Print Date: 12.02.2010

Brainboxes Serial Solutions
Installation Guide

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1. Introduction

This Installation Guide contains all the information that you will need to install your Brainboxes card in the following Operating Systems.

- Windows Server 2008 R2
- Windows 7 32 & 64 bit
- Windows Vista 32 & 64 bit
- Windows Server 2008 32 & 64 bit
- Windows XP 32 & 64 bit
- Windows Server 2003 32 & 64 bit
- Windows 2000
- Window 98
- Windows NT
- MS DOS

For details on configuring, testing, un-installation and Technical Specifications please see the Serial Solutions product manual available on the Serial Solutions CD or to download from the Brainboxes website.

2. Installation Instructions

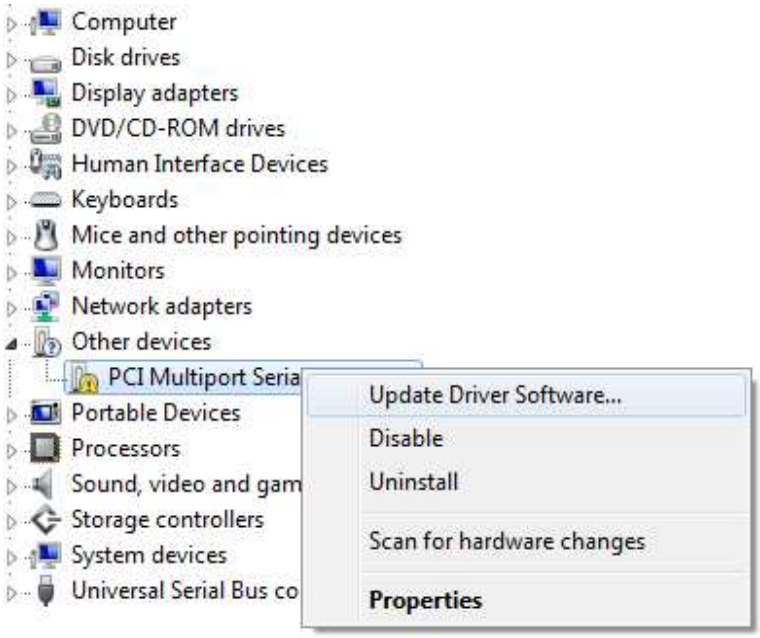
2.1. Windows 7/Server 2008 R2 Installation

1. When you boot into Windows 7, Windows update will automatically search for the latest drivers. If you have a connection to the internet, the drivers will be installed and the device will be ready to use.

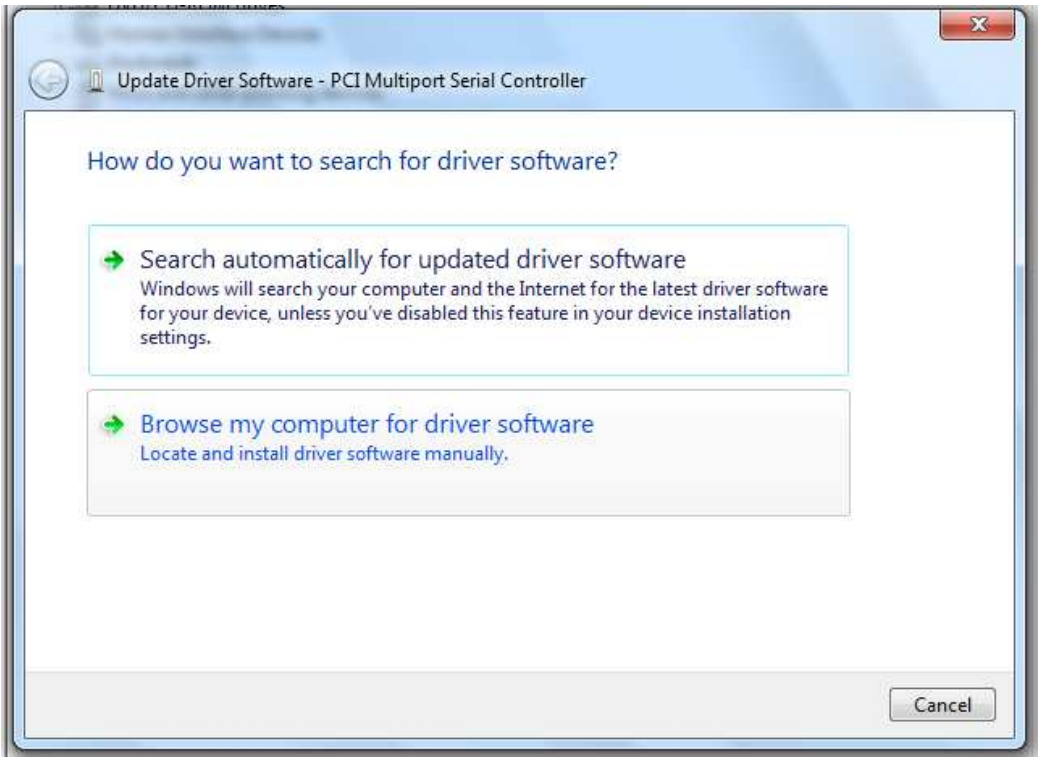
2. If there is no connection to the internet available then a message will appear saying that the drivers were not installed successfully.

3. To install the drivers Device manager will need to be opened. To open device manager go to the control panel, system, hardware tab, then click on device manager button.

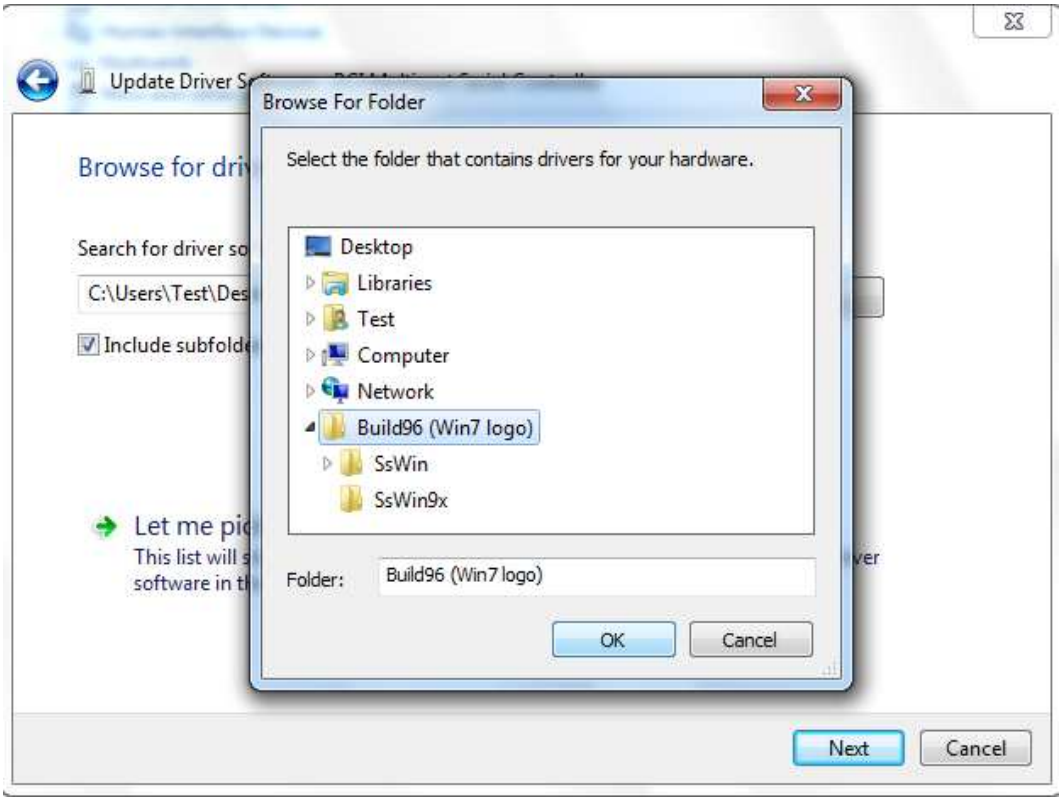
4. Once this is open you will see the yellow ! icon in the other devices node. Right click on the device and select Update Driver Software.



5. If your Brainboxes card came with a CD insert it now and select to search automatically and the driver software will be found and installed. If not and you have a folder with the drivers, select to browse your computer for the drivers.

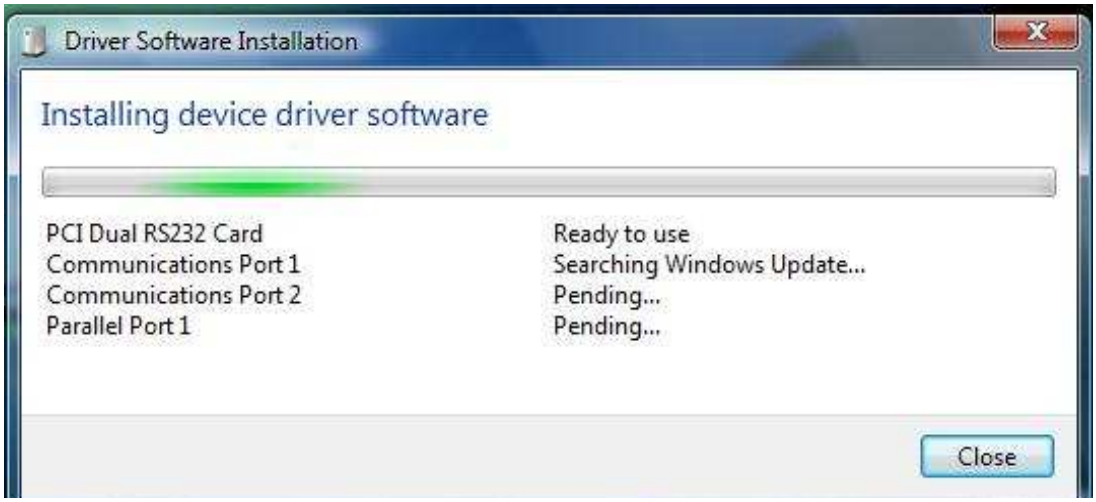


6. Select the folder which contains the driver files and then the folder will be searched and the drivers found. The drivers will then be installed and then you will get a message saying that the drivers have been installed successfully.



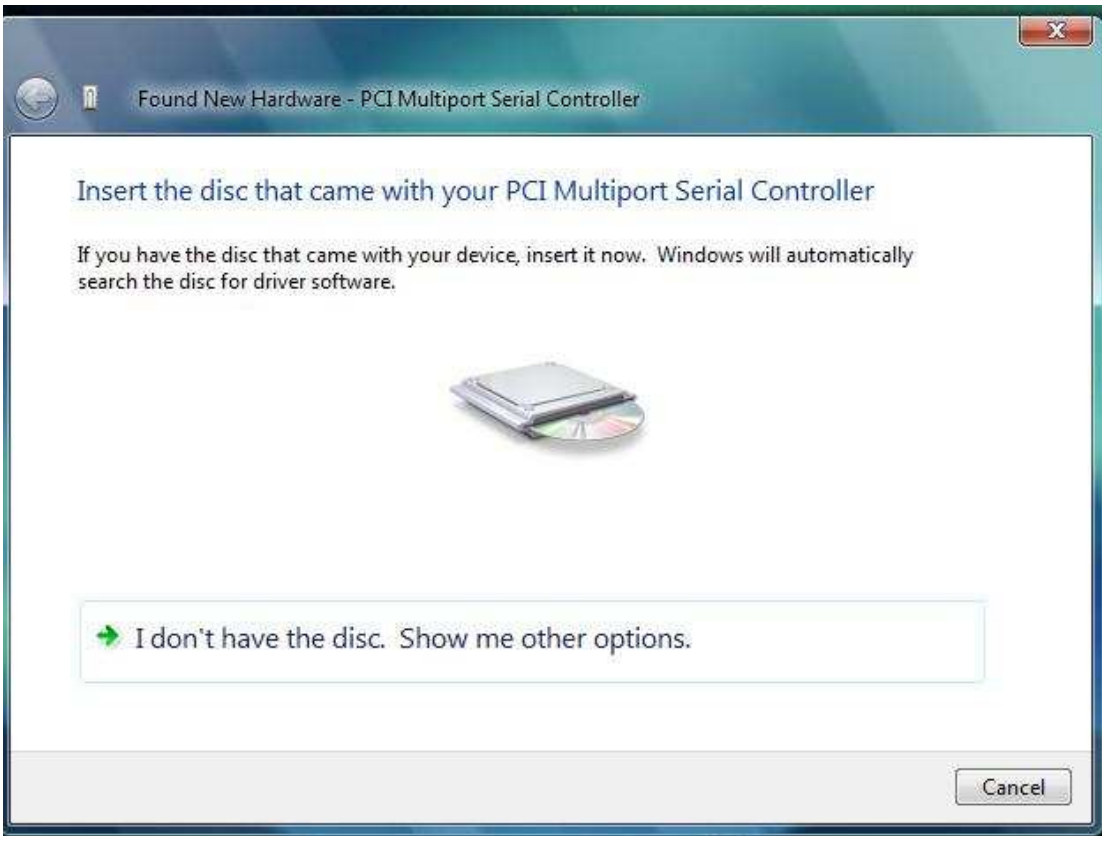
2.2. Windows Vista/Server 2008 32 & 64 bit Installation

1. Once you have booted up the computer the Found New Hardware wizard will appear and give you options to install the driver software for the Serial Solutions card. Click on the Locate and install driver software option and Windows update will be searched and install the drivers for the card and ports.



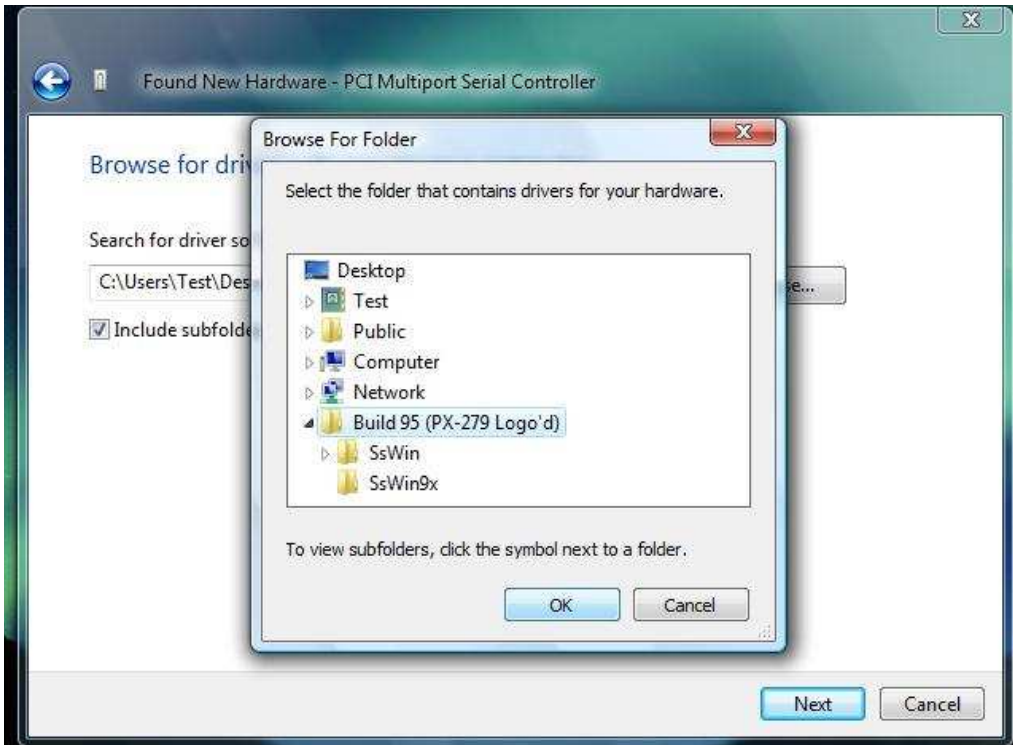
2. If the search on Windows update fails, or you are not connected to the internet you will be asked to insert the CD that came with the Brainboxes card. The CD will then be searched for the drivers and installed automatically. Please move on to step 6 if the drivers install automatically.

3. If you don't have a disc, or have downloaded the latest drivers from our website, click on the option at the bottom of the page to show other options.



4. You will then be presented with two options. Click on the second one to browse your computer for the driver software.

5. You will then be asked to browse your computer for the folders with the drivers in. Select the file that has the drivers you want to install and click OK. Click next and the drivers will be automatically installed for the card.

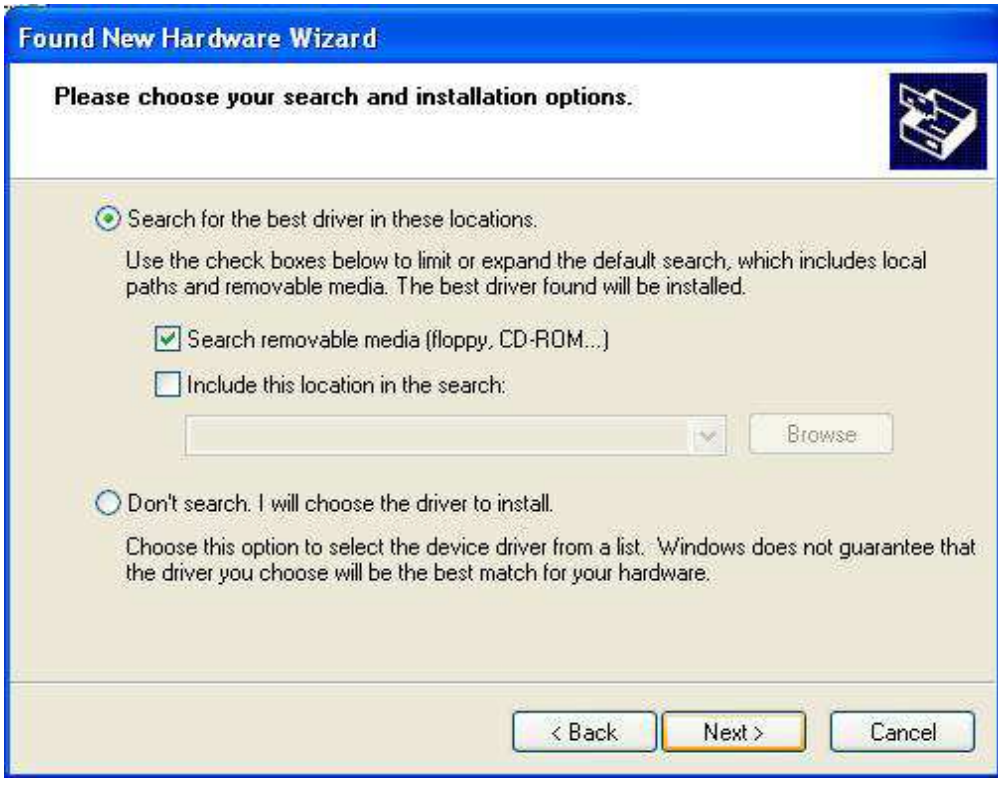


6. The drivers for the card will then have been successfully installed.

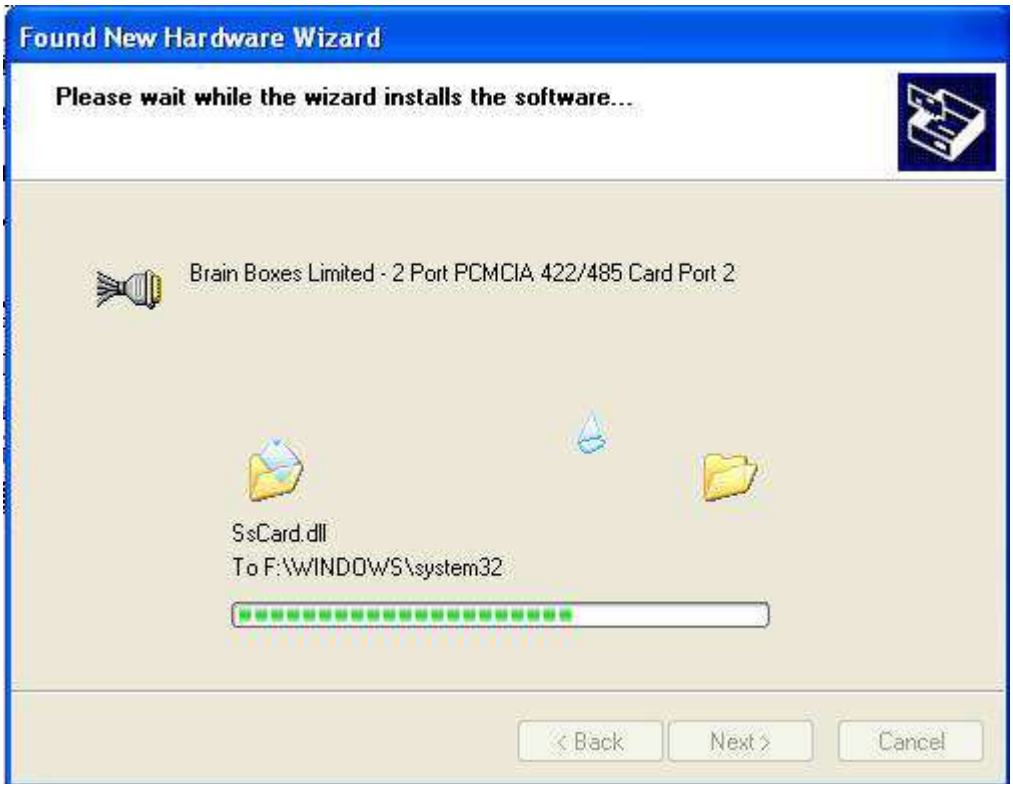
2.3. Windows XP/Server 2003 Installation

1. After your computer has booted up, a New Found Hardware Wizard will appear for the card that you inserted into the computer.

2. Insert the CD that came with your Brainboxes device and point the New Found Hardware Wizard to the CD.



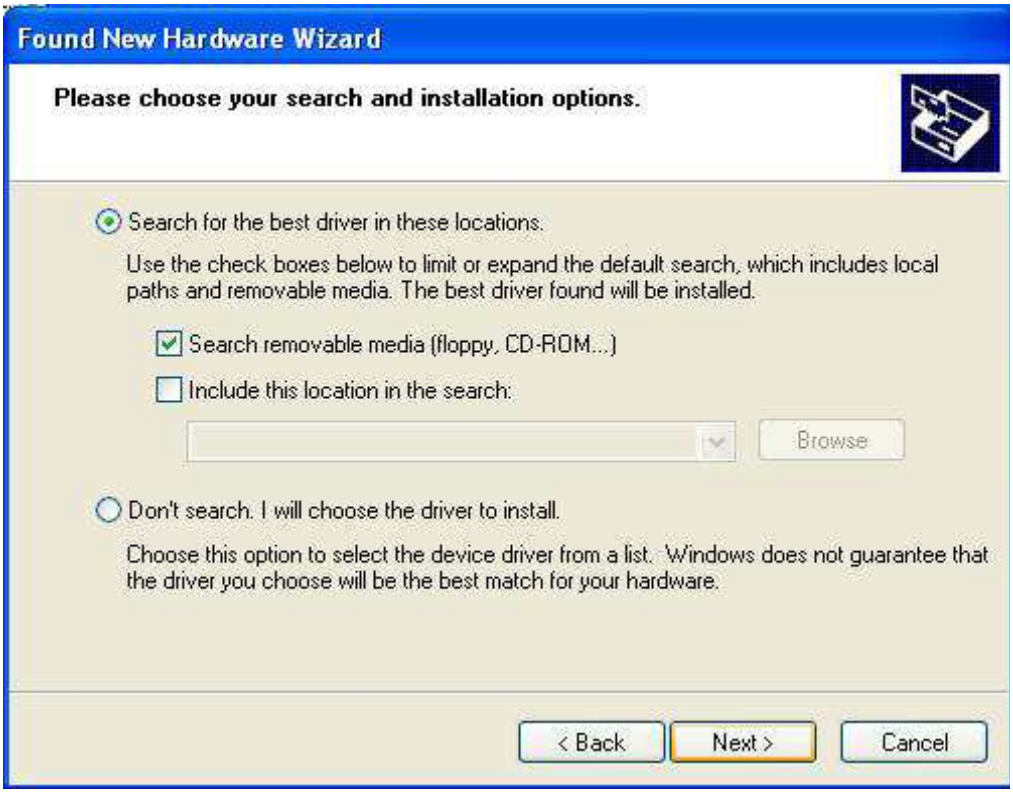
3. The driver files will start to copy across to your computer. This example is for the PM-121 and may differ slightly for each product.



4. When the files have finished copying across the New Found Hardware Wizard will finish. Press 'Finish'.

5. A second New Found Hardware Wizard will appear. Choose to Install from a specific location (Advanced)

6. Again select to search from the removable media to search the CD.



7. When the files have finished copying across the Found New Hardware Wizard will finish. Press 'Finish'.

8. The New Found Hardware Wizard will appear again for other ports that are on the device. Follow the above instructions again to install the ports.

2.4. Windows 98 Installation

During the boot up process, Windows 98 will detect the Brainboxes card and you will briefly see a message box to this effect.

Insert the Serial Solutions CD ROM into an appropriate drive and click **Next**.

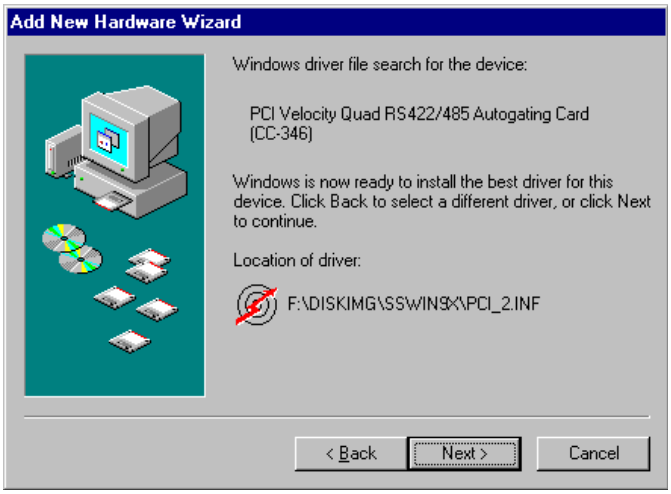
Select **Search for the best driver for your device**.

Click **Next** then Click **Specify a location**

In the location space type <drive>:\sswin9x where drive is the appropriate letter for your CDROM drive. Or select the location of the folder which contains the drivers.

Click **Next**

Click **Next**

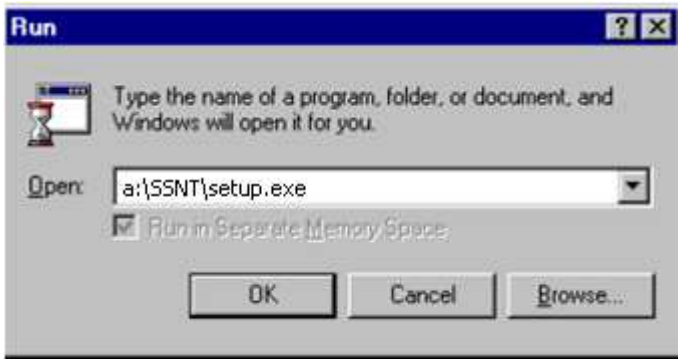


Click **Finish**

After copying the file, Windows 98 will then detect each of the serial ports in turn and install them as communication ports.

2.5. NT Installation

Insert the PCI Multiport Card into your PC, and restart. Place the supplied CD disc titled “Serial Solutions” in a suitable drive and from the start menu choose Run and enter a:\SSNT\setup.exe (where a: is the path to the CD drive).



Install shield will then install the driver software automatically – it will then copy the necessary files and start itself. This automatically detects your new PCI serial card(s) and does not require any further system restarting.

2.6. DOS Installation

The DOS installation procedure consists of 2 steps after the PCI Quad RS232 card is inserted:

1. Determining the resources that the PCI Quad RS232 has claimed.

2. Informing the Serial Solutions DOS device driver of those resources.

Determining PCI Multiport Resources

- Insert card into PC, as described in Chapter 2.

- Run BBCARDS.EXE, from the supplied CD by typing the following:

  A:\ >BBCARDS

  Where A:\ is the drive containing the supplied file.

  BBCARDS will return a string that looks similar to the following (values contained in the string may differ in individuals PC's due to resource availability):

PCI Quad Users:

Card 1 is on bus 0, device 16, function 0
Card ID=2, revision 3: Quad RS232
Interrupt line 11 has been assigned
4 sets of 16550-compatible registers are at I/O address 0140
SISR is at I/O address 0104
Baud clock control is at I/O address 02d0
Write 0xf6 for /8 (default), 0xf2 for /4, 0xd6 for /2, 0xd2 for /1.

Note down IRQ, I/O address and SISR (the SISR is the Shared Interrupt Status Register, which is a read only register which returns an index value that identifies which port on the card has an interrupt awaiting servicing by the driver software.) In this case:

The IRQ = 11
The I/O address = 0140
The SISR = 0104

NEWCOM.SYS Parameters

The NewCOM.SYS device driver included with the PCI Quad RS232 driver software is used to set up the card in DOS and has the following syntax:

NEWCOM.SYS /A *port address*, /L *SISR, IRQ, range* /B *number buffer* /S *buffer* /H *Hardware Handshake*

Where /A *port address* specifies COM number followed by a hexadecimal address in the form /Axy where x is COM port range and y is I/O address.

/L *SISR, IRQ*, range specifies SISR address, card interrupt and COM port range. The COM port(s). Range may be a single port OR a range of ports.

/B *number buffer* is used to set the number of pairs of buffers to be allocated to ports and is a decimal number in the range 1-maxport.

/S *buffer* Set size of all buffers in bytes, *buffer* is rounded to the nearest power of 2 and must be a decimal number in the range 32 to 32768. For any serial port opened two buffers of size *buffer* are allocated, one for input and the other for output.

/H *hardware handshake* selects which hardware handshake type to use on the specified ports. This is used in the following manner: /H *range, hs* where *range* specifies the COM port or ports and *hs* selects handshake type.

Handshake types available are:

Type 0 RS232 DTR/CTS – The PC only transmits when CTS is input true. When the PC is able to receive its sets DTR output true. The DSR and DCD inputs are ignored. The RTS output line is set true in case the external serial device needs a true signal.

Type 4 3 Wire Handshake – Really no handshake at all since the PC transmits irrespective of the handshake lines. The 3 wires are TxD, RxD and Ground, no other lines are required. Thus the CTS, DSR and DCD inputs are ignored. The RTS and DTR output line is set true just in case the external serial device needs a true signal.

Configuring and Installing NEWCOM.SYS

To load the Serial Solutions for DOS device driver an entry needs to be added to the CONFIG.SYS file. Any simple test editor, EDIT for example, can edit the CONFIG.SYS file. The installation procedure given below is for a PCI Lynx 8 port RS232 as COM5-COM12

The parameter required by the NEWCOM.SYS follows:

Port Address
/A5-8, 0140

COM ports 5, 6, 7 and 8 are defined with an I/O address range that begins at 0140h and all subsequent ports have an I/O address that is 8 higher than the previous i.e. if COM5 has an address of 0140h, then COM6 will have an address of 0148h, COM7 an address of 0150h etc.

PCI Lynx 8 port RS232 Users: /A5-12,0140

SISR, IRC, Range.

/L 0104,11,5-8

0104h is the i/o address SISR, 11 is the IRQ and since the COM port range is COM5 – COM 8 range is entered as 5-8

PCI Lynx 8 port RS232 Users: /L 0104,11,5-12

Number Buffer.

/B8

8 buffers are defined, though only four ports are in use – this is because buffers in DOS are assigned in a sequential order from COM1. Since the PCI Quad RS232 has been assigned COM port values of 5 to 8, all preceding COM ports, must have buffers assigned to them also.

PCI Lynx 8 port RS232 Users: /B12

Buffer Size

/S512

Buffer size set to 512 bytes.

Hardware Handshaking

/H,4

Type 4,3 Wire Handshake selected for all ports.

Modifying Command Line Parameters.

When “assembled” the NEWCOM.SYS command line looks like…

DEVICE=NEWCON.SYS /A5-8,0140 /L 0140,11,5-8 /B8 /S 512 /H,4 …and should be entered into the CONFIG.SYS file. Once you are sure that these parameters have been entered correctly, restart your PC and your PCI Quad RS232 should be ready to use immediately.

Sample terminal applications are provided on “Serial Solutions Disk 1 & 2” enabling communications to be established to your peripherals quickly and easily.

PCI Lynx 8 Port RS232 Users: When “assembled” the NEWCOM>SYS command line looks like:

DEVICE=NEWCOM.SYS /A5-12, 0140 /L0104,11,5-12 /B12 /S512 /H,4