

FLDIGI FAILURES TROUBLESHOOTING:

Introduction:

Often, fldigi will fail to work properly, either by not keying your transmitter, or by exhibiting transmit audio problems. Receive issues may also be present as well, but transmit and keying failures are the most commonly seen issues.

For the average Ham, fldigi is usually interfaced via either a Signalink device or by utilizing the USB audio interface of a connected transceiver that provides the audio transfer capabilities. Either of these interfaces is essentially an external “sound card” device, operating in addition to, but separately from the “sound card” already inside your PC. There are other types of interfaces that basically connect the audio from your transceiver to the “sound card” built in to your PC, and in those situations, the troubleshooting would center on that sound device within your PC.

Signalink Troubleshooting:

Signalink interfaces are very common and widely used. They work with radios that do not have any type of built-in sound interface (USB types).

Signalink boxes have several external controls, which makes adjusting them handy, but also presents the scenario that they get tweaked too much and too often, causing improper sound levels (or transmit delay issues in the case of the far-right “DLY” control on the Signalink).

So, let’s investigate one of the most common sound interface issues – improper audio levels:

Signalink factory suggested initial settings:

1. TX @ minimum or full CCW (it will eventually be set somewhere between the 9 o’clock and 3 o’clock positions – leave where it is if your Signalink has been working properly previously!)
2. RX @ 50% or 12 o’clock position (straight up – leave where it is if your Signalink has been working properly previously!)
3. DLY @ minimum or full CCW – leave where it is if your Signalink has been working properly previously, although not much delay is typically ever needed with fldigi!

Radio setup varies with the brand and model you are working with. It is suggested that you consult Googled info you find on the Internet to assist with getting the radio side of the interface setup properly.

The first place to look for either PTT or audio failures when using a Signalink device is as follows:

1. With fldigi open and utilizing the Signalink and radio setup you desire, do the following:
2. Click on the fldigi "Configure" drop down menu then "Config Dialog"
3. In the "Fldigi configuration" windows that pops up, click on the "+" or other icon to the left of the "Soundcard" item, then select the "Devices" sub-item.
4. Under "Devices", make sure the "Port Audio" item is checked.
5. To the right of the "Port Audio" check box are the "Capture" and "Playback" device interface selections that will define the audio input and output to/from the radio/Signalink.
6. The "Capture" device should be set to "USB Audio CODEC" if you have only a single Signalink and NO other USB audio interface transceiver connected to your PC.
7. The "Playback" device should be set to "USB Audio CODEC" if you have only a single Signalink and NO other USB audio interface transceiver connected to your PC.
8. Make sure you click on the "Save" button at the bottom of the configuration before proceeding to the next step!
9. We will discuss later how to re-label these generic "USB Audio CODEC" sound interfaces to give them more meaningful labels instead of the difficult to decipher "USB Audio CODEC", "2- USB Audio CODEC", or "3- USB Audio CODEC" (the latter two labels appearing when you have more than one Signalink or have USB audio interfaces from connected transceivers with USB connections).
10. In the menu pane to the left, under the "Soundcard" item, select the "Right channel" sub-item.
11. In the configuration pane to the right, click on the check box next to the item named "PTT tone on right audio channel."
12. Explanation: Fldigi sends an audio tone on the right (stereo) audio channel (I believe it's a 1 KHz tone) and the Signalink device has internal circuitry that senses that right channel tone and enables the PTT line connected to the radio. This eliminates the need for any special or external PTT setup (like using "Flrig" or RigCAT" as is done with the USB audio interface radios).
13. Make sure you click on the "Save" button at the bottom of the configuration before proceeding to the next step!
14. If you'd like, you can now click on the "+" or other icon to the left of the "Rig Control" item in the left hand menu area, then click on the "Hardware PTT" item.
15. In the configuration pane for "Rig Control/Hardware PTT" to the right, notice that the top most check box named "PTT tone on right audio channel" is already checked. This was passed from the previous selection in the previous "Soundcard/Right channel" done above (note that there is a notation at the bottom of the previously stated setting window regarding the transfer of the setting elsewhere).
16. Do NOT uncheck this box!

You have now made sure the Signalink audio devices are properly selected and the right audio channel is setup for PTT keying.

Next, we need to check the audio levels on your PC to make sure they are set properly and are NOT disabled:

1. Open the "Control Panel" on your PC. If you're using Windows 10 or Windows 7/8, it should be under your Start menu. If you can't find it, go to the "Search" box at the bottom of your Start Menu (or the Search box or magnifying glass, which you'll have to click on, and may be on your Task Bar) then type in "control.exe (without the quotes), and press [ENTER].
2. In the Control Panel, you will typically NOT have all the selections you need to see. Find, in the upper right portion of the "Control Panel," an item named "View by:" and it will probably be set to "Category." Click on the drop down and select "Small icons." In the list of items that appear, double click on "Sound" – be patient; it may take several seconds for the Sound properties window to appear.
3. Click on the far left tab at the top named "Playback."
4. Scroll up/down (if necessary due to many sound devices, like we Flex users have) to find the sound interface you wish to address, in this case it will be "USB Audio CODEC" (or "n- USB Audio CODEC" if more than one USB type interface is encountered). Double click on the desired "USB Audio CODEC" item to view/alter its properties.
5. In the Properties window that appears, click on the "Levels" tab at the top.
6. Check the audio level slider. It is most likely set to 100 (in the box to the right of the slider). It MAY be set lower if that was previously done, but with a Signalink, 100, or full output, is okay since we can set the audio playback level manually with the "TX" control on the front of the Signalink device.
7. Next, and this is important, look at the little speaker icon to the left of the "Balance" box at the far right. There should just be shown the speaker icon with two little sound waves in front of that speaker icon.
8. If the speaker icon has a red round circle with a slash on it in the lower right portion of the speaker icon box, your "Playback" audio has been disabled (turned OFF)! Click on the speaker icon to remove the slashed circle and re-enable the "Playback" audio output. If this is off, no audio will be sent to your radio, and, more importantly, neither will the right channel audio going to the Signalink that turns on the PTT line going to the transmitter (remember, we have selected "PTT tone on right audio channel" as fldigi's PTT keying method!).
9. Click on the "OK" button at the bottom to save your changes and close the "Playback" properties window to get back to the "Sound" window.
10. Next, select the "Recording" tab at the top of the "Sound" window – this controls the sound "Capture" coming FROM your radio.
11. Scroll up/down (if necessary due to many sound devices) to find the sound interface you wish to address, in this case it will be "USB Audio CODEC" (or "n- USB Audio CODEC" if more than one USB type interface is encountered). Double click on the desired "USB Audio CODEC" item to view/alter its recording (or capture) properties.
12. In the Properties window that appears, click on the "Levels" tab at the top.
13. Check the "Microphone" audio level slider. It is most likely set to either 100 (in the box to the right of the slider) or some value less than 100, like 35 or 50, if you've previously made adjustments here. It's best to leave it where it is, unless this is an initial setup, since we can set the audio "Capture" (or receive level manually with the "RX" control on the front of the

Signalink device). Adjusting the audio capture level here works whenever you can't find a suitable setting using the Signalink's RX control.

14. Next, and this is important, look at the little speaker icon to the far right of the level slider. There should just be the speaker icon with two little sound waves in front of the speaker icon.
15. If the speaker icon has a red round circle with a slash on it in the lower right portion of the speaker icon box, your "Recording" ("Capture") audio has been disabled (turned OFF)! Click on the speaker icon to remove the slashed circle and re-enable the "Recording" audio input. If this is off, no audio will be received from your radio. This could be the cause of NOT receiving any data from a station trying to send digital data to you, as evidenced by NO activity in your fldigi waterfall, even when no data is being received.
16. Click on the "OK" button at the bottom to save your changes and close the "Recording" properties window to get back to the "Sound" window.
17. Click the "OK" button at the bottom of the "Sound" window to exit.

So, you've probably already done the above, and your present issue is that your radio won't key from fldigi using the Signalink interface. Some Hams will decide to look at a COM (serial) port issue that might be causing the problem. The Signalink does NOT utilize a serial COM port to implement the PTT keying of your radio, so don't even bother looking at COM port settings in fldigi (or elsewhere) for answers.

USB Audio/COM port Radio Interface:

Many of the same techniques described above apply to troubleshooting a USB radio interface sound system. Let's go through that procedure for those of you who are utilizing USB radio interfaces:

Realize that your radio has NO knobs on it like the Signalink for TX/RX levels. There MAY, however, be levels that can be set internally. The Yaesu FT-991A has such controls, as do the Icom IC-7300 (for HF) and IC-9700 (for VHF/UHF). I am not going to delve into the details of making the audio level adjustments for external interfacing on those radios. Again, it is suggested that you consult Googled info you find on the Internet to assist with getting the radio side of the interface setup properly.

1. With fldigi open and utilizing the USB interfaced radio setup you desire, do the following:
2. Click on the fldigi "Configure" drop down menu then "Config Dialog."
3. In the "Fldigi configuration" window that pops up, click on the "+" or other icon to the left of the "Soundcard" item, then select the "Devices" sub-item.
4. Under "Devices", make sure the "Port Audio" item is checked.
5. To the right of the "Port Audio" check box are the "Capture" and "Playback" device interface selections that will define the audio input and output to/from the radio.
6. The "Capture" device should be set to "USB Audio CODEC" if you have only a single USB radio audio interface and NO other USB audio interface transceivers or Signalink devices connected to your PC. Don't worry about selecting the incorrect "USB Audio CODEC," as either input or

output. Only the proper interface is displayed in the selection box for the audio direction required.

7. The "Playback" device should be set to "USB Audio CODEC" if you have only a single USB audio interface connected to your PC.
8. Make sure you click on the "Save" button at the bottom of the configuration before proceeding to the next step!
9. We will discuss later how to re-label these generic "USB Audio CODEC" sound interfaces to give them more meaningful labels instead of the difficult to decipher "USB Audio CODEC", "2- USB Audio CODEC", or "3- USB Audio CODEC" (the latter two labels appearing when you have more than one USB audio interface from connected transceivers with USB connections or SignalLink devices).
10. Use of the "Right channel" with USB radio audio interfaces is NOT utilized. We will address radio PTT keying with a radio USB interface shortly.
11. Make sure you click on the "Save" button at the bottom of the configuration before proceeding to the next step! Click on the "Close" button to exit the "Fldigi configuration" window.

You have now made sure the USB radio audio devices are properly selected and saved.

As with the SignalLink, we need to check the audio levels on your PC to make sure they are set properly and are NOT disabled:

1. Open the "Control Panel" on your PC. If you're using Windows 10 or Windows 7/8, it should be under your Start menu. If you can't find it, go to the "Search" box at the bottom of your Start Menu (or the Search box or magnifying glass, which you'll have to click on, may be on your Task Bar) and type in "control.exe (without the quotes), and press [ENTER].
2. In the Control Panel, you will typically NOT have all the selections you need to see. Find, in the upper right portion of the "Control Panel" an item named "View by:" and it will probably be set to "Category." Click on the drop down and select "Small icons." In the list of items that appear, double click on "Sound" – it may take several seconds for the Sound properties window to appear.
3. Click on the far left tab at the top named "Playback."
4. Scroll up/down (if necessary due to many sound devices, like we Flex users have) to find the sound interface you wish to address, in this case it will be "USB Audio CODEC" (or "n- USB Audio CODEC" if more than one USB type interface is encountered). Double click on the desired "USB Audio CODEC" item to view/alter its properties.
5. In the Properties window that appears, click on the "Levels" tab at the top.
6. Check the audio level slider. It is most likely set to 100 (in the box to the right of the slider). It MAY be set lower if that was previously done to assure that the USB Audio going to the radio is set for proper modulation. This control is important because it is the only place, other than the radio's input level, buried in a menu/setup setting, which allows for proper modulation of the radio's transmitter. Remember, your radio has NO TX knob as found on a SignalLink!

7. Next, and this is important, look at the little speaker icon to the left of the "Balance" box at the far right. There should just be the speaker icon with two little sound waves in front of the speaker icon.
8. If the speaker icon has a red round circle with a slash on it in the lower right portion of the speaker icon box, your "Playback" audio has been disabled (turned OFF)! Click on the speaker icon to remove the slashed circle and re-enable the "Playback" audio output. If this is off, no audio will be sent to your radio and, thus, no modulation of the transmitted signal will occur!
9. Click on the "OK" button at the bottom to save your changes and close the "Playback" properties window to get back to the "Sound" window.
10. Next, select the "Recording" tab at the top of the "Sound" window – this controls the sound "Capture" coming FROM your radio.
11. Scroll up/down (if necessary due to many sound devices) to find the sound interface you wish to address, in this case it will be "USB Audio CODEC" (or "n- USB Audio CODEC" if more than one USB type interface is encountered). Double click on the desired "USB Audio CODEC" item to view/alter its recording (or capture) properties.
12. In the Properties window that appears, click on the "Levels" tab at the top.
13. Check the "Microphone" audio level slider. It is most likely set to either 100 (in the box to the right of the slider) or some value less than 100, like 35 or 50, if you've previously made adjustments here. It's best to leave it where it is, unless this is an initial setup. Adjusting the audio capture level here works in conjunction with your radio's transmit audio level menu/setup setting.
14. Next, and this is important, look at the little speaker icon to the far right of the level slider. There should just be the speaker icon with two little sound waves in front of the speaker icon.
15. If the speaker icon has a red round circle with a slash on it in the lower right portion of the speaker icon box, your "Recording" ("Capture") audio has been disabled (turned OFF)! Click on the speaker icon to remove the slashed circle and re-enable the "Recording" audio input. If this is off, no audio will be received from your radio. This could be the cause of NOT receiving any data from a station trying to send digital data to you, as evidenced by NO activity in your fldigi waterfall, even when no data is being received.
16. Click on the "OK" button at the bottom to save your changes and close the "Recording" properties window to get back to the "Sound" window.
17. Click the "OK" button at the bottom of the "Sound" window to exit.

Finally, let's address PTT keying and/or rig control with a USB connected radio. This IS possible with a Signalink interfaced radio, but MUCH more complicated, so we won't delve into the Signalink interfaced radio's rig control issue here.

Controlling a USB connected radio's PTT is done using either fldigi's "flrig" or "RigCAT" control systems. I will discuss "RigCAT," since that is the method I have had good results with. I have never been able to get "flrig" to work on any of my radios, thus my preference for "RigCAT" which utilizes the radio's CAT interface to function. I will attempt to research the "flrig" interface in the future and present my findings as a future TERA Training Net topic. The following is a brief setup of "RigCAT:"

1. Before you get started or even open fldigi, you will need to do two things.
2. The first is go to <http://www.w1hki.com/> and look in the second gridded table area, on the second line of the table. Click on the "RigCAT xml files" link (<https://sourceforge.net/projects/fldigi/files/xmIs/>) which takes you to a files repository site where you first click on the radio brand you are looking for, then click on (and download) the .xml file that matches your transceiver. It should be downloaded to your "Downloads" folder on your PC (like "C:\Users\N8GD\Downloads" where your PC's user name would replace "N8GD")
3. Find the .xml file you just downloaded (into your "Downloads" folder) then copy and paste it into the "fldigi.files" found in your User folder (like this: "C:\Users\N8GD\fldigi.files\rigs" making sure it is copied into the "rigs" folder found under "fldigi.files"!
4. Next, you need to find the COM port (serial port) used by your radio for CAT control.
5. Open the "Control Panel" on your PC. If you're using Windows 10 or Windows 7/8, it should be under your Start menu. If you can't find it, go to the "Search" box at the bottom of your Start Menu (or the Search box or magnifying glass, which you'll have to click on, may be on your Task Bar) and type in "control.exe (without the quotes), and press [ENTER].
6. In the Control Panel, you will typically NOT have all the selections you need to see. Find, in the upper right portion of the "Control Panel" an item named "View by:" and it will probably be set to "Category." Click on the drop down and select "Small icons." In the list of items that appear, double click on "Device Manager" – it may take a few seconds for the Device Manager window to appear.
7. You can also open Device Manager by typing "devmgmt.msc" into your search box (described previously, above) and hit enter to open it.
8. In the Device Manager, scroll down until you find the device group named "Ports (COM & LPT)" – double click on that group name. Once the ports group is open, locate a serial port named "Silicon Labs CP210x USB to UART Bridge (COMn)" where COMn is anywhere from COM1 to COM99 (or greater). If only one "Silicon Labs" port is shown, make note of its COMn port number (e.g. "COM3"). You will use this port number in the RigCAT setup. Close out the Device Manager and Control Panel.
9. You can also discover the port associated with your radio by opening the above-mentioned "Ports (COM & LPT)" then watch for the "COMn" port that disappears then reappears as you unplug then re-plug the USB cable from the radio to your PC.
10. Now, open fldigi.
12. With fldigi open and utilizing the previously obtained USB interfaced radio setup file/port you desire, do the following:
13. Click on the fldigi "Configure" drop down menu then "Config Dialog."
14. In the "Fldigi configuration" window that pops up, click on the "+" or other icon to the left of the "Rig Control" item, then select the "CAT (rigcat)" sub-item.
11. Under "CAT (rigcat)", make sure the "Use RigCAT" item is checked (at the very top of the configuration dialog page).
12. To the right of the "Rig description file:" box, click on "Open" and navigate to "C:\Users\{your user name}\fldigi-IC-9700.files\rigs*.xml" where *.xml is the file you downloaded to "Downloads" and copied to your ""C:\Users\{your user name}\fldigi-IC-9700.files\rigs\" folder.

Click on and highlight the .xml file name and click on “Open” at the bottom of the file selection window.

13. To the right of the “Device:” label, find the COM port selection box and scroll to the COMn port you found in Device Manager previously and click to select it.
14. Make sure the “Baud rate:” box is set to “115200”.
15. Check the following boxes: “Commands are echoed”, “CAT command for PTT”, and “Restore UART Settings on Close”.
16. The remainder of the items will be set once the .xml file is read and the following is performed:
17. Click on the “Initialize” button at the bottom right (it will probably be in red letters). Once the CAT system is initialized, you should be able to control the radio (change frequency and modes) from fldigi in addition to letting it perform the PTT keying function.

When All Else Fails: REBOOT:

After looking at all of the above possibilities as to where a problem or failure (or changed setting) might exist, and perhaps even BEFORE you do anything else, make sure your audio devices are set properly, and reboot your PC. In fact, shutting it down properly (via the “Shutdown” button in the Start menu), leaving your PC OFF for a minute or so, THEN restarting it, would be even better. I, as well as others, have found that rebooting to recover from fldigi problems, is a great FIRST troubleshooting step!

I know that many folks have PCs that reboot slowly, i.e. take forever to restart due to 1) being old, 2) having too much junk loading at startup (and running in the background), 3) have malware embedded in the system that affects performance, or 4) have MULTIPLE antivirus/security programs that battle with each other for computer resources (PCS should have only ONE antivirus program running on them, PERIOD!). Lack of enough memory for modern software, and use of old mechanical hard drive technology can both seriously affect PC performance on the hardware side. Solid state drives would greatly improve performance and reliability.

Consider getting a new PC, REALLY. If you’re running Windows 10 (or, God forbid, Windows 8/7/XP), please look at getting new and sufficient hardware, soon. As of April 2025, a little over 2 years from now, Windows 10 will no longer be supported. That means NO security updates or patches to keep the bad guys from infecting your PC. You WILL need to get a new PC to run the only available supported operating system, Windows 11, after April 2025, especially if what you currently have is more than about 3-4 years old! The performance boost and fast reboot times will be amazing (provided you DON’T buy the cheapie models)!

Renaming Audio Interface Ports:

As a bonus to looking at all these crazy settings, let's rename your audio port names so they are more easily recognizable. This is especially useful if you have more than one set of "USB Audio CODEC" audio capture/playback ports. We can actually make them associated with the radio they are coming from:

1. Open the "Control Panel" on your PC. If you're using Windows 10 or Windows 7/8, it should be under your Start menu. If you can't find it, go to the "Search" box at the bottom of your Start Menu (or the Search box or magnifying glass, which you'll have to click on, may be on your Task Bar) and type in "control.exe (without the quotes), and press [ENTER].
2. In the Control Panel, you will typically NOT have all the selections you need to see. Find, in the upper right portion of the "Control Panel" an item named "View by:" and it will probably be set to "Category." Click on the drop down and select "Small icons." In the list of items that appear, double click on "Sound" – it may take several seconds for the Sound properties window to appear.
3. Click on the far left tab at the top named "Playback."
4. Scroll up/down (if necessary due to many sound devices, like we Flex users have) to find the sound interface you wish to address, in this case it will be "USB Audio CODEC" (or "n- USB Audio CODEC" if more than one USB type interface is encountered). Double click on the desired "USB Audio CODEC" item to view/alter its properties.
5. By default you should be on the "General" tab (at the top).
6. In the box at the top of the window (above the "Change Icon" button), type in a name to identify the audio port. This is the Playback port – I named mine "TS-2000 [Signalink] Audio Output" because it sends audio OUT to the radio. Save it by hitting the "OK" button.
7. Using the same procedure above, you can switch to the "Recording" tab and you can rename that port to something like I did: "TS-2000 [Signalink] Audio Input" since Recording is an input to the PC. Again, save it by hitting the "OK" button.
8. This is especially useful if you have more than one device with the default name of "USB Audio CODEC" – even with numerals in front of each to differentiate them from one another, they are still difficult to tell apart.

Compiled by:

Gregory M. Day – N8GD

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