

NinoTNC Windows XP SP3-Windows 10 Manual Installation Procedure

Author: Stewart Todd Morgan, AL0I
Last Updated: 28 December 2020

Purpose: This document describes how to manually install the necessary Microchip driver to permit Microsoft Windows XP Service Pack 3 and later versions of Windows to recognize the TARPn NinoTNC when it is connected to a USB port.

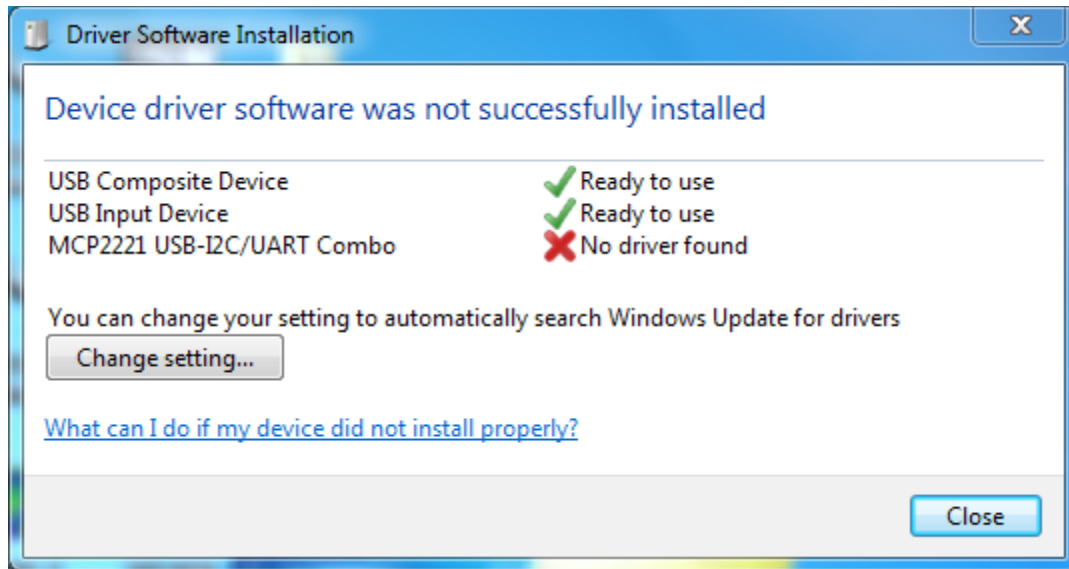
General Notes: The following hardware and software were used to document the procedure:

Microsoft Windows 7 Home Premium x64 Service Pack 1
Mozilla Firefox
TARPn NinoTNC N9600A3 r3 w/ Firmware Version 2.51
Microchip MCP2221A USB 2.0 to I²C/UART Protocol Converter with GPIO
Tera Term Version 4.105
PuTTY Version 0.74

Because the NinoTNC is an evolving device and because Microsoft Windows versions change over time, the descriptions below may vary somewhat from the user's experience depending on his/her NinoTNC version and specific Windows host machine version. Users who employ a different Internet browser will also see differences.

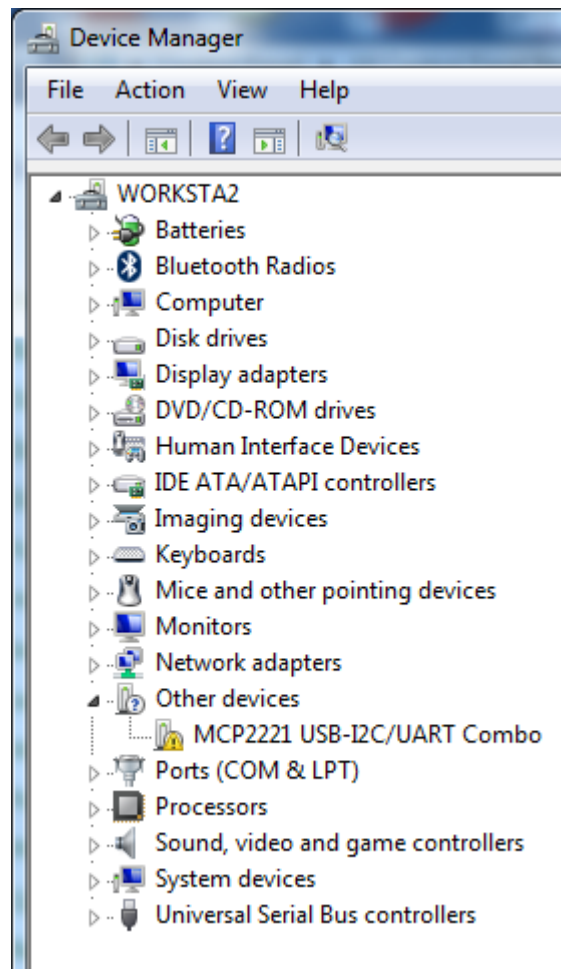
The terminal programs used in this document (Tera Term and PuTTY) are NOT KISS TNC-ready. However, the programs are general-purpose terminal software that CAN be used to view USB output from the NinoTNC when the SW2 TEST TX switch is activated, and this makes them useful in Test #4 of the USB Driver on the following page: <http://tarpn.net/t/nino-tnc/n9600a/n9600a3/n9600a3-assembly.html> .

Connect the NinoTNC to a computer running Windows XP Service Pack 3 or later (Windows Vista, Windows 7, Windows 8, Windows 8.1, Windows 10) via an appropriate USB cable. As Windows attempts to find and install drivers for the NinoTNC, a tab will likely appear to the left of the System Tray in the lower right corner of the screen. If you click this installation details tab, you will see a window with contents similar to the following image:



Note that while drivers for a "USB Composite Device" and "USB Input Device" were successfully installed, no device driver was installed for the "MCP2221 USB-I2C/UART Combo" ("No driver found").

If you start Device Manager, you will see a yellow exclamation mark by "MCP2221 USB-I2C/UART Combo" in the "Other devices" section.



Go to the following Microchip page in order to get the MCP2221A Windows driver:
<https://www.microchip.com/wwwproducts/en/MCP2221A> .



The screenshot shows a web browser window with the address bar displaying <https://www.microchip.com/wwwproducts/en/MCP2221A>. The browser's address bar also shows the page title "MCP2221A - USB - USB Bridge". The Microchip website header includes the Microchip logo and navigation links: Products, Solutions, Tools and Software, Support, and Education. The main content area features a large image of the MCP2221A chip, which is a black 8-pin DIP package. To the left of the main image is a vertical stack of four smaller images showing the chip from different angles. To the right of the chip image, the product name "MCP2221A" is displayed in large red text, followed by the description "USB 2.0 to I²C/UART Bridge" in red. Below this, the status "Status: In Production" is shown. Two buttons are present: "View Datasheet" and "View". Under the heading "Features:", a bullet point states "Supports full-speed USB (12 MHz)".

MCP2221A

USB 2.0 to I²C/UART Bridge

Status: In Production

[View Datasheet](#) [View](#)

Features:

- Supports full-speed USB (12 MHz)

Scroll down and left-click the "Documents" tab.

The screenshot shows a web browser window with the address bar displaying `https://www.microchip.com/wwwproducts/en/MCP2221A`. The browser's menu bar includes File, Edit, View, History, Bookmarks, Tools, and Help. The page header features the Microchip logo and navigation links for Products, Solutions, Tools and Software, and Support. A secondary navigation bar contains tabs for Overview, Documents (which is highlighted), and Development Environment. The main content area is titled "Documents" in large red text. Below this title, there is a "Jump to:" section with a "Select type" dropdown menu and a "Contains" dropdown menu. The "Data Sheets" section is expanded, showing a link to "MCP2221A USB 2.0 to I2C UART Protocol Converter with GPIO". The "Software Libraries/Firmware" section is also visible but not expanded.

File Edit View History Bookmarks Tools Help

MCP2221A - USB - USB Bridge

https://www.microchip.com/wwwproducts/en/MCP2221A

Most Visited openSUSE Getting Started Mozilla Firefox

MICROCHIP Products Solutions Tools and Software Support

Overview Documents Development Environment

Documents

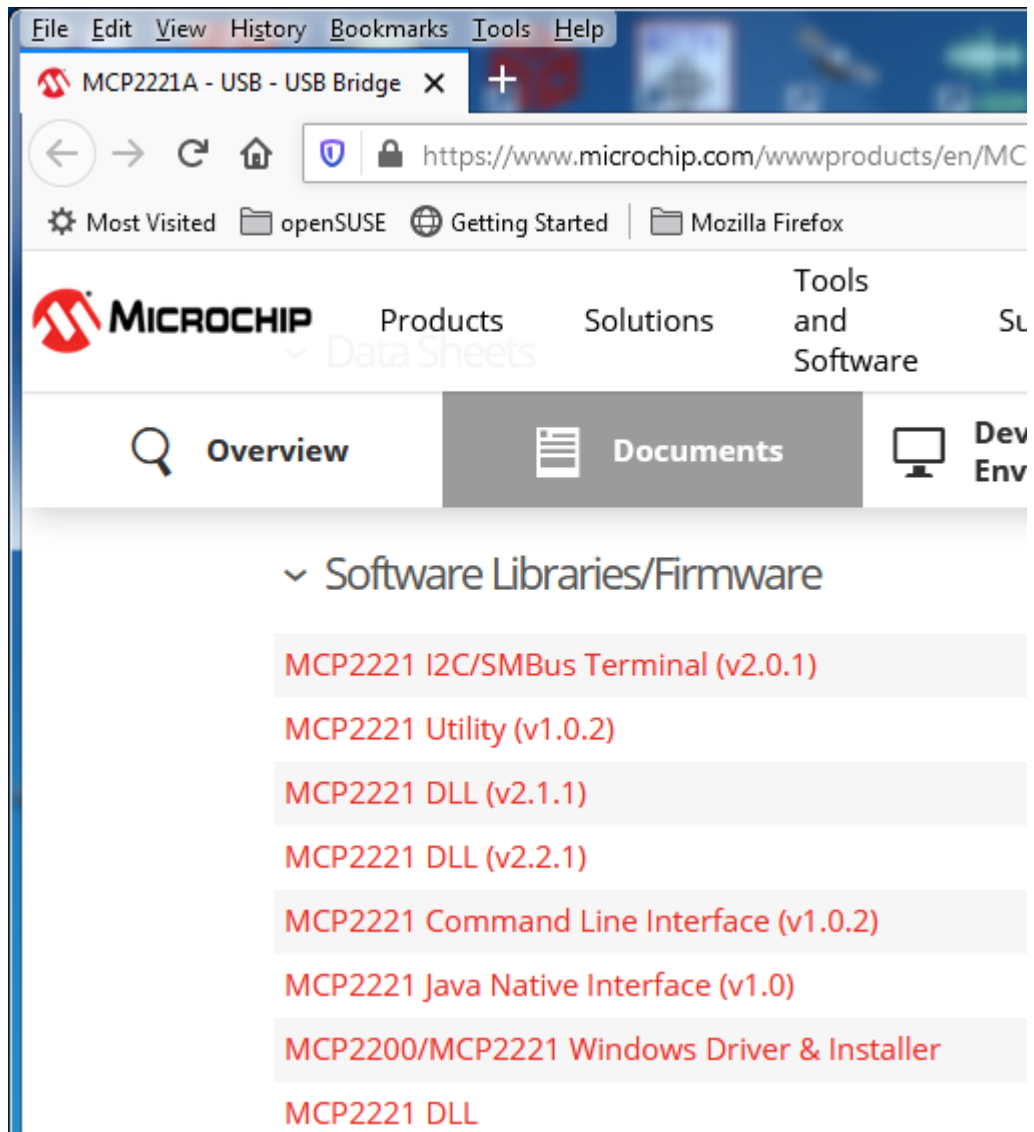
Jump to: Select type Contains

✓ Data Sheets

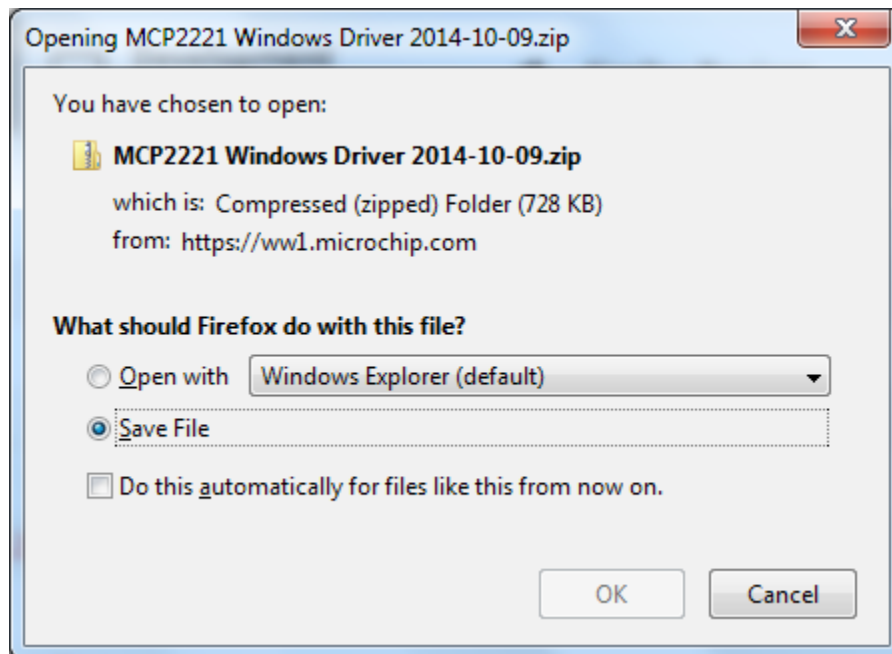
MCP2221A USB 2.0 to I2C UART Protocol Converter with GPIO

✓ Software Libraries/Firmware

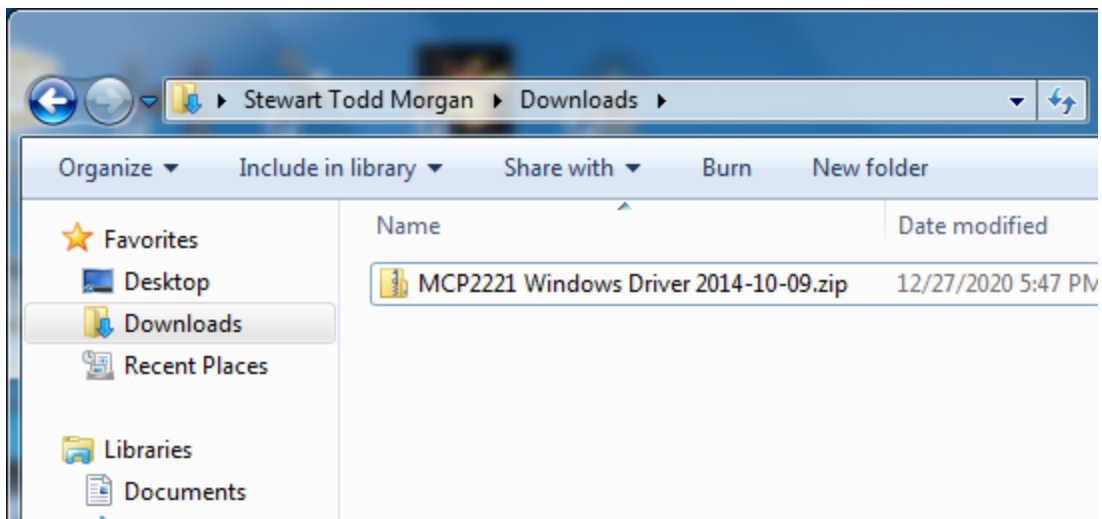
In the "Software Libraries/Firmware" section, left-click the red "MCP2200/MCP2221 Windows Driver & Installer" link to download the Windows driver.



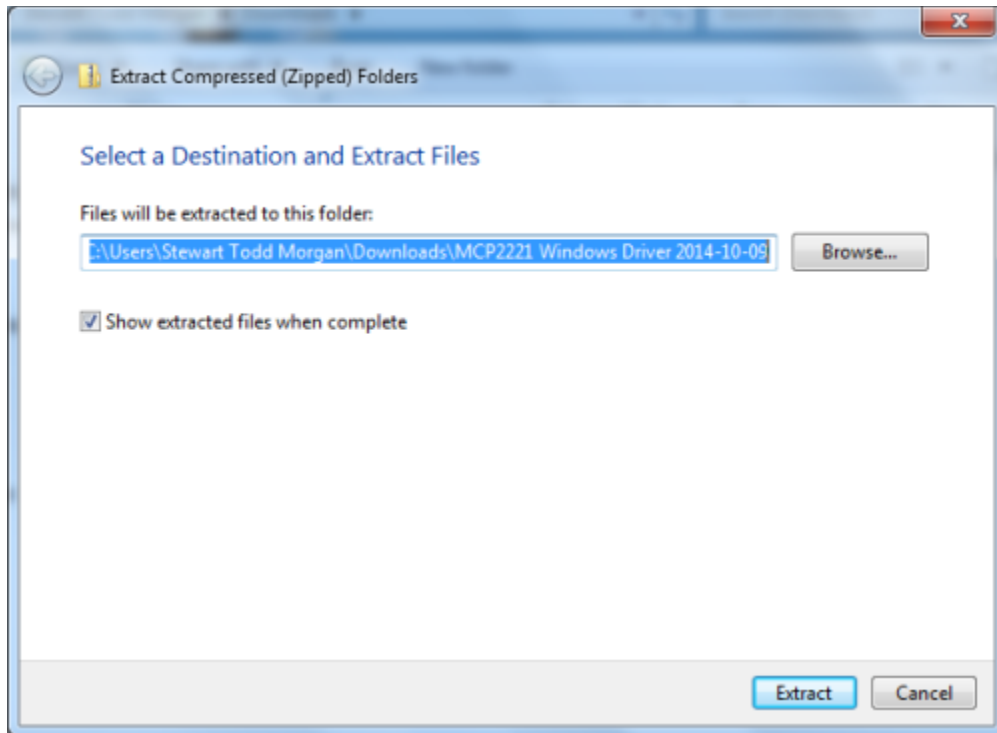
Save the "MCP2221 Windows Driver 2014-10-09.zip" file and note the location.



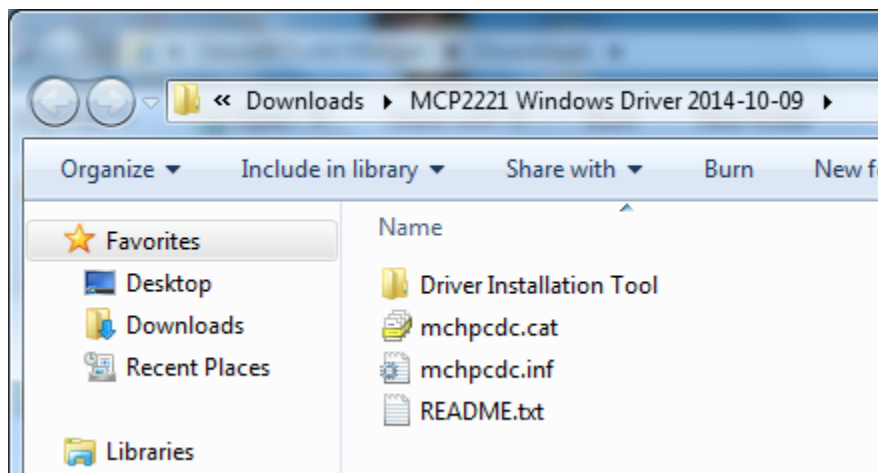
Go to the folder where you saved the file and decompress it by right-clicking the file and choosing "Extract All..."



In the "Extract Compressed (Zipped) Folders" window left-click the "Extract" button.

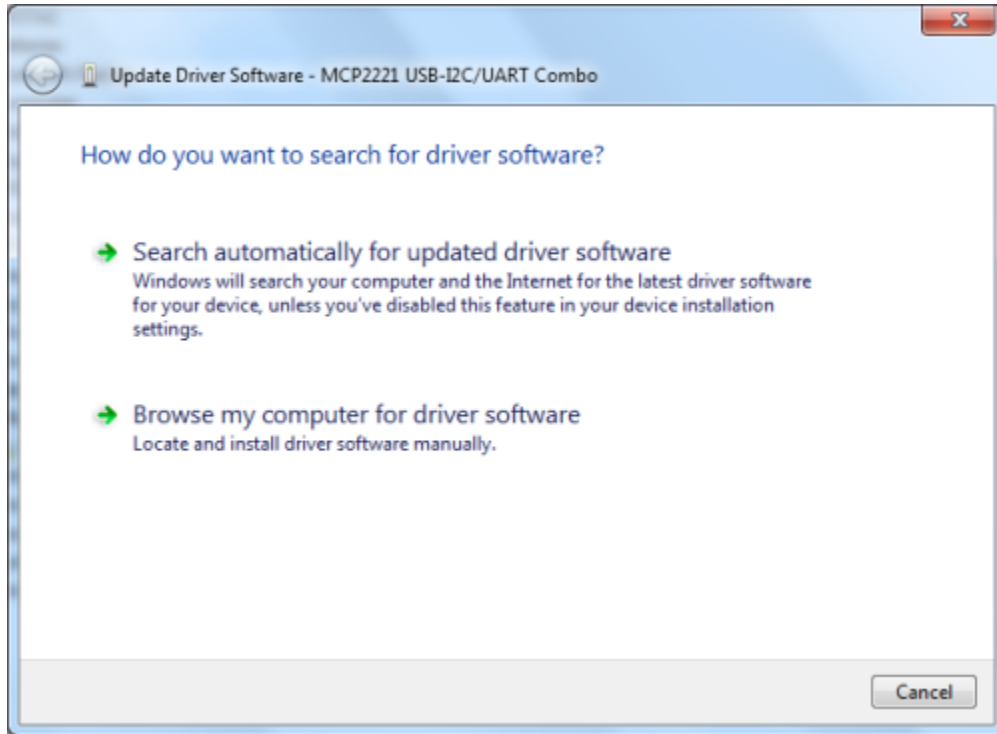


The decompressed driver should now be visible:

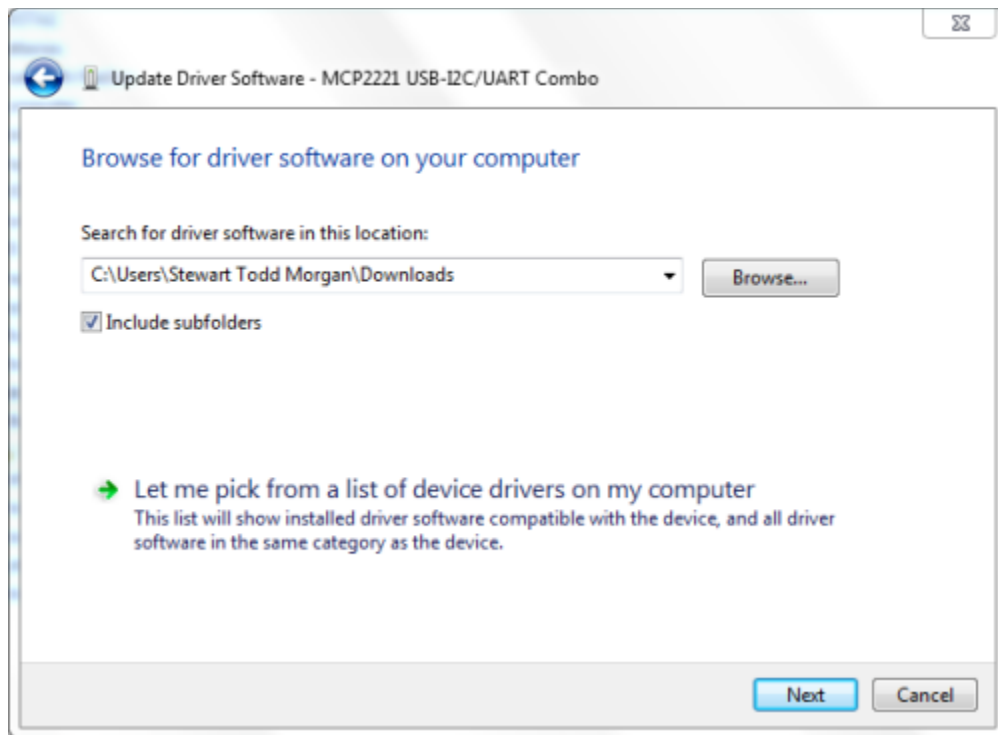


Start Device Manager and right-click the "MCP2221 USB-I2C/UART Combo" item and select "Update Driver Software...".

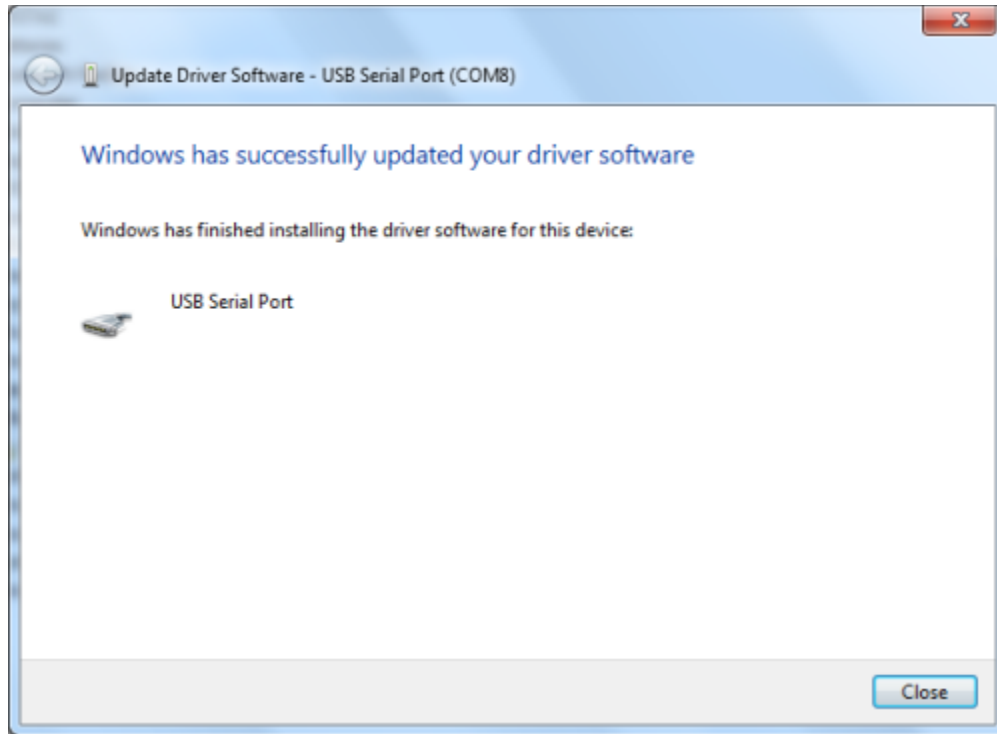
In the "Update Driver Software" window that appears, left-click the "Browse my computer for driver software" option.



Enter the path to the location where you decompressed the new Microchip driver or use the "Browse" button to navigate to the folder where the driver has been decompressed. Leave the "Include subfolders" option checked.

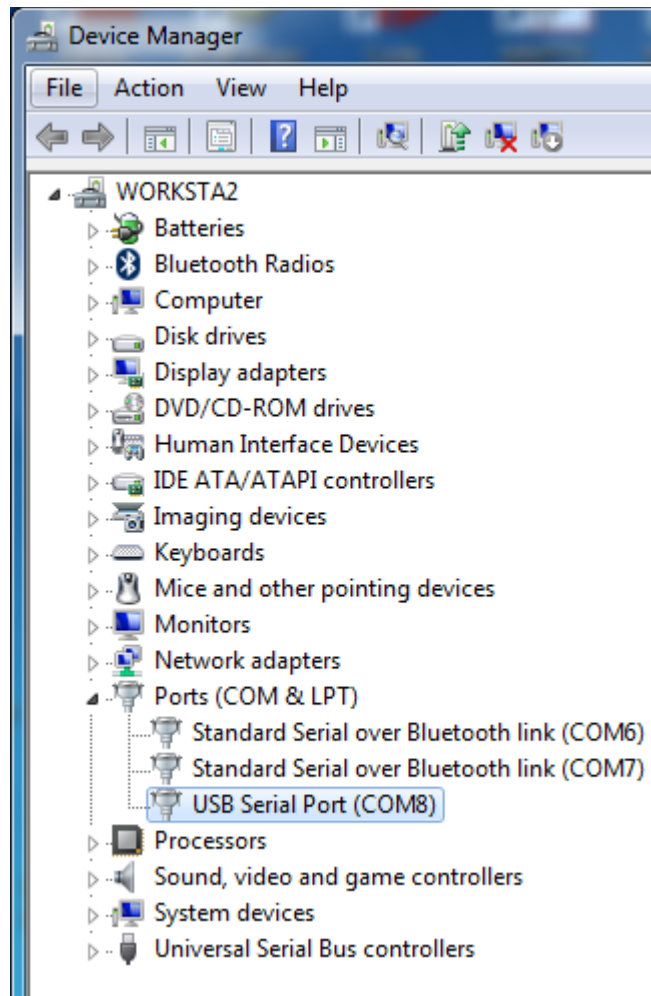


Left-click the "Next" button in the lower right corner of the window.

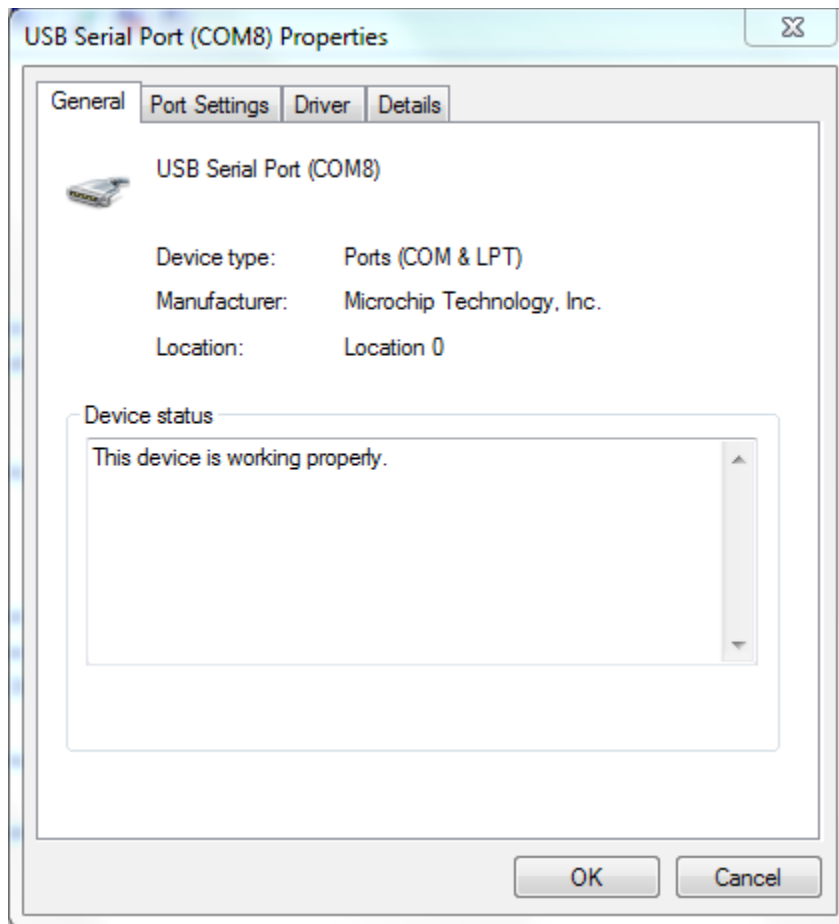


An "Installing Driver Software" window will briefly appear followed by a new window which should indicate the successful installation of the driver software. This window also indicates the COM port assigned to the new "USB Serial Port" device in the top line (COM8 in this case). Left-click the "Close" button.

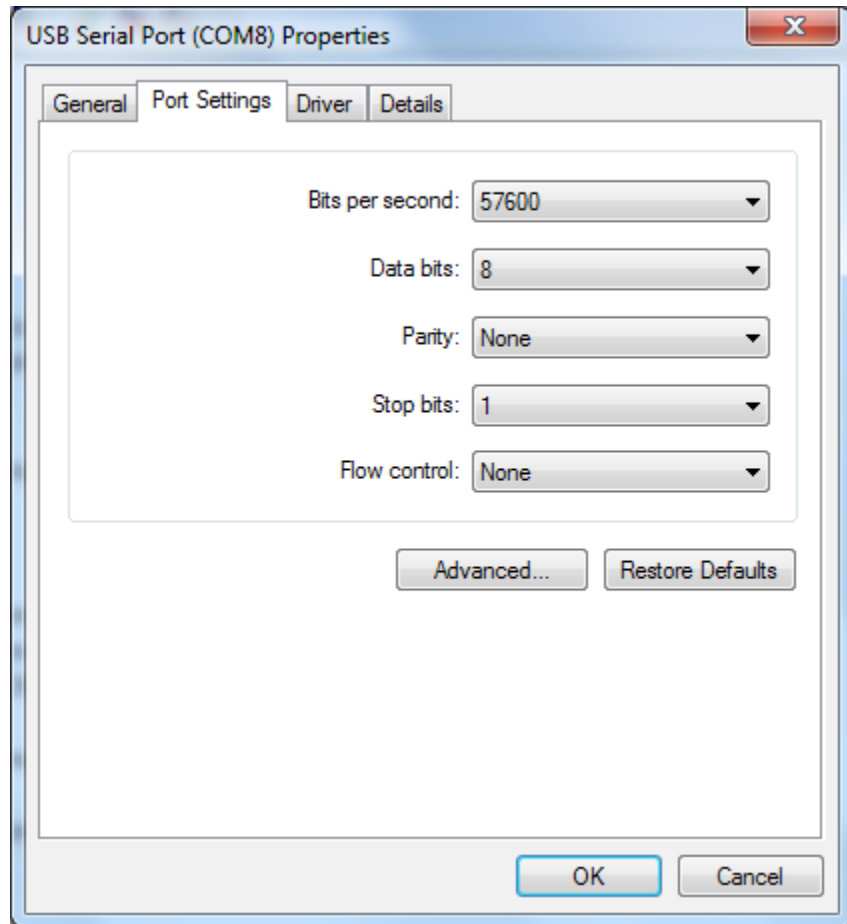
Open Device Manager, and you should see that the "MCP2221 USB-I2C/UART Combo" item has been replaced with "USB Serial Port (COM8)" in the "Ports (COM & LPT)" section (your COM port number is likely different from the one in these instructions).



Now that the Microchip driver has been installed, it is necessary to configure the serial port for communication with the NinoTNC. Right-click the "USB Serial Port (COMx)" entry and select "Properties". The "Properties" window will appear.

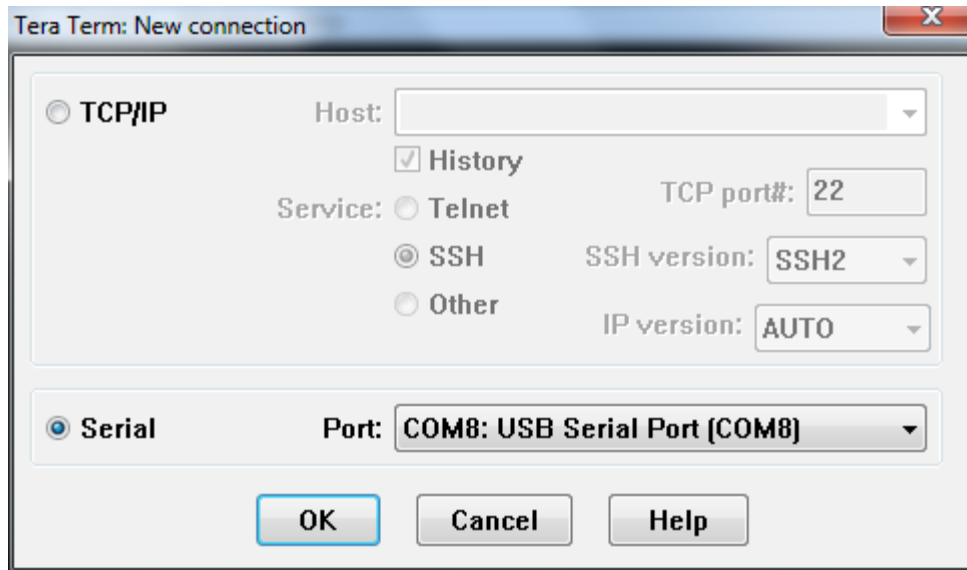


Left-click the "Port Settings" tab in order to adjust the values as indicated in the following image.

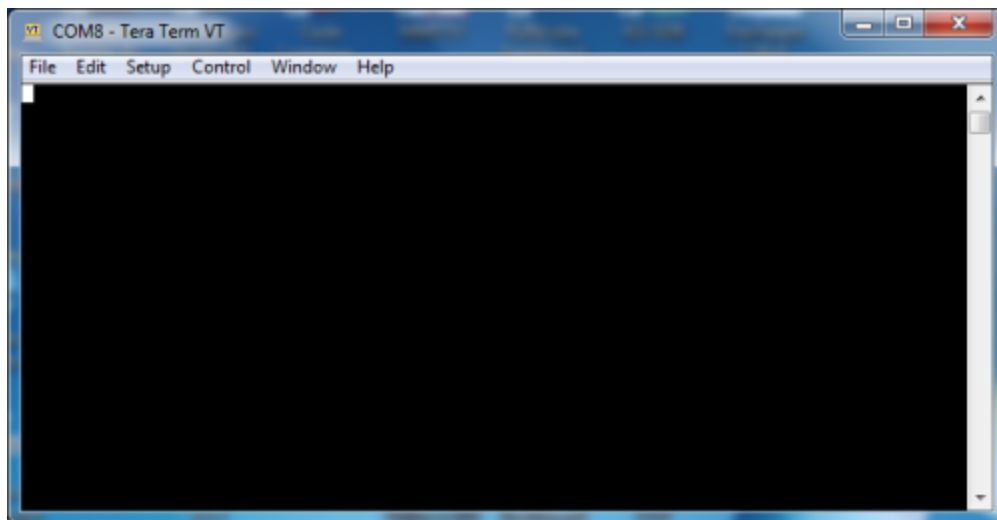


Left-click the "OK" button to complete the adjustments, and then close Device Manager.

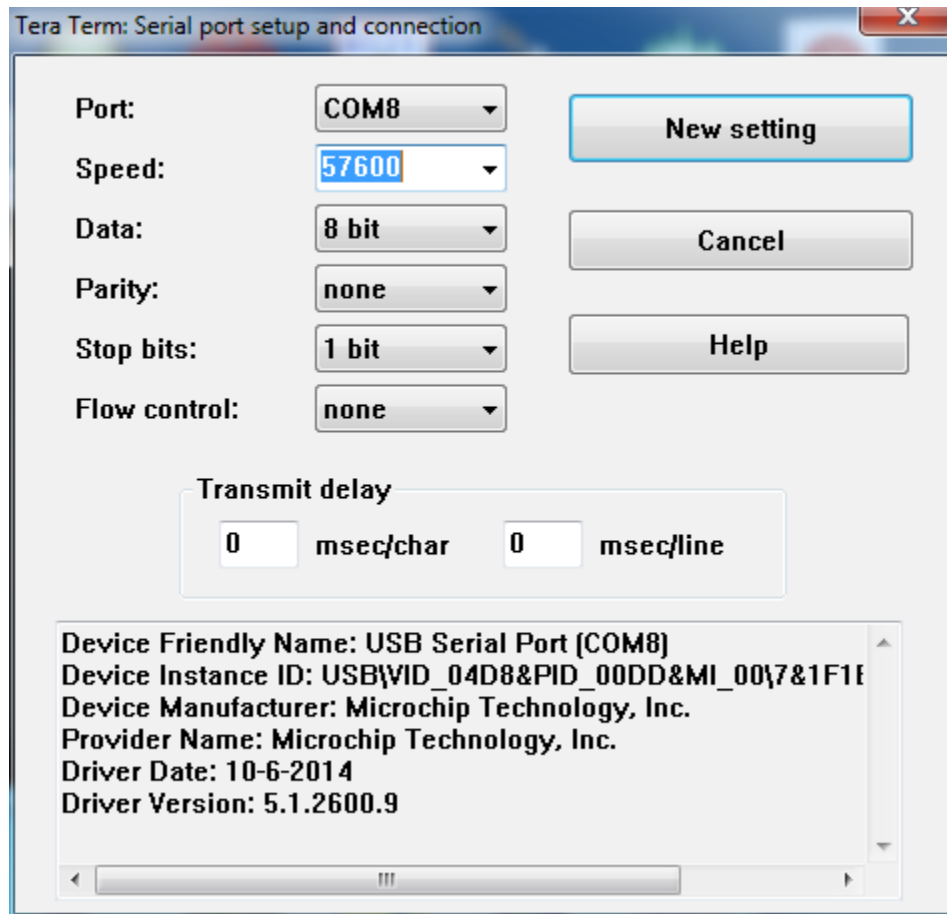
You can use a terminal program to briefly test operation of the NinoTNC. One such program is Tera Term (<https://ttssh2.osdn.jp/index.html.en>). If you start Tera Term, you will see the "Tera Term: New connection" window



Left-click the "Serial" radio button and use the drop-down "Port" control to select the proper COM port for your NinoTNC. Left-click the OK button to continue.

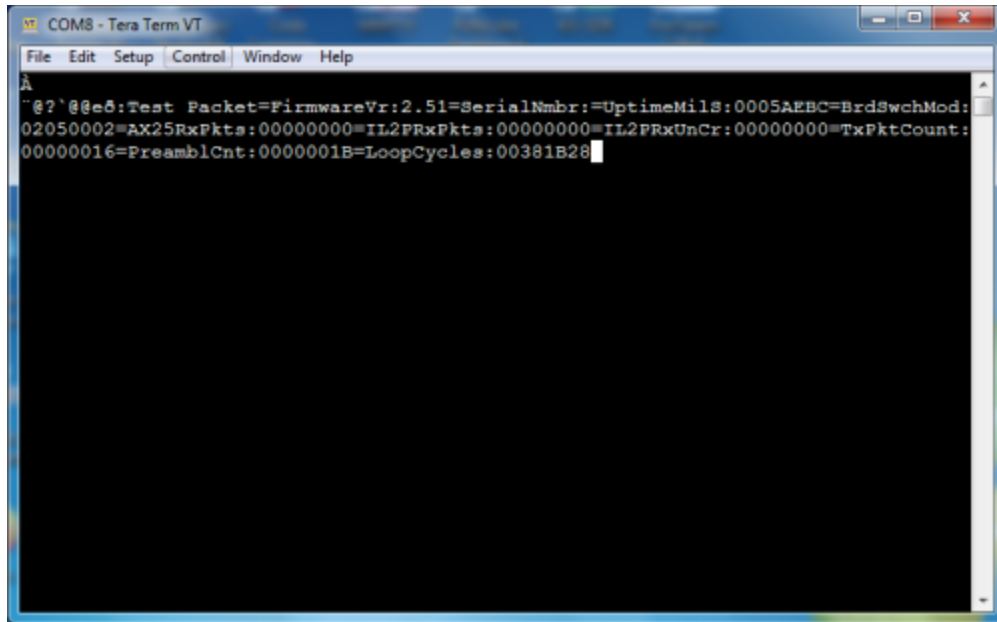


Use the "Setup" tab to select the "Serial Port" settings. Make sure the serial port values match the settings you used in Device Manager and the following image (your COM port will likely differ).

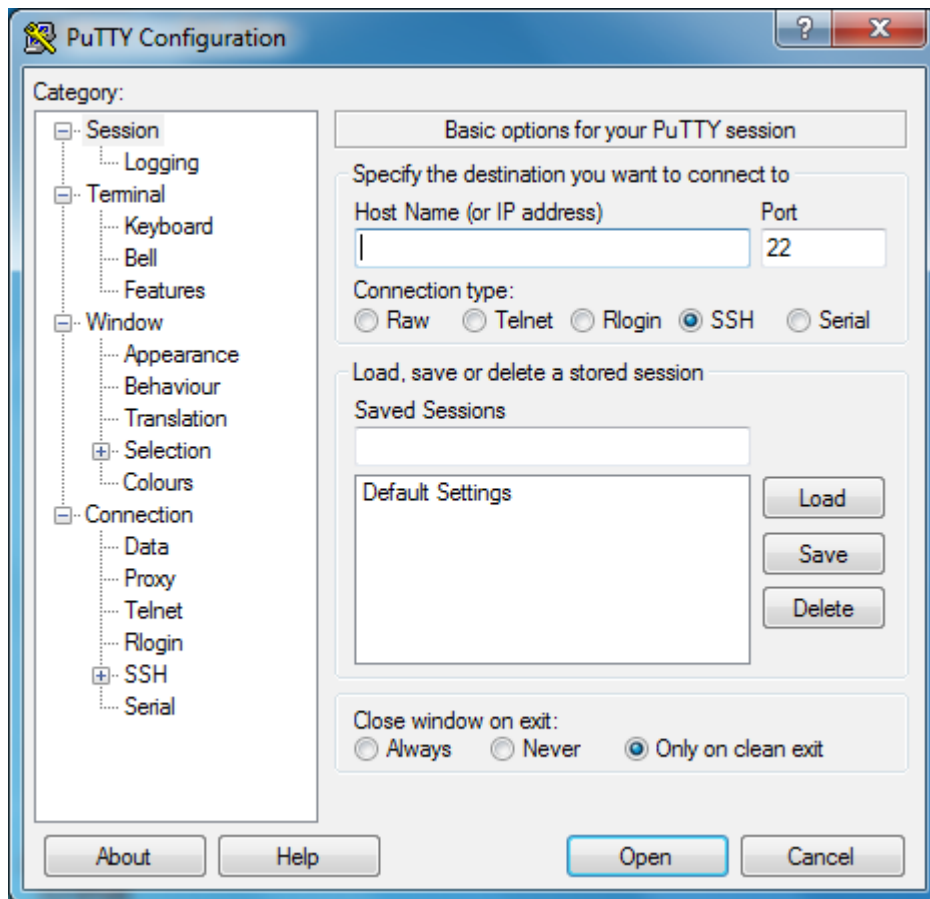


Left-click the "New settings" button to continue.

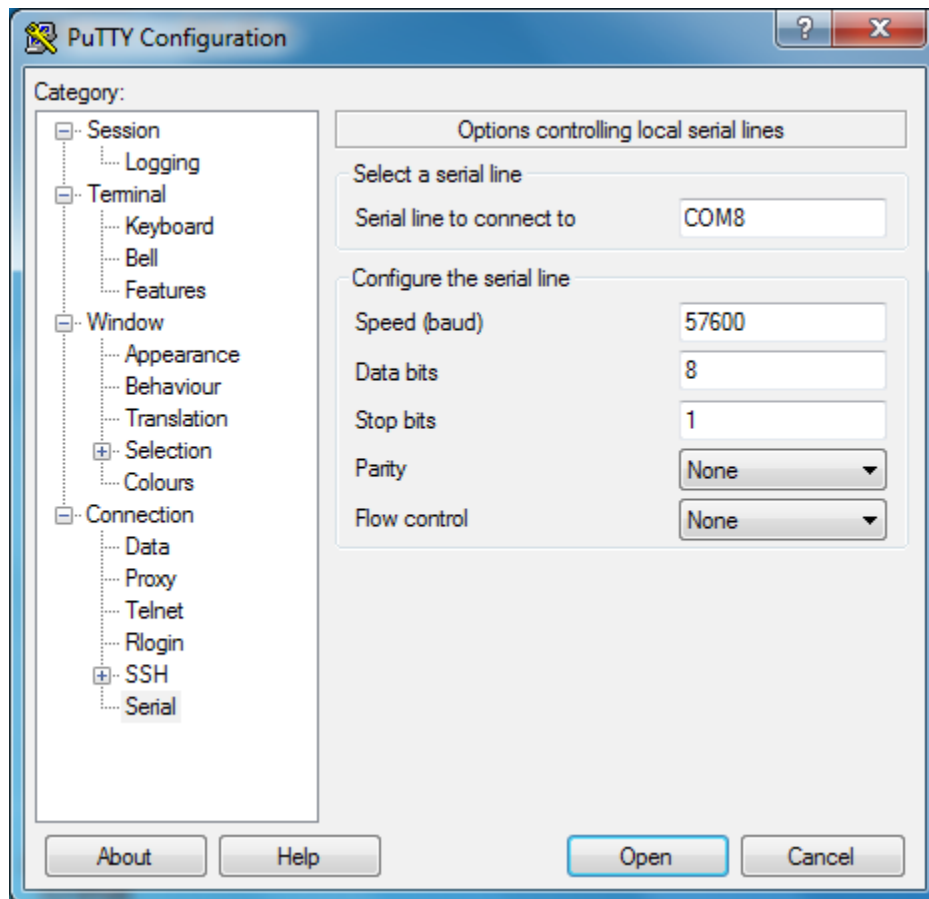
Press the SW2 TEST TX button on the NinoTNC, and you should see something similar to the following output in Tera Term:



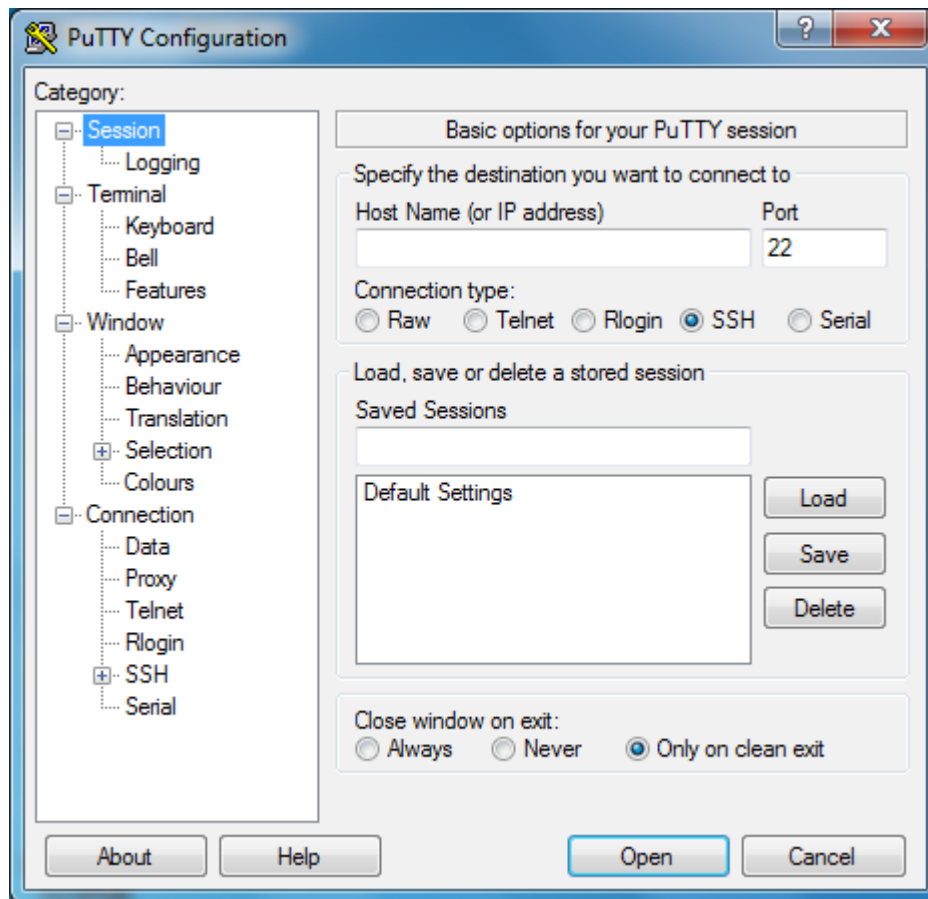
Another terminal program that can be used to test the NinoTNC is PuTTY (<https://www.putty.org/>). When you start PuTTY, you should see the "PuTTY Configuration" window:



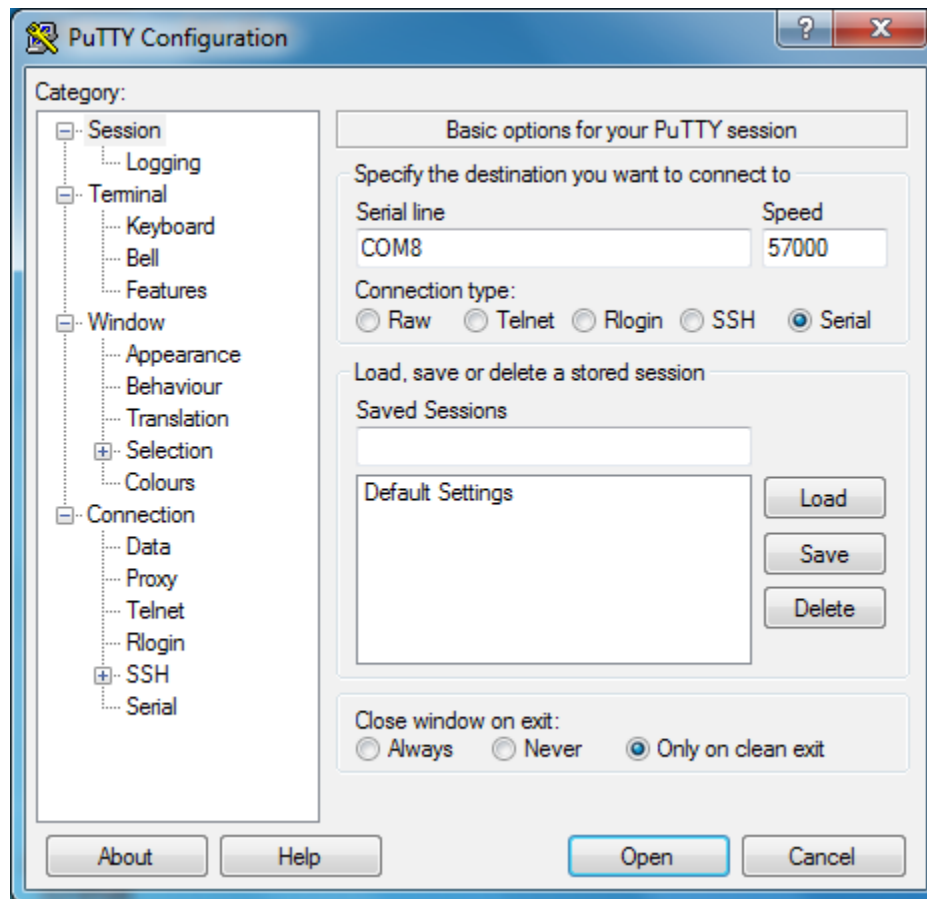
Click the "Serial" label under the "SSH" category in the left-hand window, and the "Options controlling local serial lines" window will appear:



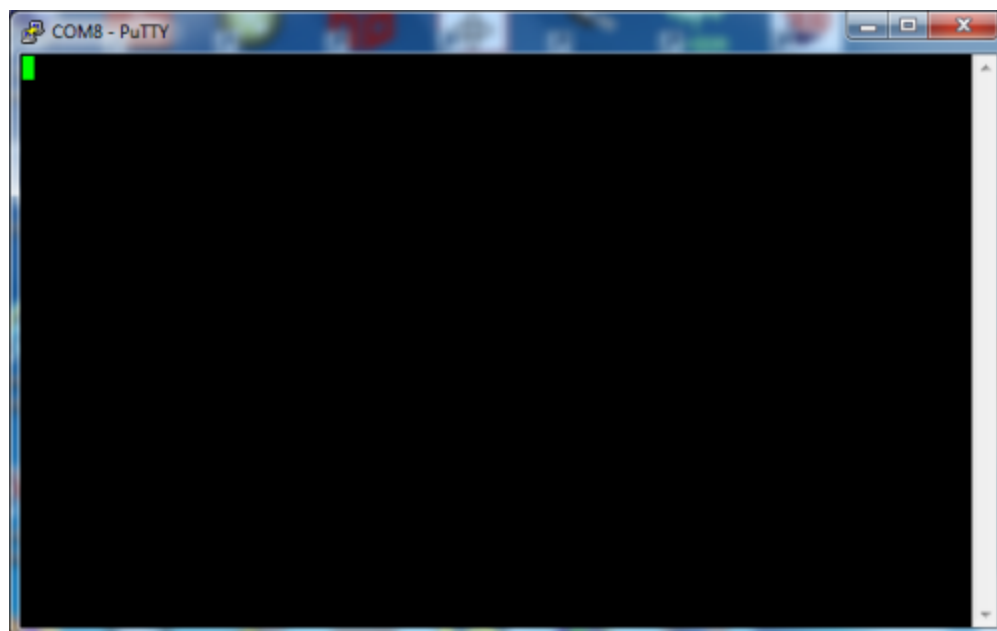
Make sure all of the parameters match those that you entered for the COM port device in Device Manager (Remember to use YOUR COM port value which is probably not the one shown here). Left-click the "Session" entry in the left-hand "Category" area of the screen.



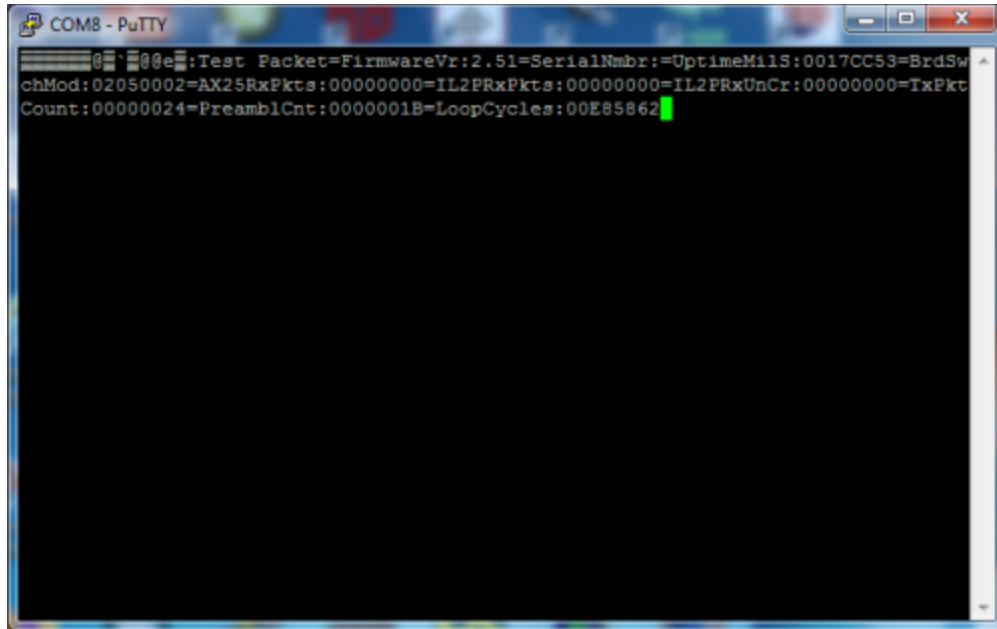
Note that "SSH" is the selected "Connection type", but you need to use the "Serial" type, so left-click the "Serial" radio button. The correct "Serial line" and "Speed" should now appear above the "Connection type" radio buttons.



Left-click the "Open" button in the lower right of the window. A COM port session will start with a blank screen.



Press the SW2 TEST TX button on the NinoTNC, and you should see something similar to the following output in PuTTY:

A screenshot of a PuTTY terminal window titled 'COM8 - PuTTY'. The window shows a single line of text: 'Test Packet=FirmwareVr:2.51=SerialNmbr:=UptimeMilS:0017CC53=BrdSwchMod:02050002=AX25RxPkts:00000000=IL2PRxPkts:00000000=IL2PRxUnCr:00000000=TxPktCount:00000024=PreamblCnt:0000001B=LoopCycles:00E85862'. The text is displayed in a monospaced font on a black background. A green cursor is visible at the end of the line.

```
COM8 - PuTTY
Test Packet=FirmwareVr:2.51=SerialNmbr:=UptimeMilS:0017CC53=BrdSw
chMod:02050002=AX25RxPkts:00000000=IL2PRxPkts:00000000=IL2PRxUnCr:00000000=TxPkt
Count:00000024=PreamblCnt:0000001B=LoopCycles:00E85862
```

Other general-purpose terminal programs can probably be used to test the NinoTNC as well. The key thing is to make sure to set the terminal program's serial parameters to match those you previously specified in the USB Serial Port (COMx) Properties tab for the Microchip MCP2221A device.