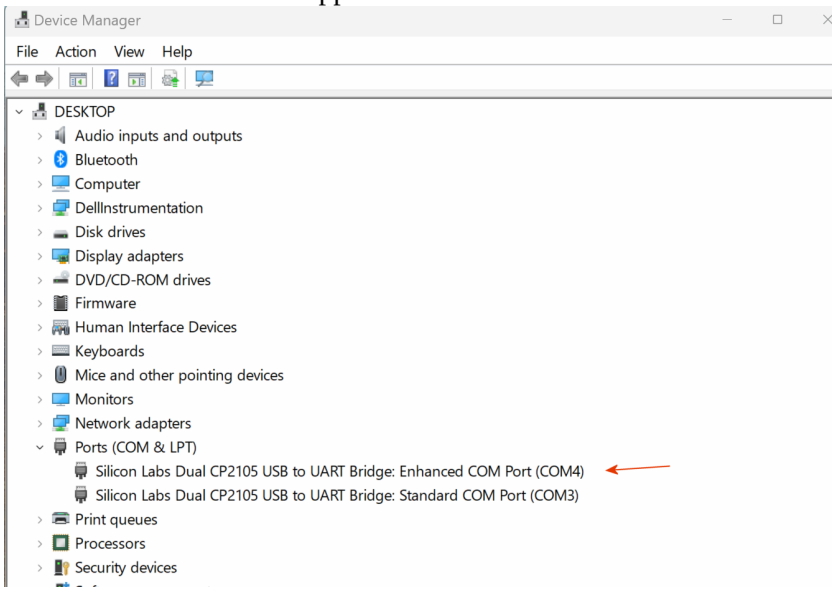
My setup on a FTDX101MP for FT8 using a USB cord between radio and computer. (KL7J)

1. Install the USB driver, then USB cord to radio, check if driver running.
2. Set the Radio Menus including the newer firmware added Presets for FT8.
3. Set the USB driver audio settings of audio levels, enhanced off, 48000 Hz. Adjust the computer controls of default sound card for media/browsers and radio sound card/Codecs. This is an area often overlooked in helps or tutorials.
4. Set WSJT program interface for com port, Cat, in/out audio device to use.

1. Download and install the FTDX101D/MP USB Driver (Virtual COM Port Driver) from www.yaesu.com. Find FTDX101 radio (D or MP model), go to the Files Tab, scroll down to the download link for file: FTDX101MP/D USB Driver Virtual COM Port Driver (Windows 11/10). Right click it and send the download to a folder of your choice. *Do not plug in USB cord until driver has been installed!

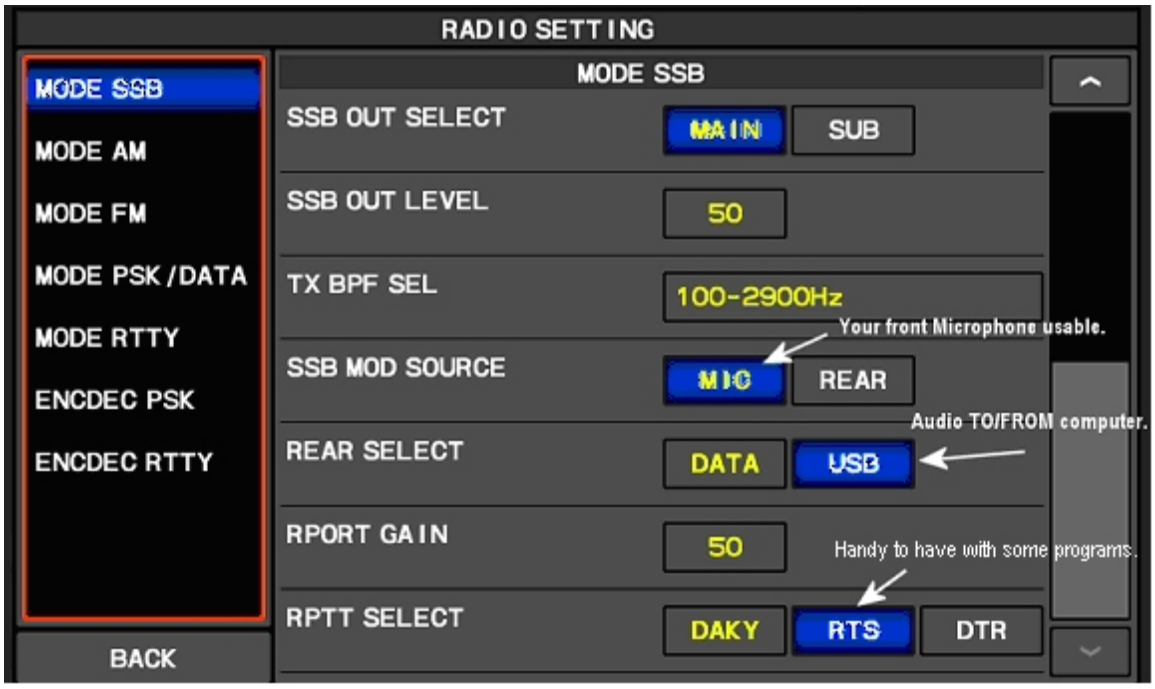
From the downloaded file, right click on it, use Extract option in the popup and unzip the file to a folder of your choice. From the *extracted folder*, install the driver by finding the file with the .inf extension and right click on it (you might have to turn view extensions on), scroll down to the option of install and left click it. It will install and that completes the USB driver installation.

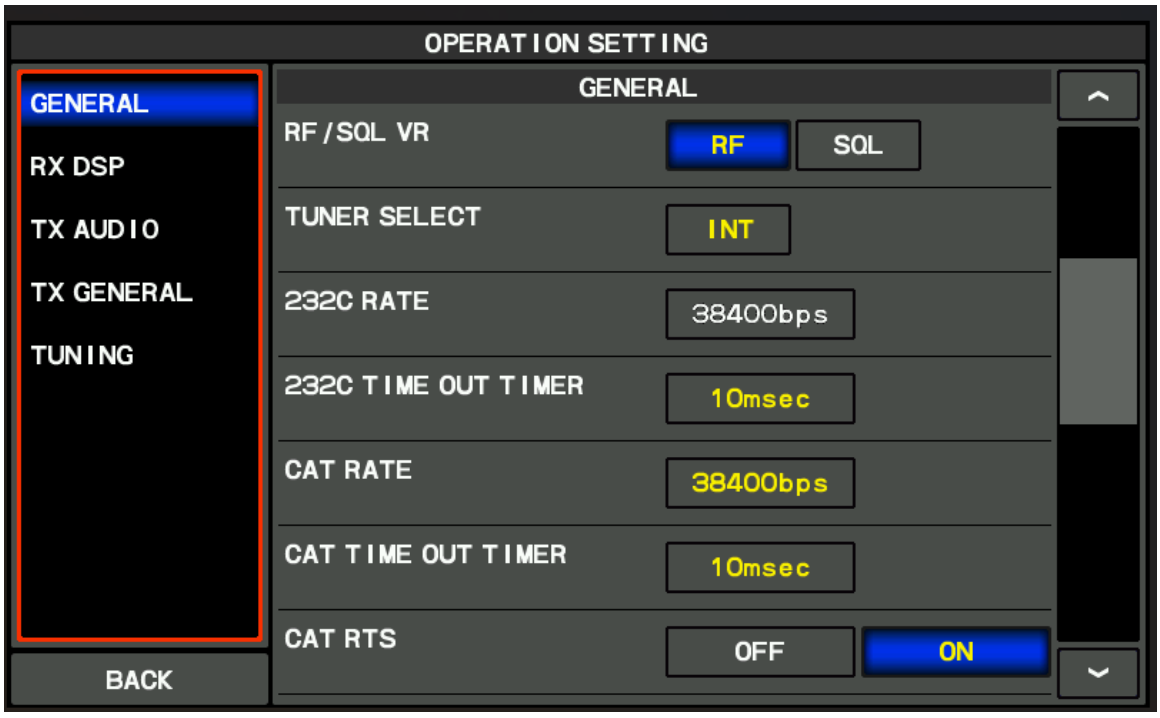
Plug the USB cord into the radio (it is a USB to Printer cable available at computer stores, for RFI reasons it is good practice to have a snap on choke installed on it).
Check that the Yaesu USB driver is working and you also need to note what COM Port number the driver assigned for data. You do this by using the built in Windows Device Manager. The installed driver will appear in Device Manager under Ports (COM & LPT). There will be two lines added and will read "Silicon Labs Dual CP210x USB to UART Bridge **Enhanced** COM Port (COM#)". It's important to find **Enhanced and its assigned com port** since *that is the driver COM PORT used in WSJT software setup under the radio tab*. The second com port will show up as "Silicon Labs Dual CP210x USB to UART Bridge "**Standard**" COM Port and it is used for RTS for PTT on applications that don't PTT under a Cat command.



2. Set your radio via the Function Key button bottom of display.
(Yaesu in their added PRESET addendum PDF specifically states to **use USB** on FT8.)

I like the RTS ability turned on albeit was not necessary..



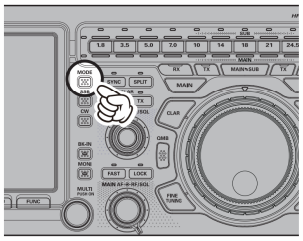


Use the Yaesu PRESET option for their recommended best performance on FT8. Turn it on USB and preset all showing blue.
(Yaesu added a new PRESET function in later firmware and issued a PDF explaining it. It specifically states to use USB on FT8).

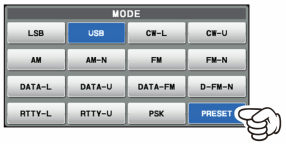
From Yaesu PRESET PDF addendum:

Set up for FT8 operation

1. Press and hold the [MODE] key.



2. The operation MODE selection screen appears on the display, then touch [PRESET].
   Touch [PRESET], the setting will be confirmed and then the operating screen will return.
3. Touch [PRESET] again, the [PRESET] settings are canceled and the original settings are restored.

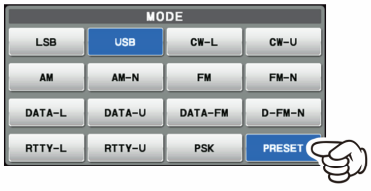


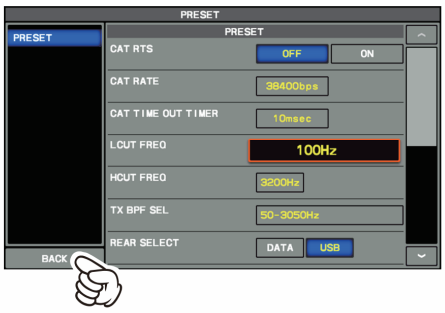
*** Be sure PRESET USB is using **Rear Select USB** or radio will key but no audio to ALC. Here is where that setting is found and changed if necessary. Enter PRESETs by holding down the MODE button above SSB. You should be using PreSet on. Hold down the blue PRESET button until its menu comes up. Turn on **Rear Select to USB**.
No audio out is often because of this setting going to Data.

Remember Yaesu set the PreSet parameters for FT8 performance on USB. Turn PreSet off for talking over the microphone.

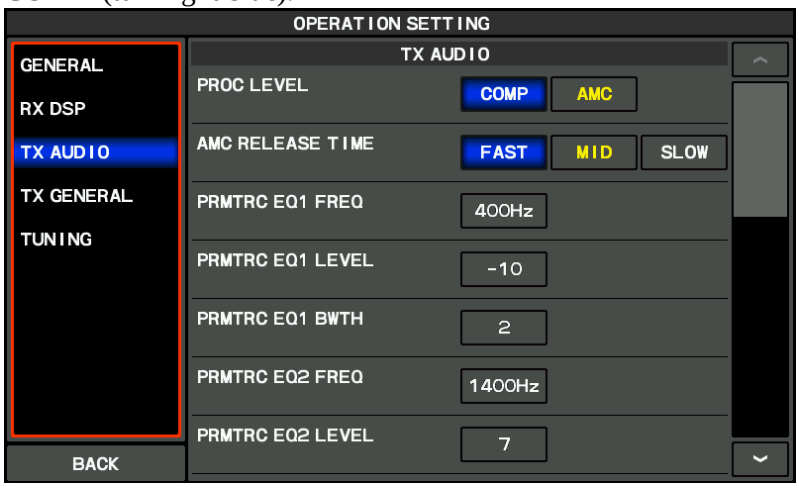
If you can't get audio out on FT8, make sure preset is on for Rear Select USB. If you can't get the microphone to work, turn PreSet off.

1. Touch and hold [PRESET], the operation mode selection screen appears on the display.
2. Touch the desired item, or rotate the [MULTI] knob to select the desired item, then press the [MULTI] knob.
3. Rotate the [MULTI] knob to change the setting.
4. Press the [MULTI] knob to save the new settings.
5. Touch [BACK] to return to the operation MODE selection screen.
6. Press the [MODE] key to return to the operation screen.



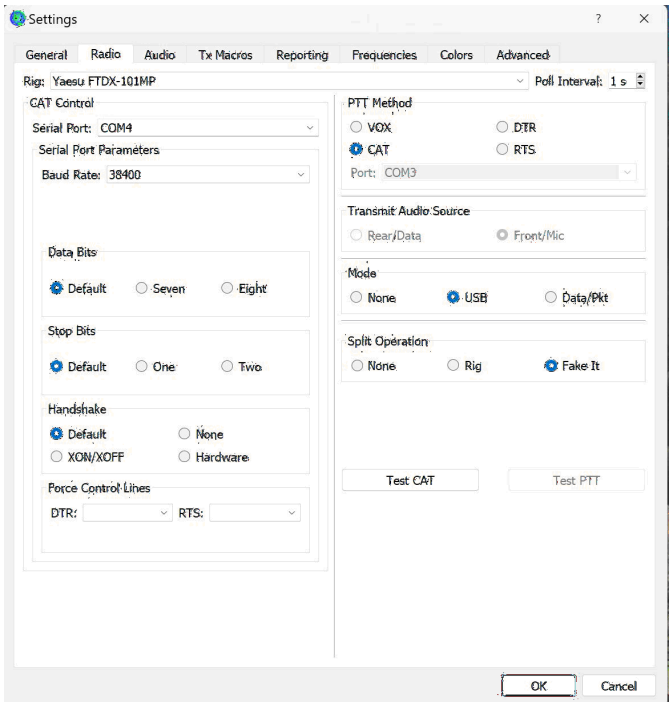


Setting up the audio for transmit.
Set the menu via Func button below screen. Operation Setting/TX Audio/PROC LEVEL = COMP (turning it blue).

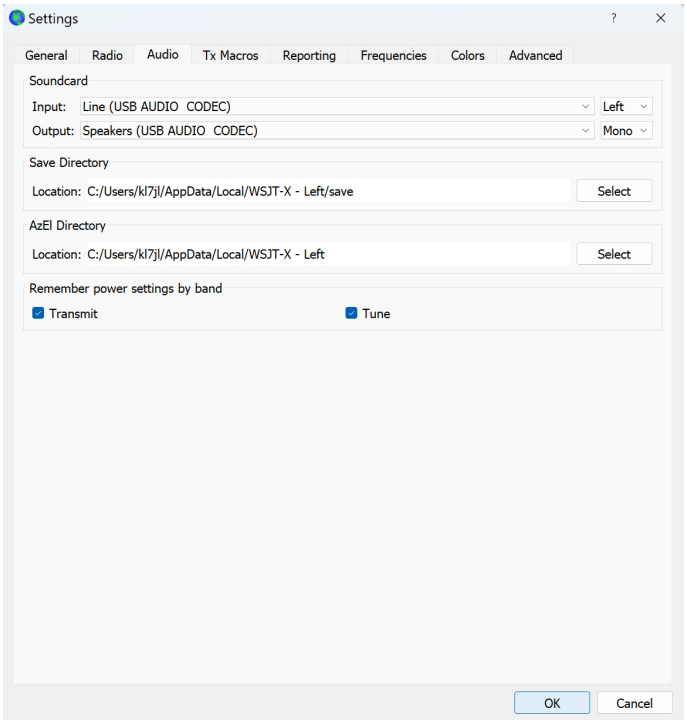


The manual is vague on AMC, ALC and Proc interactions.
Use the value of 67 for the AMC setting. It is the inner knob on the upper right labeled PROC/PITCH. Watching your radio screen, make sure it is set to value 67 !

3. Setup the WSJT-X software for FT8 and other modes included from https://wsjt.sourceforge.io/wsjtx.html
Scroll down and install proper package for Windows (32 or 64 bit, get the right one for your computer system). Look in Start button/System/About for 32 or 64 bit. Install the WSJT-X software you downloaded. Go to File/Settings.



Note: When in Fox/Hound Mode the “Fake It” setting to on is required.



On the FT-8 "Radio Tab" click on the "TEST CAT" button. It should turn Green. Click on the TestPTT. The button should turn Red and the radio should be keyed.

In “Manager Audio Settings” setup drivers.

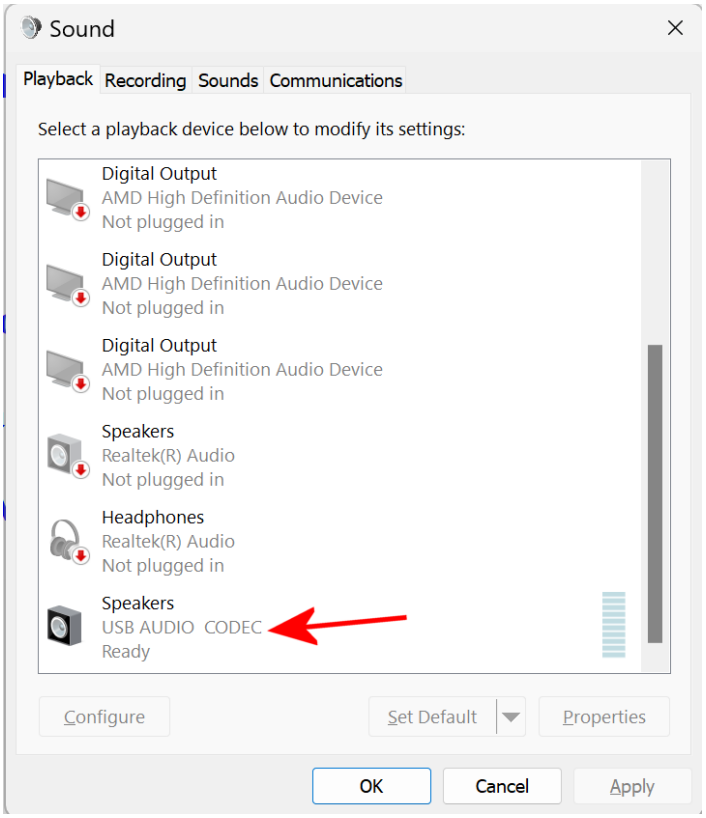
Two methods to enter the adjustment panel:

1). Press the Windows key + R to open Run. Type: mmsys.cpl and click OK.

or

2). Right click Start button, search, control panel, Hardware and Sound (Win 10 name is similar), Sound, Manage audio devices.

A Sound management Panel pops up with all drivers shown. Find the driver for radio USB Codec and highlight it.

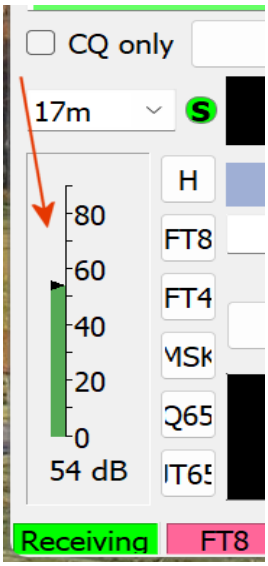


Select top Tab for "Playback"
Highlight Speakers "USB AUDIO CODEC" for the Yaesu's driver you installed from Yaesu (or... the USB driver your outboard interface installed). Not the Speaker for your internet speakers.top

Click on Properties:
Go to the tabs for Levels, Enhancements, Advanced, Spatial sound.
Select each and set:
Levels = *Pwr slider to 100% = 0dB.*
Enhancements = Disable all enhancements (this driver only affects the USB radio audio).
Advanced Set to 44100 or 48000 WSJT handles 44100 fine). Check "Allow Applications to take exclusive...". *Note: Allows WSJT to completely take over this USB audio device hardware for optimal performance.*
Spatial sound = Off
Press Apply

Select top Tab for "Recording"
Highlight "Line USB AUDIO CODEC" for the Yaesu's driver installed from Yaesu (or... the USB driver your outboard interface installed).
Properties

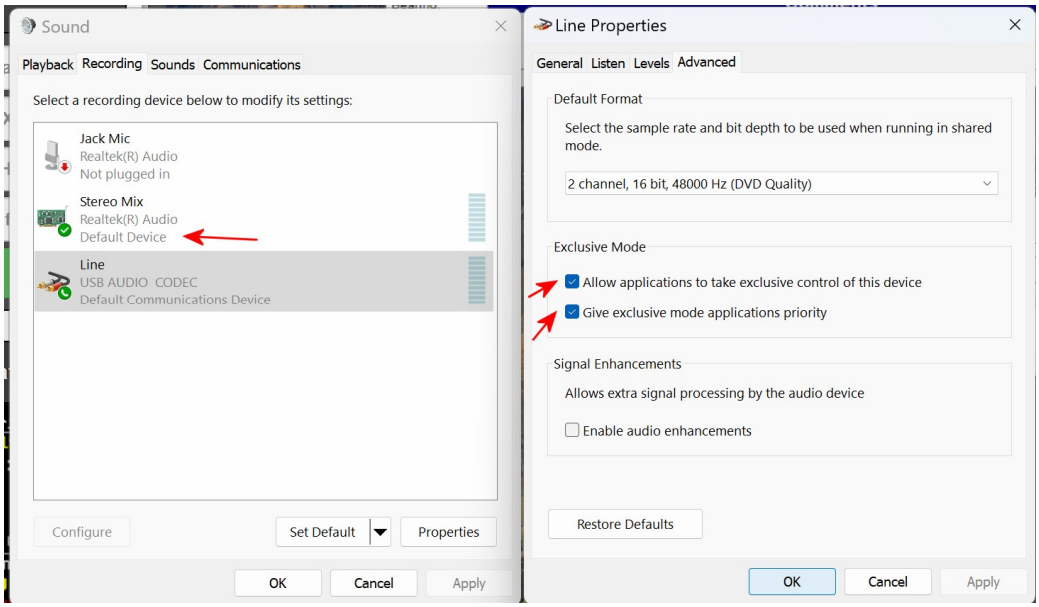
- **Levels = What ever level sets WSJT green graph on left side to about 40, fine adjust once the WSJT program is receiving. WSJT manual speaks to no signals background of 30. You can tweak it later. If you are using an interface with knob to set audio after drivers, set driver to 100% and then dial in audio set to radio via your knob and/or the Pwr slider on the right of WSJT screen.**



- **Advanced = 2 channel 48000. Note some have noted drivers lose audio after a long time on 48000 and use 44100. Check Allow applications and Give exclusive. Make sure NO checked Enable audio enhancements.**

Select Tab for Sounds
Sounds = No. You don't want your Windows system sounds/chimes put on the radio.

Select Tab for Communications = Do nothing. (This seems to help the symptom of volume changes each boot or during a session.



Press Apply

Next is set the Computer Mixer volume
In WSJT/Settings/Audio "Remember power settings by band", check mark the Transmit and Tune blocks. Return to main screen.
In WSJT, place your Pwr slider mid range.
Within WSJT, <u>transmit</u> using Tune, While key down, <u>Right click the speaker</u> in your taskbar.
Select "Open Sound Mixer".

Find WSJT mixer. Note *This slider is only adjustable while transmitting*.

Adjust the slider in your Mixer and watch your radio ALC meter and adjust the slider for your desired ALC in *tune*. Remember this gain setting is retained for each band as you move to another band and set the WSJT slider. You will have to set tune and then while WSJT calling CQ set the slider for *transmit* ALC levels.

Some trouble shooting checks or tips for audio in/out.

Check and set the USB Codec driver gain.

In “Manager Audio Settings” setup drivers.

Two methods to enter the adjustment panel:
1). Press the Windows key + R to open Run. Type: mmsys.cpl and click OK.
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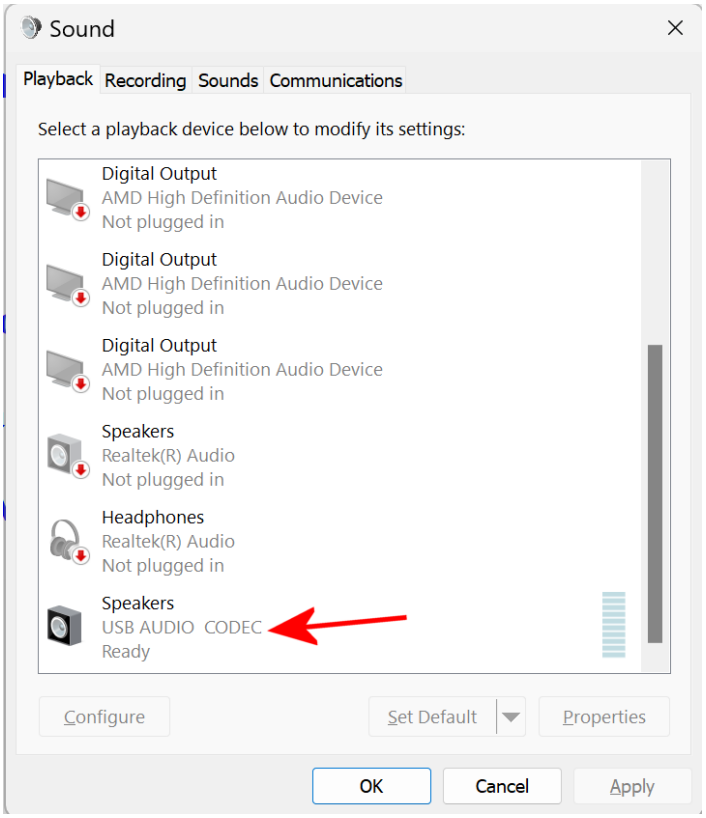

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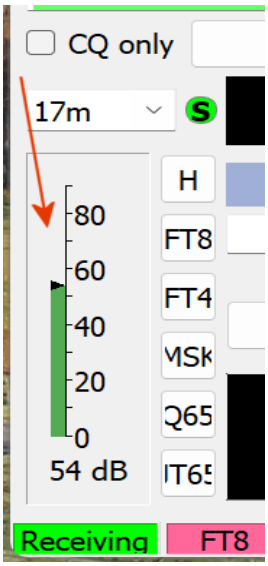

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Press Apply

Check the Computer Mixer volume
In WSJT/Settings/Audio "Remember power settings by band", check mark the Transmit and Tune blocks. Return to main screen.
In WSJT, place your Pwr slider mid range.
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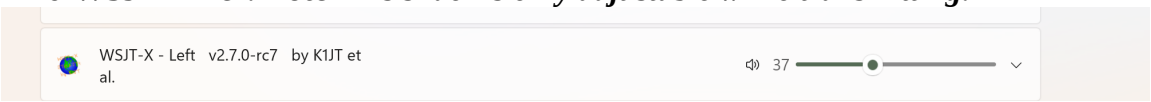

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Check Power Management in Windows if WSJT loses audio or TX.

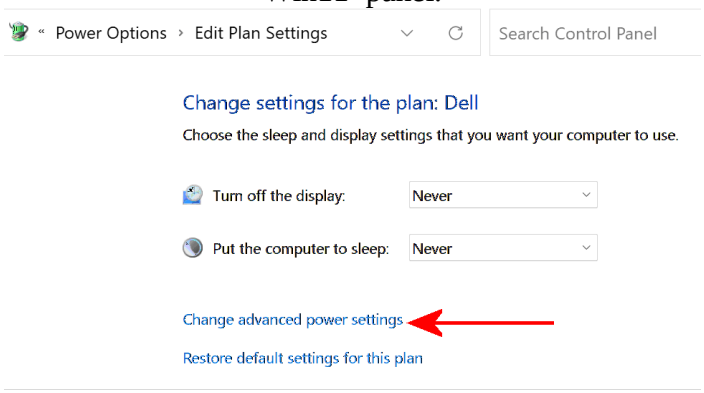
To get into Advanced Power Management:Using the right click start button/Run command, type: powercfg.cpl
On that panel, go to: Change Plan Settings.
Scroll down to: Change Advanced power settings.
The Advanced settings panel pops up. Every item and sub-item need shut off for a starting point to see if any difference is made. Reboot.

Win11 computers: Start button, right click, search, control panel/Hardware/Power Options/Change plan settings and then Advanced power settings mid screen/ uppops a Advanced Settings panel. Address every item and sub-item.

Win10 computers: Click the Start button, Open "Control Panel", Select "System and Security", and Click on "Power Options"

Change advanced power settings/ up pops the advanced choices. Edit Power Plan. Turn off display to never and computer sleep = never.

Win11 panel.



WSJT loses audio over time.

WSJT loses audio over time.

Interference by Wave Audio Services. Right click Start button, Run. Type services.msc. Find "Waves Audio Service. Right click, properties, Startup Type = Disabled, Service = Stopped.

<u>Stop WavesSvc(64 or 32).exe</u> .
Right-click on the Taskbar

- **Select Task Manager**
- **Select the Startup tab**
- **Review the list of apps that start up automatically**
- **Right-click on an app and select Disable to prevent it from starting automatically**

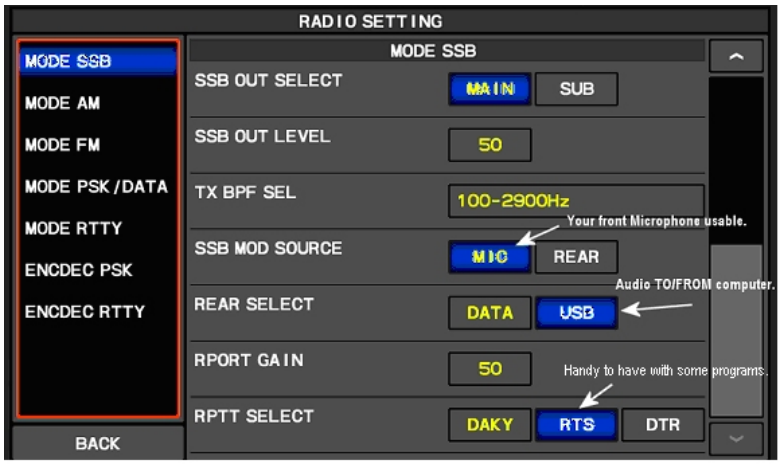
Make sure the Sound input driver (Recording) is not the default. The Mic input for say internet audio should be the default and WSJT will use the USB Codec without it being default.

Start button/search/control panel/Hardware and sound/Sound/Manage audio devices. Tab over to Recording and set accordingly.

Go to start button, search Device Manager. In Device Manager scroll down to Human Interface Devices. Select one at a time on HID and USB Input Device, right click on each, go to properties and set PowerManagement for those that have the tab, *uncheck* Allow the computer to turn off this device.

Radio not transmitting or receiving audio.

Check your radio for using USB Rear in your radio. E.g. Yaesu FTDX101's.



With newer Yaesu's be sure PRESET USB is using **Rear Select USB** or radio will key but no audio to ALC.
Here is where that setting is found and changed if necessary. Enter PRESETs by holding down the MODE button above SSB. You should be using PreSet on for FT8. Hold down the blue PRESET button until its menu comes up. Turn on **Rear Select to USB**.
No audio out is often because of this setting going to Data.

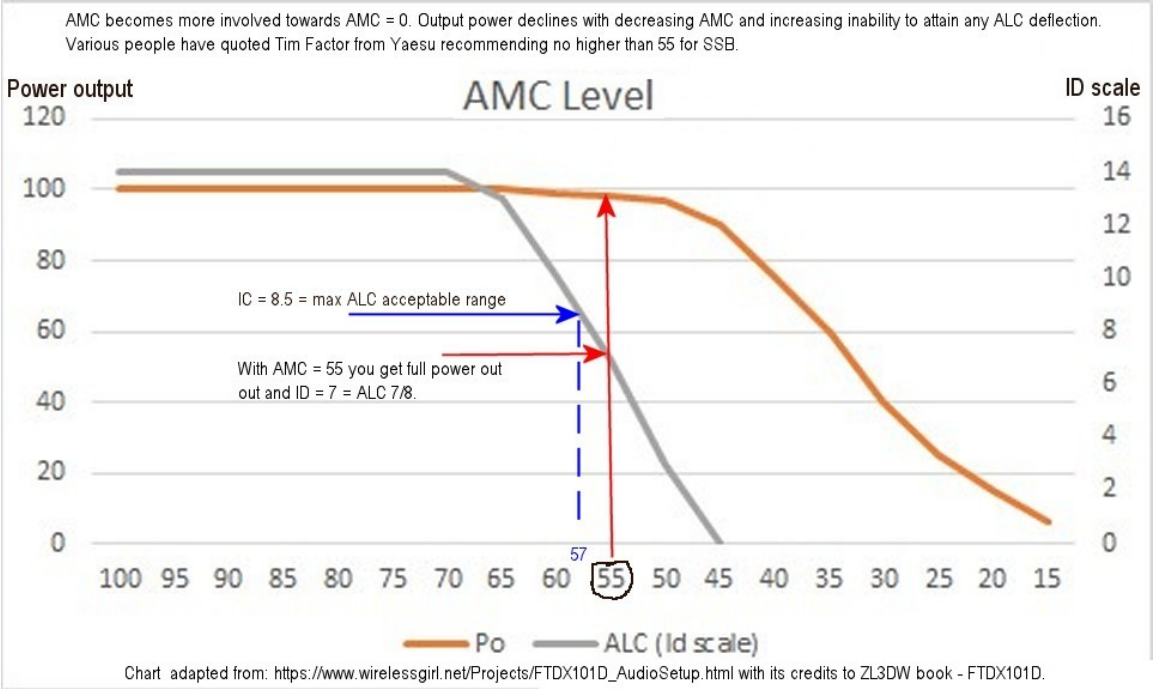
If you can transmit a Tune but not get the enable button to light, put a call in Tx1 panel by double clicking a callsign in your receive panel. Often when changing modes from FT8 to SuperFox or Fox/Hound that slot clears to blank. Also if the DX frequency is not in WSJT frequencies, the radio will return to regular FT8 frequency so you will have to dial it back in.

Your transmit changes after one TX or flips VFO. In WSJT, Settings, Radio, Split Operation, try None or Fake it, not Rig.

Not deflecting the ALC, check the WSJT Pwr slider side panel, and turn it up so it will deflect the ALC.

Not enough audio to drive the ALC adequately even when WSJT slider is full Pwr, go the Windows Sound setting and turn up the driver sound output level that goes to WSJT use.

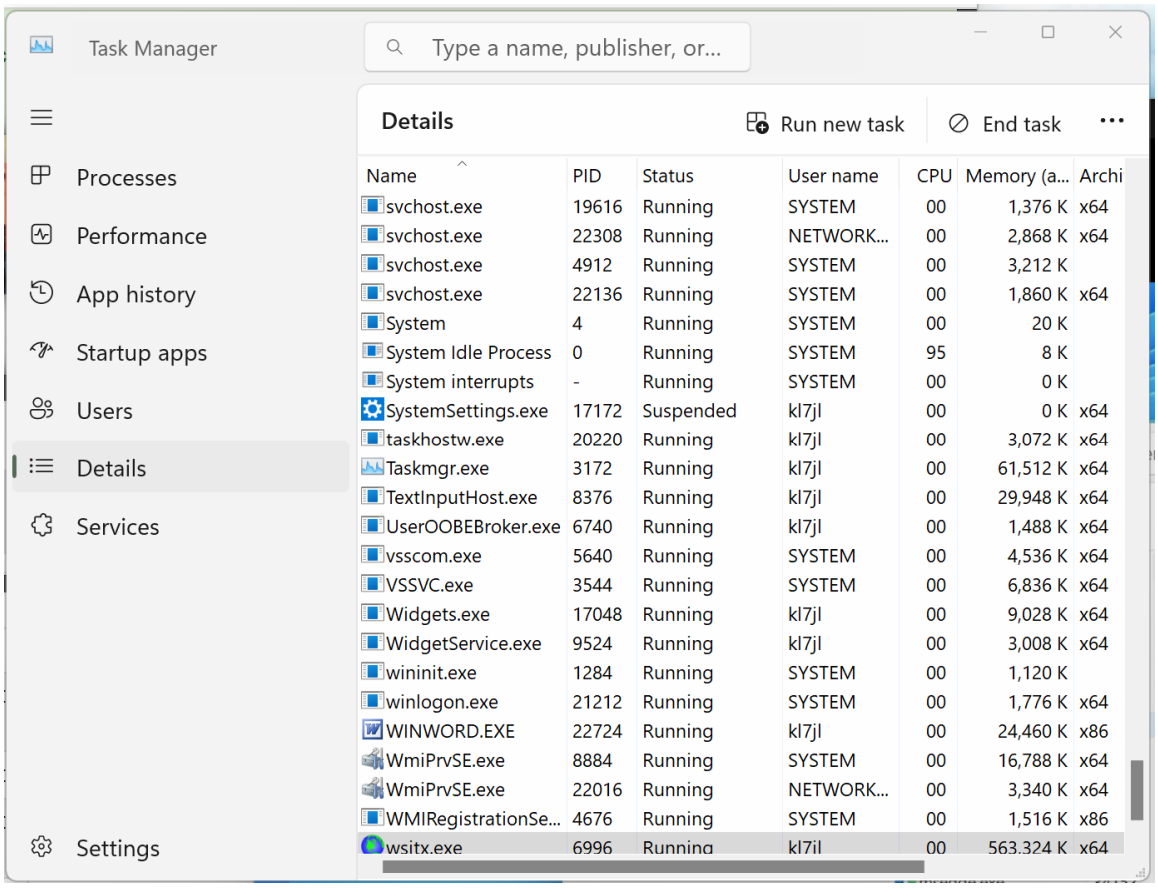
Your radio AMC should be set to 50 or 55 (Default). Set wrong (too low AMCit will not allow enough ALC deflection or too high and splatter.



No sound out or no sound in. Type mmsys.cpl in search and it will show what is default and where sound is going in a moving bar graph. Make sure the USB CODEC's are not a default. It is very handy showing where sound is going.
Sound to your speakers *for internet* should be default. Set it to default via highlighting it and then bottom button = default. Make sure your USB AUDIO CODEC is not a default if your having issues.

There is a way to make WSJT program get priority CPU access.
To speed up WSJT program, especially useful if it misses a decode line or two.

Use search
Go to Task Manager
With WSJT already open and running on your screen, find it in Taskmaster/Details.



Right click wsjtx.exe and set Priority
Go to High Priority, then click change priority.

Close out Task Manager.

You may need to reinstall the USB codecs byYaesu (or if using an interface with older radios, reinstall the interface manufactures drivers via uninstall in device manager, ports, then reinstall newest drivers after a reboot). Note a new virtual USB sound driver is also created sometimes in Windows upgrades, therefore uninstall and reinstall the Yaesu driver or your interface drivers.

RFI in USB cable changes rig files or settings. Cable may need torroids both ends. Screen savers.

If on older radio and using an interface. Select radio rig file but in WSJT Settings/Radio/PTT, select PTT and assign the proper port for PTT that is different than

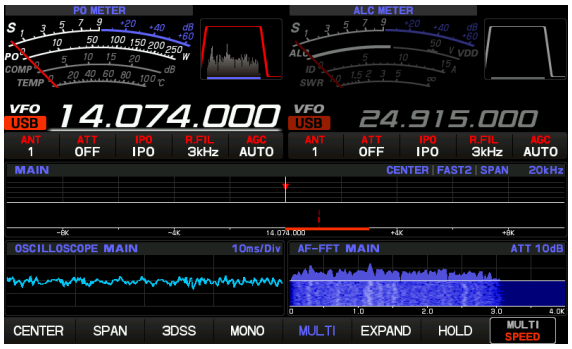
your rig port, those com ports were made in the interface utility for creating com ports options.

Problem: At higher baud rates, **data may be transmitted faster than the receiving device can process, leading to buffer overflows <u>and lost data</u>**. Try slowing your baud down increments to say as low as 9600 on radio and WSJT and see if it makes any difference.

In your radio menus, try setting the CAT Time Out Timer to longer like say 1000 msec. A time out is necessary in case something goes wrong in the middle of a CAT command transmission. This keeps the radio from suspended or hanging for a long time waiting for the command(s) to complete, and instead moves on.

Install the latest Hamlib in WSJT. In version 2.7.0 rc7 there is a button for that in File/Settings/Radio "Update Hamlib".

This is a handy scope display in the FTDX101 series for watching digital in or out on the radio's display. Setup is via Disp and S. Menu buttons below the radio's scope.



KL7J – 11/2024
V1-15.2