

How to setup the USC520 and USC540 Serial to Ethernet converter **(based on Windows 10, 32/64-bit)**

This Step-by-step guide explains how to get started using the USC520 and USC540 Serial to Ethernet converter.

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Configuring the parameters.

There are two ways of configuring the parameters of the USC5XX module:

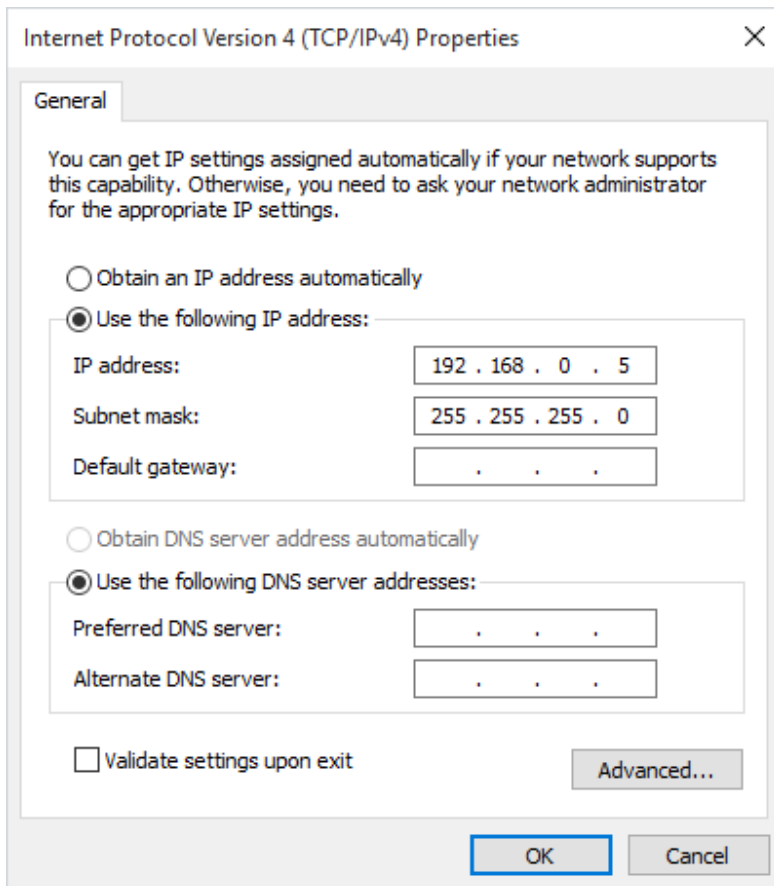
- By connecting the converter to your computer using a standard Ethernet cable and then use a web browser to login to the converter. This will work locally or remotely over a network.
- By connecting the converter to your computer using a standard Ethernet cable and then use the configuration utility to configure the parameters. This will work locally only (Ethernet cable connected directly to your computer).

We will here describe the first method as this is the most user-friendly way of configuring the converter.

Accessing the parameters using a web browser.

Connect the converter to your computer using a standard Ethernet cable.

Make sure the network connection you connect the USC5XX to is set to a static IP address in the same subnet as the USC5XX such as 192.168.0.xxx as shown below.

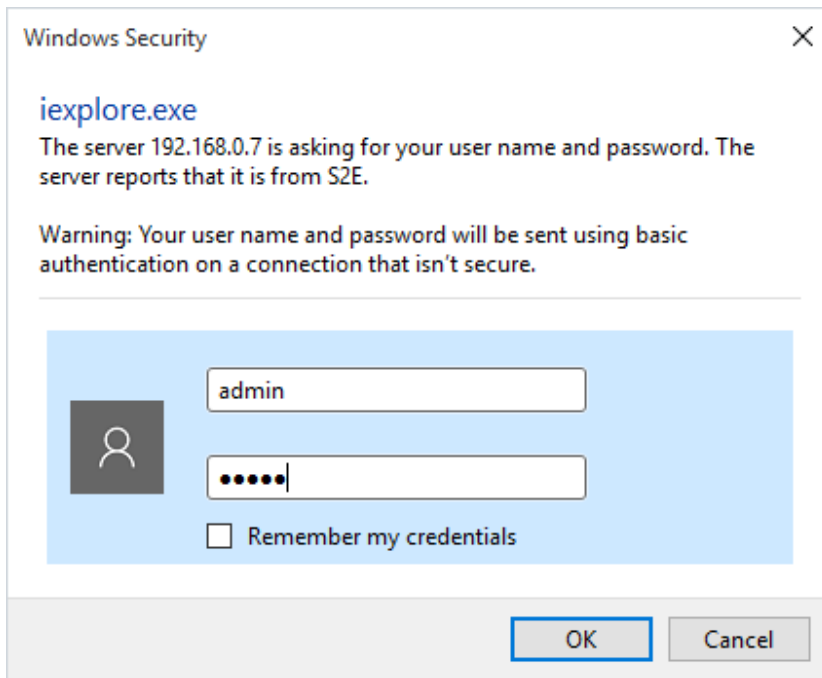


Open a web browser and enter the USC5XX's IP address which is 192.168.0.7

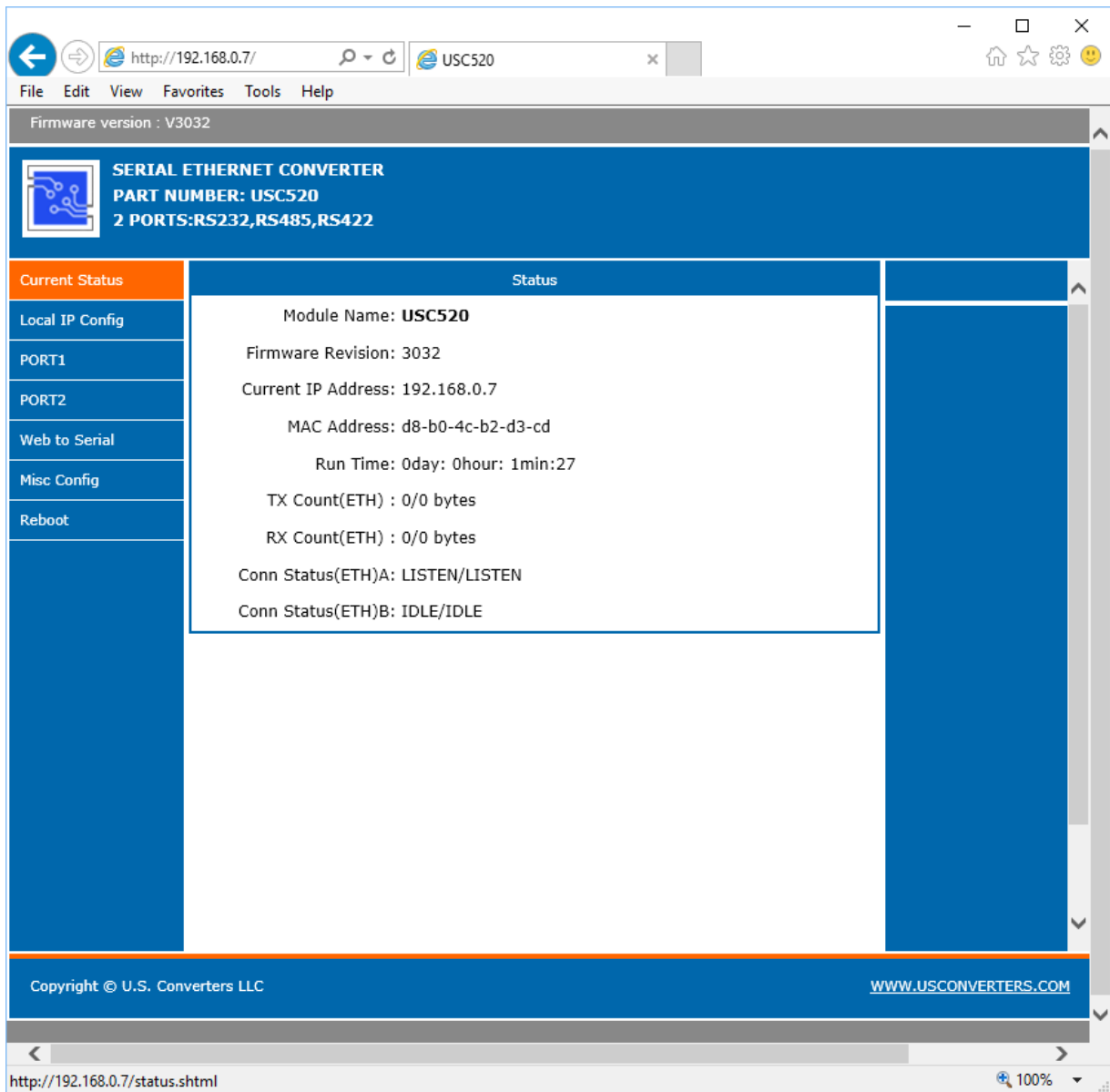
You will now see the login screen.

User: **admin**

Password: **admin**



After the login screen the Status page should show up:



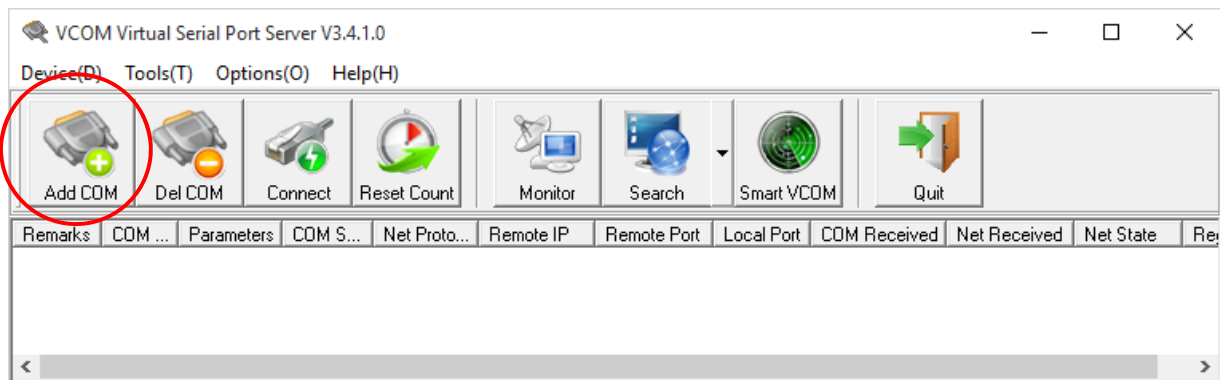
The admin pages can now be accessed and the parameters configured. Remember to save each page if you change a setting and after desired settings are configured the converter should be rebooted.

How to create a virtual COM port

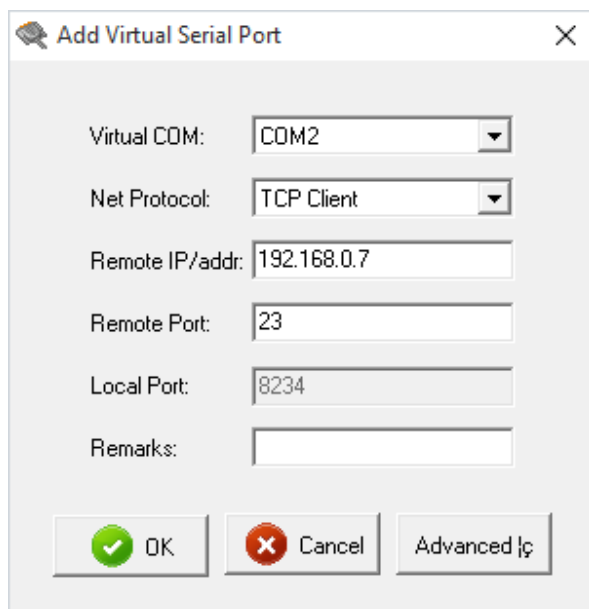
The USC5xx has two or four serial ports (RS232, RS485 and RS422). All ports can be used as individual COM ports and transfer two separate data streams at the same time.

To create a virtual COM port for the USC5XX converter which can be used by a serial application or serial device you need to use a COM port redirector. You can either use the VCOM software included with the USC5XX or a 3rd party VCOM software such as “PortShare” which is free or “Fabulatech COM port Redirector” which is a 15-day trial and can be purchased from fabulatech.com.

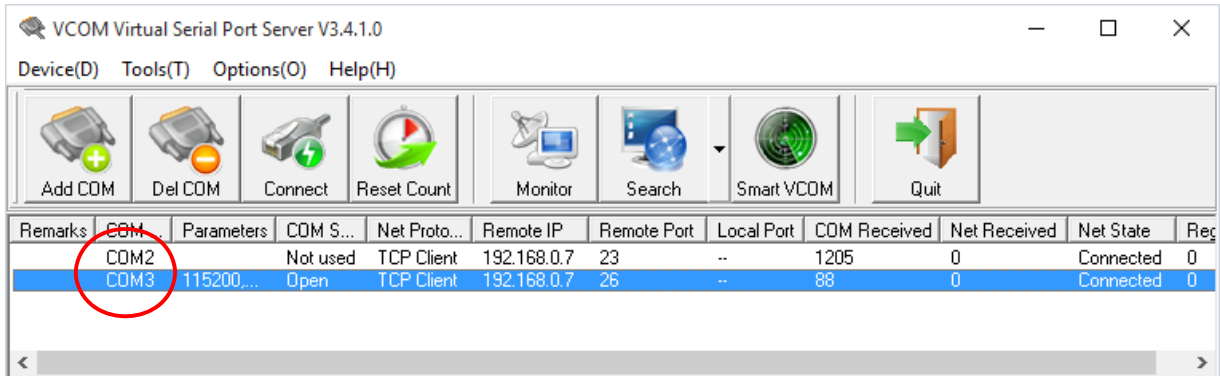
Start the VCOM software and click the “Add COM” button:



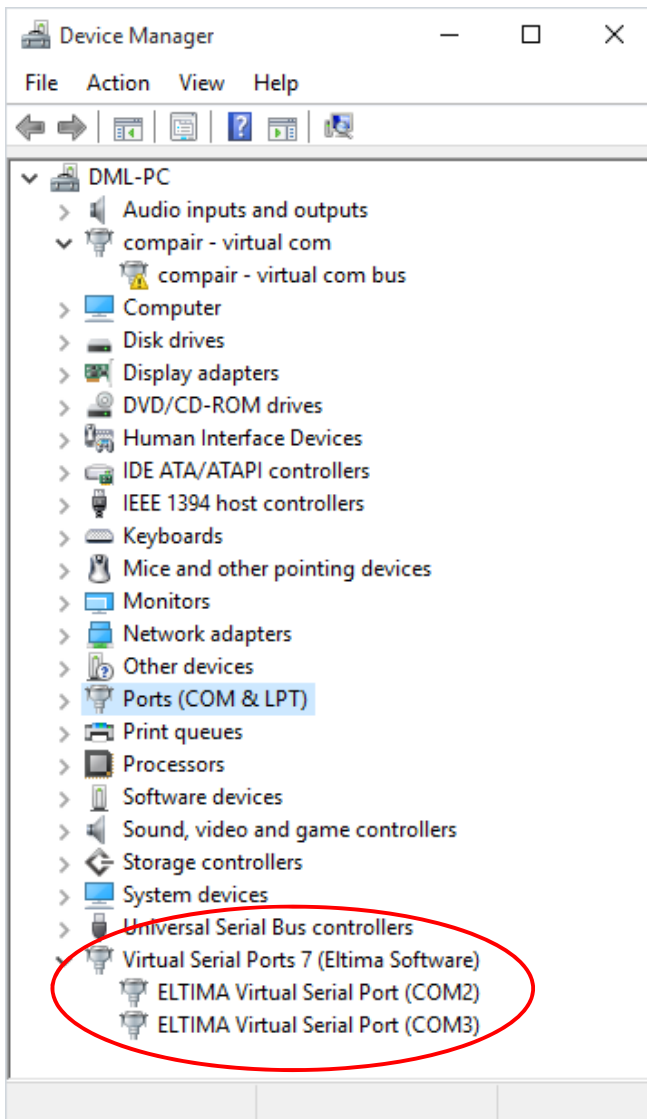
Select the COM port number you want to create and enter the IP address and LAN port number (COM port 0 = LAN port 23, COM port 1 = LAN port 26) as shown below:



The port will now be created:



Check in Windows Device Manager to see if the COM port has been successfully created:



Making a loop-back test.

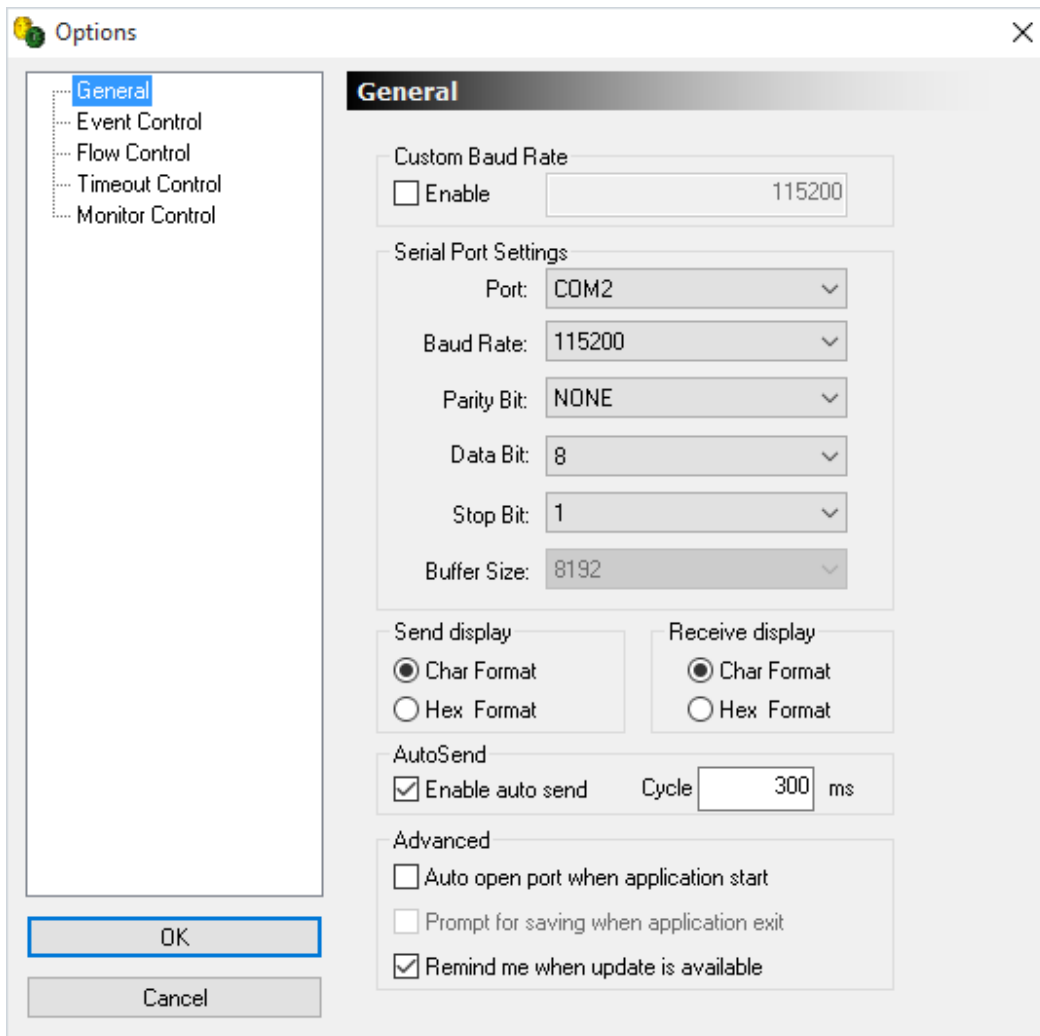
To verify if the USC5XX converter is working properly and the port(s) has been successfully created you can make a loop-back test.

First carefully use a paper clip or similar to short the RX (pin 2) and TX (pin 3) pins in the USC5XX's DB9 port. If you have a serial cable or a screw terminal it is easier to short the pins.

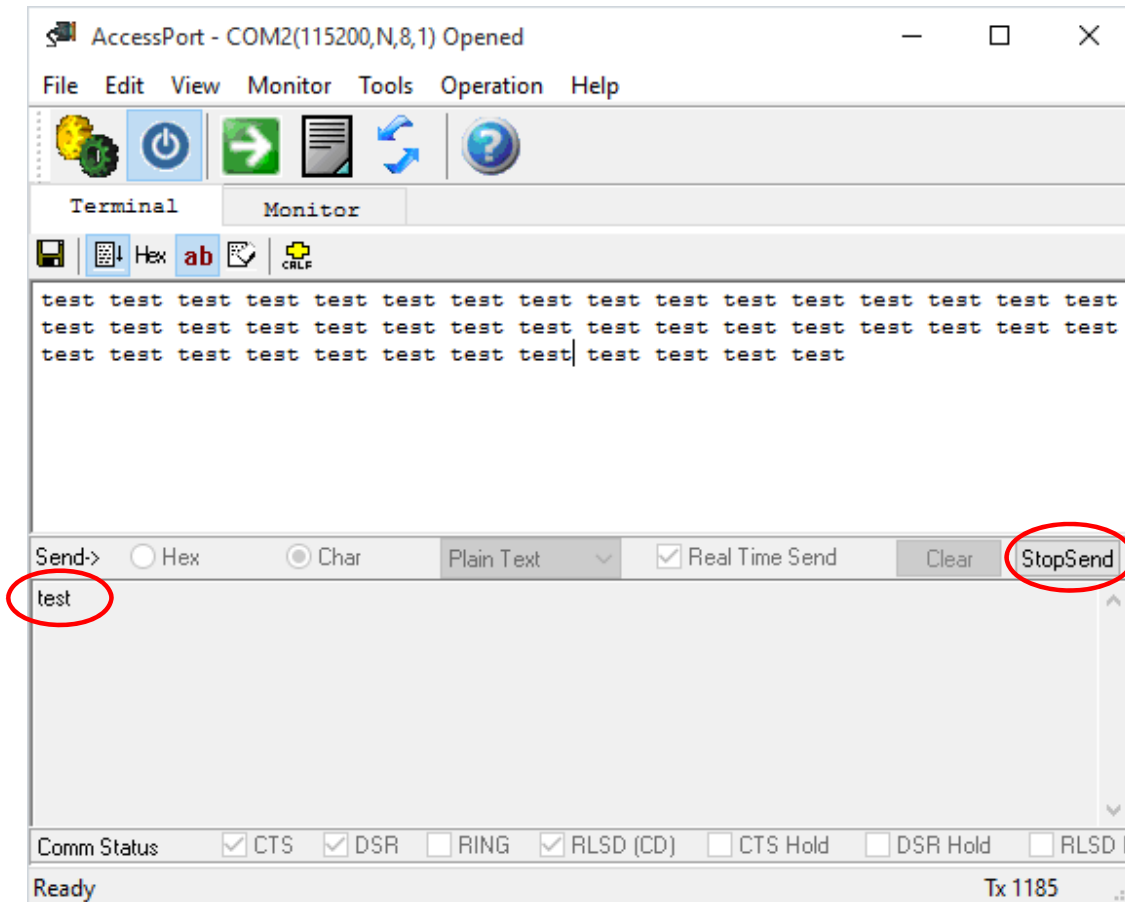
Connect the converter to your computer with an Ethernet cable and create a virtual COM port as described above.

Open AccessPort (can be downloaded for free from <http://www.usconverters.com>).

Configure AccessPort's parameters to match the virtually created COM port (the COM port created by the VCOM software), in this example COM 2, and click the OK button:



The port will now open.

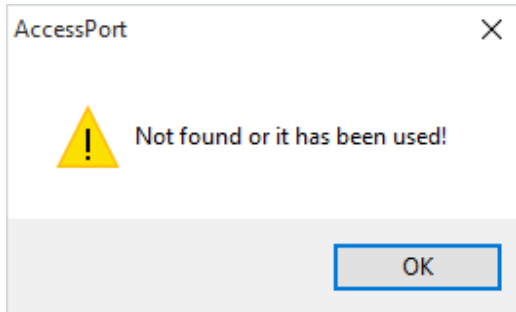


Enter a text string in the lower (send) window in AccessPort and click the AutoSend button. The characters should now be sent via virtual COM 2, out through the network cable to the USC5XX module, out on the TX pin, back into the RX pin, back through the Ethernet cable, back into virtual COM port 2 and should appear in AccessPorts upper (receive) window.

If you remove the jumper at the end of the serial cable connected to the USC5XX the data flow should stop.

Making this loopback test will confirm that the COM port has been successfully created and that the USC5XX can send and receive data, ensuring that the module has been setup correctly.

If you try to open the port but it is already in use or otherwise occupied by the operating system you will get the following error message from AccessPort. Using a different port is the easiest solution.



How to reboot USC5XX remotely over TCP

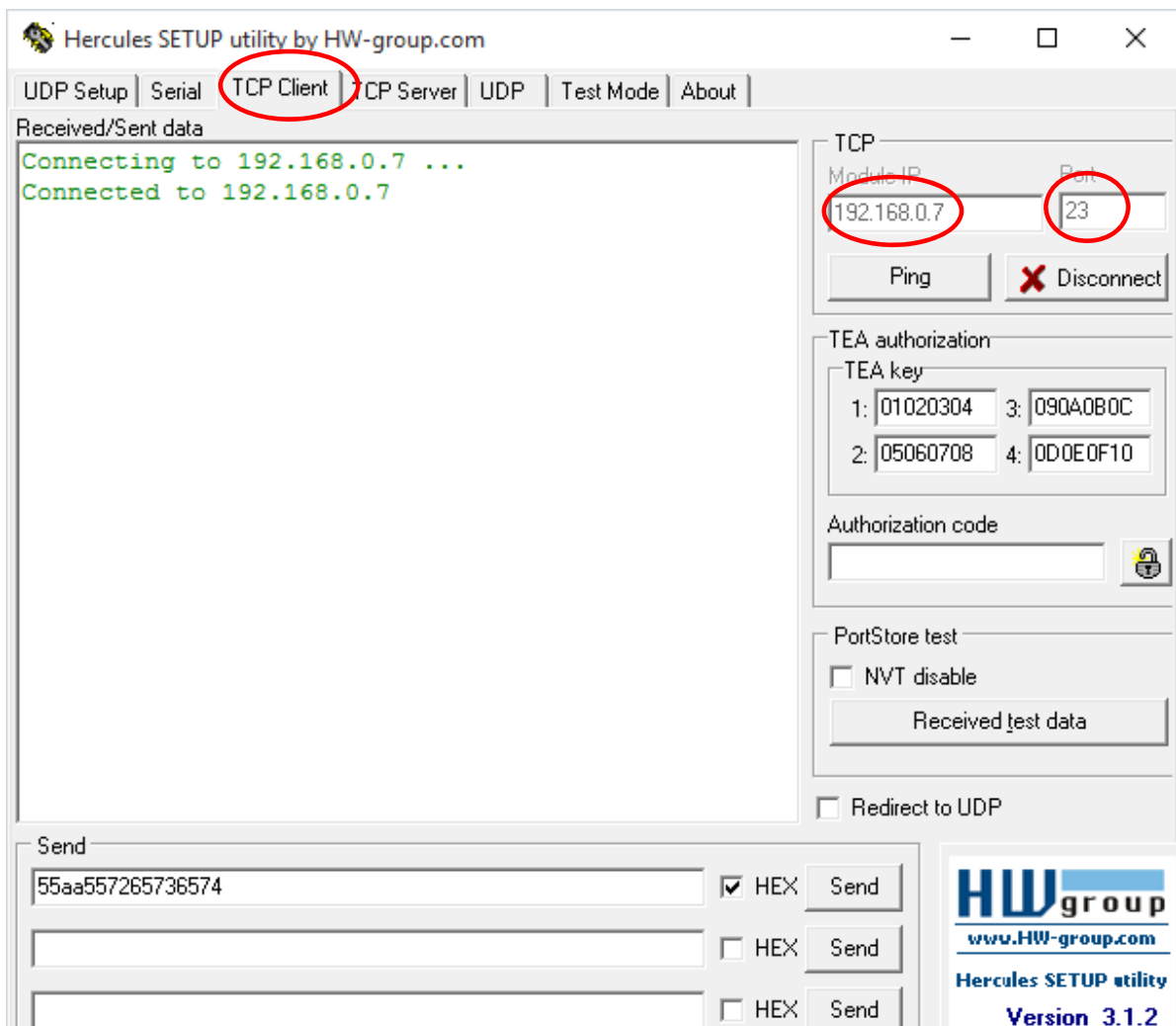
Notice: The USC5XX must have firmware version 20150203103010 or higher in order to reboot remotely.

The USC5XX can be rebooted remotely over TCP by sending the reboot command:

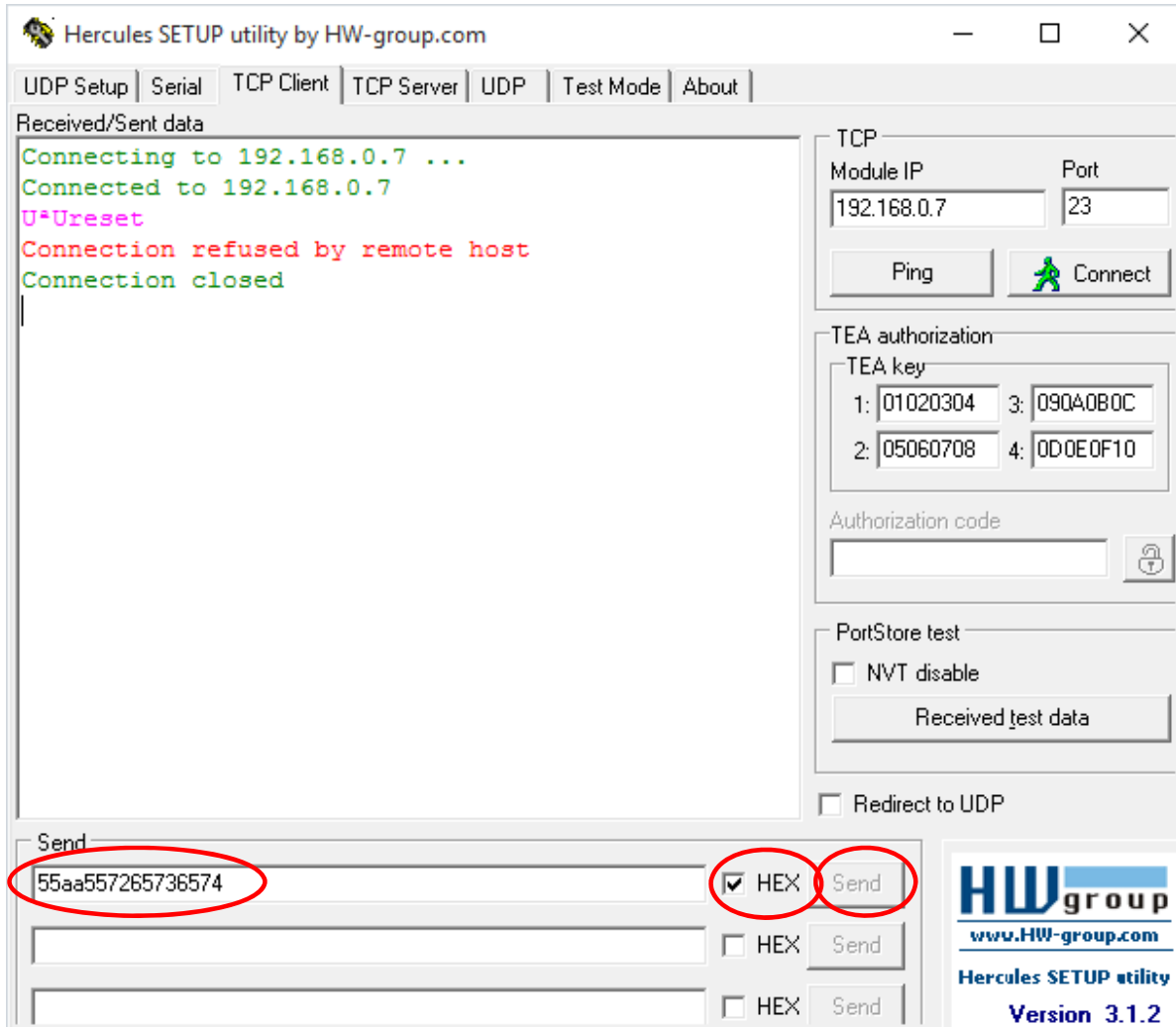
55aa557265736574

The command must be sent in HEX format.

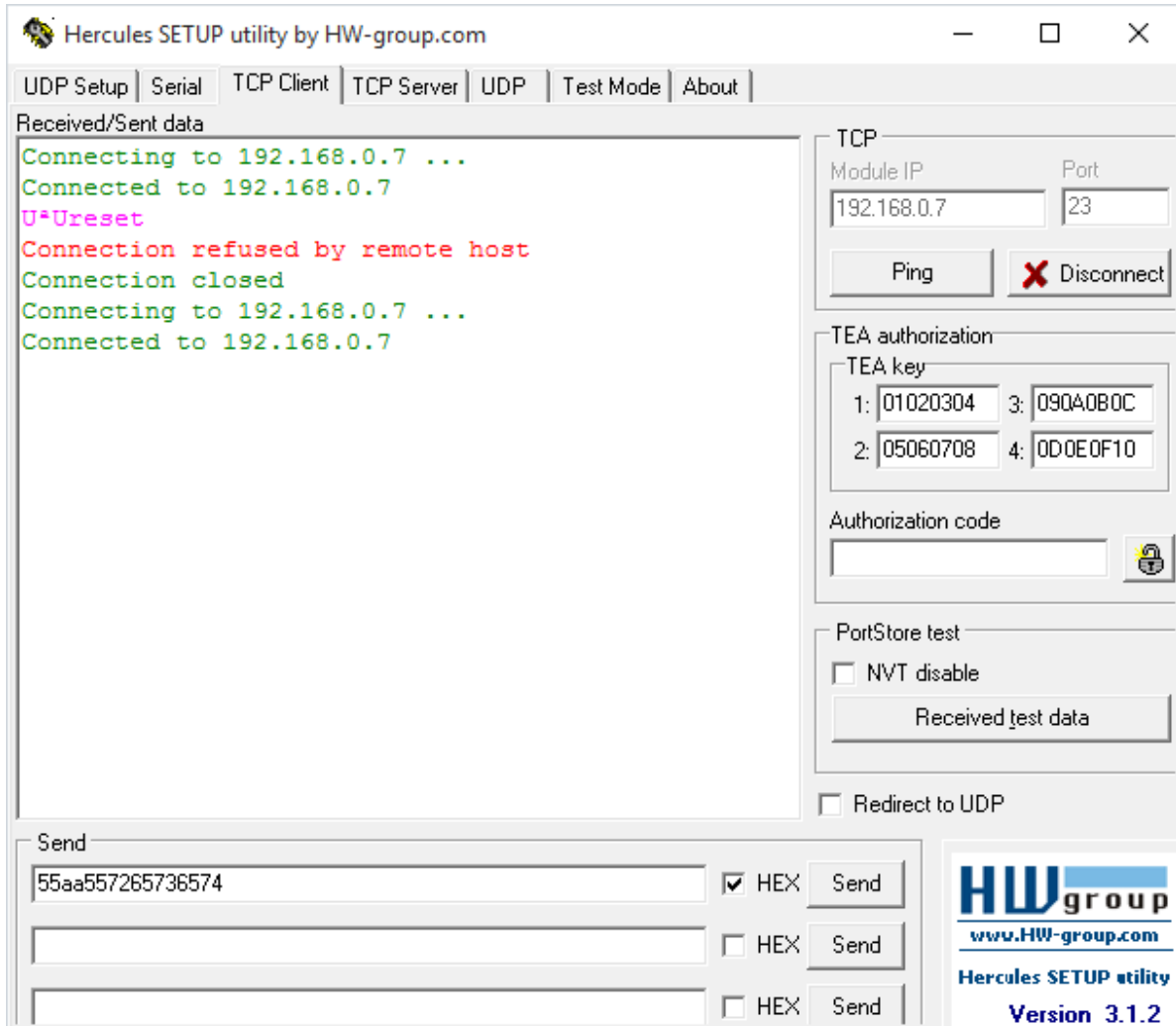
As an example we connect to the USC5XX over TCP using the terminal utility called "Hercules" (downloadable from USCONVERTERS.COM):



We enter the “55aa557265736574” command, check the “HEX” box and click “Send”. The USC5XX will close the connection and reboot within a few seconds:



Once the USC5XX has rebooted we can connect again:



How to firmware upgrade the USC5XX

NOTICE: We strongly recommend that the firmware is NOT updated unless you experience specific problems. Always contact us before attempting to upgrade.

To upgrade the USC5XX's firmware you will need to use the Configuration utility.

If the configuration utility cannot find the USC5XX then disable ALL other network connections, including wireless and virtual connections.

The following is an example of upgrading part US2000B; the upgrade process is the same for the USC5xx however the firmware file is different.

Click Device(D) -> Firmware upgrade:

US2000B V2.1.2.238

Device(D) About(A)

Search List

Device IP	Device Name	MAC	Version
192.168.0.7	US2000B	D8 B0 4C 00 B9 40	3008

Search Device Compatible with E45

Open Device Device Reset Default Config

Base Save

UPNP Port: 6432 (?) Device Name: US2000B (?)
HTTP Port: 80 (?) User MAC: D8 B0 4C 00 B9 4 (?)
Device ID: 1 (?) IP Type: Static IP (?)
Device ID Type: 0 (?) Static IP: 192.168.0.7 (?)
User Name: admin (?) SubnetMask: 255.255.255.0 (?)
Password: admin (?) Gateway: 192.168.0.1 (?)

Hide Details Base Save

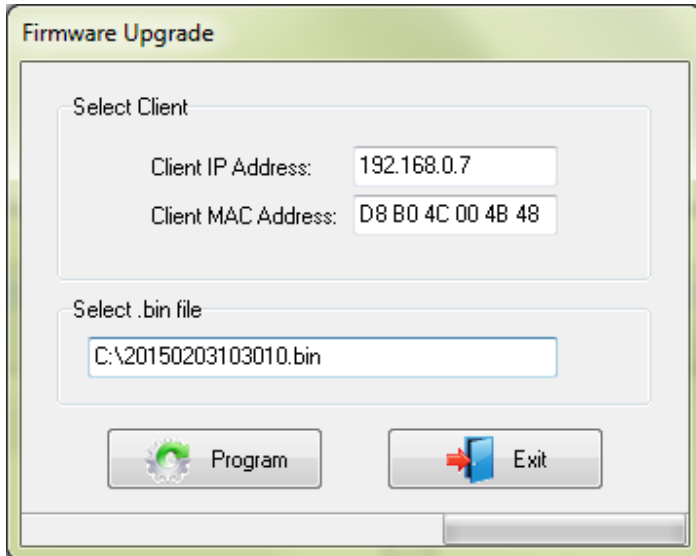
RS232 RS485

Baudrate: 115200 (?)
Parity/Data/Stop: NONE 8 1 (?)
FlowControl: RS485 (?)
Work Mode: TCP Server (?)
RemoteIP: 192.168.0.201 (?)
Remote Port: 23 (?)
Local Port: 23 (?)
TCP Server style: Transparent transmissio (?)
ModbusTCP: None (?)
PackTime: 0 ms (<256, 0 for (?)
PackLen: 0 byte (<1024, 0 for (?)
 Synchronize baudrate(RFC2217 similar) (?)

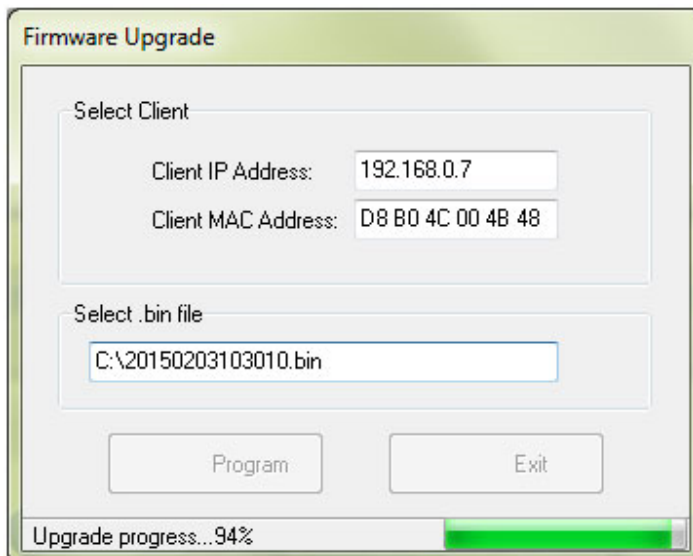
Save COM0

Data has been read. On-line Device NUM:1 Search Port:1901

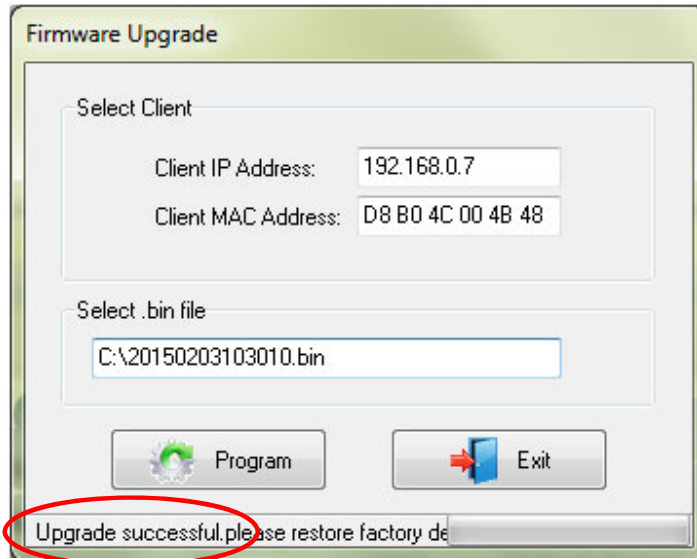
Select the path to where the firmware is located on your computer and click the “Program” button:



The upgrade process will start:



The upgrade will end with an “Upgrade successful” message if it was successful:



Troubleshooting / FAQ

When using the USC5XX with Modbus we recommend setting the connected devices to the following:

Ethernet side device needs to be set to Modbus TCP/IP protocol.

Serial side device should to be set to Modbus RTU protocol.