



CODAN Radio Tech Notes

NVIS Communications LLC

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Question: *How can I use FLDIGI with an Envoy or Sentry-H transceiver?*

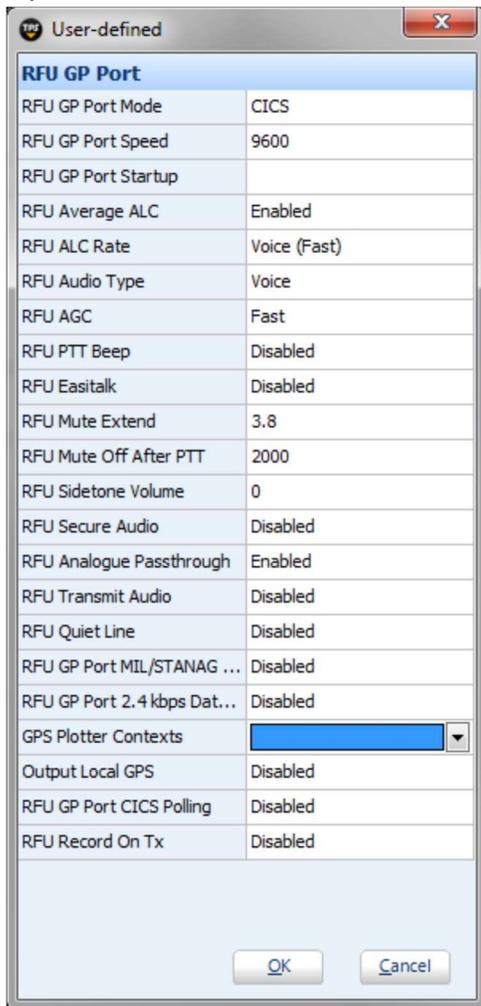
Answer: There are 3 parts to this answer: 1) cabling; 2) transceiver settings; and 3) FLDIGI settings

PART 1: cabling

1. Use cable 08-07356 “Cable, 15 Way to PC Soundcard”
2. If your computer does not have a serial port with a DE9 plug you will need a USB to serial adapter
3. Connect the DA15 plug into the 15 pin GPIO connector on the desk console or the RFU. The DA15 socket on the cable passes through all the wires from the DA15 plug EXCEPT pin 5 “AF_IN +” and pin 10 “PTT”.
4. Connect the DE9 socket to your computer’s DE9 plug or the USB to serial adapter’s plug
5. Determine the COM port number for this serial port. One way to do this on Windows computers:
 - a. Press the Windows and X keys at the same time
 - b. Press M or click on “Device Manager”
 - c. Click on the “>” to the left of “Ports (COM & LPT)”
 - d. Note the COM port number next to the serial port you are using
6. Connect the audio connectors. If your computer has a combo audio connector (a single connector for both microphone and headset) you will need a combo audio adapter or splitter which will give you separate sockets for microphone (or line in) and audio.
 - a. Connect the 1/8 inch (3.5 mm) stereo audio output from radio plug (green marking) to the computer’s headphones or line out connector
 - b. Connect the 1/8 inch (3.5 mm) stereo audio input to radio plug (red marking) to the computer’s line in (preferred) or microphone connector

PART 2: transceiver settings

1. You must be logged in as Admin to make these changes
2. Press Menu
3. Select User Data
4. Select Peripherals
5. Select RFU GP Port or the Console GP port as appropriate for your installation
6. Scroll down to User-defined and select it by pressing OK, then press the right arrow to open the list of User-defined parameters
7. Make the following changes, except “RFU GP Port Mode”, “RFU GP Port Speed”, and “RFU GP Port Setup” should be left as they were:

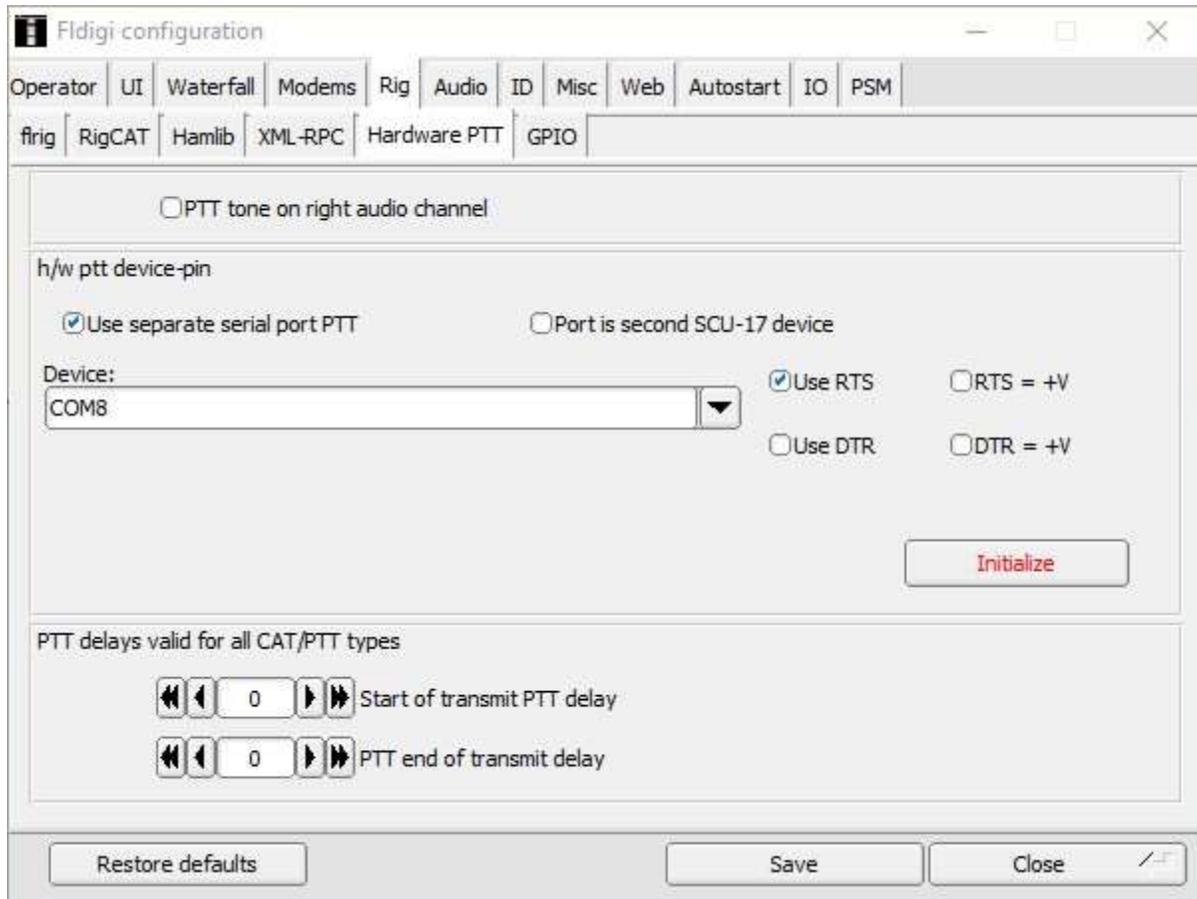


If you are making these changes for the Console GP port the lines starting with “RFU” will start with “Console” instead.

You can make the RFU GP Port changes in TPS or TPS-M (Transceiver Programming Software) but not the Console GP Port changes.

PART 3: FLDIGI Settings

1. Using the COM port determined in Part 1, step 5.d, configure the FLDIGI Rig / Hardware PTT settings as shown here:



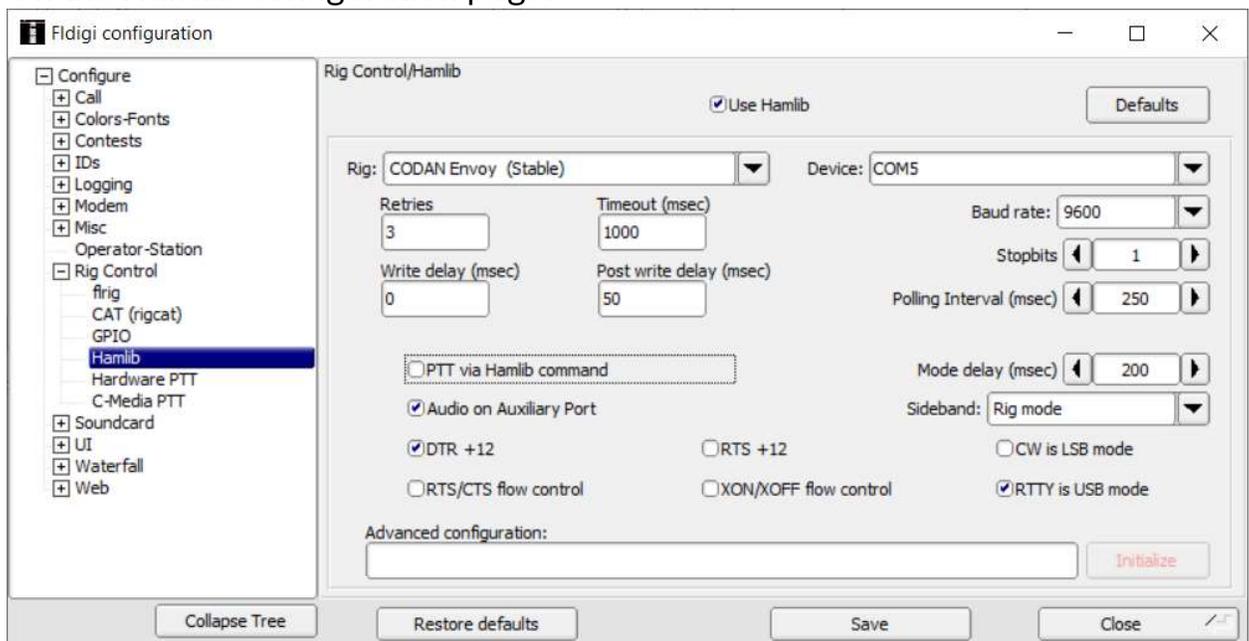
Check the boxes for “Use separate serial port PTT” and “Use RTS”; all other check boxes should be unchecked; then press “Initialize”. If “Initialize doesn’t change from red to black, check that you have the correct port number and the serial port is connected to the cable and the cable is connected to the console or RFU.



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2. On the Audio / Devices configuration page
 - a. check the boxes for “Port Audio” and “Device supports full duplex”
 - b. Select the Capture device as the Line (preferred) or Microphone input to which you connected the red 1/8 inch (3.5 mm) plug
 - c. Select the Playback device as the Headphones output to which you connected the green 1/8 inch (3.5 mm) plug
3. On the Hardware PTT configuration page:
 - a. Check the box for “Use separate serial port PTT”
 - b. At “Device” select the COM port connected to the DE9 socket of the CODAN cable
 - c. Check “Use RTS”
 - d. Press Initialize. It should change from red to black
 - e. Press Save
4. On the Hamlib configuration page:



- a. At Rig select “CODAN Envoy (Stable)”
- b. At Device select the COM port connected to the 15 pin GPIO port on the console or RFU
- c. Set Baud rate to 9600
- d. Set Stopbits to 1
- e. Uncheck “PTT via Hamlib command”
- f. Leave “Audio on Auxiliary Port” checked



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- g. If using CODAN cable 08-06952-001 on the selected Device COM port, check DTR +12. If using a different serial cable, you will have to determine the proper settings for DTR +12, RTS +12, RTS/CTS flow control, and XON/XOFF flow control
- h. Press Initialize. It should change from red to black
- i. Press Save
- j. Press Close

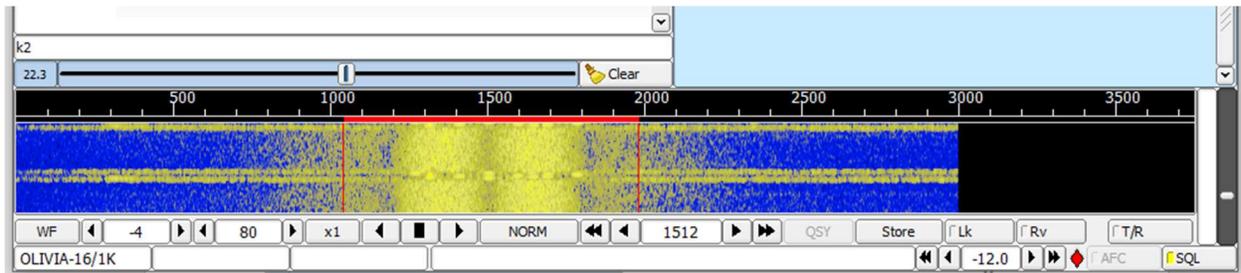


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Troubleshooting

1. If your computer only has a Microphone jack, not a Line In jack, the audio from the console or RFU might be too “hot”, i.e., at too high a level for FLDIGI to correctly decode the received signals. This is indicated by a red diamond at the bottom right of the FLDIGI screen (should be green).



Possible solutions:

- Check your Windows Sound settings – you may be able to specify whether the socket is Microphone or Line In.
- Build an attenuator:
 - Example: for 30 dB of attenuation, $R1 = 4.3\text{ k}\Omega$ and $R2 = 150\ \Omega$.
 - Signal in $R1$ $R2$ Ground
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One resistor can fit in the shell of a 1/8 inch stereo plug and the other resistor can fit in the shell of a 1/8 inch stereo socket, for an inline attenuator. No circuit board or case required.

2. For help with FLDIGI configuration, join the Win-FLDIGI group at Groups.io – see <https://groups.io/g/winfldigi>

Thanks to Jeff Hall and Callum McEwen of CODAN Communications (Australia), and Michael Black W9MDB.

