



# 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.

x64 Edition

# 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.

Browse for driv	Select the folder that contains drivers for your hardware.	
Search for driver so C:\Users\Test\Des ☑ Include subfolde	Desktop Desktop Cibraries Stest Computer Stevent Ruild96 (WinZ Iono)	
Let me pic This list will s software in the	Folder:     Build96 (Win7 logo)	

# 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.

Windows needs to in Multiport Serial Cont	stall driver software for your PCI roller
Cocate and instal Windows will guide yo for your device.	I driver software (recommended) ou through the process of installing driver software
<ul> <li>Ask me again lat</li> <li>Windows will ask aga</li> </ul>	ter in the next time you plug in your device or log on.
Don't show this r Your device will not fu	message again for this device unction until you install driver software.
	Cancel
Driver Software Installation	Cancel
Driver Software Installation stalling device driver softw	Cancel
Driver Software Installation nstalling device driver softw PCI Dual RS232 Card Communications Port 1 Communications Port 2 Parallel Port 1	Cancel vare Ready to use Searching Windows Update Pending Pending

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.

Browse for driv	Browse For Folder
Search for driver so C:\Users\Test\Des Include subfolde	Desktop Desktop Test Dublic
	To view subfolders, click the symbol next to a folder.

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.

Found New Hardware Wi	zard
	Welcome to the Found New Hardware Wizard This wizard helps you install software for: Multifunction Device
	If your hardware came with an installation CD or floppy disk, insert it now.
	What do you want the wizard to do? O Install the software automatically (Recommended) Install from a list or specific location (Advanced) Click Next to continue.
	< Back Next > Cancel

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

Found New Hardware Wizard	
Please choose your search and installation	on options.
Search for the best driver in these location	18.
Use the check boxes below to limit or exp paths and removable media. The best driv	and the default search, which includes local er found will be installed.
🔽 Search removable media (floppy, C	D-ROM)
Include this location in the search:	
	Browse
O Don't search. I will choose the driver to in	stall.
Choose this option to select the device dr the driver you choose will be the best mat	ver from a list. Windows does not guarantee that ch for your hardware.
	< Back Next > Cancel

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.

Found New Hardware Wizard	
Please wait while the wizard install	s the software
Brain Boxes Limited - 2 Port	PCMCIA 422/485 Card Port 2
SsCard.dll To F:\WINDOWS\syst	em32
	<pre>     Back Next &gt; Cancel </pre>

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

Found New Hardware Wizard	
C H	completing the Found New ardware Wizard ne wizard has finished installing the software for:
	Brain Boxes Limited - 2 Port PCMCIA 422/485 Card Port 2
Ci	ick Finish to close the wizard.
	K Back Finish Cancel

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.

ound New Hardware Wizard
Please choose your search and installation options.
Search for the best driver in these locations.
Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.
Search removable media (floppy, CD-ROM)
Include this location in the search:
Browse
O Don't search. I will choose the driver to install.
Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware.
< Back Next > Cancel

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