

How do I?

An occasional series

This week: Yaesu FTDX1200 and WSTJ-X, N3FJP and flrig

We have discussed **Computer Assisted Transceiver (CAT) control** elsewhere in this series. In this example, we will use a Yaesu FTDX-1200 HF transceiver and set up **flrig, N3FJP AC Log, and WSTJ-X with JT Alert** to help us accurately log contacts and have some fun with FT8 and the other digital modes in the WSTJ-X suite.

Start by setting up the radio and a Windows PC running at least Windows XP. These examples were done on a Windows 10 machine, but the software is the same.

Download the WSTJ-X software from <https://physics.princeton.edu/pulsar/k1jt/wsjsx-2.2.2-win64.exe>

If you need the 32 bit version it is at the same webpage. Download the manual as well!

Download flrig (might as well grab the rest of the fast light digital modem goodies while you are there from https://sourceforge.net/projects/fldigi/files/flrig/flrig-1.3.53_setup.exe/download

Download or purchase and download the N3FJP call log software from <https://www.n3fjp.com/>

Download the current version of JT Alert from <https://dnl.hamapps.com/JTAlert/eda319ab9017e7af6f5962d54a823a94>

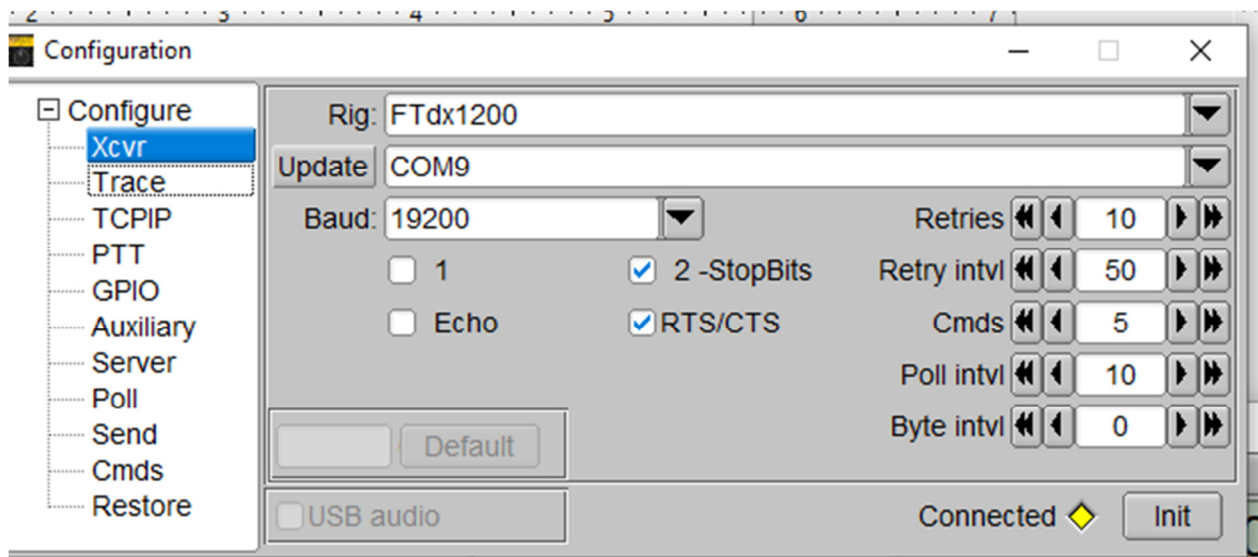
Install everything. I'll get a cup of coffee and be back soon.

Done yet?

Let's start with **flrig**.

Open it and go to the Configuration menu

From the drop down box, select FTdx1200 as the rig and select a COM port. Mine is 9, yours may vary. Baud of 19200 seems to work well. Just make sure the radio menu setting #39 CAT Rate matches. The default is 4800. Select 2 stop bits and RTS/CTS.



What is RTS?

RTS / CTS Flow Control is another flow control mechanism that is part of the RS-232 standard.

It makes use of two further pins on the RS232 connector, RTS (Request to Send) and CTS (Clear to Send). These two lines allow the receiver and the transmitter to alert each other to their state. A transmitter raises its RTS line, which causes an interrupt on the receiver, i.e - hey can I send some data? If the receiver is in a position to receive the data it will assert its CTS line, i.e - yes you can start sending. The raising and lowering of these lines allows device drivers which implement hardware flow control code to maintain a reliable data connection between transmitter and receiver. The advantage to this approach is that damaging data in transit does not affect the flow control mechanism (as in Xon/Xoff).

From

<http://us.brainboxes.com/faq/items/what-is-rts-cts-hardware-flow-control->

Your screen should look like the above. Click the INIT button in the bottom right corner and it should connect to radio and display the frequency from the radio in flrig.

That was easy? Right?

Let's go to N3FJP.

Open up the program and go to SETTINGS>RIG INTERFACE.

The screen will look like the below. The FTDX1200 does not have its own settings in N3FJP so use Yaesu-Newer, 19200 Baud, 2 stop bits. Mode determined by rig; 2 second polling and RTS connection power. When done, close the FLRIG application and click TEST. The frequency and mode should change to the test items in N3FJP.

That was easy right?

Restart flrig. Go to CONFIGURATIONS >TCP/IP.

Open N3FJP SETTINGS>SERVER. Check the box for API there and enter the server address 127.0.0.1 port 4001 into flrig.

Flrig and N3FJP should now play well and if you downloaded **FLDIGI**, you can use flrig for cat control and log your PSK31, RTTY, Olivia, Domino, etc contacts directly to N3FJP.

Baud Rate:
 1.2 2.4 4.8 9.6 11.5 14.4 19.2 28.8 38.4 56

Parity:
 Odd None Even

Connection Power:
 None RTS DTR Both

Mode Determined By:
 Rig Frequency Don't Use
 Mode by Frequency: Return All Mapped Modes

Data Bits:
 7 8

Stop Bits:
 1 2

Radio Polling Rate:
 100 ms 500 ms 2 sec 10 sec

Use Frequency on Main Form Convert Command to Hex
 Return LSB / USB Immediately Execute Commands
 Show Frequency Change Form on Startup
 Don't Send CW Mode Change if on CW (so CW filters won't reset)
 Don't Send Mode Change with Freq (useful when operating digital)
 Add Offset to Frequency Change (CW & DIG) Offset in Hertz

Command to Read Frequency:
 FA:
 Frequency:

Command to Read Mode (if required):
 MD:
 Mode:

[For more information on rig interface cables, please click here!](#)

Description:
 To use the Rig Control interface, select the appropriate parameters for your radio and click test.
 Be sure to select the RTS or DTR connection power option if your interface requires it. Many interfaces require RTS.
 Icom users, after selecting Icom, don't forget to enter your rig ID into the command strings, which you will find in your rig's manual under CAT control.
 I have the detailed successful settings users have sent along for many rigs here:
<http://www.n3fjp.com/help/righelp.html>

Now open WSJT-X and go to SETTINGS>RADIO and select FLRIG as the transceiver. If you do not plan on using **fldigi**, you can simplify things by selecting the FTDX9000 here as a stand in for the FTDX1200, but we are trying to maximize play value! If you select RTS for the :PTT method, set the DTR Force Control to HIGH. Leave RTS blank. When done, test CAT and the radio should change frequency.

See below for the WSJT X screen,

With flrig open start WSJT-X, N3FJP and finally JTAlert in that sequence. N3FJP and WSJT-X do not talk well to each other. It may be said they are barely on speaking terms, but fortunately JT Alert gets along with both and acts as the bridge to log your WSJT-X contact in N3FJP.

There, that wasn't so bad was it? And while CAT control is not necessary outside the WSJT-X modes for the most part, it sure is fun, especially in contests!

When all done, take screen shots of the setup. Windows has a habit of changing things.

General Radio Audio Tx Macros Reporting Frequencies Colors Advanced

Rig: FLRig FLRig Poll Interval: 2 s

CAT Control

Network Server: [dropdown]

Serial Port Parameters

Baud Rate: 19200 [dropdown]

Data Bits

Default Seven Eight

Stop Bits

Default One Two

Handshake

Default None
 XON/XOFF Hardware

Force Control Lines

DTR: [dropdown] RTS: [dropdown]

PTT Method

VOX DTR
 CAT RTS

Port: COM3 [dropdown]

Serial port data rate which must match the setting of your radio.

Rear/Data Front/Mic

Mode

None USB Data/Pkt

Split Operation

None Rig Fake It

Test CAT

Test PTT

OK

Cancel