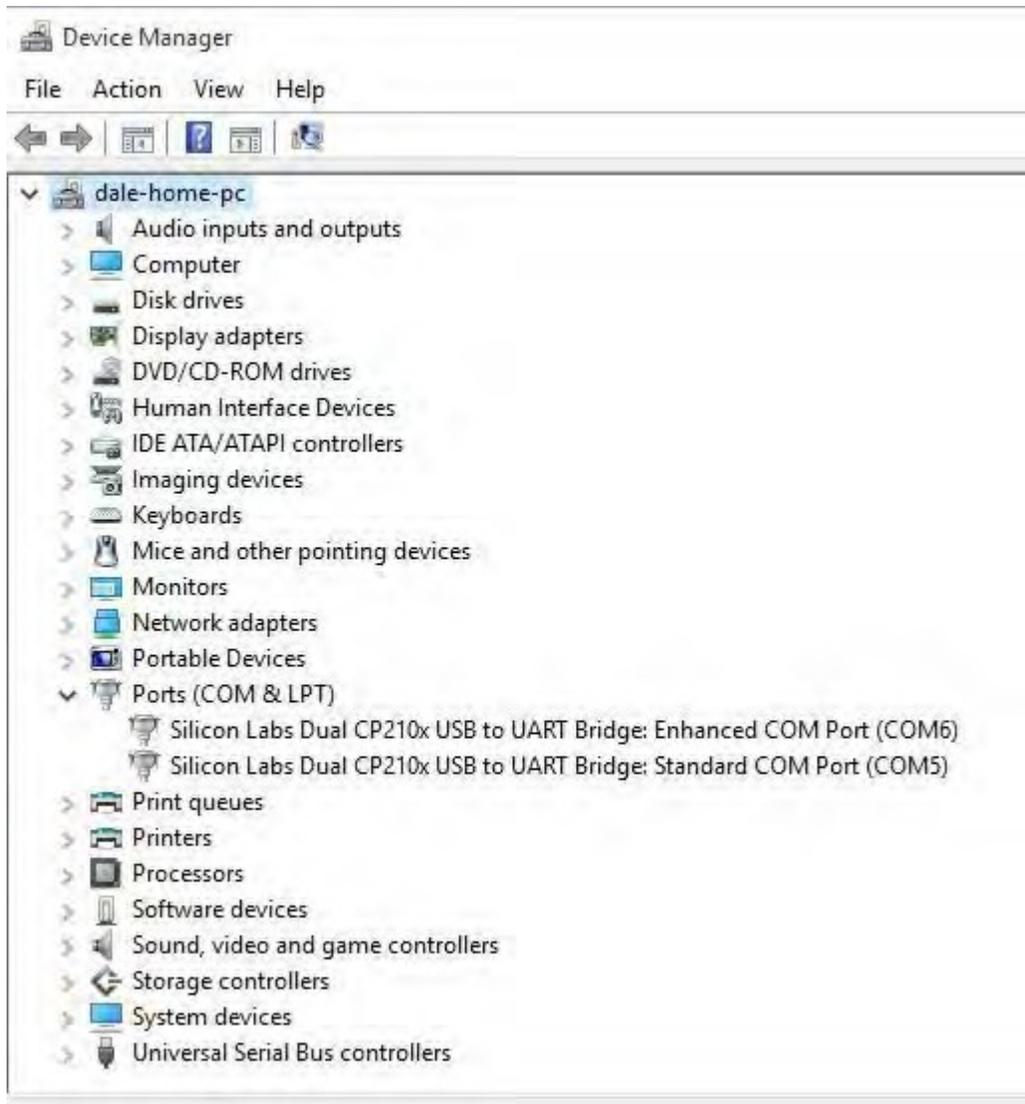


Ham Radio Deluxe on the FT-991

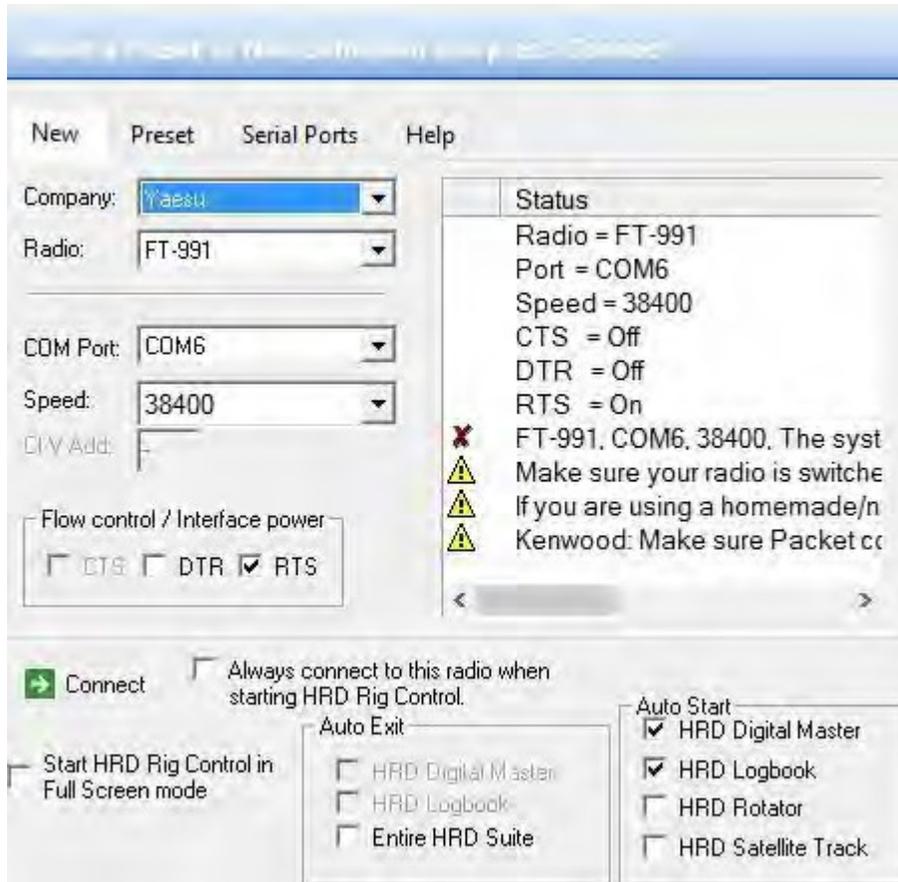
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Written by: **KE0BRZ, Dale Christopherson**

1. CAT Setup using the FT-991 Operating Manual (Page 127). Note that I am using the online manual at Yaesu.com and not the older one that came with my FT-991. There are some key differences at times.
 - a. Set Menu 31, CAT Rate to a rate you prefer. I use at least a rate of 19200 and prefer 38400.
 - b. Set Menu 32, CAT TOT to 10 which is the default
 - c. Set Menu 33, CAT RTS to Enable which is the default
 - d. Set Menu 62, PSK
 - e. Set Menu 63 PSK Tone, 1000 Hz
 - f. Set Menu 64, 0Hz
 - g. Set Menu 65, 0Hz
 - h. Set Menu 70, Rear
 - i. Set Menu 71, RTS
 - j. Set Menu 72, USB
 - k. Set Menu 73, 50
2. APSK Setup using DATA (PSK) Operation (Page 118). You will find other pages in the online manual for other digital modes. These instructions assume you're planning on using PSK-31.
 - a. Set Menu 110 SSB PTT Select to RTS
 - b. Set Menu 111 SSB Port Select to USB
3. **Do not have a USB Cable connected between your FT-991 and computer.** Go to the Files section for the FT-991 on Yaesu.com and install the USB driver following those directions. It will install 2 drivers for the Enhanced COM Port and a Standard COM Port. You will be using both of them. In the diagram below, I show the 2 ports and it is import to know which COM port both the Enhanced and Standard are using.



4. Set the control panel sound so that USB Audio CODEC is the default. The level for the mic is typically set at 70. That is where mine is set.
5. Ensure your USB cable is now connected between the FT-991 and computer. I have found that connecting through a USB Hub does not work for the Hubs I have, so I connect directly to the computer. The FT-991 will always need to be connected to the same USB connector on the computer or you must reinstall the USB Driver.
6. Next turn on the FT-991 and start Ham Radio Deluxe (HRD) on your computer. The specific version that I am currently using is 6.3.0.x
7. On the HRD Connect Screen set the following:
 - a. Company: Yaesu
 - b. Radio: FT-991
 - c. Port: Your Enhanced COM Port from step 3 above. In my case COM6.
 - d. Speed: The CAT Rate you set up for Menu 31 in Step 1a above.
 - e. Flow Control: RTS
 - f. On the FT-991: Set the FT-991 Mode to Data-USB and set the Width on the touchscreen to 3000Hz



8. At this point Rig Control and the LogBook for HRD should be connected to the FT-991 and display the same frequency and mode as shown on the FT-991.
9. Next is to connect to Digital Master 780. Most of that is setup with the connections above plus go into Program Options within DM780.
 - a. Select Soundcard. Set the input device to the Microphone (USB Audio CODEC) device. Set the Output device to Speakers (USB Audio CODEC). Close the window and Digital Master 780 is now set to do digital modes on the FT-991.
 - b. Select PTT. At this point you have two options. The simpler way is discussed first but it limits you to having to control the radio directly on the radio or with Rig Control plus the DM 780. The more complex setup places full control in the DM780. I prefer the second method after giving it sometime.

781. Option 1: Set PTT to COM Port via Serial (COM) Port, select your Standard COM Port from step 3 above (in my case COM5). Set on TX to Set RTS.

Program Options

Appearance
Callsign (My Info)
Clock
Data Controller
Logbook
Modes + IDs
PTT
Radio
QSO
Soundcard
Sounds
Storage
SuperSweeper
Waterfall

Alarms...
Favorites...
Macros...
Modes...
Navigator...

Audio Recorder...
PSK Reporter...
Soundcard Calibration...
Time Synchronization...

PTT

COM Port
 via Serial (COM) port
Port:

On TX: Set DTR (data-terminal-ready)
 Set RTS (request-to-send)

Ham Radio Deluxe
 via Ham Radio Deluxe - DM780 must be connected to HRD.
[Configure HRD connection](#)

Data Controller
 Let The Data Controller key the radio via interface.

None
 via soundcard PTT or radio VOX

 See notes below

Note: This PTT is separate and in addition to the PTT from the Data Controller.

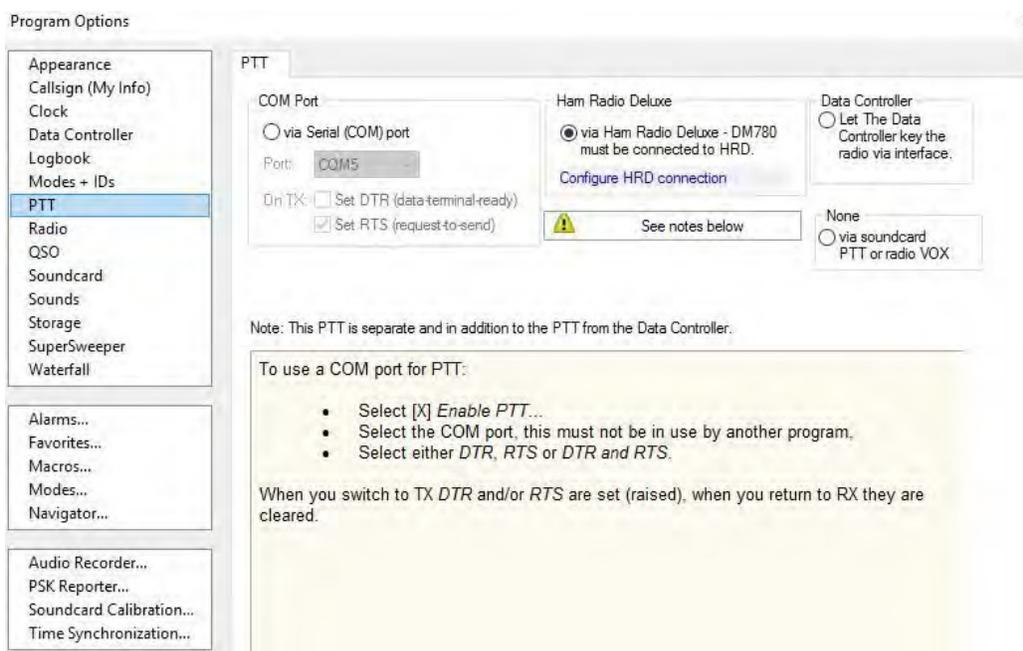
To use a COM port for PTT:

- Select *Enable PTT...*
- Select the COM port, this must not be in use by another program,
- Select either *DTR*, *RTS* or *DTR and RTS*.

When you switch to TX *DTR* and/or *RTS* are set (raised), when you return to RX they are cleared.

Option 2:

1. Set the following menu items on the FT-991:
 - a. Menu 66, Data LCUT Freq: Off
 - b. Menu 68, Data HCUT Freq: Off
 - c. Menu 71, Data PTT Select: RTS
 - d. Menu 72, Data Port Select: USB
2. Set the FT-991 Mode to Data-USB. Set the Width on the touchscreen to 3000Hz
3. With the DM780, PTT option, set PTT to Ham Radio Deluxe.
4. Select: Configure HRD Connection which is below the Ham Radio Deluxe selection for PTT. The Configure Radio Pane will be displayed with your radio name. If not select connect. Then you can configure the buttons and order you want to have displayed plus sliders for variable settings like RF Power (watts). Then select Save before closing the screen. Below is my configuration. NOTE: You must keep the TX button. If you remove it, HRD will not be able to key the FT-991.



HRD User Interface

Address:

Port:

Automatically connect

Mode	AGC
Roofing Filter	...
...	...

TX	Moni	NB
...
...
...

MAX RF power	
Noise blanker	
Mic gain	
AF gain	
...	
...	

Connect to HRD User Interface

Ham Radio Deluxe:

- The connection uses TCP/IP - you must have TCP/IP started.
- Make sure Ham Radio Deluxe (HRD) is started and connected to a radio (you must use build 1317 or later).
- In HRD select *IP Server* from the *Tools* menu, make sure the *IP Server* is started (DM780 will connect to the IP Server).

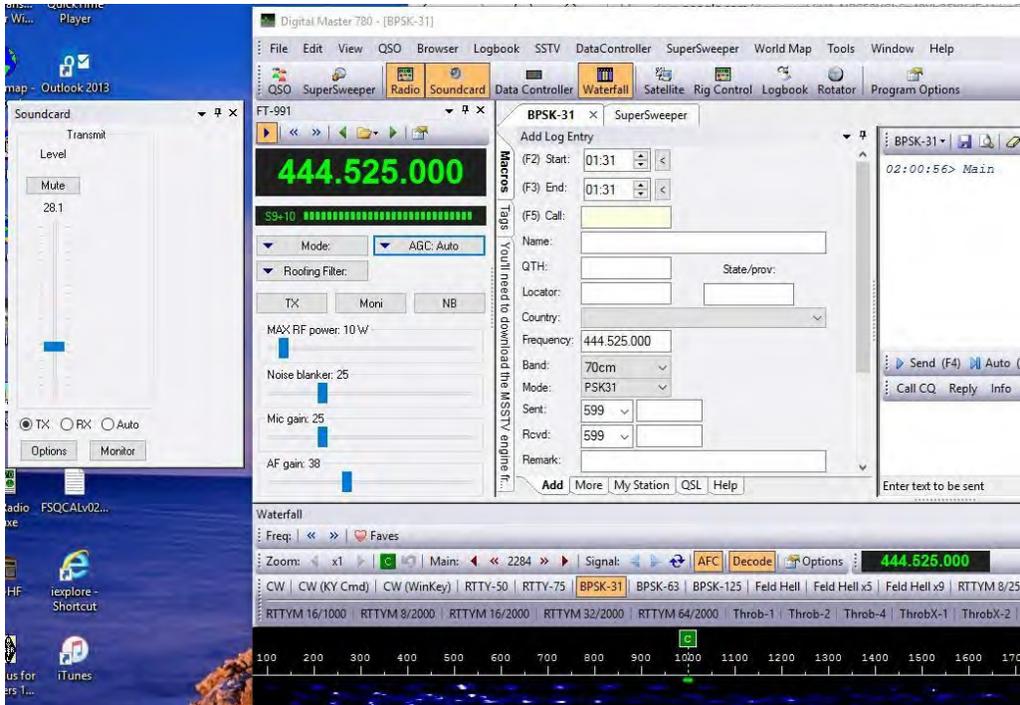
Configure Radio Pane:

- Address* - the address or name of the computer where the **HRD User Interface** is running, localhost (or 127.0.0.1) can usually be used to connect to the local computer, the actual network address is shown in the IP Server window.

Do NOT enter the address of the HRD Remote Server, always use the HRD User Interface address. Even if HRD is connected to a remote radio, you always connect to the HRD User Interface.
- Port* - the default port is 7809, use the same port selected in the IP Server window.
- Always connect to HRD* - if checked an attempt is made to connect to HRD when the program starts even if not connected when the previous

⚠ PTT - Select 'Program Options' from the 'Tools' menu

5. Within DM780, select Radio and Soundcard options. The Radio can be controlled on the Radio pane as shown below. You cannot easily change frequencies except in the Waterfall area under Faves, which are digital modes. You can also adjust the level of the sound card display. Adjust this based upon what your getting displayed on the ALC Meter located on the FT-991. I have found it best to have 1-2 bars of red displayed occasionally (not steady). You will need to always be watching your ALC. If you have too little you're not getting the RF Power that you set the radio to.



If you have any questions, email me at KE0BRZ at ARRL dot NET

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