

VARA QUICK GUIDE 3.0

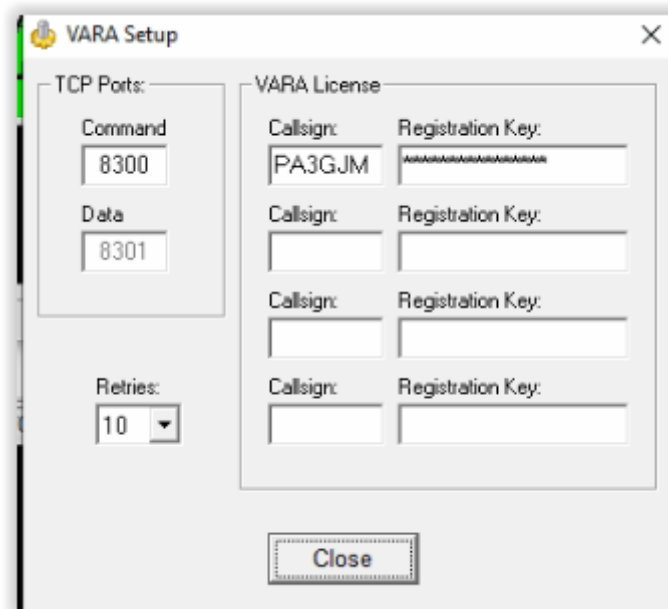
Rev, March 14th 2020

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:



The image shows a screenshot of the 'VARA Setup' dialog box. The window title is 'VARA Setup' with a close button (X) in the top right corner. The dialog is divided into two main sections: 'TCP Ports' and 'VARA License'.
In the 'TCP Ports' section, there are three input fields: 'Command' with the value '8300', 'Data' with the value '8301', and 'Retries' with a dropdown menu set to '10'.
The 'VARA License' section contains a table of four rows, each with a 'Callsign' and a 'Registration Key' field. The first row has 'PA3GJM' in the Callsign field and a masked key 'AaAaAaAaAaAaAaAaAaAaAa' in the Registration Key field. The other three rows have empty fields.
At the bottom center of the dialog is a 'Close' button.

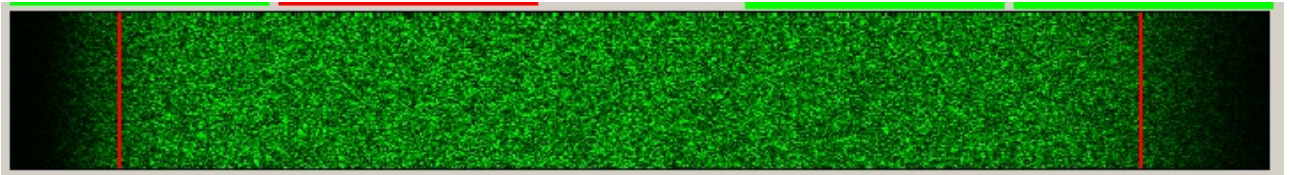
[VARA FOLDER](#)

By default, VARA is installed in C:\VARA folder. If you need to use more than one VARA in a same PC, you will need to create another VARA folder.

[RIG SETTINGS](#)

I recommend to use **AGC Slow** and open filters.

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:



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:

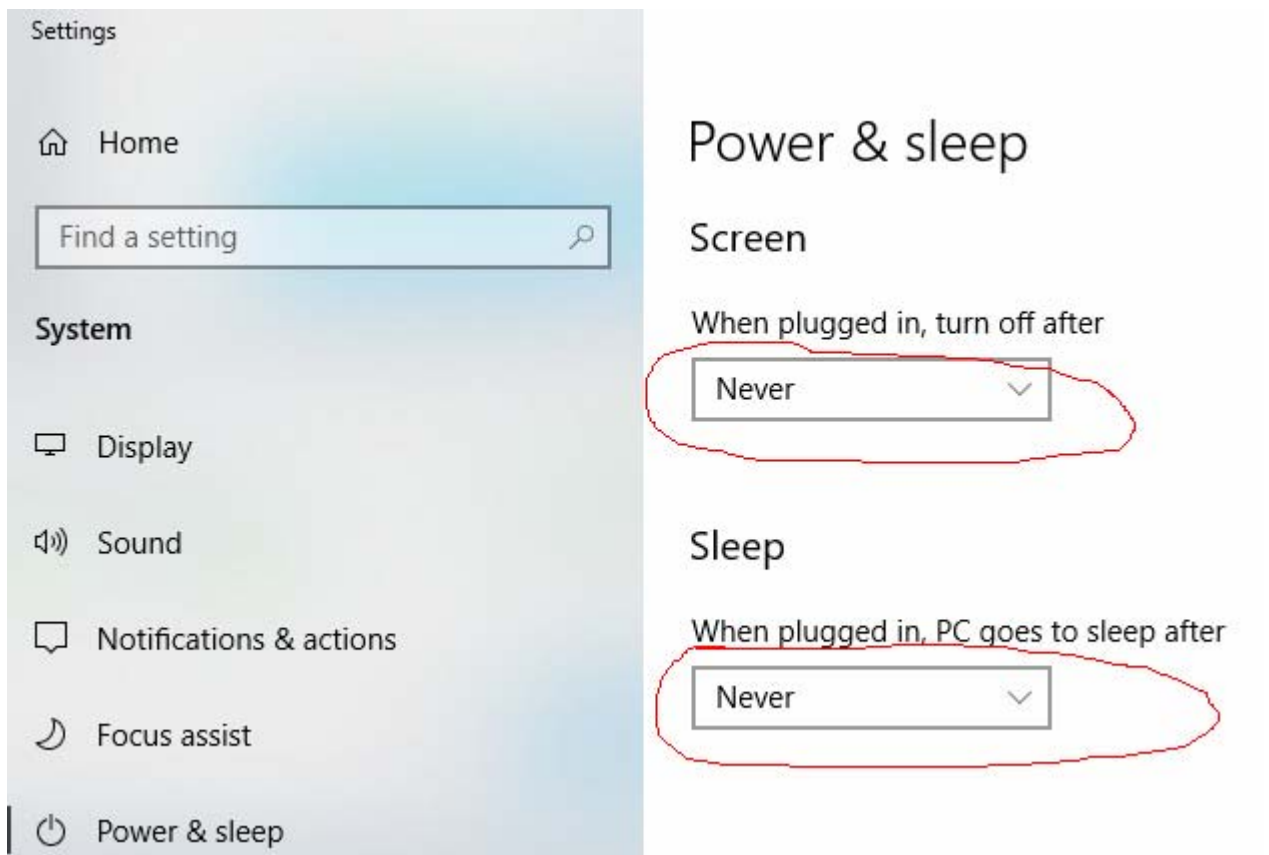
Go to Start > Settings > Update & Security > Windows Security > Virus & thread protection.

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**”.



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 with a red 'Tune' button on the left. The slider is currently set to 90. A red hand-drawn box encloses the 'Tune' button and the slider. A red arrow points from the 'Tune' button to the text 'Press Tune and set the Drive Level for ALC=1/3'. The bottom screenshot is of the ICOM IC-7300 transceiver's LCD display. It shows a frequency of 14.076.00 MHz and a time of 19:06. The ALC meter is circled in red and shows a reading of approximately 1/3 of the scale. Other meters for COMP, SWR, and V_B are also visible.

SoundCard

Device Input
SoundMAX HD Audio

Device Output
SoundMAX HD Audio

Drive level: 90

Tune

Press Tune and set the Drive Level for ALC=1/3

ICOM HF/50MHz TRANSCEIVER IC-7300

14.076.00

19:06

ALC

COMP

SWR

V_B 10 16V

TEMP COOL HOT

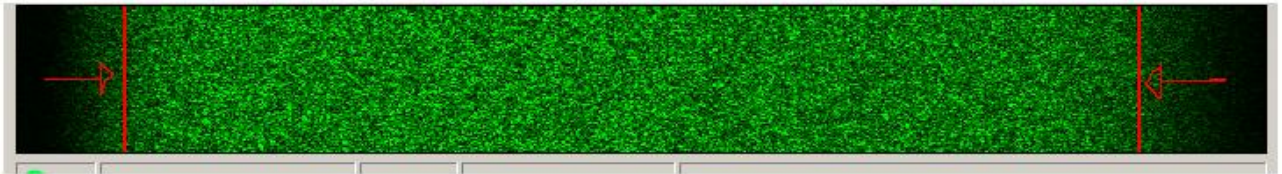
Close

SOUNDCARD INTERFACES

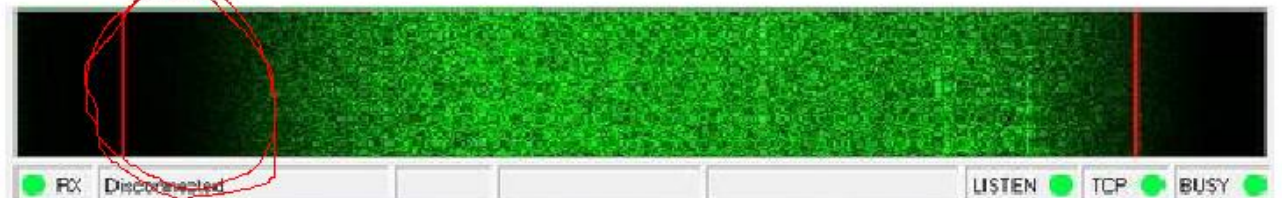
An ideal soundcard interface should not limit the wideband available of your rig. However, some interfaces filter a good part of the signal. By the robust nature of VARA, the modem continue working with a good performance, but obviously this not help. As Alfredo Di Stefano told his goalkeeper: “Do not ask you to stop the balls going inward, but at least not goals balls going out”

Here there are two different noise waterfalls:

PERFECT SOUNDCARD INTERFACE



BAD SOUNDCARD INTERFACE



In the first case there is not signal filtered between the red lines (300-2700 Hz). This waterfall was recorded with a built-in IC-7300 interface.

In the second case the low frequencies are filtered, reducing the performance.

Some new radios have a built-in interface, which is ideal. Anyway, if you need buy a soundcard interface I recommend you something similar to this, which not filter the signal, easy to set up, simple, and without any button:

PTT SOUNDCARD INTERFACE



<https://www.astroradio.com/en/302018>

Additionally, if you want to have frequency control, you need the CAT cable:

ICOM CAT CABLE



<https://www.astroradio.com/en/502002>

YAESU CAT CABLE



<https://www.astroradio.com/en/502001>

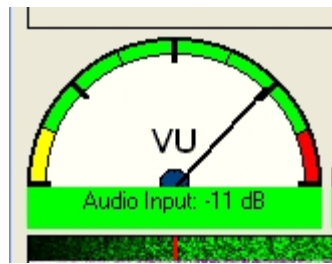
KENWOOD CAT CABLE



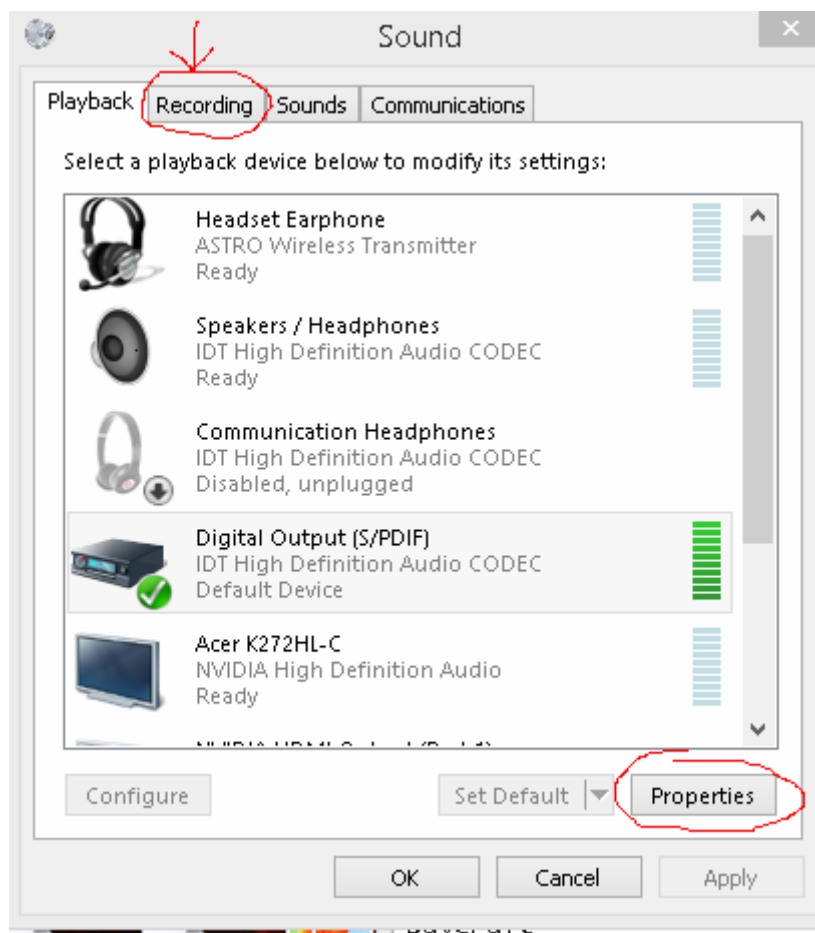
<https://www.astroradio.com/en/502008>

VU METER

The VU meter measures the input audio level in the soundcard. **Avoid the Red Zone.**



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



VARA GATEWAYS CENTER FREQUENCY

Center Frequency = USB dial + 1500Hz



The screenshot shows the VARA Gateway configuration interface. At the top, there is a text box labeled "USB Dial: 10130" with a red border. Below it, the URL "http://www.winlink.org/RMSChannels" is displayed. The main part of the interface is a table with columns: Center Frequency (KHz), BW, Start Hour, Stop Hour, P3/4, P1/2, W, A, Vara, Rp, Dwell (sec), Callsign, and Service Code. There are two rows of data, labeled 1 and 2. Row 1 has a center frequency of 10131,500 (circled in red), BW of W, Start Hour of 0, Stop Hour of 23, and other settings. Row 2 has a center frequency of 0,000, BW of W, Start Hour of 0, Stop Hour of 23, and other settings. A red arrow points from the "USB Dial: 10130" box to the "10131,500" value in the first row.

	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"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0	EA5HVK	PUBLIC

SDR LATENCY

Sdr Latency decreases the throughput of any ARQ mode. VAC Audio adds latency, which should be reduced as much as possible. I recommend to use a conventional Radio better than a SDR to get a better throughput.

LINUX

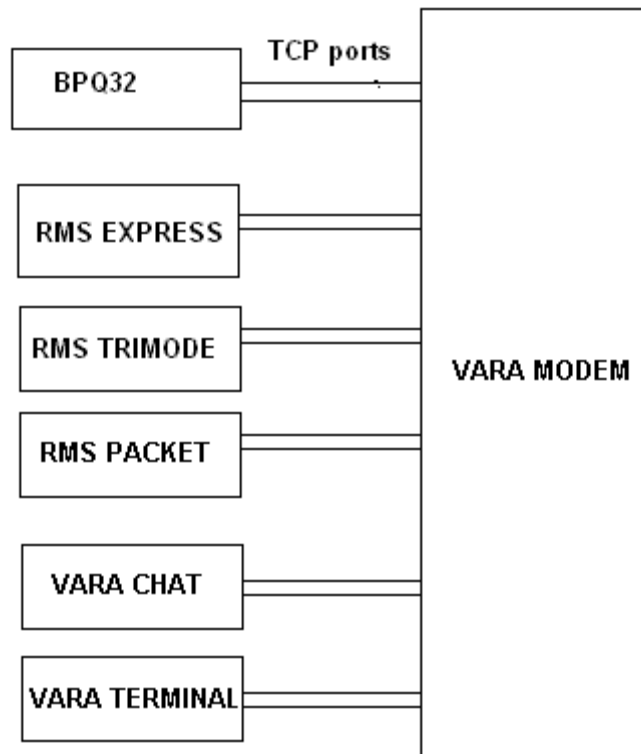
For using VARA under Linux S.O go to this link:

http://spinfax.org/RMS_on_Linux_or_Mac.pdf

For more information, ask to Steve K6ETA.

VARA APPLICATIONS

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



TECHNICAL SUPPORT

If you have problems or doubts with the installation, write to nietoros@hotmail.com

Jose, EA5HVK
nietoros@hotmail.com