

Testing PCI/ISA/PCMCIA Serial Cards

Instructions on How to Use HyperTerminal to Test Serial Cards

Version: 1.0



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1. Introduction

This document describes how to use the Microsoft HyperTerminal application in order to prove that your Brain Boxes serial card is functioning correctly. This assumes that the card is correctly installed. Windows 2000 Professional is used in the example. However, the document also applies to Windows 9x, Millennium, NTx and XP.

In this example the card installed is a CC-257 RS232 2-port PCI card on "COM1" but it can be applied to any COM label.

2. Loopback for RS232 serial cards

On the 'D' type connector, electrically short pins 2 and 3. This can be easily achieved by placing an electrical jumper over the pins. See below:



3. Loopback for RS422/485 serial cards

On the card there are a set of multiplex jumpers. These are the set nearest to the 'D' type connectors. They need to have the jumpers on, i.e., Tx+ shorted to Rx+ and Tx- shorted to Rx-. See below:



Go to Device Manager (Control Panel/System/Hardware) and double click on the card's entry under Multiport Serial Adaptor (Multi-Function Adaptor in Window 9x). In the Card Properties tab click on the port button next to the COM port to be tested:

	Port Number	r: Address:	IRQ : A	dvanced :
1:	COM22	00006C60 · 00006C	67 10	Port 1
2;	COM23	- 00006C68 · 00006C	6F 10	Port 2
3;	COM24	 00006C70 - 00006C 	77 10	Port 3
4 :	COM25	- 00006C78 · 00006C	7F 10	Port 4
				Adurnard

Select RS422/485 full-duplex mode:

Port Settings - Port 1	<u>? ×</u>
Trigger Levels Receiver Trigger Level : (100%)	OK Cancel
Software Transmit Limit : (24%)	Apply To All
422/485 Options Duplex Operation : RS422/485 full-duplex mode	
CTS true : RS422/485 full-duplex mode RS485 half-duplex autogating mode RS485 half-duplex mode	
Baudrate Settings Transmit only Receive only Maximum Baudrate : Transmitter and Receiver both disable	ed 🗸
UART Type : 750 💌 FIFO Depth : 64	FIFO Off : 🗖

4. Using HyperTerminal

Set up the card to be able to perform a loopback. See 2 and 3.

From the Start menu select Programs\Accessories\Communications\HyperTerminal or perform a search in My Computer for "HyperTerminal"

Double click on the application and the following window will appear:

Connection Description
New Connection
Enter a name and choose an icon for the connection:
Name:
lcon:
OK Cancel

Type in a connection identifier name say "Test1" and click OK. The only restriction here is it cannot be a device name e.g. "COM1"

You will then be presented with the following dialogue box:

Connect To		? ×
Nest1		
Enter details for t	he phone number that you want to	dial:
Country/region:	United Kingdom (44)	~
Ar <u>e</u> a code:		
Phone number:		
Connect using:	COM2	•
	COM2 COM1	
	COM3 TCP/IP (Winsock)	

Here it is possible to choose the COM port to test using the drop down box. In this example we will use the onboard port COM1. Click OK.

Please note in Windows 9x and Millennium only, COM labels COM1 to COM4 are available. If the port under test is COM5 then the COM label will need to be changed from Device Manager.

The next dialogue box will ask for the Port Communication Settings:

COM1 Properties		? ×
Port Settings		
<u>B</u> its per second:	9600	•
<u>D</u> ata bits:	8	•
<u>P</u> arity:	None	•
<u>S</u> top bits:	1	•
Elow control:	None	•
		estore Defaults
0	K Canc	el <u>Apply</u>

Click "Restore Defaults" then OK.

If all went well you would then be give a blank dialogue box with a flashing cursor. The COM port is now open and ready to transmit and receive data.

From the File menu choose Properties:

🍓 Test1 - HyperTerminal		
File Edit View Call Transfe	r Help	
New Connection	r l	
Open		
Save		
Save As		
Page Setup		
Print		
Properties		
Exit Alt+F4		
		*
•		J. J
Displays the properties of the cur	rent session	

Click on the Settings tab:

Test1 Properties	? ×
Connect To Settings	
Test1 Change Icon	
Country/region: United Kingdom (44)	
Enter the area code without the long-distance prefix.	
Area code:	
Phone number:	
Connect using: COM1	
Configure	
 Use country/region code and area code Redial on busy 	
OK Cance	el

Click on the ASCII Setup button:

Test1 Properties	? ×
Connect To Settings	
Function, arrow, and ctrl keys act as	
Backspace key sends	
Ctrl+H C Del C Ctrl+H, Space, Ctrl+H	
Emulation:	
Auto detect Terminal Setup	
Tel <u>n</u> et terminal ID: ANSI	
Backscroll buffer lines: 500	
Play sound when connecting or disconnecting	
Input Translation ASCII Setup	Þ
OK Ca	ncel

Then check the "Echo typed characters locally" tick box:

ASCII Setup
C ASCII Sending
Send line ends with line feeds
Echo typed characters locally
Line delay: 0 milliseconds.
Character delay: 0 milliseconds.
ASCII Receiving Append line feeds to incoming line ends Eorce incoming data to 7-bit ASCII Vrap lines that exceed terminal width
OK Cancel

Click OK for both open dialogue boxes and the original blank screen will appear again. Ensure the loopback connector is connected as described in section 2/3.

Now, every time a character on the keyboard is pressed two will appear on the screen:

Test1 - HyperTerminal File Edit View Call Transfer Help								_ 🗆 ×
aabb								
Connected 0:00:16 Auto detect	Auto detect	SCROLL	CAPS	NUM	Capture	Print echo		

This means that characters are being transmitted and received through the loopback. If you don't believe us remove the loopback connector. This time you should only see one character each time a key is pressed.

Please note in Windows 98 only one character will be seen. This is the received character.

Version History

Version	Date	Author	Checked By	Comments
1.1	17/12/02	Mike Wilcox	Gavin Jewel	