How to setup the BIT COMMANDER US2000B Serial to Ethernet converter

(based on Windows 10, 32/64-bit)

This Step-by-step guide explains how to get started using the Bit Commander US2000B Serial to Ethernet converter.

Powering the converter.

The US2000B converter can be powered by a 5 to 36VDC 1.5A (max) voltage by using a standard connector jack size of 5.5 x 2.1 x 11.5mm or through screw terminals.

When power is applied to the module the red “Power” LED should be solid ON and after the module has booted and is ready the green “Ready” LED should flash.

A standard 110VAC / 9VDC power adapter as shown below can be used to power the module.

Configuring the parameters.

There are two ways of configuring the parameters of the US2000B 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.

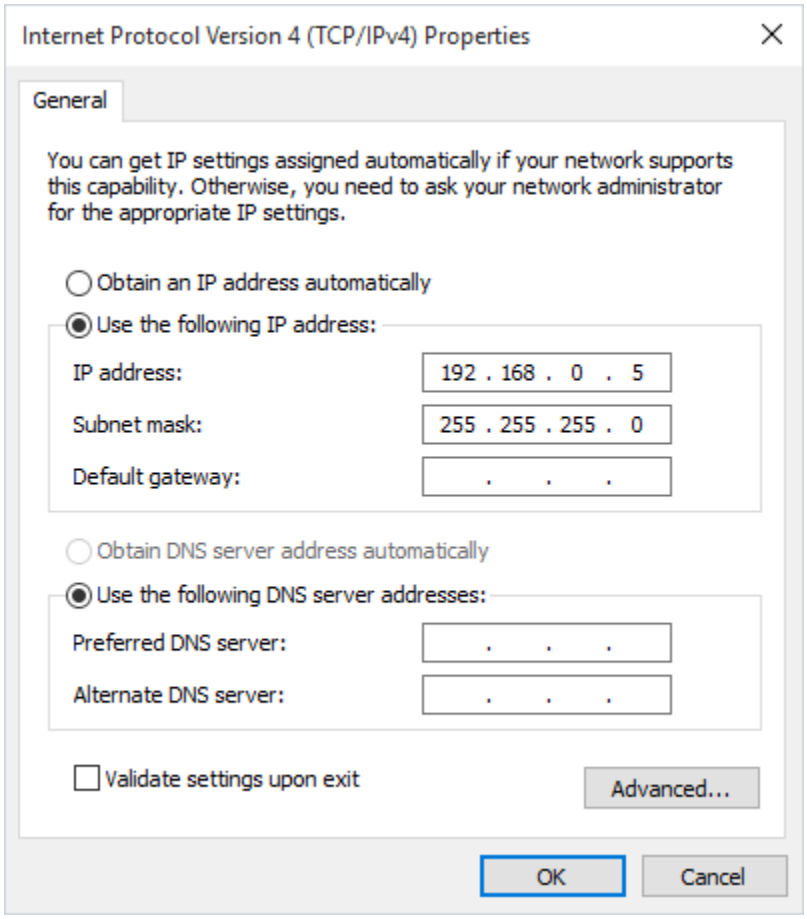
- By connecting the converter to your computer using a standard Ethernet cable and then use the configuration utility to configure the parameters. This will work locally only (Ethernet cable connected directly to your computer).

We will here describe these methods.

Accessing the parameters using a web browser.

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

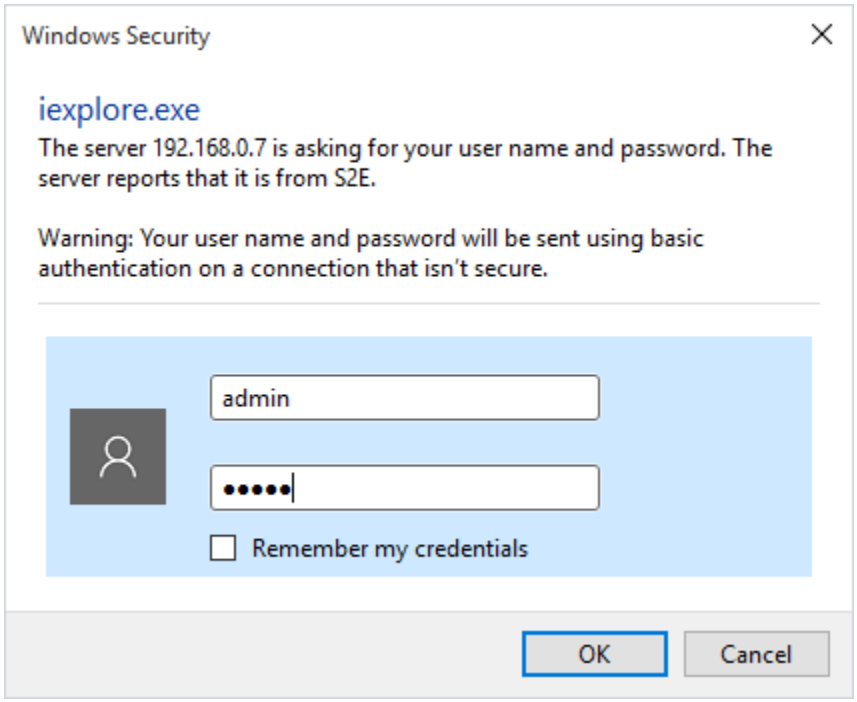
Make sure the network connection you connect the US2000B to is set to a static IP address in the same subnet as the US2000B such as 192.168.0.xxx as shown below.



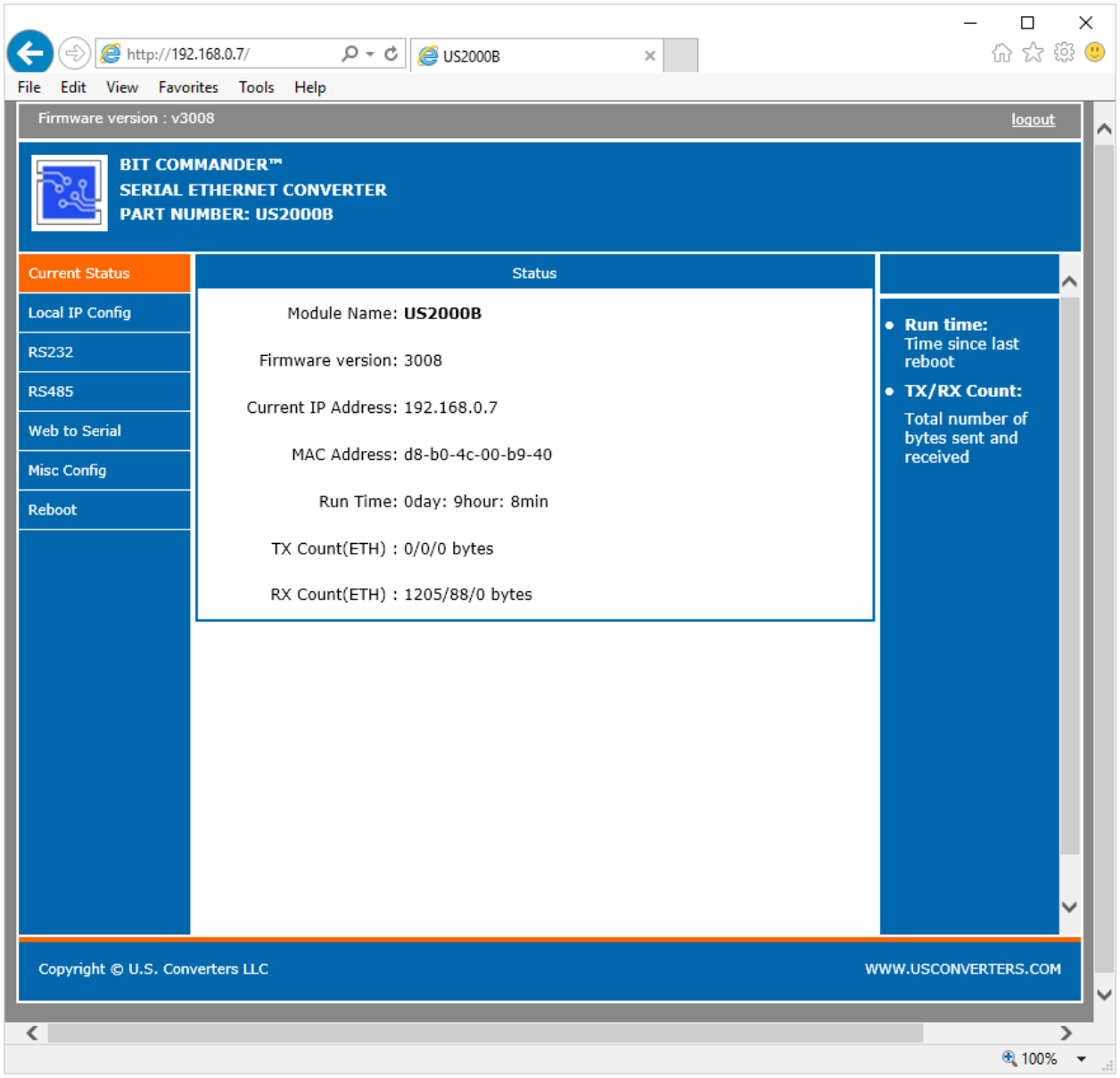
Open a web browser and enter the US2000B's IP address which is 192.168.0.7

You will now see the login screen.

User: **admin**
Password: **admin**



After the login screen the Status page should show up:



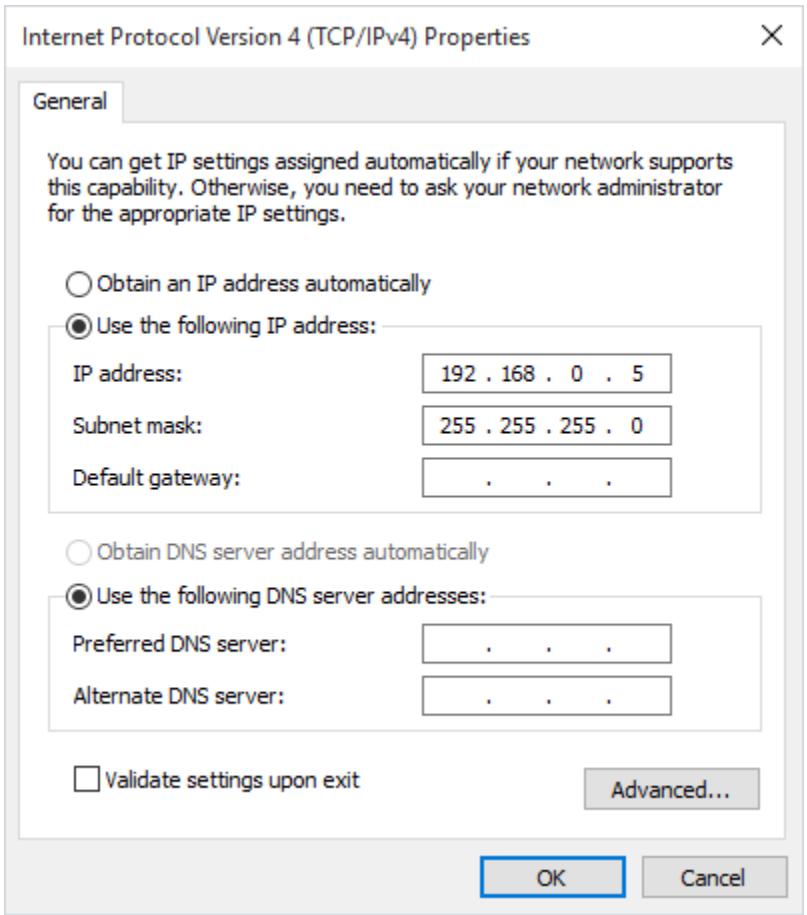
Accessing the parameters by using the configuration utility

The US2000B's parameters can be configured by using the configuration utility. This will only work locally (not over a network). We recommend using a web browser for configuring the parameters and only using this configuration utility for firmware updates.

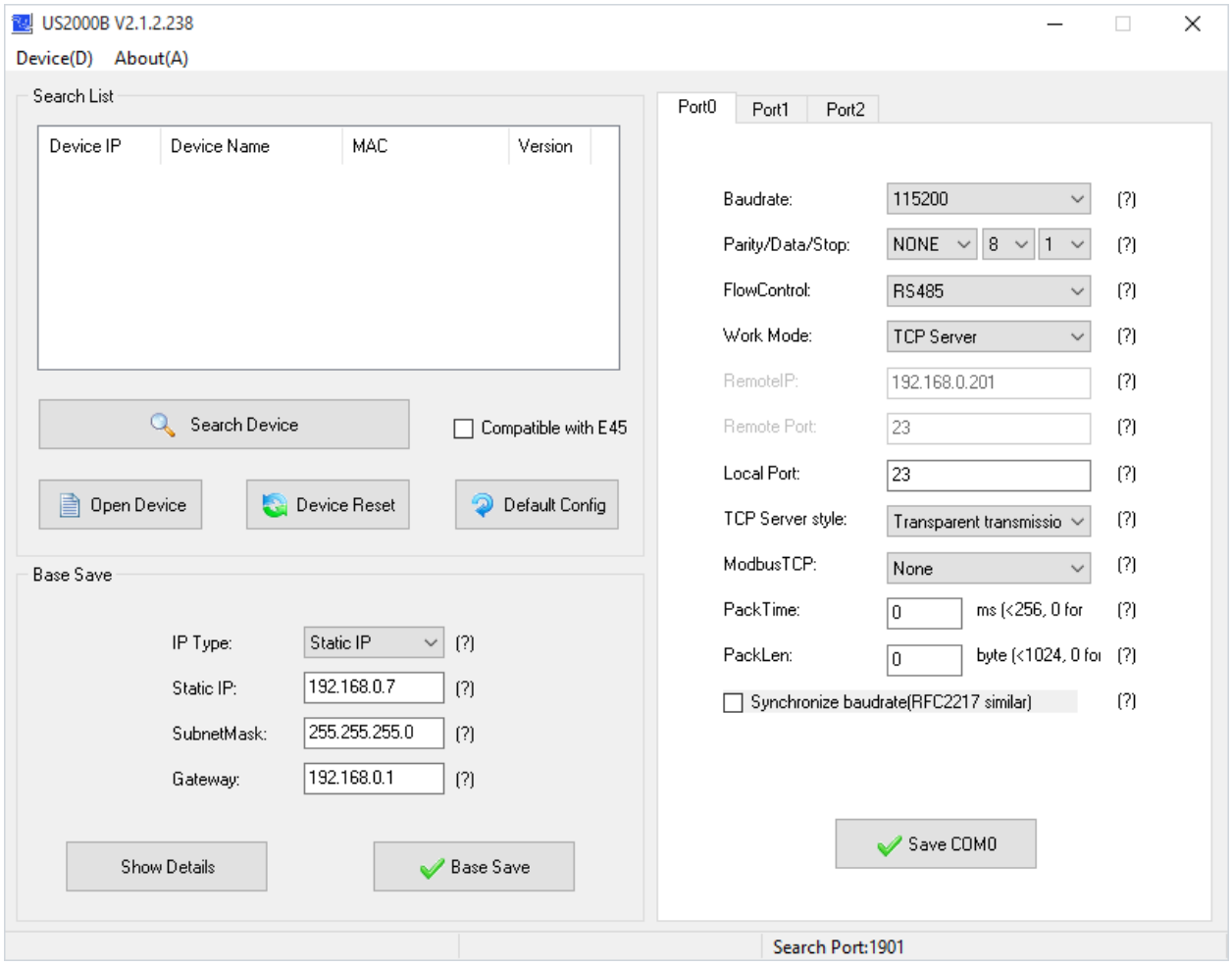
To use the configuration utility simply run the program called "US2000B Config.exe" and click the "Search" button.

If the configuration utility cannot find the US2000B when you click the "Search" button then try the following:

1. **Make sure the network connection you connect the US2000B to is set to a static IP address in the same subnet as the US2000B such as 192.168.0.xxx as shown below.**
2. **Disable ALL other wired and wireless network connections (including Internet connection) for the configuration software to be able to fine the US2000B on the network.**
3. **Disable antivirus and firewall software.**



Configuration main screen:

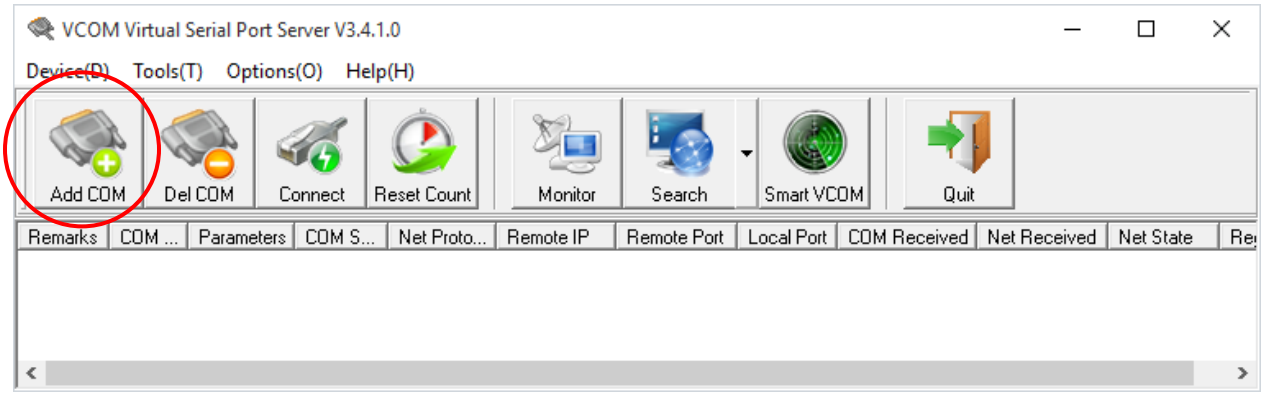


How to create a virtual COM port

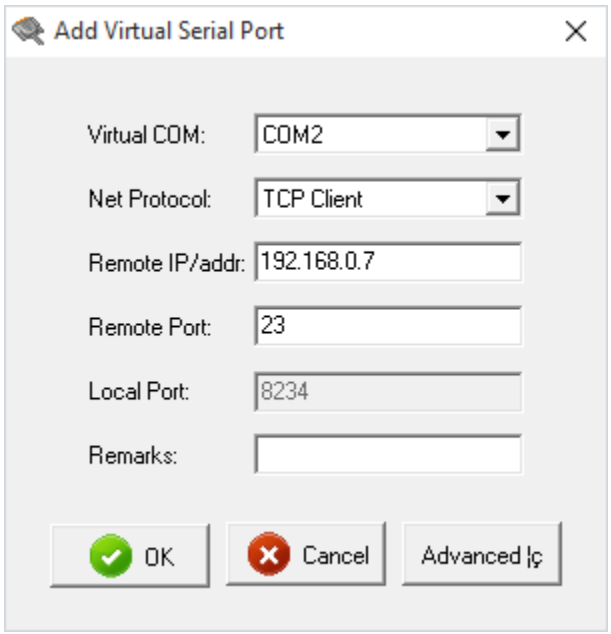
This converter has two serial ports, one RS232 port and one RS485 port, both ports can be used as individual COM ports and transfer two separate data streams at the same time.

To create a virtual COM port for the US2000B 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 US2000B 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.

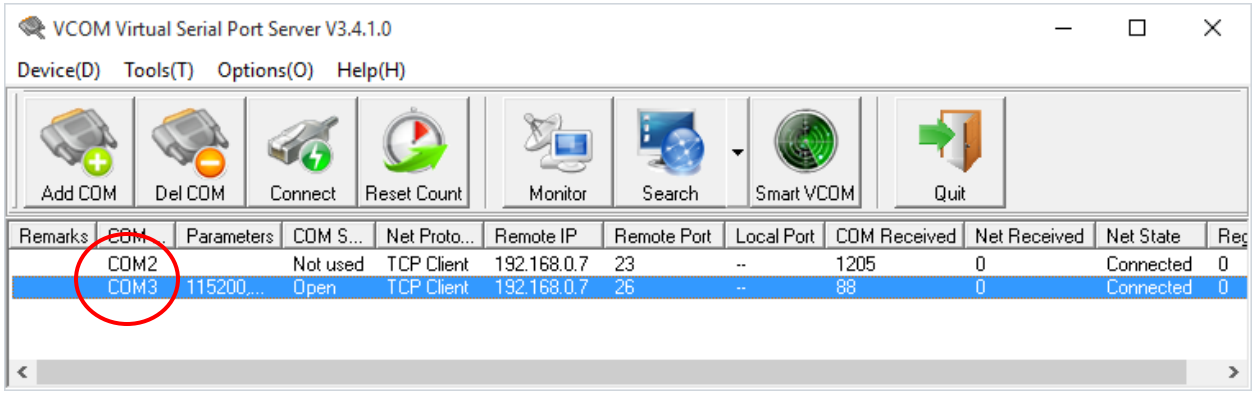
Start the VCOM software and click the "Add COM" button:



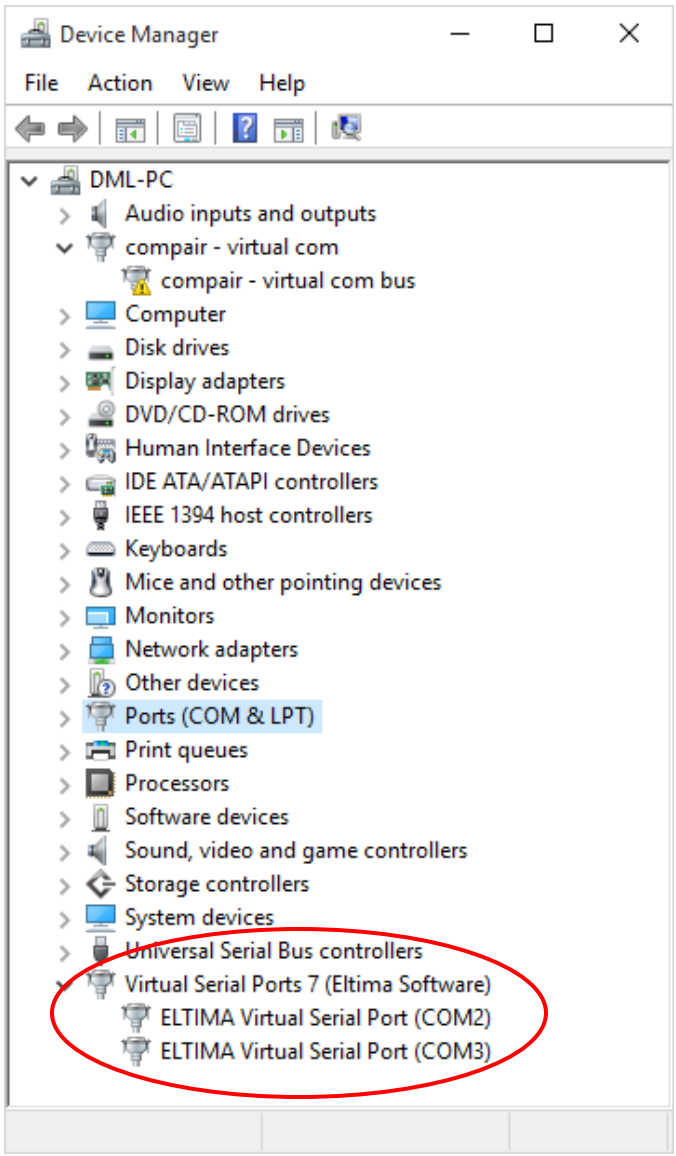
Select the COM port number you want to create and enter the IP address and LAN port number (COM port 0 = LAN port 23, COM port 1 = LAN port 26) as shown below:



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.

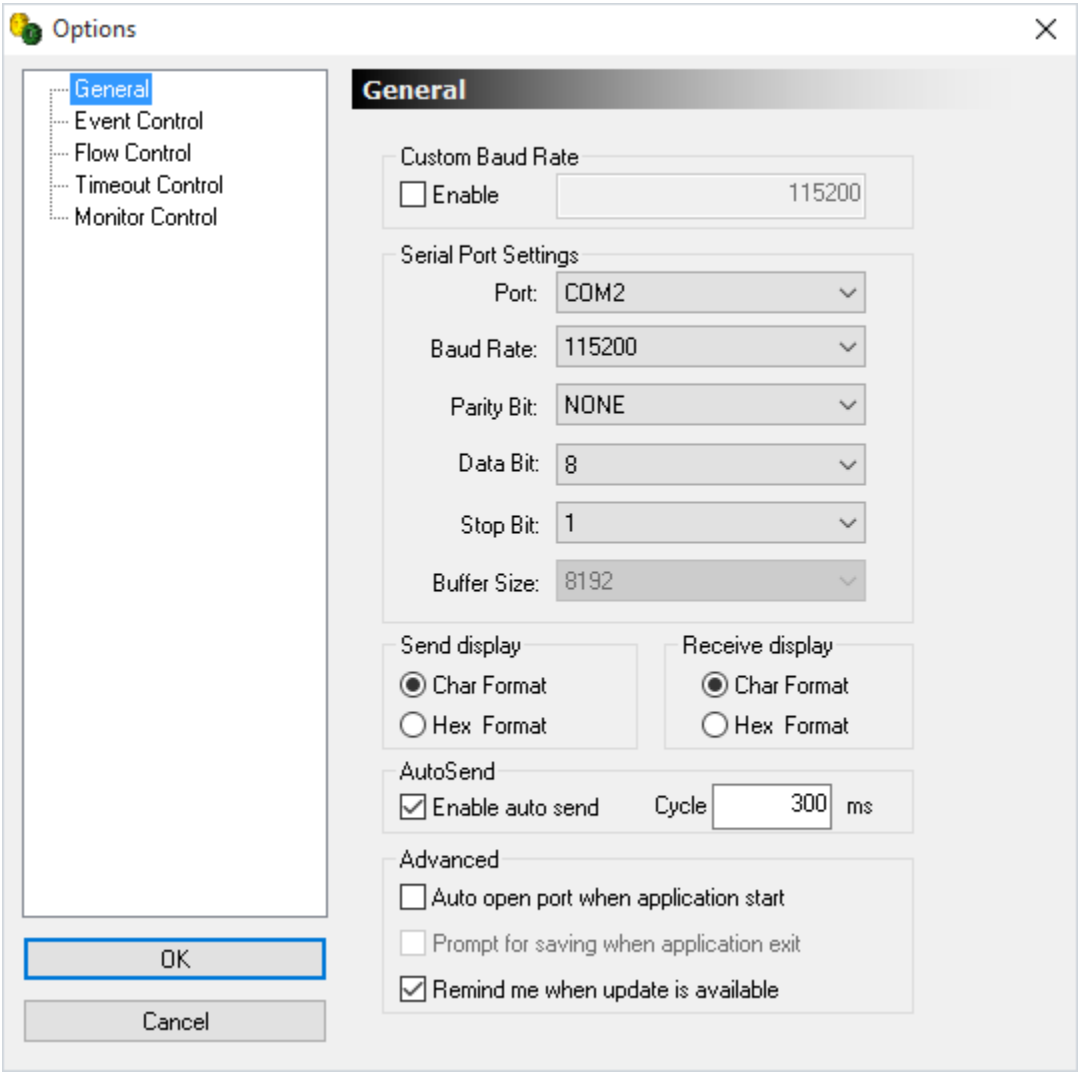
To verify if the US2000B converter is working properly and the port(s) has been successfully created you can make a loop-back test.

First carefully use a paper clip or similar to short the RX (pin 2) and TX (pin 3) pins in the US2000B's DB9 port. If you have a serial cable or a screw terminal it is easier to short the pins.

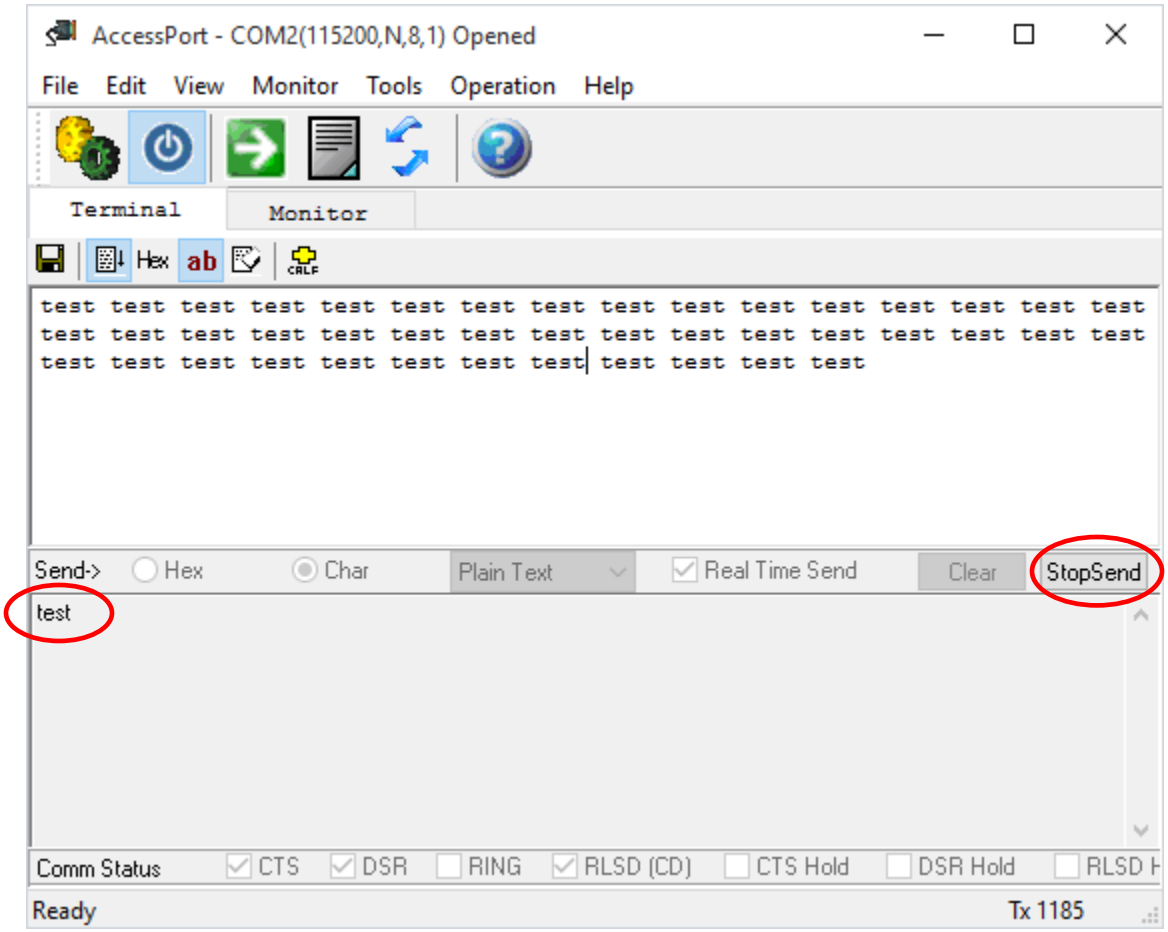
Connect the converter to your computer with an Ethernet cable and create a virtual COM port as described above.

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.

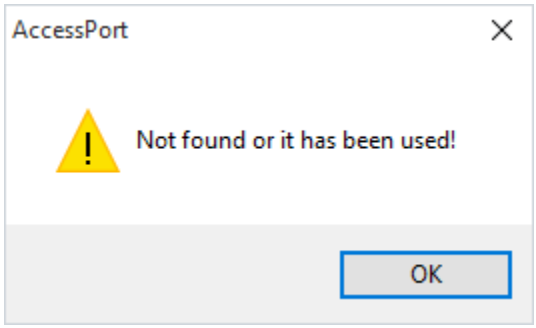


Enter a text string in the lower (send) window in AccessPort and click the AutoSend button. The characters should now be sent via virtual COM 2, out through the network cable to the US2000B module, out on the TX pin, back into the RX pin, back through the Ethernet cable, back into virtual COM port 2 and should appear in AccessPorts upper (receive) window.

If you remove the jumper at the end of the serial cable connected to the US2000B the data flow should stop.

Making this loopback test will confirm that the COM port has been successfully created and that the US2000B 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 US2000B remotely over TCP

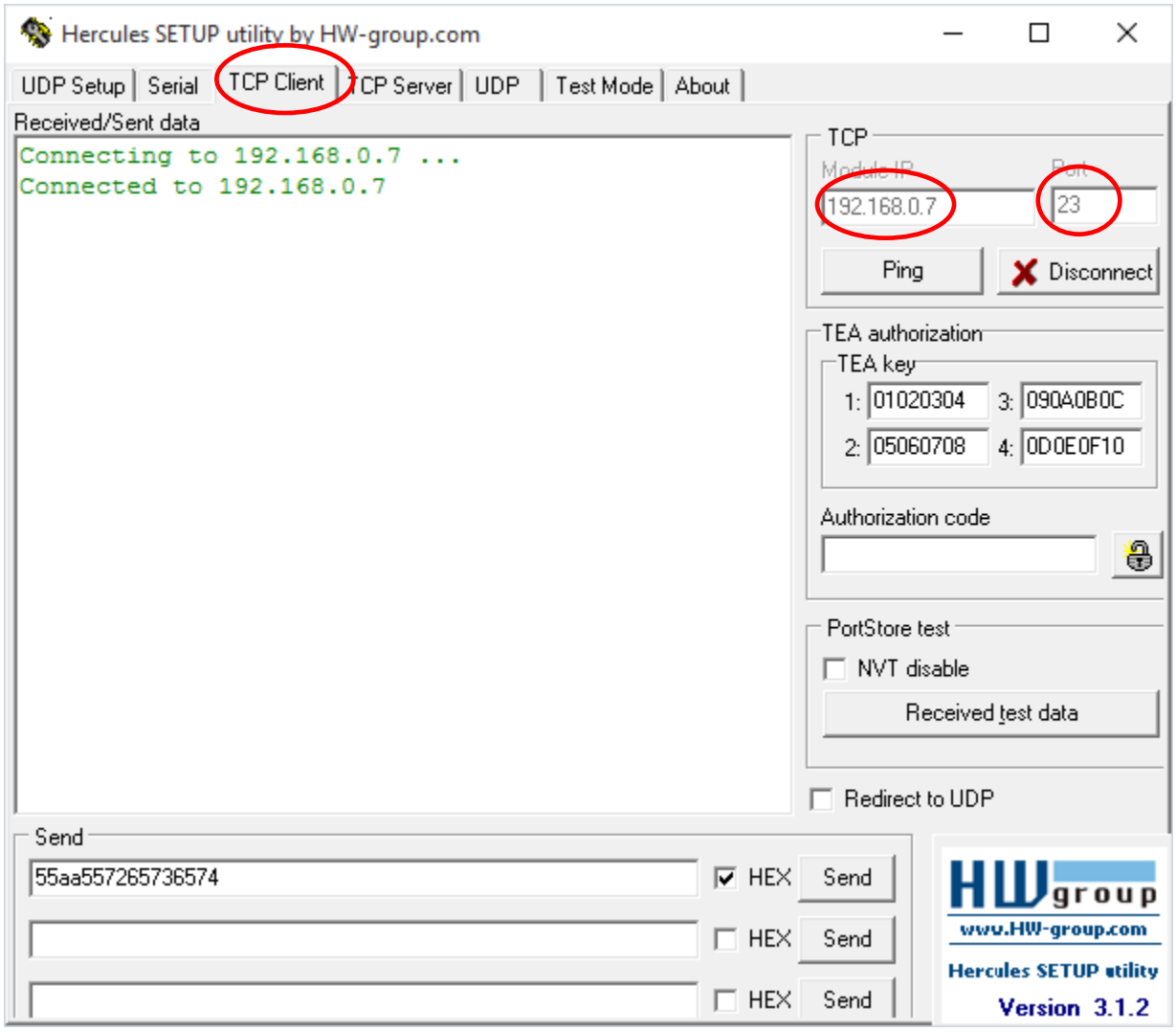
Notice: The US2000B must have firmware version 20150203103010 or higher in order to reboot remotely (firmware can be downloaded from USCONVERTERS.COM).

The US2000B can be rebooted remotely over TCP by sending the reboot command:

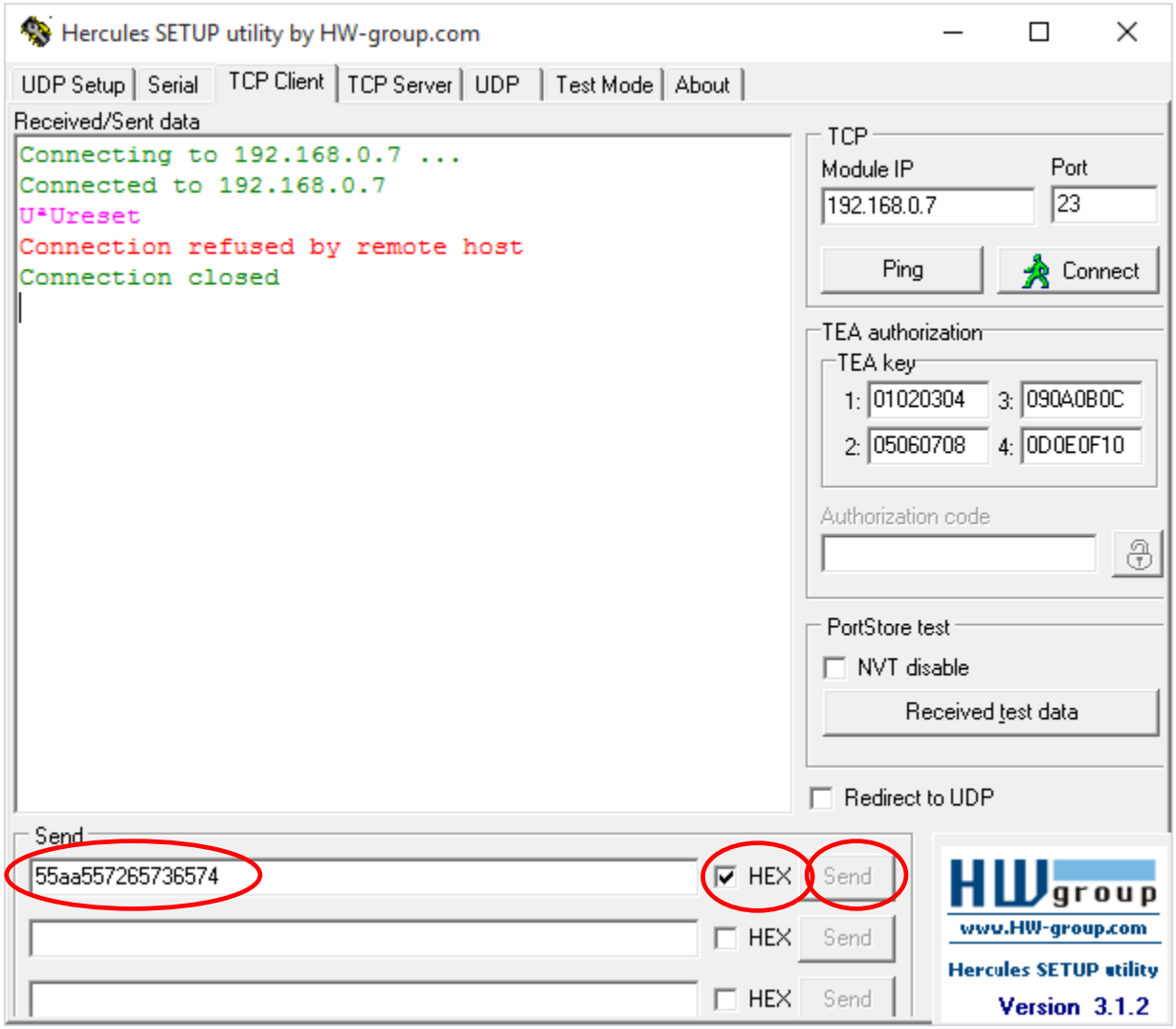
55aa557265736574

The command must be sent in HEX format.

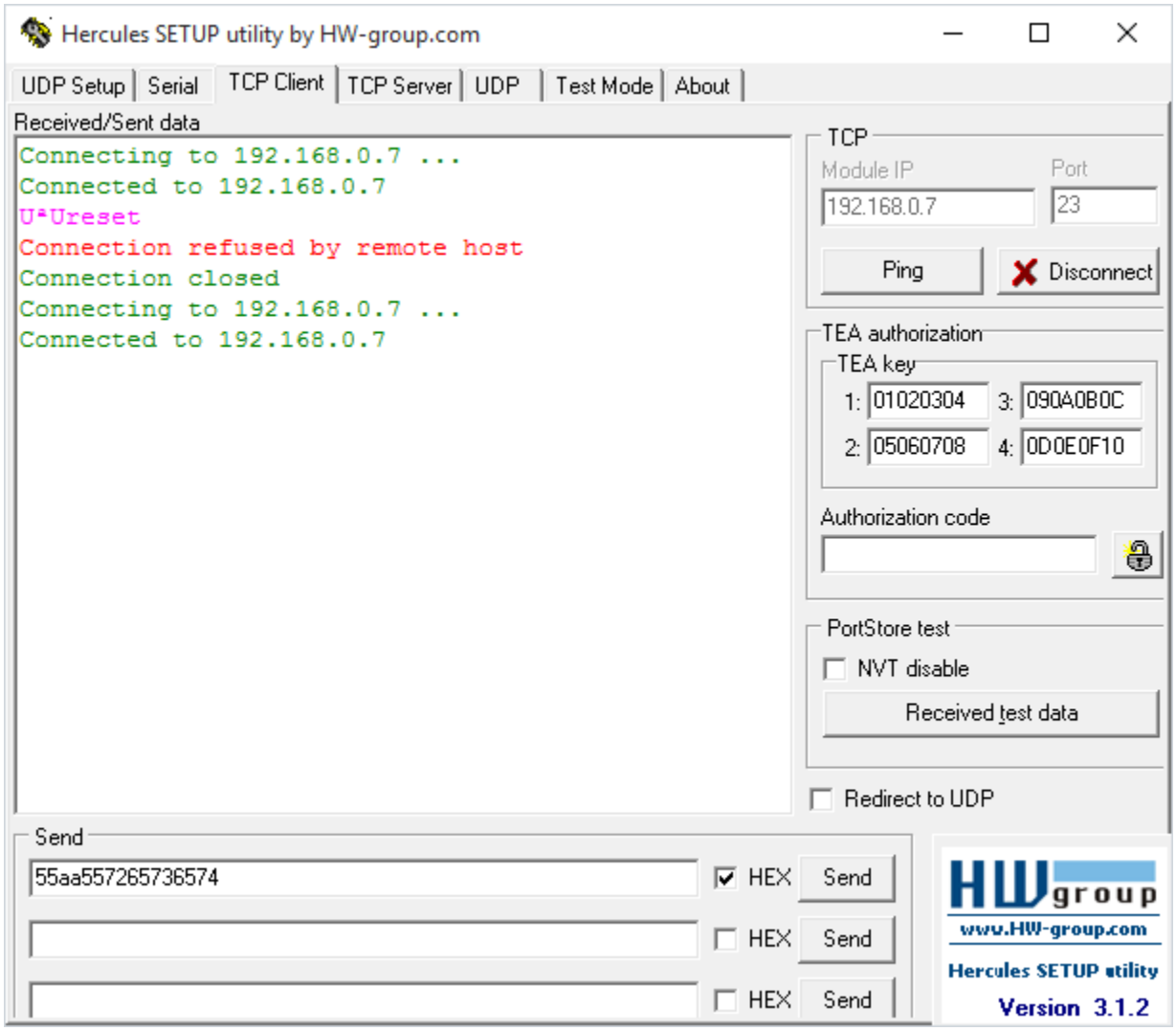
As an example we connect to the US2000B over TCP using the terminal utility called “Hercules” (downloadable from USCONVERTERS.COM):



We enter the “55aa557265736574” command, check the “HEX” box and click “Send”. The US2000B will close the connection and reboot within a few seconds:



Once the US2000B has rebooted we can connect again:

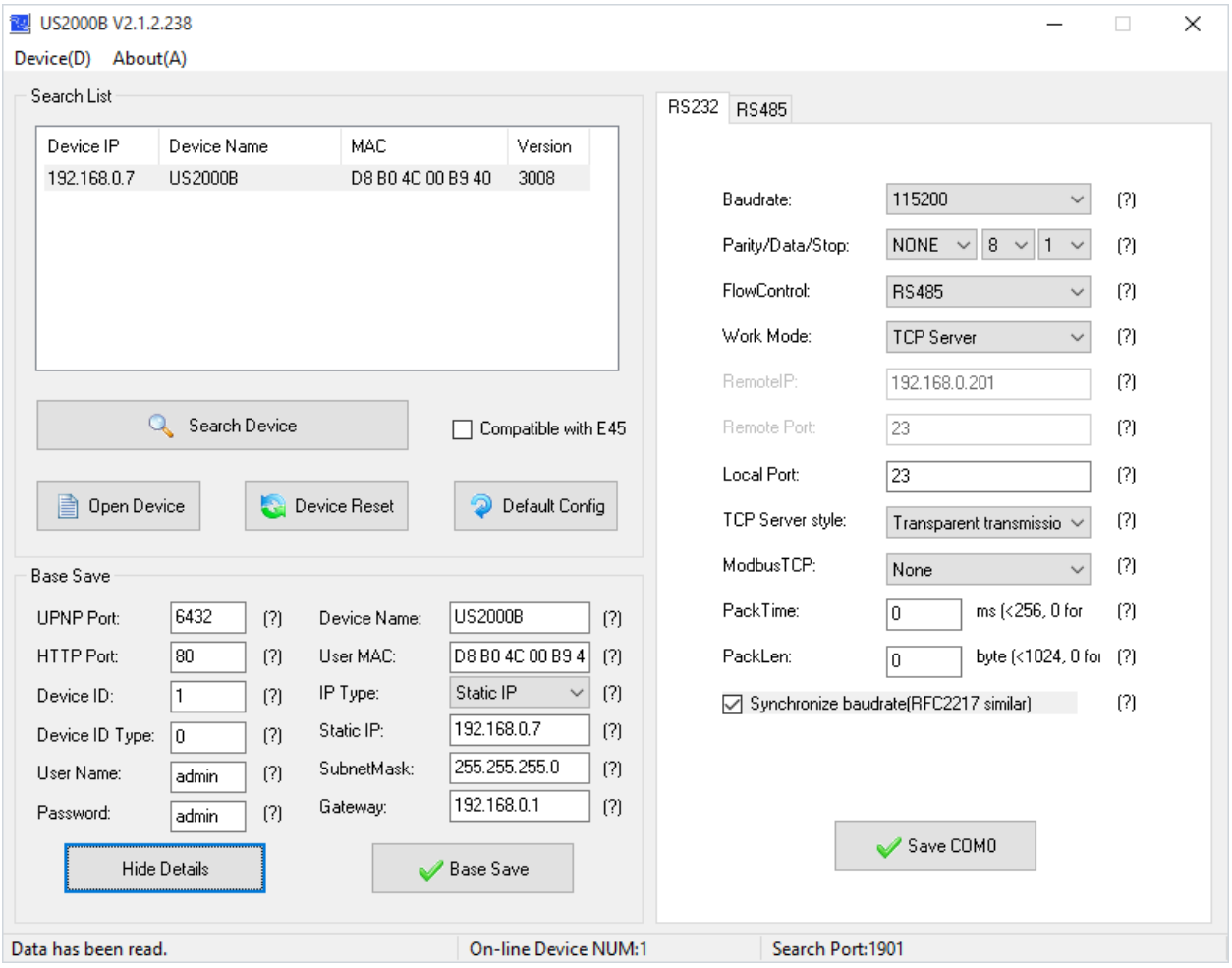


How to firmware upgrade the US2000B

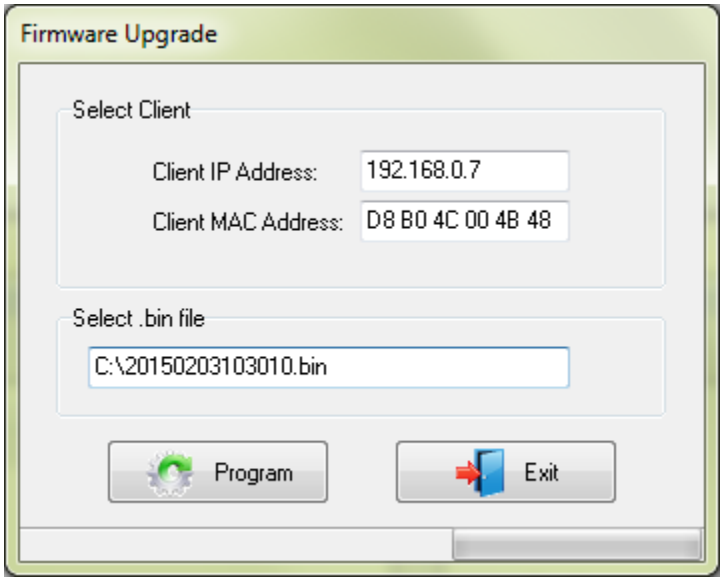
To upgrade the US2000B's firmware you will need to use the Configuration utility.

If the configuration utility cannot find the US2000B then disable ALL other network connections, including wireless and virtual connections.

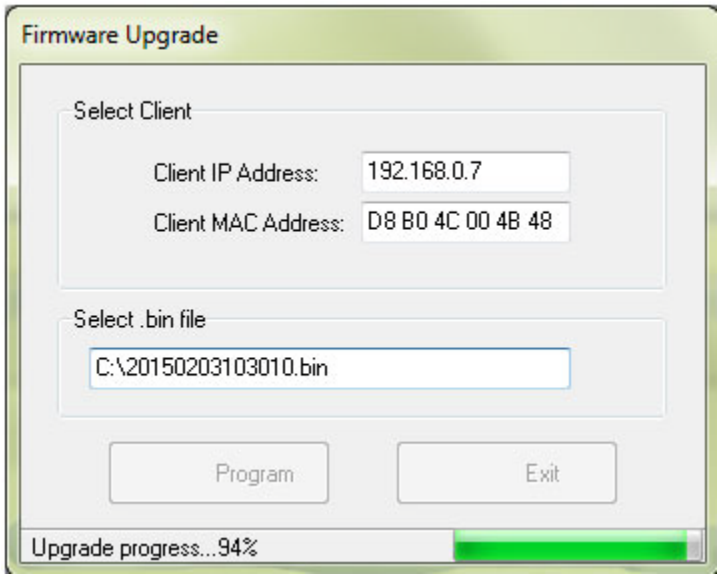
Click Device(D) -> Firmware upgrade:



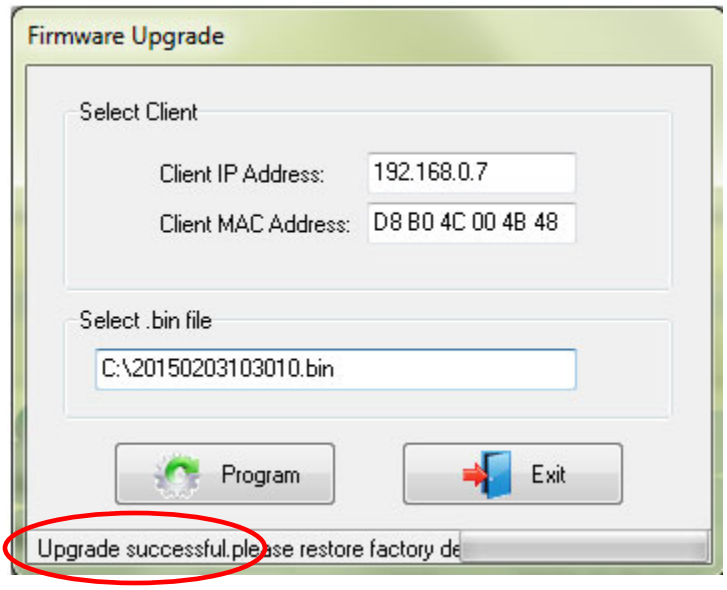
Select the path to where the firmware is located on your computer and click the “Program” button:



The upgrade process will start:



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



Troubleshooting / FAQ

When using the US2000B 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.