



Tech notes  
**NBEMS & Windows 10**  
**Windows 10 update issues**  
Bob Brammer NO1 LKD 13 June 19, 2018



**The norm:** Typically FLDIGI installations are very plug-and-play. The most detail-oriented tasks are configuring FLDIGI with mode, your call sign and linking it to its helper programs like FLMSG and FLWRAP. It helps to know how to turn on and select your mics, speakers etc. It is not hard if you patiently follow Keith Prebble S-12's Fall 2017 step-by-step setup slides.

FLDIGI works fine on Windows 10, but Windows 10 Updates may tweak Windows settings so FLDIGI fails.

The Windows 10 Update 1803 in May 2018 created the problems noted here. The privacy tweak affected a large number of hams and is posted in a number of forums. The "enhancements" issue hit some Lenovo Thinkpads.

The "fixes" are easy. The frustration is that you go from having a fully functional system to being down with no warning and no hint of "what changed."

**Quick tips during FLDIGI setup:**

Privacy in Win 10 should be set to ALLOW programs to use you machine's internal mic.

"Enhancements" need to be turned off on both the Playback (Speakers) and Recording (Mic) of your system.

**This document shows how to fix Windows 10 settings changes that impede FLDIGI.**

**1) Windows 10 Update 1803 changed the PC's "Microphone privacy settings"** governing whether programs could use the machine's microphone. This directly impacted audio coming into the mic input for acoustic coupling. Symptom: "Port audio device not available" error comes up when an FLDIGI user tries to select their audio source from inside FLDIGI.

This is a routine task typical when you choose either your laptop's mic and speakers for "acoustic coupling" operation or pick "USB Codec" audio source, if Signalink is connected, and you want FLDIGI to work via a Signalink soundcard.

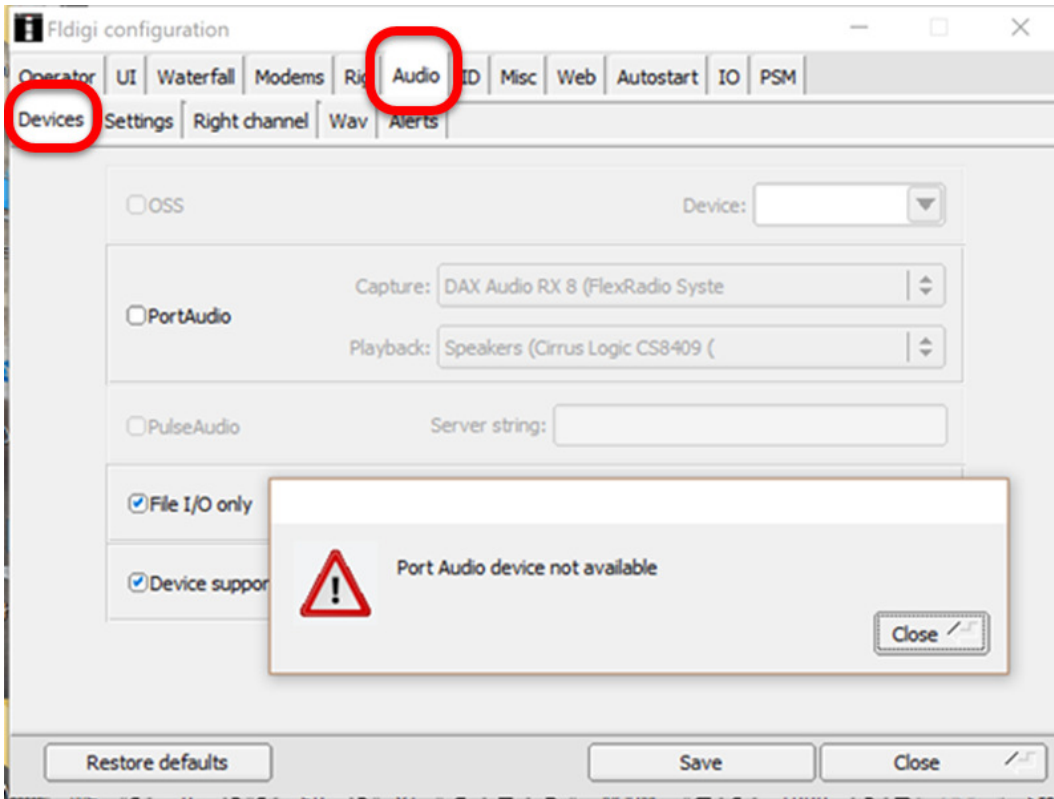
**2) Windows 10 Update 1803 "checked" a checkbox within the microphone controls** that turned on "enhancements." The enhancements alter the mic's incoming signal so audio from acoustic coupling fails to decode in FLDIGI. It's assumed enhancements should also be off in your drivers for Signalink. It will need to be connected and sensed by Win 10 to adjust/check.

**3) Other reports mention the Window 10 Updates causing home network issues** by eliminating the "HomeGroup" so older Win 7 machines could no longer see Win 10 machines on network. These were privacy related settings as well. See: [https://answers.microsoft.com/en-us/windows/forum/windows\\_10-update/homegroup-is-gone-in-windows-10-version-1803/1aea6406-f574-4835-8e33-27677fa1d107?auth=1](https://answers.microsoft.com/en-us/windows/forum/windows_10-update/homegroup-is-gone-in-windows-10-version-1803/1aea6406-f574-4835-8e33-27677fa1d107?auth=1)

## “Privacy setting change causes “Port audio device not available” error

The May 2018 Windows 10 Update changed audio “privacy” settings. It turned “off” all program access to the PC’s internal mic.

FLDIGI users found they could no longer select mics and speakers. Some users got a the ‘Port audio device not available’ error message shown below. Some just saw what seemed like malfunctioning pop-up source selection menus in FLDIGI.



The “fix” is simple. The problem was most folks did not even know they had audio privacy settings and many were not familiar with navigating Win 10 to troubleshoot this.

### Simple Privacy Fix

*From: Joe, KIYOW*

*The fix for the loss of audio I/O for the Windows Update 1803 appears to be fairly easy to fix.*

*Go to Settings and select Privacy. Then select Microphone from the menu on the left side.*

*Check the box titled "Allow apps to access your microphone."*

*You will then have to decide which other, if any, apps need to be turned off or on (Camera, Cortana, etc.).*

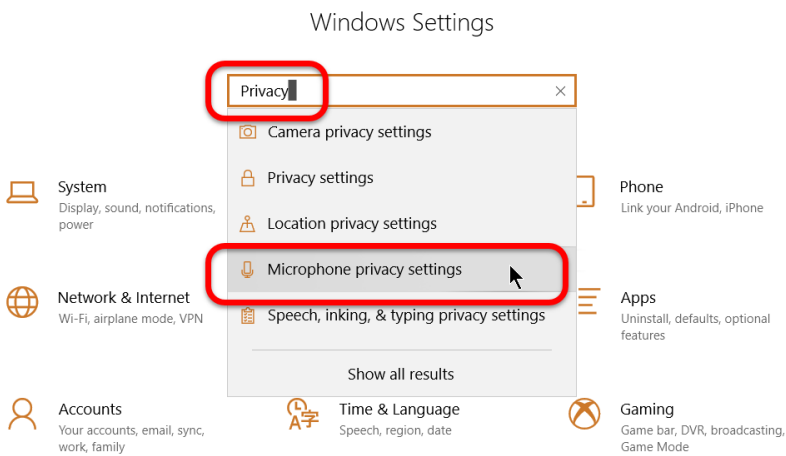
*This was posted by Joe Subich, W4TV, earlier. Wanted to share it here.*

## Step-by-step for Win 10

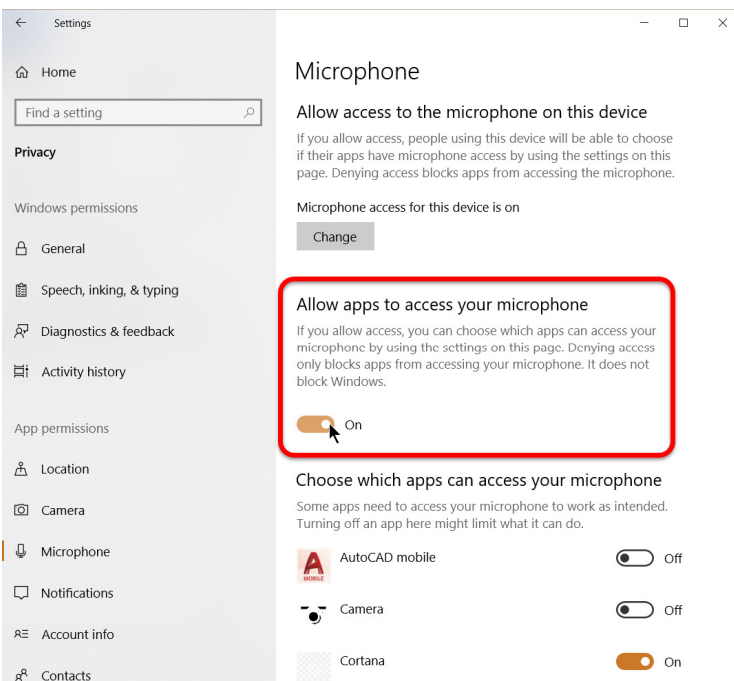
Go to "Settings" to bring up control panels



## Search on "Privacy" to get the "Microphone privacy settings"



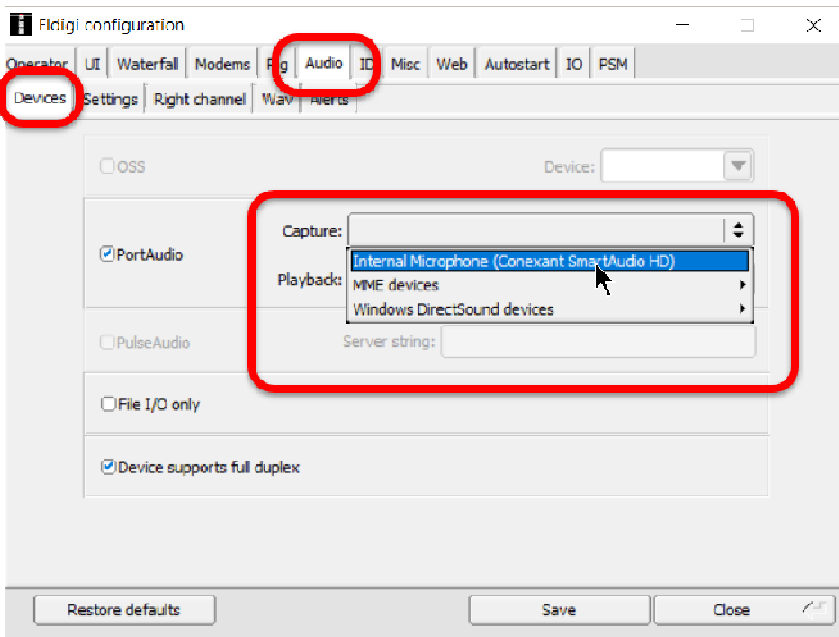
## Click the "Allow apps to access your microphone" toggle to "On"



The change means you're allowing programs to use your PC's mic. This lets programs, and FLDIGI, be able to select a mic input. Once you turn it on, review the list for programs able to use your PC's mic. You may want to limit some access. For instance, I do not want to have 'Cortana,' Microsoft's automated assistant, listening to me, so I turn off her access here.

**NOTE:** I've never seen FLDIGI in the list of privacy-related list of programs where you can toggle mic privacy individually, but the software is impacted by globally turning "Off" access.

Once privacy is set to allow access to the mic, you'll be able to choose your audio sources again from within FLDIGI.



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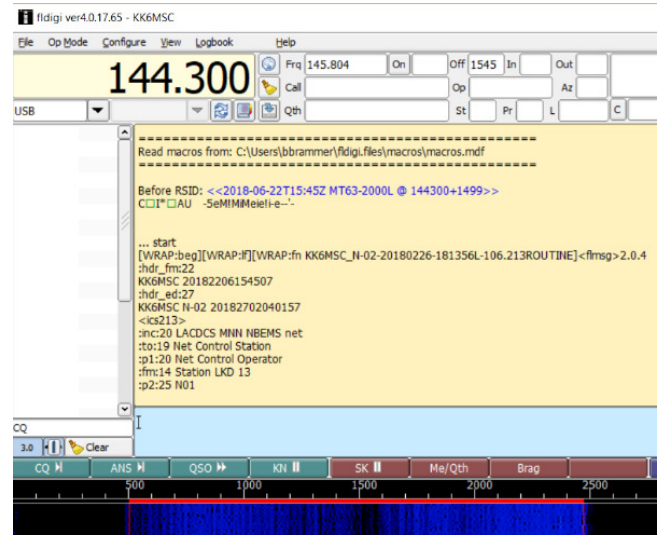
## Windows Update 1803 turned "On" internal mic "enhancements" in some PCs

Typically, "acoustic coupling" works easily with FLDIGI running in MT63-2000 Long mode. It is virtually plug-and-play in most installations with the software "hearing" message tones through the PC's internal mic.

The operator "sees" audio in the "waterfall" and can watch incoming messages decode in the program's receive window. ICS-213 form tags and message copy scroll on in real time.

### BUT...

If microphone "enhancements" get turned on everything appears to same except FLDIGI ceases decoding messages. Everything will appear functional but incoming messages will cease after an incoming ID or will inconsistently decode.

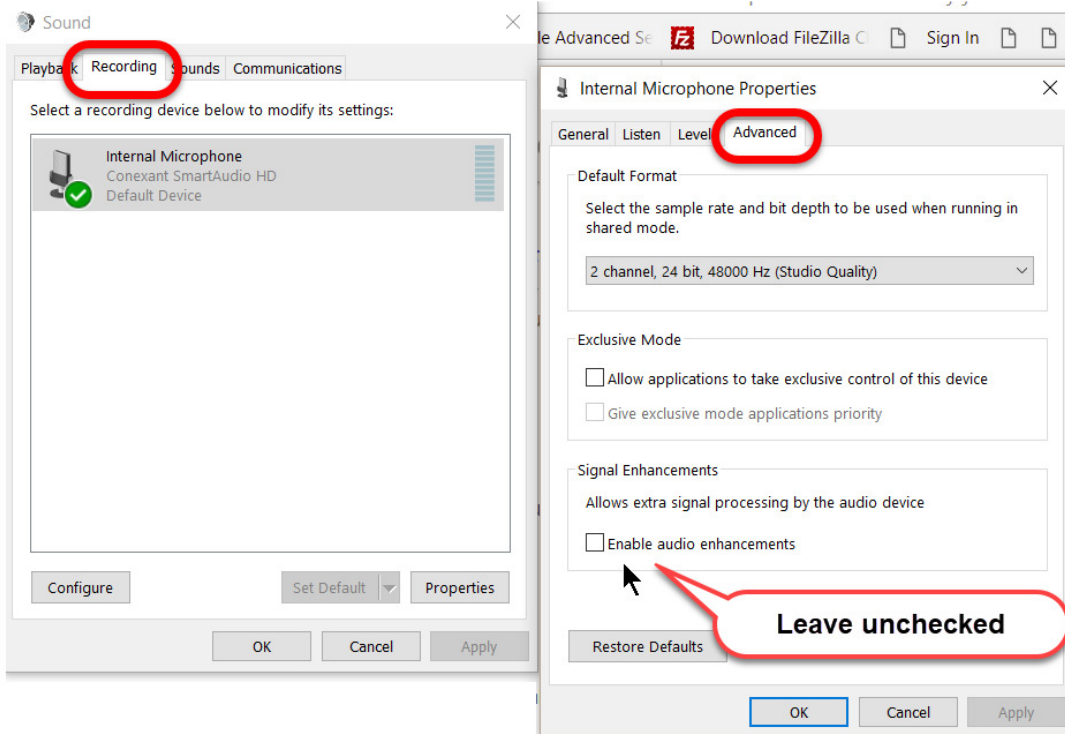


Like the fore mentioned "Microphone Privacy Settings," the May 2018 Windows Update "turned on" enhancements for some uses. Systems running fine prior to the update simply could "hear" radio tones correctly via their PC's microphone.

When the nondescript checkbox in Windows 10 is checked it turns on "Enhancements" for the internal mic. It impacts "acoustic coupling" by altering the incoming signal just enough so FLDIGI an no longer decode it consistently. It has nothing to do with audio levels, it's the sound itself.

## How to turn off Windows audio mic "enhancements"

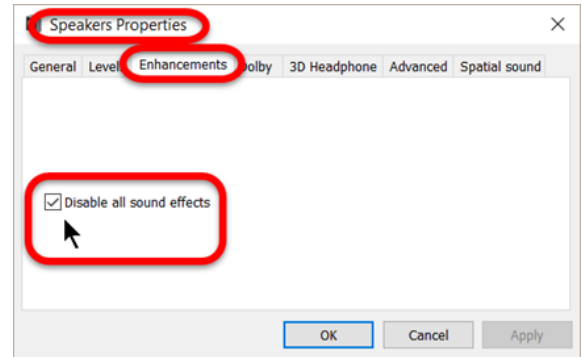
It's simple (like a similar setting for your speakers) Go to "Sounds" and uncheck the box on the microphone side of things.



The checkbox that controls enhancement is buried within the "Sound" controls. Turning off "Enable audio enhancements" is important and easy once you drill down and find it.

The panels control "Sound" for BOTH "Playback" (think speakers) and "Recording," (think microphone) for each audio input/output device you have installed. Were a Signalink USB device installed, you would see it as an additional choice.

You should turn off enhancements/sound effects on your speakers here too.



NOTE: Another tab in both Playback and Recording allows adjustment of both incoming and outgoing audio gain or volume levels.

## Symptoms "Enhancements" being "on"

Scenario: After the Windows Update, imagine you have been toiling away wondering why in the heck FLDIGI won't allow you to select your tried-and-true internal mic. After much gnashing of teeth, you read about the "Privacy" problem in an online group. You make the fix to give programs access to your mic and you think all is well.

You get restarted and you selected your trusty internal mic. You hit the "CQ" macro and the software "sends" fine.

You check the "receive" pane as you play a recorded test message. It seems like FLDIGI isn't decoding NBEMS MT63-2000 Long tones. Things seem to hang after the RSID and a quarter line of hash...

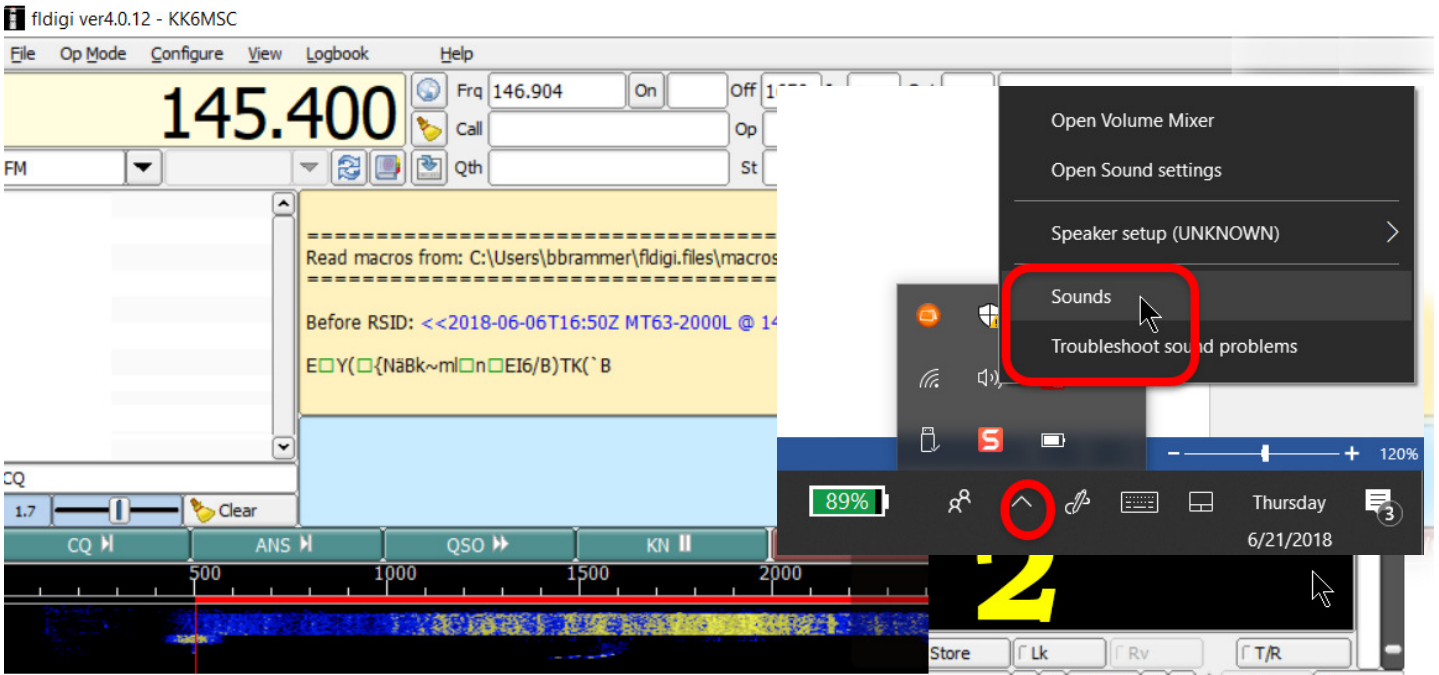
In troubleshooting, you try to serenade your mic by playing an AndFLDIGI message off your phone with the same results.

You check the "waterfall" and it seems to be "hearing" just fine. It is displaying blue with some yellow highlights.

But instead of the AFC "Diamond" in in **#1** showing "Green" – you're seeing it black like **#2**.

You try higher volume and moving the acoustic coupling sound source axis around your mic and closer to your mic and it only brings up green occasionally....

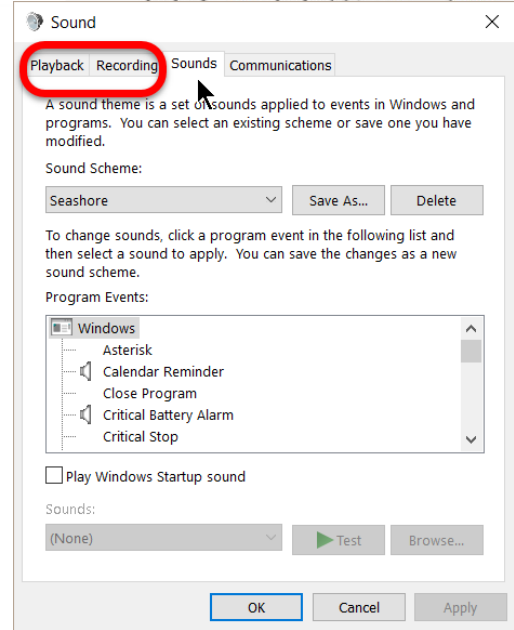
Even though signal is coming in, it isn't decoding. It dies after that half line of hash.



## How to get to controls that turn off enhancements or adjust audio levels

Left-click on the right side of your Task Bar to see some underlying choices for audio, networking etc. Right-click on the little "speaker" icon to bring up some sound-related choices.

Then, right-click on the "Sounds" choice.



You get a very non-descript panel that has a LOT in it.

It opens on the Windows "Sounds" tab. We don't care about Windows system noises that come up as the default.

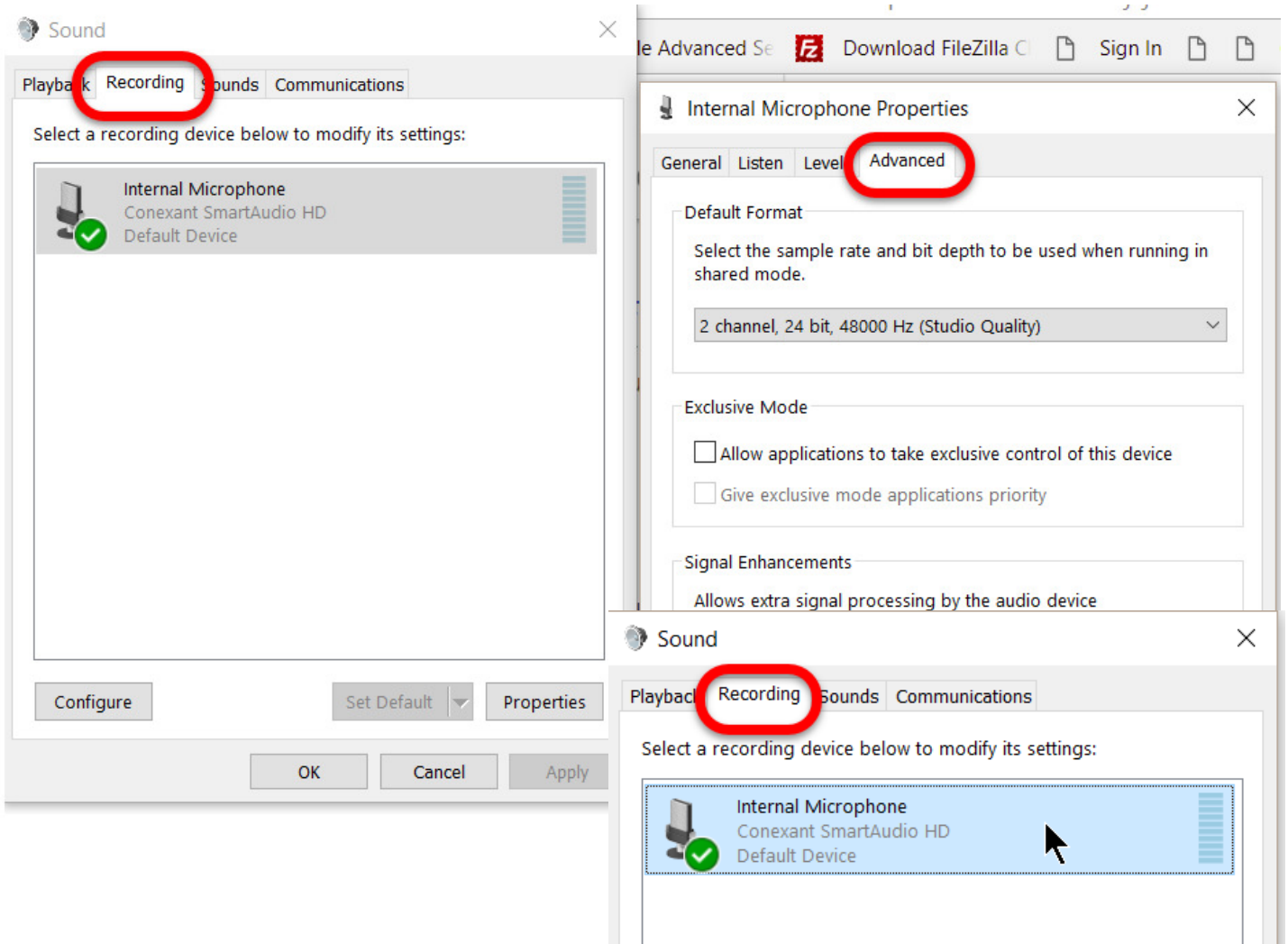
For our mic fix we want to go to "Recording" (think mic). Playback (think speakers) controls are here too, and there are "enhancements" there to turn off there as well.

**To get to Mic enhancements, go to the "Recording" tab**

You may see multiple devices here. You need to pick the one for your internal mic.

Double-click the Internal Microphone to bring up its controls.

**The enhancements checkbox lives under the advanced tab. Uncheck it.**





Just a note that the Sounds control panels allow you to control both speaker and mic audio levels. It isn't important right now, but when you come across references in forums regarding adjusting audio levels, this is where you can do it.

There are comments online that say the mic should be set to as close to 0db as possible with no boost. I've tested a broad a range of settings that work. Finer turning may come into play more with a fully integrated rigs.

Also, Playback/speaker setting have similar controls. Adjusting playback volume may be a help if output is too low for audio coupling. Or, folks may say they can't copy you because you're too loud and possibly distorted. Think of it like the electronic version of overdriving your outgoing speech by shouting or being too close to your mic when transmitting plain old voice.

Baselines can be lowered here.

My experiments showed me a lot of latitude in volume gain for incoming and outgoing audio.

The "issue" with enhancements isn't volume, it's an issue with the incoming signal being altered by Windows "enhancements" so FLDIGI ceases to decode it. Boosting the volume might improve decoding slightly, but simply unchecking "enhancements" is the key.

## Related stuff

**Simple YouTube video on steps to enhancements checkbox.** No radio info.

[https://www.youtube.com/watch?v=CDpKu\\_q3orM](https://www.youtube.com/watch?v=CDpKu_q3orM)

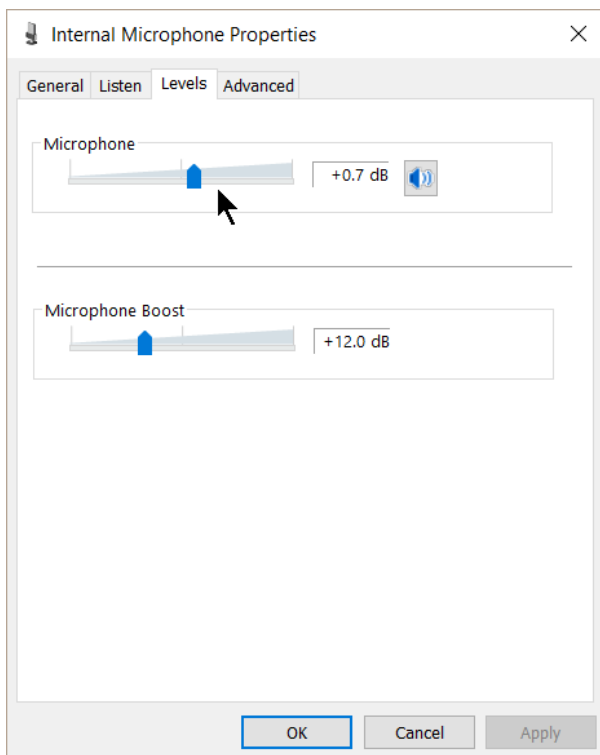
**Informative emergency communications focused FLDIGI site,** and notes "enhancements" in one of his doc's.

<https://www.jeffreykopcak.com/tag/fldigi/>

**Long and drawn out video discussion of a DIFFERENT issues,** but has a lot of good info on audio levels and radio:

**Other ways to get to Sounds panel:**

<https://www.windowscentral.com/how-manage-sound-settings-windows-10-april-2018-update>



## Useful FLDIGI group

<https://groups.io/g/nbems>

**"Volume Bug discussion"** is separate from anything mentioned above.

It has some interesting info on audio levels and sound monitoring tools. There's some interesting discussions on adjusting gain for FLDIGI related to other modes and rigs.

<https://groups.io/g/nbems/message/13693?p=,,,20,0,0,0::Created,,windows+update,20,2,20,4226189>

Video discusses Volume Bug" <http://k3rrr.com/signalink-and-other-usb-digital-interfaces-huge-bug-fix-for-amateur-radio-digital-modes/>

There may be value in video discussion in its use of third-party scopes listed below.

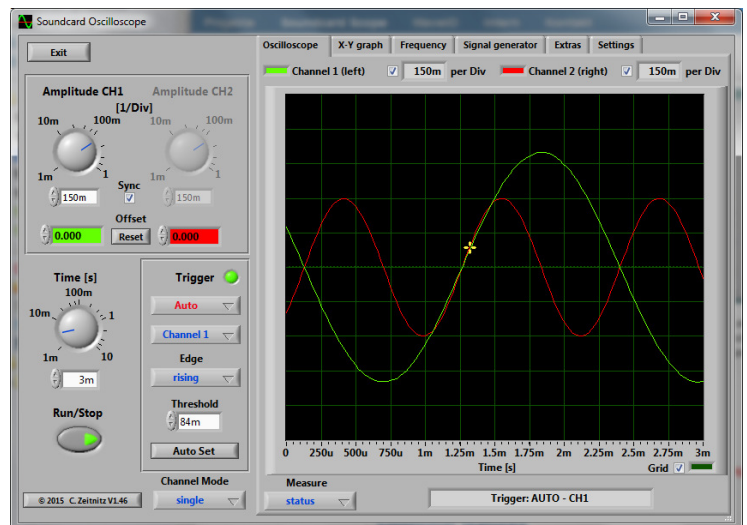
## Audio tools from the Volume Bug article

## Soundcard Scope

[https://www.zeitnitz.eu/scope\\_en](https://www.zeitnitz.eu/scope_en)

The PC based Soundcard Oscilloscope receives its data from the Soundcard with 44.1kHz and 16 Bit resolution. The data source can be selected in the Windows mixer (Microphone, Line-In or Wave). The frequency range depends on the sound card, but 20-20000Hz should be possible with all modern cards. The low frequency end is limited by the AC coupling of the line-in signal. Be aware, that most microphone inputs are only mono.

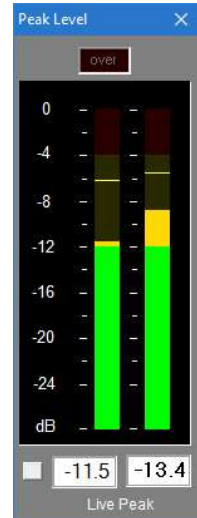
The oscilloscope contains in addition a signal generator for 2 channels for sine, square, triangular, sawtooth wave forms and different noise spectra in the frequency range from 0 to 20kHz. The signal can be defined by a mathematical formula as well. The signals are available at the speaker output of the sound card. These can be fed back to the oscilloscope in order to generate Lissajous figures in the x-y mode.



## Digital audio meter

<http://www.darkwooddesigns.co.uk/pc2/meters.html#Digital>

Zero is referenced to Full Scale Digital, although this can be modified with the calibration adjustment to provide some headroom as required. Sample rate can be set to match recording if necessary. Infinite peak hold setting if required, even across program restarts. Reset by double-clicking meter display. If you need to run multiple meters monitoring more than one source there Multi-Channel Level Meter for up to 24 channels.



is a

**Samson Go Mic** is a plug-and-play USB mic that is an easy install and comes with a case for the mic. It has both cardioid and omni pick-up patterns.

Lots of reviews are online at Amazon and Best Buy. It is powered by USB. It is ideal for older desktops lacking a mic or for having in your laptop bag as a backup.

Shop for sale prices that may save you half. Also, has link to download audio editing software.

**CutePDF and FoxIt PDF** Good freeware PDF software for printing out received messages.



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