



## How to setup the UCW232C Serial WiFi adapter (based on Windows 7, 32/64-bit)

This step-by-step guide explains how to get started using the Serial RS232 WiFi Adapter part UCW232C and Serial RS485 / RS422 WiFi adapter part UCW4842. These products have several more advanced features and functions than described in this guide so you should consider this guide only as a quick-start guide to help you get started with the basic functions.

**This guide is based on part UCW232C but also applies to part UCW4842.**



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## Configuring the parameters

The UCW232C's parameters can be configured by using a standard web-browser.

The default network settings are:

Adhoc mode (Simple AP), DHCP enabled

SSID: Serial2WiFi\_ab\_cd ("ab" and "cd" is the last 4 digits of the MAC address)

Security: WPA2, password: 12345678

IP: 192.168.10.1

Socket port: 8080

Channel: 6

Log in ID: admin

Log in password: admin

The default COM port settings are:

Baud rate: 9600 bps

Data bit: 8

Parity: none

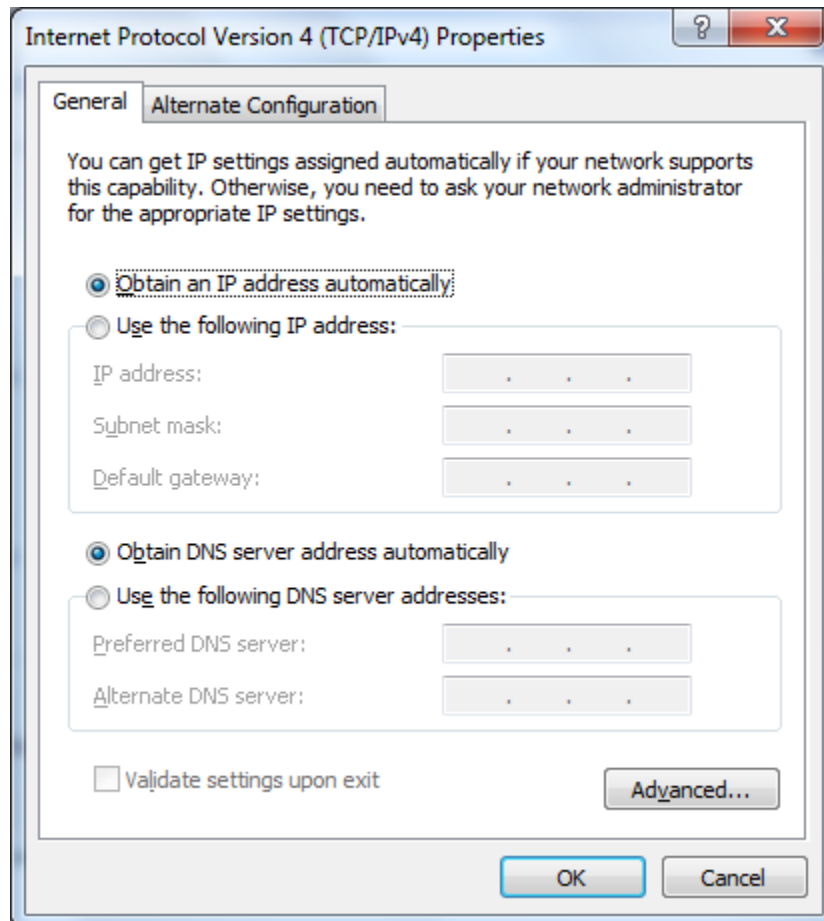
Stop bit: 1

Flow control: none



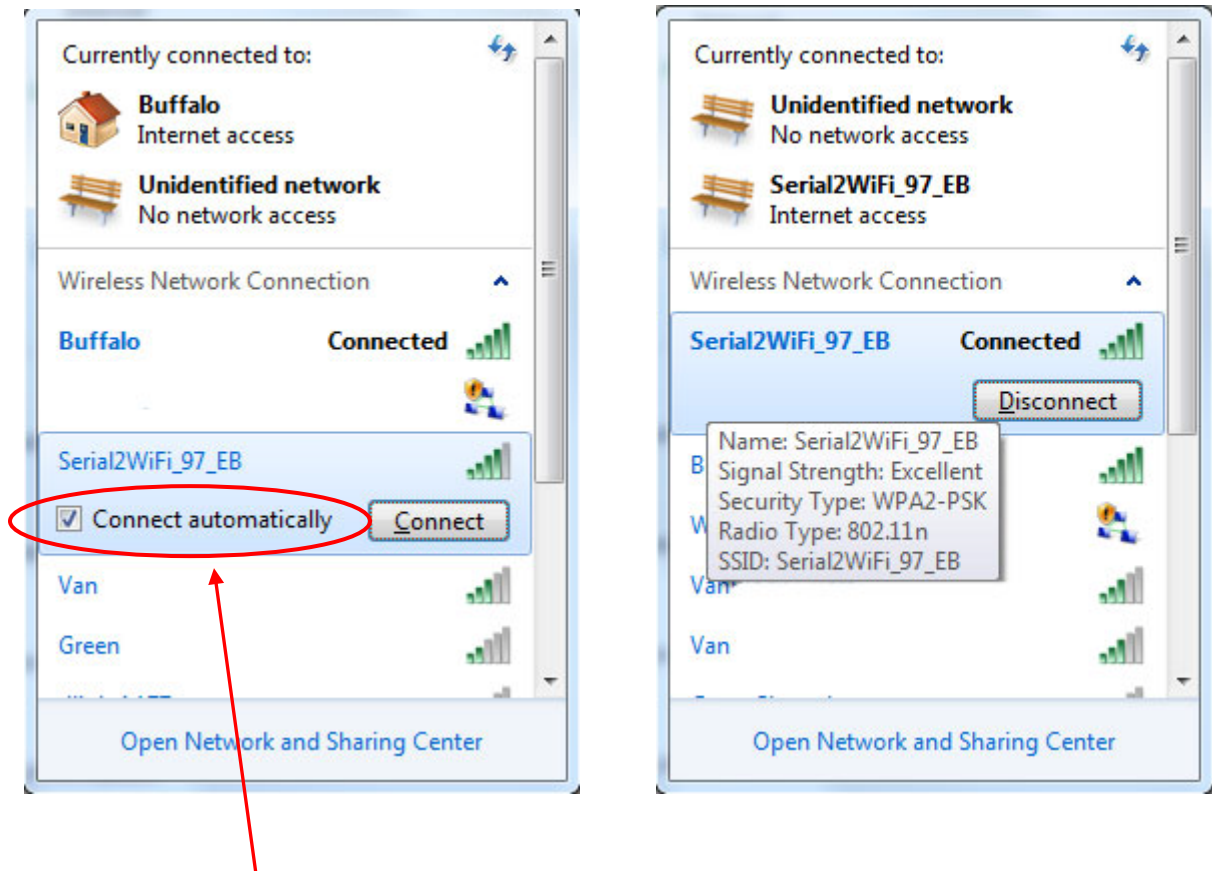
## Configuring the parameters using a Web browser

First you need to connect to the UCW232C over WiFi. The UCW232C has DHCP enabled by default so your wireless connection should be set to support this:





In this example we use Windows built-in wireless network manager to connect to the adapter:



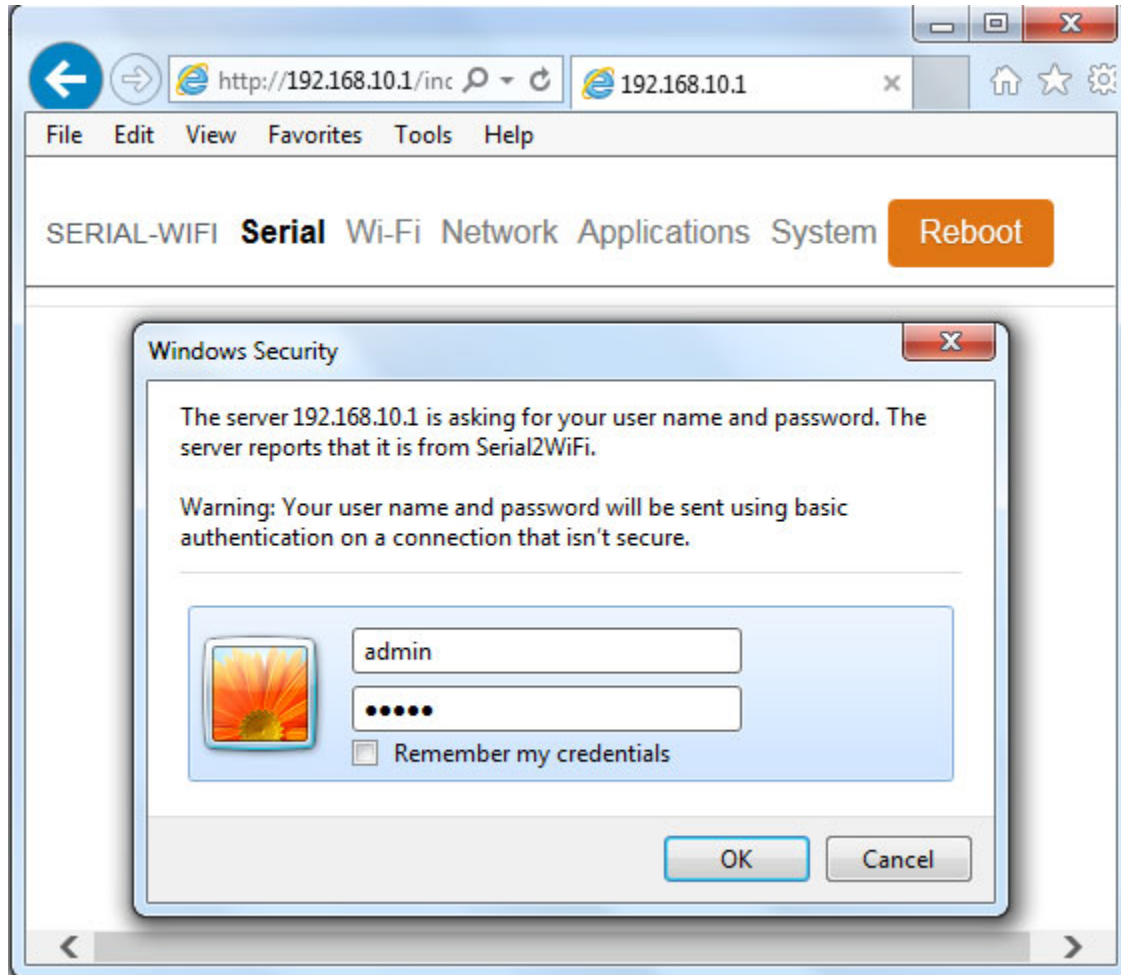
If you enable “Connect automatically” then you don’t forget to manually re-connect when rebooting the adapter.



Open Internet Explorer and enter the IP address `http:// 192.168.10.1`. You should now see the login screen.

The default username is: admin

The default password is: admin





The correct way to change and save parameters:

**Update 6/19/2015: If you are having problems changing the parameters then use Firefox browser instead of Internet Explorer.**

1. Change the particular parameter to the value you need and click the Save button. The text *"Saved. Reboot required for the changes to take effect"* should appear at the bottom of the screen. Wait a few seconds.
2. Now click "Reboot" and wait about 10 seconds. The adapter is now rebooting and re-connecting to WiFi automatically if you have enabled "Connect automatically" in Windows WiFi Manager.
3. Now refresh the browser page by clicking the refresh icon in your browser (or press F5).

If you are having problems connecting to the adapter over WiFi try and disable your firewall software.

You should now be able to see the changed baud rate and also select other menu links etc. Below are screenshots of the configuration pages:

http://192.168.10.1/inc 192.168.10.1

File Edit View Favorites Tools Help

SERIAL-WIFI **Serial** Wi-Fi Network Applications System Reboot

RS232

Data Baud Rate 9600 ☐ Custom Baud ( 9600 bps at least )

Data Bits 8

Data Parity None

Data Stop Bits 1

Flow Control None

Save Cancel



http://192.168.10.1/index.html 192.168.10.1

File Edit View Favorites Tools Help

SERIAL-WIFI Serial **Wi-Fi** Network Applications System Reboot

Wi-Fi Mode Simple AP

Self SSID Serial2WiFi\_97\_EB

Self Key Type WPA2 AES

Self Key 12345678

Self Channel 6

Save Cancel





A screenshot of a web browser window showing the 'Network' configuration page. The address bar displays 'http://192.168.10.1/inc' and the page title is '192.168.10.1'. The navigation menu includes 'SERIAL-WIFI', 'Serial Wi-Fi', 'Network' (highlighted), 'Applications', and 'System'. An orange 'Reboot' button is in the top right. The main content area has a 'DHCP Client' section with a dropdown menu set to 'Enable'. At the bottom are 'Save' and 'Cancel' buttons.

http://192.168.10.1/inc 192.168.10.1

File Edit View Favorites Tools Help

SERIAL-WIFI Serial Wi-Fi **Network** Applications System Reboot

DHCP Client Enable

Save Cancel

A screenshot of a web browser window showing the 'Applications' configuration page. The address bar displays 'http://192.168.10.1/index' and the page title is '192.168.10.1'. The navigation menu includes 'SERIAL-WIFI', 'Serial Wi-Fi', 'Network', 'Applications' (highlighted), and 'System'. An orange 'Reboot' button is in the top right. The main content area has four configuration fields: 'Application' (dropdown set to 'M2M'), 'Connection Type' (dropdown set to 'TCP Server'), 'Server Port' (text box with '8080'), and 'Modbus RTU CRC Padding' (checkbox). At the bottom are 'Save' and 'Cancel' buttons.

http://192.168.10.1/index 192.168.10.1

File Edit View Favorites Tools Help

SERIAL-WIFI Serial Wi-Fi Network **Applications** System Reboot

Application M2M

Connection Type TCP Server

Server Port 8080

Modbus RTU CRC Padding ☐

Save Cancel



Serial-Wi-Fi Network Applications **System** Reboot

Firmware Revision: IWM021-v1.0.17

MAC: B0:38:29:15:97:EB

Print MAC

Station IP: 0.0.0.0

GPO 0:

GPO 1:

Change Password

Current Password

New Password

NTP Setting

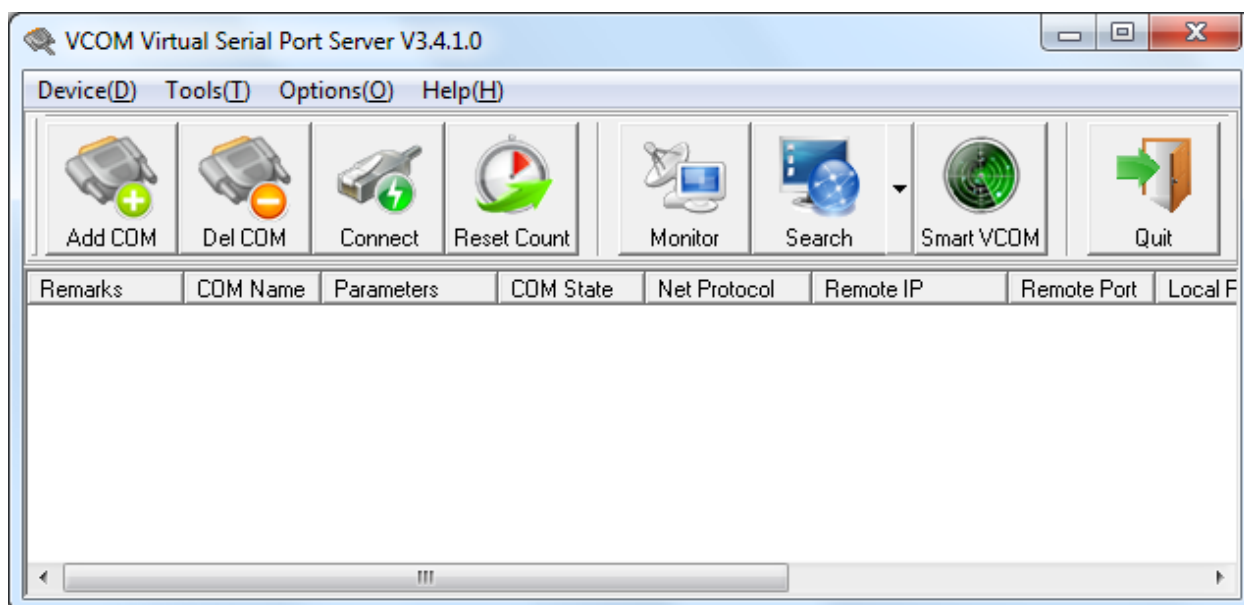
Enable NTP



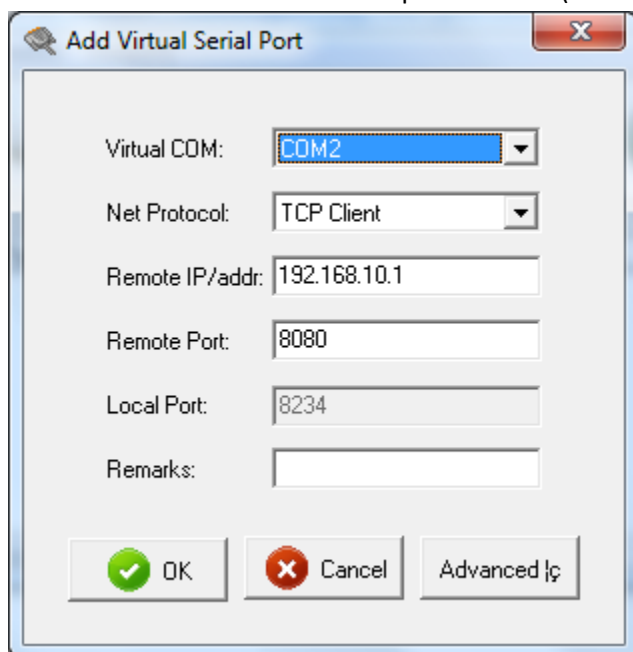
## Creating a Virtual COM Port

For creating a virtual COM port we recommend using the virtual COM port software called USR-VCOM (downloadable for free from [www.usconverters.com](http://www.usconverters.com)).

Install USR-VCOM, start the software and click the “Add COM” button:

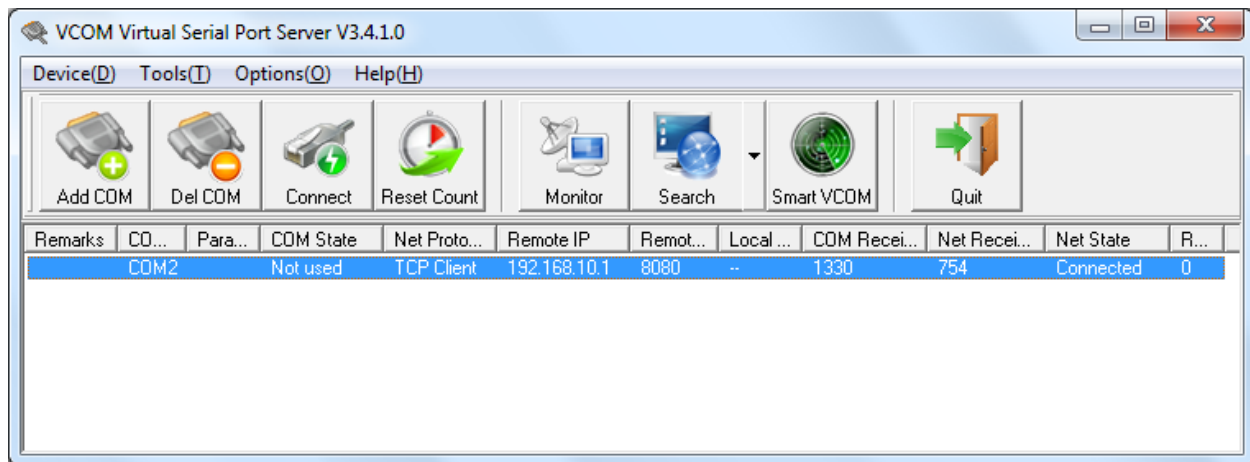


Enter UCW232C's IP address and port number (192.168.10.1 port 8080), and click “OK”:

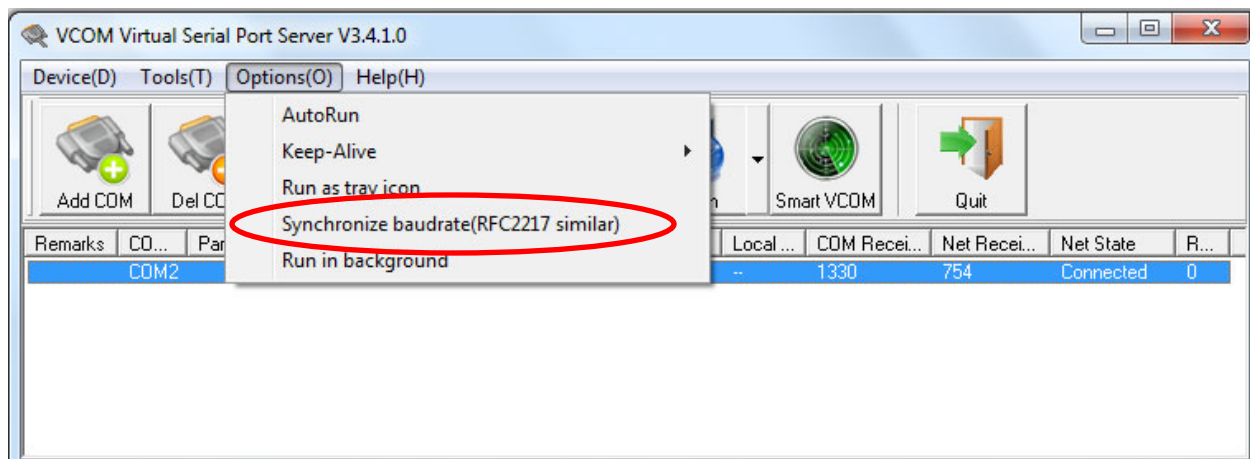




The virtual COM port should now be created:

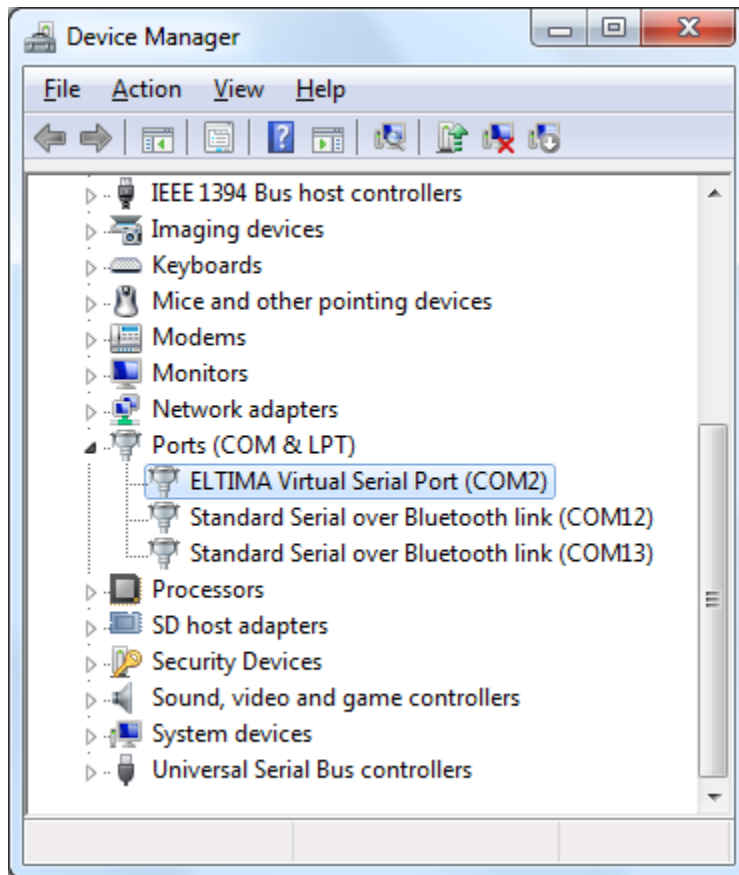


We highly recommend disabling “Synchronize baudrate (RFC2217 similar)” in the Options menu:





Verify in Windows Device Manager if the virtual COM port has successfully created:





## Verifying communication with a loop-back test

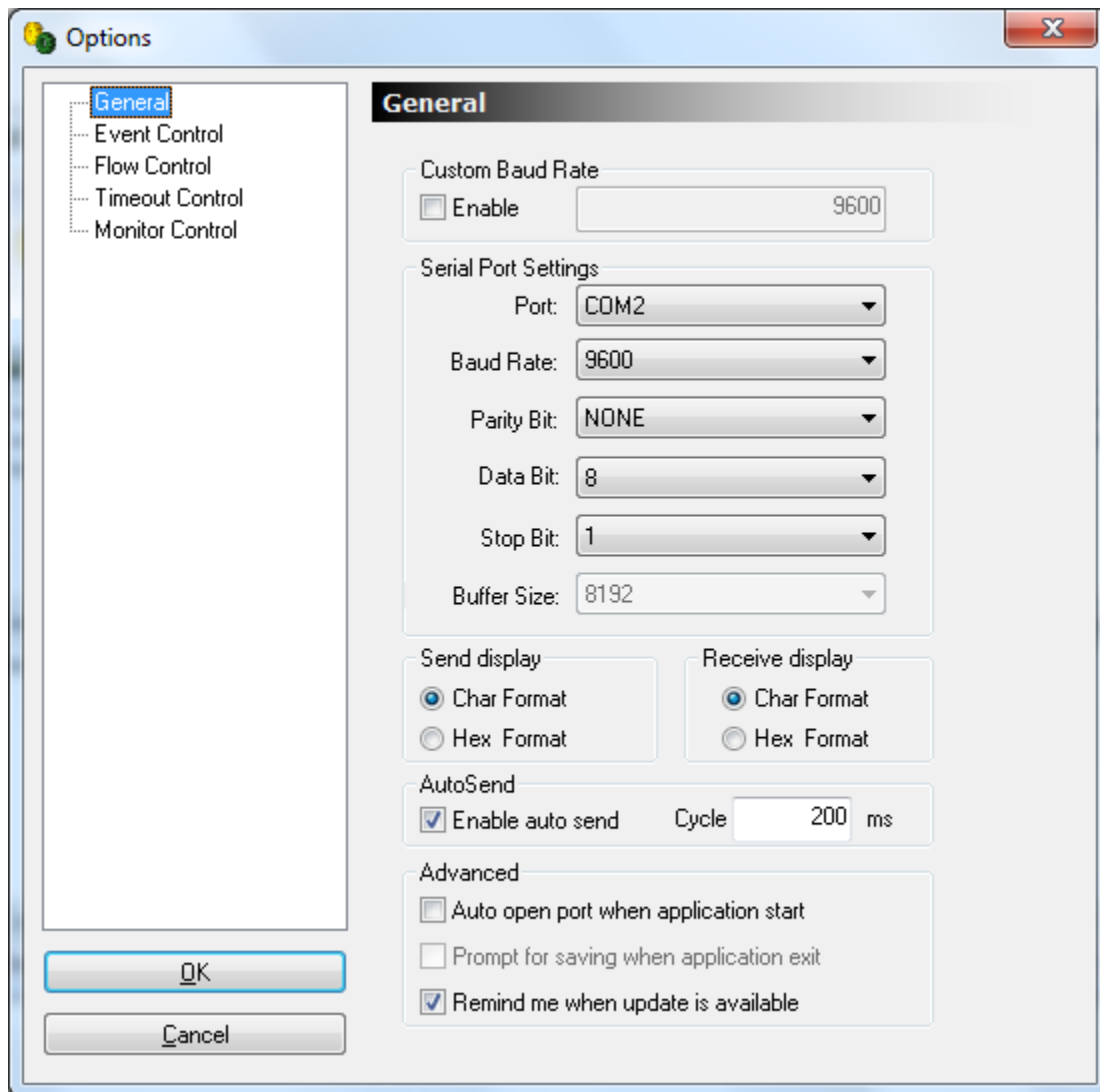
To check if the UCW232C can send and receive data successfully you can make a loop-back test using AccessPort (can be downloaded from [www.usconverters.com](http://www.usconverters.com)).

First carefully loop-back the TX pin (pin 2) to the RX pin (pin 3) on the DB9 connector of the UCW232C by placing a jumper (for example a paperclip) between the TX and RX pins:





Open AccessPort (downloadable from [www.usconverters.com](http://www.usconverters.com)) and set the parameters to match the UCW232C's port parameters:







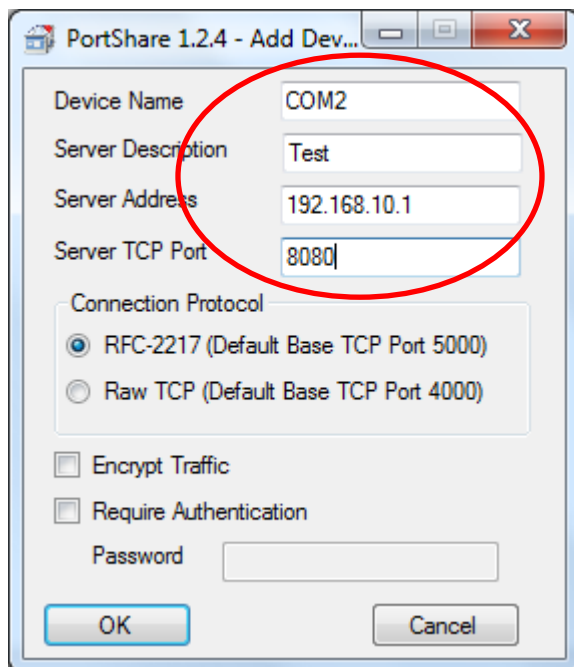


## Creating a virtual COM using PortShare

PortShare is an alternative 3<sup>rd</sup> party virtual COM software which can be used for creating the virtual COM port. PortShare can be downloaded for free from [www.usconverters.com](http://www.usconverters.com).

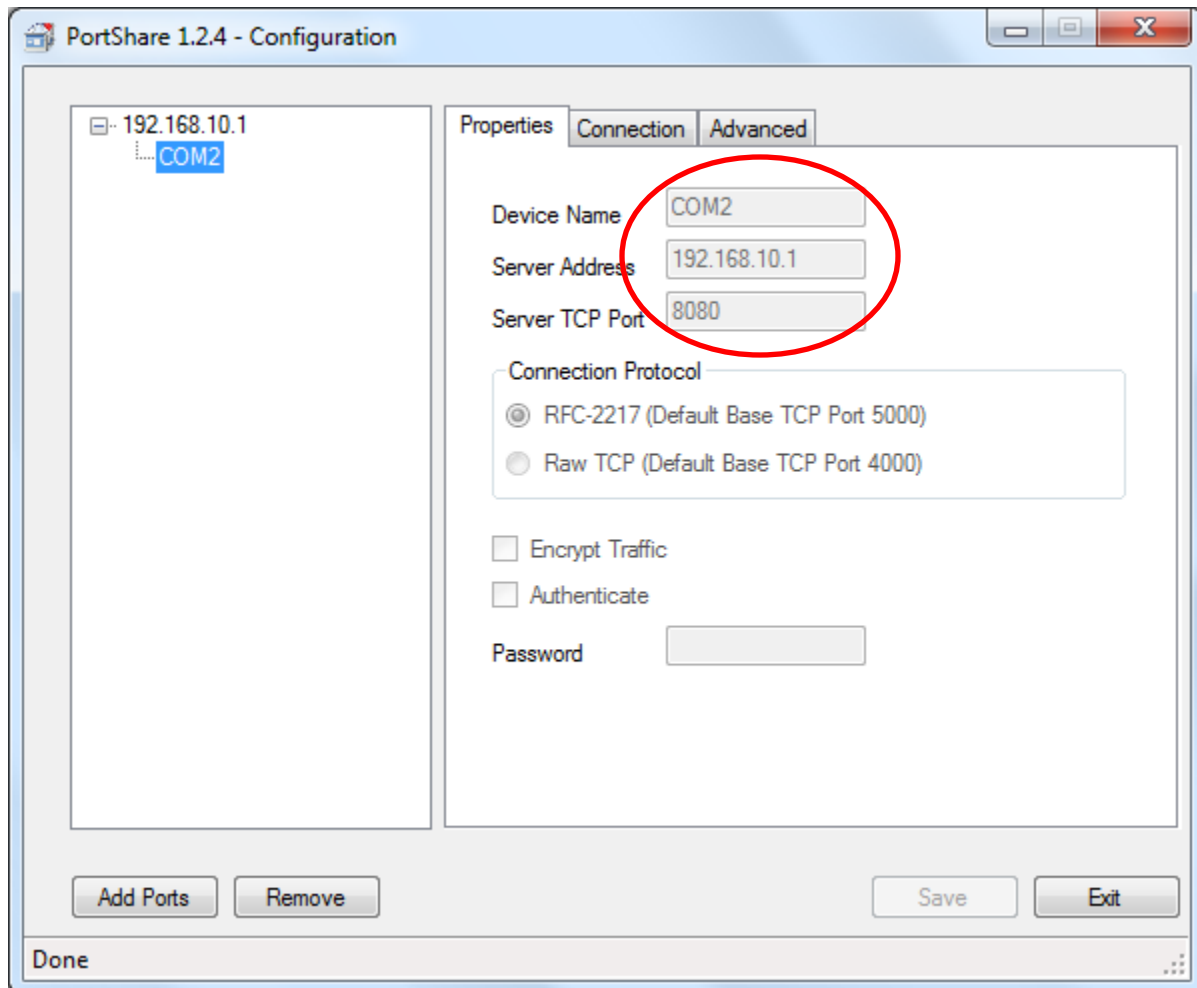
First make sure that the UCW232C has joined the network.

Start PortShare and enter the settings of the UCW232C as shown below:





Default settings can usually be used without problems. PortShare will in this example create COM 2:





Alternative compatible Virtual COM/TCP software is:

Fabulatech Serial Port Redirector: <http://www.fabulatech.com/serial-port-redirector.html>

and

Eltima Serial over Ethernet: <http://www.eltime.com/products/serial-over-ethernet/>

These alternative solutions are good products and offers a 30 day trial period.



## Creating a virtual COM port using Fabulatech

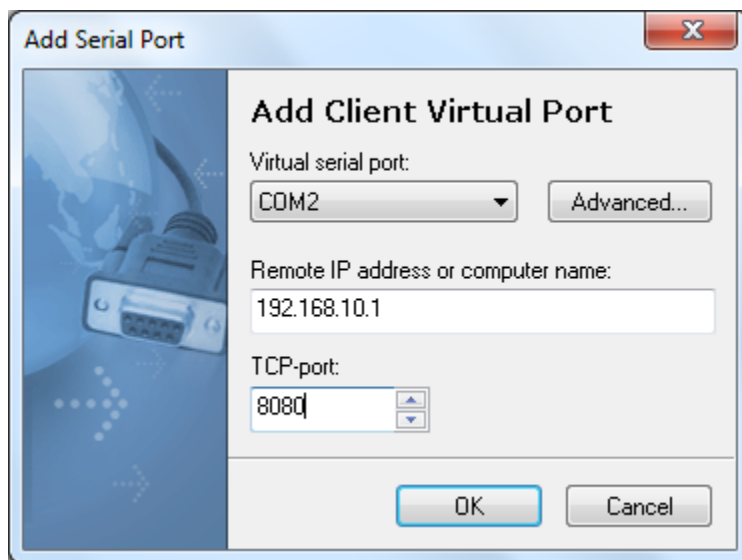
Fabulatech COM port redirector is compatible with the UCW232C and an excellent alternative software for creating a virtual COM port.

A 15-day trial software can be downloaded from [www.usconverters.com](http://www.usconverters.com) or [www.fabulatech.com](http://www.fabulatech.com).

Here is a quick overview for how to use the Fabulatech COM port redirector with the UCW232C.

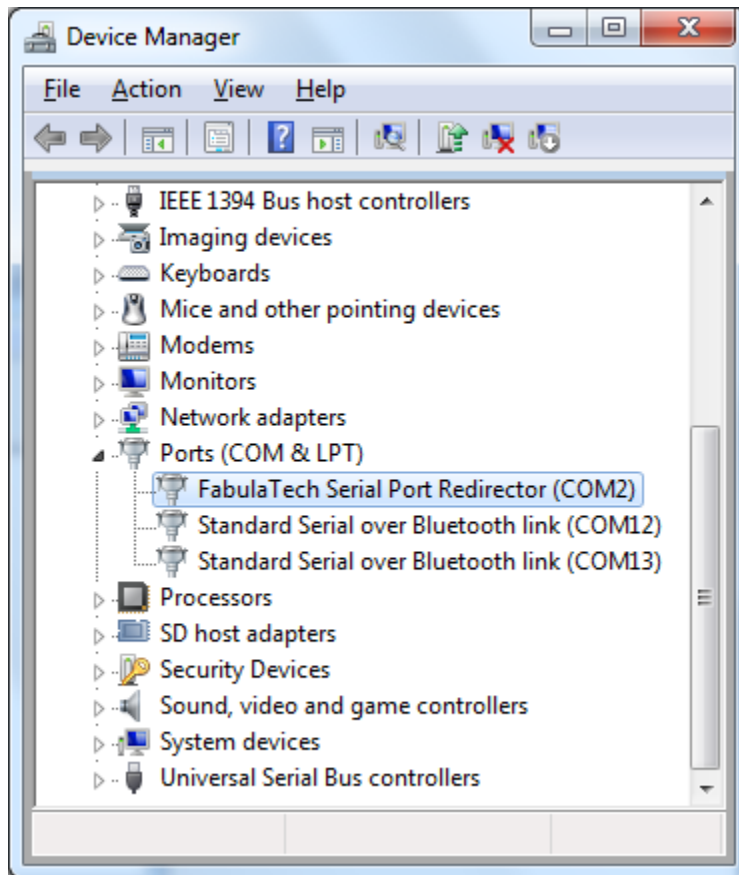
Install and start the Fabulatech software.

Enter the COM port number and the IP address of the UCW232C. All other settings can be left to default:



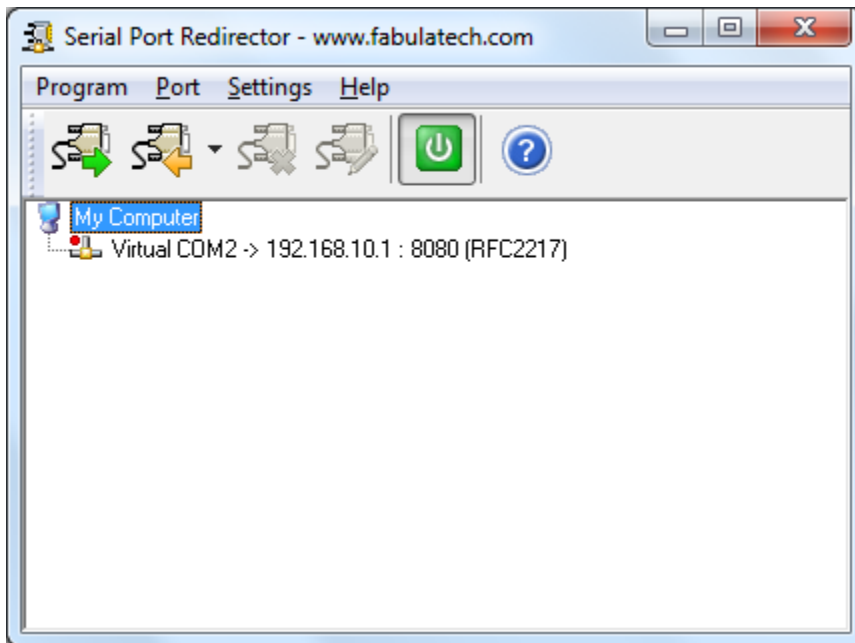


The COM port is now available in Windows Device Manager:

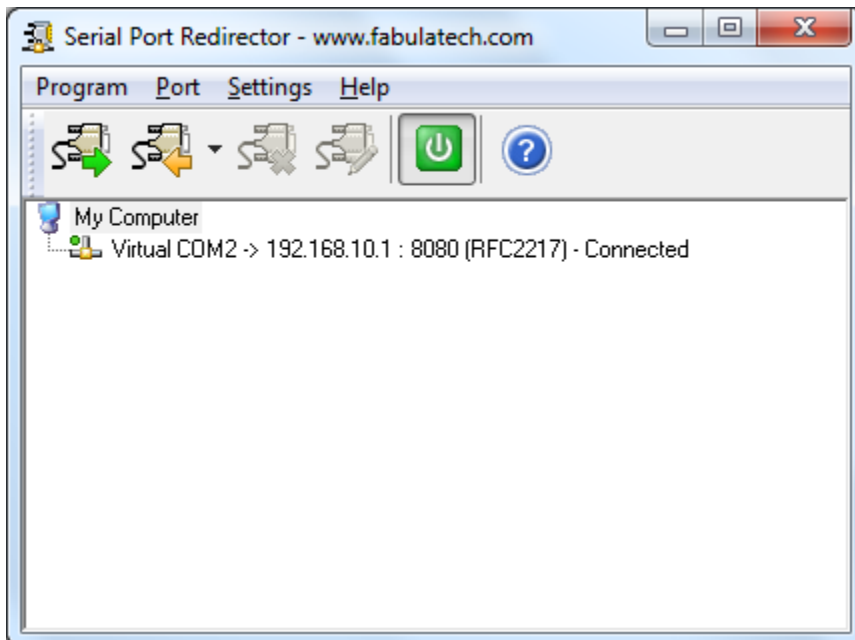




A small red dot next to the COM port indicates that the port is closed:



The small green dot next to the COM port indicates that the port is open:





## Connecting using a wireless router

Before you can use your wireless router to communicate with the serial WiFi adapter you first need to configure the adapter as an infrastructure device, also called Station Mode. Please follow the instructions below.

Reset the adapter to make sure it has all default settings. Login to the adapter via an access point.

Once you have logged in, go to the “Wi-Fi” menu and change the WiFi Mode to “Station”. Then click the “Scan” button to scan for a wireless router. Select the wireless router once the adapter finds it and then select the security protocol and enter the password. Click “Save” and “Reboot” and then power cycle the adapter.

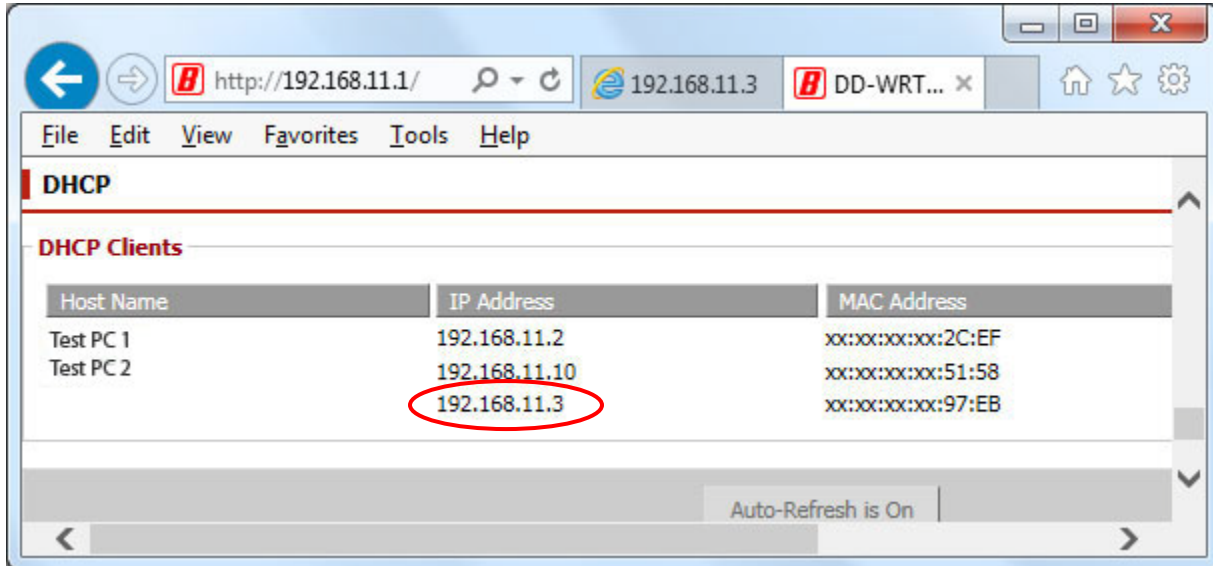
The screenshot shows a web browser window with the address bar displaying `http://192.168.10.1/inc` and `192.168.10.1`. The browser has a menu bar with `File`, `Edit`, `View`, `Favorites`, `Tools`, and `Help`. The page title is `SERIAL-WIFI`. The main content area has a navigation bar with `Serial`, `Wi-Fi` (highlighted), `Network`, `Applications`, and `System`. A `Reboot` button is located in the top right corner. The `Wi-Fi` section contains the following configuration options:

- `Wi-Fi Mode`: A dropdown menu set to `Station`.
- `Scan`: A blue button.
- `Done.`: An orange button.
- `Site Survey`: A dropdown menu set to `Buffalo -- Channel: 2`.
- `Target SSID`: A text input field containing `Buffalo`.
- `Target Key Type`: A dropdown menu set to `WPA2 AES`.
- `Target Key`: A text input field containing `1029384756`.

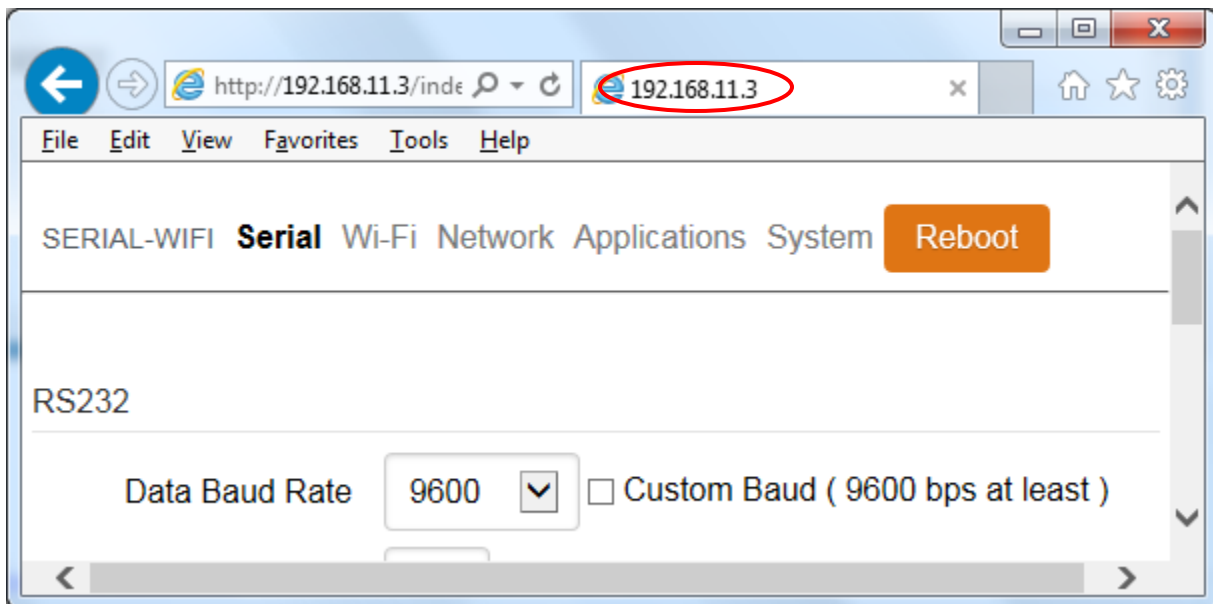
At the bottom of the configuration section are two buttons: `Save` (blue) and `Cancel` (light blue).



After the adapter restarts from the power cycle the wireless router will assign an IP address to the adapter. You now need to find out which IP address has been assigned to the adapter. The easiest way is to login to your wireless router's status page to see which IP address has been assigned:



Since our wireless router in this case has an IP address in the 192.168.11.xx range the IP address assigned to the adapter is 192.168.11.3. We can now login to the UCW232C:



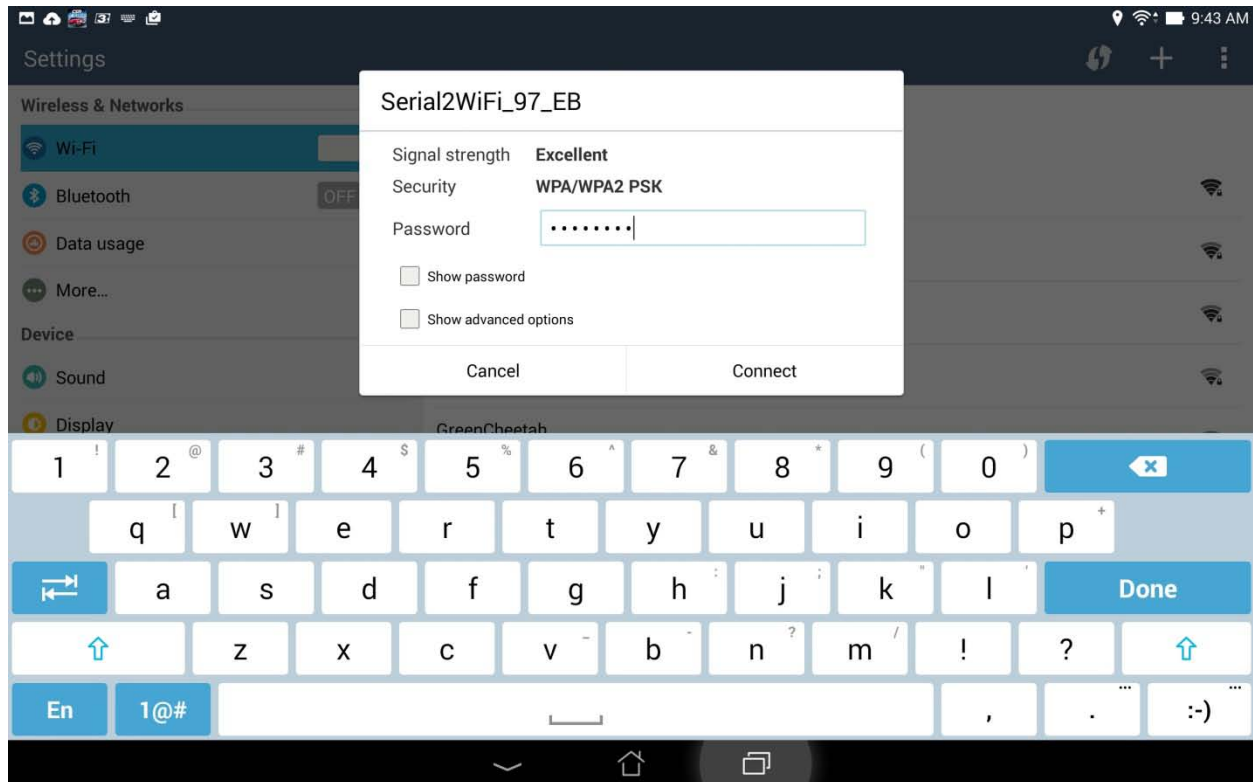
If logging into your wireless router is not an option then you can use an IP Scanner to find the UCW232C. We recommend "Advanced IP Scanner" <http://www.advanced-ip-scanner.com/> which is free and easy to use.





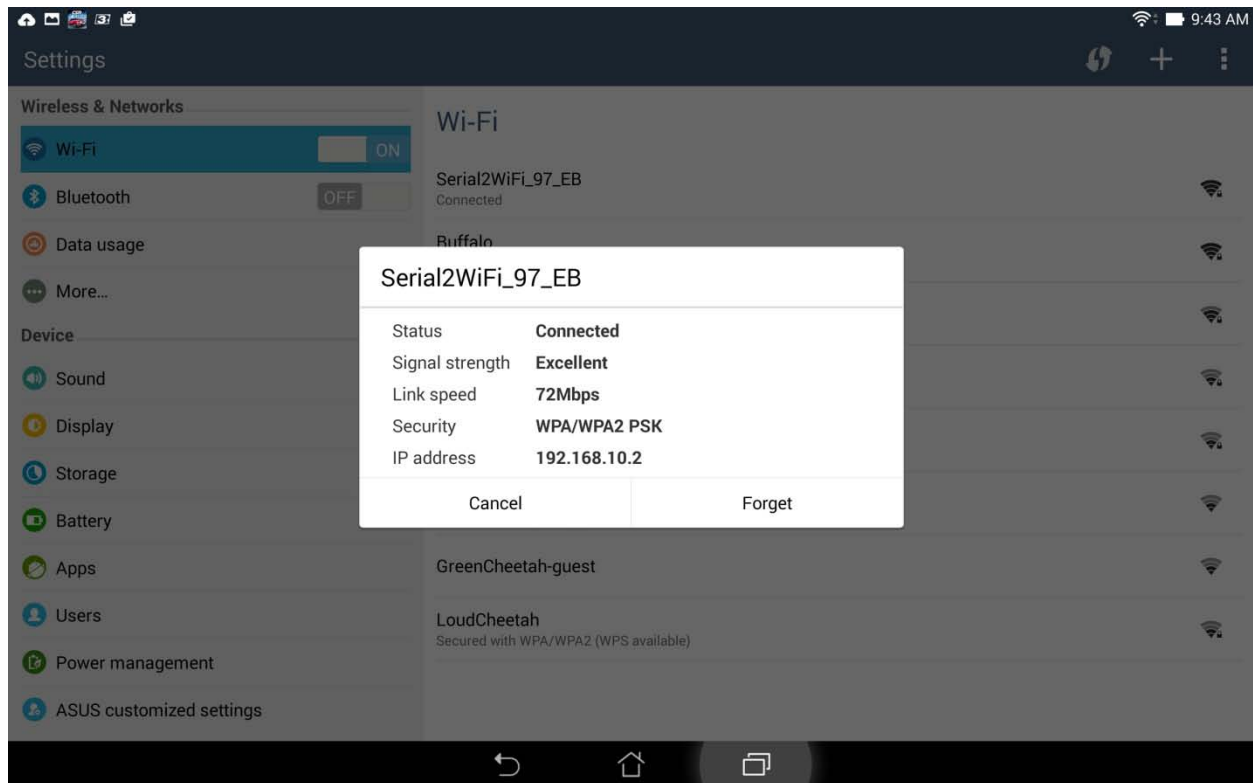
## Connecting with Android

Connecting and communicating with the UCW232C using an Android tablet is easy. Simply search for the UCW232B using the tablet's built-in WiFi manager and connect to the UCW232C:





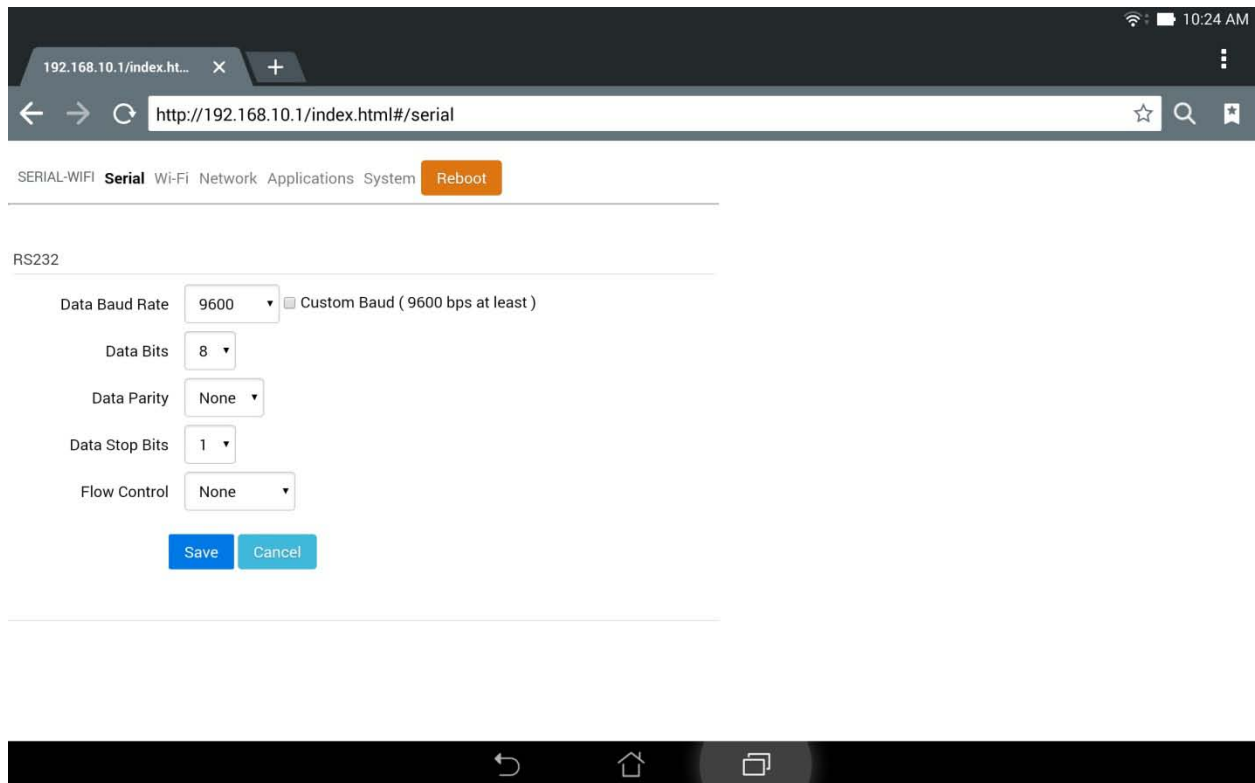
The UCW232C is now connected to the Android tablet.



Most of the free serial terminals are compatible with the UCW232B, simply search the Google Play Store for “Serial Terminal”, see what is available and experiment with the various terminals until you find one you like.



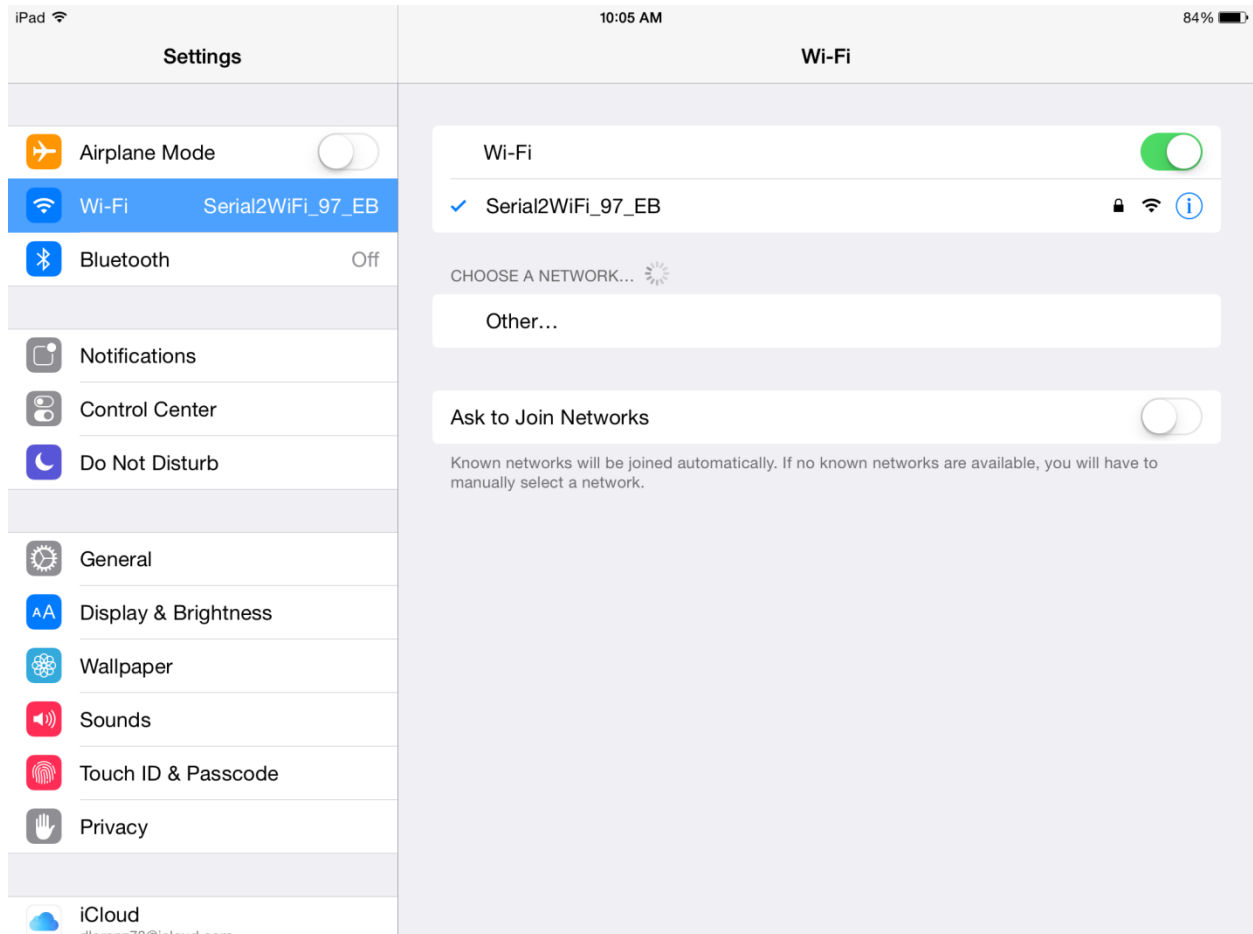
You can connect to the UCW232C by using a web-browser:





## Connecting with iOS

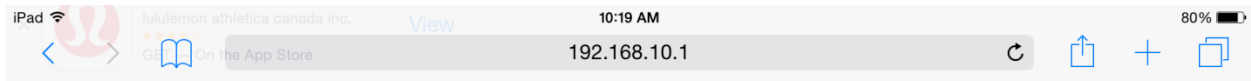
Connecting and communicating with the UCW232C using an iPad table is easy. Simply search for the UCW232B using the tablet's built-in WiFi manager and connect to the UCW232C:



Most of the free serial terminals are compatible with the UCW232B, simply search the Apple App Store for “Serial Terminal”, see what is available and experiment with the various terminals until you find one you like.



You can connect to the UCW232C by using a web-browser:



SERIAL-WIFI **Serial** Wi-Fi Network Applications System [Reboot](#)

#### RS232

Data Baud Rate  ☐ Custom Baud ( 9600 bps at least )  
Data Bits   
Data Parity   
Data Stop Bits   
Flow Control

[Save](#)[Cancel](#)

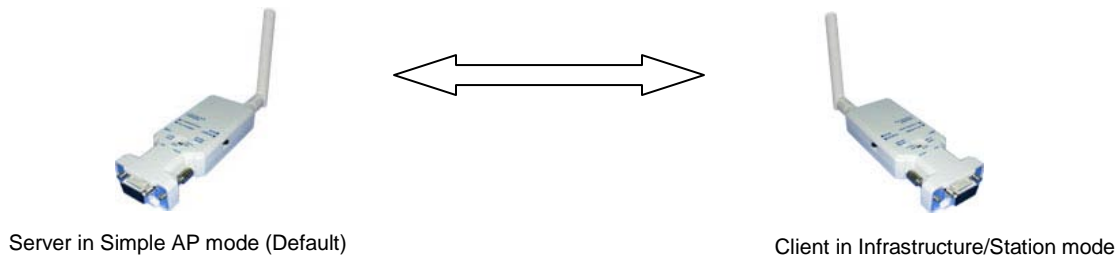
A free terminal emulator APP for iOS is offered from the iTunes store:

<https://itunes.apple.com/WebObjects/MZStore.woa/wa/viewSoftware?id=1063937265&mt=8>



## Point-to-Point Communication with a Pair of UCW232C's

The UCW232C can be configured to communicate in pairs between two serial ports, also called point-to-point communication.



We need to setup one adapter as a server in Simple AP mode (which it is by default) and one as a client in Station mode.

### Configuring the Server.

There is nothing to configure on the server. All default parameter values can be used.

### Configuring the Client.

Connect the other UCW232C to your computer's access point over WiFi; we will configure this adapter as the client. Login to the admin page by using a web browser (use Firefox).

Go to the "Wi-Fi" menu and select "Station" from the "Wi-Fi Mode" setting.

Turn on the *server* adapter.



Click “Scan” and select the server adapter from the drop-down menu:

File Edit View History Bookmarks Tools Help

http://192.168.....html#/network X +

192.168.10.1/index.html#/wifi

WWW.USCONVERTERS.COM  
SERIAL WIFI ADAPTER

Serial **Wi-Fi** Network Applications System Reboot

---

Wi-Fi Mode Station

AP Client Setting

Scan Done

Site survey Serial2WiFi\_96\_5D -- Channel: 6

SSID Serial2WiFi\_96\_5D

Security protocol WPA2 AES

Security key 12345678

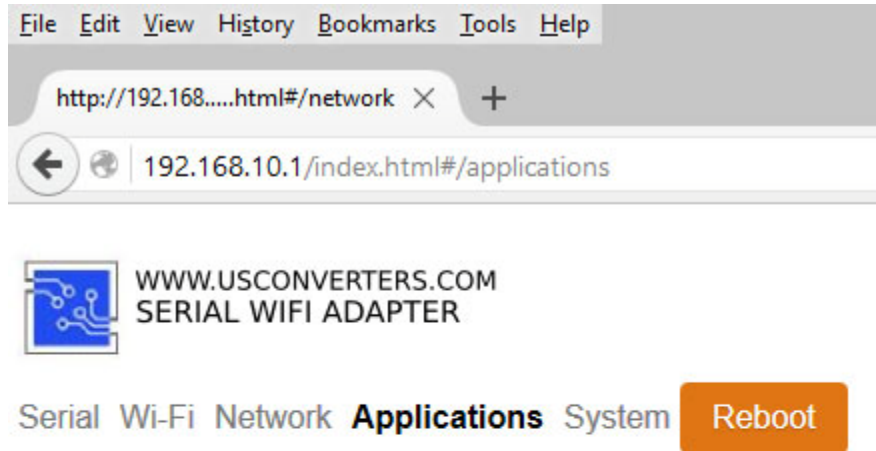
Save Cancel

Enter the security key 12345678.

Click the “Save” button but do not yet reboot the adapter.



Go to the “Applications” menu and set the “Connection Type” to “TCP Client”. Enter the server adapter’s default IP address in the “Client Destination Host/IP field”: 192.168.10.1:



Application

Connection Type

Client Destination Host/IP

Client Destination Port

Click the “Save” button and also the “Reboot” button.

Now power cycle the Client adapter. Once it is turned on again it will start searching for the Server adapter and automatically connect to it.

The Server and Client adapter’s can now be used to send and receive wireless data between two serial devices.

Notice: The server and client adapters cannot connect and create a link if there is data present on any of the serial ports before the link is created.





## Troubleshooting

### Using the serial WiFi adapter in high traffic network locations.

Using a serial WiFi adapter in a location with many WiFi and/or Bluetooth connections may sometimes be a challenge since all WiFi and Bluetooth devices share the same 2.4Ghz frequency. Sometimes this can cause “noisy” environment may cause problems connecting the UCW232C or dropped connections, so here are a few things you can try to improve the situation:

1. Try changing the wireless channel.

2. Try changing the wireless data rate.

Lowering the data rate may help improve time-out issues.

3. If possible try and scan the 2.4Ghz spectrum. This can for example be done by using a 3rd party software such as:

inSSID:

<http://www.metageek.net/products/inssider/>

WiFi Stumbler:

<http://meraki.cisco.com/products/wireless/wifi-stumbler>

For Android: WiFi Analyzer APP

Analyze the network and use the channel with the least number of other wireless devices.

### Federal Communications Commission (FCC) Statement

#### RADIO FREQUENCY INTERFERENCE STATEMENT

THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS.

(1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE AND

(2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED , INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRE OPERATION.

Tested to comply with FCC standards for home or office use