

HOW-TO set up the Yaesu FTDX3000 using internal USB interface for Fldigi 3.23.13

Background

Operating the FTdx3000 and Fldigi using the radios built in USB port.

In my PSK31 travels I have encountered other hams also using a Yaesu FTDX3000 with an external interface such as a Signalink. As the radio has a built in interface I am somewhat shocked by this. And when I ask why are they not using the built in interface the most common answer is along the lines of I was not aware that the radio had it built in.

Until now I only used Ham Radio Deluxe for digital modes but I learned from a friend of mine, Dimitris, SV8ANW, that Fldigi has more exotic digital modes than HRD, but that its difficult to connect the Yaesu FTDX-3000 using the transceiver USB interface and fldigi.

So for me it is a challenge to find out how its done..

With this in mind I took a few pictures and documented a few settings and leveraging the power of the net and search engines everywhere. Hopefully this blog post on setting up the FTDX3000 for sound card digital modes will prevent a few from doing the hard way, and for those who have already gone the external interface route to change.

The screen shots in this article may seem strange to a non-Dutch speaking person. The Microsoft operating system dialogs are in Dutch, but are easily understood.

Preparation

DO NOT Connect the radio to the PC at this time.

Before diving in you will need a few things in addition to the radio and a PC.

1. Visit the Yaesu website and download the USB Serial driver.
2. Don't use already existing old Prolific PL2303 e.o.drivers!
3. Obtain but do not connect an appropriate length Type A to Type B USB cable. Your PC will have the rectangular plug and the back of the radio has

square type B plug.

The driver pack on the Yaesu web site has instructions, follow them carefully and install the drivers. Once installed and the radio is connected and powered up you will get various messages in the windows task bar that drivers are being installed and or have been installed and the device is ready for use. The driver install directions on the Yaesu website details all of this.

In this next step we will check and confirm that the drivers are correctly installed.

Connect the USB cable between your PC and the Yaesu FTDX-3000

Switch on the FTDX-3000 before you switch on your PC !

Via the Windows control panel enter the device manager and expand the **Ports** and the **Sound, video and game controllers** section. Your port numbers may differ from mine which is ok. However if they are missing you have a problem and need to return to the Yaesu driver installation instructions.

Write down the port numbers for the Standard and Enhanced com port you will need these values when setting up the PTT. In your situation there can be other port numbers depending of how many COM-ports are already in use



Configure the radio

Before we begin to setup Fldigi to interface with the radio, we first need to setup the radio side of the connection. When using the FTDX-3000 for PSK and other sound card based digital modes. The data mode lets the radio use a different set of interfaces and configuration settings for example from SSB use. Which is nice as it allows you to flip between data and voice modes without having to reset a series of controls.

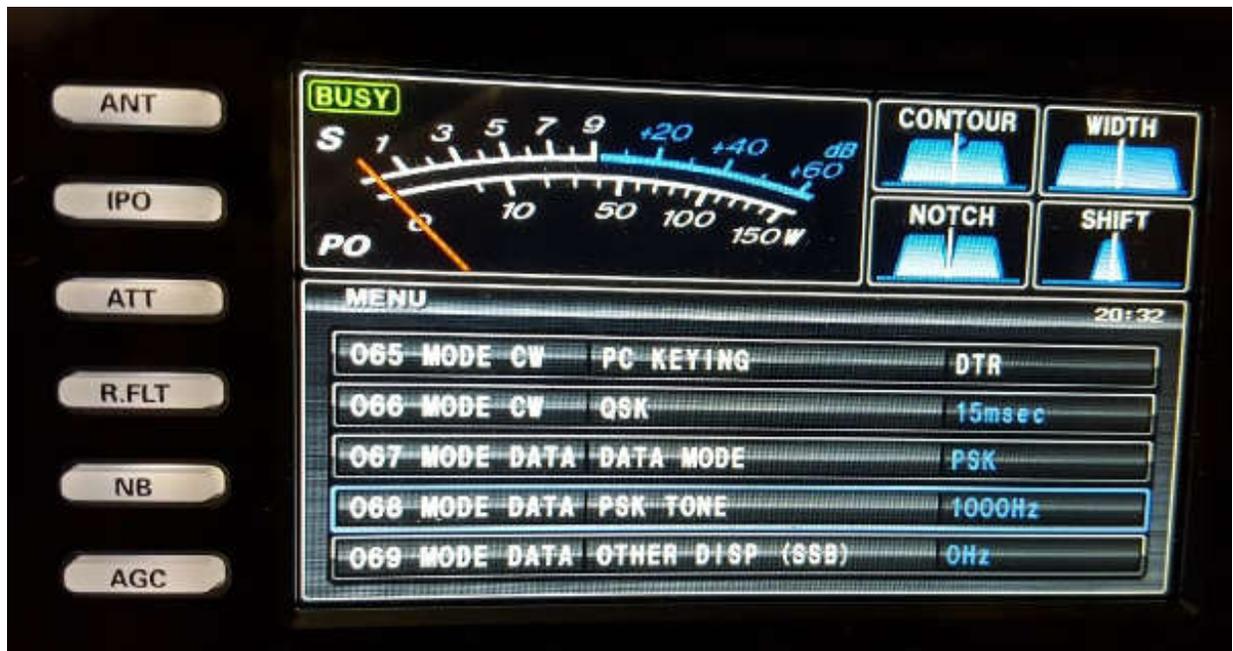
Now we check and /or change the right setting in the Mode menu of the FTDX-300000

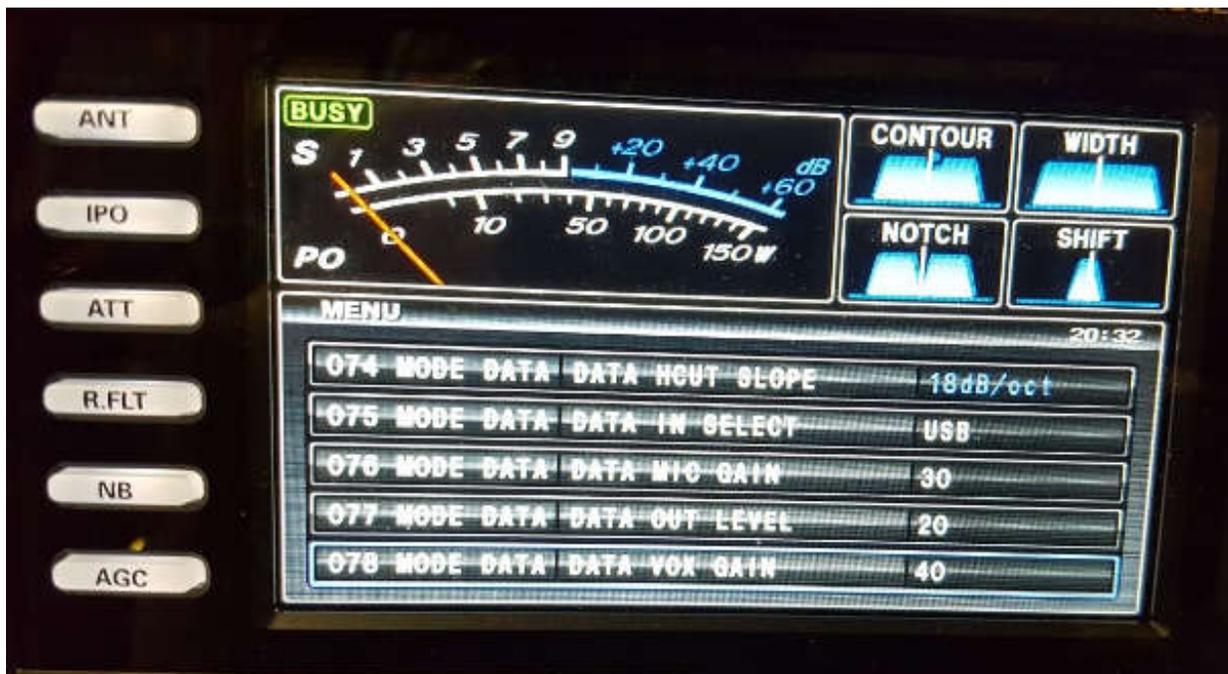
Only mentioned menu items need to be changed!

Enter the menu system and change option #65 PC Keying to DTR.

Change item #75 to USB, which tells the radio to source TX audio from the USB audio interface.

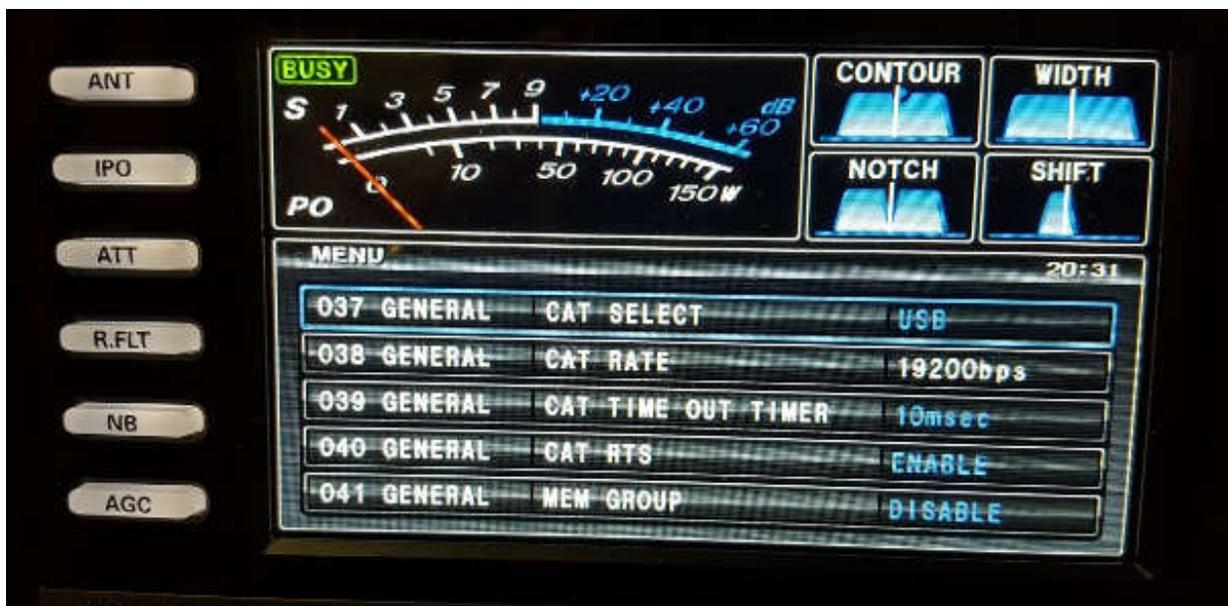
The next two items #76 and #77 is the gain settings internal to the radio between the internal sound card and the audio input of the transmitter and the audio output of the receiver. These are the values which work best for me.





Change #037 to use the USB serial port and not the back panel port. Also ensure that CAT RTS #040 is enabled as this will permit hardware flow control with the PC.

Set the right CAT Baudrate. My Advice : Set it to 19.200



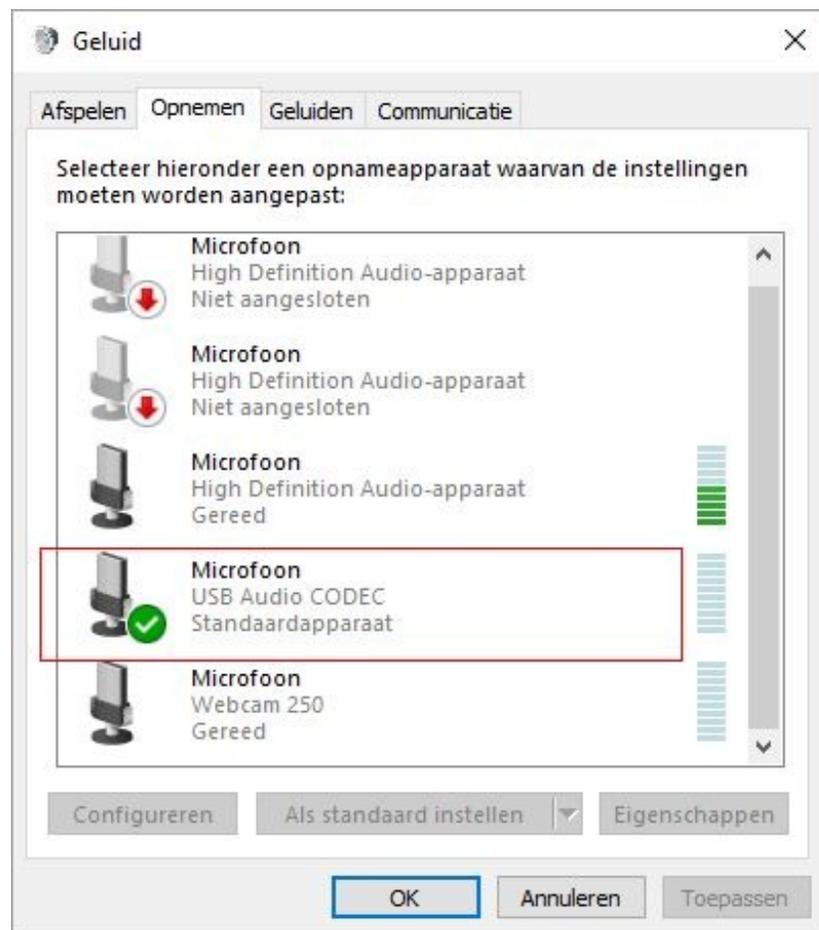
Menu settings applicable to the serial port

Setup Windows Sound Card Setting

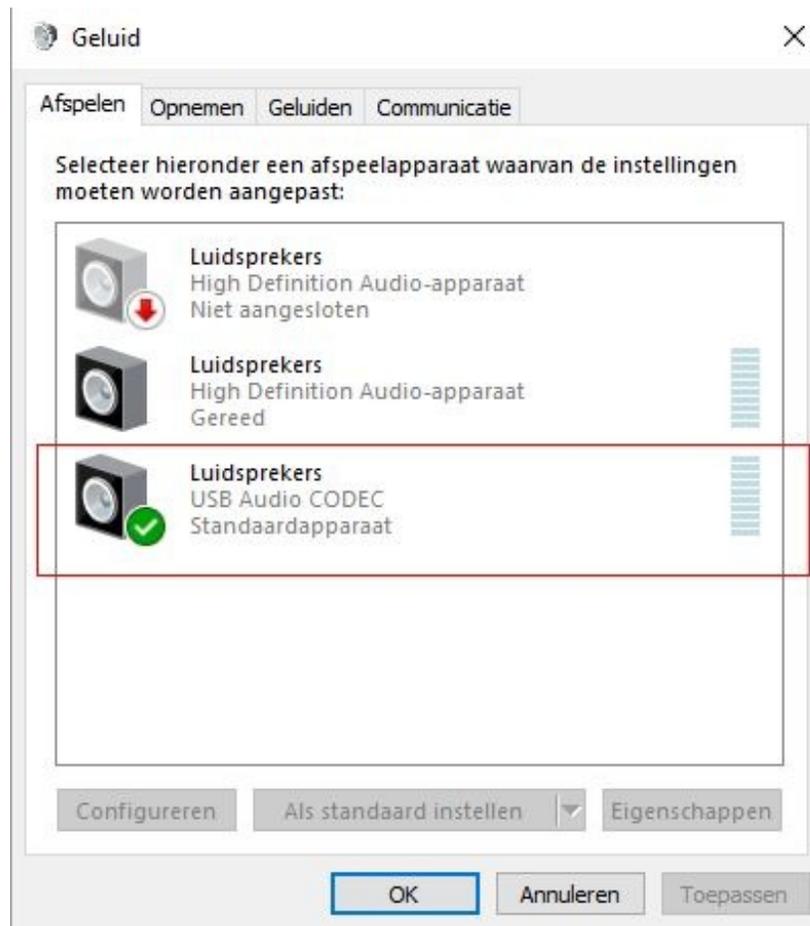
Now that we assigned 2 Enhanced COM ports to work via USB, we have to assign

these USB ports in the audio settings of Windows. We can do that via the Configuration Screen, Sounds and Sound management.

We have to assign:



TX (Microphone /recording) to USB Audio Codec



RX (Loudspeaker / Playback) to USB Audio Codec

Set the levels of the Audio between 20 and 30% to avoid over modulation.

If necessary, you can change the levels later or adjust them in Fldigi.

Set up Fldigi – Basic Configuration

First you have to configure all the Basic items in Fldigi as normal

Operator, UI, Rig (choose FTDX-5000) If necessary you can find the setting in the Fldigi user manual, fldigi on-line help.

Configure COM port

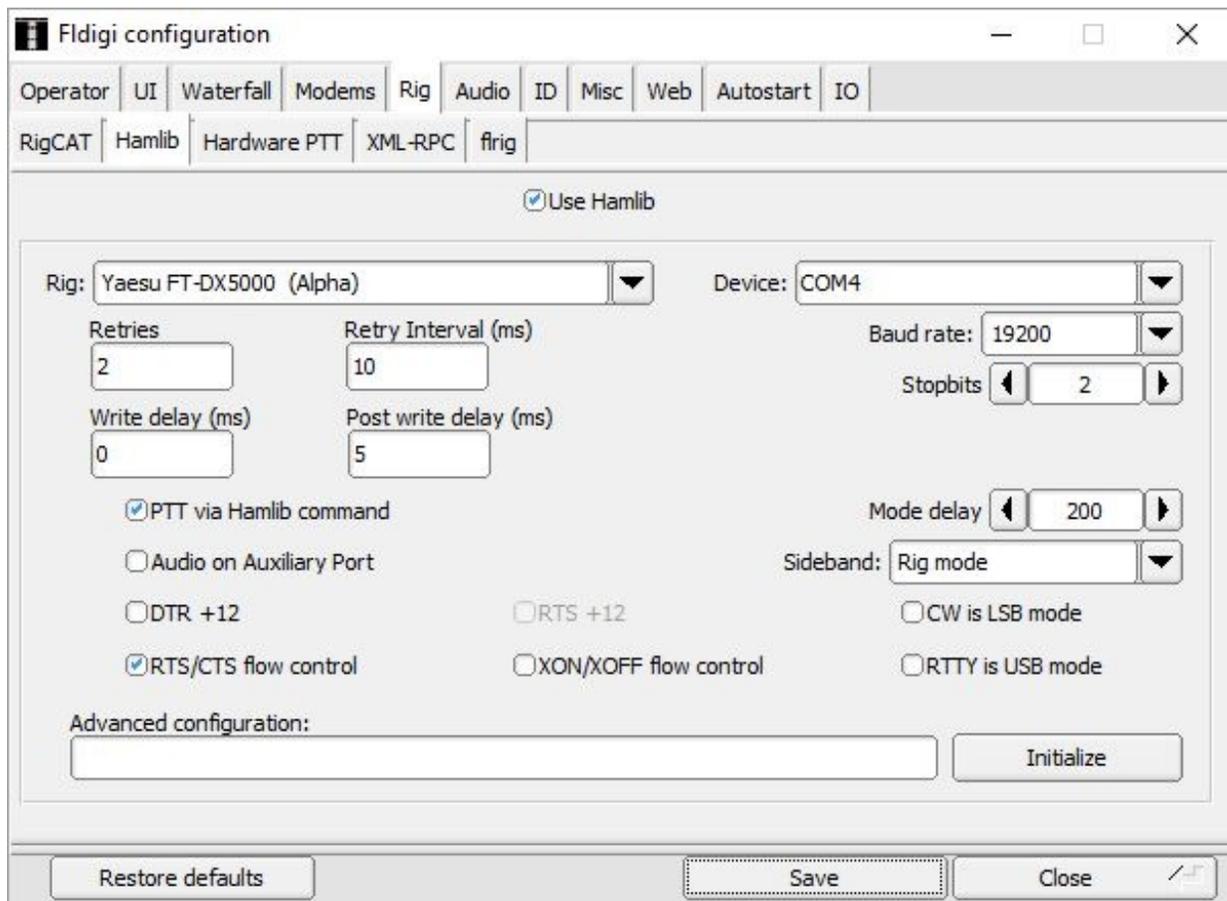
- Choose in Configuration tab RIG
- Select Use Hamlib
- For the Yaesu FTDX-3000 choose FTDX-5000 for rig, as the FTDX-3000 is not in the list
- At Device : choose **the first COM port** of the Enhanced COM ports (see Part

2 as example)

- Set the right CAT Baudrate. Advice : choose 19.200 In Menu #038
- Check PTT via Hamlib command
- Check RTS/CTS flow control

Push Initialize now

- If everything is correct, the selection “Use Hamlib, on top in this screen, stays on. If the connection with the FTDX-3000 failed, this selection disappears! In this case you have to check all setting again and retry



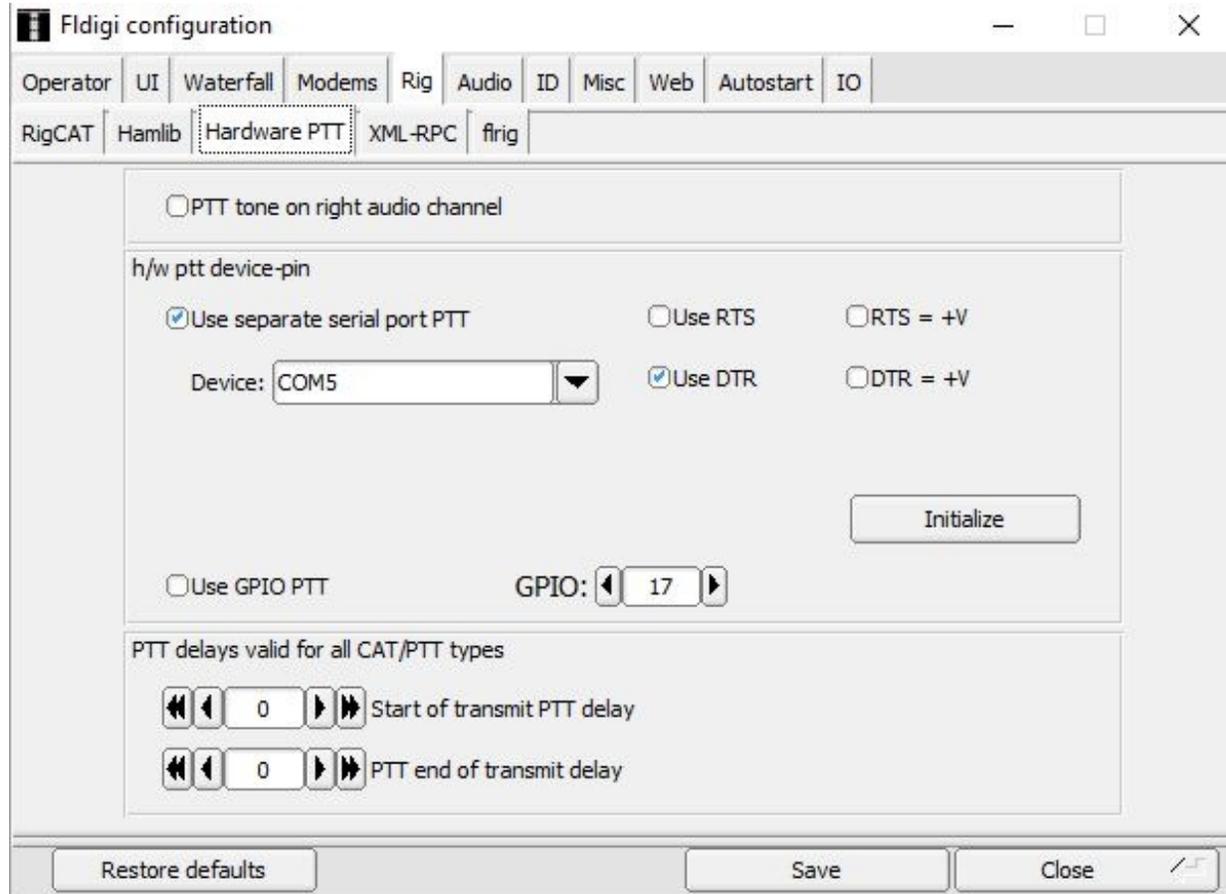
When you setup Fldigi to connect to the radio ensure that in the option Rig under Device the first “Enhanced port” is being noted and that the speed is the same as what was set in radio option #038.

If the connection is OK, you can “now save the settings !

Configure PTT

I will assume that you have already setup the radio control side of Fldigi to connect

with the radio. It is important that when configuring Fldigi (configure/Rig Control) you use the enhanced port recorded above and not the standard port number.

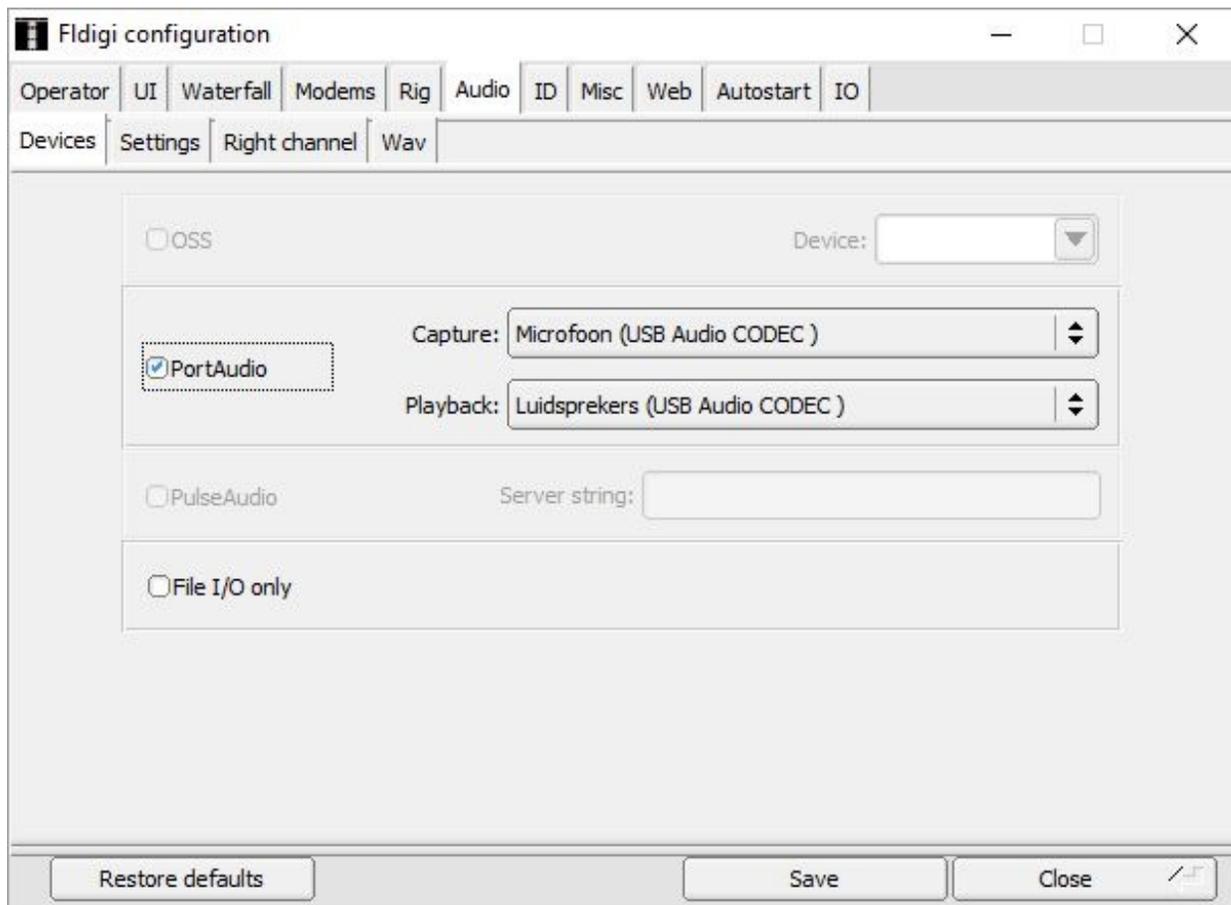


Fldigi Configure / Rig Control / Hardware PTT options

- Choose the second Enhanced COM port
- Check Use separate serial port PTT
- Check Use DTR

Configure Sound Card

Via the Fldigi Configure / Soundcard menu we now can set the right setting for RX and TX ports



Via the Fldigi Configure / Soundcard menu we now can set the right setting for RX and TX ports

Setting Sound Card Initial Gain Levels

Before taking it for a test drive on the air the initial gain level for the USB sound card which while physically inside the transceiver it is logically part of Windows. In my particular installation the FTDX3000 sound card shows up as Speakers "USB Audio CODEC" and Microphone "USB Audio CODEC".

In your system the number may be different but the rest of the text will be the same. Right click on each device, select properties and levels. Start out will a low level around 20 for you initial trials. You can tweak the TX value in Fldigi, here in the logical device config, and in the radio menu settings as shown above in the radio configuration section.

Problems and solutions

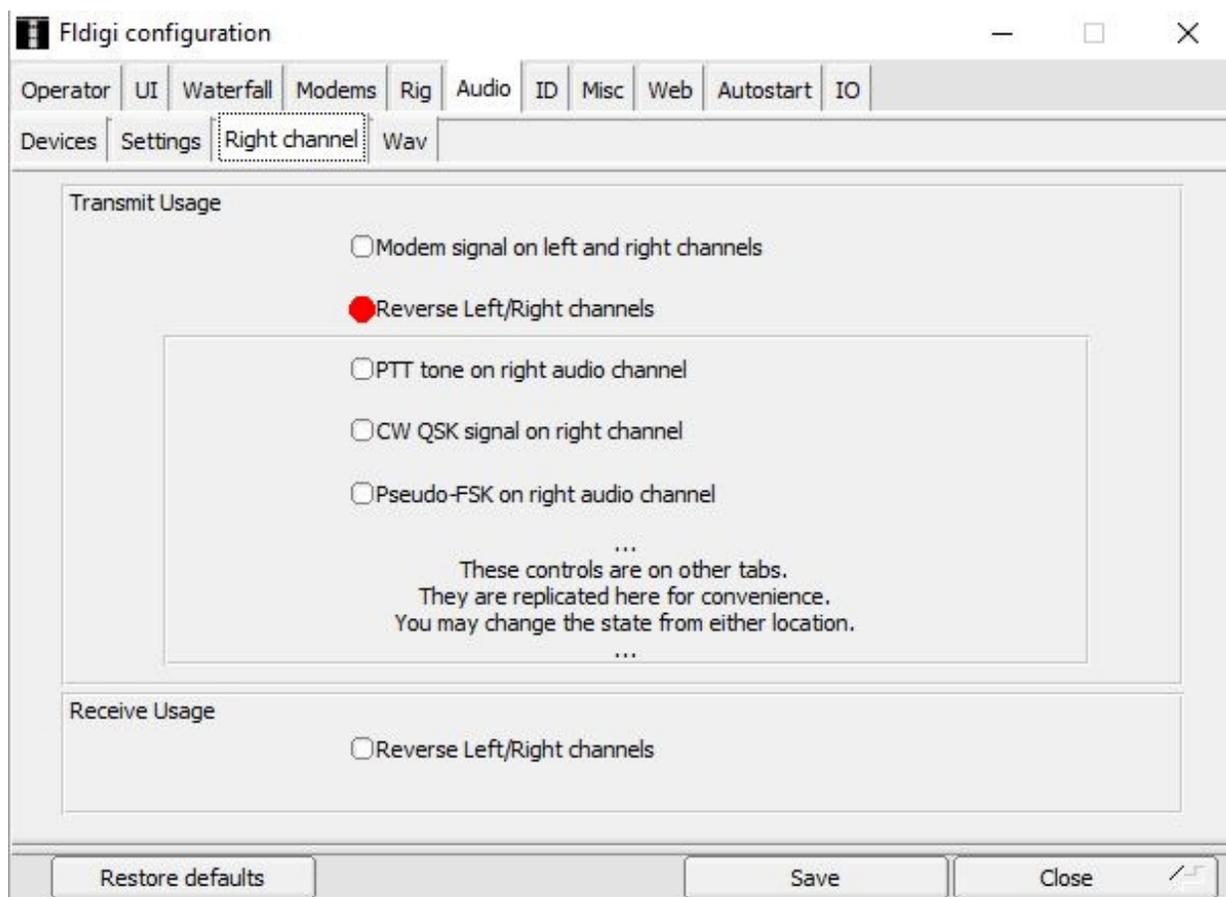
No audio output / modulation

The Yaesu FTDX-3000 user only one audio channel to modulate. It can happen,

that everything is set ok , but there is no audio output or modulation. That can occur if the FTDX-3000 is connected to the wrong audio channel of the PC. In that case, you can reverse the left and Right channels to cure this problem.

In Fldigi, you can easily swap the left and right channels.

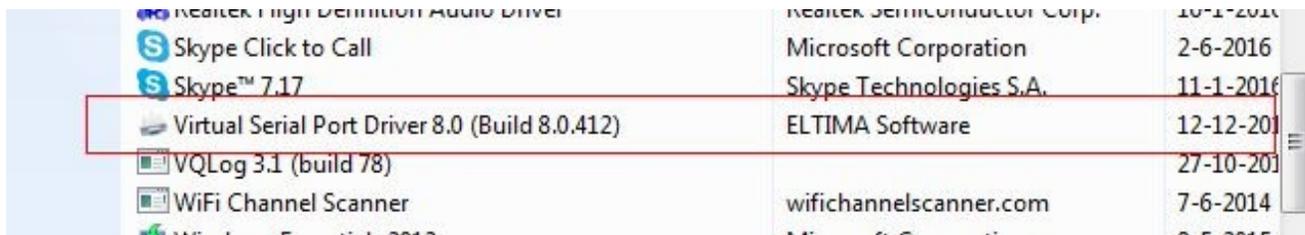
- Go to Configure / Sound Card / Right channel
-
- At Transmit Usage, Check Reverse Left/Right channel
- Save the new setting and restart the program



Its advisable to remove existing virtual COM-port drivers you may using before with other programs or transceivers. The Yaesu virtual drivers seem to work the best with the Yaesu FTDX-3000

Depending on which drivers you have used before, and how you installed them, there is an associated uninstall program. Its advisable to use the uninstall program if its exists. This will probably be a Prolific or Eltima driver. Look at the Windows Programs listed on the Start button and find the Prolific, Eltima or other Virtal COM-

port driver uninstall program. If there is no uninstall program available, you have to uninstall the old drivers via the Windows configuration screen. Go to the Windows Configuration Screen, choose Remove program and select the appropriate Virtual Serial Port Driver program. Remove all settings.



Installing Yaesu Virtual Com-port drivers

You will find these drivers and manual at www.yaesu.com, choose the FTDX-3000, and then the Tab: "Files". Here you find the Virtual Com-port driver software and the manual. Continue with the Preparation section of this document

This completes the setup and Installation

You can now use Fldigi and all its modes in combination with the Yaesu FTDX-3000

That should be enough to get you on the air.

Perform a few test transmissions to get the audio levels in Fldigi , the sound card and in the radio setup options to achieve the ALC levels recommended for your mode. Normally you are striving for no ALC deflection. Set the carrier level in the radio either via the front panel or inside the menu system to the power level desired and have fun.

With Thanks to Jay, Admin at Morsetutor.com who made a similar description for using the Yaesu FTDX-3000 with HRD and give me the idea to make a description for Fldigi.

See you in Digital modes on several bands

73, de Cor, PA0GTB