How to Configure the Yaesu FTDX101D for WSJT-X and JS8 Operation

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Introduction

This document captures the configuration that I have used to get operational on FT8 via the WSJTX package using the Yaesu FTDX101D. This document contains information from the FTDX101D Manuals and also information from the Groups.io FTDX101D Forum, the members of which have kindly helped me to get operational.

This document will be uploaded to the Files section of the Groups.io FTDX101D Forum so that others may use the information to also get operational. It also captures my configuration so that I may recreate it at a later date should this be needed.

Note from what I have read the following is also probably suitable for the FTDX101MP but it has not been tested as I only have the FTDX101D.

NOTE in this document the key steps have been identified with a **STEP #** number. These are the important steps and must be followed.

NOTE: I reiterate that this is the configuration that I have used to get operational. You will need to make appropriate changes as apply to your PC and these are identified in the document.

Hardware Configuration

STEP 1: The first step is to connect a USB-A to USB-B cable between the FTDX101D and your PC or laptop. Note: I am using a Surface Pro 4 running Windows 10. In my case I connect the USB cable to my Docking Station for the Surface Pro 4.

PC Configuration

Computer Aided Transceiver

From the CAT (Computer Aided Transceiver) Operation Manual:

The CAT System in the FTDX101D transceiver provides control of frequency, VFO, memory and other settings such as dual-channel memories and diversity reception using an external personal computer. This allow multiple control operations to be fully automated with single mouse clicks or keystroke operations on the computer keyboard.

The FTDX101D transceiver has a built in USB to Dual UART Bridge, allowing direct connection from the rear-panel USB jack to the USB jack of a computer without the need for an interface device, simply use the USB cable referenced above for the connection.

Virtual COM Port Driver

To connect to a PC using a USB cable, a Virtual COM port driver must be installed on the PC. Visit the Yaesu website to download the drivers:

https://www.yaesu.com/indexVS.cfm?cmd=DisplayProducts&ProdCatID=102&encProdID=959169DE998192AB87295E90077D740D&DivisionID=65&isArchived=0

The top of this web page is shown in Figure 1 below.

Figure 1 Yaesu Website for FTDX101D

Go to the bottom of this webpage for the Virtual COM Port Driver as shown in a red box in Figure 2:

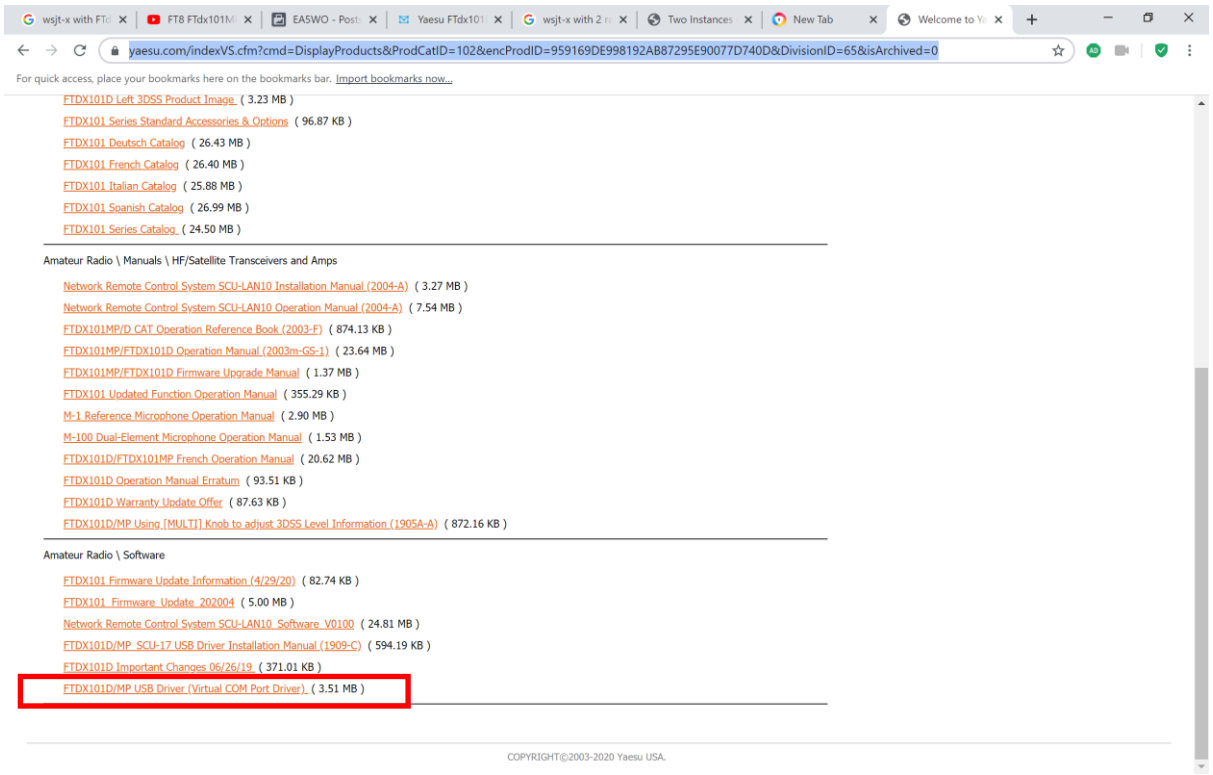

Figure 2 Virtual COM Port Driver Software

The download is a zip file which you will need to save to a suitable directory and then unzip the file. I usually do this in the same directory as shown in Figure 3

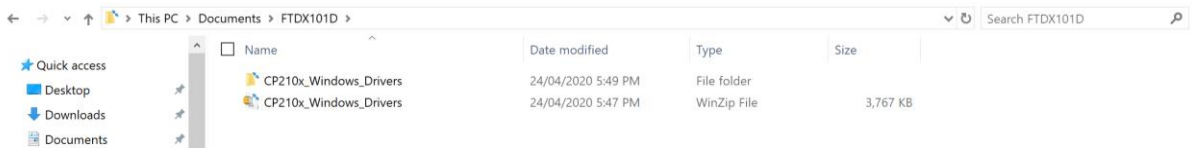

Figure 3 Virtual COM Port Software

STEP 2: The CP210x_Windows_Drivers directory contains the files shown in Figure 4. Double click on the application applicable for your PC and follow any instructions required to complete the installation. In my case that was the CP210xVCPInstaller_x64.exe application as applies to the 64 bit operating system on the Surface Pro 4.

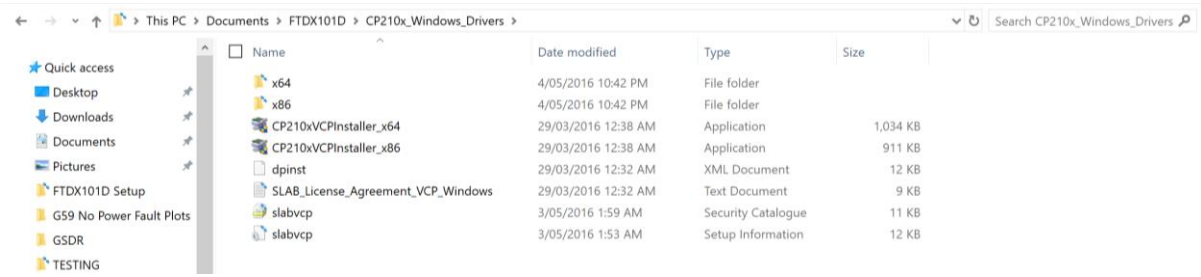

Figure 4 Virtual COM Port Driver application

STEP 3: The next step is to verify that the Virtual COM Port Driver has been installed successfully:

1. Press and hold the ON/OFF switch to turn the transceiver ON.
2. You have already connected the transceiver to the PC via the USB cable
3. Open the Device Manager screen in Windows:
    a. Type in Device Manager on the Windows Search Engine and an image similar to that in Figure 5 will appear. It will be different for different version of Windows.
4. On the Device Manager screen, double click on “Ports (COM & LPT)”
5. The Screen shown in Figure 6 will appear.

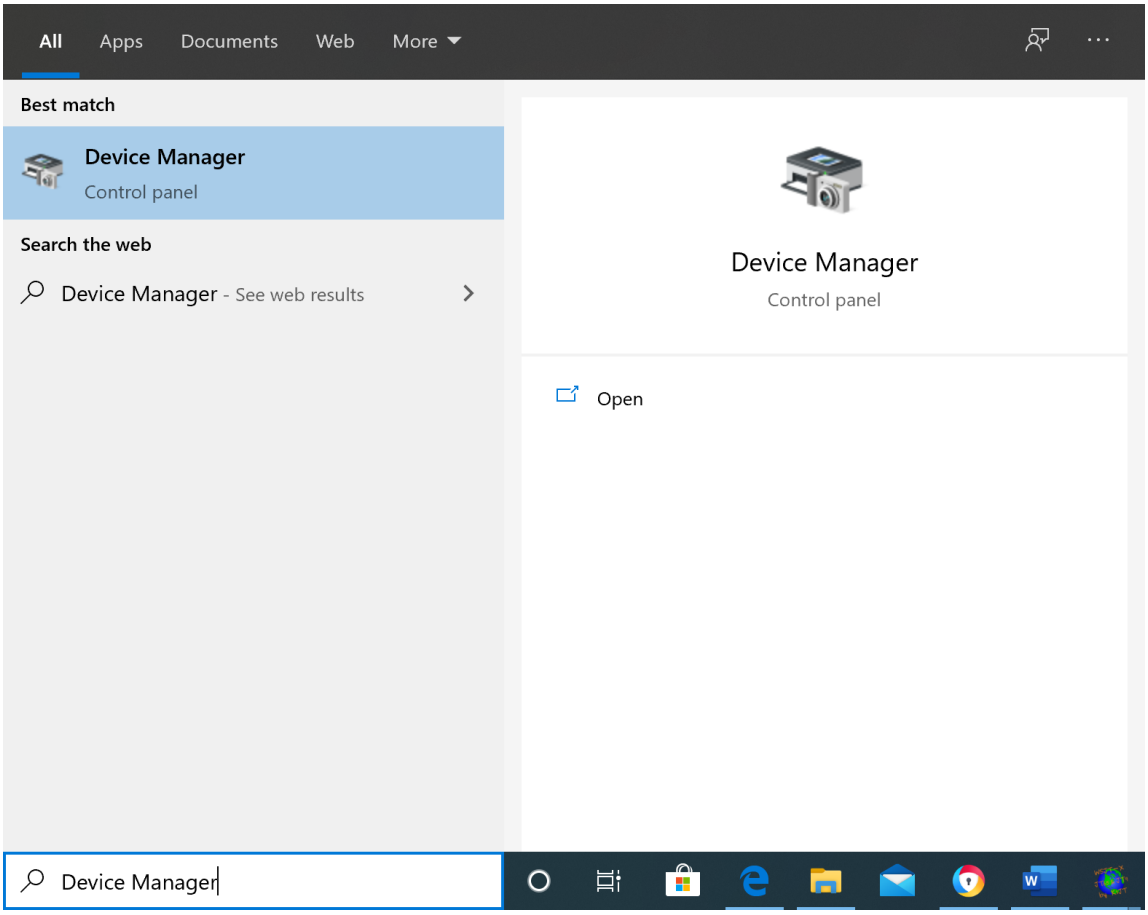

Figure 5 Device Manager

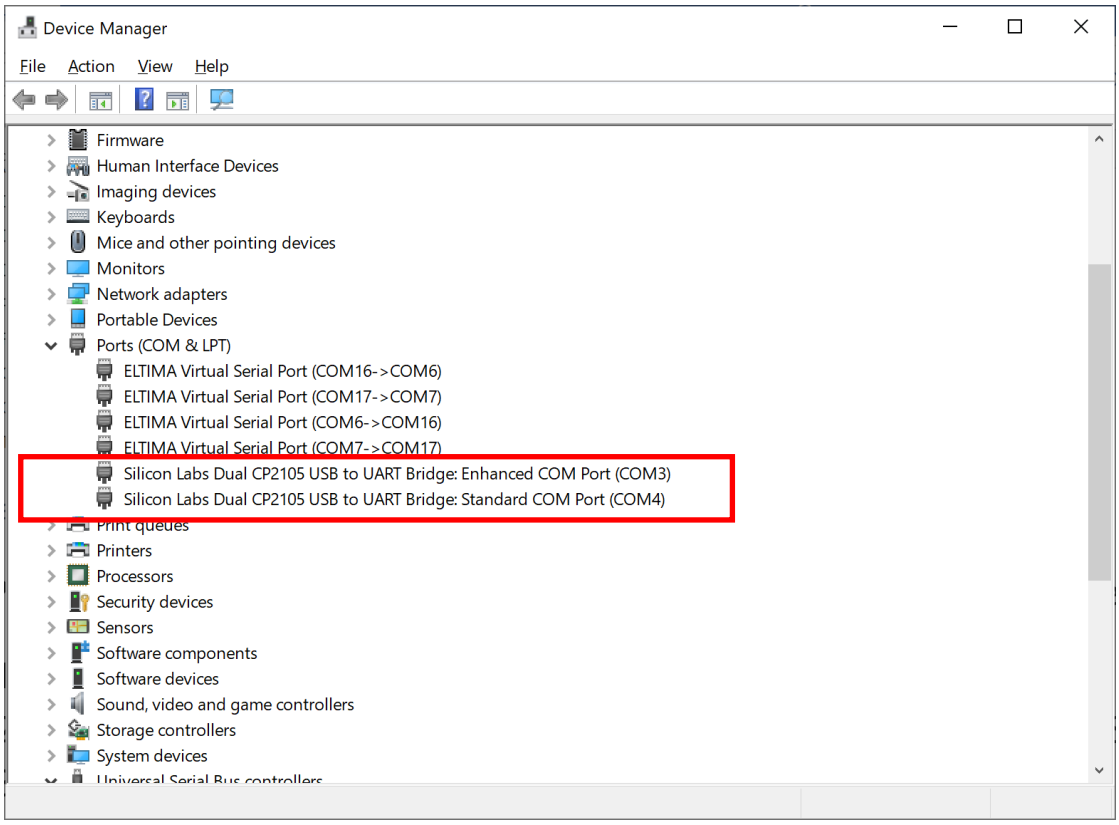

Figure 6 Ports (COM & LPT)

6. The two Silicon Labs Dual CP2105 USB to UART Bridge port numbers need to be written down or remembered as you will need them for the WSJT-X configuration.
7. NOTE: they may be different on your PC depending on what other ports are in use etc.
8. Note in my case:
    a. COM3 is the Enhanced Port for my radio, and
    b. COM4 is the Standard Port for my radio
9. The FTDX101D contains two virtual COM Ports which have different functions:
    a. The Enhanced COM Port: CAT Communications (Frequency and Communication Mode Settings)
    b. The Standard COM Port: TX Controls (PTT control, CW Keying, Digital Mode Operations

USB Audio CODEC

STEP 4: The next step is to setup the USB Audio CODEC so that WSJT-X can listen to the received signal from the FTDX101D and also provide a data signal for transmission.

1. Select Device Manager again as shown in Figure 5
2. Select "Audio inputs and outputs" and the screen shown in Figure 7 will appear.
3. NOTE: that when you first do this that probably only see 6- USB AUDIO CODEC or something similar. Again the number may be different depending on how many Virtual Audio cables you have configured on your PC.
4. NOTE: that this number appears twice, once for the Line Input and once for the Speaker Output. Both are highlighted with a red rectangle in Figure 7.
5. NOTE also that if you change the USB port that you connect the FTDX101D to your PC to that the number in front of the "USB AUDIO CODEC" will change as well. When I am connected directly to the Surface Pro 4 the number is 5, when connected to the docking station the number is 6.
6. Record the current name of the AUDIO CODEC. In my case 6- USB AUDIO CODEC

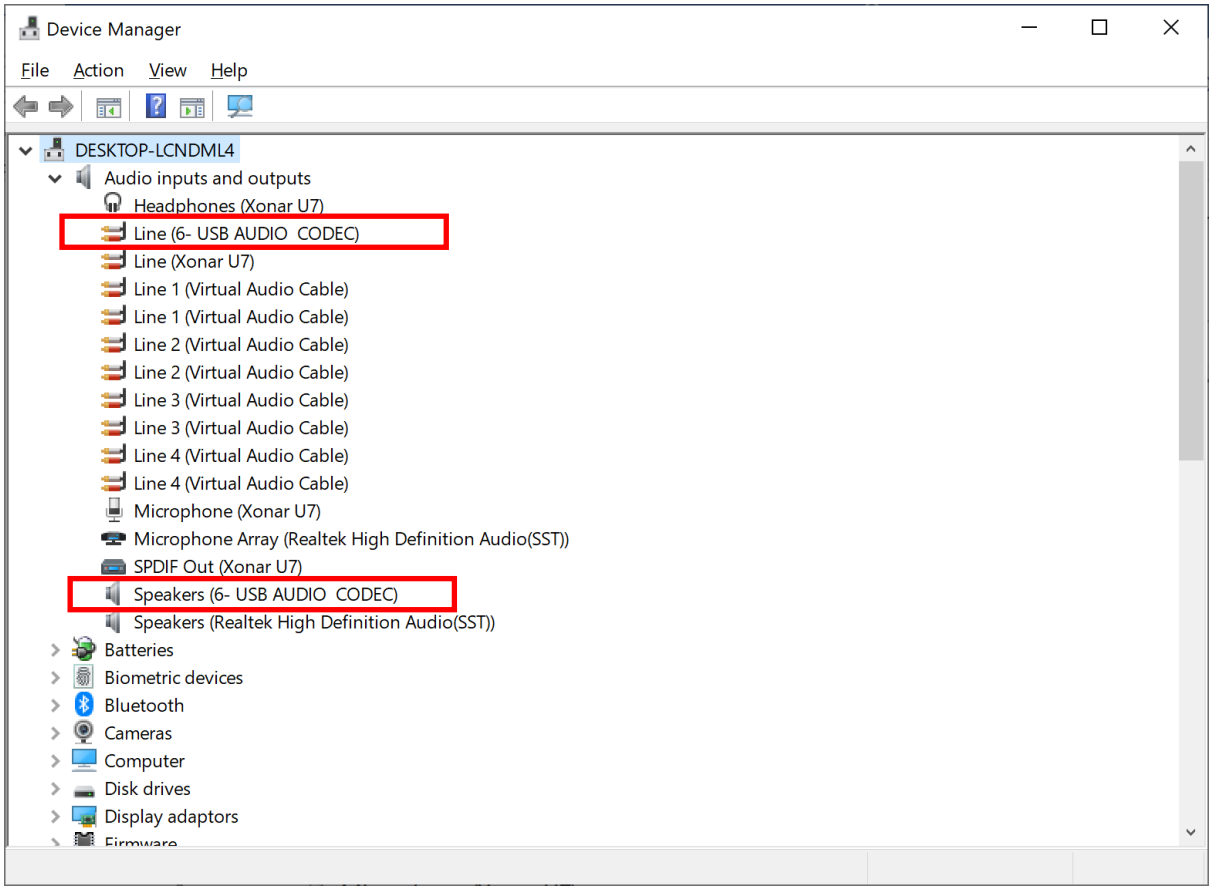

Figure 7 Device Manager > Audio Inputs and Outputs

7. If you want to change the name right mouse click on your Speaker Icon on the bottom left of the screen and select “Open Sound Settings”. This will give you Figure 8.
8. Double clicking on “Sound Control Panel” (highlighted with a red rectangle) will allow you to access the Sound Setup as shown in Figure 9

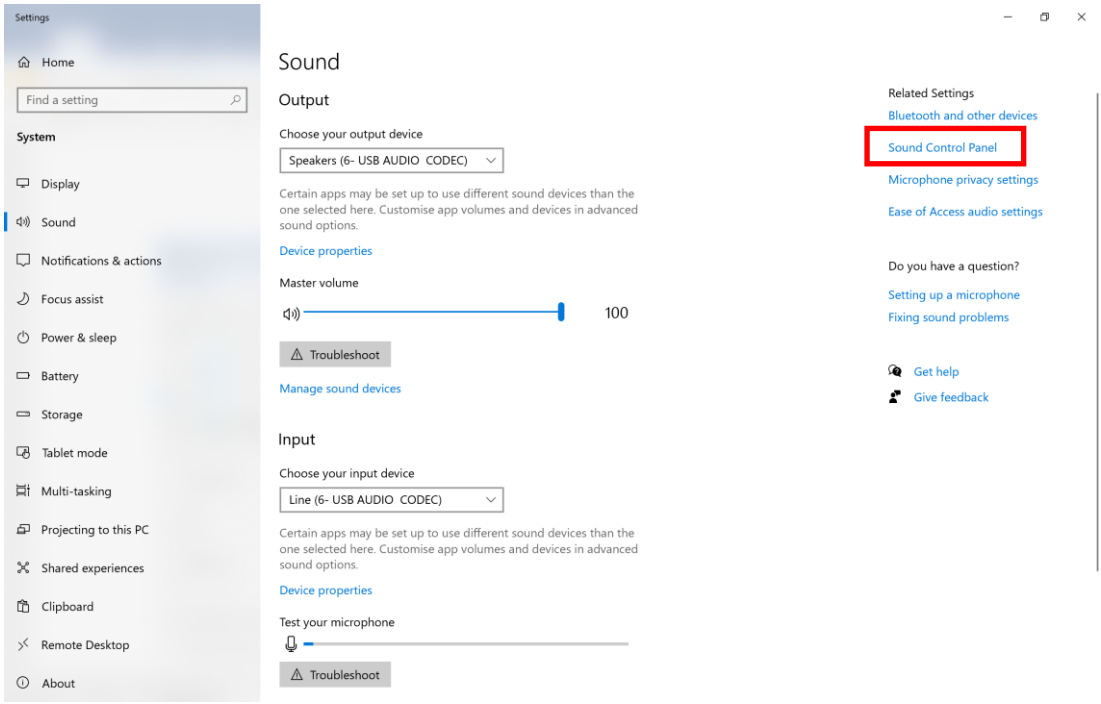

Figure 8 Open Sound Settings

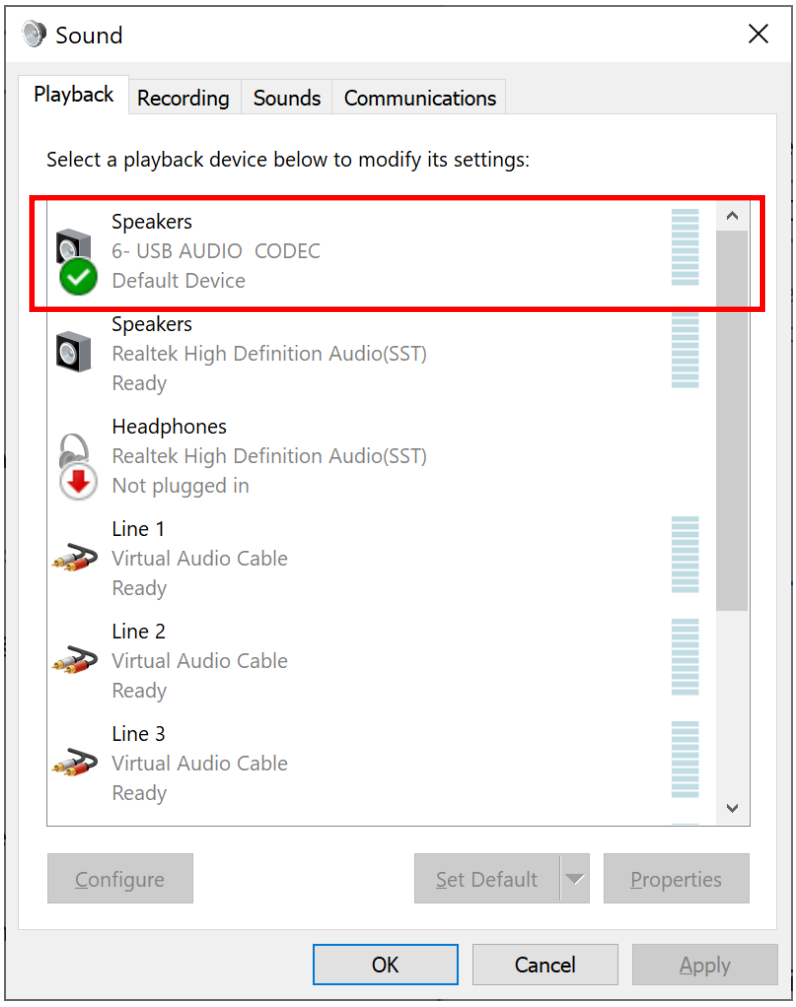

Figure 9 Sound Setup

9. Right click on the 6- USB AUDIO CODEC and Select Properties
10. In the “General Tab” the Label will be “Speakers” as shown in the left hand image of Figure 10.
11. The name may be changed from Speakers to FTDX101D in the top entry in the window as shown in the right hand image of Figure 10.

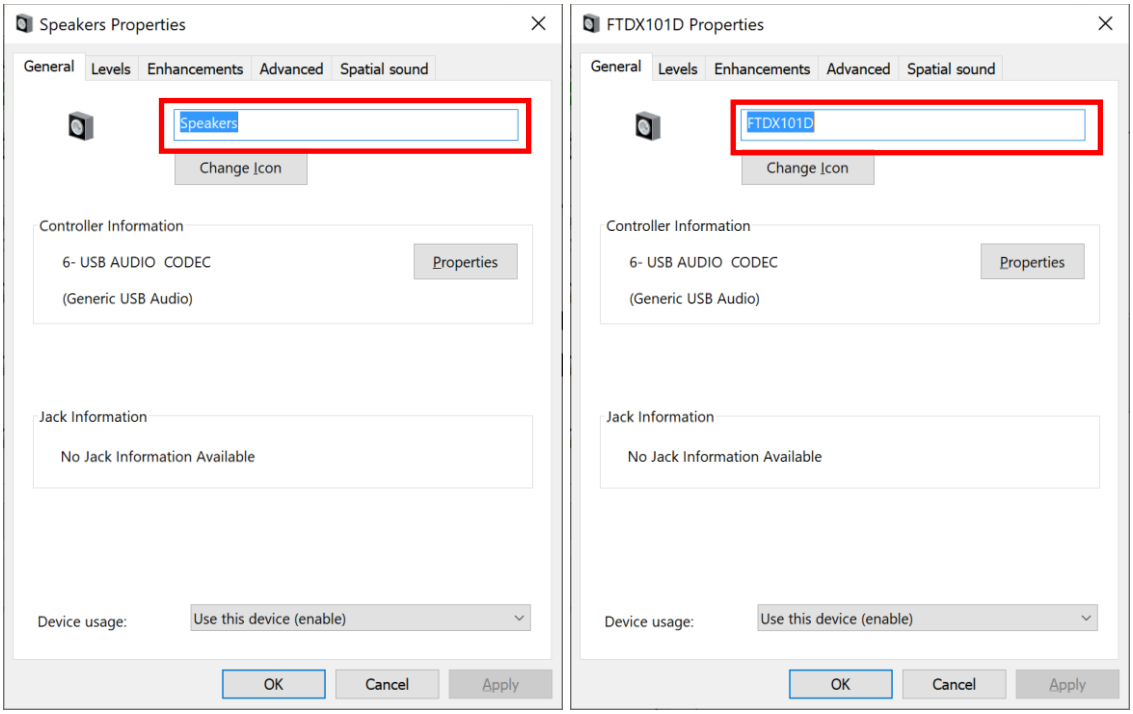

Figure 10 Name Change USB AUDIO CODEC in General

12. Select the Recording Tab and repeat the process to change the name for the Line device shown in Figure 11. This makes sure that the correct USB AUDIO CODEC is selected for the FTDX101D when you complete the setup later in the process.

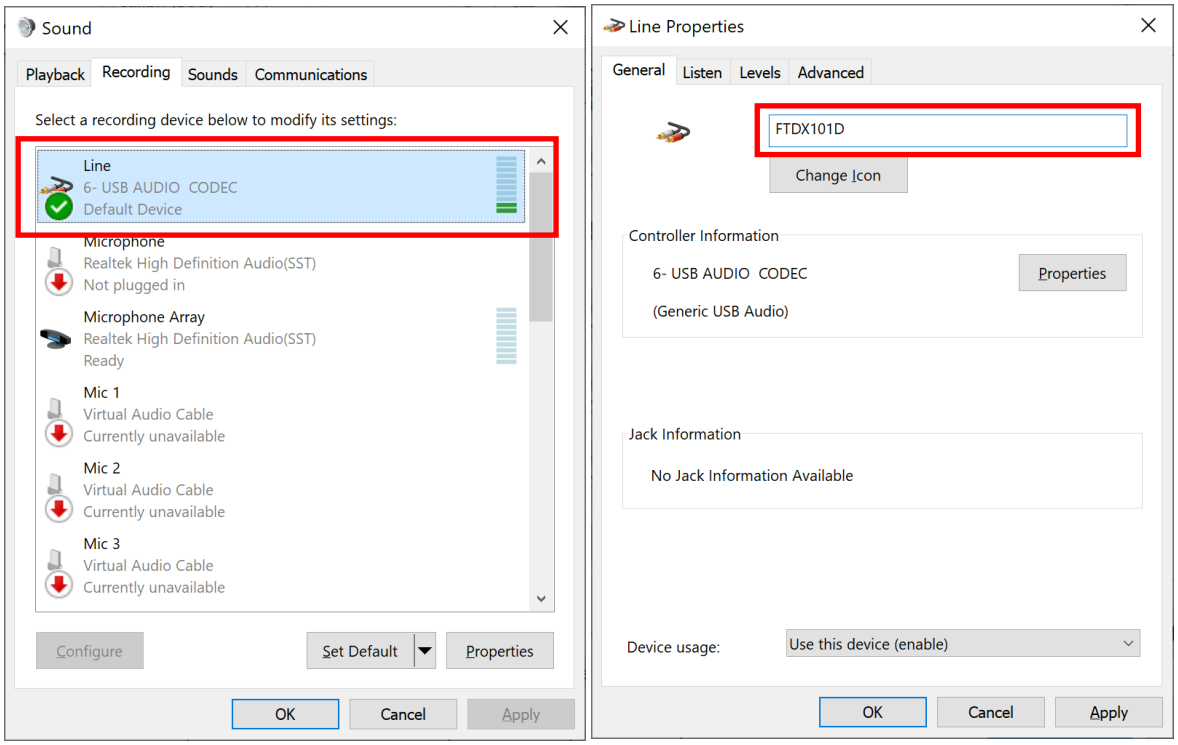

Figure 11 Name Change USB AUDIO CODEC in Recording

13. Under FILES>SETTINGS>AUDIO you can now set the Input and Output up to select the FTDX101D USB AUDIO CODEC as shown in Figure 24.
14. This completes the FTDX101D to PC set up for your rig.

FTDX101D Configuration

Transceiver Configuration

STEP 5: The FTDX101D should be configured as follows:

1. Select MAIN. Note that I have configured my radio to use the Main Receiver for WSJT-X and JS8 but I have also noted that selecting the SUB band in the FTDX101D still allows complete control from WSJT-X.
2. Set Mode to DATA-U. These settings are shown on Figure 12.

Figure 12 FTDX101D Setup

OPERATION SETTINGS

STEP 6: Select OPERATION SETTINGS

1. Press FUNC (Figure 13) then OPERATION SETTING>GENERAL to get Figure 14.

Figure 13 FTDX101D>FUNC

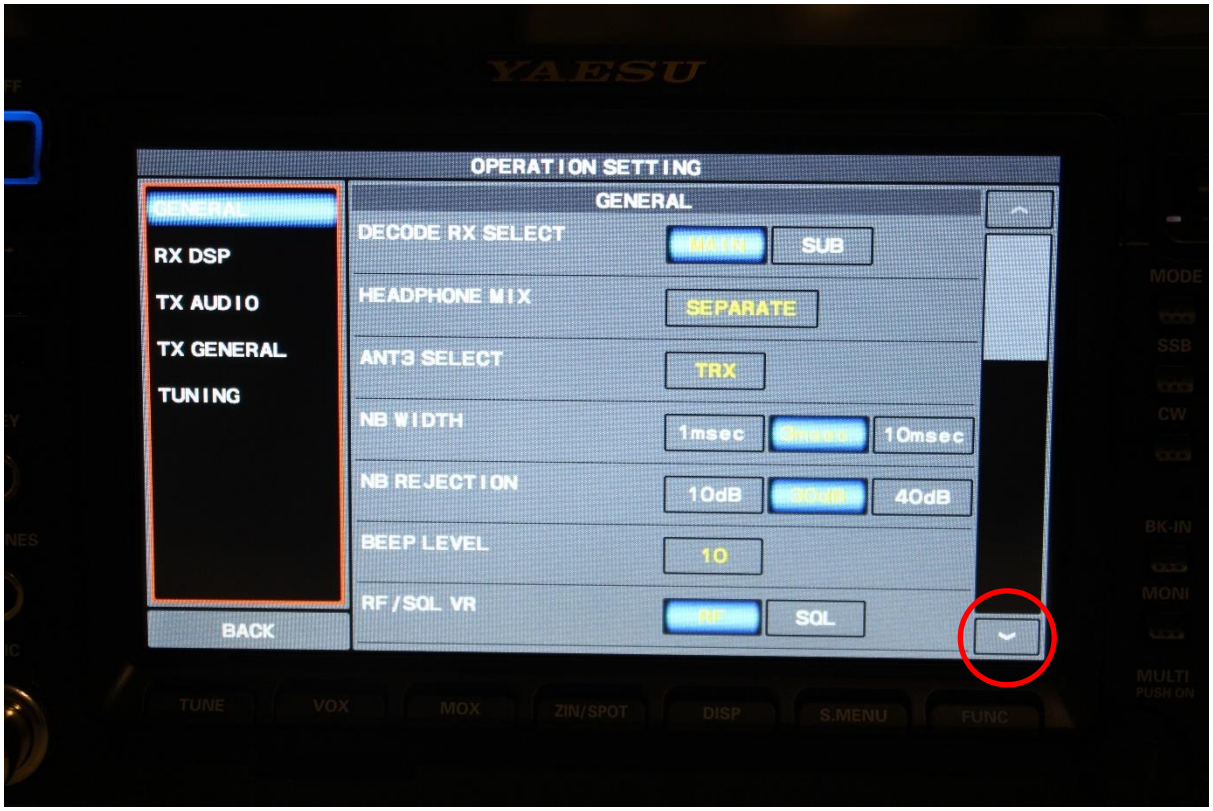

Figure 14 FUNC>OPERATION SETTING>GENERAL 1

2. Step down through the options by pressing the down arrow (highlighted with a red circle) until you get to CAT RATE. Press the current value and set it to 384000bps as shown highlighted in the red rectangle in Figure 15. Note other instructions have said to also set the 232C RATE to the same value but I don't believe that will make any difference to the correct operation of the USB port.
3. Set CAT RTS to ON as shown highlighted in the orange square.
4. NOTE other values are all left at their default values
5. I have included Figure 16 and Figure 17 for consistency to show what the settings are for the rest of the GENERAL tab.
6. Press the FUNC key again to exit from the OPETATION SETTING menu.

Figure 15 FUNC>OPERATION SETTING>GENERAL 2>SET CAT RATE to 38400bps and CAT RTS to ON

Figure 16 FUNC>OPERATION SETTING>GENERAL 3

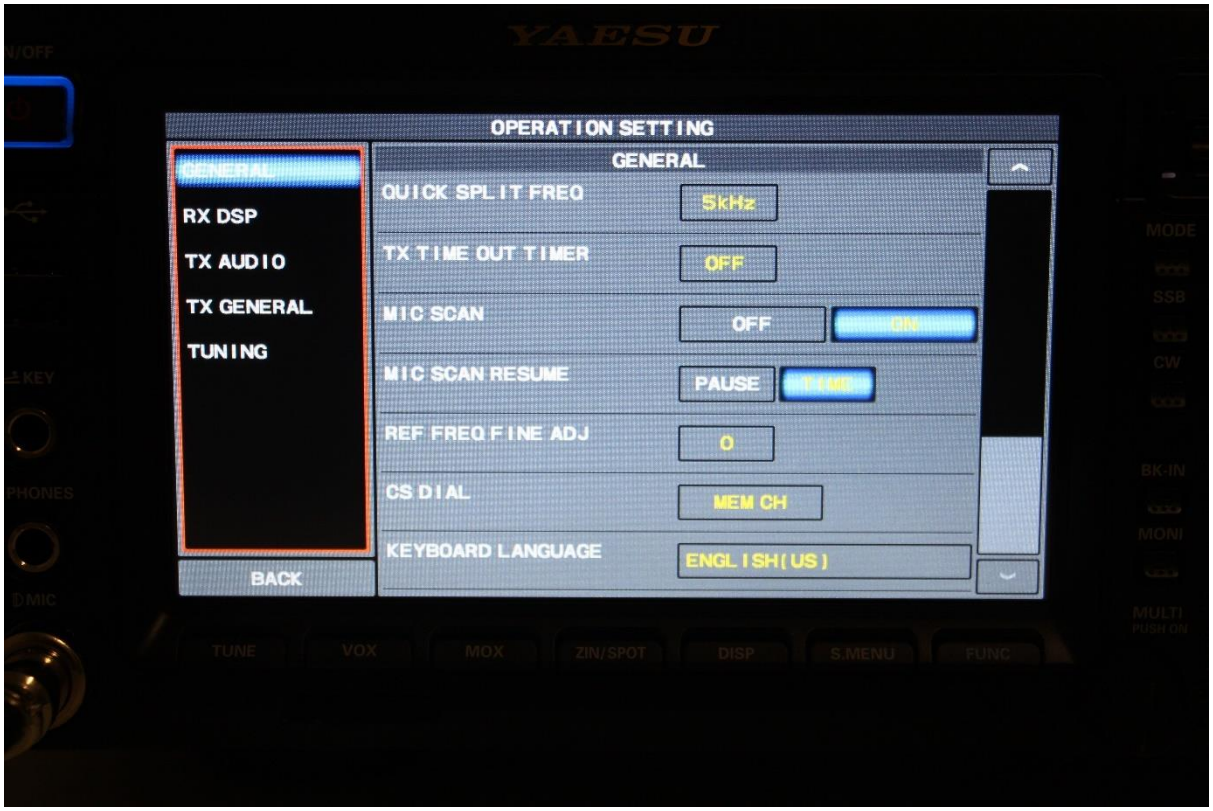

Figure 17 FUNC>OPERATION SETTING>GENERAL 4

RADIO SETTING

STEP 7: Select RADIO SETTINGS

1. Press the RADIO SETTING button shown in Figure 18.
2. Select MODE PSK/DATA shown highlighted in a red rectangle.

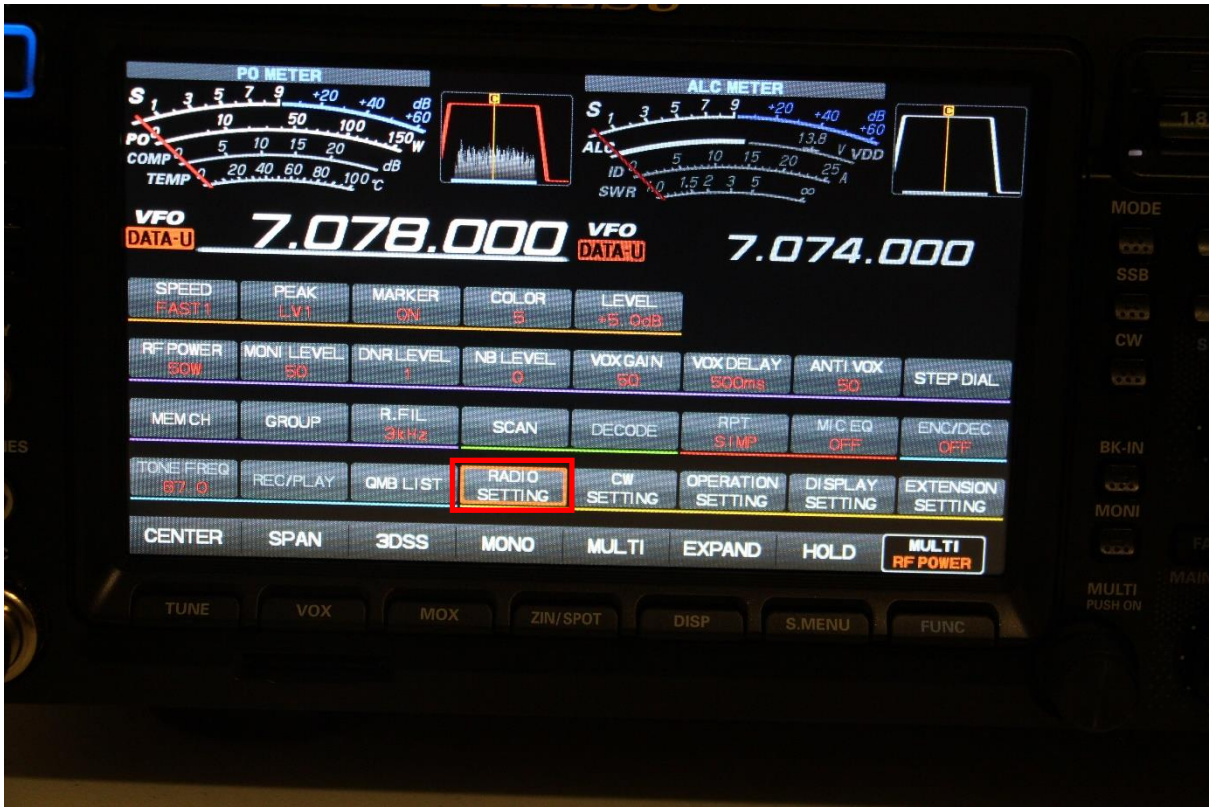

Figure 18 FUNC>RADIO SETTING

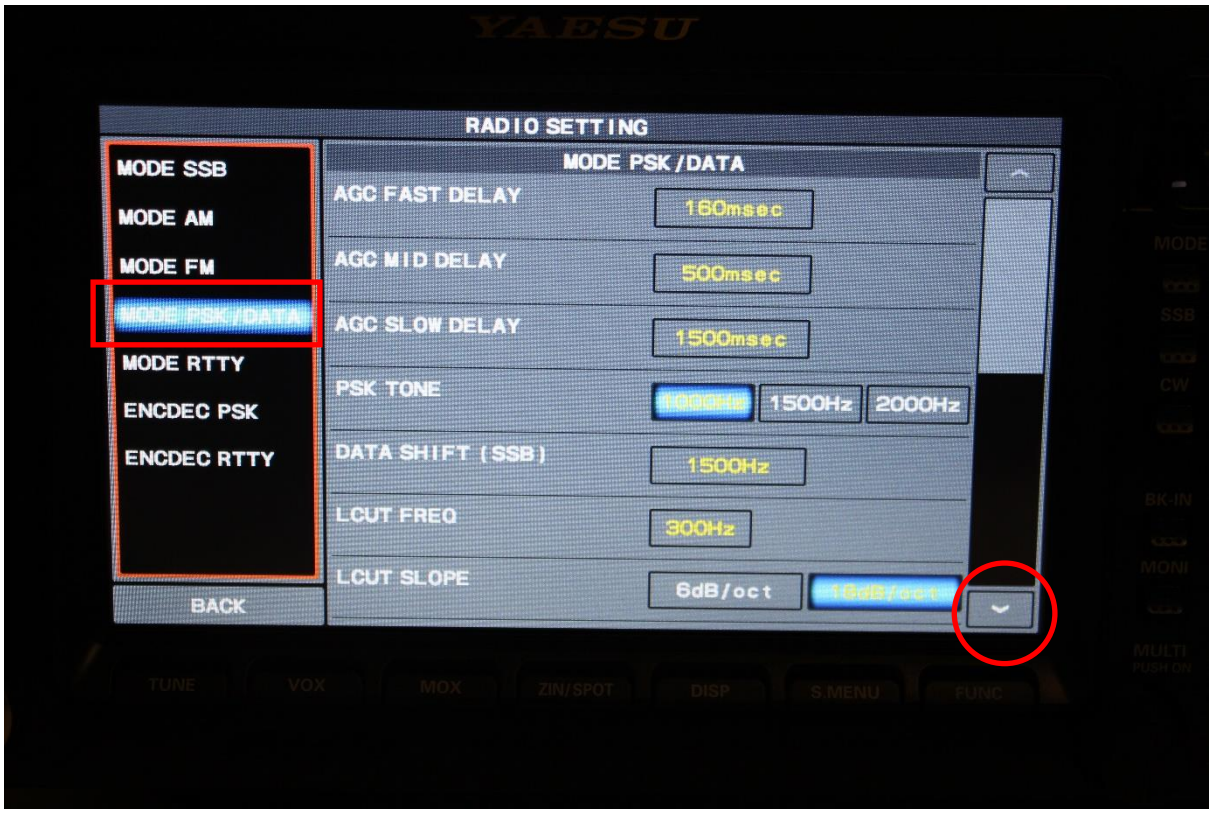

Figure 19 FUNC>RADIO SETTING 1

3. Again use the down arrow key to step down to DATA OUT SELECT and select MAIN as shown in Figure 20.

Figure 20 FUNC>RADIO SETTING 2

Figure 21 FUNC>RADIO SETTING 3

4. Use the down arrow key to step down to DATA MOD SOURCE and select REAR.
5. Use the down arrow key to step down to REAR SELECT and select USB as shown in Figure 21.

6. Use the down arrow key to step down to RPTT SELECT and select RTS
7. You may need also to set RPORT GAIN. I am currently not sure how this needs to be set. I have left it at DEFAULT setting.
8. Press FUNC twice to return to normal operation of the transceiver.

WSJT-X Configuration

If you have not already done so install WSJT-X from the following site:

https://physics.princeton.edu/pulsar/K1JT/wsjtx.html

STEP 8: In WSJT-X (v2.1.2 0068f9) configure the settings as follows:

1. Go to File>Settings>General and you will get Figure 22
2. Configure the My Call: with your callsign
3. Configure My Grid: with your Maidenhead Grid Locator
4. Configure the IARU Region: with your region.

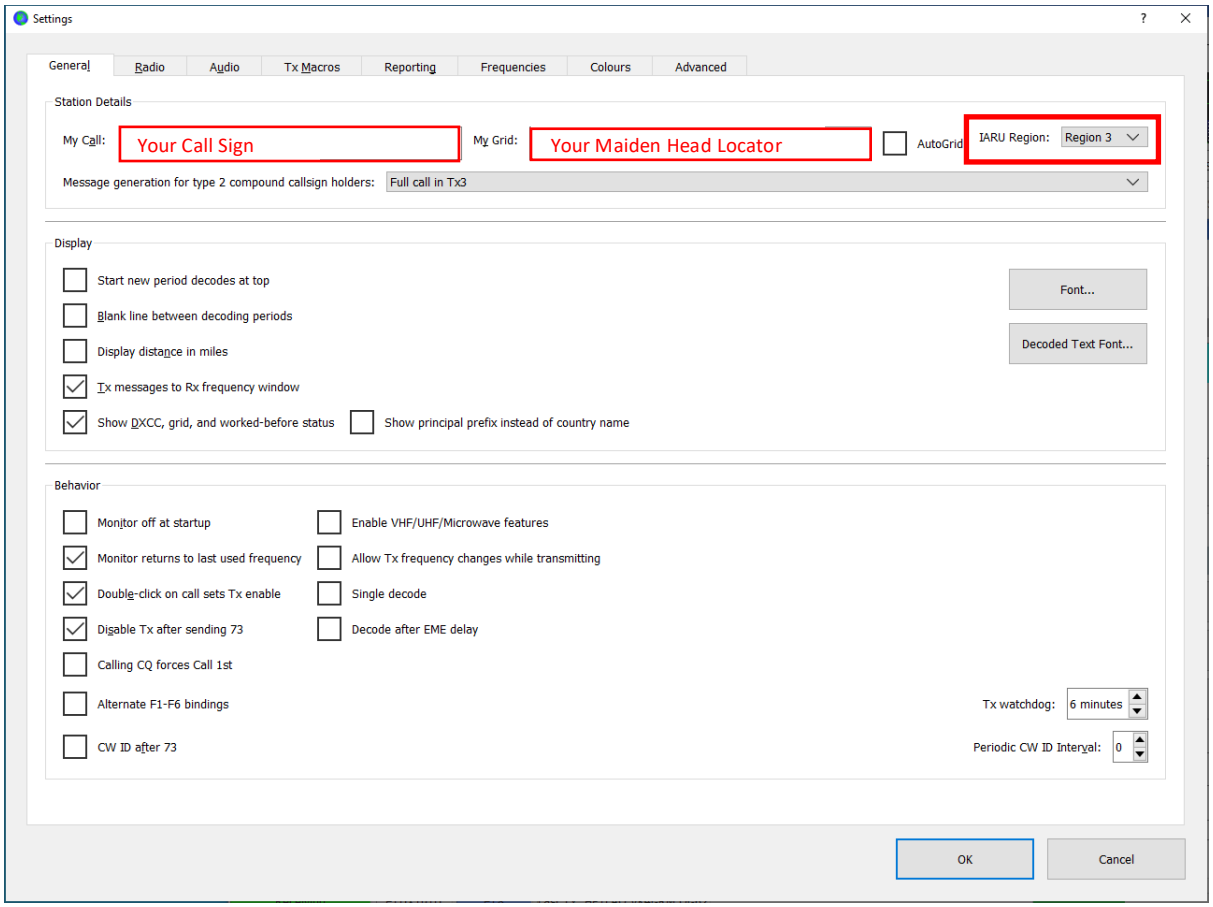

Figure 22 File>Settings>General

5. Select the Radio tab and configure the settings as shown in Figure 23.
6. NOTE PLEASE USE YOUR OWN ENHANCED AND STANDARD COM PORT NUMBERS:
    a. Enhanced COM Port number for CAT Control. NOTE COM 3 in my case.
    b. Standard COM PORT number for PPT Method. Note COM 4 in my case.

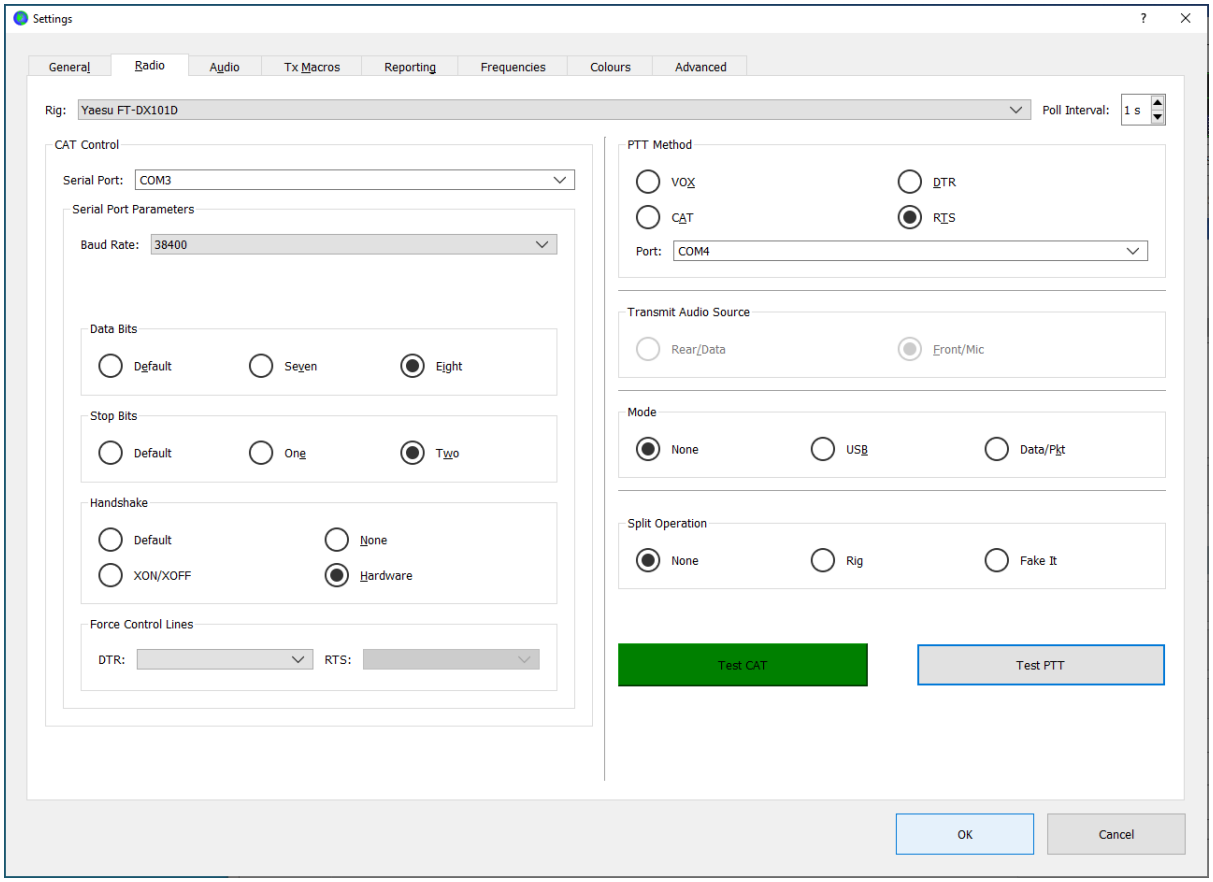

Figure 23 File>Settings>Radio

7. NOTE: I have found that CAT control works for either One or Two Stop Bits provided that the Handshake is set to Hardware. If Handshake is set to None then neither work.
8. Select the AUDIO tab as shown in Figure 24 and set the Input and Output to the values you determined in STEP 4 above.
9. In my case these were 6 – USB AUDIO CODEC.
10. Click OK to accept the changes and you should now be operational on all the modes in WSJT-X.

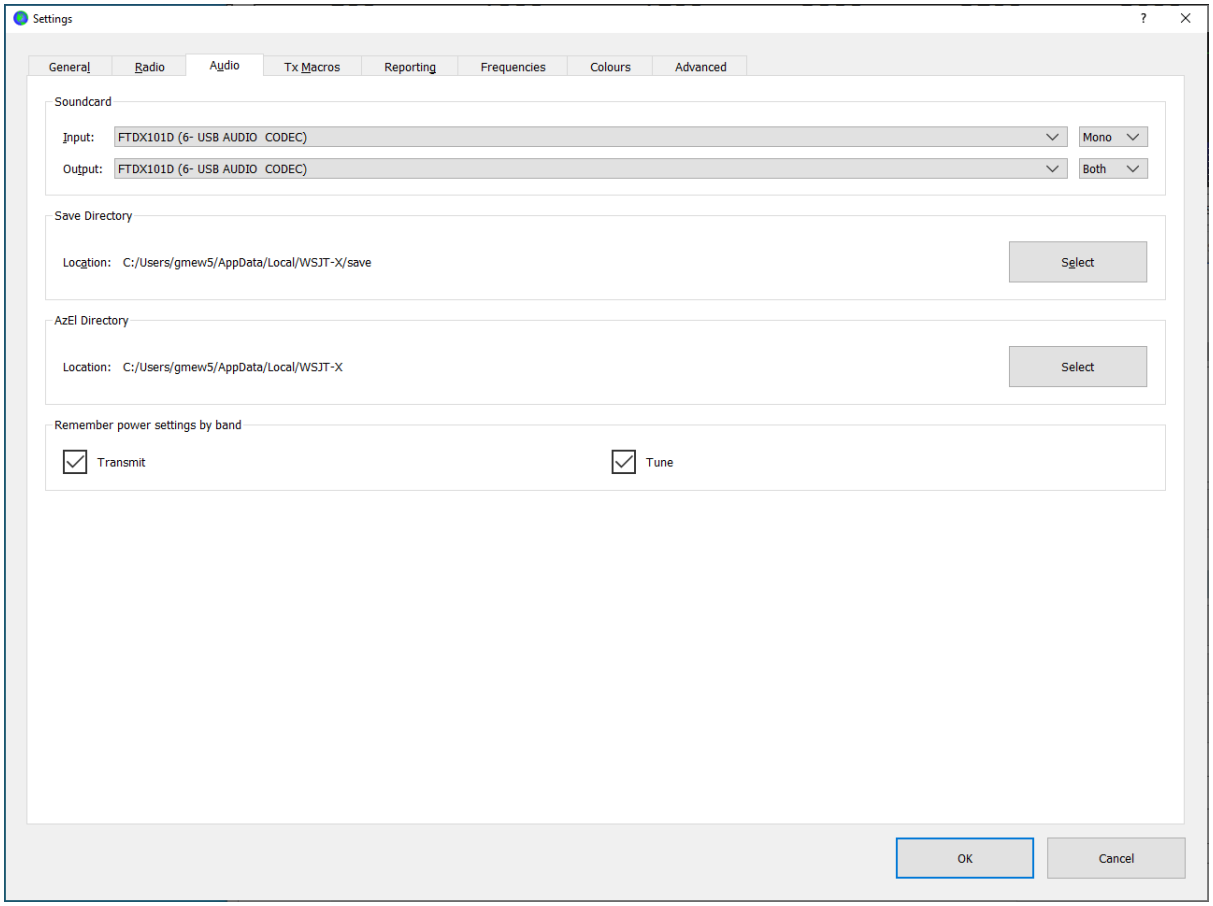

Figure 24 FILES>SETTINGS>AUDIO

JS8 Configuration

If you are interested in JS8 then download the software from the following link and install it on your PC:

http://js8call.com/

The following quote is taken from the site to provide a very quick overview of JS8:

"The idea with JS8Call is to take the robustness of FT8 mode and layer on a messaging and network protocol for weak signal *communication* on HF with a keyboard-to-keyboard interface. JS8Call is heavily inspired by WSJT-X, Fldigi, and FSQCall and would not exist without the hard work and dedication of the many developers in the amateur radio community."

The set up of JS8 is essentially the same as WSJT-X as shown below:

STEP 9: After installing JS8 you should have a window on your PC looking like Figure 25.

1. Select FILE>SETTINGS>GENERAL>STATION and complete your Station details and Maidenhead Grid Locator
2. Select the Radio Tab
3. Select the "CAT Control" Tab and set as shown in Figure 26. NOTE: Use the Enhanced COM Port number that is applicable for your FTDX101D as saved earlier.
4. Select the "Rig Options" Tab and set as shown in Figure 27.

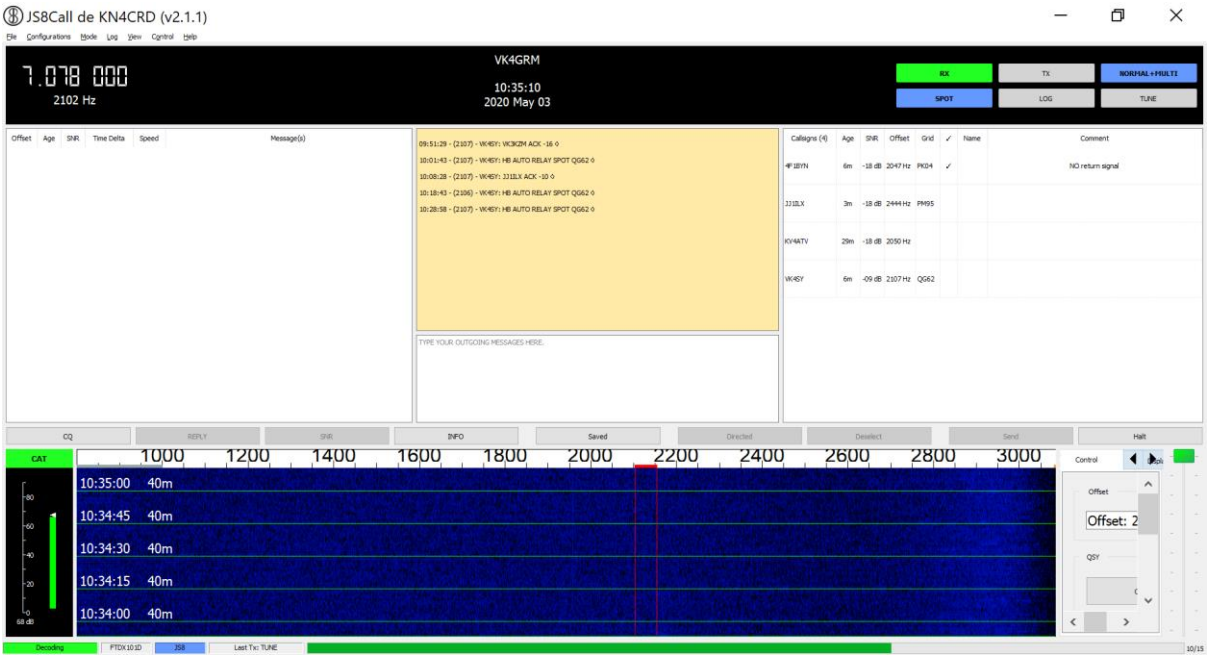

Figure 25 JS8 Main Screen

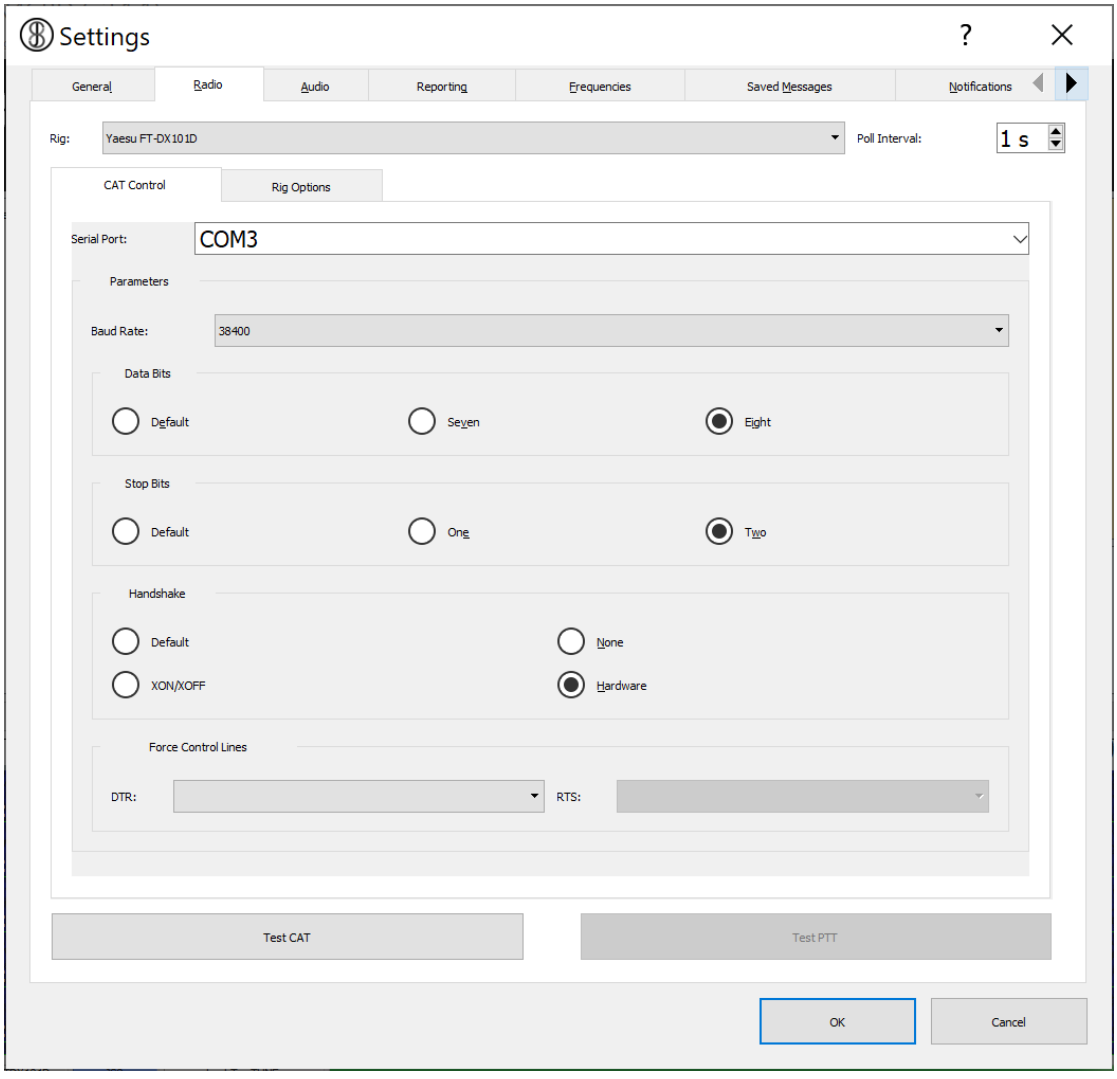

Figure 26 JS8>FILE>SETTINGS>RADIO>CAT Control

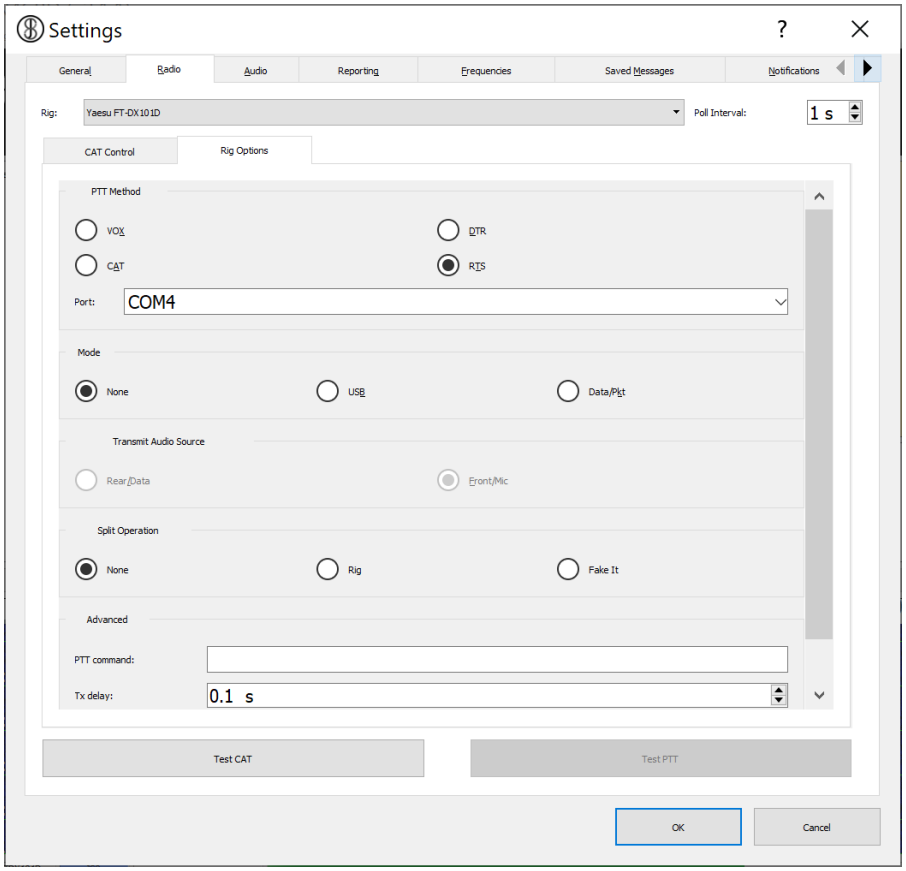

Figure 27 JS8>FILE>SETTINGS>RADIO>Rig Options

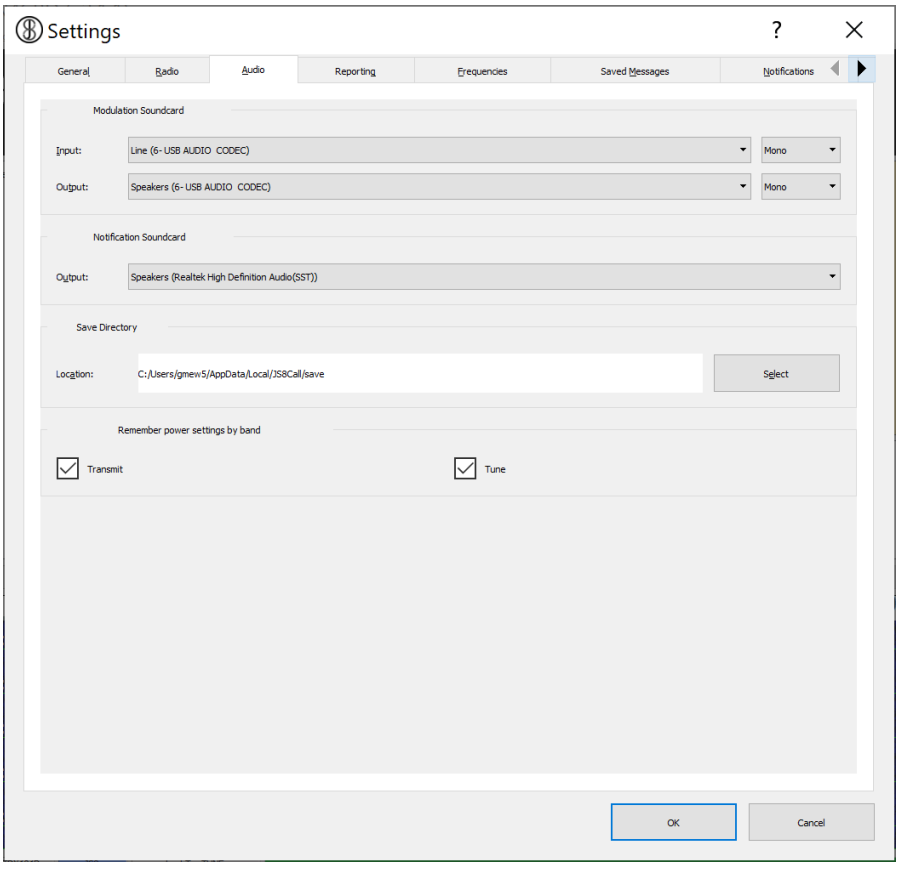

Figure 28 JS8>FILE>SETTINGS>RADIO>Audio

5. Select the Audio Tab and set up as shown in Figure 28. Note you again need to use the correct USB AUDIO CODEC.
6. NOTE for some reason the FTDX101D has not appeared in this setup possibly because it is not an original setup.
7. You should now be able to operate JS8 with the FTDX101D.

Good Luck with your FTDX101D

73s

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