



Quick WinLink Express - VARA FM Installation Setup & Operation

Outer Banks Repeater Association

June 2025



KY4RY

Windows Drivers!



**What Steps did
he say to Install
these Windows
Drivers**



Winlink VARA – Need to Know

Winlink Express: is open source no fee application with full functionality available at no cost to the user. However, you will be (regularly) prompted to contribute \$25 to [Amateur Radio Safety Foundation, Inc. \(ARSFI\)](#), to support development.

Winlink Account: you create your Winlink account from within the Application not from the Winlink.org site.

VARA: is not open source and requires a license \$69 for full functionality to be unlocked. An unlicensed copy will limit speed, restrict (prevent) digipeater and compression. One license gives full access to all VARA Applications, FM, HF, etc.



Installing Winlink Express



Go to www.winlink.org.
Select Download drop down menu. You will be presented with following Screen

Winlink Accounts...

...are created with a client program. *You can not create one here.*

We require

- A valid amateur radio license, or
- a license or authorization from a participating government service or agency.

GMRS, LMR, ship station, other marine or general radiotelephone licenses *DO NOT* qualify.

How To Get an Account

- Download, install and configure any [client software](#). We suggest [Winlink Express](#). After you install, study the program's help about configuration and use.

If using Winlink Express:

My Account

Username (Callsign) *

Enter your Winlink Global Radio Email username.

Password *

Enter the password that accompanies your username.

Password Assignments & Recovery

Forgot your Winlink password?

We will send it to your account password recovery address, or your [@winlink.org](#) address if you have not supplied one.

NOTE: Password recovery works only for CALL SIGN ACCOUNTS and not for tactical address accounts.

Contact an administrator for assistance with tactical addresses.

Callsign (Username) *

downloads.winlink.org - /

6/7/2024	3:15 PM	<dir> Sysop Programs
7/15/2024	1:05 PM	<dir> User Programs
5/4/2024	1:03 PM	<dir> VARA Products

Select User Programs



Select Download File

downloads.winlink.org - /User Programs/

[\[To Parent Directory\]](#)

6/3/2023	6:34 PM	1846835	Paclink_install_4-3-11-0.zip
6/3/2023	6:34 PM	1101	README_Software_Install_Instructions.txt
6/3/2023	6:33 PM	847697	RMS_Link_Test_install_2-0-24-0.zip
6/3/2023	6:34 PM	12176	SCS_PTC-IIIusb_and_end_of_PTC-IIusb_IIpro_IIex.pdf
7/11/2024	1:09 PM	2269252	Standard_Forms.zip
7/15/2024	1:05 PM	40085446	Winlink_Express_install_1-7-17-0.zip

1

Click on WinLink Express Install file. Note, version maybe later when you do this.

2

Note this is a native Windows exe file so you need to install on a Windows PC running Windows 10/11

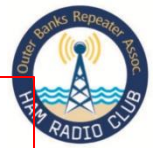
3

File will commence download to PC once link is clicked. Locate downloaded file and double click too launch

NOTE

You will most likely be presented with "Windows Protected your PC message. Application may put your PC at Risk. Ignore App is unsafe, Click More Info and Run Anyway

Account Setup



Having installed WinLink Express & opening application you will be presented with the initialization screen – account setup.

The screenshot shows the WinLink Express Properties dialog box. The following fields are highlighted with orange boxes:

- My Callsign: [] My Password: []
- Password recovery e-mail: []
- My Grid Square: [] Lat/Lon to Grid Square: []

The Contact Information (Optional) section includes fields for Name, Street address 1, Street address 2, City, State/Province, Country, Postal code, Web Site URL (optional), Phone number, and Non-Winlink e-mail. The Additional information (optional) section has a text area. The bottom of the dialog features an Update button and a Cancel button. A red arrow points from the text box on the right to the Update button.

Go ahead and fill out the required fields, I have identified the minimum data necessary, but I personally fill out the entire form. Once complete click Update button – note Service Code set as “Public”

System will auto load your data and then launch the Home Screen – see next slide.





Completed Initiation Form

Winlink Express 1.7.23.0 - KY4RY

KY4RY Add Callsign Settings Message Attachments Move To: Saved Items Delete Open Session: Vara FM Winlink Logs Help

to active session.

System Folders	Date/Time	Message ID	Size	Source	Sender	Recipient	Subject
nbox (2 unread)							
Read Items (0)							
Outbox (0)							
Sent Items (9)							
Saved Items (0)							
Deleted Items (1)							
Drafts (0)							

Personal Folders

Global Folders

Contacts

Winlink Express Properties for KY4RY

Call Signs
My Callsign: **KY4RY** My Password: *********
(Case sensitive)
Callsign suffix (optional): (Used for country code)
Password recovery e-mail:
(Non-Winlink e-mail address where lost password will be sent when requested)

Auxiliary Callsigns and Tactical Addresses

My Grid Square:
Winlink Express registration key:

Service Codes

(Use PUBLIC for ham call signs. Separate multiple service codes by spaces.)
If you change service codes, you must update the list of channels.

Registration Contact Information
Name:
Street address 1:
Street address 2:
City:
State/Province:
Country:
Postal code:
Phone number:
Web Site URL (optional):
Additional information (optional):

Recalculate HF path quality if SFI changes more than:
Keep logs for weeks. Keep deleted messages for days.
 Display list of pending incoming messages prior to download
 Warn about connections to stations holding messages
 Automatically install field-test (beta) versions of Winlink Express
 Automatically install updates without prompting

Ensure you set the service code to Public, if you set to EMCOMM (for example) you will only see EMCOMM RMS. All OBRA RMS are Public.

Once Complete go ahead and install Vara FM








Installation Of VARA TNC Application

<https://rosmodem.wordpress.com/>



VARA Modem

10 January, 2011

-  [VARA HF v4.8.7 \(High Performance HF Modem\)](#)
-  [VARA FM v4.3.7 \(VARA for FM transceivers\)](#)
-  [VARA SAT v4.4.3 \(VARA for QO-100 geostationary SAT\)](#)
-  [VARA Chat v1.4.1 \(Easy Text and File transfer chat\)](#)
-  [VARA Terminal v1.2.2 \(VARA dumb terminal for BBS's\)](#)

Email: nietoros@hotmail.com

 [Terms of use](#)



Recent Posts

- » [VARA HF Modem](#)
- » [New ROS v7.4.0](#)
- » [\(no title\)](#)
- » [ROS WEEKEND HF AWARD 2016](#)
- » [1 ST 27Mhz ROS WEEKEND AWARD](#)

Recent Comments

DA5UDI VARA-Update...
on VARA HF Modem



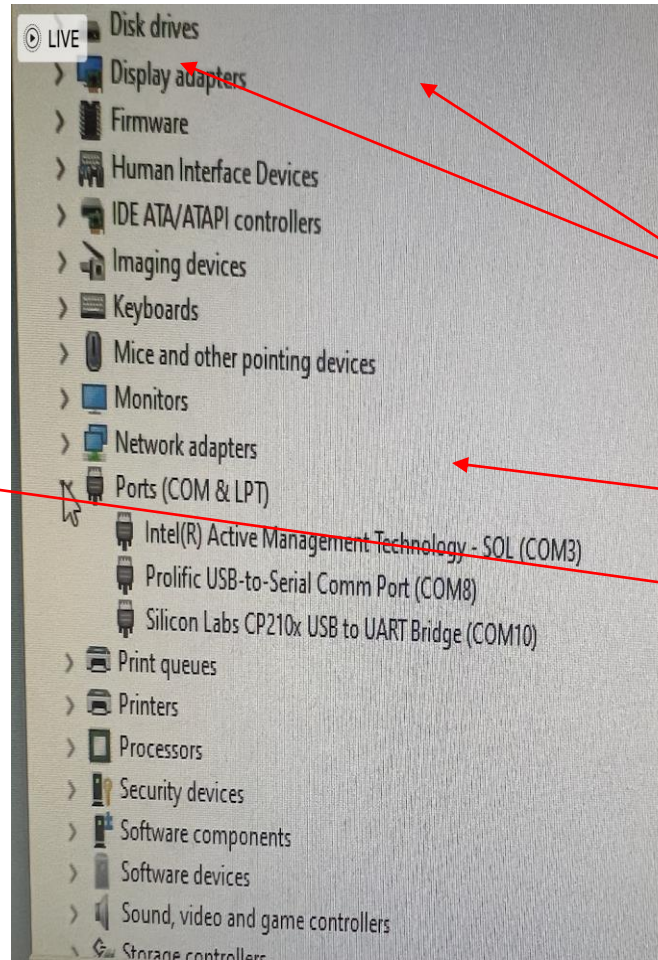
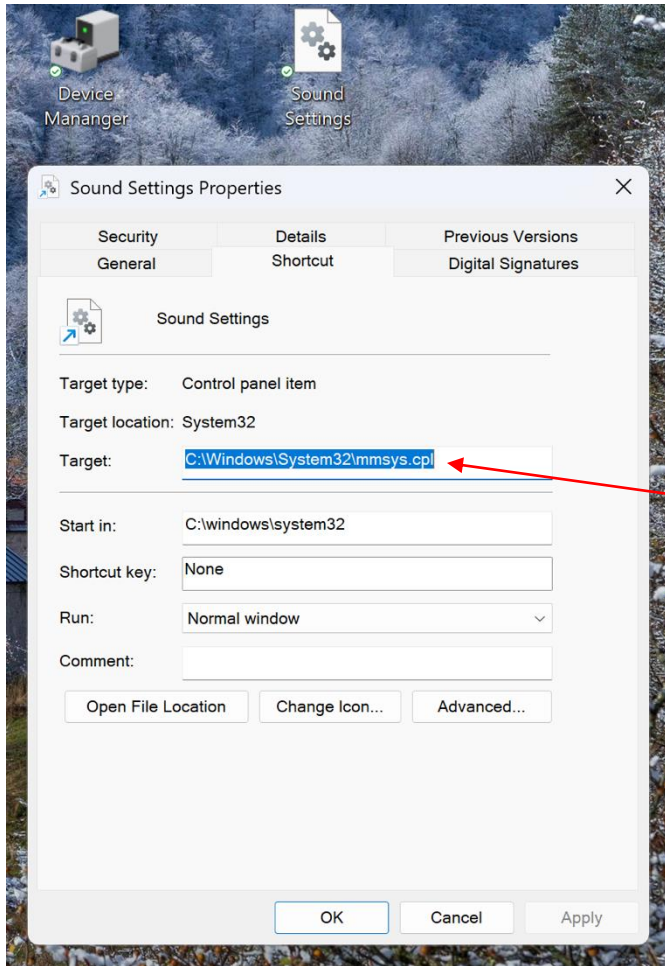
José Alberto Nieto R...
on New ROS v7.4.0

Download VARA FM from the link above – the screen to the left will be presented. Download the ‘VARA FM’ file. Install on your PC that WinLink is already installed. Follow the normal Windows install procedure. *Click Click next...*

For us Tech Nerds, the application will be installed in the C:/ root in a File Named VARA. In this folder you will find the VARA.EXE and recommend you create a desktop shortcut..

The Vara Applications are available via the Winlink.org site also but I prefer to download from the originator.

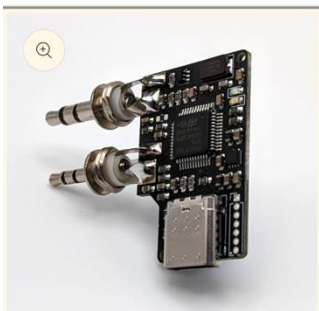
Device Manager & Sound Setting



You need regular access to Device Manager and Sound Settings to set and verify settings. For this purpose I create short cuts on the Desk Top for quick access to these controls rather than clicking through Windows, Settings etc. etc. or Run Device Manager – totally up to you. The Target Shortcut to these tools is shown here.

Sound Card Options

[AIOC - Ham Radio All-in-one-Cable - NA6D](#)



[SignalLink USB Interface](#)



[Masterscommunications.com](#)



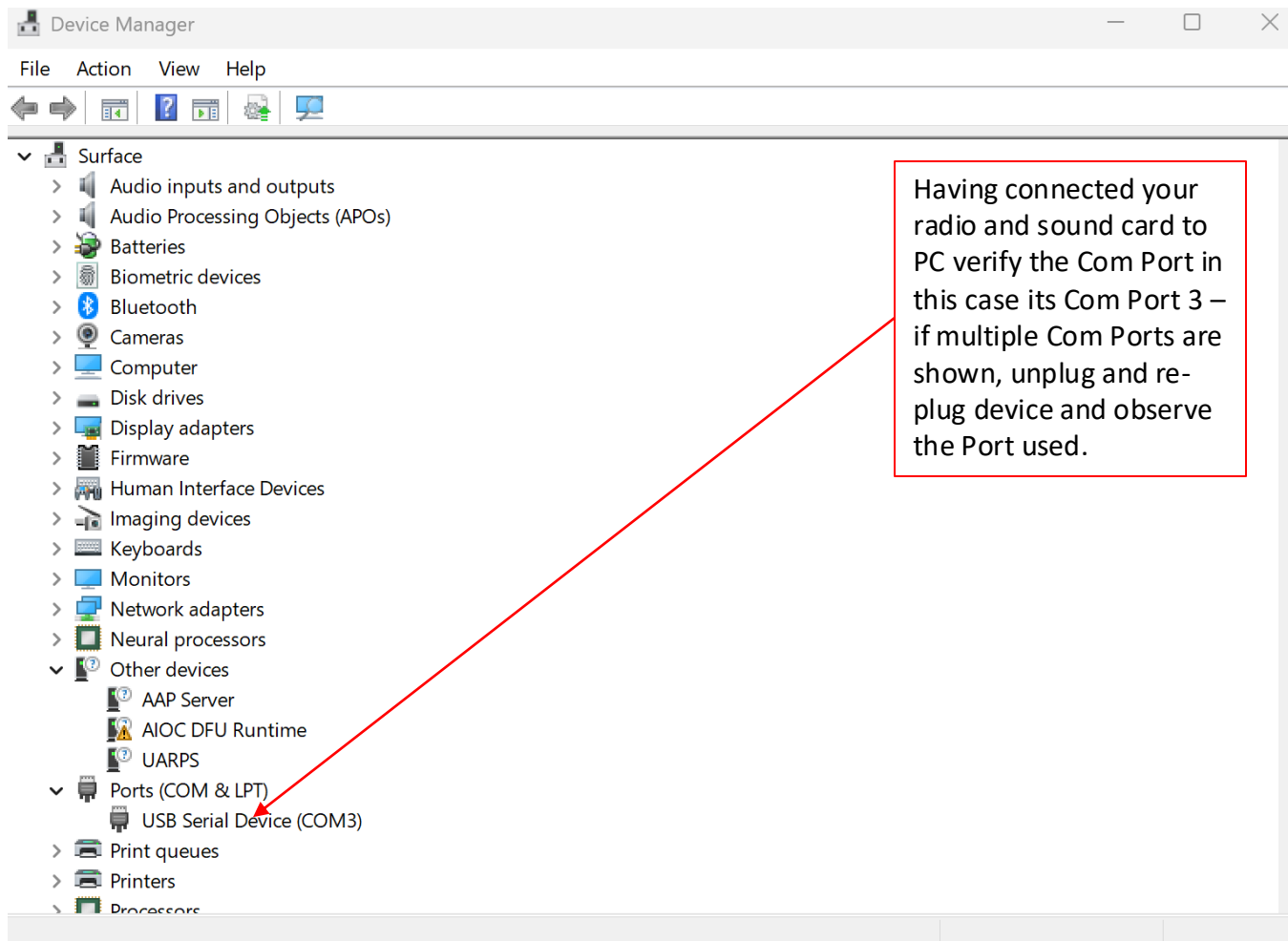
[Digirig Mobile – digirig](#)

Unless you're using a 'Shack in the box' with integral sound card you will need external sound card. Note many radio's with Sound Cards like Yaesu FT991A cannot support VARA Wide due to bandwidth limitations. This is the same for older Signal Link devices.

For HT use I highly recommend the All-In-One-Cable solution this works out of the box and reliable. Can be purchased without the 'K' connector so user could make Yaesu connector or similar.

Connect your radio/sound device to your computer USB input and verify Com Port Active.

Verify Com Port Connection



VARA FM Settings

Winlink Express 1.7.25.0 - KY4RY

KY4RY Add Callsign Settings Message Attachments Move To: Saved Items Delete **Open Session:** Vara FM Winlink Logs Help



n Vara FM Winlink session.

	Date/Time	Message ID	Size	Source	Sender	Recipient	Subject
System Folders							
inbox (0 unread)							
Read Items (0)							
Outbox (0)							
Sent Items (0)							
Saved Items (0)							
Deleted Items (0)							
Drafts (0)							
Personal Folders							
Global Folders							
Contacts							

Vara FM Winlink Session - KY4RY

Exit Settings Channel

Connection: Direct

Favorites:

In: 0/0 Out: 0/0 BPM: 0/0

*** Launching VARA FM TNC:
*** Successfully connected to
*** Ready
*** This is a registered version

Vara FM Setup

Virtual TNC host address/name: 127.0.0.1

Virtual TNC Command Port: 8300 Data Port: 8301

VARA FM Modem location: C:\VARA FM\VaraFM.exe Browse

Automatically launch Vara FM TNC when session is opened
 Show Vara FM TNC screen when it's launched

Automatic Calling

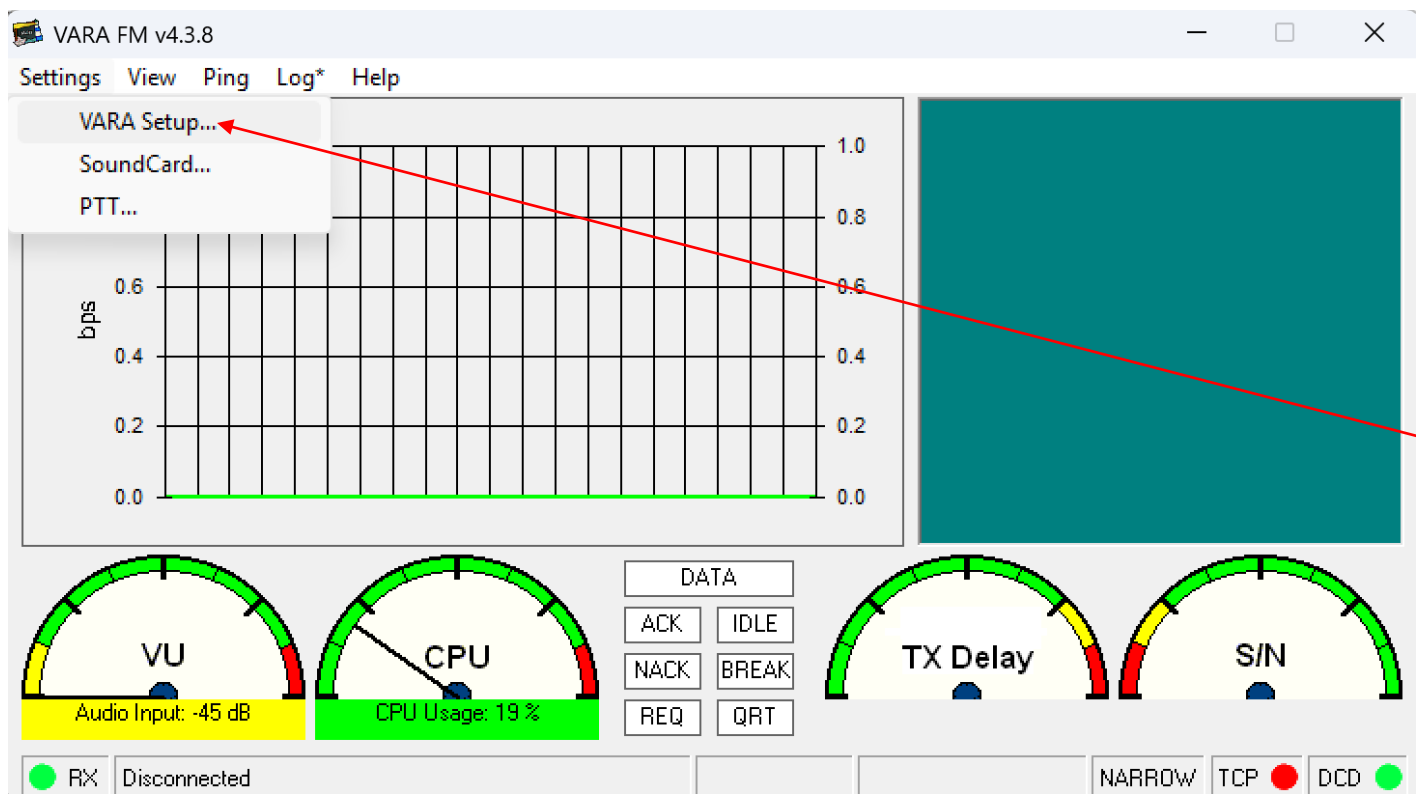
Autoconnect time: Disabled

Automatically call when there are pending outgoing messages

Update Cancel

1. Select VARA FM Winlink
2. Click Open Session
3. Click Settings
4. Ensure your settings match these

Setup VARA



The screenshot shows the VARA FM v4.3.8 software window. The title bar reads "VARA FM v4.3.8" and the menu bar includes "Settings", "View", "Ping", "Log*", and "Help". A dropdown menu is open under "Settings", with "VARA Setup..." selected and highlighted by a red arrow. Other options in the menu are "SoundCard..." and "PTT...".

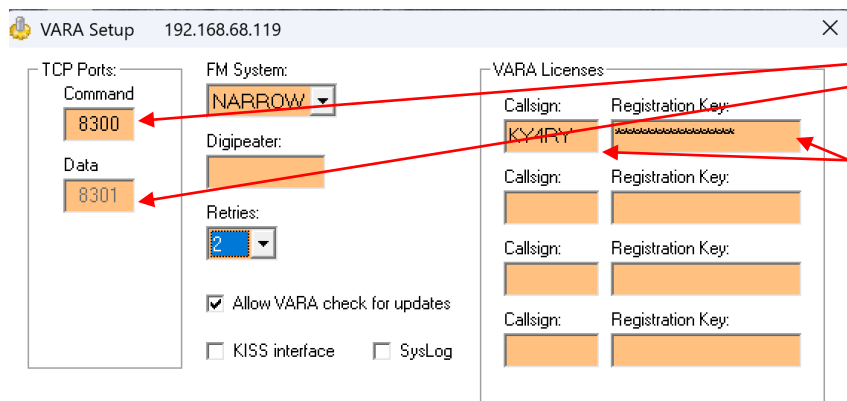
The main interface features a large graph on the left with a vertical axis labeled "bps" ranging from 0.0 to 1.0. The graph area is currently empty. To the right of the graph is a large teal rectangular area. A red arrow points from the "VARA Setup..." menu item to this teal area, and a red box on the right contains the text "Launch VARA and click on Settings".

At the bottom of the window, there are several gauges and controls:

- VU** gauge: Audio Input: -45 dB
- CPU** gauge: CPU Usage: 19%
- TX Delay** gauge
- S/N** gauge
- Control buttons: DATA, ACK, IDLE, NACK, BREAK, REQ, QRT
- Status indicators: RX (green dot), Disconnected, NARROW, TCP (red dot), DCD (green dot)

Launch VARA and click on Settings

VARA Settings



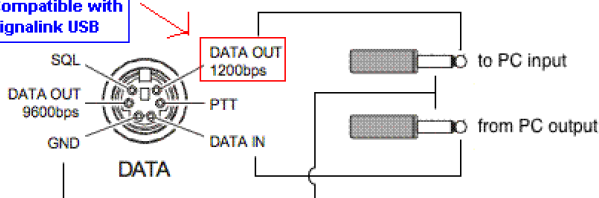
Fill out the Settings page;
Ensure TCP Port is set to 8300 and 8301.

Enter base call sign no SSID extension

If you have a License enter key here.

If you have a licensed copy of Vara you can enable Digipeater by entering your call AND SSID. Convention on Outer Banks is to use Call-10 so in my case KY4RY-10. This allows others to Digipeat through your station it is not enabling you to Digipeater that you'll see later. Note; you will need to leave Winlink Station on for others to use as Digipeater.

Compatible with Signalink USB

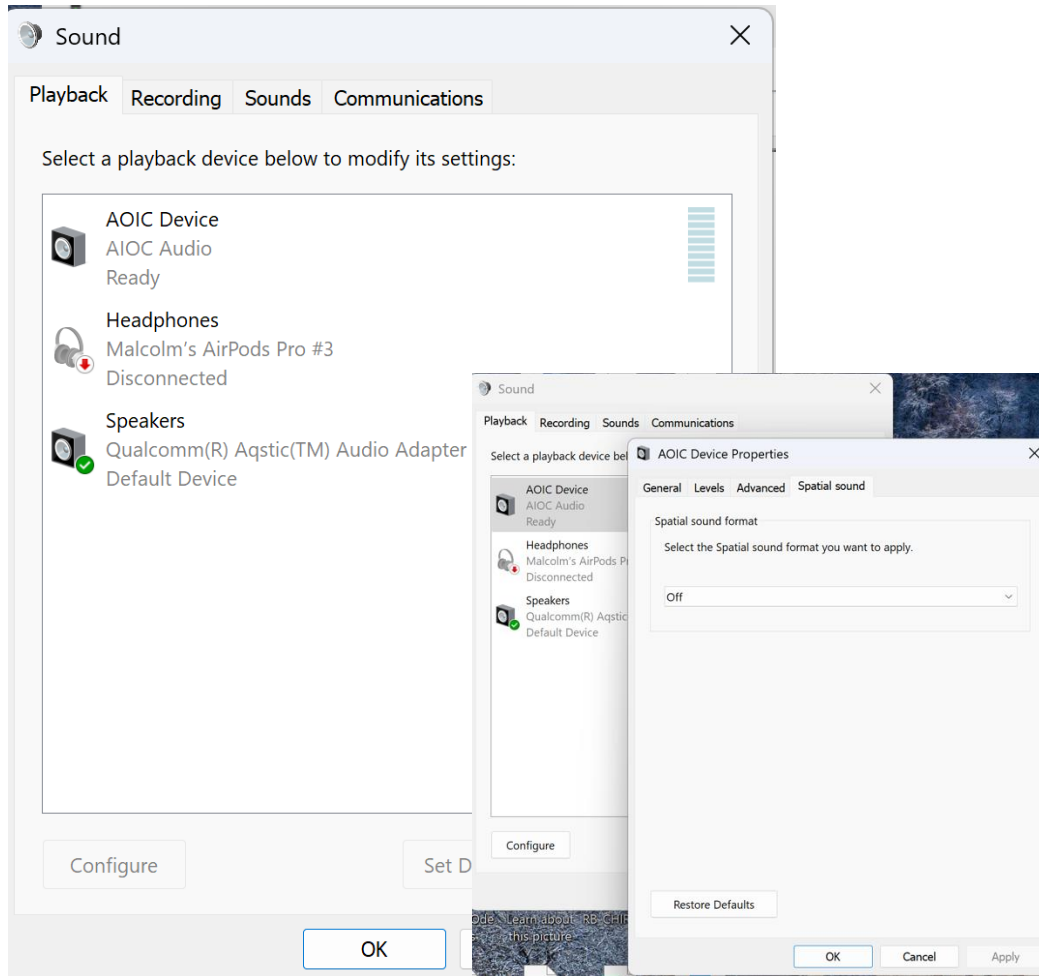


* VARA FM WIDE needs a FM rig set for 9600 Packet operation, with a special soundcard interface (6 kHz BW) connected to rear panel: RA-Board, Signalink "Black" transforms, Modified Signalink (red audio transforms removed), homebrew interface (a simple direct cable)...

* In other case, you must select VARA FM NARROW

Close

Sound Device Setup

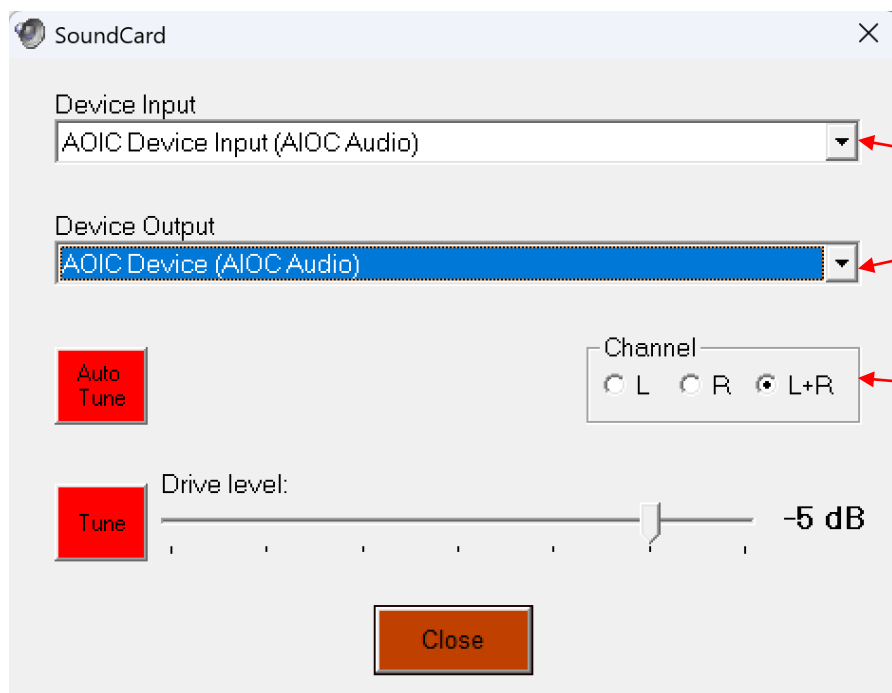


Sound Device Setup is where most problems occur.

With the device connected to the PC, in this case you can see I'm using the AIOC and I have renamed it for ease. Default it will show as USB Codec. Right click on device and rename. Ensure its Enabled, again right click and enable if disabled.

Critically ensure its not 'ticked' as default device. In this case you see I have PC speakers as default. This is the device Windows will use by default. In addition, also essential to turn off all sound enhancements, spatial etc. Right click and turn off all enhancements.

VARA Sound Card Settings

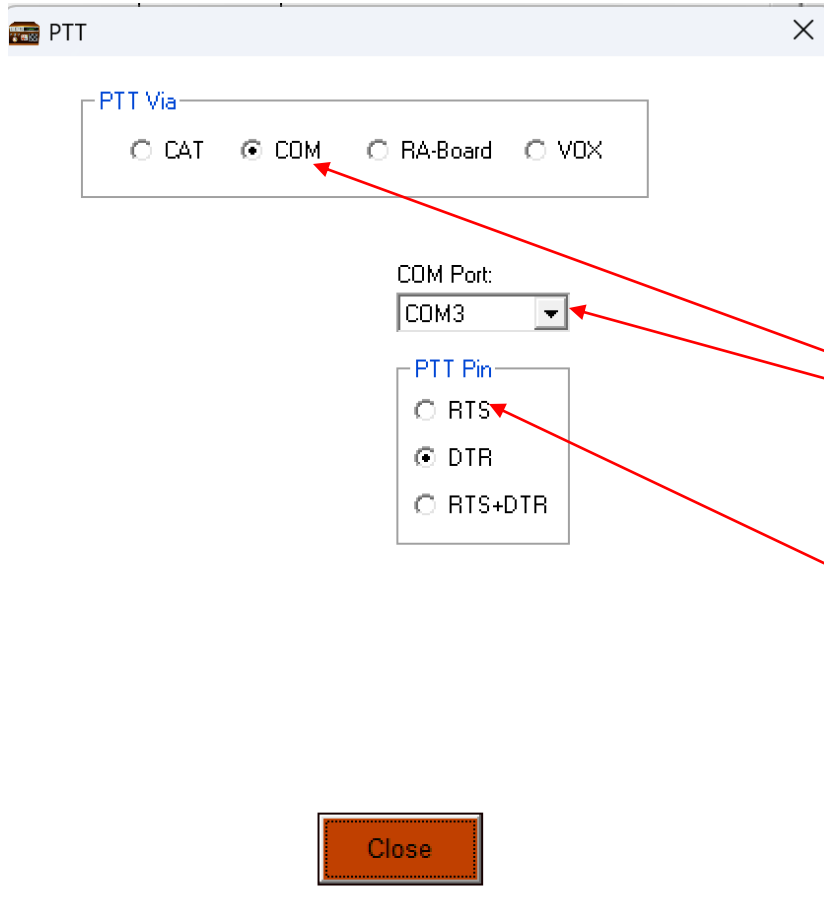


With Sound Device now set up return to Vara Settings/Sound Card

From pull down menu select the sound card device you have – now you see the benefit of renaming especially if you have multiple devices

Select Left & Right Channels

VARA PTT Settings



Now return to VARA settings pull down and select PTT.

Depending on the sound device your using will depend on your PTT option, for the AIOC I'm using the Com Port, for the Masters Communications DRA you'll logically select RA-Board. For the Signal Link VOX.

For PTT Pin select Ready to Send RTS

Then Click Close to save

Now Let's Test the Set-Up

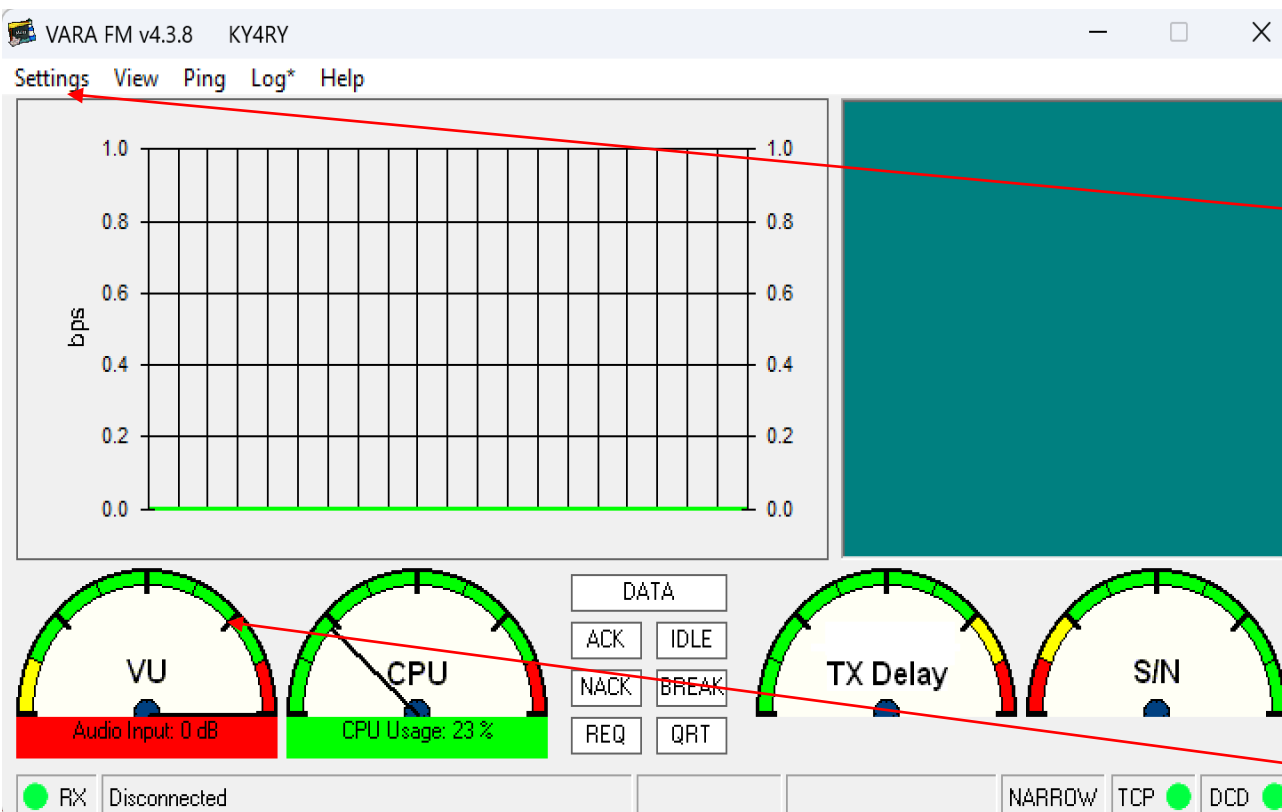


Make a clean launch of Vara FM by launching Winlink Express, Open Winlink Vara FM session.

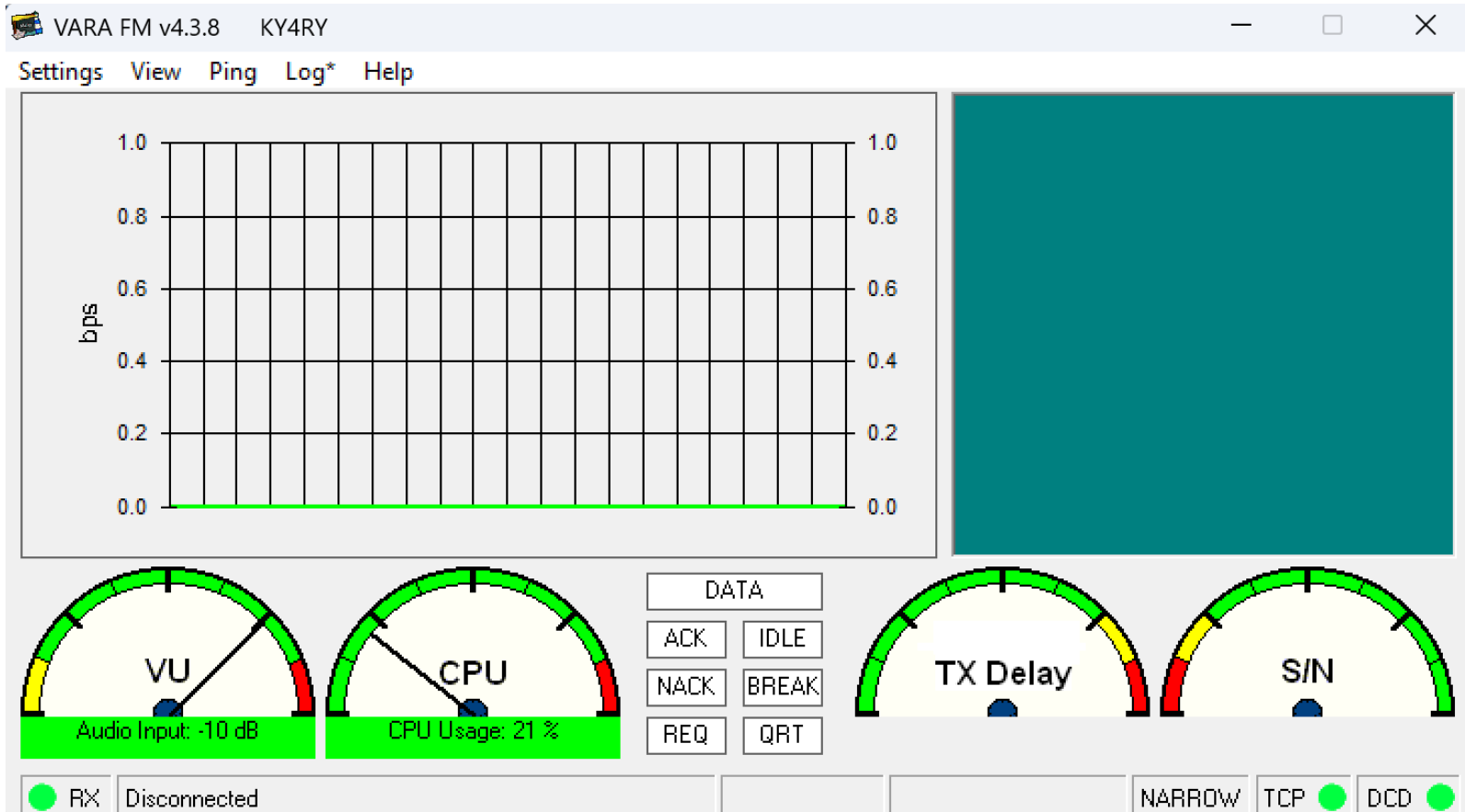
Now go to Vara FM (maybe minimized in tray) Go to Settings, Sound Card to VARA settings pull down and select PTT.

In the VU Meter you can see the level is in the red this needs to be reduced either on the radio (Vol) on the Sound Card Device Master, Signal Link etc. or in Windows Sound Device Settings.

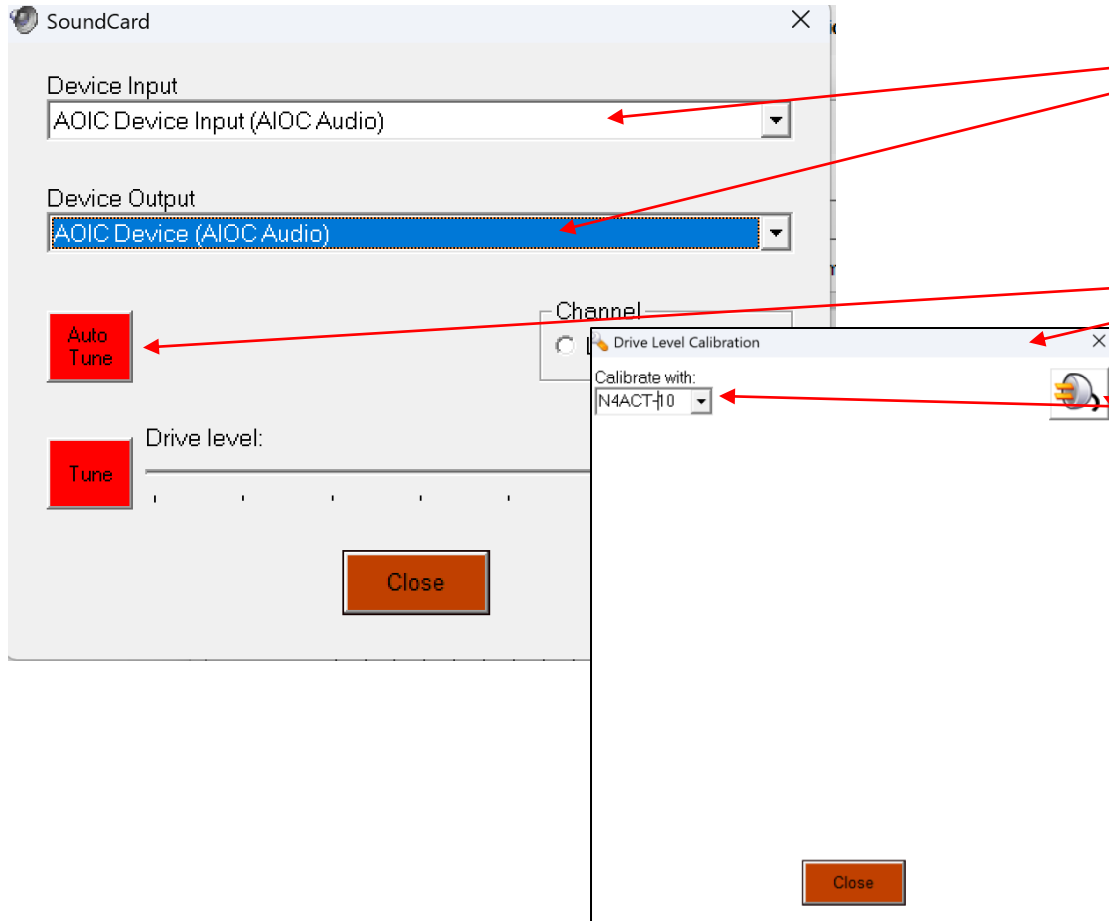
The VU Meter should indicate 2 'O' Clock in the green as shown in next slide.



Correct VU Audio Input



Checking The Levels

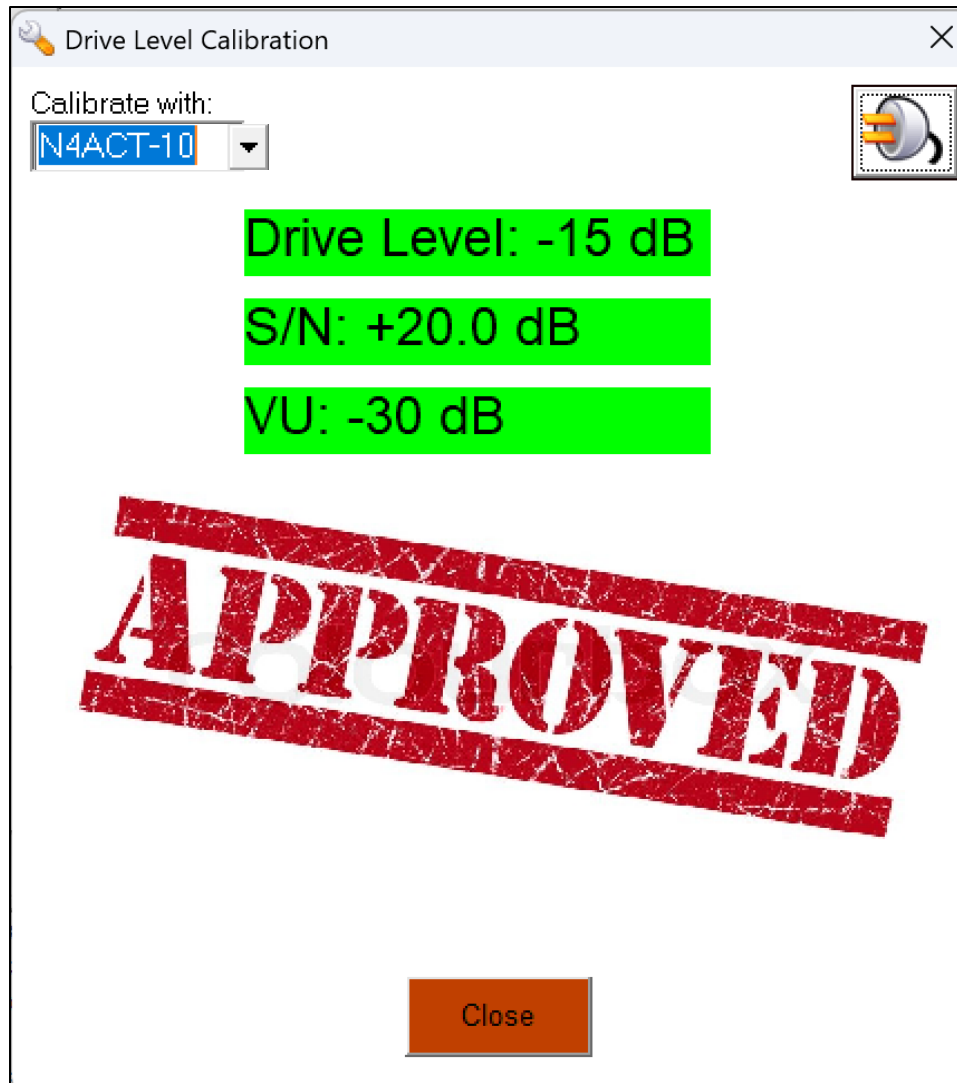


Having launched Vara Sound Card from drop down settings menu check the correct Sound Device is shown for both input and output.

Now click on Auto Tune which will bring up the Drive Level Calibration Window.

Enter the Call of the Station you will use to calibrate with and click on the plug icon

Validated



Vara will now transmit 10 tones at different levels to verify the sound card audio levels. If you receive a fail report then adjust the appropriate level and repeat test until a pass 'approved' is achieved. Over driving or under driving will most likely achieve a connection but fail to authenticate and pass traffic.

Now Let's Make The Connection



Winlink session. Vara FM Winlink Session - KY4RY

Exit Settings Channel Selection **Start** Stop Abort

Connection: Direct KY4RY-10 via KY4RY-10 Freq.: 145.610 Range: Bearing: 000

Favorites:

In: 0/0 Out: 0/0 BPM: 0/0 Disconnected

*** Launching VARA FM TNC: C:\VARA FM\VARAFM.exe

*** Successfully connected to VARA FM TNC at 127.0.0.1 port 8300

*** Ready

*** This is a registered version of Vara TNC that can operate at full speed.

Message ID: PPAIOOFCUPF7
Date: 2025/05/29 14:15 (UTC)
From: KN4LQN
To: KQ4DRK; KQ4FMD; KQ4GPE; KQ4HZK; KR4EL; KS0JD; KS1G; KS4YX; KT4BCS; K KORDM; KORFI; KORVW; KORX; KOWET; K1 K4EKB; K4HVF; K4IIY; K4JFH; K4JIP; K K4ZVG; K5BBC; K5CCC; K5DHH; K5HC; K5 K7OLI; K7PWS; K7ISD; K7WIV; K7WZX; K LA4IL; LA5XIA; LY2XJ; MMOXET; MOKCB; Source: KN4LQN

Vara FM Channel Selector

Select Channel Update Table Via Internet Update Table Via Radio Exit

Stations found within 300 kilometers of your grid square.

Callsign	Frequency (MHz)	Channel Width	Grid Square	Group	Distance (km)	Bearing (Degrees)
N4ACT-10	145.610	Wide	FM25EX	PUBLIC	016	152
KY4RY-10	145.610	Wide	FM25EU	PUBLIC	029	165
N3JC-10	145.090	Wide	FM16SC	PUBLIC	067	270
KN4DUF-10	145.090	Narrow	FM16WT	PUBLIC	087	335
N4CEC-10	145.090	Wide	FM16US	PUBLIC	091	325
N1VTT-10	440.450	Wide	FM17TB	PUBLIC	122	331
N1VTT-10	145.090	Wide	FM17TB	PUBLIC	122	331
KE4DV-10	440.450	Wide	FM17TE	PUBLIC	134	334
AI4WU-10	145.090	Wide	FM17PG	PUBLIC	157	326
KM4PJZ-10	145.090	Wide	FM17QJ	PUBLIC	165	331
K4BWM-10	145.590	Wide	FM14HT	PUBLIC	208	227
KO4BJV-10	145.090	Narrow	FM17RV	PUBLIC	212	340
WX4EMC-10	145.550	Wide	FM17SW	PUBLIC	214	342
N5VX-10	145.590	Wide	FM14GS	PUBLIC	217	227
KN4LQN-10	145.090	Wide	FM17EI	PUBLIC	220	310
KO4DQS-10	145.590	Wide	FM14GR	PUBLIC	220	227
KG4MRA-10	440.450	Narrow	FM17GN	PUBLIC	225	317

Make clean launch of Winlink Express and Open a Winlink Vara FM Session. Click on Channel Selection to display available Radio Messaging Server (RMS). Update via Internet.

Select best (nearest) RMS by highlighting and clicking Select Channel.

As there is no CAT control of the transceiver then manually ensure Frequency is correctly set on transceiver to match RMS frequency.

In this example we will select KY4RY-10 (Which is currently Skyco)





Connection Made

Vara FM Winlink Session - KY4RY

Exit Settings Channel Selection **Start** Stop Abort

Connection: Direct ▾ KY4RY-10 via KY4RY-10 , Freq.: 145.610 Range: Bearing: 165

Favorites: Select Add to favorites Remove from favorites

In: 0/0 Out: 0/0 BPM: 0/0 Disconnected Time to next Autoconnect = Disabled

*** Connected to Winlink RMS: KY4RY-10 @ 2025/06/04 18:23:46 Freq: 145.610
*** Disconnected from Winlink RMS: KY4RY-10 @ 2025/06/04 18:24:52
*** Session: 1.1 min; Avg Throughput: 0 Bytes/min; 1 Min Peak Throughput: 0 Bytes/min





Digipeating

Winlink Express 1.7.23.0 - KY4RY

KY4RY Add Callsign Settings Message Attachments Move To: Saved Items Delete Open Session:

Vara FM Winlink Logs Help

In Vara FM Winlink session.

System Folders	Date/Time	Message ID	Size	Source	Sender	Recipient	Subject
Inbox (2 unread)	2025/05/30 0...	GP0HHTW5K...	1067	KN4LQN	KN4LQN	KQ4DRK...	Winlink Wednesday Roster Put
Read Items (0)	2025/05/29 1...	5P333ROSC4...	267	KD2U	KD2U	KY4RY	Via Vara HF
Outbox (1)	2025/05/29 14:15	PPAIOOFCUPF7	961	KN4LQN	KN4LQN	KQ4DRK...	Winlink Wednesday Net Confirmation

Personal Folders

Global Folders

Vara FM Winlink Session - KY4RY

Exit Settings Channel Selection Start Stop Abort

Connection: Digipeater N4ACT|10 via KY4RY-10 Freq.: 145.610 Range: Bearing: 165

Favorites: Select Add to favorites Remove from favorites

In: 0/0 Out: 0/0 BPM: 0/0 Disconnected Time to next Autoconnect = Disabled

*** Connected to Winlink RMS: KY4RY-10 @ 2025/06/04 18:23:46 Freq: 145.610

*** Disconnected from Winlink RMS: KY4RY-10 @ 2025/06/04 18:24:52

*** Session: 1.1 min; Avg Throughput: 0 Bytes/min; 1 Min Peak Throughput: 0 Bytes/min

Now let's use Digipeater, functionality. I know I can't reach N4ACT from my QTH but I can reach Skyco W\$PCN and Skyco can reach N4ACT.

All I need to do is change Direct to Digipeater in the pull-down menu.

Then enter the destination in the next box and the digipeater station in the 'Via' box. As you can see it is possible to digipeater via two stations.





Trouble Shooting

Please see separate document; **Winlink Express with VARA FM Troubleshooting Guide for EMCOMM & Amateur Radio.**

