

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

There can be many reasons why you can't communicate with your device using a serial wireless adapter such as a **Serial to WiFi adapter**, **Serial Bluetooth adapter** or a **Serial Wireless RF radio**.

We will here go through some of the most common problems. Please check each suggestion described below to properly troubleshoot the problem you experience.

1. Make sure all the serial adapter's serial port settings are correct and match your serial device's port settings: Baud rate, number of data bits, flow control etc.
2. If your serial device communicates through a COM port or a specific channel, make sure that the serial adapter's COM port or channel and also your serial device's software, if you use such, is correct/matching. In short, the serial adapter's COM port must match your serial device's COM port, and your software must 'look' for the virtual COM port number created by the virtual COM port software.
3. If your serial adapter is a WiFi based adapter, disable all antivirus software, firewalls and security certificates, as these may prevent the adapter from communicating with the specified IP address on the network.
4. If your serial device is a DTE device then you may need to use a null modem adapter. A null modem adapter swaps the TX and RX wires. Check your device's user manual or datasheet to find out on which pins TX and RX are located in the DB9 connector.
5. If there is a DTE/DCE switch on your serial adapter then make sure it is in the correct position.
6. Try disabling flow control on both the adapter and your device if possible.
7. 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 (see table below).
8. Your device may need a DSR/DTR control signal. Some devices require a signal on both CTS and 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 in the table below will solve this problem in most cases. Generally hardware flow control should be disabled on the wireless adapter (if possible) when this loop-back is used.

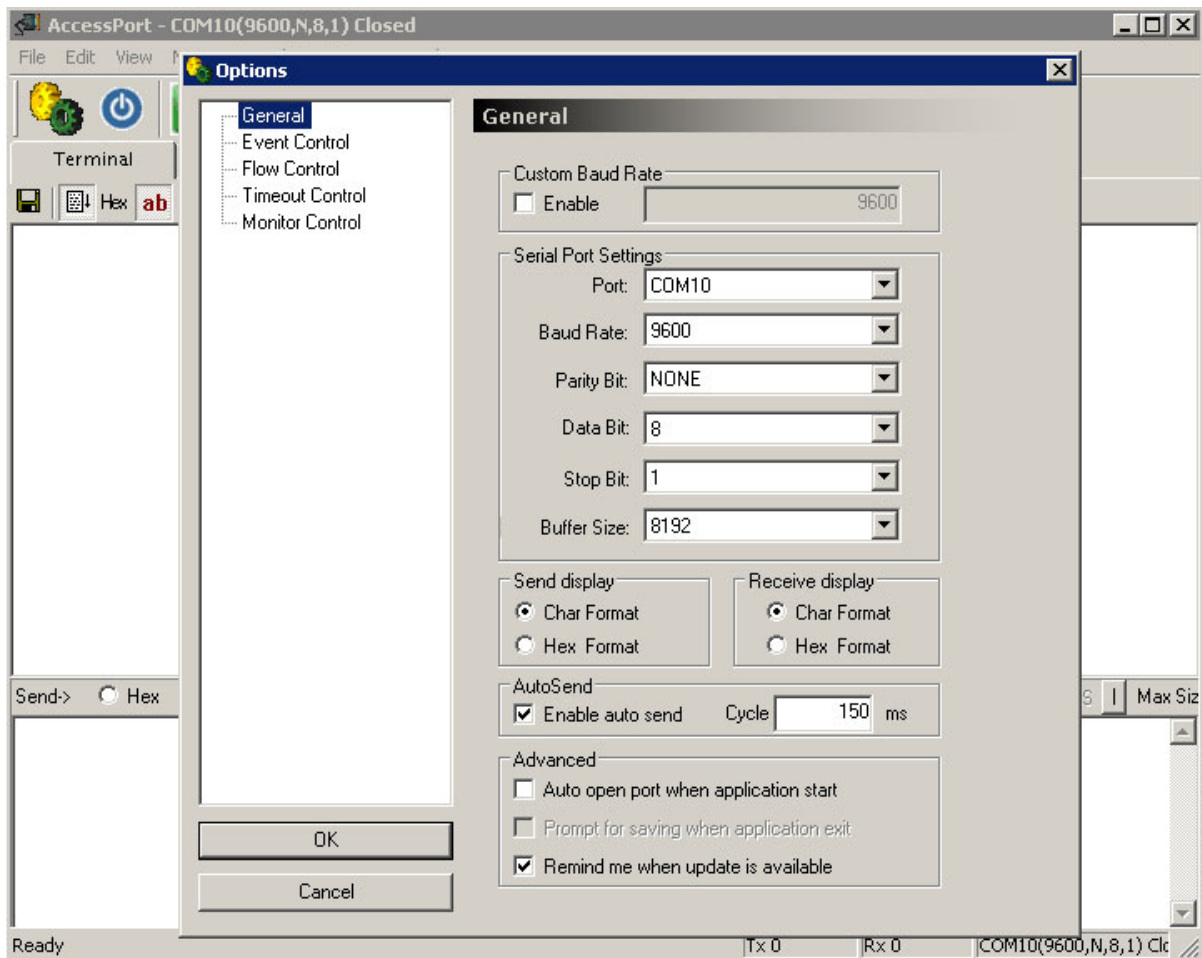
Often the easiest way to make this loopback wire is to make a custom cable/adapter:

Adapter Side	Equipment Side
Pin 2 (RxD)	Pin2 (RxD)
Pin 3 (RxD)	Pin3 (RxD)
Pin 5 (GND)	Pin 5 (GND)
Pin 7 (RTS)	Pin 4 (DTR) connected to Pin 7 (RTS)
Pin 8 (CTS)	Pin 6 (DSR) connected to Pin 8 (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.usconverters.com](http://www.usconverters.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 table (looping back only Tx to Rx is usually sufficient, however not always):

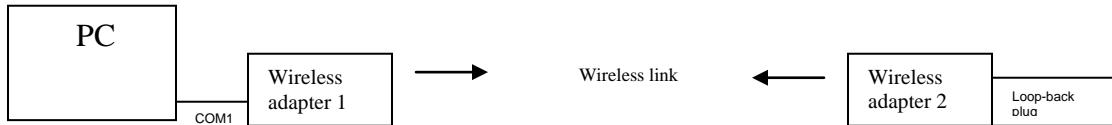
## RS-232 Loopback Connections

### 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
#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

- 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 or is in use by a different process.

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



Enter a text string in the lower window in AccessPort 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.

