My Serial Wireless adapter can't communicate, ..why?

There can be many reasons why you can't communicate with your device via a serial wireless adapter such as a Serial Bluetooth adapter or a Serial Wireless RF module. We will here go through some of the most common problems.

- Make sure all data settings are correct and matching your device: Baud rate, number of data bits, flow control etc.

- If your adapter communicates through a COM port or a specific channel, make sure that the COM ports and channels are correct/matching.

- If your device is a DTE device then you may need to use a null model adapter. A null modem adapter swaps the TX and RX wires.

- If there is a DTE/DCE switch on your adapter then make sure it is in the correct position.

- Try disabling flow control on both the adapter and your device if possible.

- If your device requires handshake signals to operate, you might in some cases need to loop-back these. Often looping back RTS to CTS (Pin 7 to Pin 8) with a jumper is sufficient.

- Your device may need a DSR/DTR signal. Some devices require a signal on both CTS and DSR. The BT232B simply loop-back DTR to DSR. If your device requires a DSR signal but does not provide a DTR signal then the DSR signal will be missing. A loop-back as shown below will solve this problem. Generally hardware flow control should be disabled on the wireless adapter (if possible) when this loop-back is used.
 It may be necessary for you to make a custom cable/adapter to be able to do this.

Adapter Side	Equipment Side
Pin 2 (RxD)	Pin2 (RxD)
Pin 3 (RxD)	Pin3 (RxD)
Pin5 (GND)	Pin5 (GND)
Pin7 (RTS)	Pin4 (DTR) connected to Pin7 (RTS)
Pin8 (CTS)	Pin6 (DSR) connected to Pin8 (CTS)

Making a loop-back test

To verify that your wireless adapter is working properly you can make a loop-back test.

1. Download the software AccessPort from www.nordfield.com
2. Connect your wireless adapter to your COM port.
3. Start AccessPort.
4. Click Tools > Configuration and enter the parameters (baud rate, COM port etc.) of the wireless adapter at the COM port which it has created, in this case COM 10.
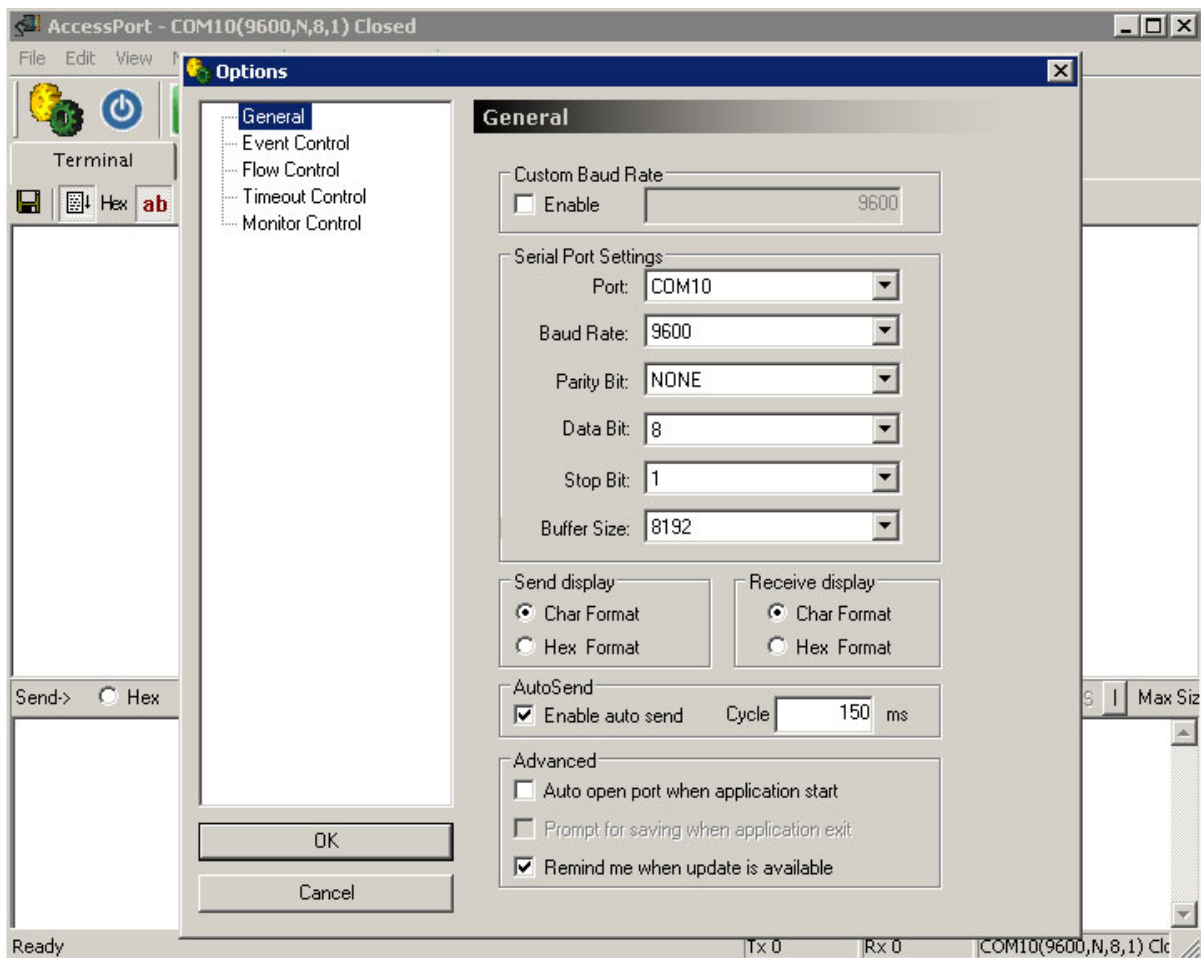
5. Make a DB9 loop-back test-plug according to below pin-out (looping back only Tx to Rx is often sufficient but *not always*):

RS-232 Loopback Connections

DB9 Loopback

Pin# DB9 RS-232 Signal Names	Signal	
#1 Carrier Detector (DCD)	CD	
#2 Receive Data (Rx)	RD	
#3 Transmit Data (Tx)	TD	
#4 Data Terminal Ready	DTR	CD Option
#5 Signal Ground/Common (SG)	GND	
#6 Data Set Ready	DSR	
#7 Request to Send	RTS	
#8 Clear to Send	CTS	
#9 Ring Indicator	RI	
Soldered to DB9 Metal - Shield	FGND	RI Option

6. Connect the test-plug to the wireless adapter's DB9 connector. In AccessPort open COM 10 by clicking Tools > Port Switch. Make sure the COM port is properly opened. If AccessPort cannot open the port this is an indication that the wireless adapter (or your USB to serial adapter) is not properly connected, it has a defect or the port for some other reason has not successfully been created.

The test setup would look similar to below diagram if you are using two wireless adapters.

PC	Wireless adapter 1	Wireless link	Wireless adapter 2	Loop-back plug

COM1
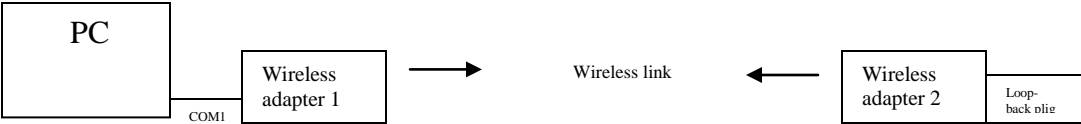
Enter a text string in the lower window and click send.
With the wireless adapter properly connected you should now be able to receive the same characters in the upper window which you send in the lower window.