

PCIe Multiport Serial Card

User Manual

Multiport Serial Communication Board with 2/4/8 RS-232/422/485 Ports
Version 1.0.0, Oct. 2021

WARRANTY

All products manufactured by ICP DAS are warranted against defective materials for a period of one year from the date of delivery to the original purchaser.

WARNING

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CONTACT US

If you have any questions, please feel free to contact us via email at:

service@icpdas.com

SUPPORT

PCIe-S112/PCIe-S112i 、 PCIe-S142/PCIe-S142i

PCIe-S114/PCIe-S114i 、 PCIe-S144/PCIe-S144i

PCIe-S118 、 PCIe-S148

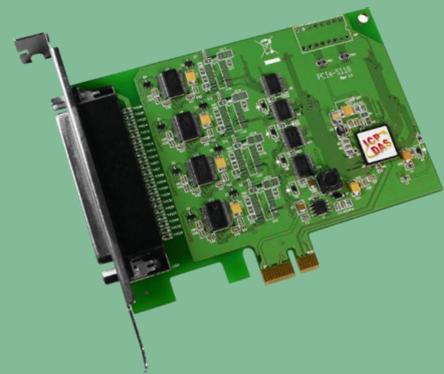


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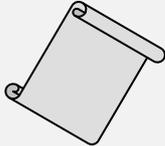
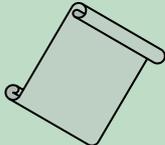
Packing List

The shipping package includes the following items:



Note:

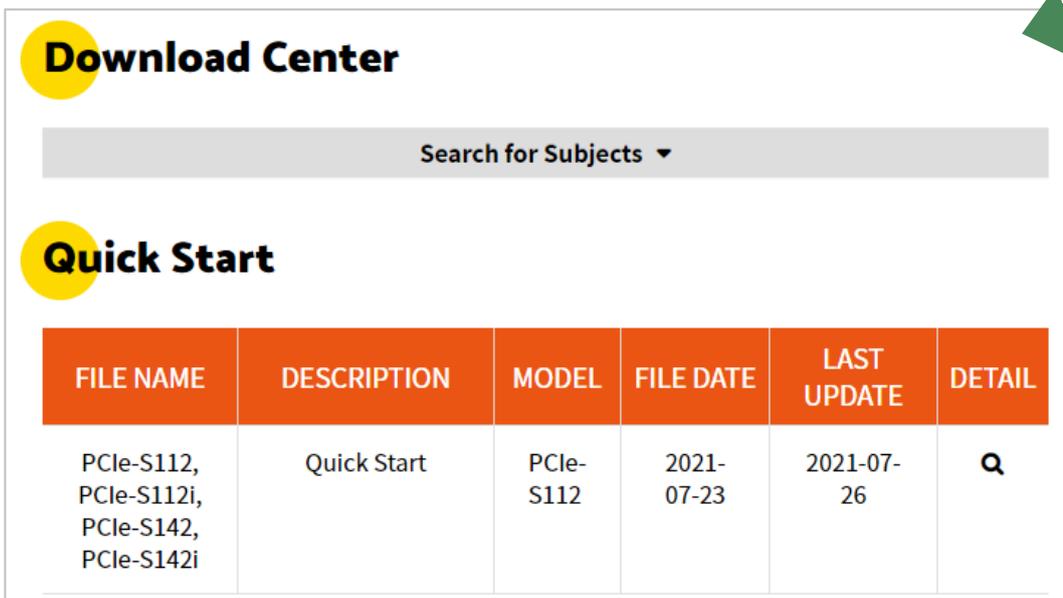
If any of these items are missing or damaged, please contact the local distributor for more information. Save the shipping materials and cartons in case you need to ship the card in the future.

<p>PCle-S112(i)/ PCle-S142(i)</p>	 <p>One PCle-S1x2 Series Card</p>	 <p>One Quick Start</p>	
<p>PCle-S114(i)/ PCle-S144(i)</p>	 <p>One PCle-S1x4 Series Card</p>	 <p>One Quick Start</p>	 <p>One CA-4002 Connector</p>
<p>PCle-S118/ PCle-S148</p>	 <p>One PCle-S1x8 Series Card</p>	 <p>One Quick Start</p>	 <p>One CA-PC62M Connector</p>

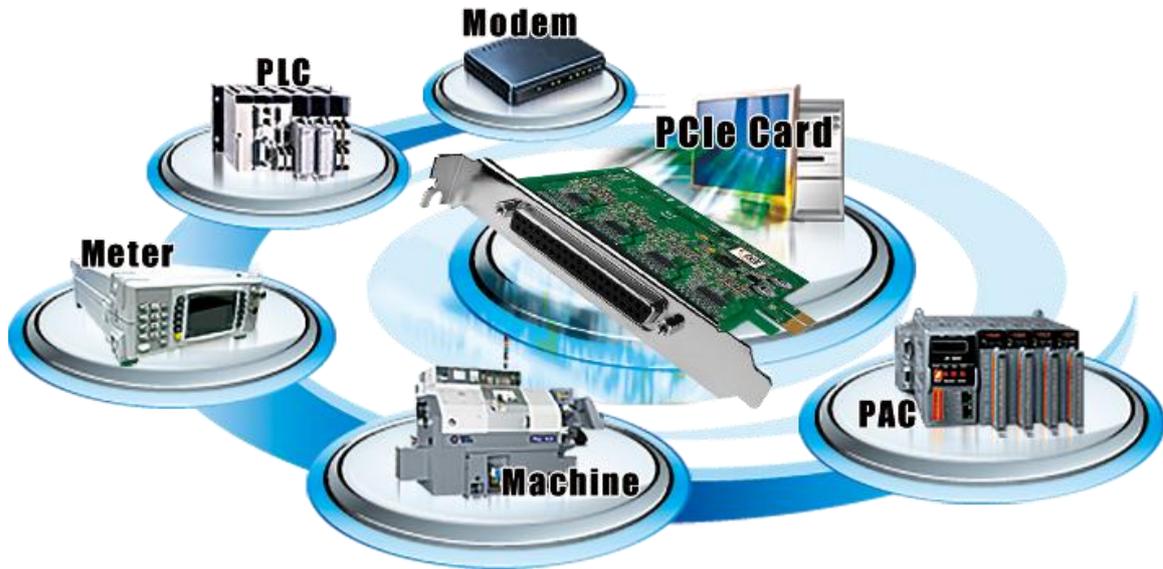
More Information

More information about the software and manual for the PCIe multiport serial cards can be obtained on the ICP DAS website, <https://www.icpdas.com/>.

You can visit the product page by entering part or all of your model name in the search bar, and get the detailed information about the software and manual by clicking the **Download Center** icon in the upper right position of the product page.



1. Introduction



The PCIe multiport serial card is the foremost choice for PC-based communication solutions, ensuring smooth communication in both time-critical applications and industrial fields. Installing a multiport card increases the number of serial ports available on the PC, meaning that it is much easier to integrate a PC with a large number of external serial communication devices, such as PLCs, meters, controllers, laboratory instruments, modems, card readers, serial printers, RFID readers, bar code readers, and sensors.

Comparison Table for PCIe Multiport Serial Cards:

Model	RS-232		RS-422/RS-485		ESD Protection	Max. Speed (bps)	FIFO Size (bytes)	Connector
	Ports	Isolation	Ports	Isolation				
PCIe-S112	2	-	-	-	-	921.6 K	256	Male DB-9
PCIe-S112i	2	3.0 kV	-	-	±4 kV	921.6 K	256	Male DB-9
PCIe-S142	-	-	2	-	-	921.6 K	256	Male DB-9
PCIe-S142i	-	-	2	3.0 kV	±4 kV	921.6 K	256	Male DB-9
PCIe-S114	4	-	-	-	-	921.6 K	256	Female DB-37
PCIe-S114i	4	3.0 kV	-	-	±4 kV	921.6 K	256	Female DB-37
PCIe-S144	-	-	4	-	-	921.6 K	256	Female DB-37
PCIe-S144i	-	-	4	3.0 kV	±4 kV	921.6 K	256	Female DB-37
PCIe-S118	8	-	-	-	-	921.6 K	256	Female DB-62
PCIe-S148	-	-	8	-	-	921.6 K	256	Female DB-62

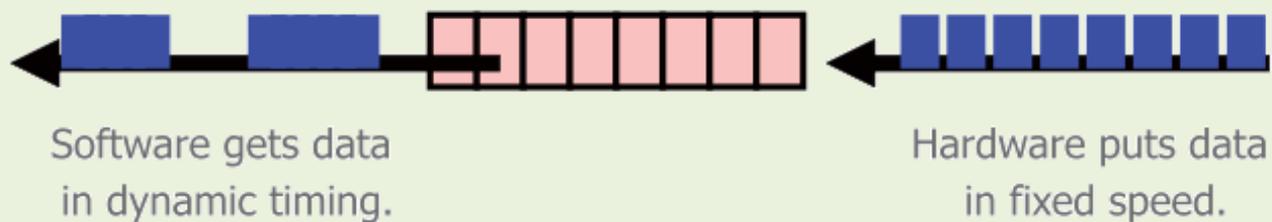
1.1 Features

PCI Express

PCI Express (PCIe) is a computer expansion card standard. A key difference between PCIe and earlier PC buses is a topology based on point-to-point serial links, rather than shared parallel bus architecture. Conceptually, the PCIe bus can be thought of as a 'high-speed serial replacement' of the older PCI/PCI-X bus.

Hardware FIFO up to 256 bytes

FIFO is an acronym for "First In, First Out", and is a method used for organizing and manipulating data relative to time and prioritization. FIFO is used for buffering and flow control while the data is transmitted from the hardware to the software. When using a hardware FIFO (buffer), a small delay in either the software or the operating system will not cause any data loss.



PCIe multiport serial cards are equipped with a large 256-byte hardware FIFO for each port. A large hardware FIFO is useful for preventing data loss if the loading on your system is heavy, e.g. while running a multi-task operating system, such as Windows or Linux.

Automatically Select COM Port Numbers

The COM ports on a PCIe multiport serial card can be automatically detected and configured by the software driver. You can clearly and easily specify any COM port to access your serial devices in control programs with regardless of which PCI Express slot that the PCIe multiport serial card is inserted in.

Various Accessories

There are a lot of optional accessories for the PCIe multiport serial cards, such as RS-232 cables and daughter boards. These tools make wiring much easier than ever before.

1.2 Specifications

1.2.1 PCle-S112(i)/PCle-S142(i)

Models	PCle-S112	PCle-S112i	PCle-S142	PCle-S142i
COM Ports				
Ports	2 x 9-wire RS-232		2 x RS-422/485	
Baud Rate	300 ~ 921600 bps			
Data Bits	5, 6, 7, 8			
Parity	None, Even, Odd, Mark, Space			
Stop Bits	1, 1.5, 2			
FIFO	Internal 256 bytes			
Isolation	-	3000 VDC	-	3000 VDC
Power				
Consumption	120 mA @ 5 V	440 mA @ 5 V	120 mA @ 5 V	440 mA @ 5 V
Mechanical				
Dimensions (W x L x D)	94 x 109 x 22			
Connector	2 x DB9 (Male)			
Environmental				
Operating Temperature	0°C ~ +60°C			
Storage Temperature	-20°C ~ +70°C			
Humidity	5 ~ 85% RH, Non-condensing			

1.2.2 PCIe-S114(i)/PCIe-S144(i)

Models	PCIe-S114	PCIe-S114i	PCIe-S144	PCIe-S144i
COM Ports				
Ports	4 x 9-wire RS-232		4 x RS-422/485	
Baud Rate	300 ~ 921600 bps			
Data Bits	5, 6, 7, 8			
Parity	None, Even, Odd, Mark, Space			
Stop Bits	1, 1.5, 2			
FIFO	Internal 256 bytes			
Isolation	-	3000 VDC	-	3000 VDC
Power				
Consumption	120 mA @ 5 V	880 mA @ 5 V	120 mA @ 5 V	880 mA @ 5 V
Mechanical				
Dimensions (W x L x D)	110 x 110 x 22		100 x 114 x 22	
Connector	Female DB-37			
Environmental				
Operating Temperature	0°C ~ +60°C			
Storage Temperature	-20°C ~ +70°C			
Humidity	5 ~ 85% RH, Non-condensing			

1.2.3 PCIe-S118/PCIe-S148

Models	PCIe-S118	PCIe-S148
COM Ports		
Ports	8 x RS-232	8 x RS-422/485
Baud Rate	2400 ~ 921600 bps	
Data Bits	5, 6, 7, 8	
Parity	None, Even, Odd, Mark, Space	
Stop Bits	1, 1.5, 2	
FIFO	Internal 256 bytes	
Power		
Consumption	120 mA @ 5 V	
Mechanical		
Dimensions (W x L x D)	90 x 131 x 22	93 x 128 x 22
Connector	Female DB-62	
Environmental		
Operating Temperature	0°C ~ +60°C	
Storage Temperature	-20°C ~ +70°C	
Humidity	5 ~ 85% RH, Non-condensing	

1.3 Options

Item & Description	PCIe-S112(i)	PCIe-S142(i)
 <p>CA-PC09F 9-pin Female D-sub connector with plastic cover</p>	✓	✓
 <p>DN-09-2/DN-09-2F I/O Connector Block with DIN-Rail Mounting and two 9-Pin male Header</p>	✓	✓
 <p>CA-0910F 9-pin Female-Female D-sub Cable, 1 m</p>	✓	✓
 <p>CA-0915 9-pin Male-Female D-sub Cable, 1.5 m</p>	✓	✓
 <p>CA-090910 9-pin Female D-sub & (9-wire) RS-422 Cable, 1 m</p>	-	✓

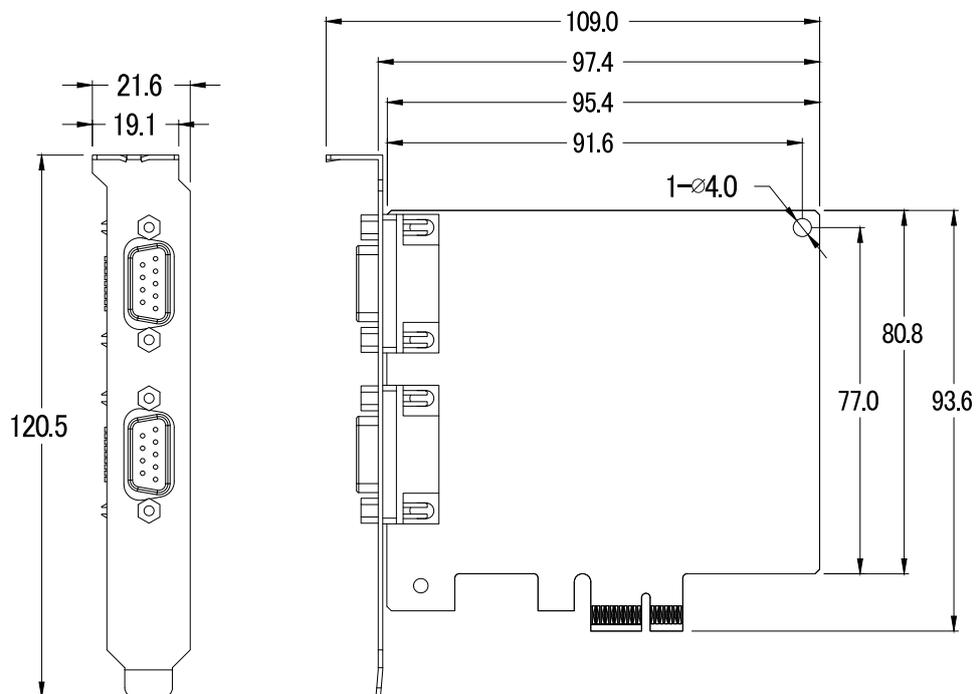
Item & Description	PCIe-S114 (i)	PCIe-S144 (i)
 <p>CA-4002 37-pin Male D-sub connector with plastic cove</p>	✓	✓
 <p>DN-37 I/O Connector Block (Pitch= 5.08 mm) with DIN-Rail Mounting Include: One CA-3710 (37-pin Male-Male D-sub Cable 1.0 m)</p>	✓	✓
 <p>CA-3710 37-Pin Male-Male D-sub Cable 1 m (45°)</p>	✓	✓
 <p>CA-3710D 37-Pin Male-Male D-sub Cable 1 m (180°)</p>	✓	✓
 <p>CA-3720 DB-37 Male-Male D-sub Cable 2 m Cable(45 °)</p>	✓	✓
 <p>CA-3720D 37-Pin Male-Male D-sub Cable 2 m (180°)</p>	✓	✓
 <p>CA-9-3715D DB-37 Male(D-sub) to 4-Port DB-9 Male(D-sub) Cable 1.5 M (180 °)</p>	✓	✓

Item & Description	PCIe-S118	PCIe-S148
 <p>CA-9-6210 DB-62 Male(D-sub) to 8-Port DB-9 Male(D-sub) Cable 1 m (180 °)</p>	✓	✓
 <p>CA-PC09F 9-pin Female D-sub Connector with Plastic Cover</p>	✓	✓
 <p>CA-PC62M 62-pin Male D-sub Connector with Plastic Cover</p>	✓	✓
 <p>DN-09-2/DN-09-2F I/O Connector Block with DIN-Rail Mounting and two 9-pin Male Headers</p>	✓	✓
 <p>CA-0910F 9-pin Female-Female D-sub Cable, 1 m</p>	✓	✓
 <p>CA-0915 9-pin Male-Female D-sub Cable, 1.5 M</p>	✓	✓

2. Hardware Configuration

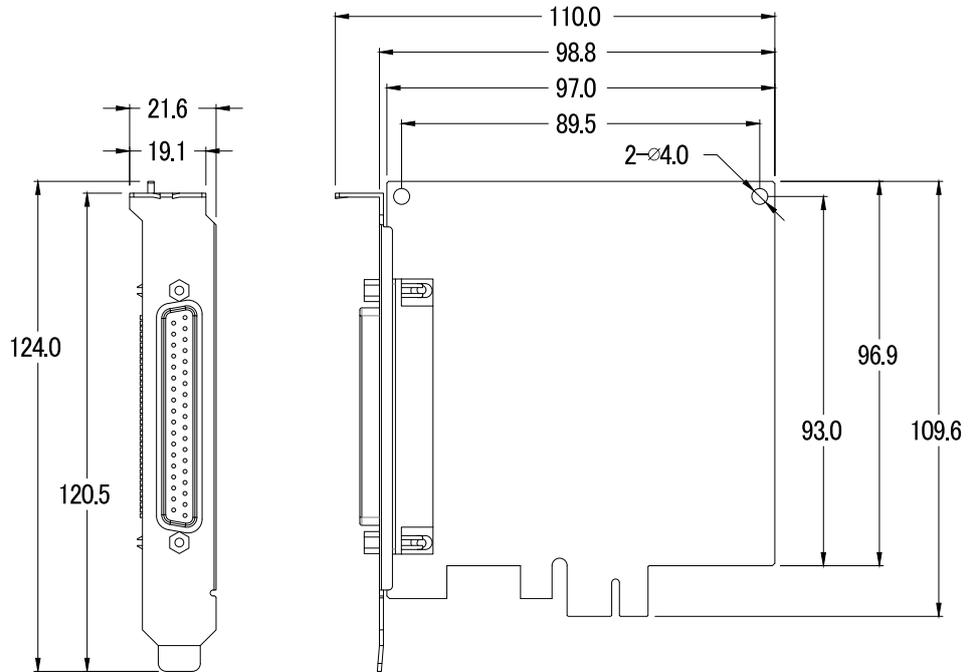
2.1 Dimensions

2.1.1 PCIe-S112(i)/ PCIe-S142(i)

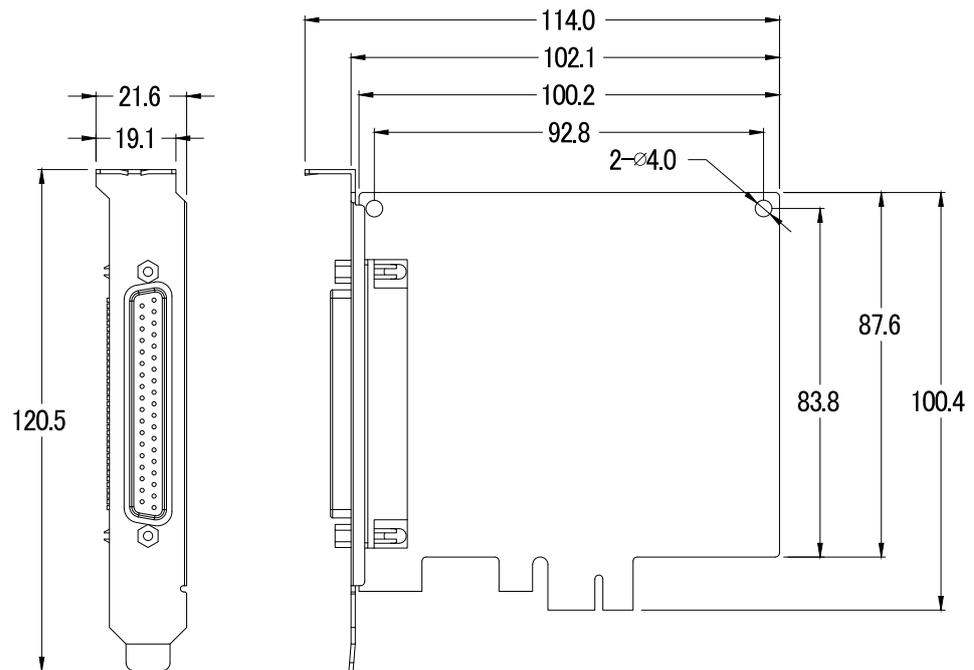


2.1.2 PCIe-S114(i)/ PCIe-S144(i)

PCIe-S114(i)

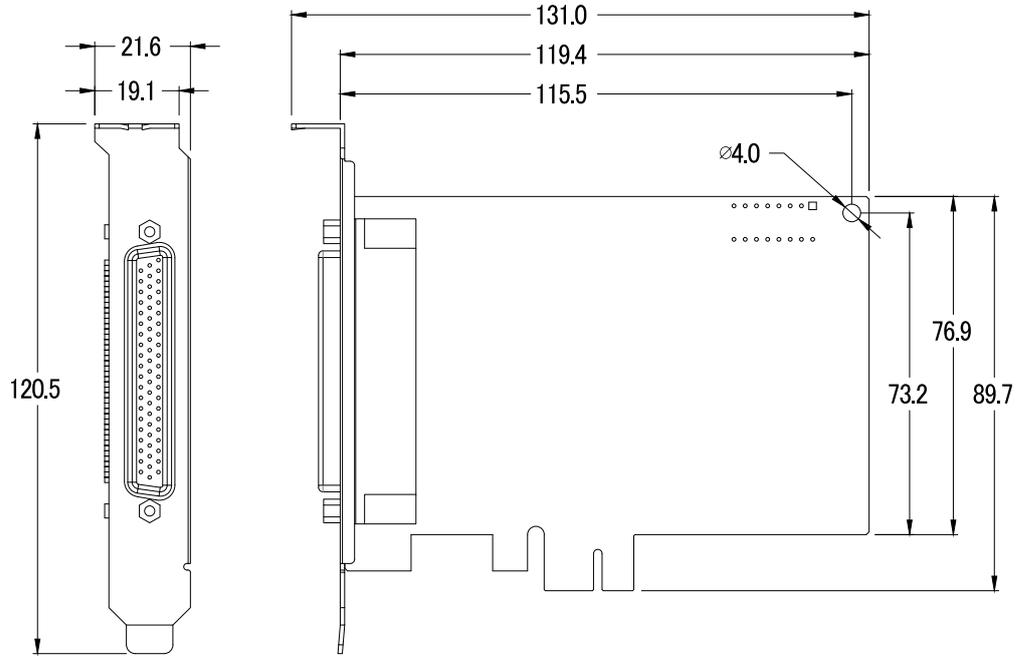


PCIe-S144(i)

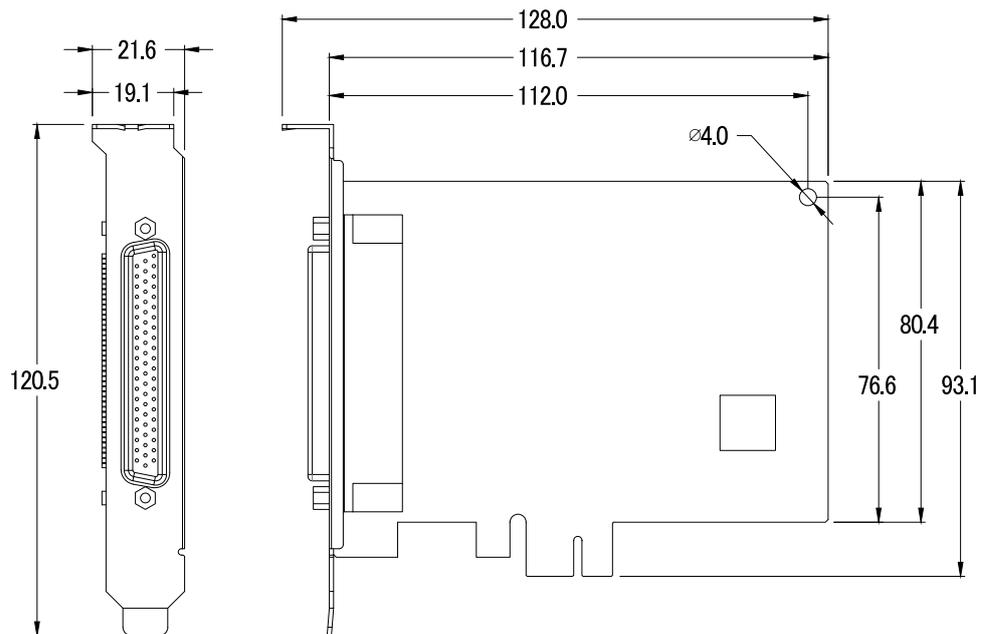


2.1.3 PCIe-S118/PCIe-S148

PCIe-S118

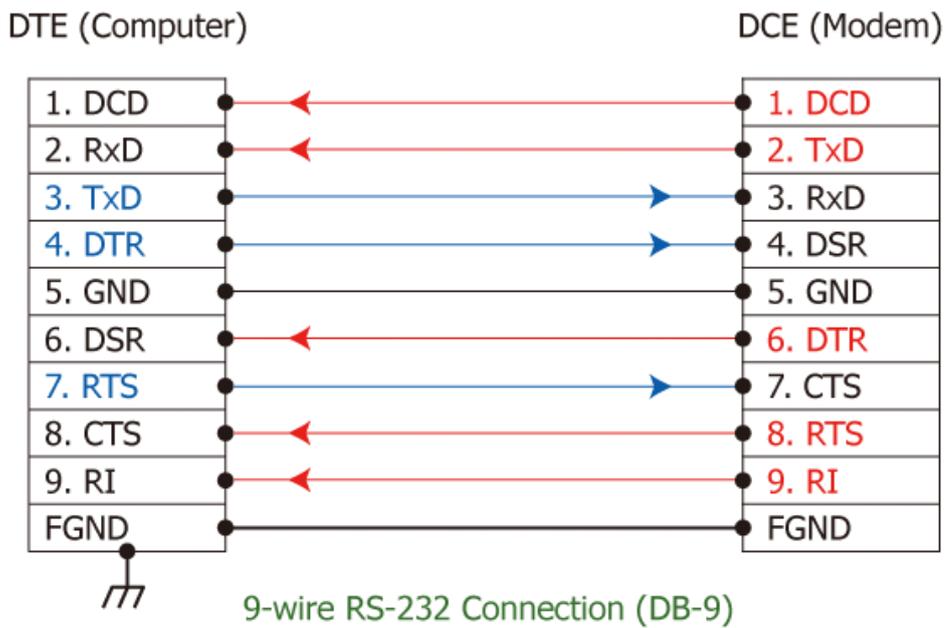


PCIe-S148



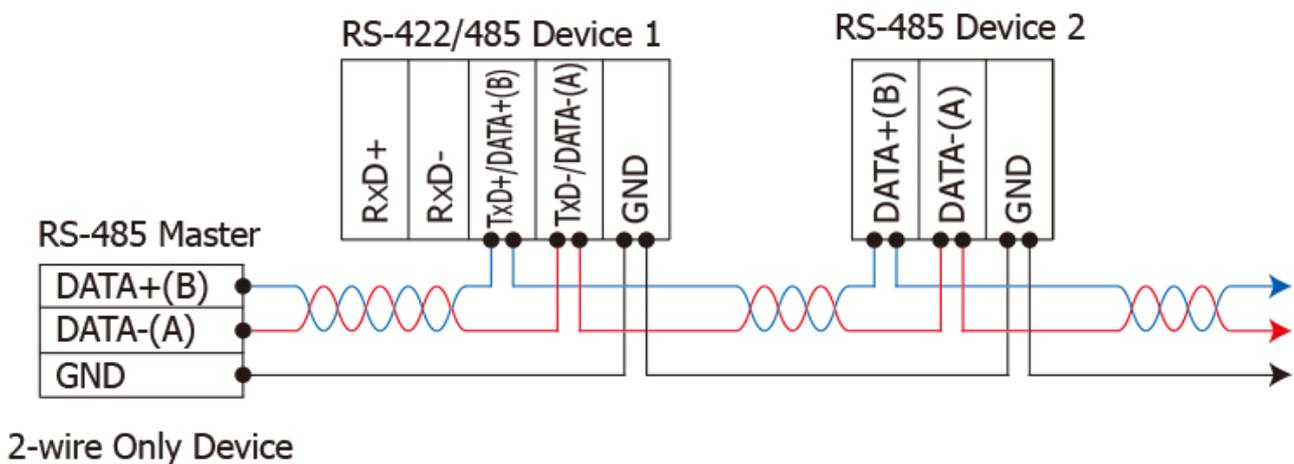
2.2 Wiring Notes for RS-232/422/485

2.2.1 RS-232 Wiring

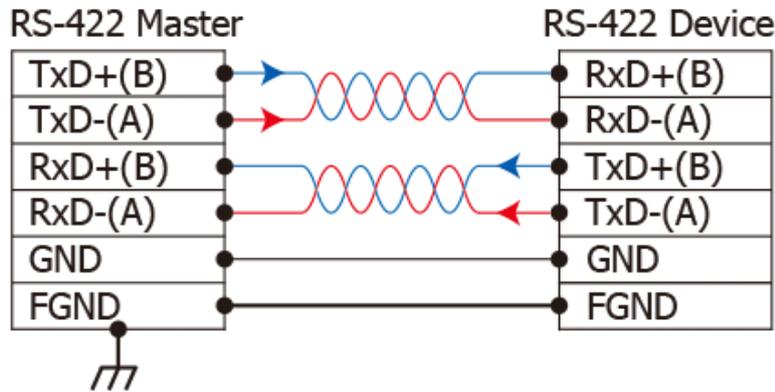


Note: FGND is the frame ground that is soldered to the metal shield on the DB-9 cable.

2.2.2 RS-485 Wiring



2.2.3 RS-422 Wiring



Note:

1. Usually, you have to connect all signal grounds of RS-422/485 devices together to reduce common-mode voltage between devices.
2. Twisted-pair cable must be used for the DATA+/- wires.
3. Both two ends of the cable may require a termination resistor connected across the two wires (DATA+ and DATA-). Typically 120 Ω resistors are used.
4. The Data+ and B pins are positive-voltage pins, and Data- and A pins are negative-voltage pins in the above figure. The B/A pins may be defined in another way depending on devices, please check it first.

2.3 Pin Assignments

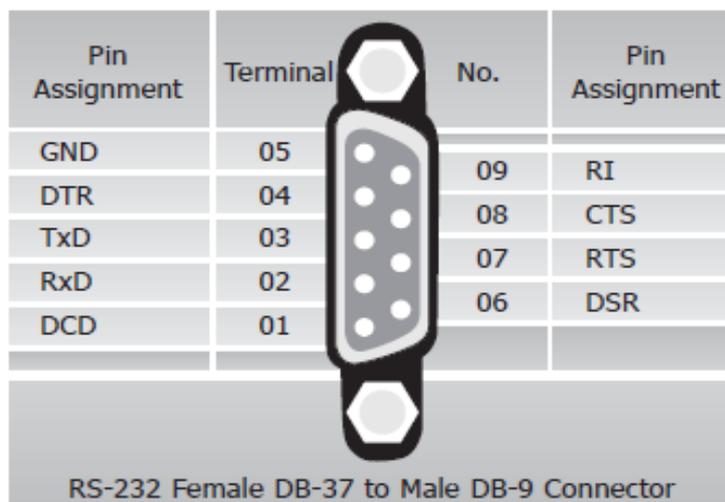
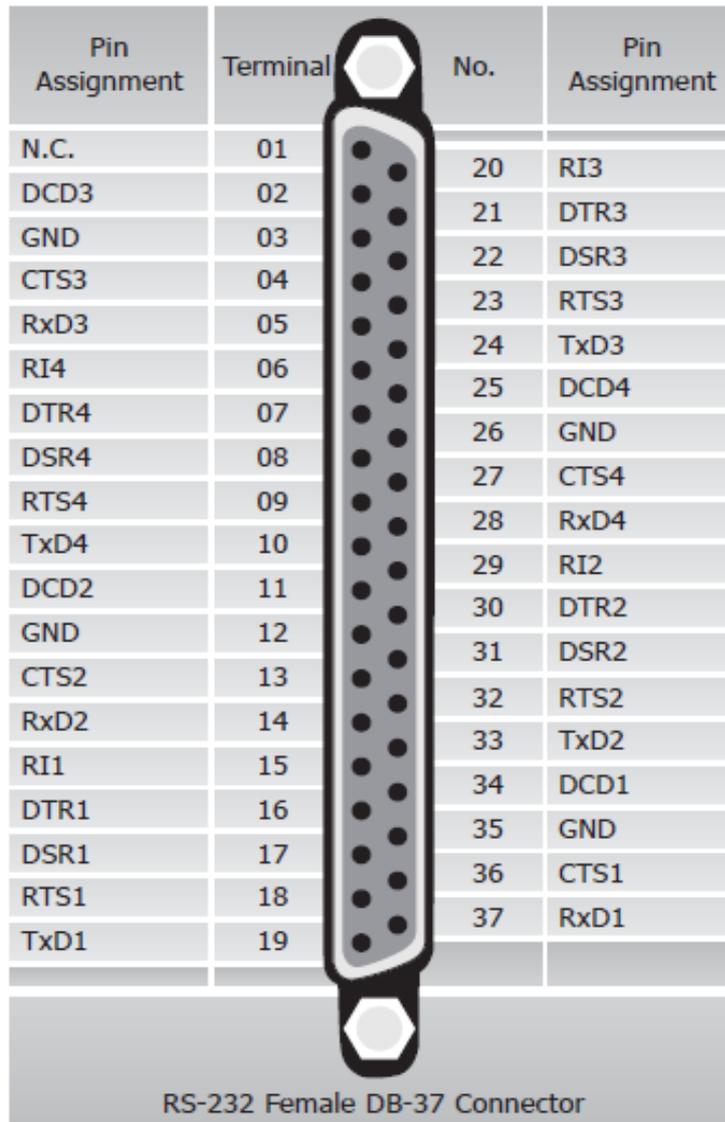
2.3.1 PCle-S112

Pin Assignment	Terminal		No.	Pin Assignment
GND	05		09	RI
DTR	04		08	CTS
TxD	03		07	RTS
RxD	02		06	DSR
DCD	01			
				Male DB-9 Connector

2.3.2 PCle-S142

Pin Assignment	Terminal		No.	Pin Assignment
GND/VEE	05		09	CTS-(A)
RxD-(A)	04		08	CTS+(B)
RxD+(B)	03		07	RTS+(B)
TxD+(B)/Data+(B)	02		06	RTS-(A)
TxD-(A)/Data-(A)	01			
				RS-422/485 Male DB-9 Connector

2.3.3 PCIe-S114



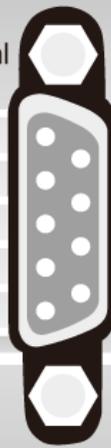
2.3.4 PCIe-S144

Pin Assignment	Terminal	No.	Pin Assignment
N.C.	01	20	CTS3-(A)
TxD3-(A)/Data3-(A)	02	21	RxD3-(A)
GND/VEE3	03	22	RTS3-(A)
CTS3+(B)	04	23	RTS3+(B)
TxD3+(B)/Data3+(B)	05	24	RxD3+(B)
CTS4-(A)	06	25	TxD4-(A)/Data4-(A)
RxD4-(A)	07	26	GND/VEE4
RTS4-(A)	08	27	CTS4+(B)
RTS4+(B)	09	28	TxD4+(B)/Data4+(B)
RxD4+(B)	10	29	CTS2-(A)
TxD2-(A)/Data2-(A)	11	30	RxD2-(A)
GND/VEE2	12	31	RTS2-(A)
CTS2+(B)	13	32	RTS2+(B)
TxD2+(B)/Data2+(B)	14	33	RxD2+(B)
CTS1-(A)	15	34	TxD1-(A)/Data1-(A)
RxD1-(A)	16	35	GND/VEE1
RTS1-(A)	17	36	CTS1+(B)
RTS1+(B)	18	37	TxD1+(B)/Data1+(B)
RxD1+(B)	19		



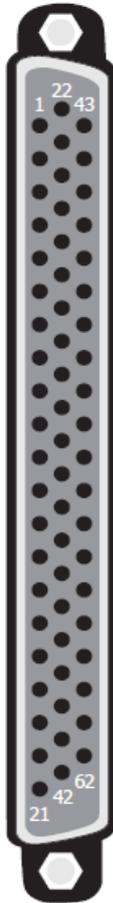
RS-422/485 Female DB-37 Connector

Pin Assignment	Terminal	No.	Pin Assignment
GND/VEE	05	09	CTS-(A)
RxD-(A)	04	08	CTS+(B)
RxD+(B)	03	07	RTS+(B)
TxD+(B)/Data+(B)	02	06	RTS-(A)
TxD-(A)/Data-(A)	01		



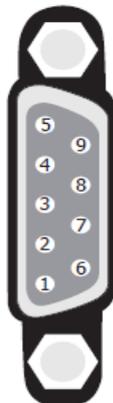
RS-422/485 Female DB-37 to Male DB-9 Connector

2.3.5 PCIe-S118



Terminal No.	Pin Assignment	Terminal No.	Pin Assignment	Terminal No.	Pin Assignment
01	TxD_0	22	RxD_0	43	CTS_0
02	DTR_0	23	DSR_0	44	RTS_0
03	RxD_1	24	DCD_0	45	GND
04	DSR_1	25	TxD_1	46	CTS_1
05	DCD_1	26	DTR_1	47	RTS_1
06	TxD_2	27	RxD_2	48	CTS_2
07	DTR_2	28	DSR_2	49	RTS_2
08	RxD_3	29	DCD_2	50	GND
09	DSR_3	30	TxD_3	51	CTS_3
10	DCD_3	31	DTR_3	52	RTS_3
11	RxD_4	32	GND	53	CTS_4
12	DSR_4	33	TxD_4	54	RTS_4
13	DCD_4	34	DTR_4	55	GND
14	TxD_5	35	RxD_5	56	CTS_5
15	DTR_5	36	DSR_5	57	RTS_5
16	RxD_6	37	DCD_5	58	GND
17	DSR_6	38	TxD_6	59	CTS_6
18	DCD_6	39	DTR_6	60	RTS_6
19	RxD_7	40	GND	61	CTS_7
20	DSR_7	41	TxD_7	62	RTS_7
21	DCD_7	42	DTR_7		

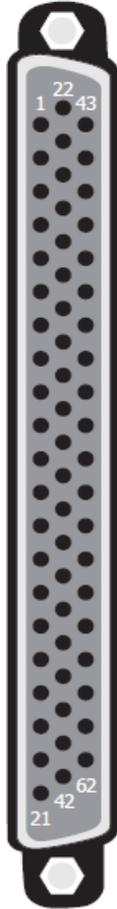
CON1



Terminal No.	Pin Assignment
01	DCD
02	RxD
03	TxD
04	DTR
05	GND
06	DSR
07	RTS
08	CTS
09	-

RS-232 Female DB-62 to Male DB-9 Connector

2.3.6 PCIe-S148



Terminal No.	Pin Assignment	Terminal No.	Pin Assignment	Terminal No.	Pin Assignment
01	RxD0+	22	TxD0+/Data0+	43	-
02	RxD0-	23	-	44	-
03	TxD1+/Data1+	24	TxD0-/Data0-	45	GND
04	-	25	RxD1+	46	-
05	TxD1-/Data1-	26	RxD1-	47	-
06	RxD2+	27	TxD2+/Data2+	48	-
07	RxD2-	28	-	49	-
08	TxD3+/Data3+	29	TxD2-/Data2-	50	GND
09	-	30	RxD3+	51	-
10	TxD3-/Data3-	31	RxD3-	52	-
11	TxD4+/Data4+	32	GND	53	-
12	-	33	RxD4+	54	-
13	TxD4-/Data4-	34	RxD4-	55	GND
14	RxD5+	35	TxD5+/Data5+	56	-
15	RxD5-	36	-	57	-
16	TxD6+/Data6+	37	TxD5-/Data5-	58	GND
17	-	38	RxD6+	59	-
18	TxD6-/Data6-	39	RxD6-	60	-
19	TxD7+/Data7+	40	GND	61	-
20	-	41	RxD7+	62	-
21	TxD7-/Data7-	42	RxD7-		

CON1



Terminal No.	Pin Assignment
01	TxD-/Data-
02	TxD+/Data+
03	RxD+
04	RxD-
05	GND
06	-
07	-
08	-
09	-

RS-422/485 Female DB-62 to Male DB-9 Connector

3. Hardware Installation



Note:

As certain operating systems, such as Windows XP may require the computer to be restarted after a new driver is installed, it is recommended that the driver is installed first, which will reduce the installation time.

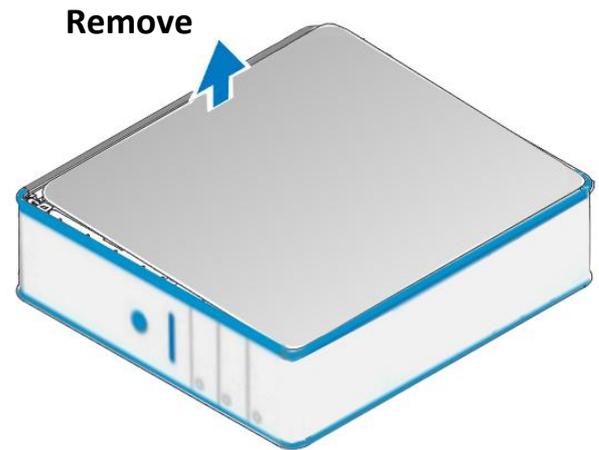
Step 1: Install the driver for the PCIe multiport serial card on your computer.

For detailed information regarding driver installation, refer to [Chapter 4 Software Installation.](#)

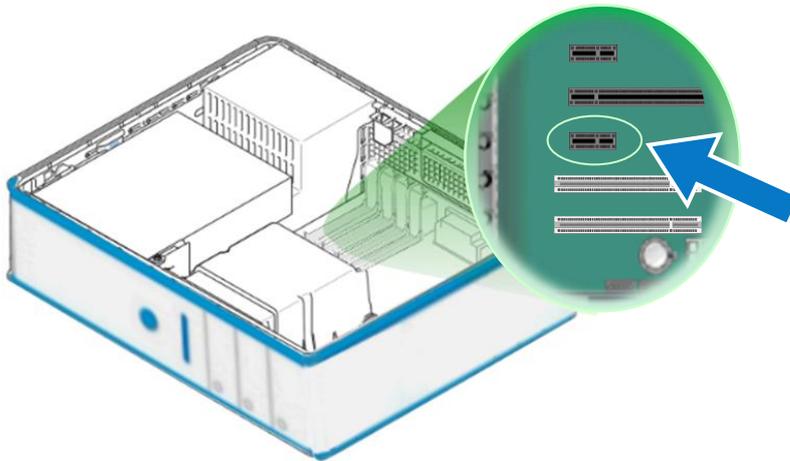


Step 2: Shut down and turn off the power to the computer, and then disconnect the power supply.

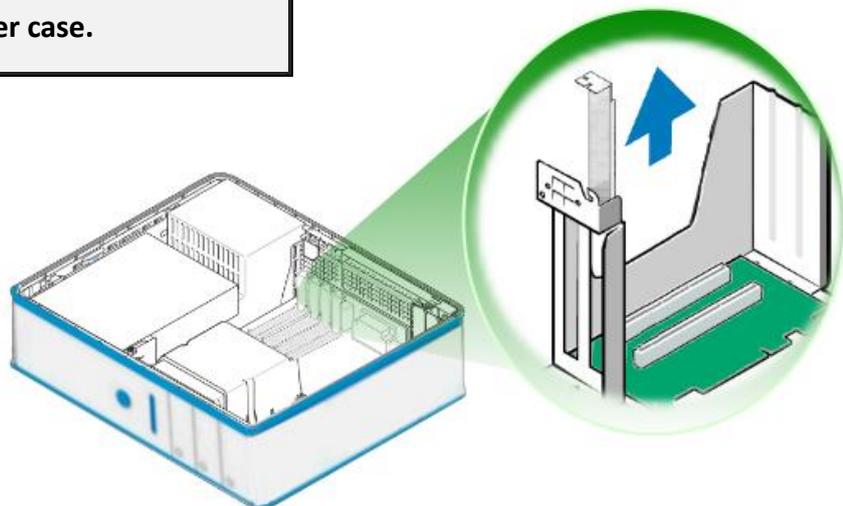
Step 3: Remove the cover from the computer.

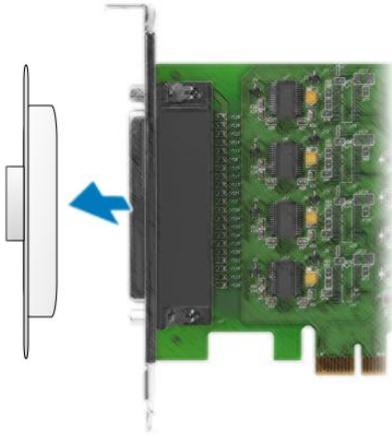


Step 4: Select an empty PCI/PCI Express slot.



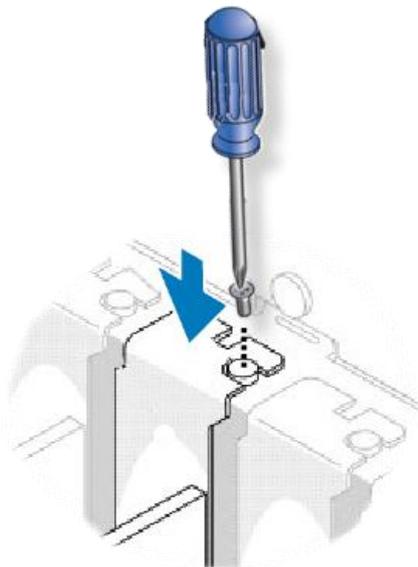
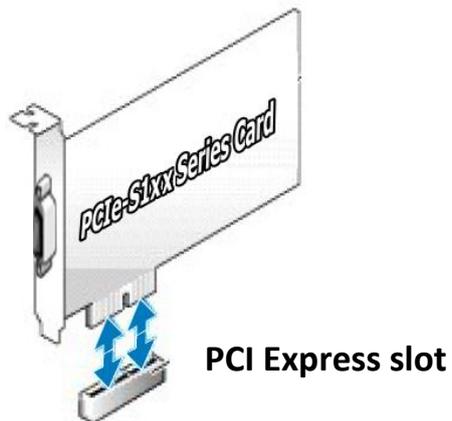
Step 5: Unscrew and remove the PCI Express slot cover from the computer case.





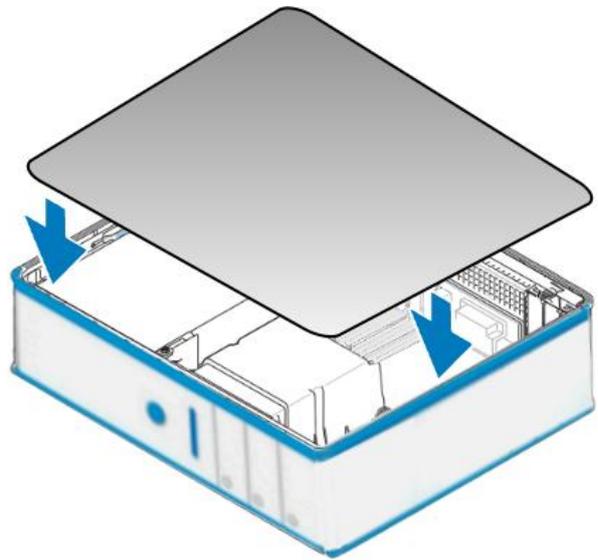
Step 6: Remove the connector cover from the PCIe multiport serial card.

Step 7: Carefully insert the PCIe multiport serial card into the PCI Express slot by gently pushing down on both sides of the card until it slides into the PCI connector.



Step 8: Confirm that the card is correctly inserted in the motherboard, and then secure the PCIe multiport serial card in place using the retaining screw that was removed in Step 5.

Step 9: Replace the covers on the computer.



Step 10: Re-attach any cables, insert the power cord and then switch on the power to the computer.

Once the computer reboots, follow the onscreen messages to complete the Plug and Play installation process. For more information, refer to [Chapter 4 Software Installation](#).



4. Software Installation

PCIe multiport serial card driver supports both 32 and 64-bit Windows XP/2003/Vista/7/8 systems, and also provides Plug and Play (PnP) functions for easy installation. This chapter provides detailed description of how to install the drivers for the PCIe multiport serial card.

4.1 Obtaining the Driver Installer Package

The installer package for the PCIe multiport serial card driver can be obtained from the ICP DAS web site at the following link:

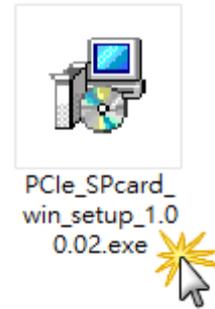


<https://www.icpdas.com/en/download/show.php?num=2142>

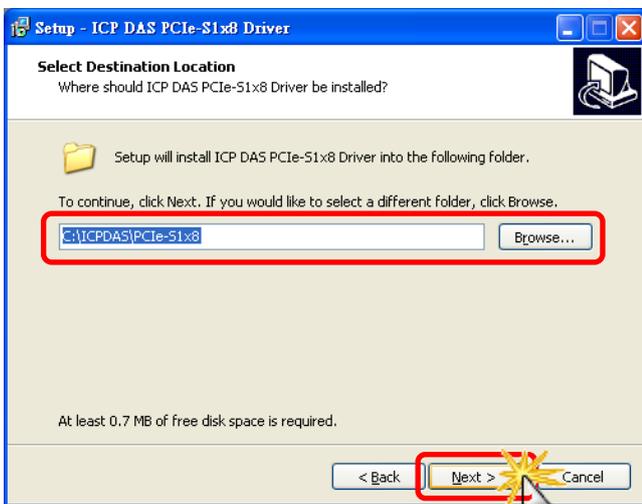
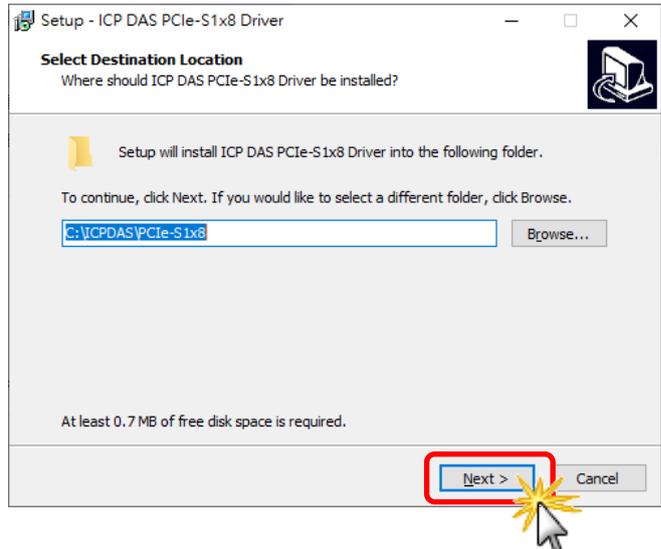
4.2 Installing Driver for PCIe Multiport Serial Card

Follow the process described below to set up the software for the PCIe multiport serial card.

Step 1: Double-click the “PCIe_SPCard_win_setup_0000.exe” application to install the driver.

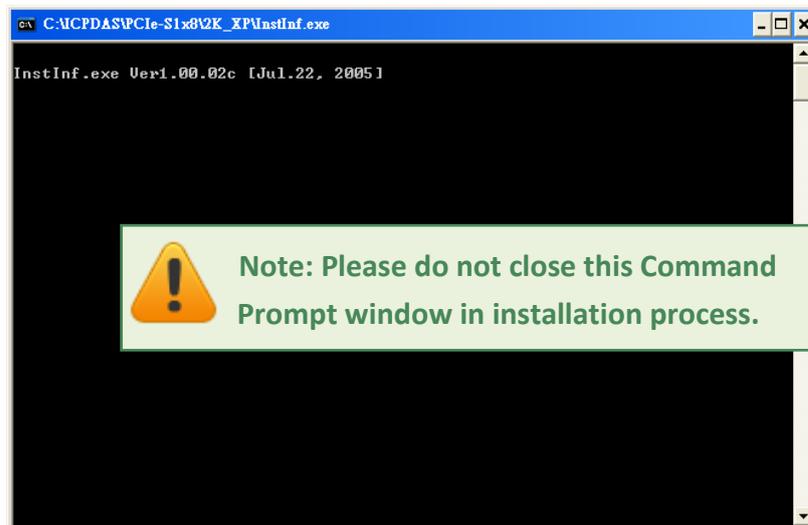


Step 2: When the Setup Wizard screen is displayed, click “Next>”.

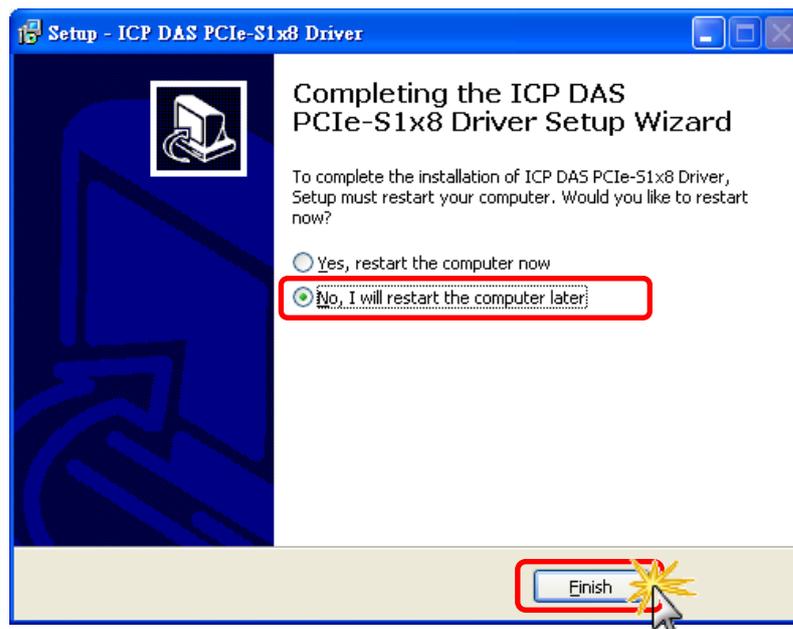


Step 3: Select the folder to install driver. The default path is C:\ICPDAS\PCIe-S1x8. If you wish to install the drivers to a different location, click the “Browse...” button and select the relevant folder and then click the “Next>” button.

Step 4: In the installation process, the Command Prompt windows will be displayed, don't care.



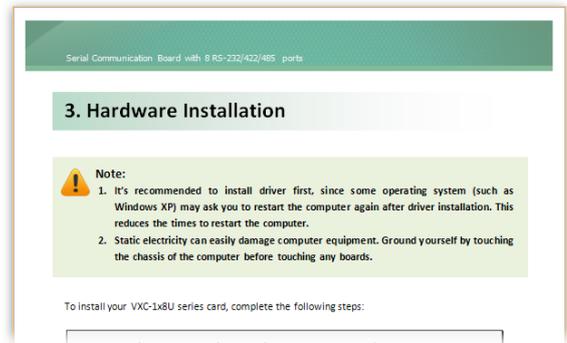
Step 5: Once the driver has been installed, the Setup Wizard will be displayed to advise that the computer must be restarted in order to complete the installation. Select the **“No, I will restart the computer later”** option, and then click the **“Finish”** button to exit the Wizard.



4.3 PnP Driver Installation

Step 1: Correctly shut down your computer and disconnect the power supply, and then install the PCIe multiport serial card into the computer.

For detailed information regarding installation of the PCIe multiport serial card, refer to [Chapter 3 Hardware Installation](#).



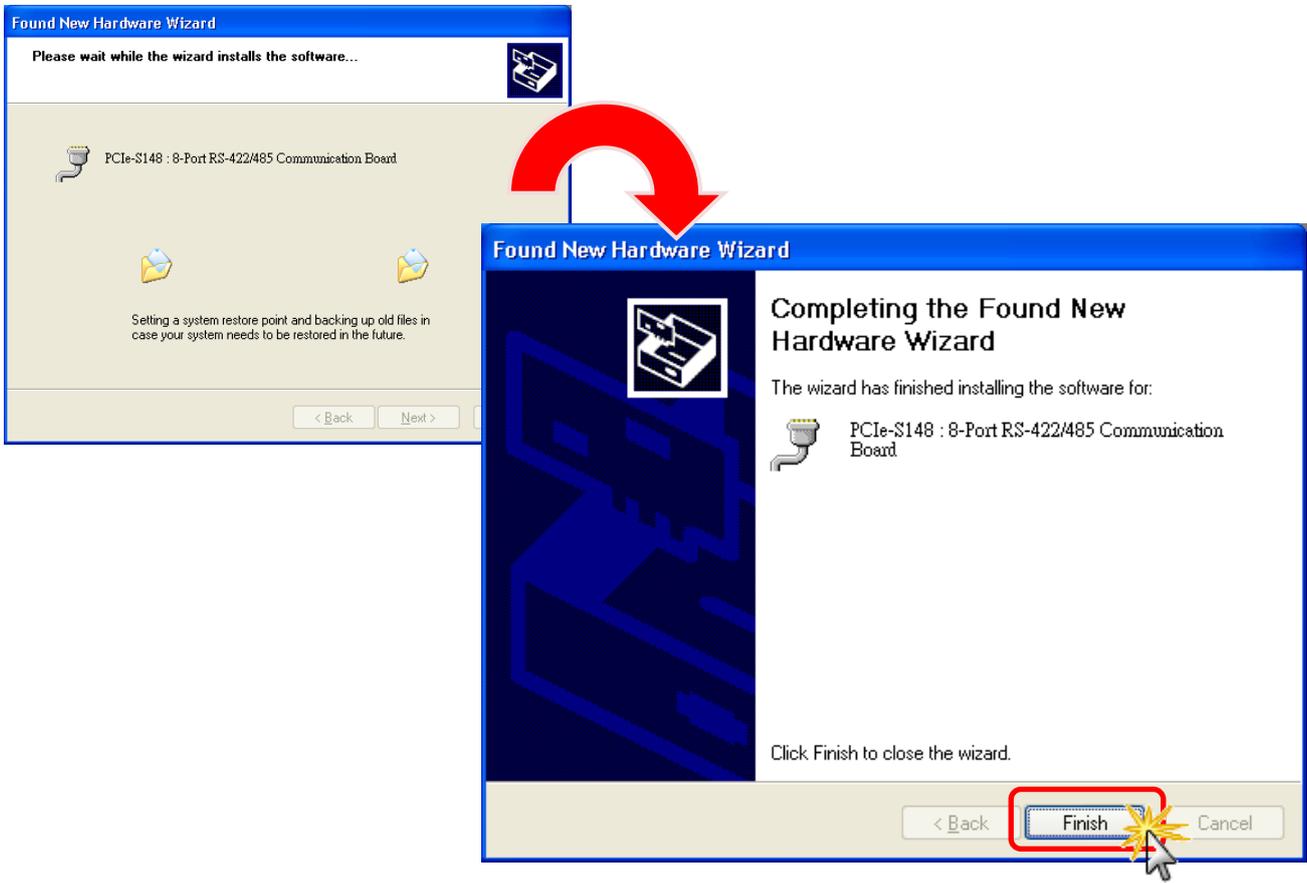
Step 2: Power on the computer and complete the Plug and Play installation.

 **Note:** More recent operating systems, such as Windows Vista/7/8 will automatically detect the new hardware and install the necessary drivers, so Steps 3 to 5 can be skipped.

Step 3: When the “Found New Hardware Wizard” is displayed, select “Install the software automatically [Recommended]” option and then click the “Next>” button.



Step 4: After the Plug and Play installation completed successfully, click the **“Finish”** button on the pop up window to exit the Wizard.



Step 5: If the **“Found New Hardware Wizard”** dialog box is displayed again, repeat **Steps 3 and 5** to complete the installation for all COM ports.



4.4 Verifying the Installation

To verify that the driver was correctly installed, use the Windows **Device Manager** to view and update the device drivers installed on the computer, and to ensure that the hardware is operating correctly. The following is a description of how access the Device Manager in each of the major versions of Windows. Refer to the appropriate description for the specific operating system to verify the installation.

4.4.1 Accessing Windows Device Manager

■ Windows XP

Step 1: Click the “**Start**” >> “**Settings**” and click “**Control Panel**”. Double-click the “**System**” icon to open the “**System Properties**” dialog box.

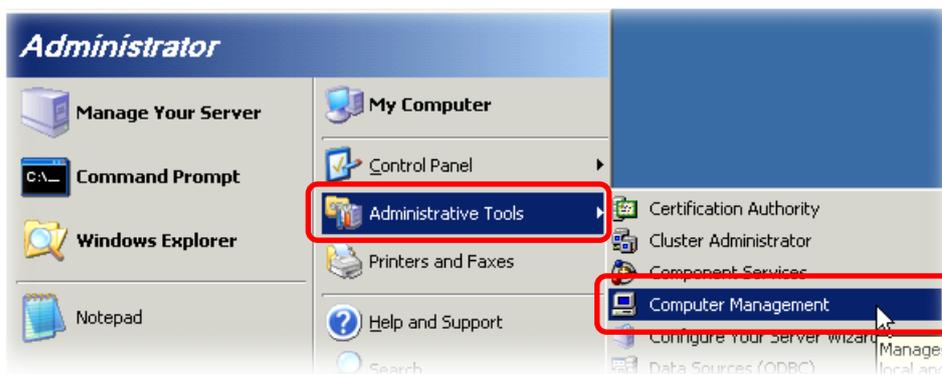
Step 2: Click the “**Hardware**” tab, and then click the “**Device Manager**” button.



■ Windows Server 2003

Step 1: Click “**Start**” >> “**Administrative Tools**”, and then click “**Computer Management**”.

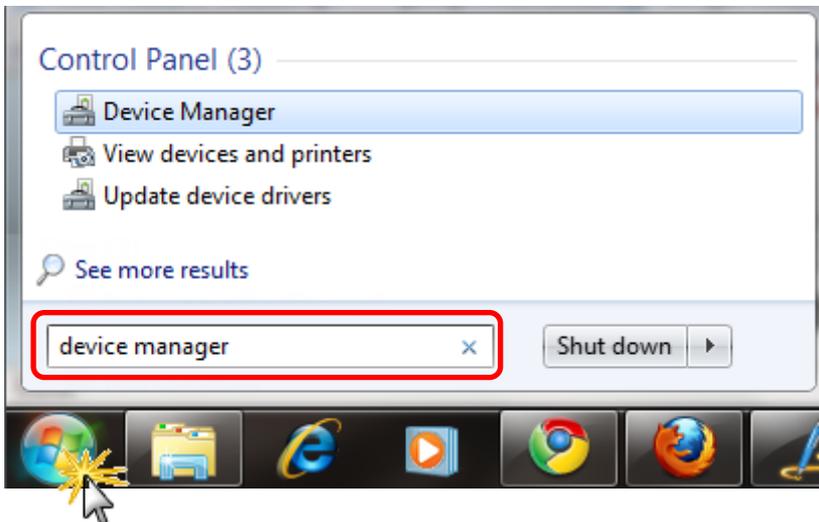
Step 2: Expand the “**System Tools**” item in the console tree, and then click “**Device Manager**”.



■ Windows Vista/7

Step 1: Click the “Start” button.

Step 2: In the Search field, type **Device Manager** and then press Enter.



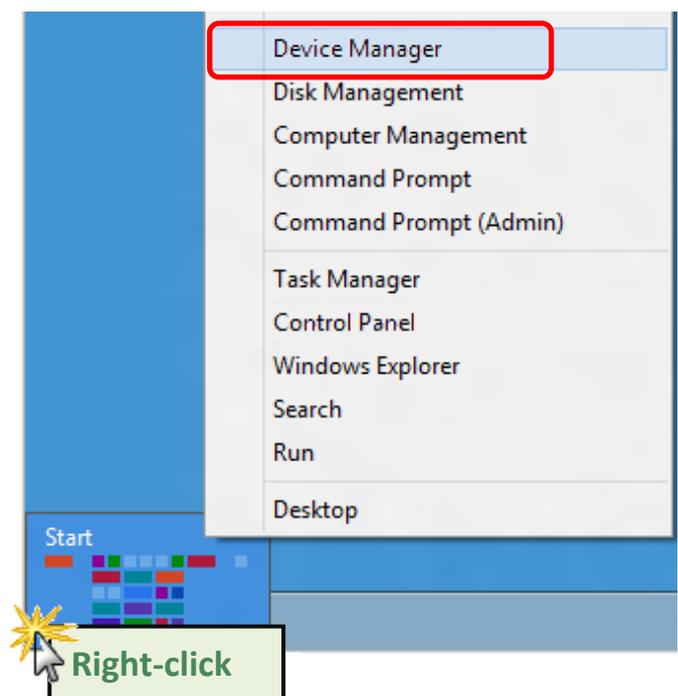
Note that Administrator privileges are required for this operation. If you are prompted for an administrator password or confirmation, enter the password or provide confirmation by clicking the “Yes” button in the User Account control message.

Windows 8

Step 1: To display the Start screen icon from the desktop view, hover the mouse cursor over the bottom-left corner of screen.

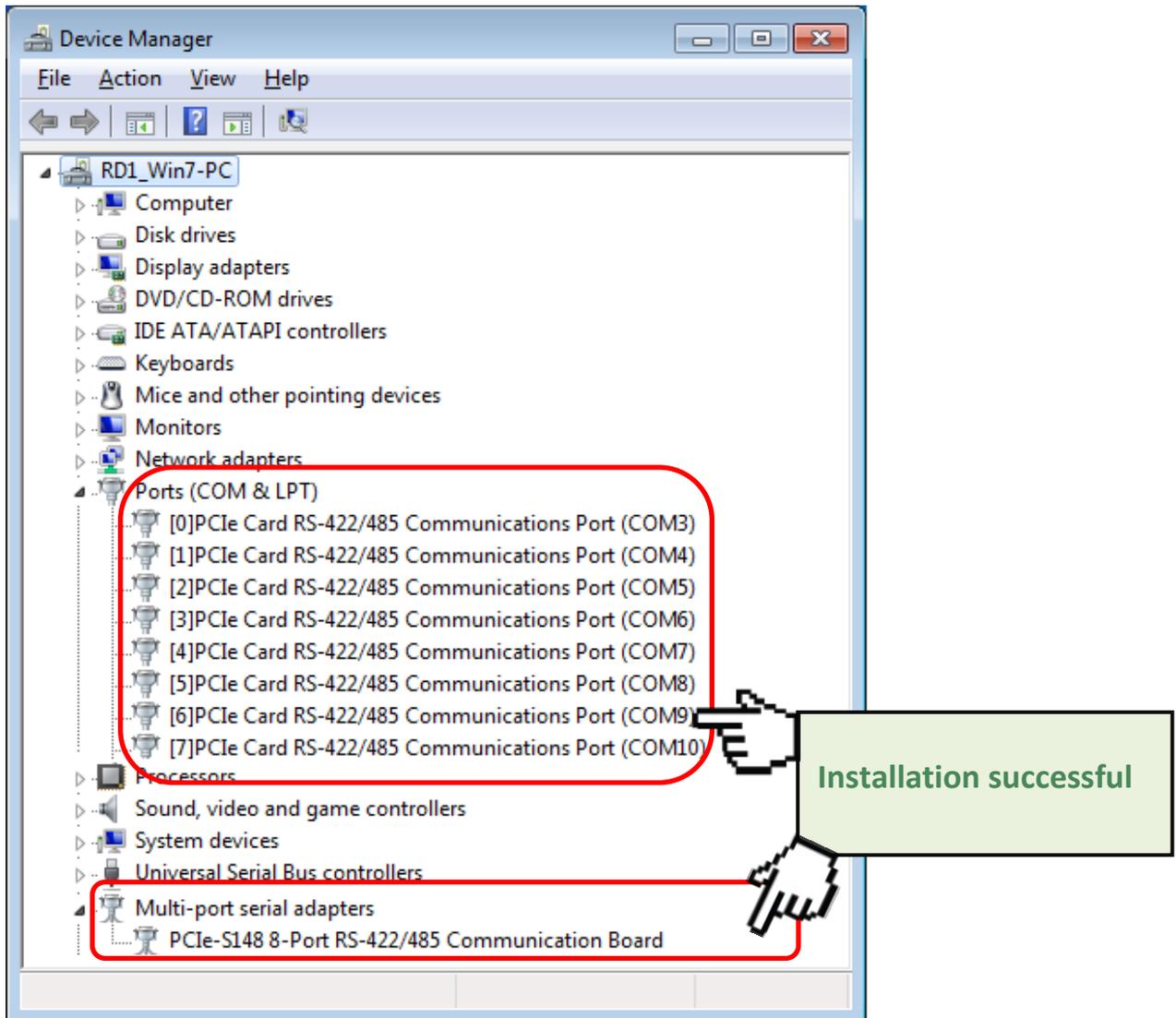
Step 2: Right-click the Start screen icon and then click “Device Manager”.

Alternatively, press [Windows Key] + [X] to open the Start Menu, and then select Device Manager from the options list.



4.4.2 Check the Configuration of the COM Port

Step 3: Verify that the COM Ports for the PCIe multiport serial card are listed correctly.



Note: Depending on the operating system, the COM port mapping may be applied automatically.

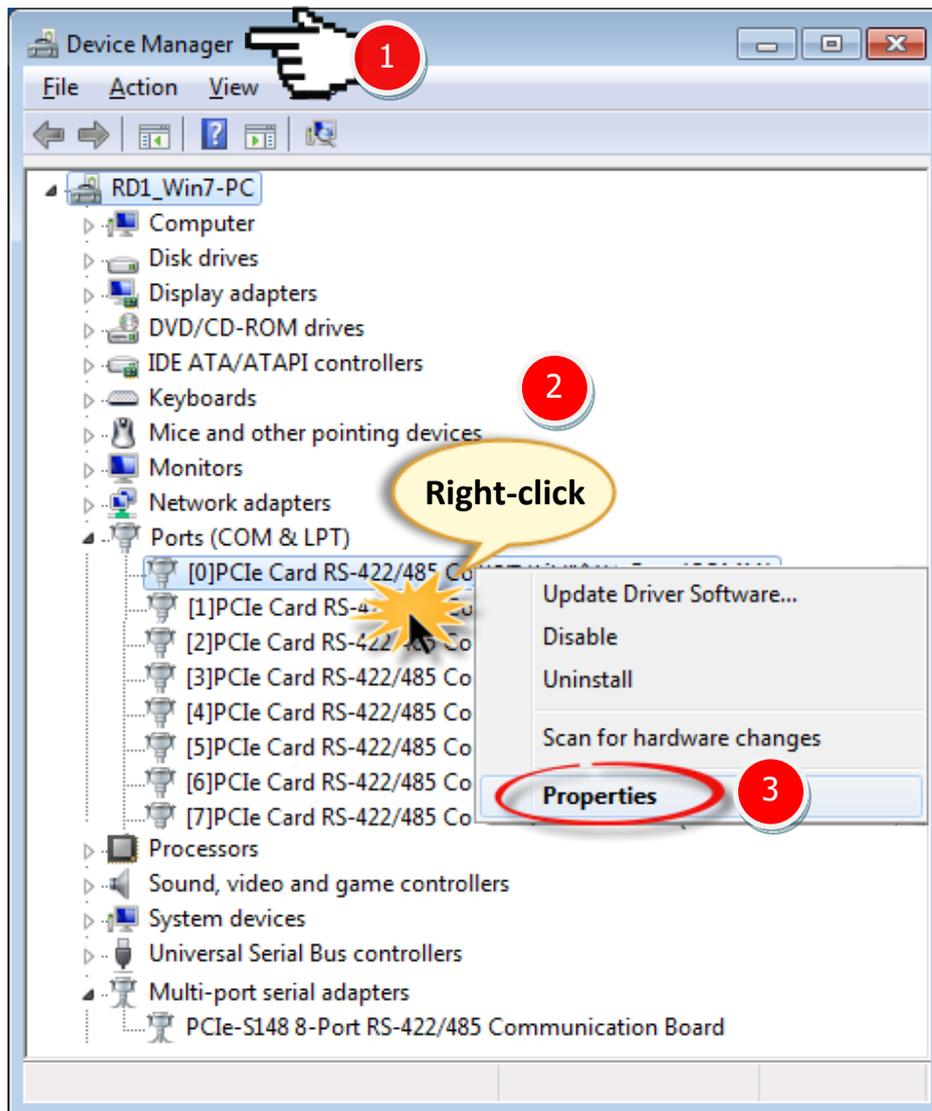
4.5 Manual Configuration for COM Ports

The PCIe multiport serial card supports 2/4/8 RS-232 or RS-422/485 serial ports. Depending on the operating system, COM port mapping may be applied automatically during the hardware and software installation. If the auto-configuration for COM Port is messy or it does not suit your needs, you can change the COM Port mappings manually. In this section, we will take PCIe-S148 as an example to show you the steps of manual configuration.

Step 1: Open Windows **Device Manager**. Refer to [Section 4.4.1](#) for more detailed information.

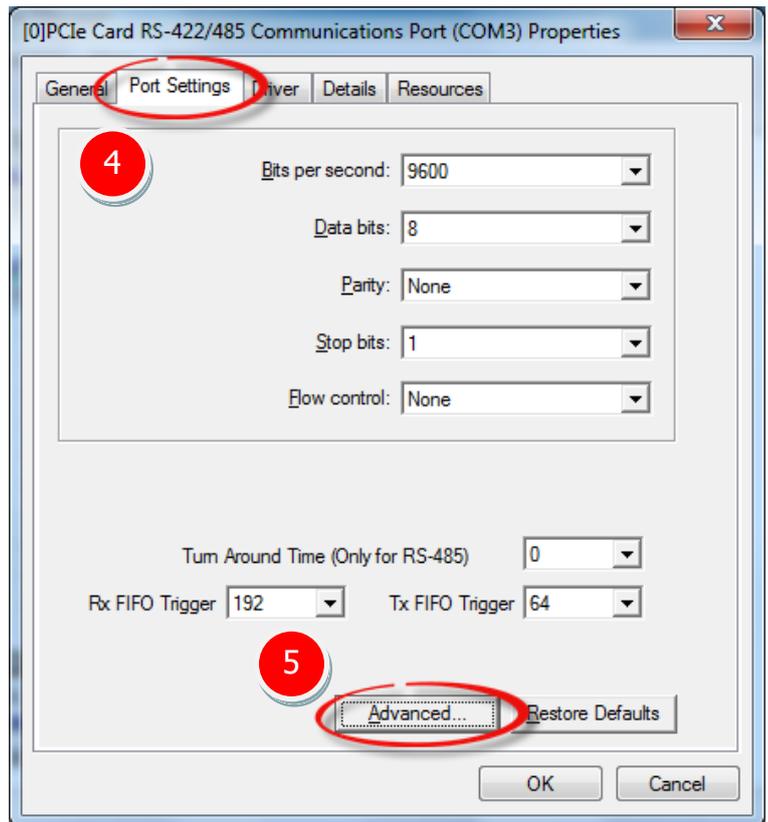
Step 2: **Right click** on the serial port of the PCIe-S148 card.

Step 3: Select the “**Properties**” item from the popup menu and the “Communications Port (COM n) Properties” dialog box will be displayed.



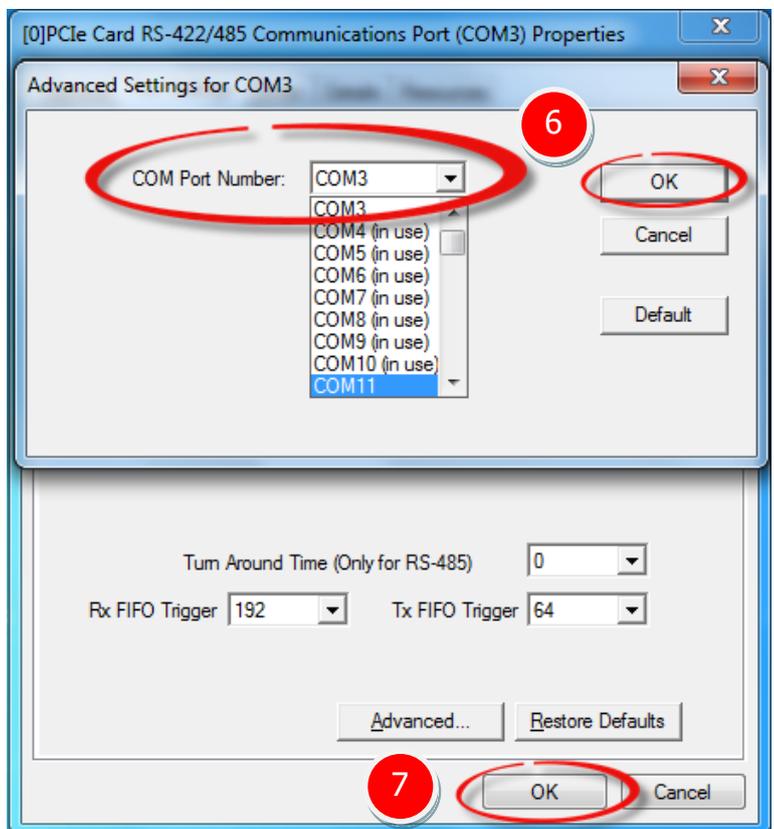
Step 4: Select the “Port Settings” item in the “Communications Port (COM n) Properties” dialog box.

Step 5: Click the “Advanced...” button to open the “Advanced Settings for COM n” dialog box.



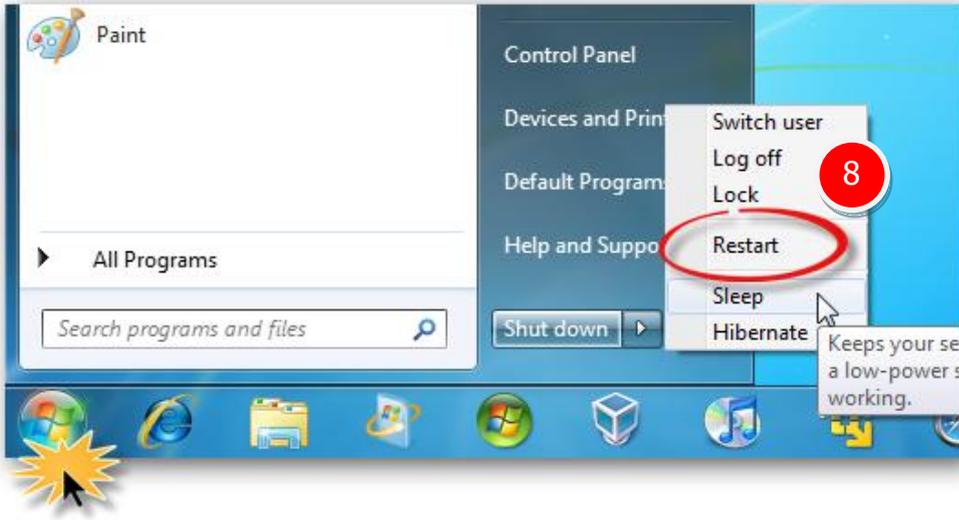
Step 6: In “Advanced Settings for COM n” dialog box, select the appropriate **COM Port number** from the “COM Port Number:” drop-down options and click the “OK” button.

Note: The COM port display “(in use)” means this COM port is being used. Therefore, please do not select it.

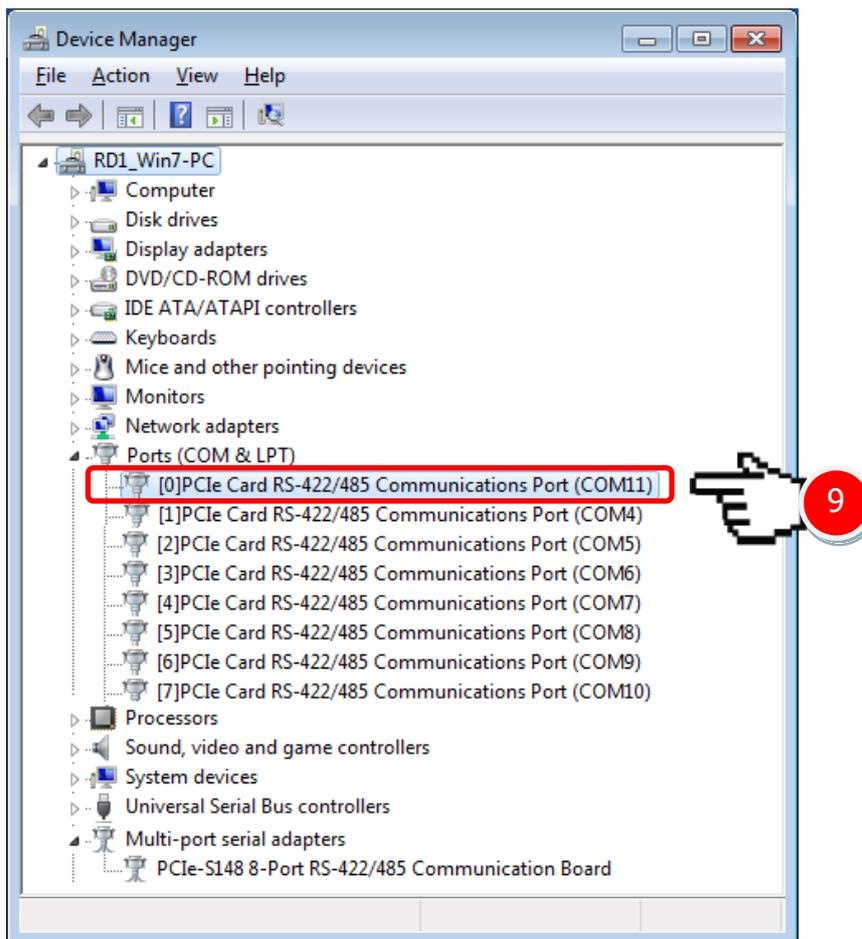


Step 7: Click the “OK” button in the “Communications Port (COM n) Properties” dialog box.

Step 8: Restart your computer to complete the configuration.



Step 9: Confirm the new COM Ports is correctly displayed.



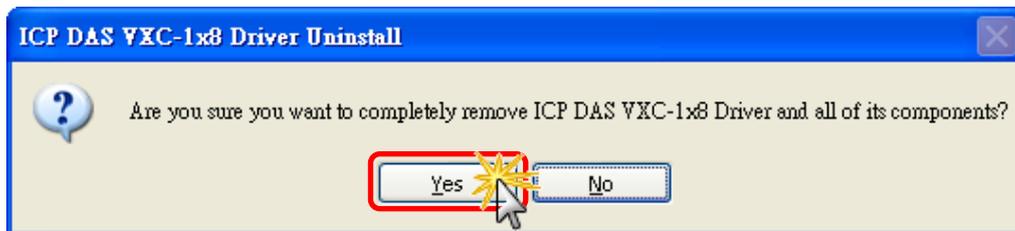
4.6 Uninstalling the Device Driver

The ICP DAS PCIe multiport serial card driver includes a utility that allows you to remove the software from the computer. To uninstall the software, follow the procedure described below:

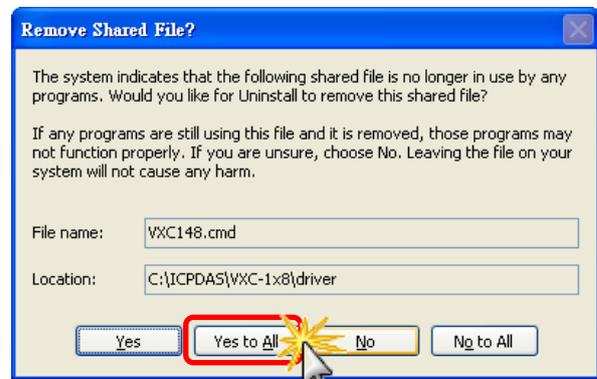
Step 1: Open the driver installation folder, for example **C:\ICPDAS\PCIe-S1x8**, and then double click the **unins000.exe** uninstaller application.



Step 2: The uninstaller application will then ask you to confirm that you want wish to remove the utility program. Click the **“Yes”** button to continue.



Step 3: The **“Remove Shared File?”** dialog box will be displayed asking whether you wish to remove the shared file. Click the **“Yes to All”** button to continue.



Step 4: After the uninstall process is complete, a dialog box will be displayed to notify that the driver was successfully removed. Click the **“OK”** button to finish the process.



5. Testing the PCIe Multiport Serial Card

This chapter provides detailed information regarding the “self-test” process, which enables the user to confirm whether or not the PCIe multiport serial card is operating correctly. Before performing the “self-test”, the hardware and driver installation must be completed. For detailed information regarding hardware and driver installation, refer to [Chapter 3 Hardware Installation](#) and [Chapter 4 Software Installation](#).

5.1 PCIe-S112(i)/ PCIe-S142(i)

5.1.1 Preparation

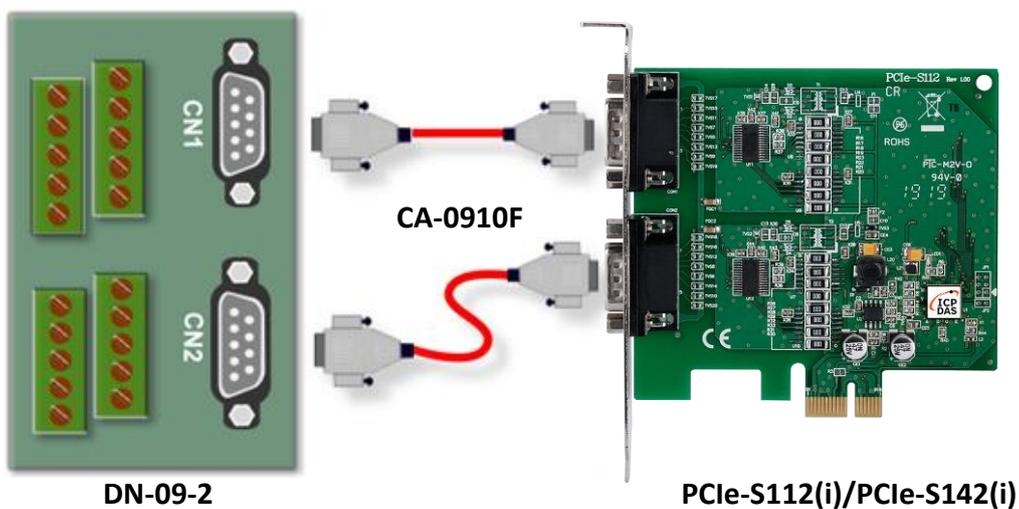
Before beginning the “self-test”, ensure that the following items are available:

- One DN-09-2 terminal board (optional)
- Two CA-0910F cables (optional)



5.1.2 Self-test Wiring

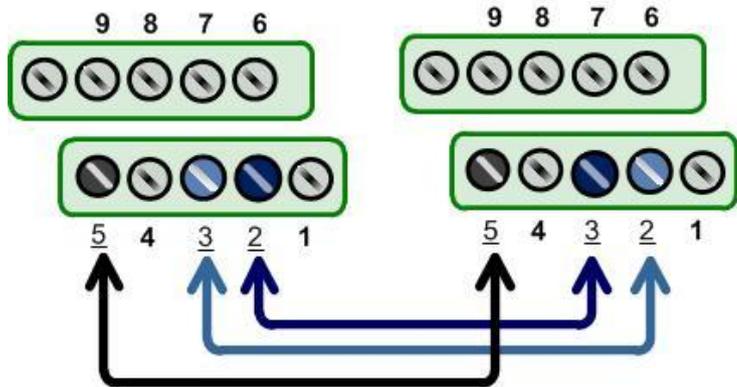
Step 1: Connect the DN-09-2 terminal board to the PCIe-S1x2 series card using the CA-0910F cables.



■ PCIe-S112(i) Card (RS-232 Wiring):

Port0 Signal	Pin No.		Pin No.	Port1 Signal
TxD0	3	↔	2	RxD1
RxD0	2	↔	3	TxD1
GND	5	↔	5	GND

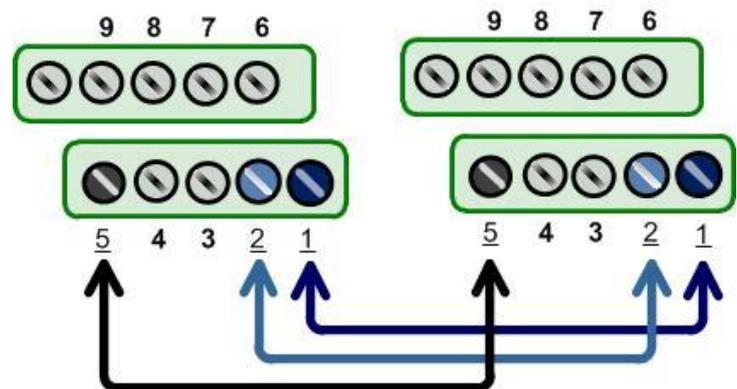
Step 2: Short the RxD, TxD and GND pins of Port0 and Port1.



■ PCIe-S142(i) Card (RS-485 Wiring):

Port0 Signal	Pin No.		Pin No.	Port1 Signal
Data0-	1	↔	1	Data1-
Data0+	2	↔	2	Data1+
GND	5	↔	5	GND

Step 2: Short Port0 Data+ to Port1 Data+, Port0 Data- to Port1 Data-, and Port0 GND to Port1 GND.



⚠ Note: For detailed information regarding wiring and pin assignments for the RS-232/422/485, refer to [Section 2.2 Wiring Notes for RS-232/422/485](#) and [Section 2.3 Pin Assignments](#).

5.1.3 Executing Test Program

Step 1: Execute the “Test2COM.exe” application

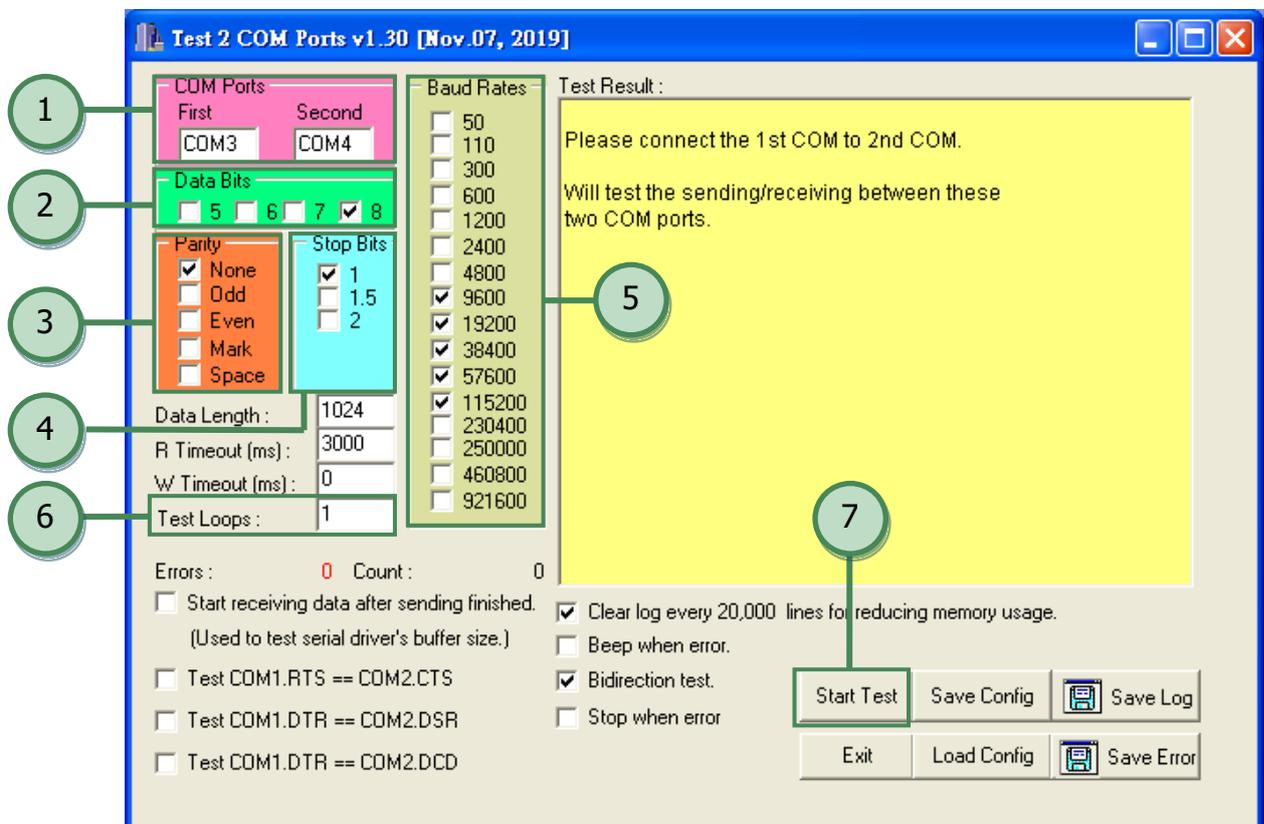


Test2COM.exe can be downloaded from:

<https://www.icpdas.com/en/download/show.php?num=2910&kw=Test2COM>

Step 2: Set the appropriate COM Ports, Baud Rate and Data Format information as the values shown in the image below.

- 1: COM Ports:** Enter COM3 (First), COM4 (Second).
- 2: Data Bits:** Check “8”
- 3: Parity:** Check “None”
- 4: Stop Bits:** Check “1”
- 5: Baud Rates:** Check values 9600 to 115200
- 6: Test Loop:** Enter “1”
- 7: Click “Start Test”** to begin the test.

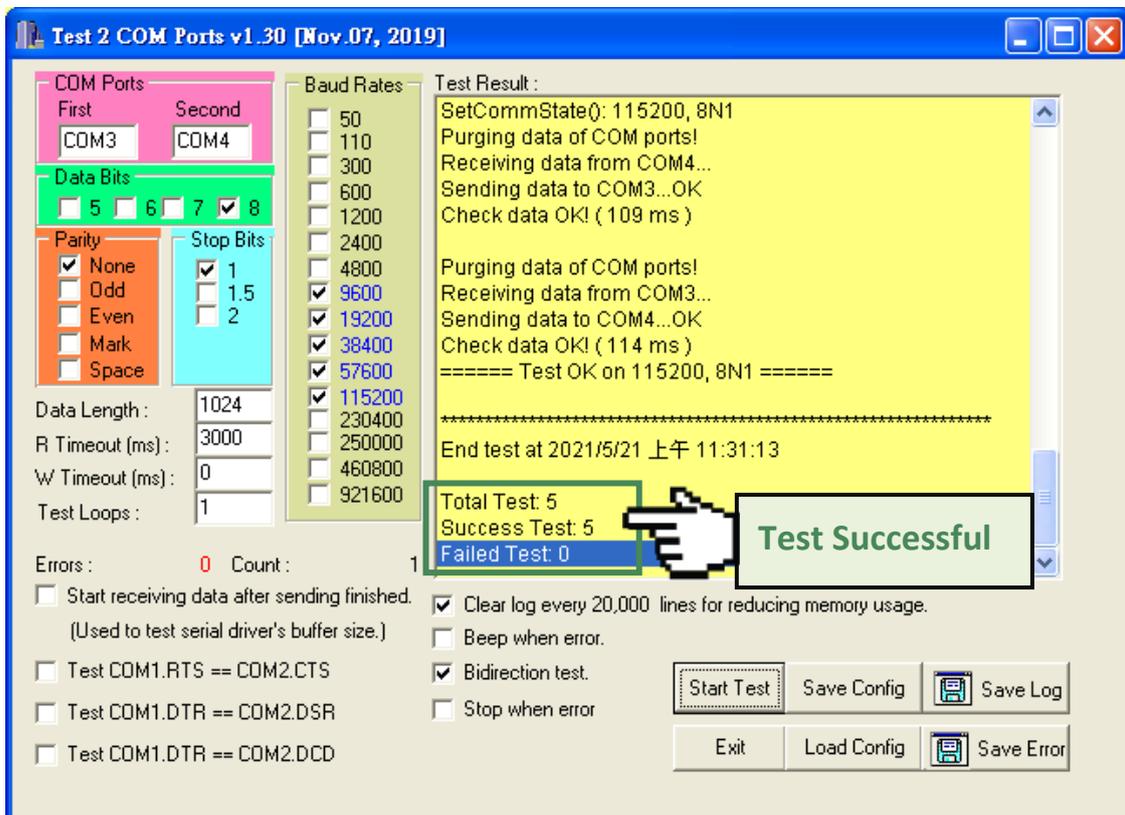


Notes:

1. Depending on the operating system, COM port mapping may be applied automatically. You should first confirm the number of the COM Port for PCIe multiport serial card through Device Manager (see [Section 4.4 Verifying the Installation](#)) and then test this COM Port using the Test2COM.exe application.
2. The Baud Rate and Data Format settings used in the Test2COM application depend on the COM ports being used by the PCIe multiport serial card. Refer to [Section 1.2 Specifications](#) for more detailed information.

Step 3: Refer to the test results. If the test was successful, the message “Failed Test: 0” will be displayed.

The “self-test” process is now complete and your COM port program can access serial devices through the extended COM Port.



5.2 PCIe-S114(i)/ PCIe-S144(i)

5.2.1 Preparation

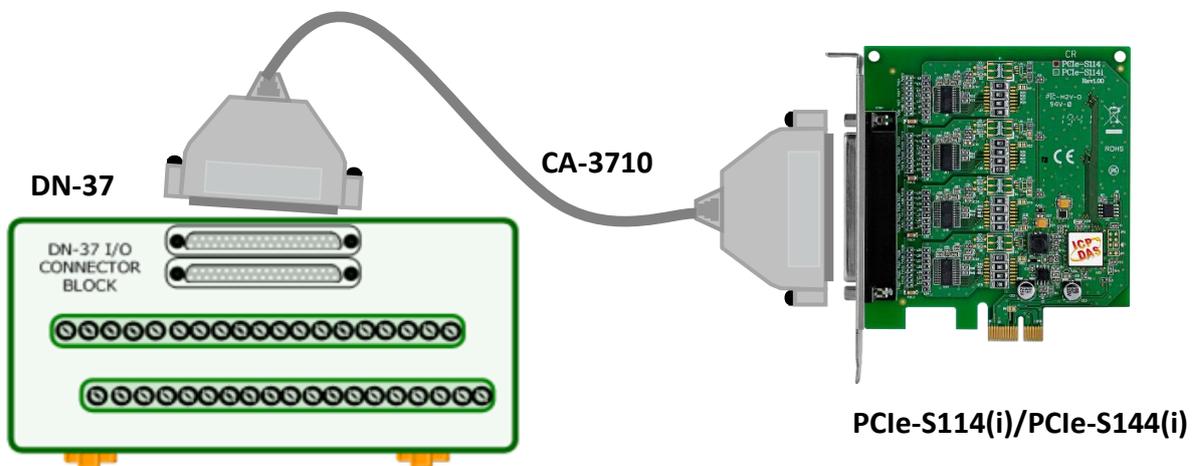
Before beginning the “self-test”, ensure that the following items are available:

- One DN-37 terminal board (optional)
- One CA-3710 cable (optional)



5.2.2 Self-test Wiring

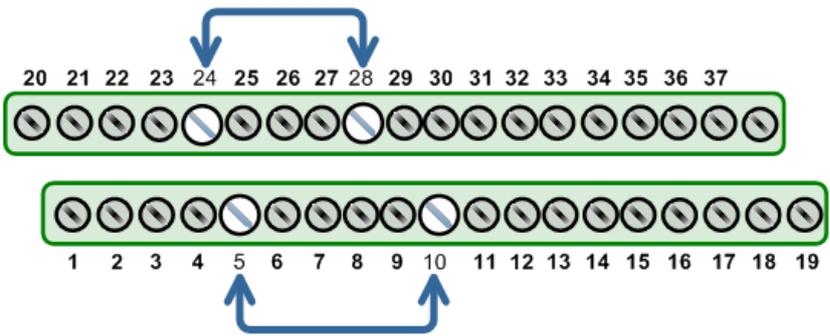
Step 1: Connect the DN-37 terminal board to the PCIe-S1x4 series card using the CA-3710 cable.



■ **PCle-S114(i) Card (RS-232 Wiring):**

Pin Assignment	Pin No.		Pin No.	Pin Assignment
TxD3	24	↔	28	RxD4
RxD3	5	↔	10	TxD4

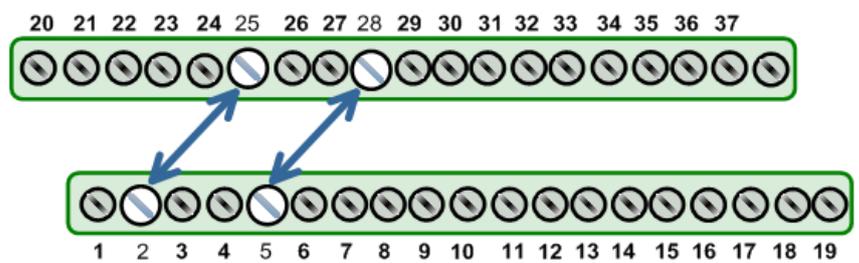
Step 2: Short the RxD, TxD and GND pins of Port3 and Port4.



■ **PCle-S144(i) Card (RS-485 Wiring):**

Pin Assignment	Pin No.		Pin No.	Pin Assignment
Data3-	2	↔	25	Data4-
Data3+	5	↔	28	Data4+

Step 2: Short Port3 Data+ to Port4 Data+, Port3 Data- to Port4 Data-, and Port3 GND to Port4 GND.



⚠ Note: For detailed information regarding wiring and pin assignments for the RS-232/422/485, refer to [Section 2.2 Wiring Notes for RS-232/422/485](#) and [Section 2.3 Pin Assignments](#).

5.2.3 Executing Test Program

Step 1: Execute the “Test2COM.exe” application



Test2COM.exe can be downloaded from:

<https://www.icpdas.com/en/download/show.php?num=2910&kw=Test2COM>

Step 2: Set the appropriate COM Ports, Baud Rate and Data Format information as the values shown in the image below.

1: COM Ports: Enter COM3 (First), COM4 (Second).

2: Data Bits: Check “8”

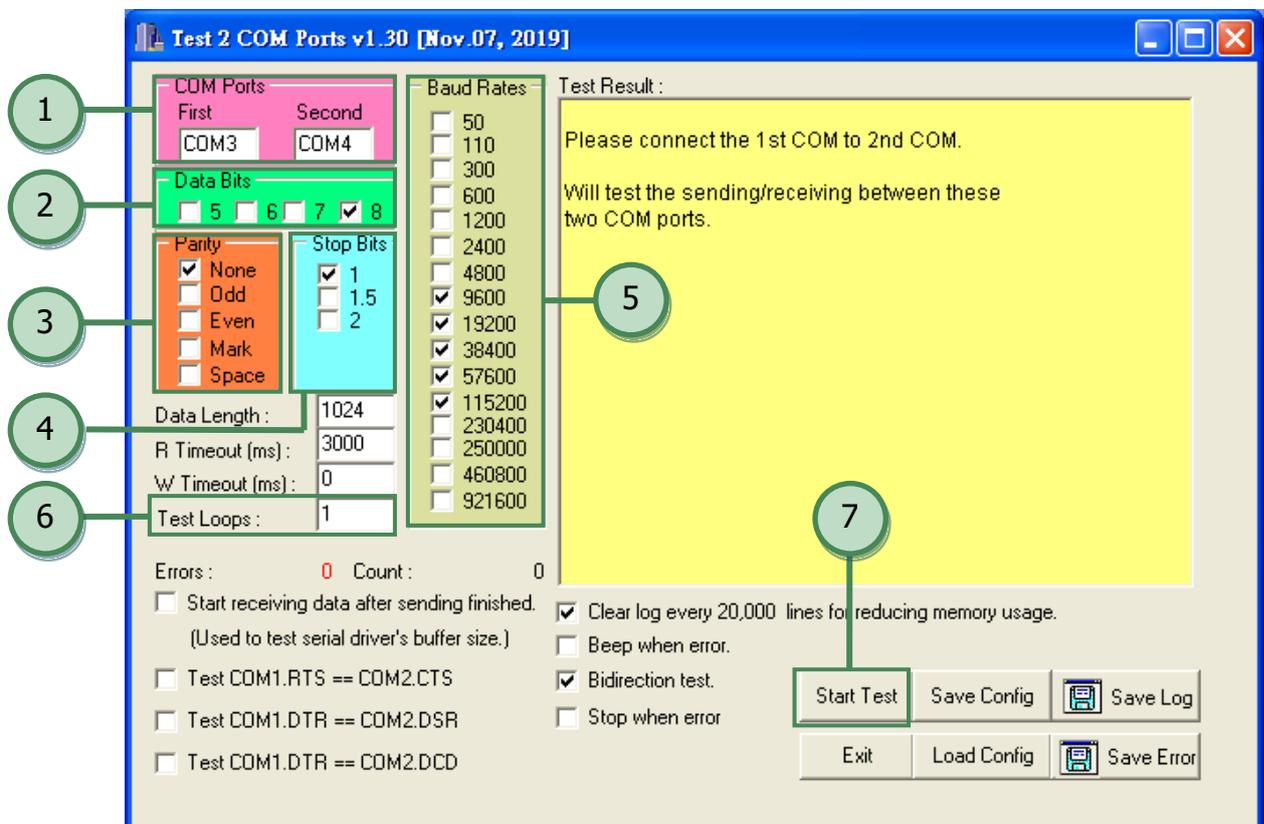
3: Parity: Check “None”

4: Stop Bits: Check “1”

5: Baud Rates: Check values 9600 to 115200

6: Test Loop: Enter “1”

7: Click “Start Test” to begin the test.

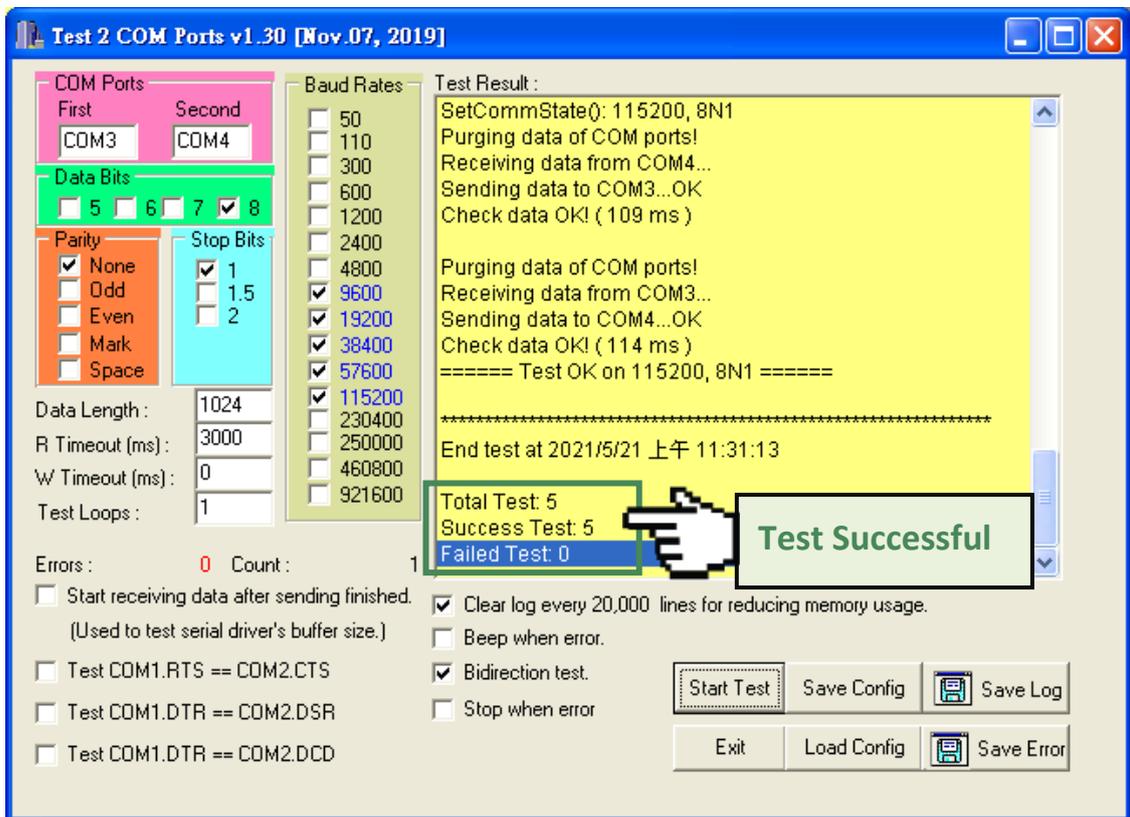


Notes:

1. Depending on the operating system, COM port mapping may be applied automatically. You should first confirm the number of the COM Port for PCIe multiport serial card through Device Manager (see [Section 4.4 Verifying the Installation](#)) and then test this COM Port using the Test2COM.exe application.
2. The Baud Rate and Data Format settings used in the Test2COM application depend on the COM ports being used by the PCIe multiport serial card. Refer to [Section 1.2 Specifications](#) for more detailed information.

Step 3: Refer to the test results. If the test was successful, the message “Failed Test: 0” will be displayed.

The “self-test” process is now complete and your COM port program can access serial devices through the extended COM Port.



5.3 PCIe-S118/ PCIe-S148

5.3.1 Preparation

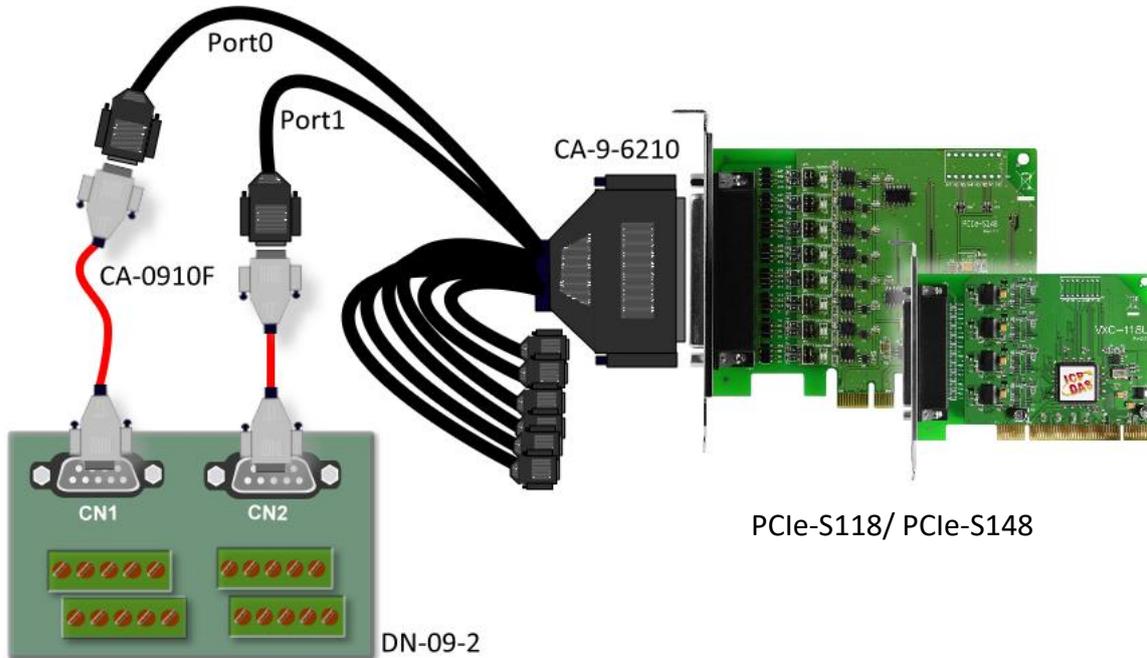
Before beginning the “self-test”, ensure that the following items are available:

- One DN-09-2 terminal board (optional)
- One CA-9-6210 cable (optional)
- Two CA-0910F cables (optional)



5.3.2 Self-test Wiring

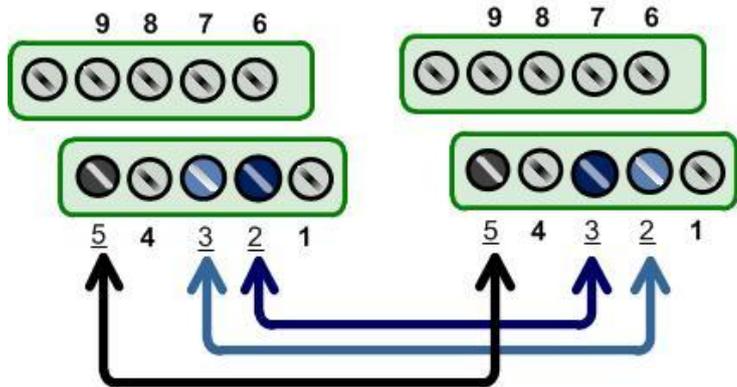
Step 1: Connect the DN-09-2 terminal board to the PCIe-S1x8 series card using the CA-9-6210 and CA-0910F cables.



■ PCIe-S118 Card (RS-232 Wiring):

Pin Assignment	Pin No.		Pin No.	Pin Assignment
TxD0	3	↔	2	RxD1
RxD0	2	↔	3	TxD1
GND	5	↔	5	GND

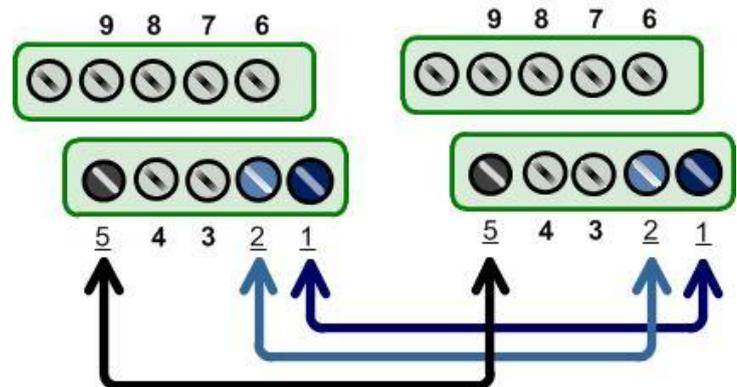
Step 2: Short the RxD, TxD and GND pins of Port0 and Port1.



■ PCIe-S148 Card (RS-485 Wiring):

Pin Assignment	Pin No.		Pin No.	Pin Assignment
Data0-	1	↔	1	Data1-
Data0+	2	↔	2	Data1+
GND	5	↔	5	GND

Step 2: Short Port0 Data+ to Port1 Data+, Port0 Data- to Port1 Data-, and Port0 GND to Port1 GND.



⚠ Note: For detailed information regarding wiring and pin assignments for the RS-232/422/485, refer to [Section 2.2 Wiring Notes for RS-232/422/485](#) and [Section 2.3 Pin Assignments](#).

5.3.3 Executing Test Program

Step 1: Execute the “Test2COM.exe” application

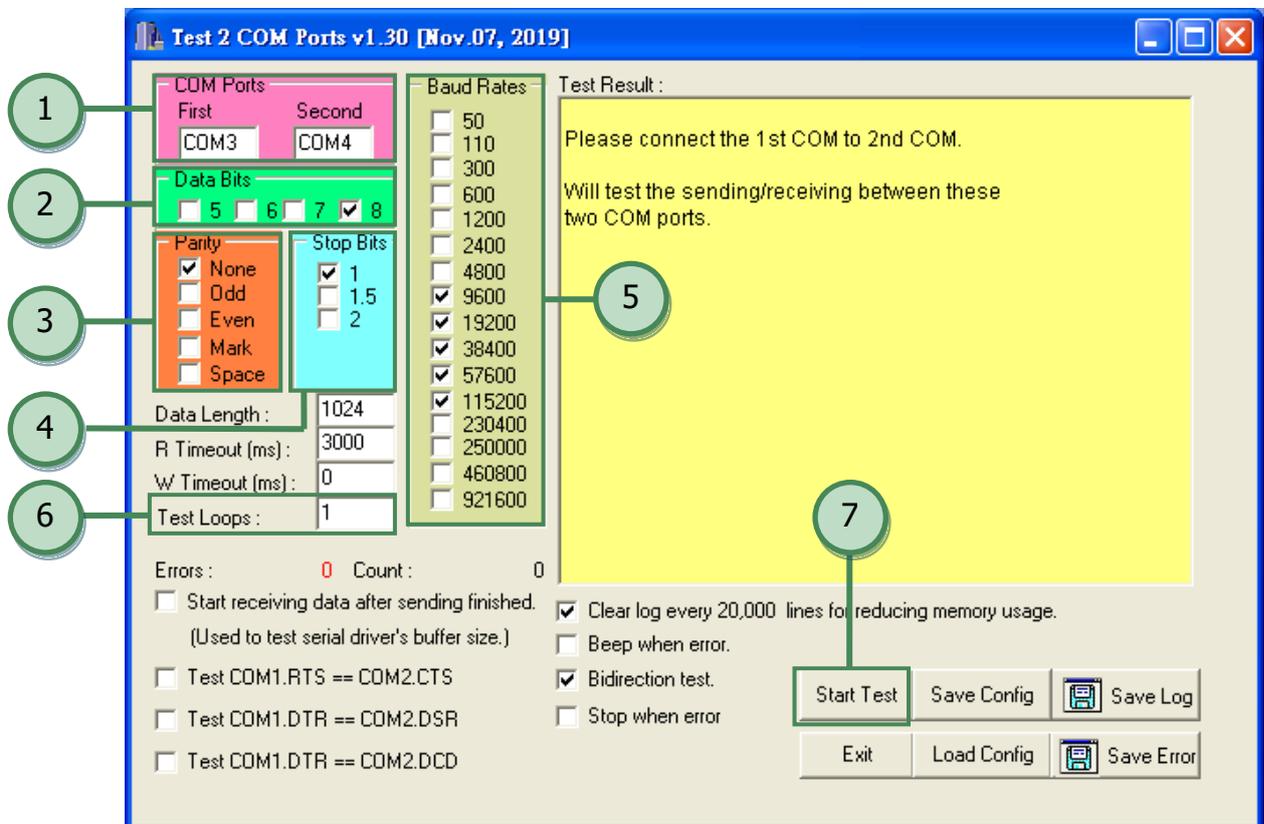


Test2COM.exe can be downloaded from:

<https://www.icpdas.com/en/download/show.php?num=2910&kw=Test2COM>

Step 2: Set the appropriate COM Ports, Baud Rate and Data Format information as the values shown in the image below.

- 1: COM Ports:** Enter COM3 (First), COM4 (Second).
- 2: Data Bits:** Check “8”
- 3: Parity:** Check “None”
- 4: Stop Bits:** Check “1”
- 5: Baud Rates:** Check values 9600 to 115200
- 6: Test Loop:** Enter “1”
- 7: Click “Start Test”** to begin the test.



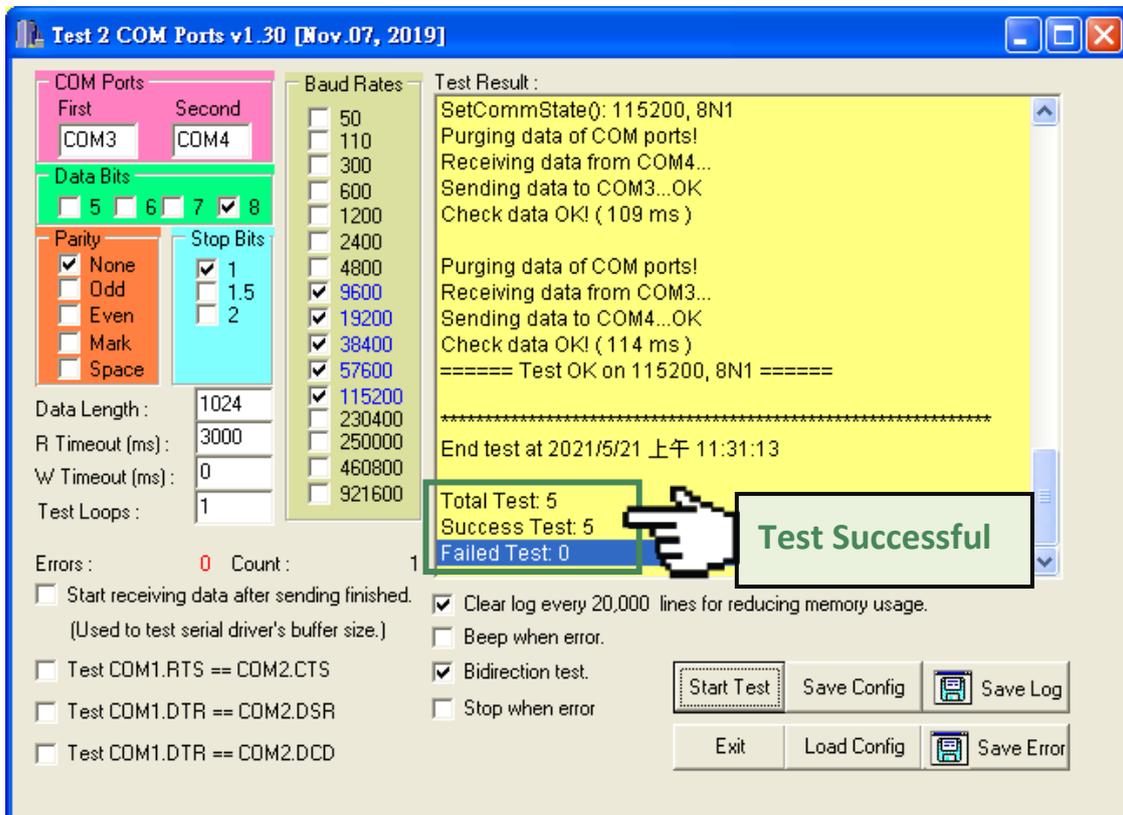


Notes:

1. Depending on the operating system, COM port mapping may be applied automatically. You should first confirm the number of the COM Port for PCIe multiport serial card through Device Manager (see [Section 4.4 Verifying the Installation](#)) and then test this COM Port using the Test2COM.exe application.
2. The Baud Rate and Data Format settings used in the Test2COM application depend on the COM ports being used by the PCIe multiport serial card. Refer to [Section 1.2 Specifications](#) for more detailed information.

Step 3: Refer to the test results. If the test was successful, the message “Failed Test: 0” will be displayed.

The “self-test” process is now complete and your COM port program can access serial devices through the extended COM Port.



Revision History

Revision	Date	Description
1.0.0	Oct. 2021	Initial issue