

# VARA HF 4.7 QUICK GUIDE

Rev, February 27th 2023

## VARA LICENSE

The VARA license is valid for the callsign and his 15 suffixes: CALLSIGN, CALLSIGN-1, CALLSIGN-2.....CALLSIGN-15 and CALLSIGN-T, CALLSIGN-R and CALLSIGN-X.

There is not hardware restrictions. You can use your VARA license in several computers. In the case of Gateway operation, no license is necessary to get full speed.

The registration Key is inserted in VARA Setup menu:

VARA Setup

TCP Ports:

Command: 8300

Data: 8301

Retries: 10

VARA License

Callsign	Registration Key
PA3GJM	XXXXXXXXXXXXXXXXXX

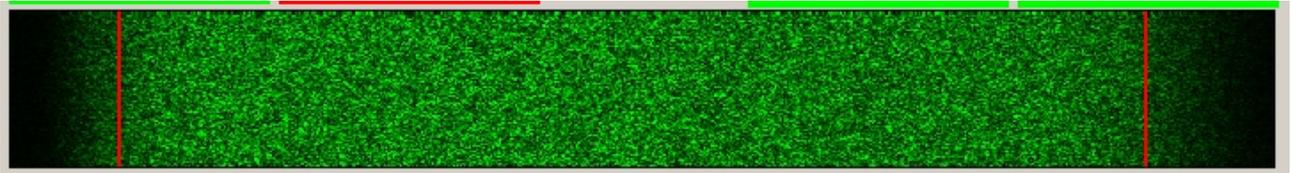
Close



## RIG SETTINGS

Open filters from 0-3000Hz, even in the case of VARA 500. VARA uses a specific internal filter for VARA 2300 or 500, which is not visible in the waterfall.

In the waterfall, VARA signal covers the space between the red lines, so ideally, your rig filter should exceed this threshold, like in this picture:



In the case of VARA HF Tactical, you need open the TX filter from 100-2900 Hz. This is only possible in the Icom IC-7300.



## VARA GATEWAYS CENTER FREQUENCY

Center Frequency = USB dial + 1500Hz



Center Frequency (KHz)	BW	Start Hour	Stop Hour	P3/4	P1/2	W	A	Vara	Rp	Dwell (sec)	Callsign	Service Code
1 10131,500	W	0	23	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7	EA5HVK	PUBLIC
2 0,000	W	0	23	<input type="checkbox"/>	<input type="checkbox"/>	0	EA5HVK	PUBLIC				

## WINDOWS DEFENDER

Some antivirus, like Windows Defender, give a false positive in VARA.exe file, removing the file even without asking you. I recommend to add an exclusion to C:\VARA folder.

*How Add an exclusion to Windows Security:*

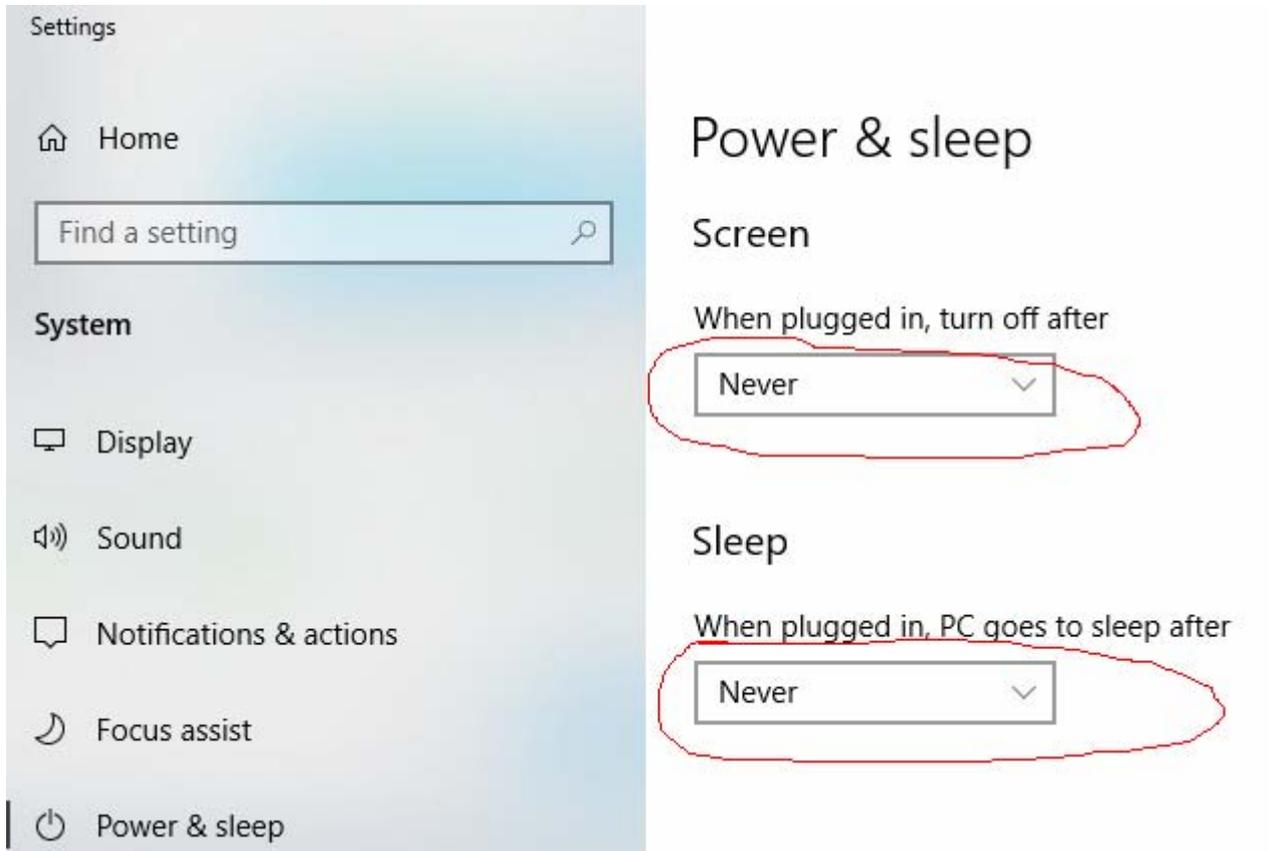
*Go to Start > Settings > Update & Security > Windows Security > Virus & threat protection.*

*Under Virus & threat protection settings, select Manage settings, and then under Exclusions, select Add or remove exclusions.*

*Select Add an exclusion, and then select C:\VARA folder*

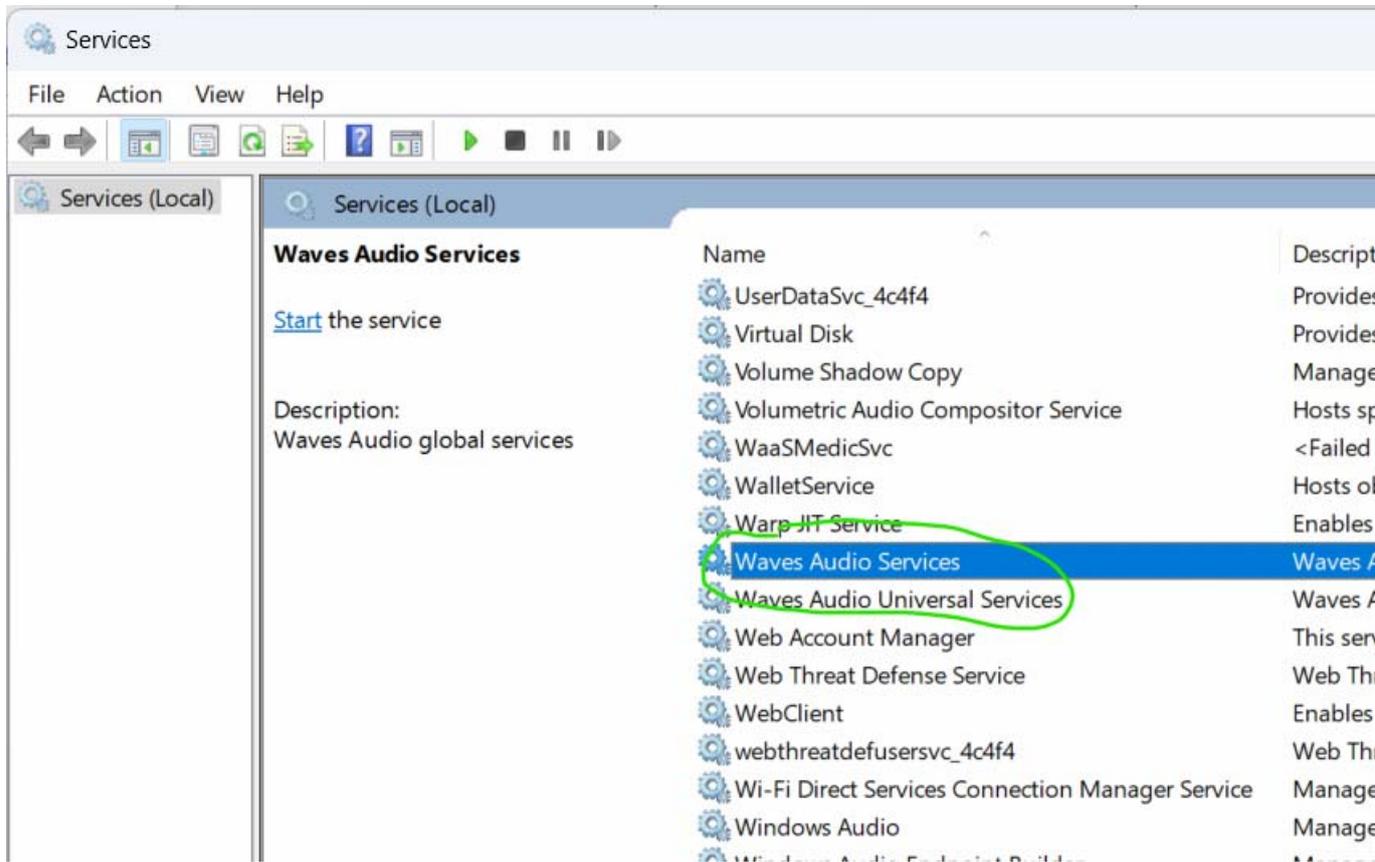
## WIN10 POWER & SLEEP SETTINGS

To avoid a possible VARA locked-up with Win10, go to /Settings/System/Power & Sleep, and set the Screen and Sleep option to “**NEVER**”.



## WINDOWS 11

Disable the two Services: Wave Audio Services and Wave Audio Universal Services, which are used to reduce background noises. These services destroy the VARA signals.



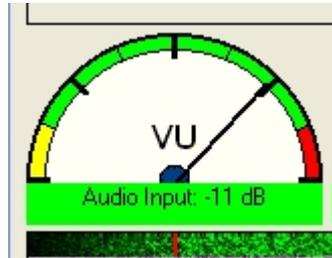
## TUNE BUTTON

The **TUNE** button plays a test tone, useful for the power/ALC settings. Using the **drive level** slider, you can adjust the audio level out. Your **ALC** meter should be about 1/3 or 1/2 of scale.

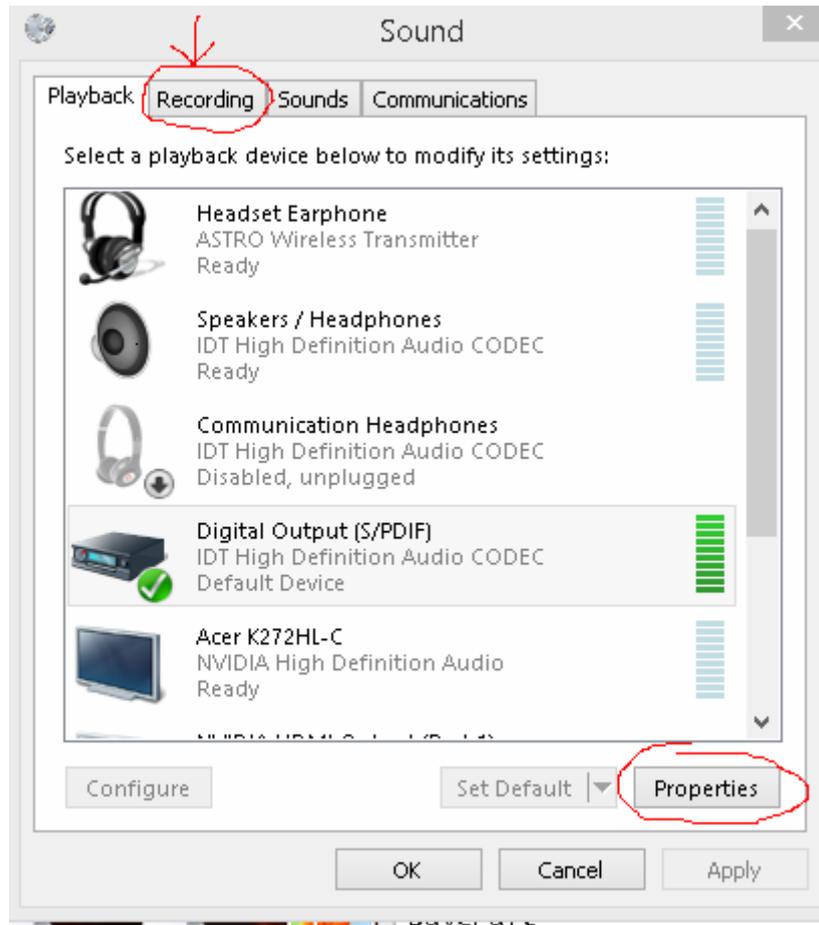
The image shows two screenshots. The top screenshot is from the 'SoundCard' software window. It features a 'Device Input' dropdown menu set to 'SoundMAX HD Audio' and a 'Device Output' dropdown menu also set to 'SoundMAX HD Audio'. Below these is a 'Drive level' slider set to 90, with a red 'Tune' button to its left. A red hand-drawn box encloses the 'Tune' button and the slider. A red arrow points from the 'Tune' button to the ALC meter in the bottom screenshot. Below the slider, text reads 'Press Tune and set the Drive Level for ALC=1/3'. The bottom screenshot shows the ICOM HF/50MHz TRANSCEIVER IC-7300 display. The frequency is 14.076.00 MHz. The ALC meter is circled in red and shows approximately 1/3 of the scale. Other meters include AGC-S, COMP, SWR, and TEMP. A 'Close' button is located at the bottom of the software window.

## VU METER

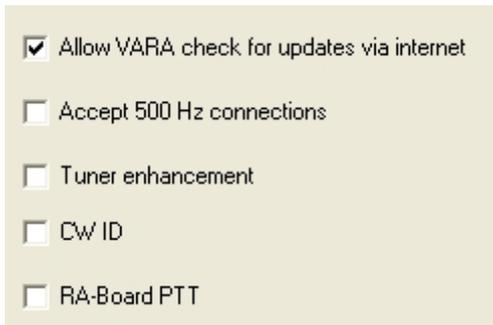
The VU meter measures the input audio level (db Full Scale) in the soundcard. **Avoid the Red Zone.**



For adjusting the RX Audio level, use the Windows Recording Audio Slider (Recording → Properties).



## Setup Options



Allow VARA check for updates via internet  
 Accept 500 Hz connections  
 Tuner enhancement  
 CW ID  
 RA-Board PTT

### Allow VARA check for updates via internet

VARA will connect with a VARA server to check if a new version is available.

### Accept 500 Hz connections

Your VARA Gateways accept incoming connections on VARA HF 500, even if your station has not selected 500 mode. If you are already using VARA 500, this option is not necessary. I recommend disable it to reduce the CPU usage.

### Tuner enhancement

Select Tuner enhancement in your VARA HF Gateway only if you have problems with your ATU scanning bands. This option requires 2 additional retries by client users.

### CW ID

For USA calls, the CW ID is forced. The rest of the world can enable/disable it

### RA Board PTT

Select RA Board PTT if you are using a RA-Board interface with VARA HF. (In the Winlink Express Port PTT option select "External")

## SmartSDR

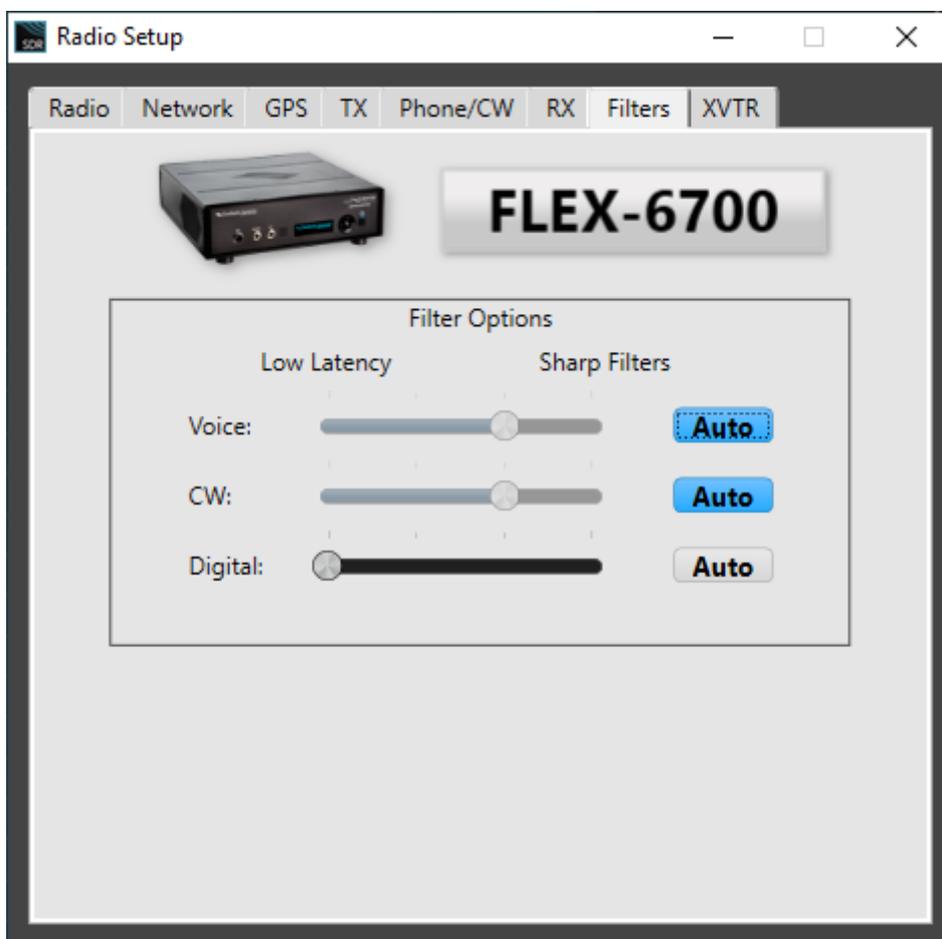
A feature of SDR transceivers is the high latency caused by VAC (Virtual audio cables). This latency is about 470 ms as minimum. In case of connection between two SDR's, the latency is double:  $2 \times 470 = 940$ ms minimum.

For EMMCOM, I recommend to use conventional Radios (0 latency), to have a better throughput performance.

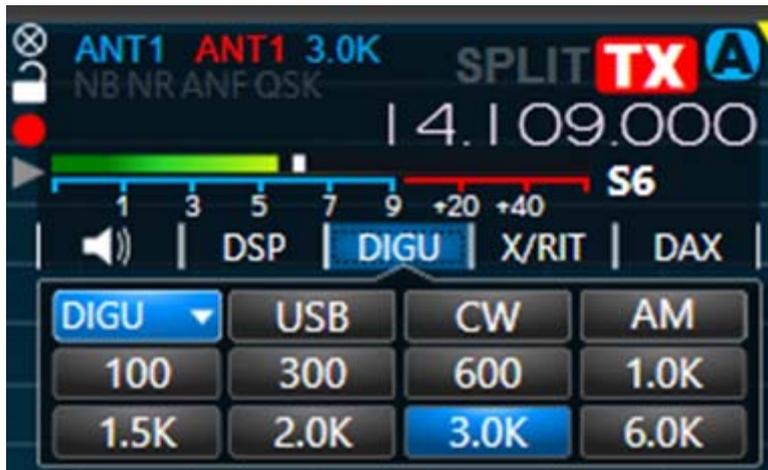
VARA supports a single SDR connected to a conventional radio station, but it does not support the connection between two SDR's.

Here a typical configuration for SDR's:

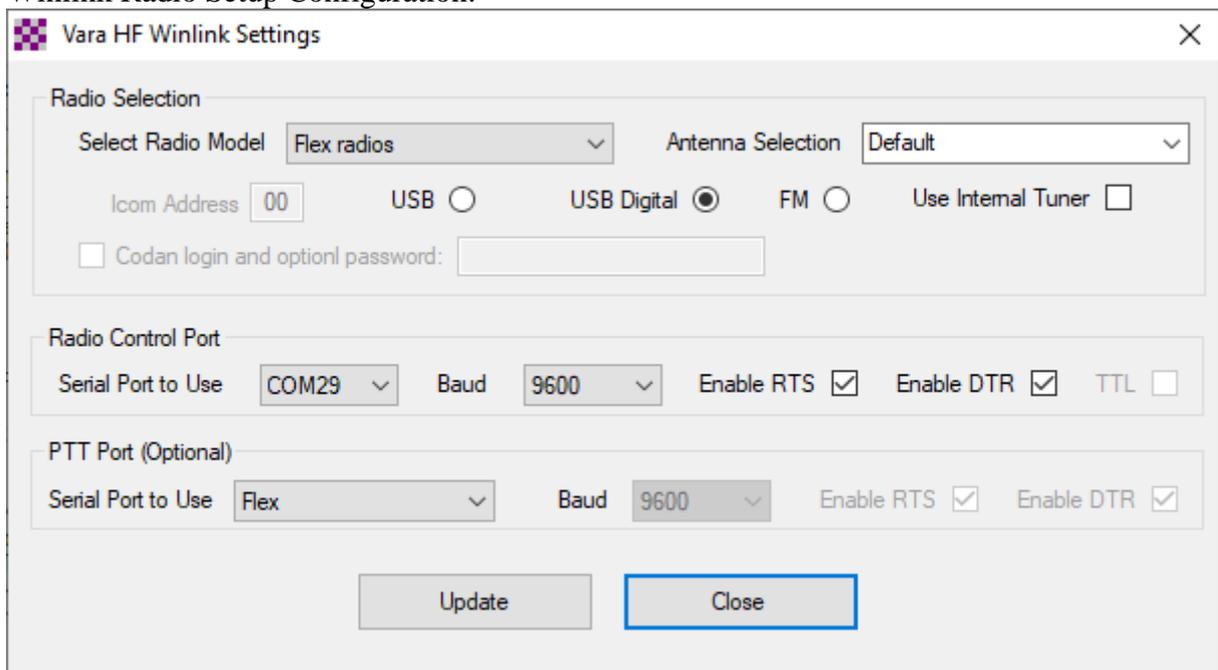
In Filters Option set Digital to the left (minimum latency)



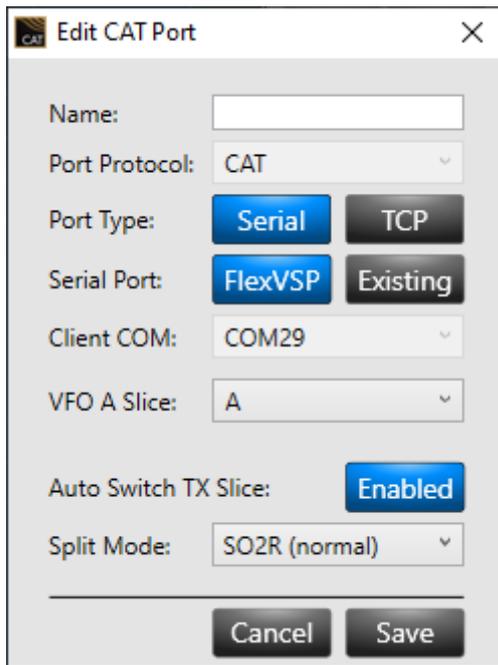
Select **DIGU** and **3.0K** wideband:



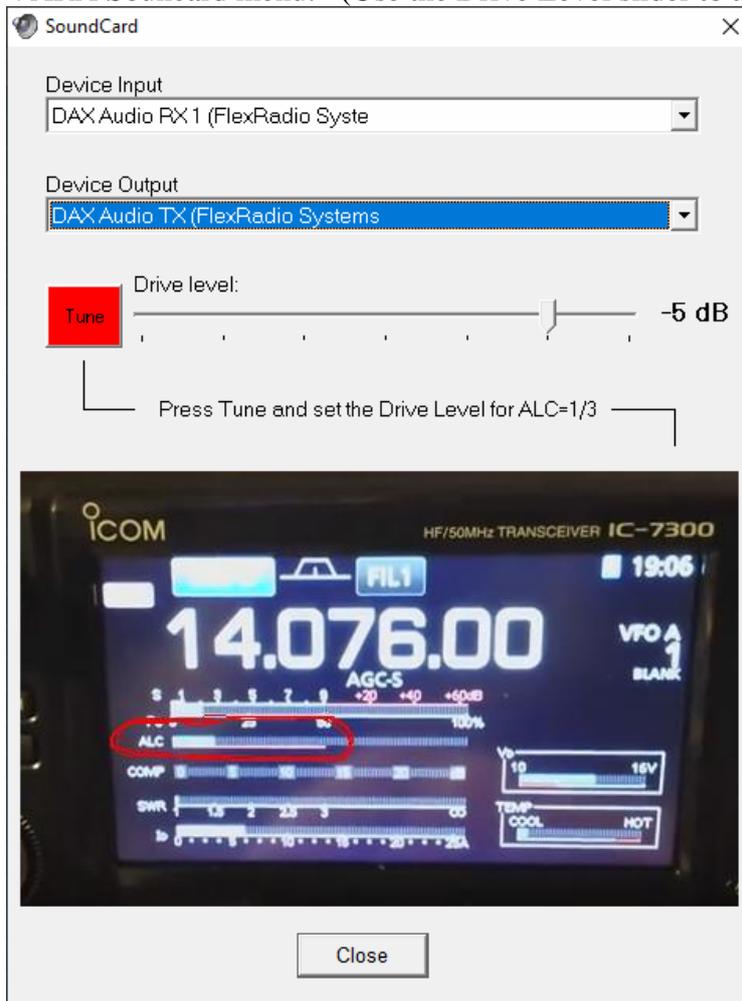
Winlink Radio Setup Configuration:



CAT port:



VARA Souncard menu: (Use the Drive Level slider to adjust the ALC)



# DAX Control

**DAX Control Panel v3.1.1...** Settings

**FLEX-6700**  
N4CZ  
N4CZ

Station: **LATITUDEE5570-1**

**TX Stream**  
**TX** Streaming  
TX Gain: [Slider] -60dB 0

**Mic Stream**  
**On** Streaming  
Mic Record Gain: [Slider] -60dB 0

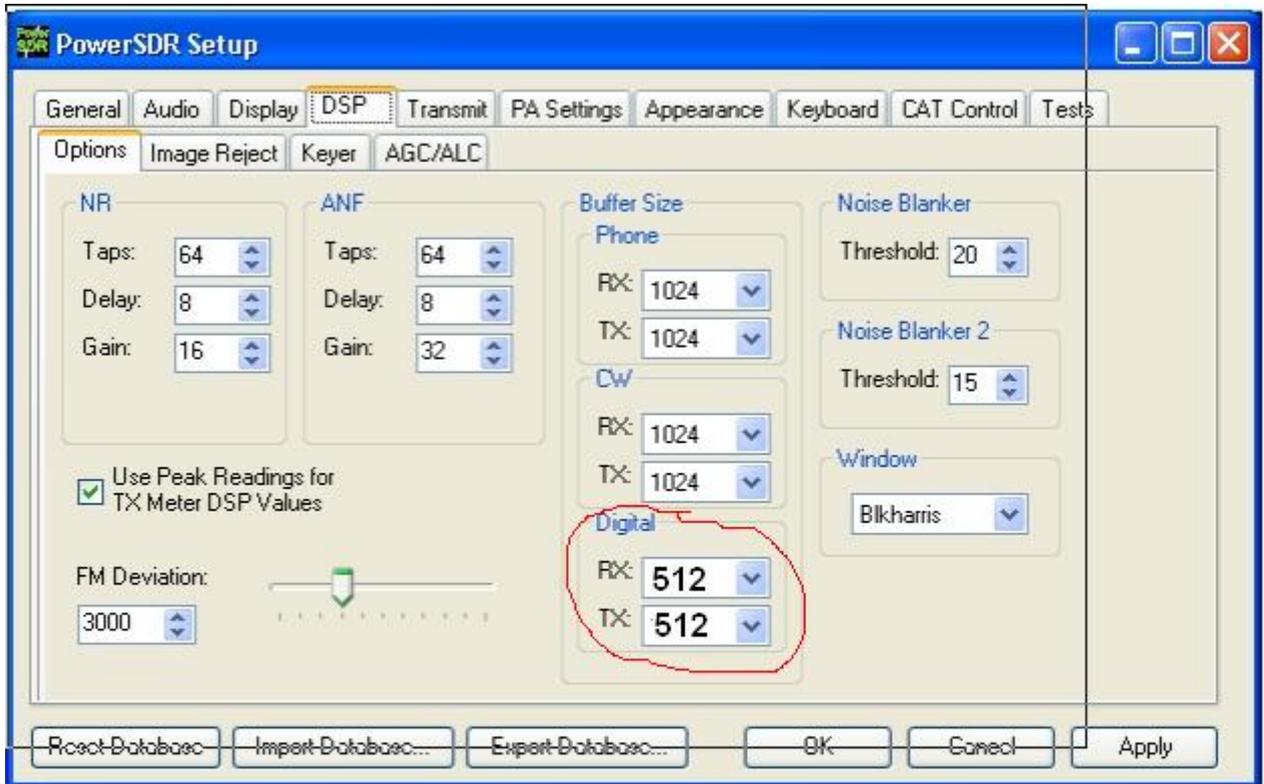
**RX Streams**

Slice	Status	RX Gain
1	Slice A Streaming	[Slider] -60dB 0
2	Slice - No Slice	[Slider] -60dB 0
3	Slice - Off	[Slider] -60dB 0
4	Slice - Off	[Slider] -60dB 0
5	Slice - Off	[Slider] -60dB 0
6	Slice - Off	[Slider] -60dB 0
7	Slice - Off	[Slider] -60dB 0
8	Slice - Off	[Slider] -60dB 0

**IQ Streams**

## PowerSDR

To reduce the latency, set the DSP Buffer size to 512.



## VARA TCP PORTS

Currently, VARA have been incorporated to BPQ32, RMS express, RMS Trimode, RMS packet, VarAC, VARA Chat, VARA Terminal, vARIM, PAtLink..... The communication between VARA and these external applications is done using two TCP ports (8300, 8301 by default).

If you are running several VARA's in the same computer, I recommend you to create a different VARA folder for every application, using different TCP ports.

For example:

Winlink Express	C:\VARA	(TCP 8300-8301)
VarAC	C:\VARA2	(TCP 8310-8311)
VARA Terminal	C:\VARA3	(TCP 8320-8321)

etc....

## TECHNICAL SUPPORT

For more information, write to [nietoros@hotmail.com](mailto:nietoros@hotmail.com)

Jose, EA5HVK  
[nietoros@hotmail.com](mailto:nietoros@hotmail.com)