VarAC manual

VarAC
HF Chat reinvented

Version 17.1.9

22 Nov 2026

Read this information.

This manual is not complete and may contain language errors and other errors. If you have such errors and/or other additional information, please send a message to my email address that is on QRZ.com.
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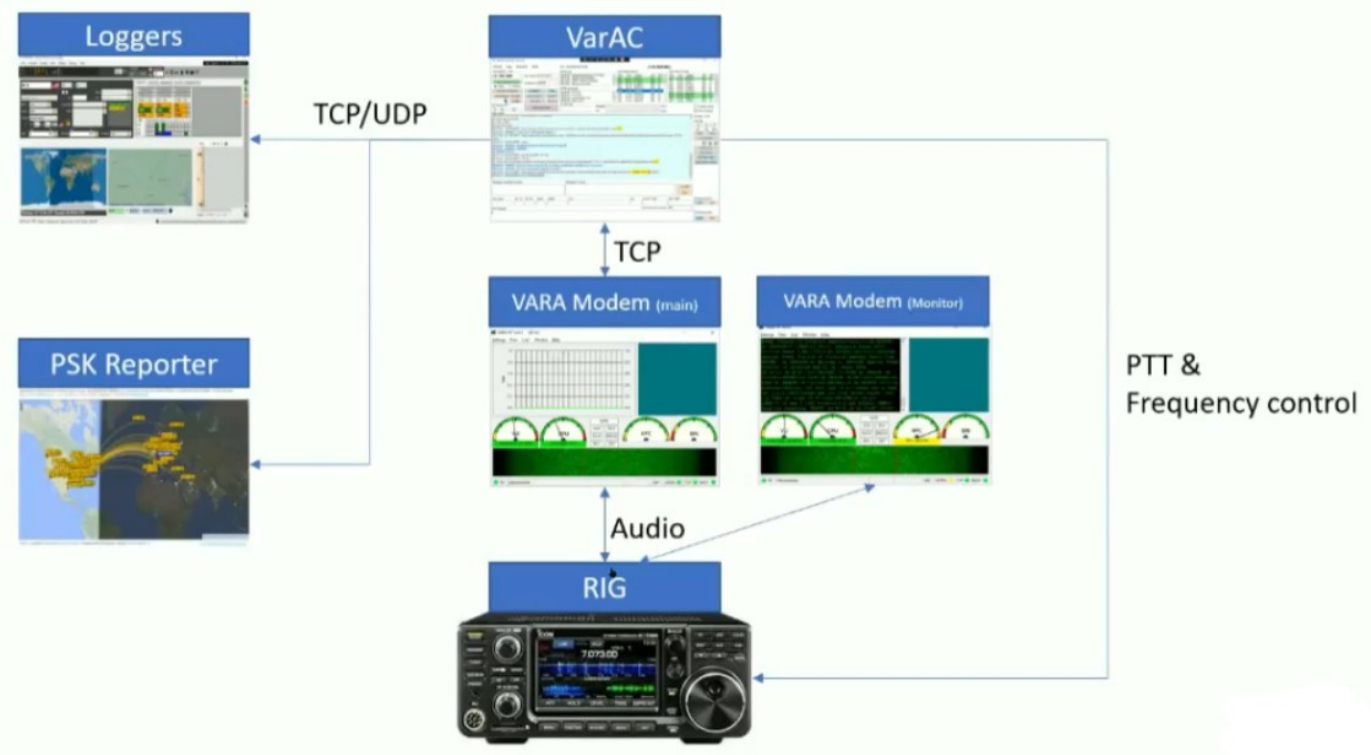
VarAC Basic Architecture



Introduction

Who is the author of VarAC?

Irad Deutsch, 4Z1AC is the author of VarAC.
He has been an amateur radio operator since the age of 13 (30 years now).
He has always been fascinated by digital modes such as PACKET RADIO, AMTOR, PACTOR, GTOR, CLOVER, FT8/4, PSK and others... and he likes to chat with these modes rather than just exchanging reports.

When VARA came into our lives, he adopted it because he believes it offers the protocol robustness of PACTOR coupled with the ability to handle challenging SNR levels like FT8. So he decided to create a chat application with lots of cool features to chat with his fellow HAMs.

But he is not the only one. There is a great team of supporters and testers who play a huge role in this project. You can read more about them here.

He has contacted the creator of VARA (EA5HVK) about feature requests and bug fixes, but has no business relationship with them. He does this purely for fun.

What operating systems are supported by VarAC?

VarAC is written in C#, which means it can only run on Windows for now. You can try using some C# emulators for Linux and if it works he will be happy to know and provide the community with a help book.

What is VarAC

VarAC is a FREE, modern HF P2P real-time chatting and emergency communication (EmComm) application for amateur radio operators, leveraging the VARA protocol.

VarAC Forum

Subject & URL	Subject & URL
Forum	Troubleshooting
Bug reports	VarAC EmComm discussion forum
HF discussion forum	VarAC on Linux/Pi/Mac
VarAC - HF discussion forum	VarAC - FM discussion forum
Feature requests	

Other Information

Subject & URL	Subject & URL
varac-cluster-multiple-instances-quick-configuration-guide	configuring-varac-email-gateway-using-a-gmail-account
integrating-varac-with-your-qso-logging-application	varac-quick-start-guide
rig-control-cat-command-file-cat-customization-guide	

VarAC prerequisites

VARA-HF 4.9.3 or higher.

YOU MUST UPGRADE your VARA modem to the latest version to enjoy new features in VarAC.

Optional

OmniRig V1.X (V2.0 is NOT supported currently)
1280 X 800 screen resolution or higher
Windows 8.1 and above (some hams reported that Win7 also works, but officially it is not supported)
.NET framework 4.X or above
10MB of disk space.

Installing the program:

Two programs need to be installed, namely

VARA….

VARA is a ARQ, error free protocol

Make a choice from the different protocols:

VARA-HF

(High Performance HF Modem) what this manual is about..
Up to 1.543 bps at 500 Hz BW / 7.050 bps at 2300 Hz BW
See VARA-HF install

VARA-FM

(for FM transceivers)
Up to 12.750 bps Narrow / 25.210 bps Wide
See VARA-FM install

VARA-SAT

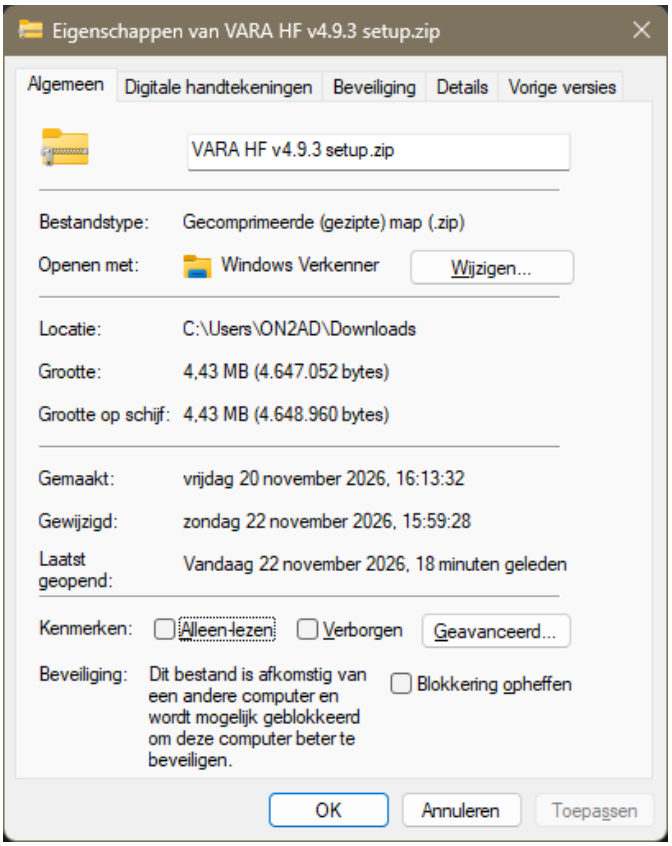
(for QO-100 Geostationary SAT)
Like HF but with additional latency handling
See VARA-SAT install

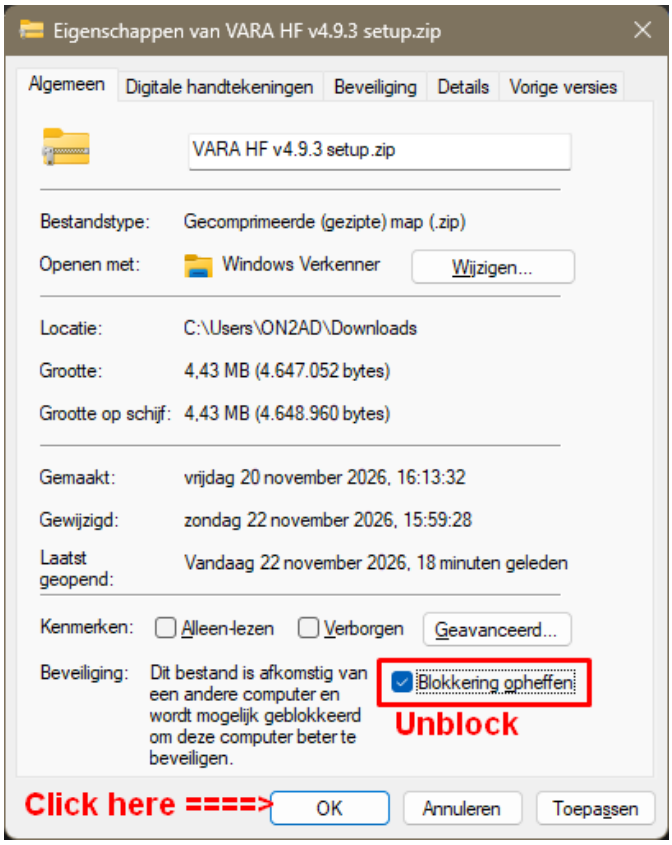
VarAC

The chat program itself

VARA-HF install

Download and install the VARA-HF version which can be found at:
EA5HVK | Weak signals Software (wordpress.com)





After these files are downloaded, they must be unblocked
Select the file with the right mouse button

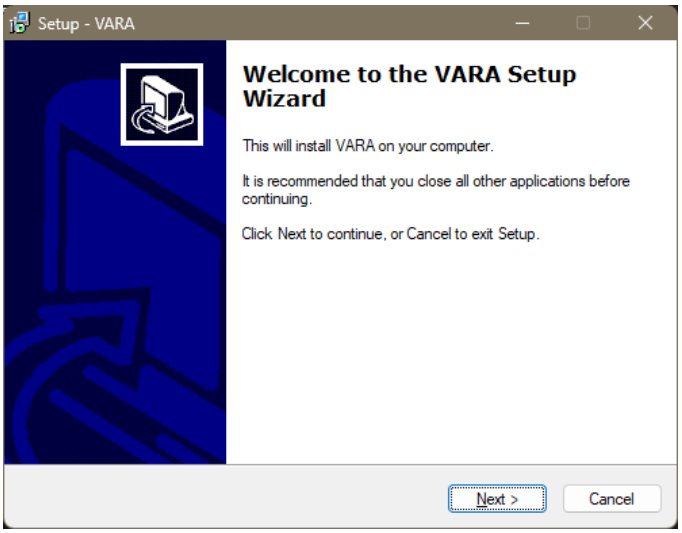
Now with the left mouse button, click Properties

Select properties from the drop-down menu.
If a button marked with Unblock is visible on the General menu, this file is blocked.

Click the Unblock button on the left mouse, and then click OK to unblock the file

Unzip VARA-HF version
Twice click on the VARA setup (run as Administrator).exe

Click now on Next

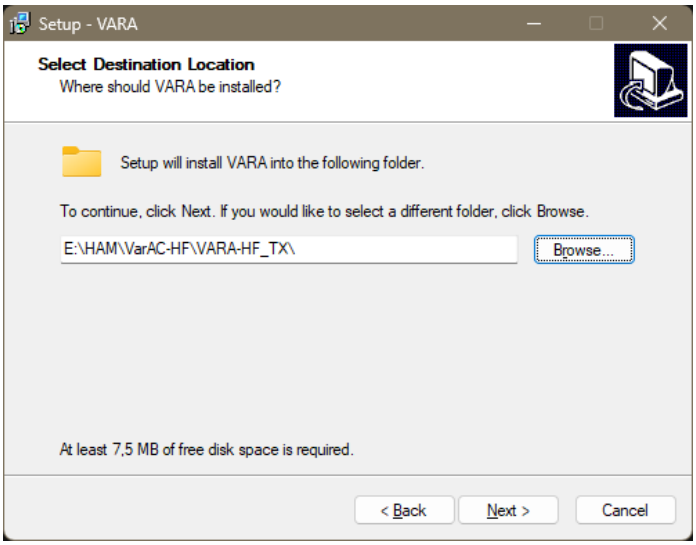


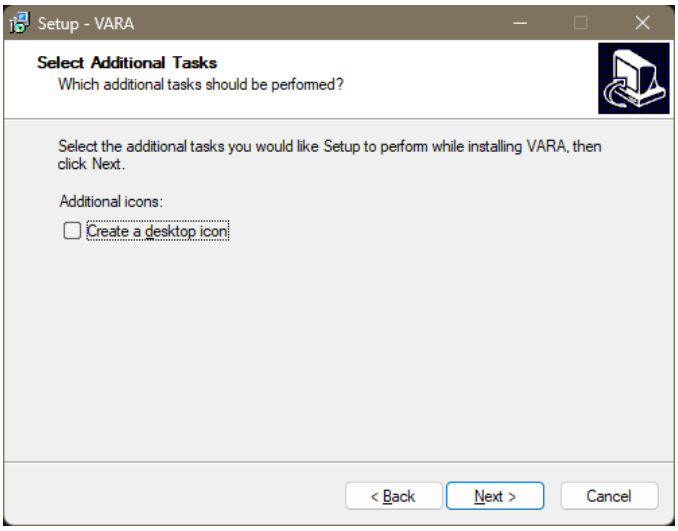
Select “I accept the agreement”
And click on Next



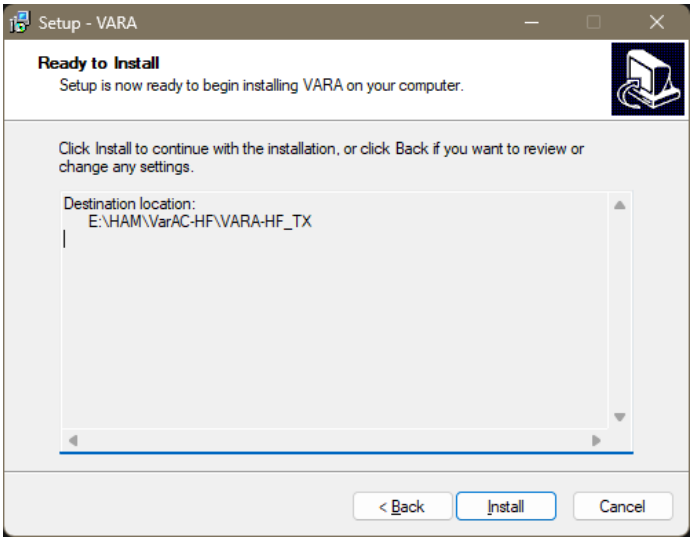
Click on Browse for select the folder who you will install VARA or use the default setting.
Click Next.

Enable the “Create a desktop icon” if you want a icon for VARA on your desktop.
Click Next.

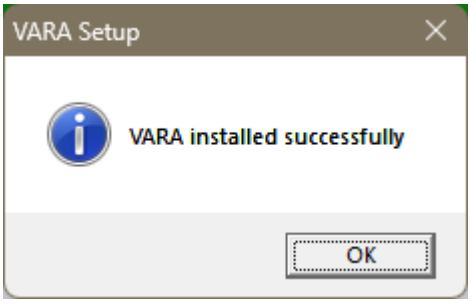




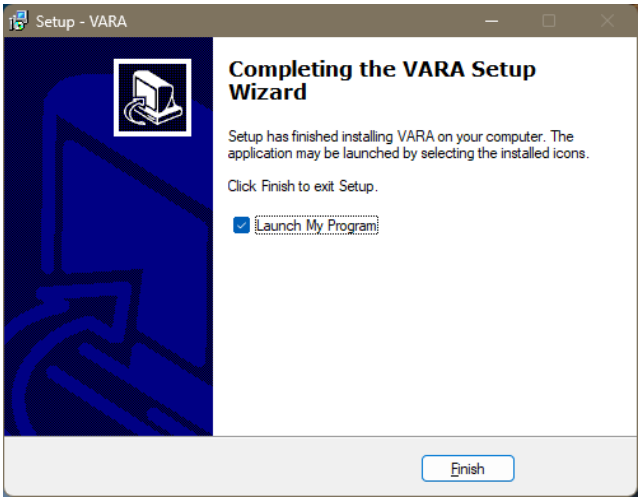
Click “Install” for install VARA



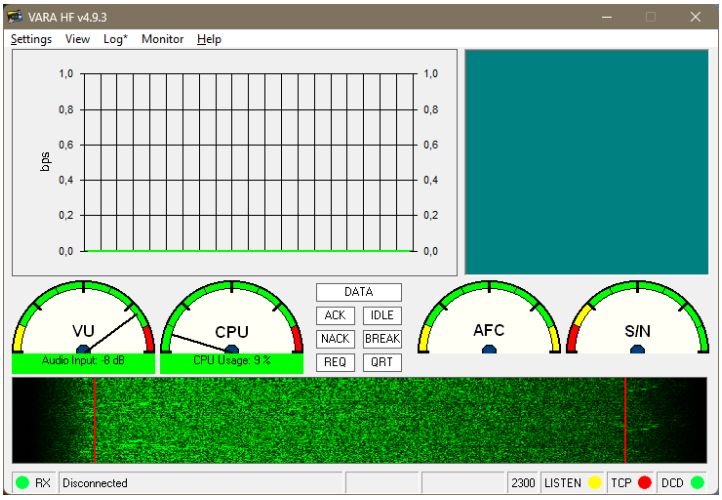
The result



After VARA is installed successfully screen you will have the next window. Press Finish to launch VARA



This can be your result.



Monitoring Received information

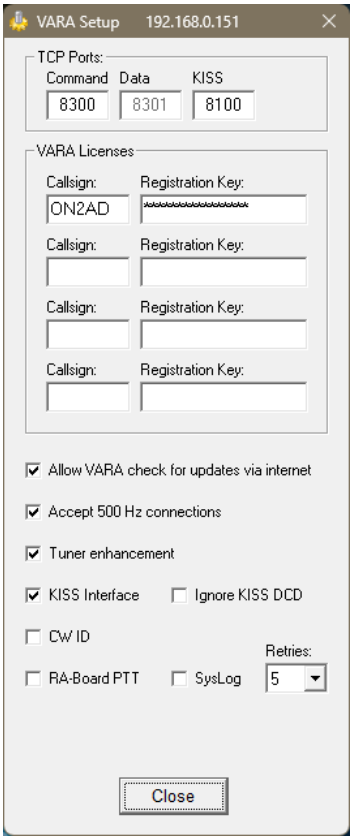
If you want a reception window, then install VARA-HF as described above, BUT in a different directory, for example

E:\HAM\VarAC-HF\VARA-HF_RX (this will the RX window)

E:\HAM\VarAC-HF\VARA-HF_TX\ (this will the TX window)

VARA HF Setup

Click Settings and then on VARA setup…
Fill in the necessary data in the screen on the left and if you have a Key for this program, put your Callsign and your Key in it, if you do not have a Key then leave these fields empty.
Click Close

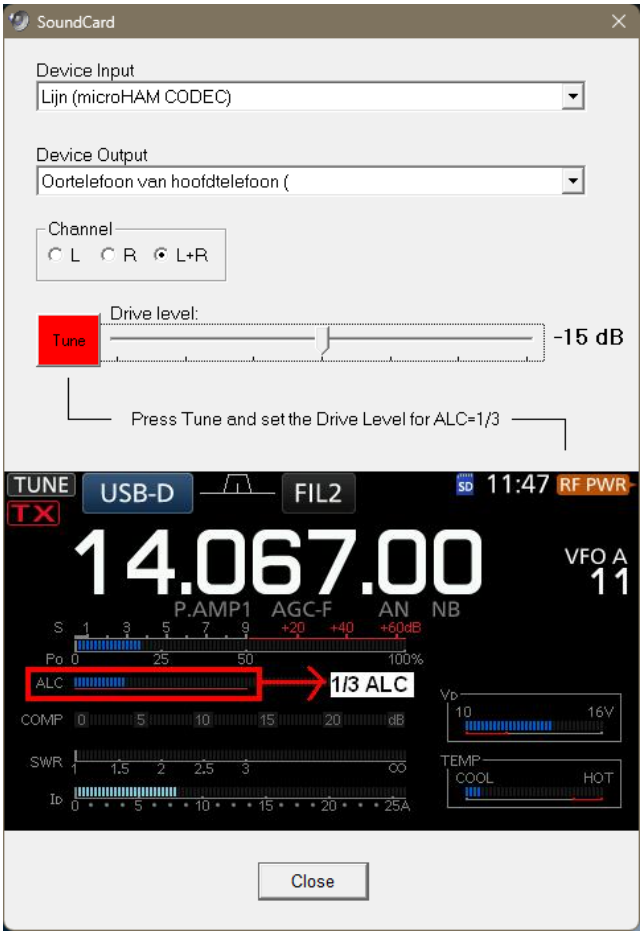


Click back on Settings and click on Soundcard…

Now select your Device Input and the Device Output of the sound card

Channel: Choice the right channel.

Close with click on the "Close" button.



VARA Monitoring

VARA is an ARQ mode.
Which means that what you get is 100% accurate due to CRC correction, or you do not get it at all.
Very similar to Pactor and Packet.

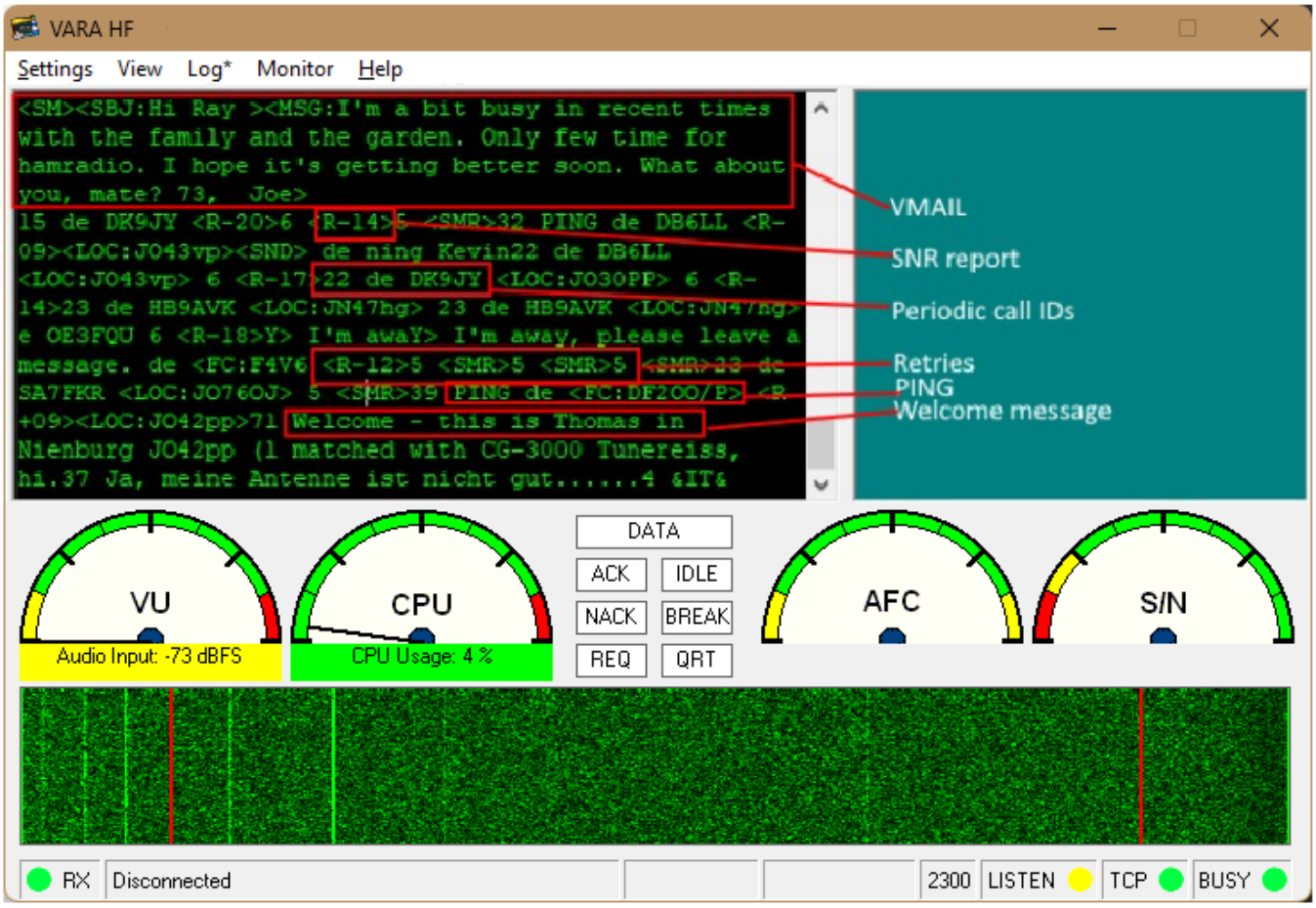
Now, when 2 stations have a strong solid link between them (lets say +2 SNR for example) and they shift to **HIGH SPEED** (Level 5 for example) and I receive them -10 SNR, sure you can't decode much of it as out of the many bytes sent, You will miss too many due to noise so the CRC can't be used to correct the message.

Same with hearing a high speed **Pactor 4** signal that may sound strong to your ear but too weak to decode the packet due to noise...

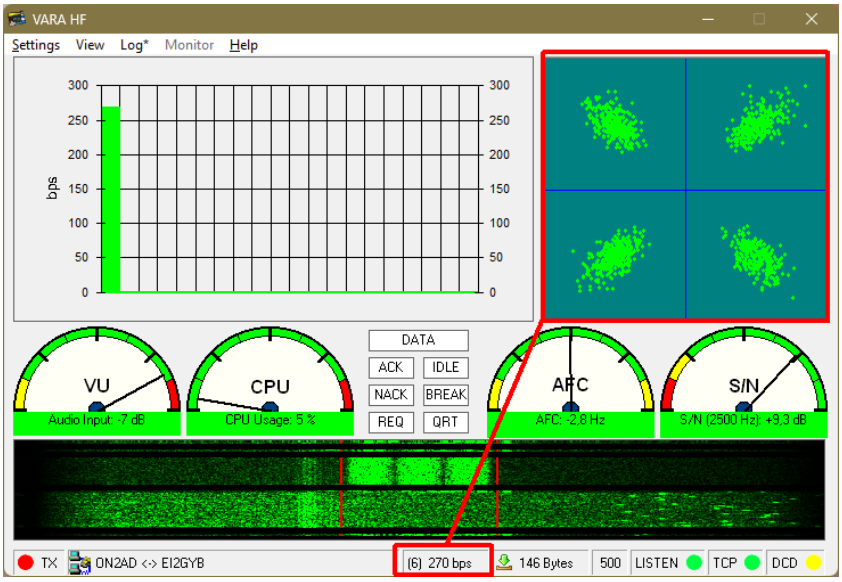
In **NON** ARQ modes like RTTY/PSK, if you missed a few letters, you can still get the before and after of the message, with ARQ mode the whole set of bytes in a packet (up to a certain threshold) must be received to decode the packet correctly.
Otherwise, it is dumped.

Therefore, it is most likely you will decode more packets in low VARA speed then high... the fact that you hear a signal, (faint or not) doesn't mean your modem was able to decode all the encoded bytes in it.

Here is an example of a monitor screen on the Calling frequency.
You can notice quite a few elements in it.



What do these patterns mean

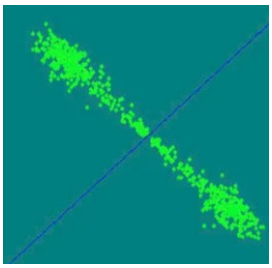


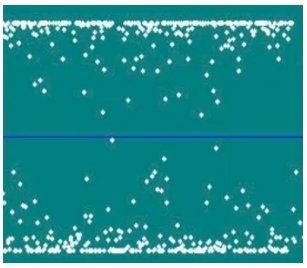
That is the Constellation pattern and shows the modulation type, quality and SNR in a simple display.

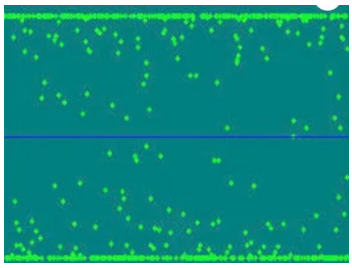
In terms of color:
Green is good, **white** and **red** SNRs are not so good.

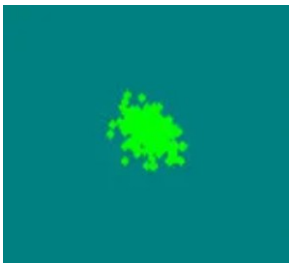
There are many more Constellation patterns that will appear depending on the speed and as such the modulation type from FSK to BPSK to 4PSK to 8PSL to 32QAM (which will have 32 blocks above that).

See below:









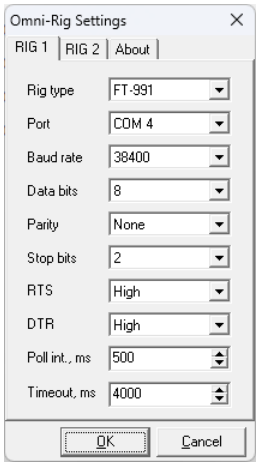
Optional installation

OmniRig

OmniRig install

Omni Rig-version 1.
Home page: http://www.dxatlas.com/omnirig
OmniRig can be downloaded from DX Atlas: Amateur Radio software
Download: http://www.dxatlas.com/OmniRig/Files/OmniRig.zip

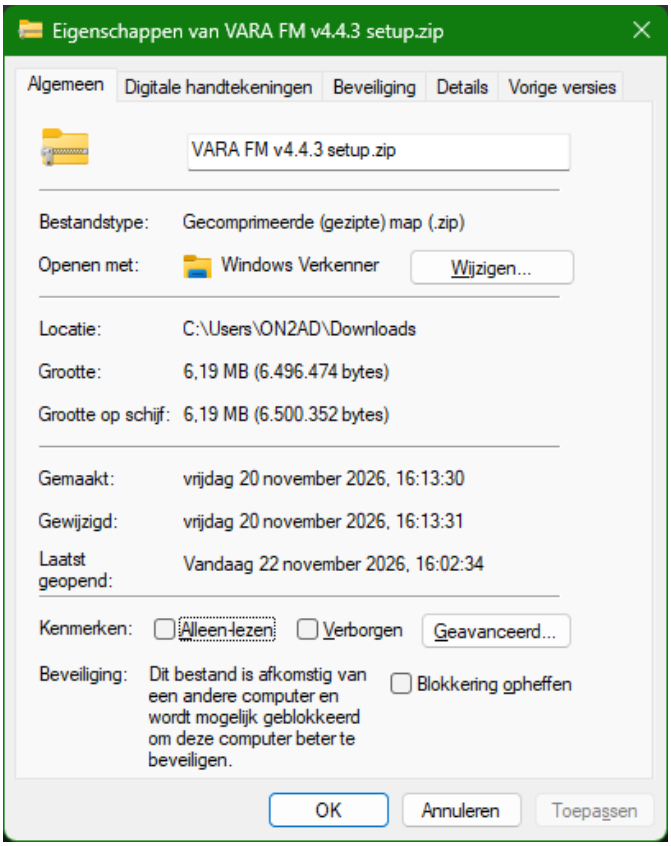
Select and adjust this information as prescribed in your manual.
This setting is for my Yaesu FT-991A



Rig Type: Select your Rig here.
Port: Select your COM port.
Baud rate: Select your baud rate
corresponding to that of your transceiver.
Data bits: Select your Data bits according to your
transceiver.
Parity: None, Odd, Even, Mark, Space (here on None).
Stop bits: 1, 1.5, 2 (here on 1).
RTS: High, Low, Handshake (here on High).
DTR: High, Low, (here on High).
Poll int. ms: is on here 500
Timeout, ms: is on here 100

VARA-FM install

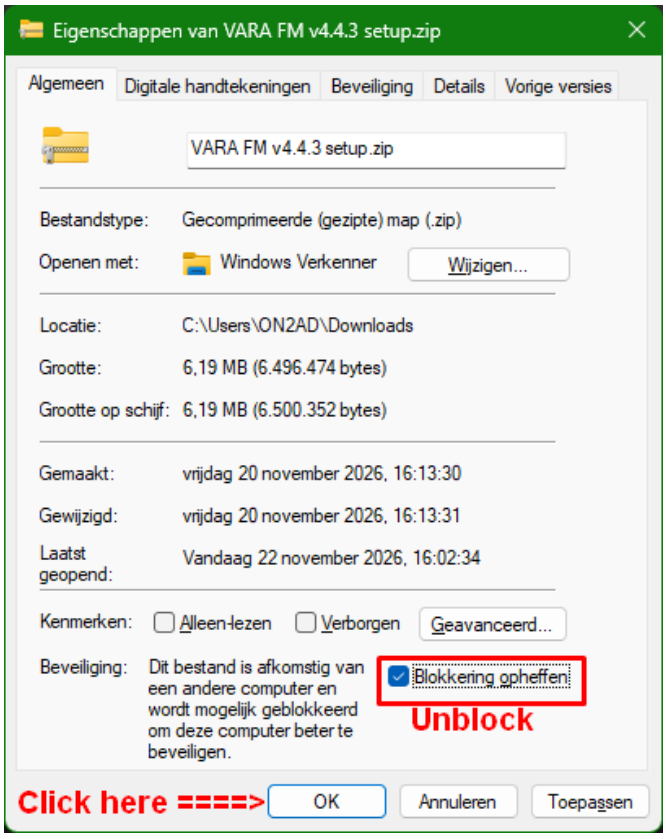
Download and install the VARA-FM version which can be found at:
EA5HVK | Weak signals Software (wordpress.com)



After these files are downloaded, they must be unblocked
Select the file with the right mouse button

Now with the left mouse button, click Properties

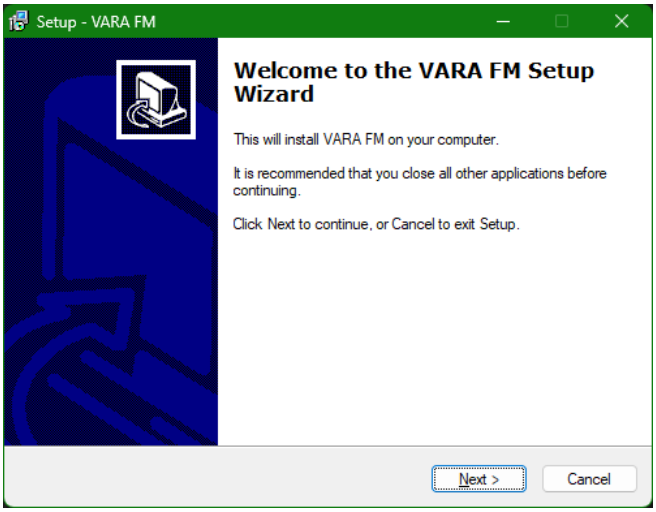
Select properties from the drop-down menu.
If a button marked with Unblock is visible on the General menu, this file is blocked.



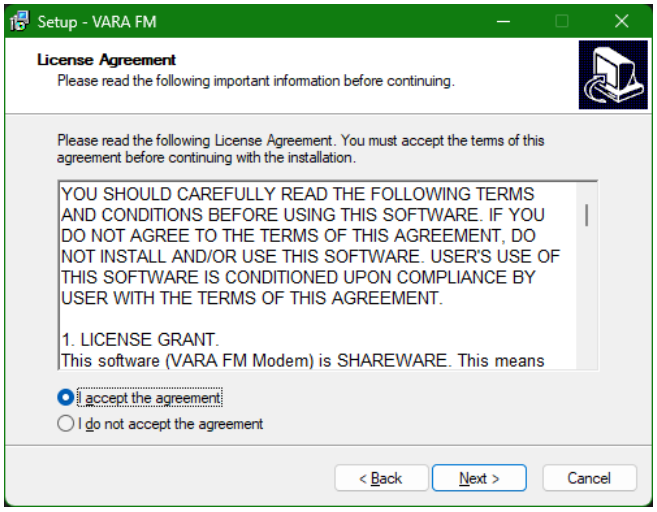
Click the Unblock button on the left mouse, and then click OK to unblock the file

Unzip VARA-FM version
Twice click on the VARA setup (run as Administrator).exe

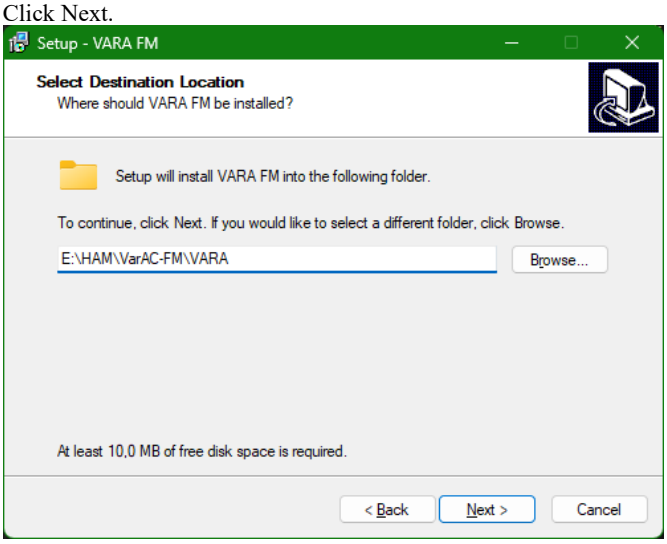
Click now on Next



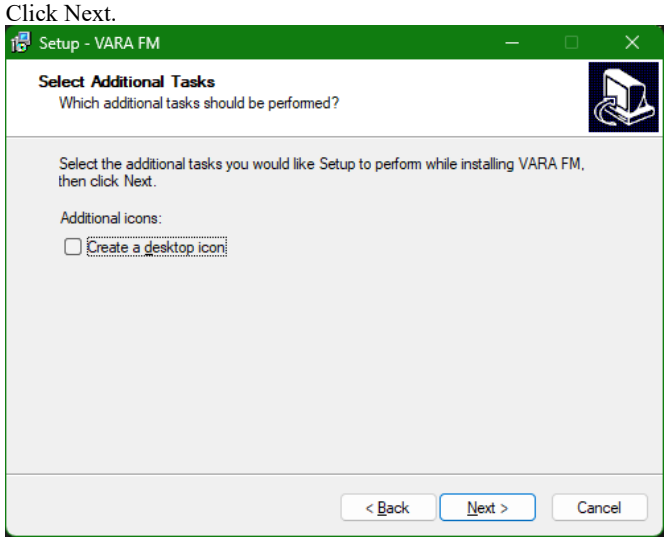
Select “I accept the agreement”
And click on Next



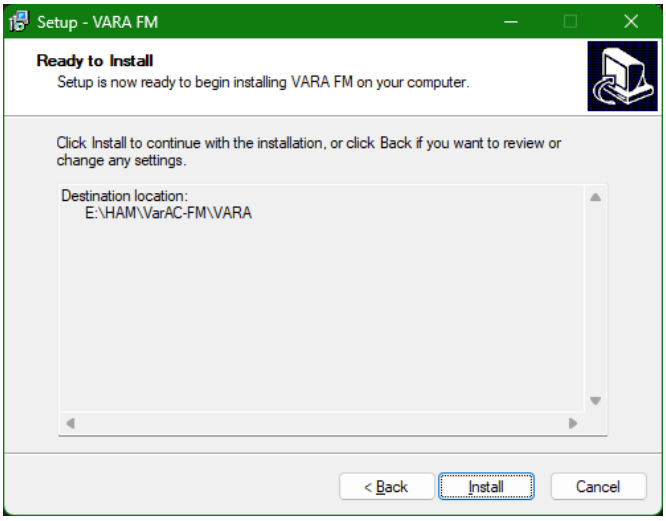
Click on Browse for select the folder who you will install VARA or use the default setting.
Click Next.



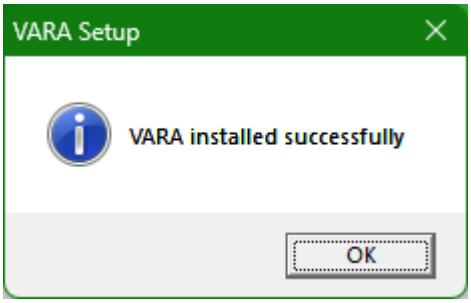
Enable the “Create a desktop icon” if you want a icon for VARA on your desktop.
Click Next.



Click “Install” for install VARA

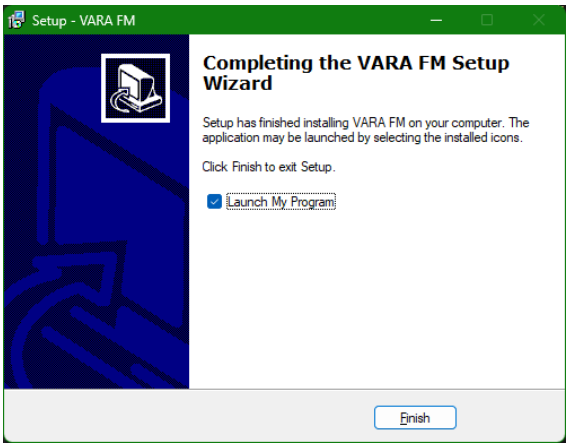


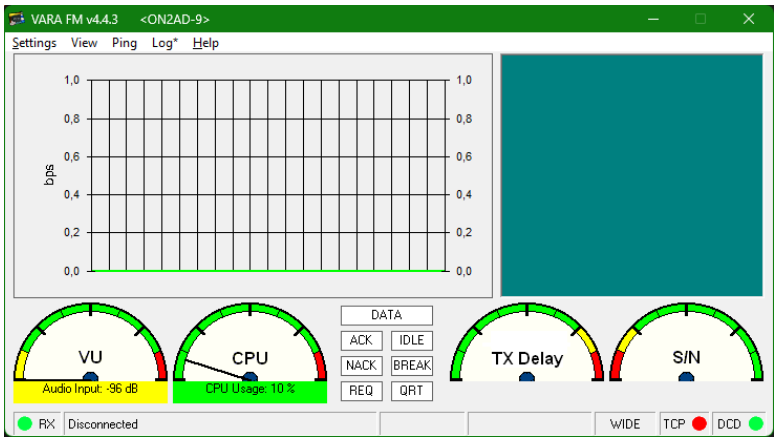
The result



After VARA is installed successfully screen you will have the next window. Press Finish to launch VARA

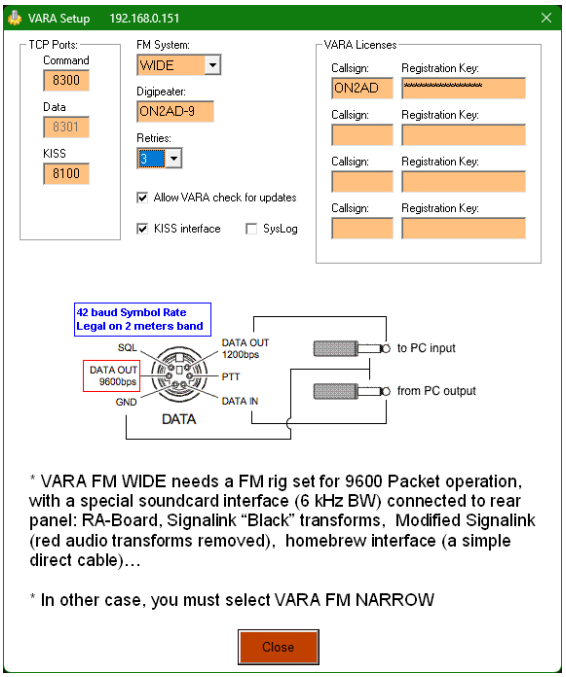
This can be your result.





VARA-FM Setup

Click Settings and then on VARA setup…
Fill in the necessary data in the screen on the left and if you have a Key for this program, put your Callsign and your Key in it, if you do not have a Key then leave these fields empty.
Click Close

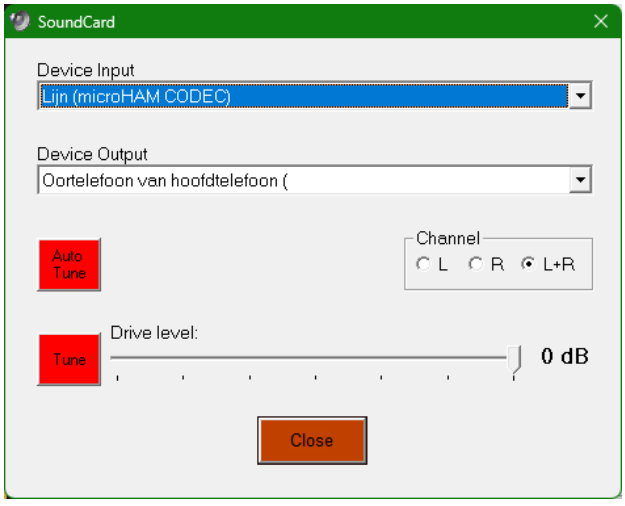


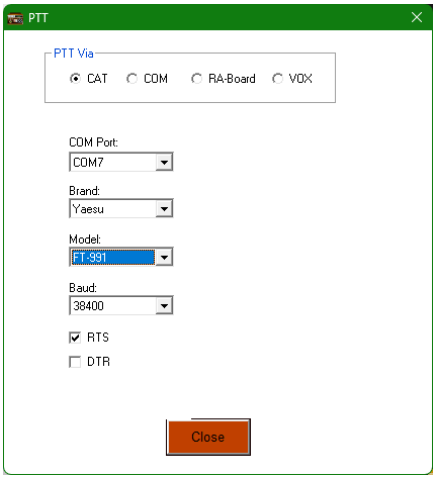
Click back on Settings and click on Soundcard…

Now select your Device Input
and the
Device Output of the sound card

Channel:
Choice your channel.

Close with click on the "Close" button.



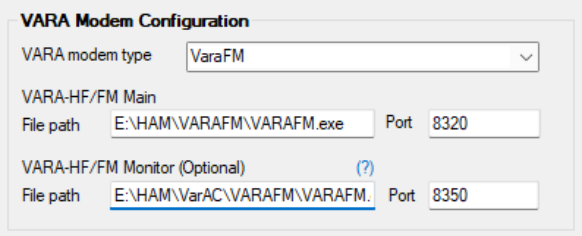


VarAC & Vara-FM

To use VaraFM you must first download and install the VaraFM modem, which you can find at:
EA5HVK | Weak signals Software (wordpress.com)

VarAC configuration

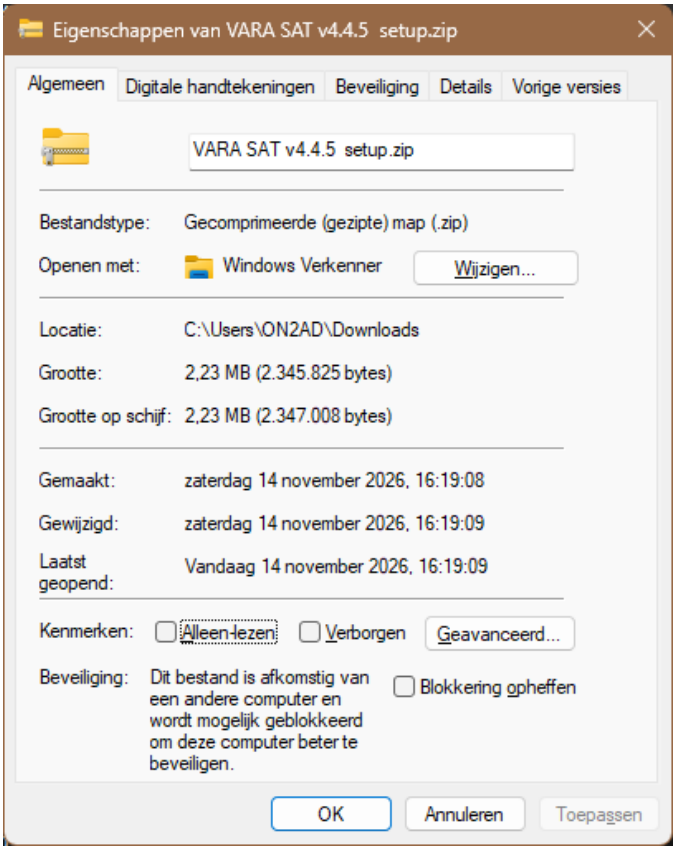
Go to the menu Settings press Rig control and VARA configurations.

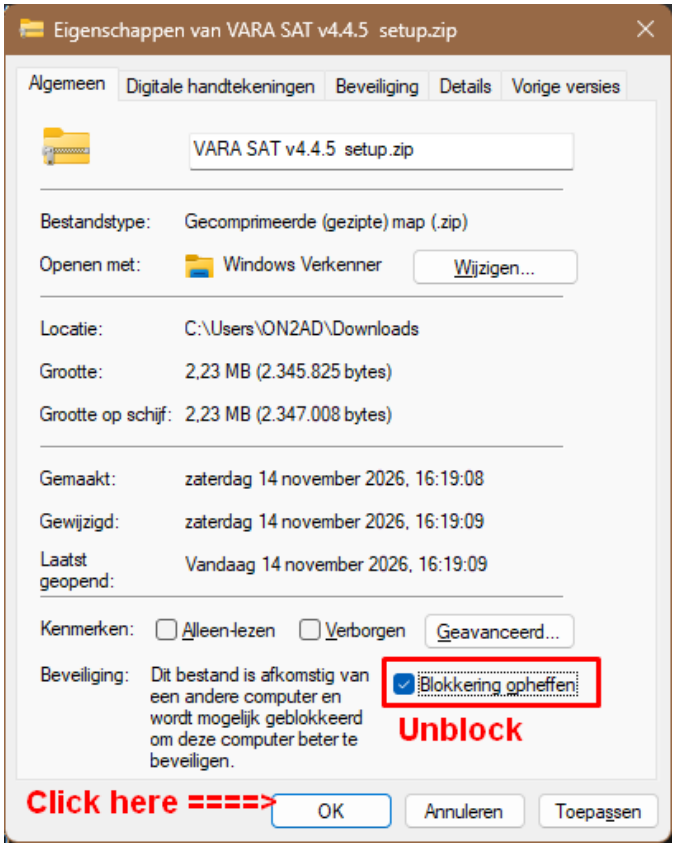


Set the VARA modem type to "VaraFM".
Set the VaraFM modem path and port number.
Click "SAVE AND EXIT"

VARA-SAT install

Download and install the VARA-FM version which can be found at:
EA5HVK | Weak signals Software (wordpress.com)





After these files are downloaded, they must be unblocked
Select the file with the right mouse button

Now with the left mouse button, click Properties

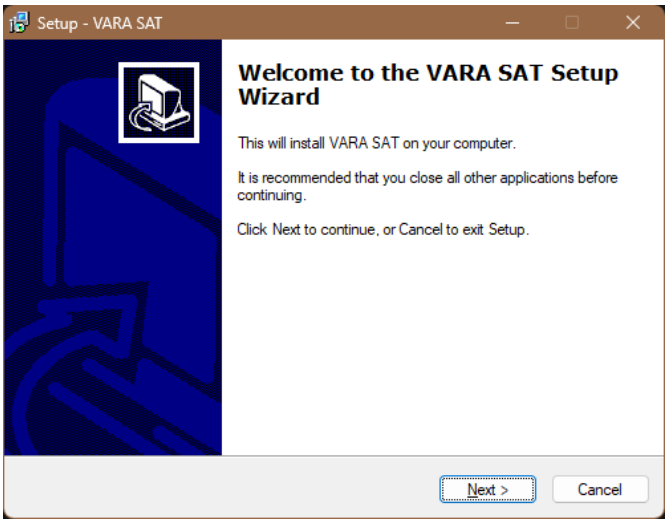
Select properties from the drop-down menu.
If a button marked with Unblock is visible on the General menu, this file is blocked.

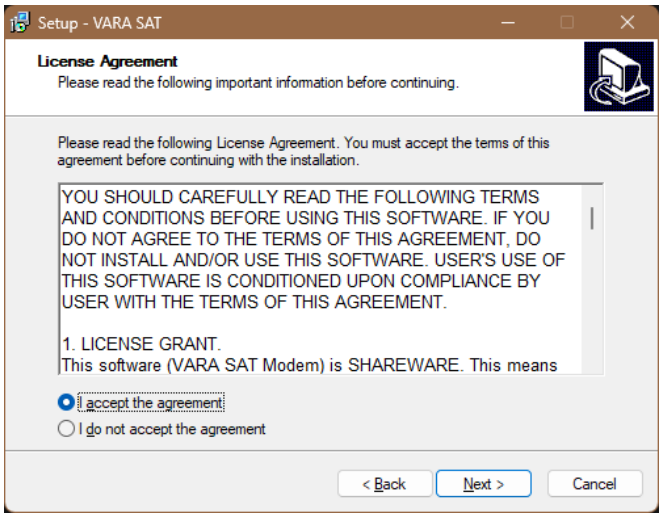
Click the Unblock button on the left mouse, and then click OK to unblock the file

Unzip VARA-FM version
Twice click on the VARA setup (run as Administrator).exe

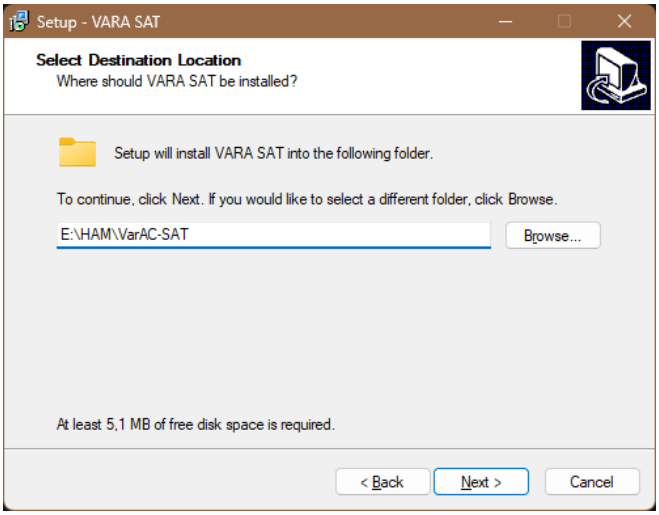
Click now on Next

Select “I accept the agreement”
And click on Next

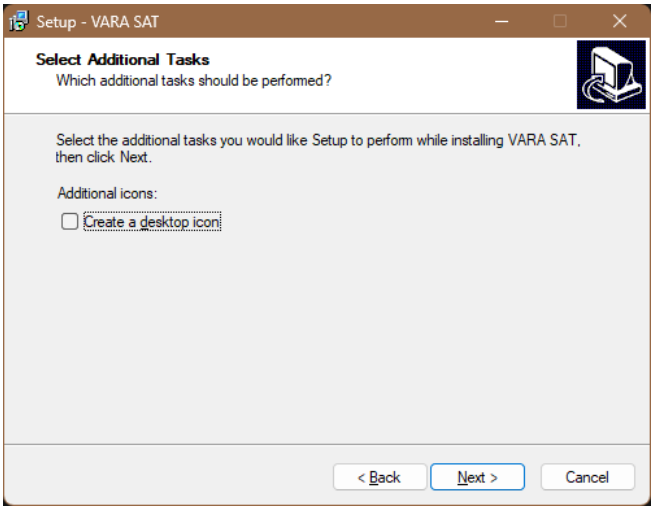




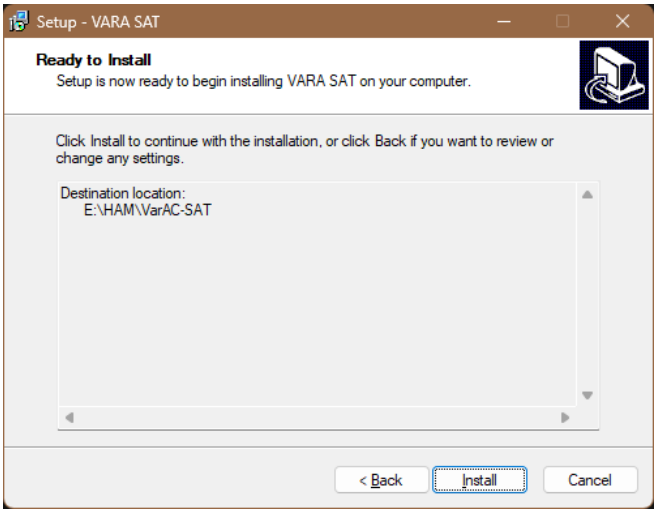
Click on Browse for select the folder who you will install VARA or use the default setting.
Click Next.



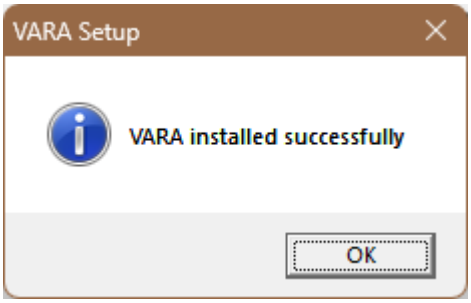
Enable the “Create a desktop icon” if you want a icon for VARA on your desktop.
Click Next.



Click “Install” for install VARA

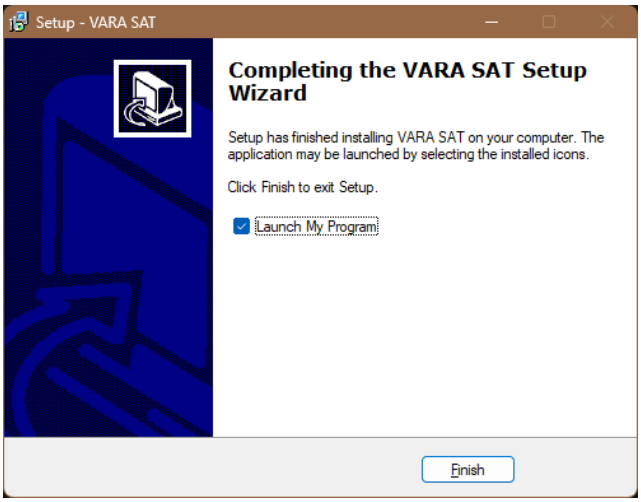


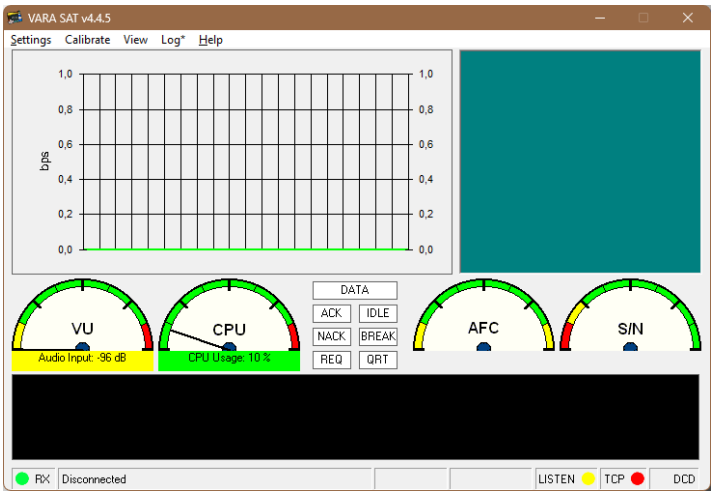
The result



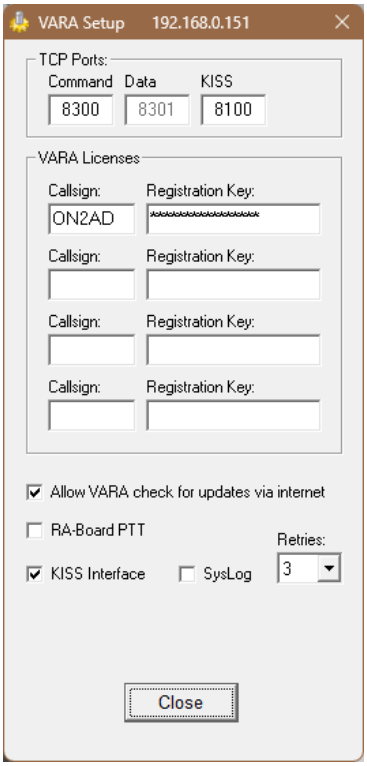
After VARA is installed successfully screen you will have the next window. Press Finish to launch VARA

This can be your result.





VARA-SAT Setup

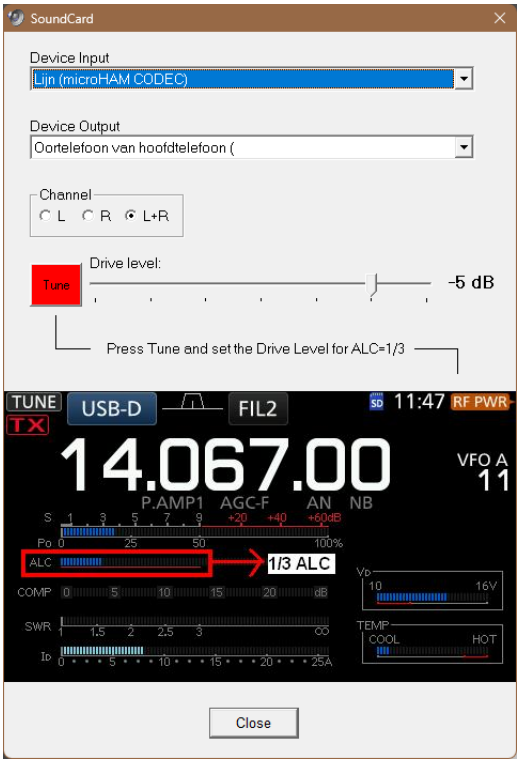


Click back on Settings and click on Soundcard…

Now select your Device Input
and the
Device Output of the sound card

Channel:
Choice your channel.

Close with click on the “Close” button.



VarAC

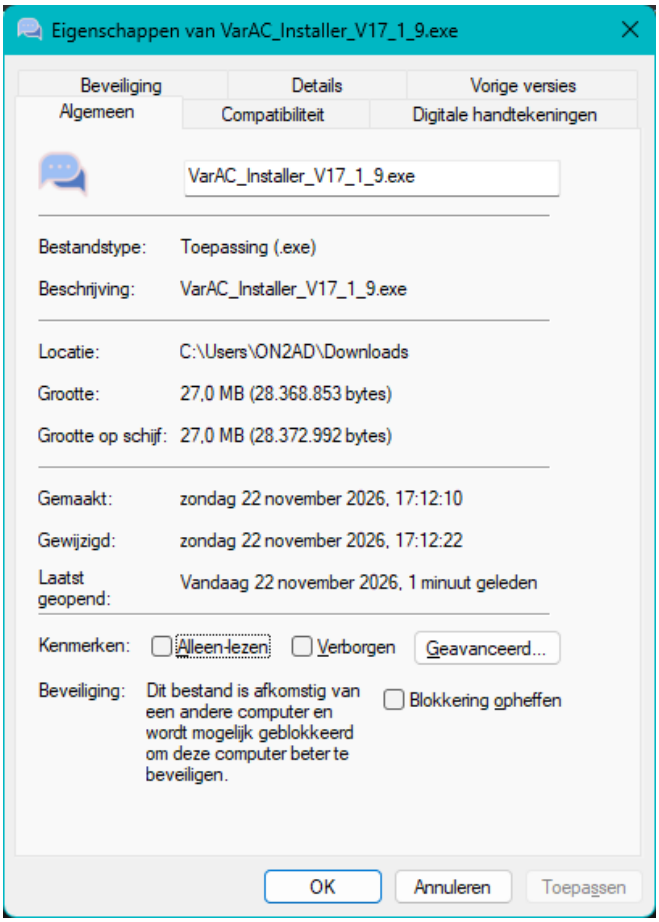
There are 2 versions available for download.

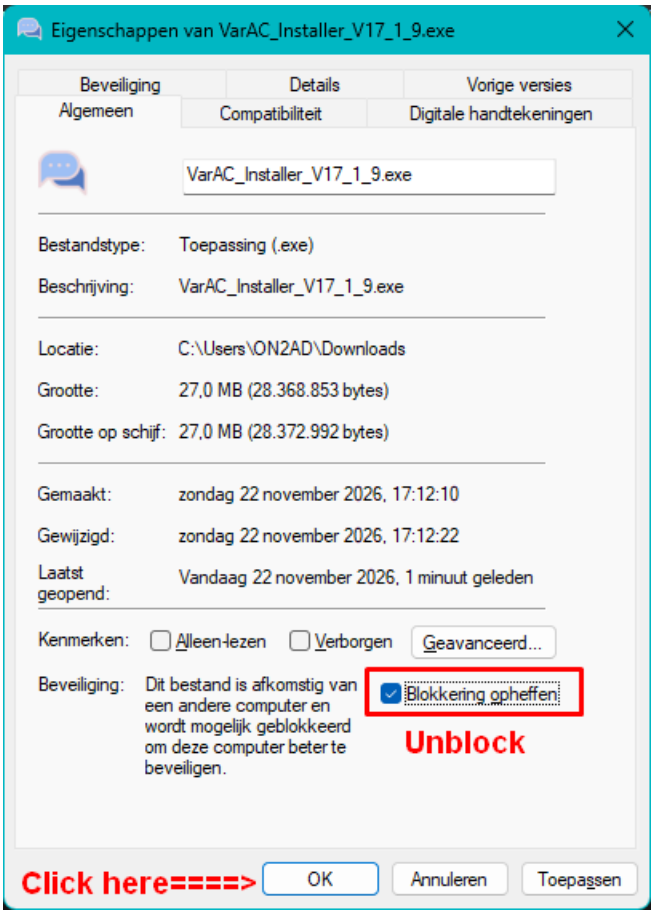
1. An installer version https://www.varac-hamradio.com/download
   a. After filling out the form and answering the question, click "Download" to download VarAC.
2. A ZIP version for Linux/Windows/Mac/Pi package https://www.varac-hamradio.com/downloadlinux
   a. After filling out the form and answering the question, click "Download" to download VarAC.

The installation is done in C:\VarAC, in C:\VarAC, because many users have encountered problems with the installation in the Program Files directory.
Or choose a folder of your choice

VarAC install

Installer version





Click on the VarAC_Installer_V17_1_9.exe or higher for install this version.
After this following the instructions of the Installer version.

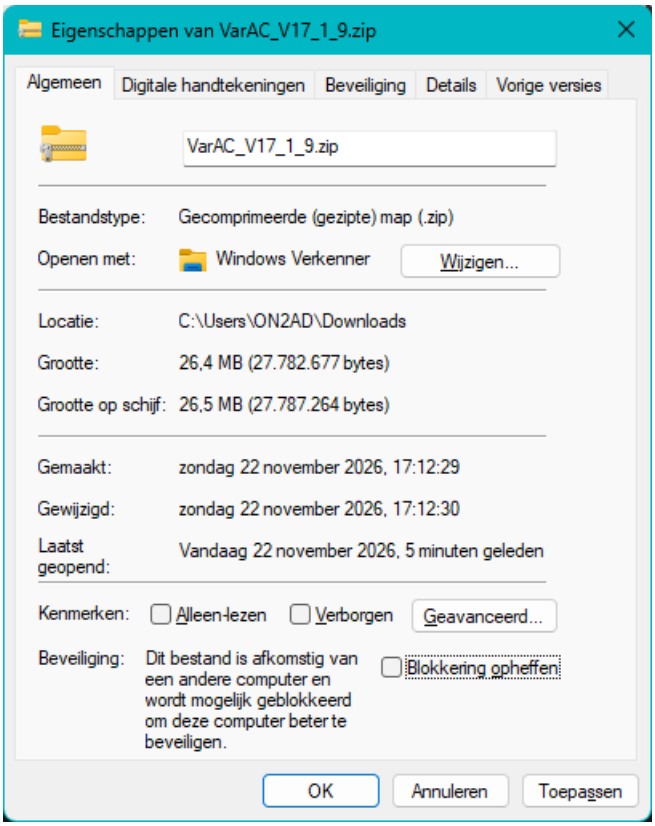
ZIP version

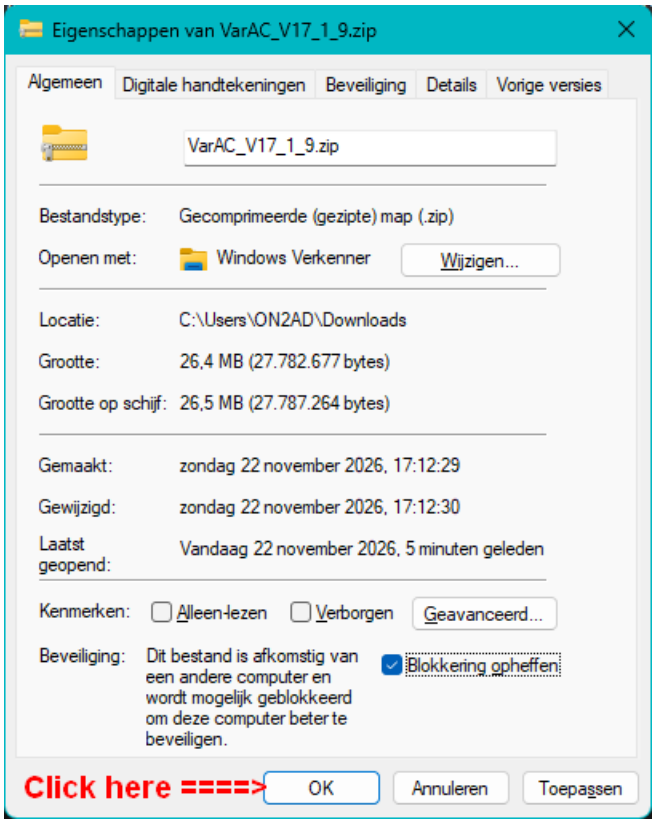
After these files are downloaded, they must be unblocked
Select the file with the right mouse button

Now with the left mouse button, click Properties

Select properties from the drop-down menu.
If a button marked with Unblock is visible on the General menu, this file is blocked.

Click the Click the Unblock checkbox, and then click OK to unblock the file

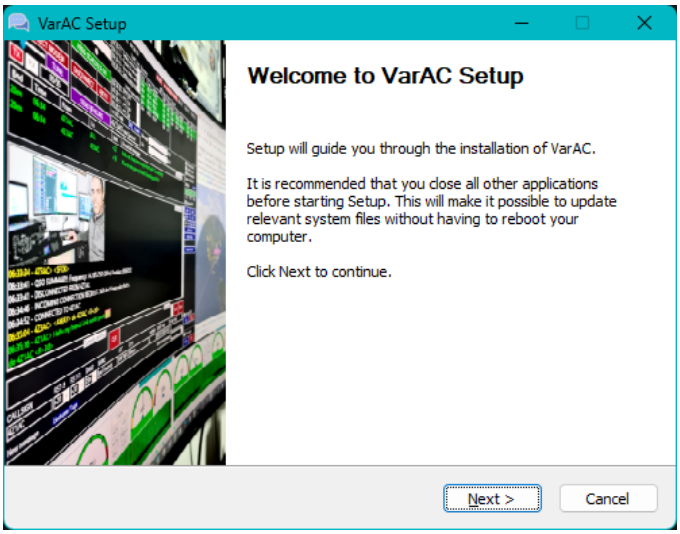




Install of the Installer version

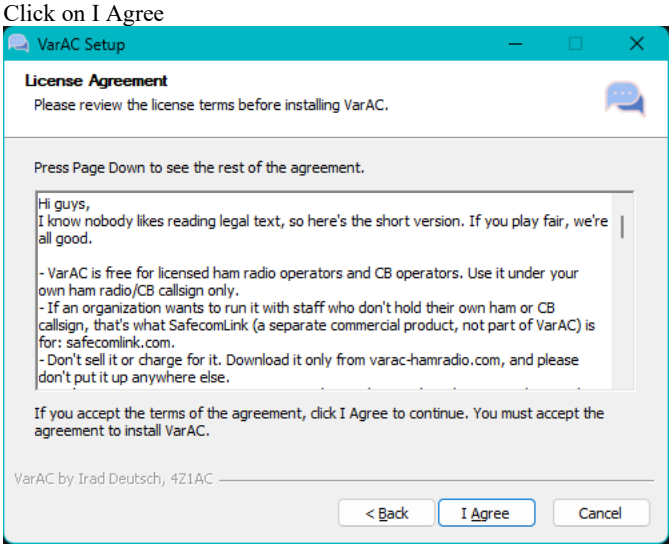
Click on the VarAC_Installer_V17_1_9.exe or higher for install this version.

Click on Next

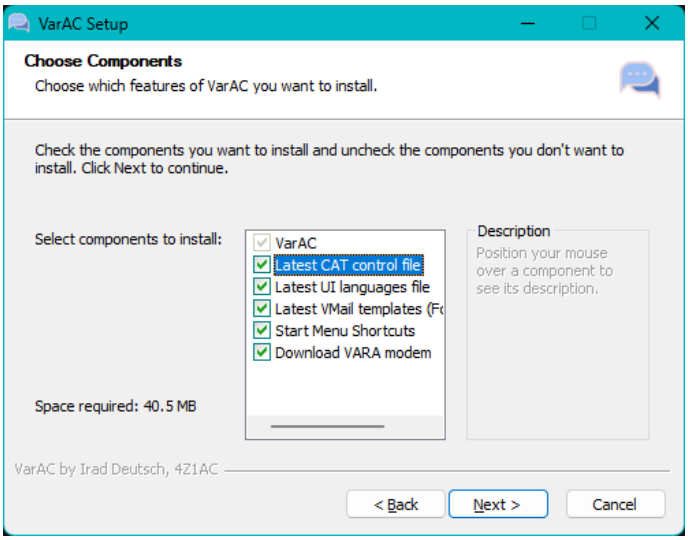


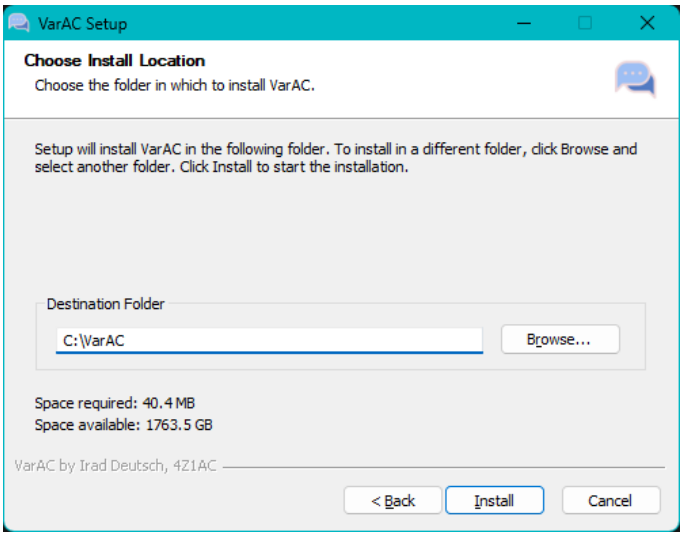
Latest CAT control file: Deploy the latest CAT control file with Rigs. **IF you already personalized your CAT file, do not deploy this**.
Start Menu Shortcuts: Create a shortcut links on the desktop and start menu.
Download VARA modem: VarAC relies on the VARA modem to operate. Redirecting you to the VARA modem author website.

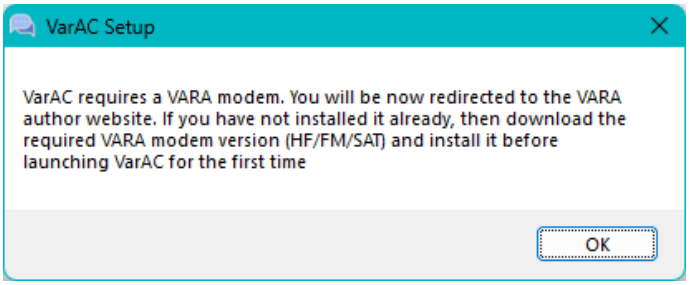
Click on I Agree



Now choose the destination folder where you want to install VarAC.
The default folder is:
C:\VarAC
but you can also install VarAC in another folder.
I install VarAC in:
E:\HAM\VarAC-HF\VarAC\
Now click Install.







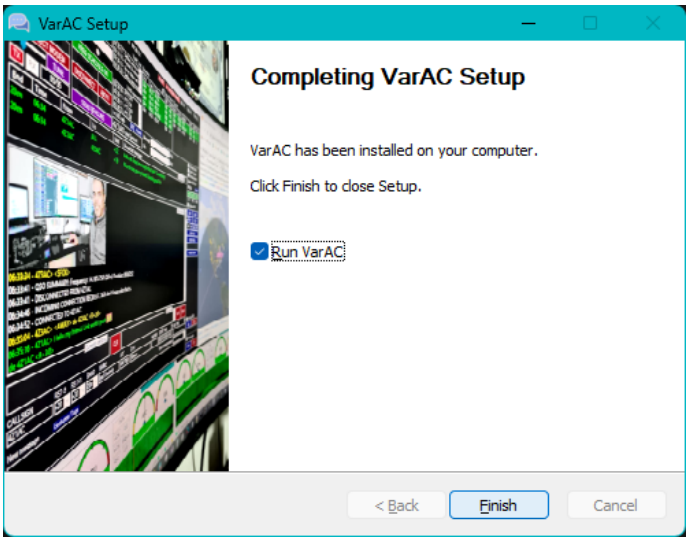
After you click on OK the website of the VARA author will open, and you can download and install the VARA modem.

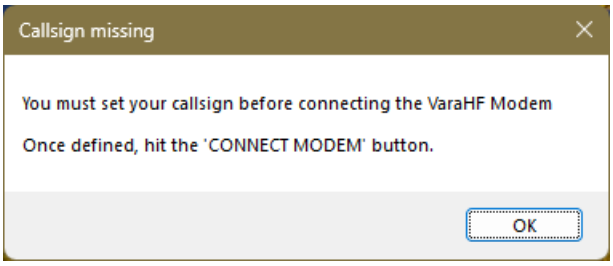
For install the VARA modem see VARA



Click on Finish

By the first start of VarAC you will see the next window.
Click on OK.





Files

After install and start the program you will find the following files:

File	Info
Backup	This is the backup folder.
BBS	This is the BBS folder
Licence.txt	License info
PSKReporter.dll	The PSKReporter dll file for the PSKReporter to function
Uninstall.exe	Uninstall VarAC
VarAC.db	Database for Broadcast, VMail, Beacons and CQ messages
VarAC.exe	The VarAC program
VarAC.ini	The VarAC ini file
VarAC.log	Program events log
VarAC.manifest	The manifest is a file that is used only during the install. allowing windows to set the right permissions on the VarAC.exe file to make it run as administrator by default as not running as administrator can cause issues
VarAC_alert_tags.conf	VarAC_alert_tags configuration
VarAC_auto_qsy_allowed_frequencies.conf	See Auto_QSY_Allowed_Frequency_Ranges
VarAC_callsign_tags.conf	Callsign tags are brief texts displayed alongside a callsign in the Last Heard CQ or Beacon sections. They can serve as 'friendly identifiers for callsigns or represent role names in emergency communication(EMCOMM) operations, where each station is assigned a specific role(e.g., HQ). **Example:** 4Z1AC,FRIEND
VarAC_cat_commands.ini	The VarAC CAT Commands
VarAC_frequencies.conf	The VarAC preset frequency which one can also adjust See Calling Freq.
VarAC_frequency_scanner.conf	This is the frequency Scanner list
VarAC_frequency_schedule.conf	This is the frequency schedule list
VarAC_templates.ini	See VarAC templates
VarAC_traffic.log	The RX and TX traffic log
VarAC_UI_languages.ini	Select your languages
VarAC_mailbox.mbx	The mailbox

The following files are generated if you setup a separate ini file like in the example one for the Kenwood and the FT-991A:

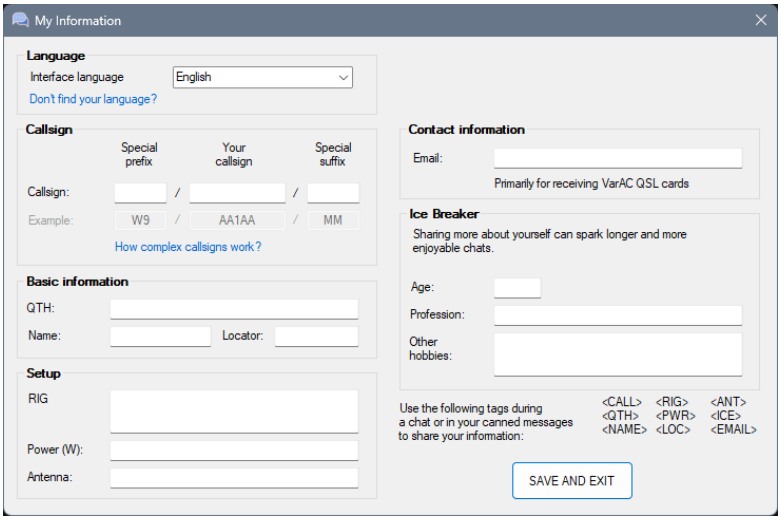
File	Info
VarAC-Kenwood	Ini file for the Kenwood
VarAC-FT991A	Ini file for the Yaesu FT-991A

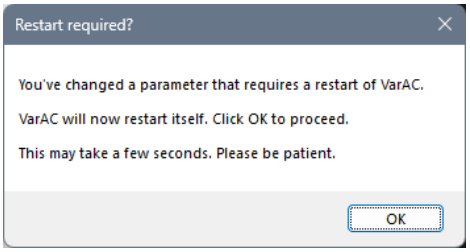
With a new installation of VarAC and starting it up, the following screen will appear where you can enter personal information.
See My Information

See How complex callsigns work?

When everything is filled in click on "SAVE AND EXIT" and another info screen will appear. Click OK.
See second image

When overwriting an older version of VarAC, this screen will no longer appear because this data already exists.





Change the language to yours

See My Information

Ice Breaker

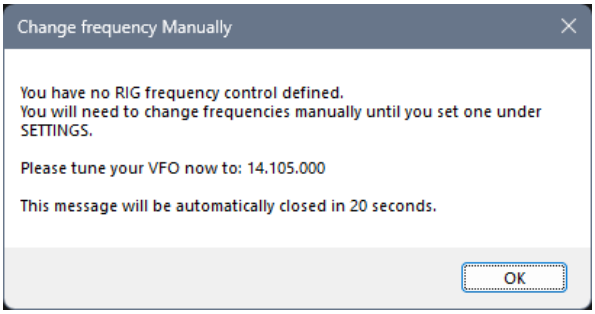
Sharing more about yourself beyond HAM radio can spark longer and more enjoyable chats.

After the restart, a new notification screen will appear.

You have no RIG frequency control defined.
You will need to change frequencies manually until you set one under SETTINGS.

Please tune your VFO now to: 14,105.000

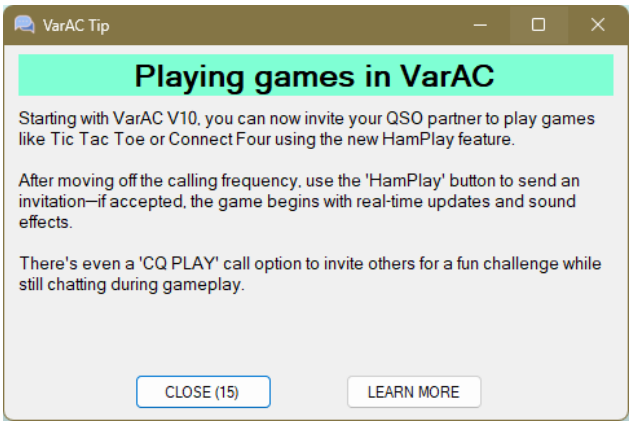
This message will be automatically closed in 20 seconds.



Note:

If you did not install VarAC in the default folder, don't forget to change this in the Menu – Settings – PTT and VARA Configurations by VARA-HF/FM main config path the same for the VARA-HF/FM monitor config (Optional)

VarAC Tip



This screen appears when installing VarAC, if you would like more information click on "LEARN MORE"

See HAM-PLAY Center

Customize VarAC window

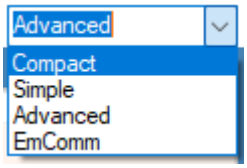
Compact mode

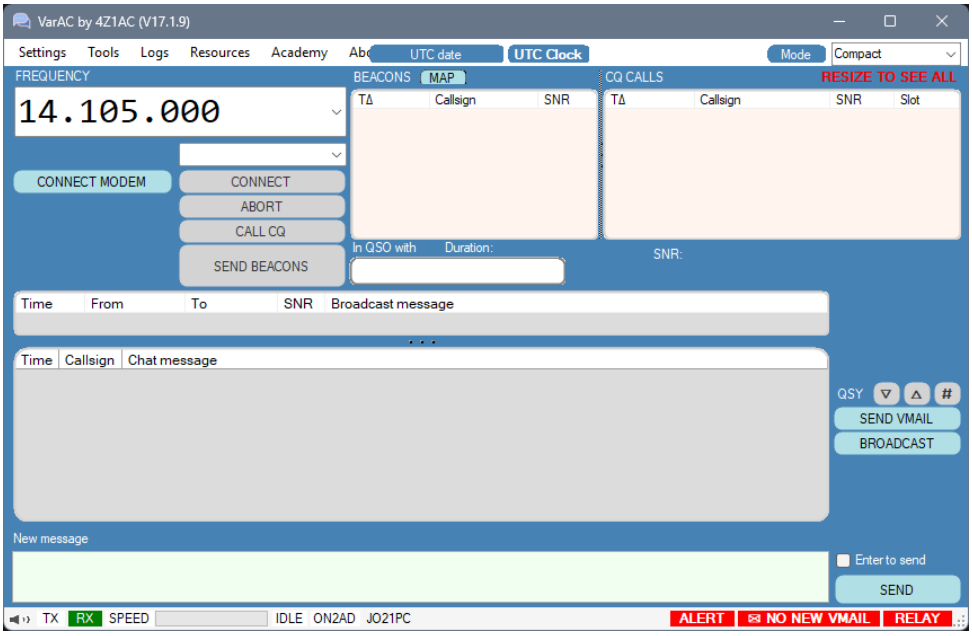
If everything is installed correctly then start VarAC in the Compact modus (Advanced mode not enabled) and this is the next screen.

After you have enabled the Simple mode and if for some reason you have resized the VarAC window size then a red warning will appear in the top right corner to adjust this window to see all elements

RESIZE TO SEE ALL

Select **Compact**





See UnattendedFiles IMPORTANT

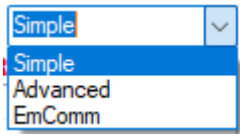
Simple mode

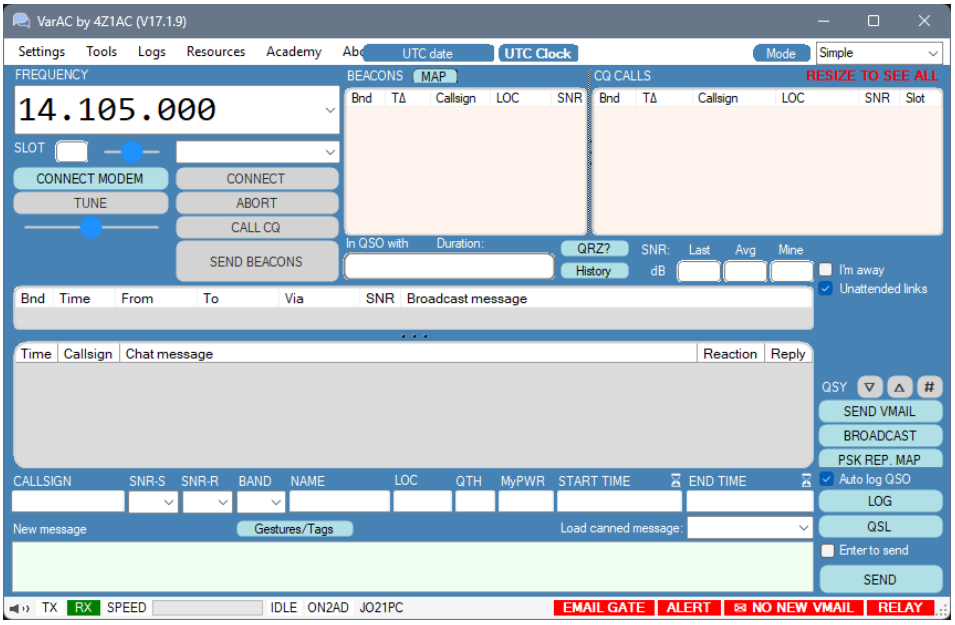
If everything is installed correctly then start VarAC in the Simple modus (Advanced mode not enabled) and this is the next screen.

After you have enabled the Simple mode and if for some reason you have resized the VarAC window size then a red warning will appear in the top right corner to adjust this window to see all elements

RESIZE TO SEE ALL

Select **Simple**





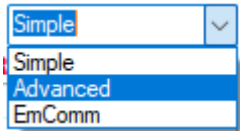
See UnattendedFiles IMPORTANT

Advanced mode

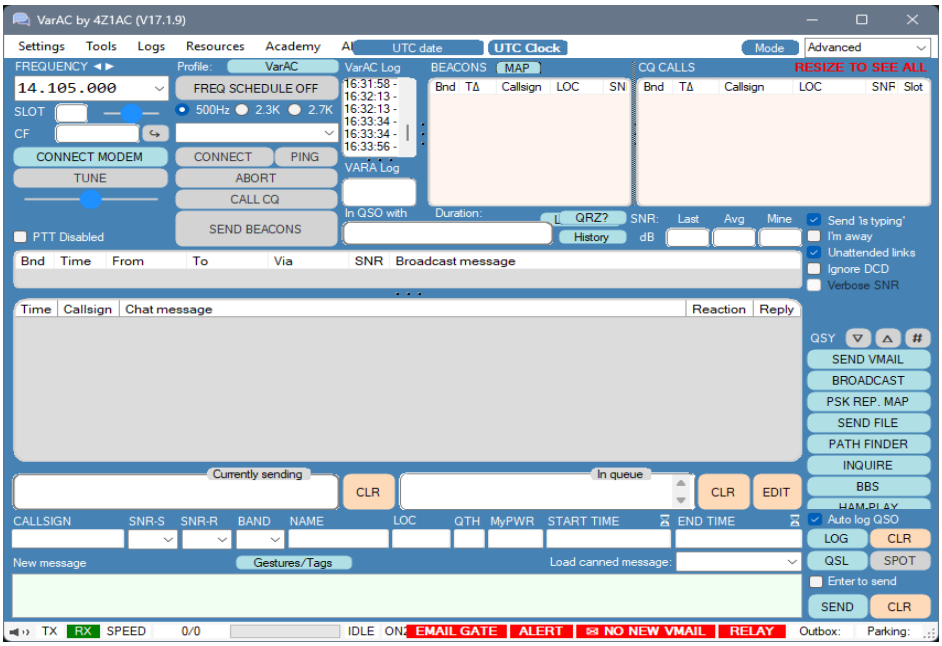
After you have enabled the Advanced mode and if for some reason you have resized the VarAC window size then a red warning will appear in the top right corner to adjust this window to see all elements

RESIZE TO SEE ALL

Select **Advanced**



See UnattendedFiles IMPORTANT

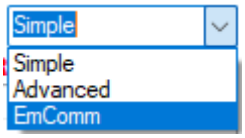


EmComm mode

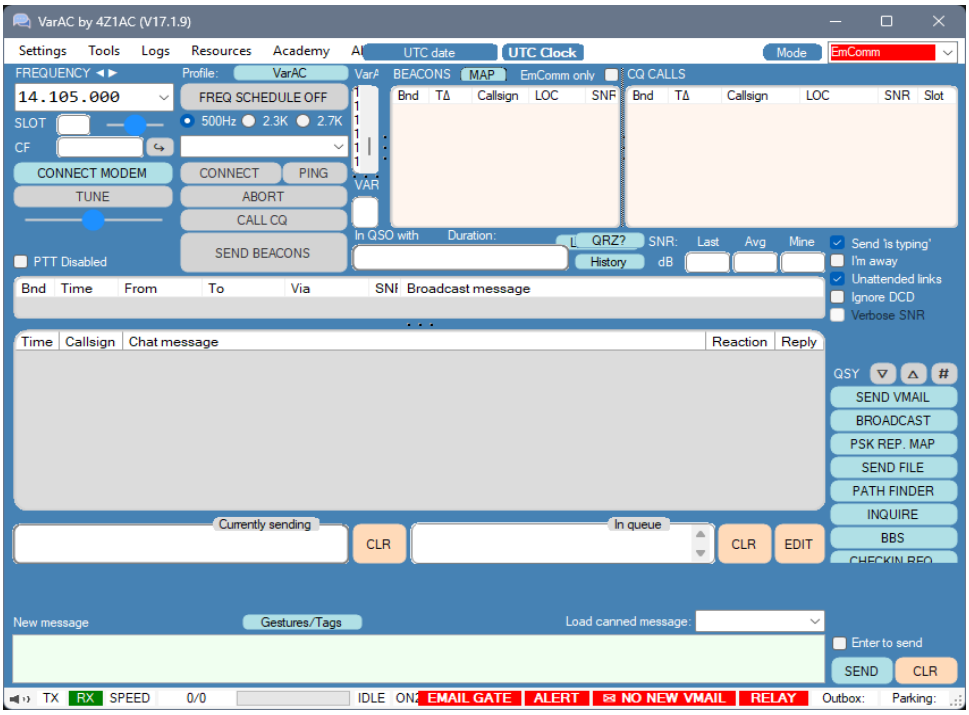
After you have enabled the EmComm mode and if for some reason you have resized the VarAC window size then a red warning will appear in the top right corner to adjust this window to see all elements

RESIZE TO SEE ALL

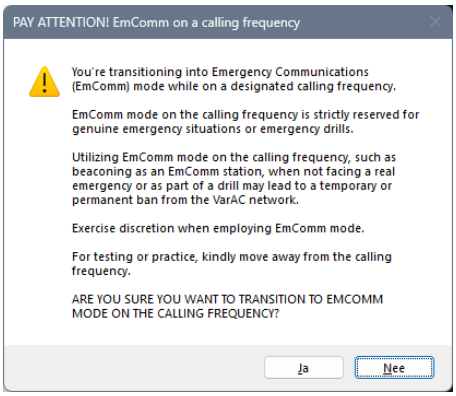
Select **EmComm**



See UnattendedFiles IMPORTANT



If you select the EmComm Mode then read this PAY ATTENTION message.



You are switching to Emergency Communications (EmComm) mode while on a designated calling frequency.

EmComm mode on the calling frequency is strictly reserved for real emergencies or emergency drills.

Using EmComm mode on the calling frequency, such as beaconing as an EmComm station, when not in a real emergency or as part of a drill, may result in a temporary or permanent ban from the VarAC network.

Use caution when using EmComm mode.

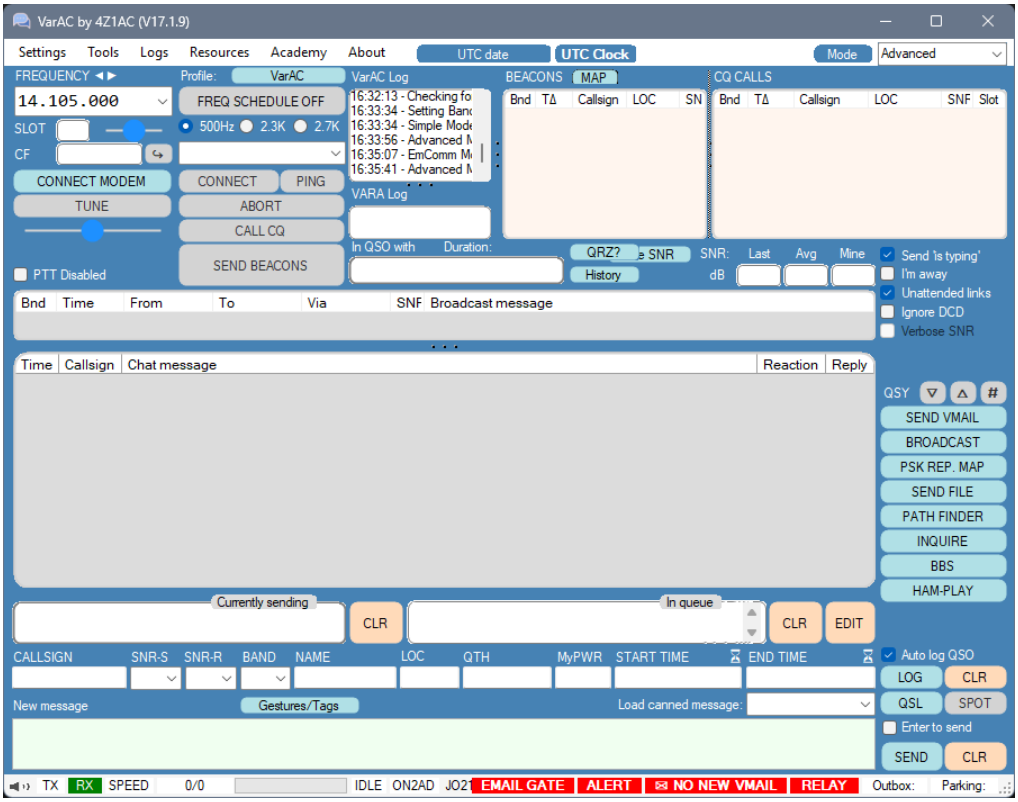
Move away from the calling frequency for testing or drills.

Are you sure you want to switch to EmComm mode on the calling frequency?

[More info about EmComm are here]
[More info about EmComm VMails are here]

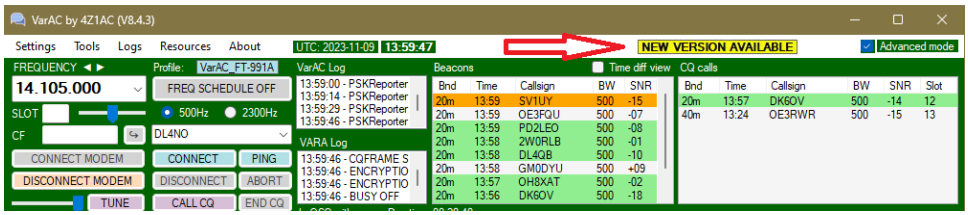
Resize to see all

After adjusting to a larger size, the
RESIZE TO SEE ALL
text disappears for all the three modes:
Simple, Advanced and EmComm.



New version indicator

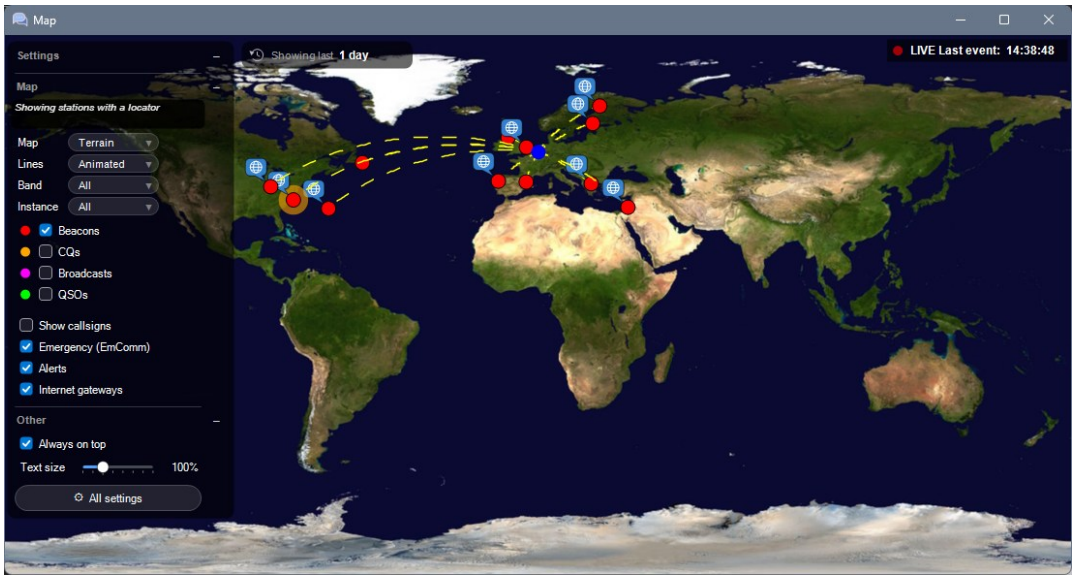
VarAC will keep you informed about updates.
A new indicator in the top right corner will illuminate when a new version becomes available.
Clicking the link will direct you to the VarAC website, where you can download the latest version.



Vector Map

This folder appears during installation.

[See Live Activity Map]



Internet gateways on the Vector map

Stations that run an internet gateway are now marked on the map with a small globe icon, so you can spot them at a glance.

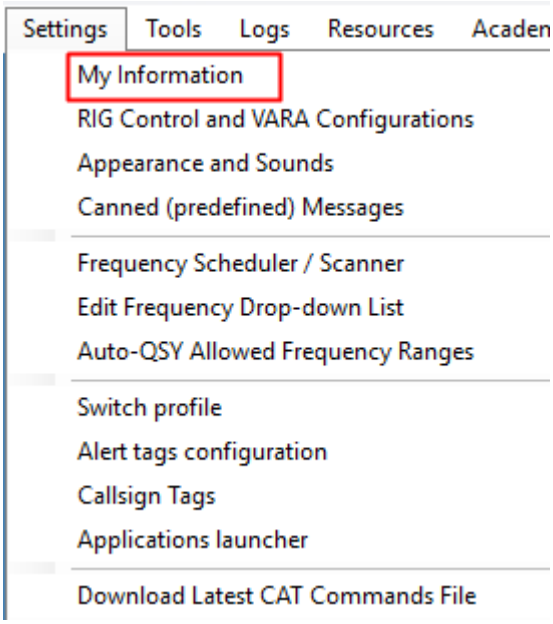


Main menu

VarAC settings

Start VarAC and fill in all the needed info in the “My Information” or go to the Settings/My Information menu

My Information

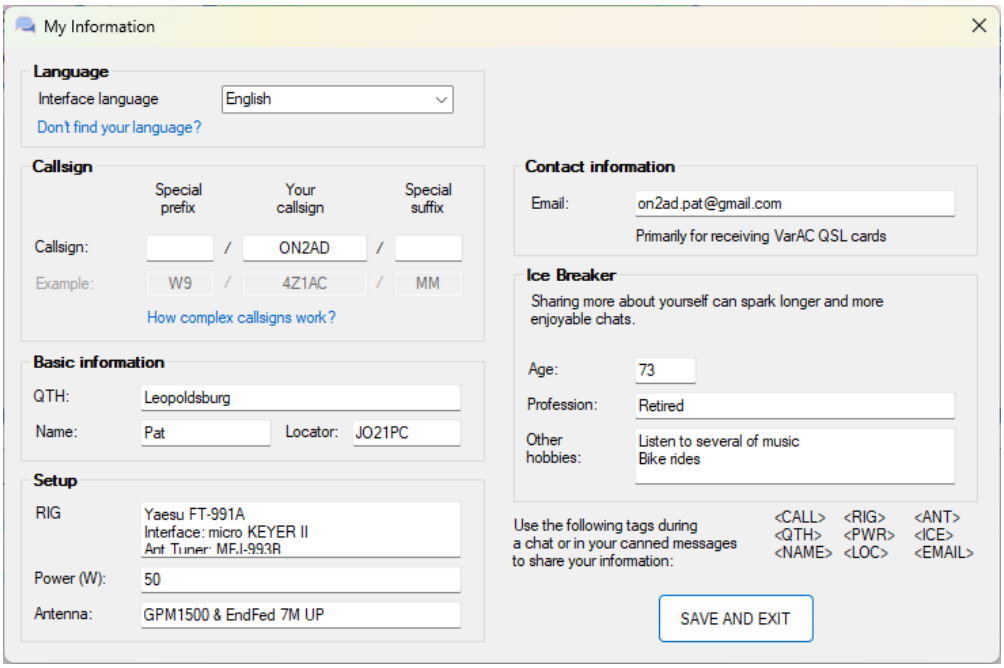


Click the Settings menu
And then on "My Information" and fill in the fields used in the "Canned messages".

The following tags can be used in canned messages:

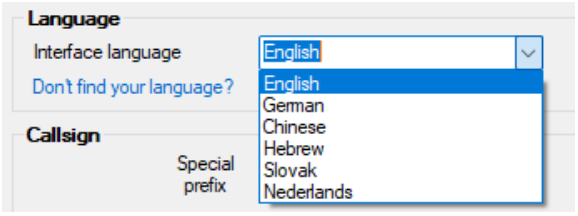
<CALL>	this will automatically fill in your own callsign.
<QTH>	this will automatically fill in your QTH.
<NAME>	this will automatically fill in your name or nickname.
<LOC>	this will automatically fill in your locator.
<RIG>	this will automatically fill in your equipment.
<PWR>	this will automatically fill in your power.
<ANT>	this will automatically fill in your antenna info’s.
<ICE>	this will automatically fill in your personal info’s.
<EMAIL>	this will automatically fill in your e-mail info.

Remark: Click SAVE AND EXIT to Save your settings



Language setup

Select your language by click on the Interface language selector, and the VarAC UI will change to your selected language.



Don't find your language

The VarAC UI translation are made possible by dedicated members of the VarAC community who generously contribute their time to translate the VarAC UI into their native languages.

This is an ongoing initiative, and additional VarAC screens will continue to be translated into various languages.

If your language is not currently listed, and you wish to contribute to the VarAC project, please send an email to iradirad@gmail.com , specifying the language you would like to translate.

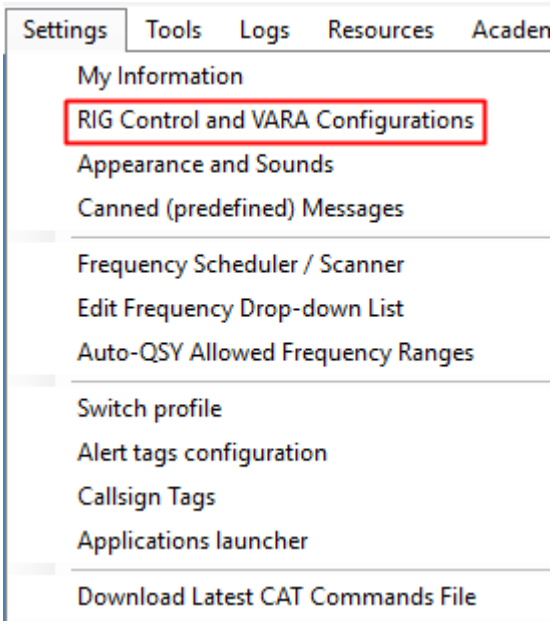
How complex Callsigns work?

VARA modem supports only plain callsigns.
However, with VarAC you can define a complex callsign such as W/4Z1AC/QRP.

VarAC will use your plain callsign during the connect phase, and if a complex callsign is defined, it will be sent right after the connection is established and will be reflected on the other console.

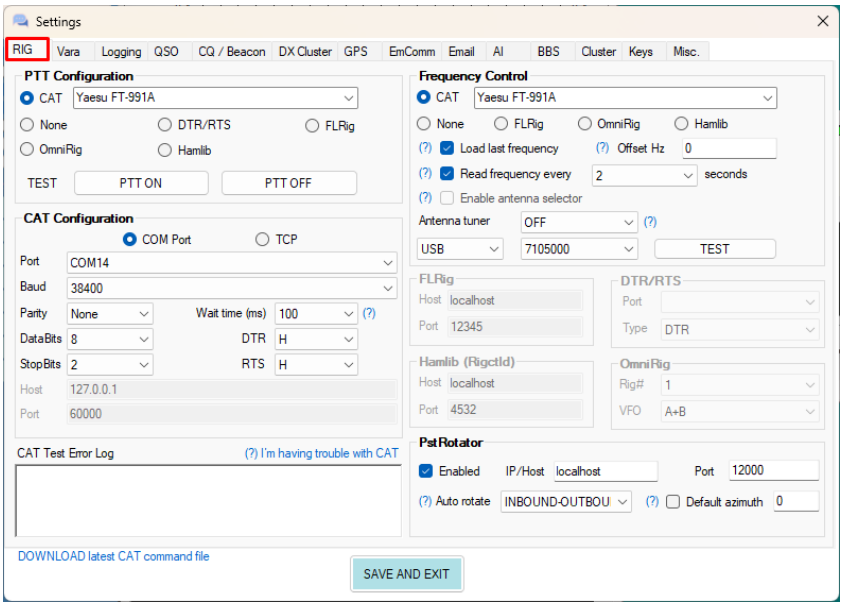
PLEASE NOTE:
CQ and BEACONS will show your plain callsign only.

RIG Control and VARA Configurations



Click on the settings menu.
RIG control and VARA Configurations
And a new window opens.

RIG



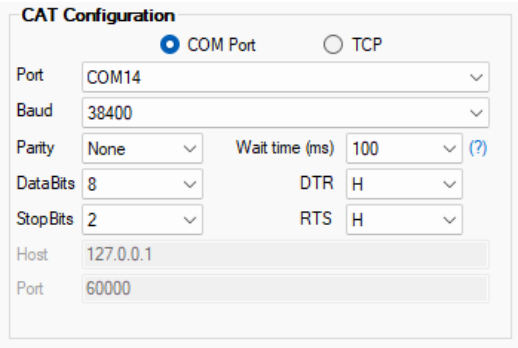
PTT Configuration

If you will use:

CAT	Select CAT and select your transceiver.
OmniRig	Select OmniRig see OmniRig
FLRig	Select Flrig if you will use the FLRig as your PTT interface.
DTR/RTS	Select DTR/RTS if you will use it.
Hamlib	Select Hamlib if you needed. VarAC now offers compatibility with Hamlib by using the rigctld TCP-based daemon.
None	None is not recommended.
Test PTT ON	To test whether the transceiver is transmitting. The TEST PTT function now supports comma-separated command sequences for testing CAT commands.
Test PTT OFF	To stop transmitting.

CAT Configuration

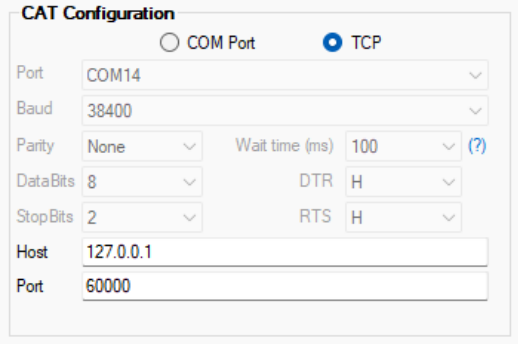
CAT Port connecting



COM Port: Connecting via the COM Port.
TCP: Connecting via TCP.

Port: Select your COM port.
Baud rate: Select your Baud rate.
Parity: Select your Parity
Data bits: Select your Data bits
Stop Bits: Select your Stop bits
Wait time (ms): see Wait time (ms)
DTR: Choice of **L** (LOW) and **H** (HIGH)
RTS: Choice of **L** (LOW) and **H** (HIGH)

TCP connecting



TCP: Connecting via TCP based CAT control (For all modern SDRs)

Host: 127.0.0.1
Port: 60000

Wait time (ms)

Do not modify unless necessary: Some CAT commands like “read frequency” generate a response from the RIG.
On certain radios or when using low rates, this response may take longer to arrive.

The “Port wait time” settings defines how long (in milliseconds) VarAC will wait before attempting to read the RIG’s response.

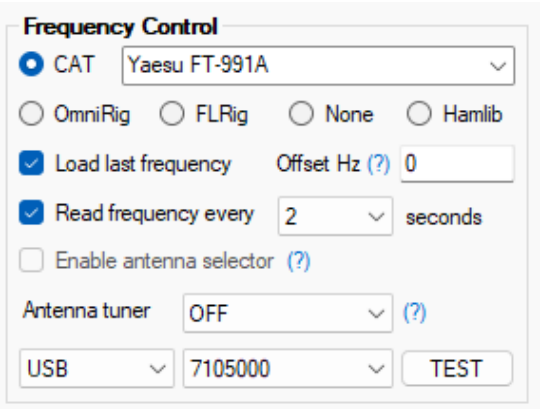
If you notice issues with frequency readings, try increasing this value.

There is a parameter in the VarAC.ini file to set the amount of time to wait for a CAT command to complete. default is 100ms. you can increase where necessary in rare scenarios.

```
PortWaitTimeMs=100
```

Frequency Control

CAT Frequency Control



CAT	Select your transceiver
OmniRig	see OmniRig.
FLRig	Start the Flrig and select Flrig as your PTT interface see FLRig configuration
None	No setting
Hamlib	With this setup you will use Hamlib frequency control see Hamlib Configuration
Load last frequency	Your last used Frequency. will upon by startup
Offset Hz	see Offset Hz
Read Freq. Every xx sec	When selected, the frequency will be monitored at the set time
Antenna tuner	see Antenna tuner
Enable antenna selector	See Antenna selector
Mode	Select the transmitter mode, for the FT-991A, the choice is USB, USB-D (USB-DATA) or FM
TEST	Click on TEST and if everything is set correctly then the transceiver frequency will change.

Offset HZ

Some RIG’s VFO’s are not well calibrated and has a certain offset (drift) from the real frequency.
Set this offset in HZ (ex: 200 or -200) and every time VarAC will change your RIG frequency, it will adjust it according to your offset.

Set to “0” (zero) to disable these features.

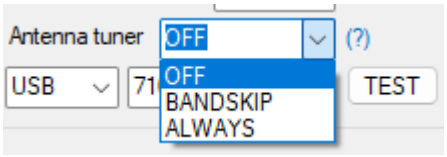
Please note:
If you enable this feature, disable the “Read frequency” checkbox so VarAC will not read your RIG offset frequency, which will mess with the VarAC ability to perform its asks.

Antenna tuner

VarAC can activate your antenna tuner option on your RIG when you change frequencies.
This option is available only to users who control their RIG using direct CAT control or through FLRig.
Omnirig does not provide with a tune option.
If your RIG supports this option through CAT command but VarAC does not provide you with this option, you can manually edit the “VarAC_Cat_commands.ini” and add a CAT command to the “AntennaTuner = “ parameter under your Rig section.
Please notify us through the support forum so we can add it to all users.

You have three options:

OFF: Auto tuner OFF.
ALWAYS: Tune every time you change frequency.
BANDSKIP: Tune only if you change band.



Antenna selector

Some Rigs are capable of working with multiple antennas. For these rigs, you can enable a feature that automatically sends a command to switch to the appropriate antenna whenever you change bands in VarAC.

To enable this feature, you must manually edit the “VarAC_cat_command.ini” file and add a parameter in the following format:
AntennaBand_XXXX=YYYY

For example:
AntennaBand_20m=AN1;

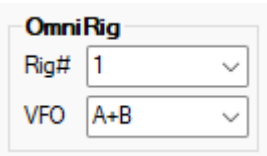
VarAC will execute this command each time you switch bands.

Please note:
This feature is available only when using direct CAT rig control.

Disable Antenna Tuner When PTT Off

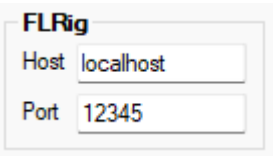
The antenna tuner will no longer activate when changing frequencies if PTT is disabled.

OmniRig Configuration



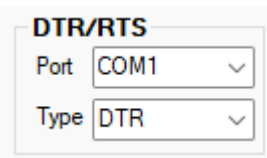
Select **OmniRig**
Select the right Rig see also info about the OmniRig
Select VFO: A+B, A, or B

FLRig Configuration



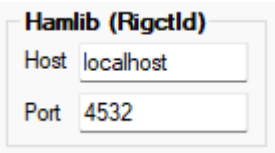
The **Flrig** setup are:
Host: 127.0.0.1 or localhost
Port: 12345

DTR/RTS Configuration



Select **DTR/RTS**
Select your **COM port**
Select **Type DTR** or **RTS**

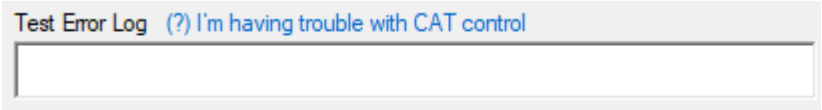
Hamlib Configuration



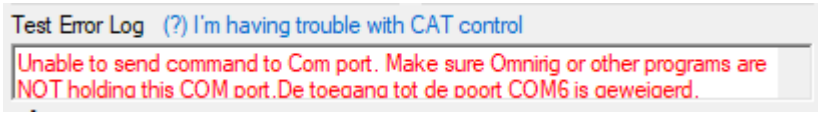
Select **HamLib (Rigctld)**
Select your **Host**
Select your **Port**

CAT Test Error Log

In normal circumstances if everything is configured correctly this window will remain empty



If there are conflicts, they will be displayed in the same window, see below.



I am having trouble with CAT control

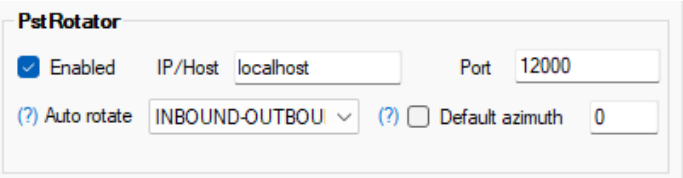
Please make sure you have the most recent CAT command file at
https://www.varac-hamradio.com/rig-control-file

As there are so many Rigs out there, it takes time to develop and validate against each one.
But no worries, if you cannot find your RIG here or if you fail to configure it with CAT control, you can always use OmniRig to control both of your PTT and frequency.

Pst Rotator

Automatically keep your antenna pointed in the optimal direction for maximum link performance.

When enabled, a rotate command is automatically sent to the antenna controller based on the direction of the station being contacted.



Auto rotate

DISABLED	Auto Rotate is turned off.
OUTBOUND	Automatically rotate the antenna when you actively attempt to connect to another station.
INBOUND-OUTBOUND	Includes outbound connections, plus automatically rotates the antenna for incoming connections.

NOTE: An incoming connection may also be an unattended link, so INBOUND-OUTBOUND mode ensures the antenna is automatically positioned correctly even when a incoming connection is established without operator intervention.

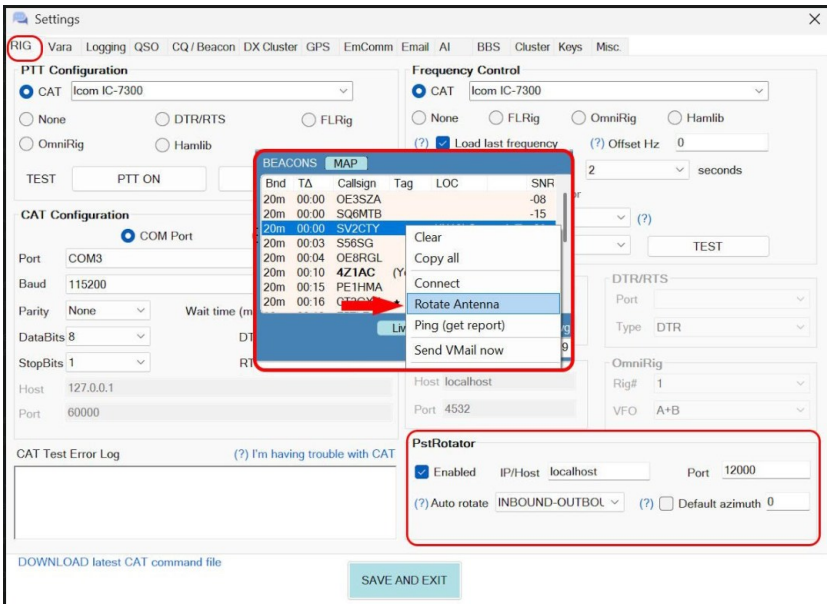
Default azimuth

Set a fixed azimuth (in degrees) that will be sent to the antenna rotator at startup and whenever a link ends.

This keeps your antenna at your preferred standby position before and after a link.

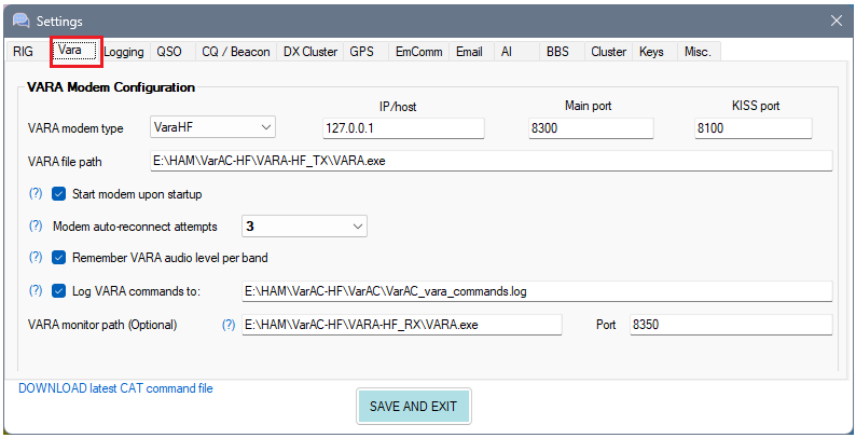
Note: Default Azimuth works alongside Auto Rotation. When Auto Rotation is enabled, the antenna can still automatically rotate to the required azimuth when connecting to a station. After the link ends, it will return to the Default Azimuth.

Rotate antenna in Beacons and CQ Calls list



Vara

VARA Modem Configuration



VARA modem type	Choice between, VaraHF, VaraFM or VaraSAT.
IP/host	IP address. Default: 127.0.0.1
Main Port	put the port number here
KISS port	see VARA setup
VARA file path	select where the VARA.exe is located
Start modem upon startup	Disable/Enable Vara modems launch upon VarAC startup see Start Modem upon startup
Remember VARA audio level per band	See Remember VARA audio level per band
VARA-Monitor Path (Optional)	see Vara Monitor Path
Log VARA Commands to	See VARA Commands to
Port	put the port number of the VARA monitor here

Start modem upon startup

By default, VarAC will start the VARA modem locally before trying to connect it.
But in case you run the VARA modem on a remote server, then you can disable this from happening by unchecking this box.

Remember VARA audio level per band

Different bands may need varying VARA modem audio levels.
By default, VarAC retains the last audio (TUNE) level associated with each operated band.

Enabling this feature enables VarAC to adjust the audio level when transitioning between bands.

VARA Commands to

VarAC communicates with the VARA modem through a dedicated interface that handles the exchange of commands.
You can log this commends to a file for analysis or debugging purposes.

However, keep in mind that the log can grow large, so it is not recommended to keep logging enabled continuously.

VARA monitor Path

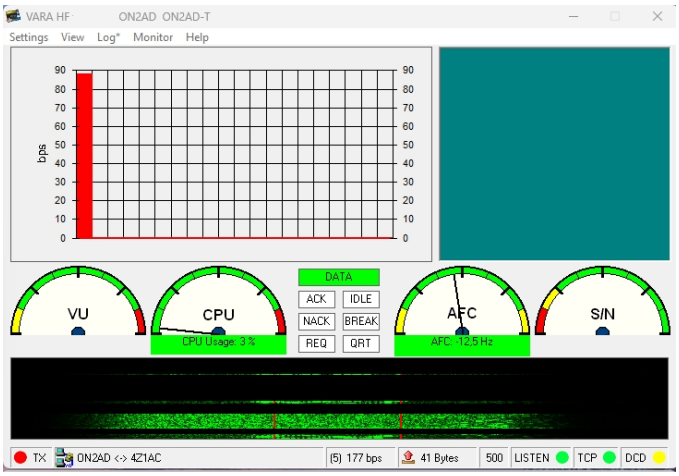
A VARA modem can be configured either in the Ready-To-Connect mode, or the Listening (Monitoring) mode.

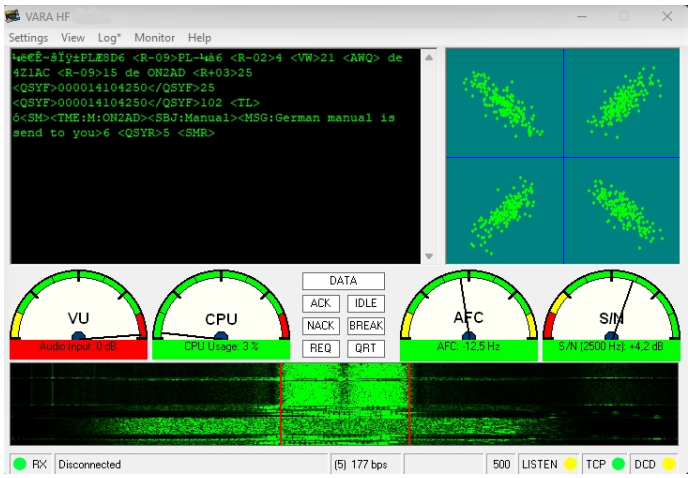
If you wish to be ready for incoming connections and at the same time monitor the frequency for VARA traffic such as ongoing VARA QSO, then you need to run a separate VARA modem instance in Monitor mode.

Simply duplicate your existing VARA modem directory into a new folder, set this path to the new VARA.exe file and VarAC will do the rest.
VarAC will configure the second VARA modem to Run in Monitoring mode upon startup.

If you do not wish you launch a Monitor VARA modem, simply leave this section empty.

Then you see the next:





Remark

When selecting the VARA-HF/FM Main and the VARA-HF/FM Monitor (Optional) make sure not to select the VarAC.exe, otherwise the program will go in looping loop. I had to experience this myself.

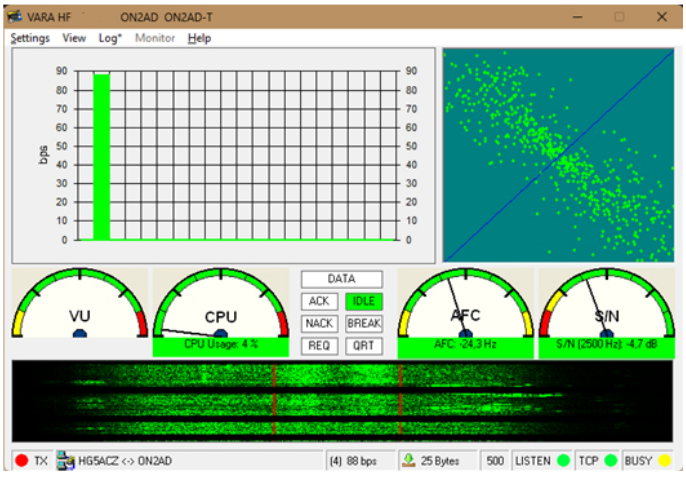
VARA-HF Monitor ON or OFF

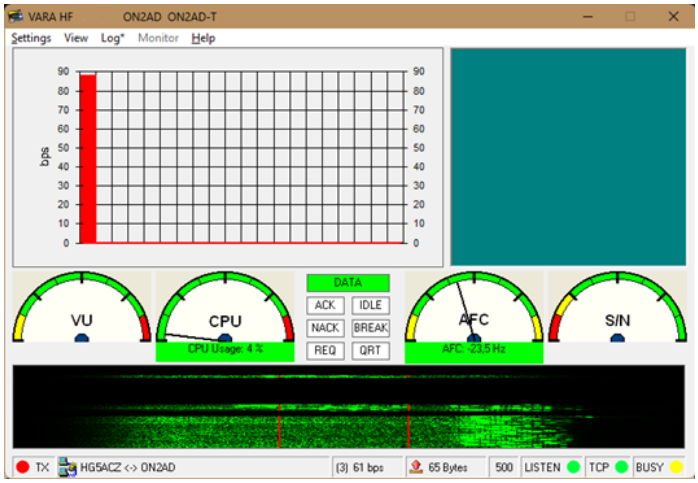
In the VARA-HF you also have the option to monitor the signals and display the received signals in text in the monitor section.

Monitor OFF

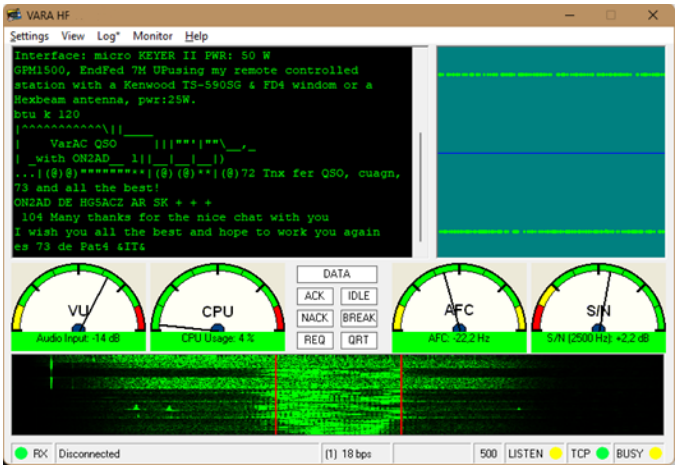
When the transceiver receives the signals, we see in the VARA-HF monitor a green bar that is an indication of the received DATA.

When the transceiver sent the signals, we see in the VARA-HF monitor a red bar that is an indication of the sent DATA





Monitor ON

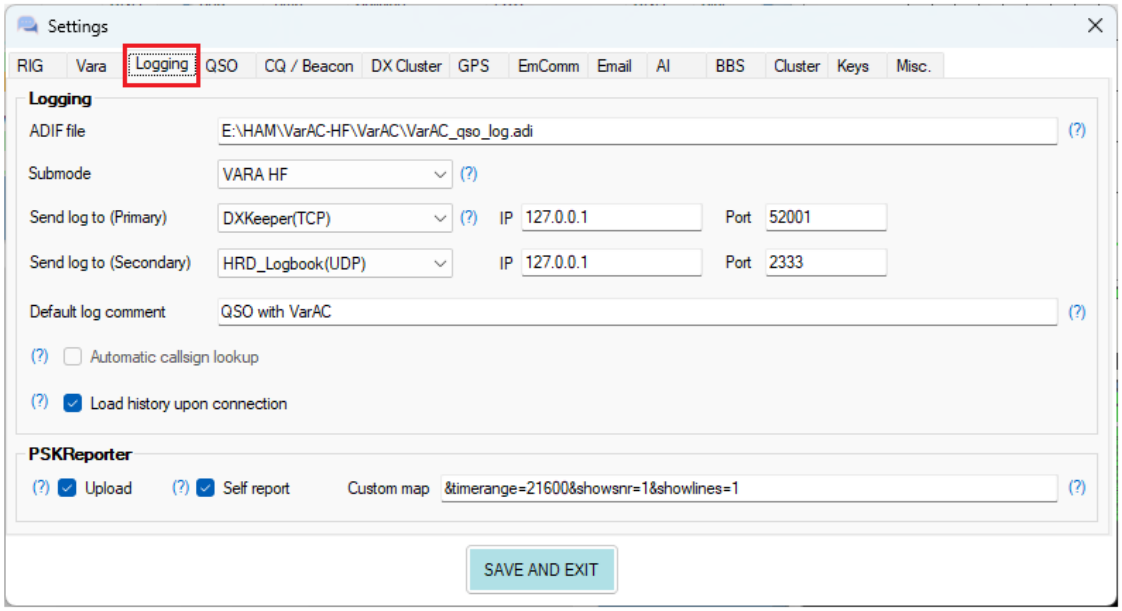


When the transceiver receives the signals, we see the decoded data in text format in the Monitor screen of VARA-HF..

Logging

VarAC can send your QSO record in real-time to an external logger such as DXKeeper, N3FJP etc… using both TCP & UDP protocol.

The default port number for your selected logger is automatically populated, however you can change it manually.



ADIF file path	VarAC stores all your QSO's in an ADIF format file. You can configure the ADIF file path according to your preferences.
Submode	See Submode
Send log to (primary):	See Send log to (primary) and See Log integration guide
Send log to (Secondary):	See Send log to (secondary) and See Log integration guide
Load history upon connection	See Load history upon connection
Automatic callsign lookup	See Automatic Callsign lookup
IP	See IP and Port
Port	See IP and Port
Default log comment	See Default log comment

Logging

ADIF file

VarAC stores all your QSOs in an ADIF file.
You can configure the path to the ADIF file to your liking.

Submode

The ADIF Committee has decided to classify VARA as a set of sub-modes under the umbrella term "DYNAMIC".

The supported ADIF classifications are:
Mode: DYNAMIC
Submode: VARA HF
VARA FM 1200
VARA FM 9600
VARA SATELLITE

Most QSO logging programs comply with ADIF guidelines, so it is recommended to adhere to the ADIF standard.

Send log to (primary)

Send log to	*Protocol*	*IP*	*Port*
NONE	-	-	-
DXKeeper	TCP	127.0.0.1	52001
HRD Logbook	UDP	127.0.0.1	2333
Log4OM	UDP	127.0.0.1	1200
N1MM	TCP	127.0.0.1	52001
N3FJP	TCP	127.0.0.1	1100
Swisslog	TCP	127.0.0.1	52001
UcxLog	UDP	127.0.0.1	2237
Winlog32	UDP	127.0.0.1	12060
Logger32	TCP	127.0.0.1	52001

VarAC can send your QSO record in real-time to an external logger using both TCP & UDP protocol.

The default port number for your selected logger is automatically populated. However you can change it manually.

Do you want to read the VarAC-Loggers integration guide?

https://www.varac-hamradio.com/post/integrating-varac-with-your-qso-logging-application

Send log to (secondary)

VarAC can also add your log to a secondary log program

IP and Port

Select the IP and the port number from the program

See Send log to (primary)

Default log comment

When logging a QSO, you can specify a default text that is automatically added as a comment to the QSO data.

Automatic callsign lookup

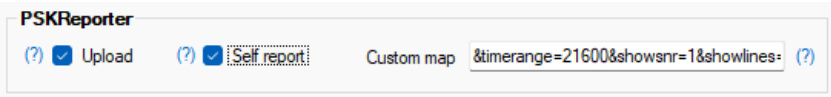
Some loggers support a real-time callsign lookup. Upon connection, VarAC will ask your logger application to Perform a callsign lookup and present in the logger application all the information about it including QRZ.com info, earlier QSO's etc.

Please note that you need to enable this feature also on your QSO logger application.

Load history upon connection

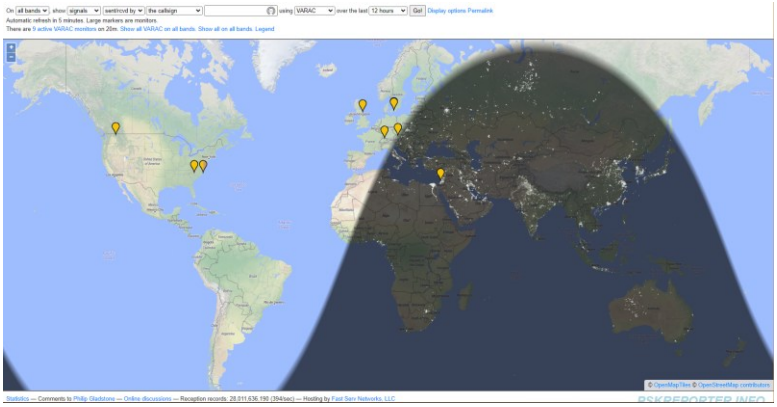
When VarAC is linked to a station, it will query its database for any preexisting.
Information about that station, such as its Name, QTH, and Locator.
If such data is found, it will be automatically inserted into the LOG section.

PSKReporter



Upload See Upload to PSKReporter
Self report See Self report
Custom map See Custom map

Upload data to PSKReporter



If this function is checked, your data will be forwarded to the PSKReporter.
Display Reception Reports (pskreporter.info)

PSKReporter is a website that aggregates spots from various logging programs.

VarAC can upload all stations you spotted to PSKReporter.

Please note that spots are uploaded to PSKReporter will be visible under the mode name : “VARAC”

Self report

Let people know that you are active on a frequency without being noticed by sending a beacon or a CQ Call.
Every time you change the frequency, a self-report to PSKReporter will be sent.

PLEASE NOTE:
Self-report will only be sent after staying at least 60 seconds on the same frequency.
In addition, while on the same frequency, a self-report will send every 14400 seconds.

Custom map

PSKReporter offers a variety of options to customize the map.
The VarAC PSKReporter buttons is activating a link which is composed of two elements.

A static one:
Https://pskreporter.info/pskmap.html?preset&callsign=YOURCALL&mode=VARAC

And dynamic one that is concatenated to the static one which contains the customization options.
The VarAC default dynamic element is:
&timerange=21600&showsnr=1&showlines=1

Change your PSKReporter map preferences but changing this link.
So next time you click the button "PSKReporter MAP" it will open the way you want it to.

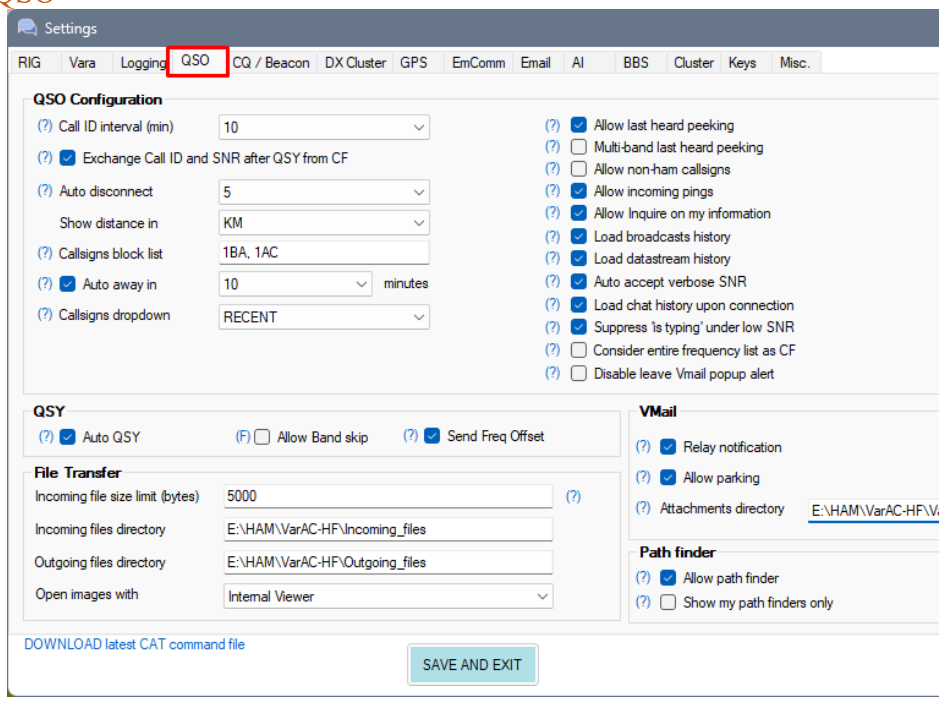
To find it more about PSKReporter customization options, open the PSKReporter map, click "Display options" at the top right, and set your preferences. Then click the "Permalink" to see the results.

Once you are happy, copy the website URL aside and paste only what comes after the Mode = VARAC to this settings field.

Note

It is an part of the PSKReporter that you can see which version of VarAC some people are using (not only VarAC) see at:
https://pskreporter.info/cgi-bin/pskstats.pl and select VarAC

QSO



QSO Configuration

Call ID interval (min)	see Call ID interval
Exchange Call ID and SNR after QSY from CF	see Exchange Call ID and SNR after QSY from CF
Auto disconnect	see Auto disconnect
Show distance in	show KM or MI (Kilometre or Miles)
Callsigns block list	see Callsigns block list
Auto away in	see I am Away message minutes: set the time for the Auto away
Callsign dropdown	see Callsign dropdown
Allow last heard peeking	see Allow last heard peeking
Multi-band last heard peeking	see Multi-band last heard peeking
Allow non ham Callsigns	see Allow non Ham Callsigns
Allow incoming pings	see Allow incoming pings
Allow Inquire on my information	see Allow Inquire on my information
Load broadcasts history	see Load broadcasts history
Load datastream history	see Load datastream history
Auto accept verbose SNR	see Auto accept verbose SNR
Load chat history upon connection	see Load chat history upon connection
Suppress "is Typing" in low SNR	see Suppress "is Typing" in low SNR
Consider entire frequency list as CF	see Consider entire frequency list as CF
Disable leave VMail popup alert	see Disable leave VMail popup alert

Call ID interval (min)

As HAMs, we are required to identify ourselves every few minutes during a QSO. The number of minutes depends on YOUR local regulations.

It also enables other HAMs monitoring frequency to know who is chatting, and once the QSO is over, they can connect to any of the chat parties.

This parameter affects the interval in which a "DE MyCallsign" message is sent over the chat.

Auto Disconnect

Set the time in minutes in which you want to end the inactive connection.

This is useful if you do not want someone to forward you and leave the link open for a long time without sending anything or if you forget that the link is open.

Set this parameter to 0 (zero) if you want to disable this function

Exchange Call ID and SNR after QSY from CF

Calling frequencies are designated for beaconing. CQ calls and initiating connections. Once a connection is established, it is crucial to send a QSY invitation and vacate the calling frequency to allow others to connect.

To streamline this process and minimize congestion on calling frequencies, VarAC by default will not exchange any QSO details such as CALL ID or SNR reports until a QSY has been completed.

It is strongly recommended not to disable this feature unless you are operating on a private calling frequency with your own team, outside of the official VarAC frequencies.

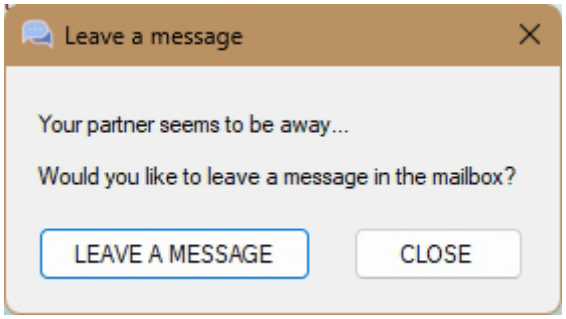
Callsigns block list

You can tell VarAC to block specific callsigns you do not want to see or connect to.
Type these Callsigns separated by commas.
Those callsigns cannot connect you and will not appear on your last heard lists.

I'm Away message

When you connect to a station that is in "I'm away" status, the following messages appear:
In the first image you see a summary of the connection and in the second image a question appears if you still want to send a message.

15:35:49 - CONNECTED TO KN4PRE
15:35:58 - KN4PRE> <AWAY> Busy taming tigers...lv a msg? de <FC:Z6/KN4PRE>
15:36:07 - ON2AD> de ON2AD <R+01>
15:36:16 - QSO SUMMARY: Frequency: 14.105.000 (20m) Duration: 00:26
15:36:16 - DISCONNECTED FROM KN4PRE



The AWAY station will automatically send an "<AWAY>" message when it has enabled "Allow incoming pings" in the "Rig Control and VARA configurations" menu in the "QSO Configuration" panel.

Auto away

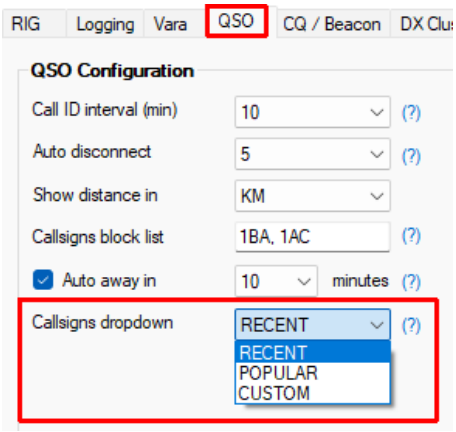
The automatic away mode automatically puts VarAC in the "I'm away" state, if there was not operation performed in the VarAC application for a given amount of minutes.

Callsign dropdown

RECENT:
Displays the callsigns you've recently connected with (excluding Pings), just like before.

POPULAR:
VarAC will populate the list with the callsigns you've linked with most frequently over the past 60 days—perfect for reconnecting with your regular contacts.

CUSTOM:
Allows you to set a fixed callsign list. This is ideal if you want quick access just to friends or, for EmComm teams, just your team's callsigns for streamlined communication.



Allow last Heard peeking

You can allow the other party to retrieve your last heard beacons/CQ lists.
It allows your partner to see who you see online.

Multi-band last heard peeking

By default, when a 'Last Heard' request is received, your station will report only the station on the band you are currently tuned to.

To include callsigns from all bands, enable this feature.

In cluster mode, it allows, reporting of stations heard across all active bands in your cluster.

Allow non ham Callsigns

By default, VarAC ignores beacons, CQ calls and connection attempts from stations that do not use a valid radio callsign.

We recommend you leave this feature disabled to protect you from non-amateur radio connections attempts.

If you use VarAC for other purposes outside of the amateur radio bands with non-amateur callsigns, you must enable this feature.

Allow incoming pings

Pings are short QSO for the purpose of reports exchange only.
Pings are great to check the link between two stations.

By default, your VarAC will accept ping requests.
You can disable it by unchecking this box.

Allow Inquire on my information

VarAC allows your QSO partner to inquire the following information:
Name, QTH, Locator, Age, Profession, Hobbies, Rig, Power and GPS location.
If you wish to disable this option, then uncheck this box.

Load broadcasts history

VarAC keeps all incoming and outgoing broadcasts in its database.

You can ask VarAC to populate the broadcasts section upon startup from the database so if you restart VarAC for any reason, you will still see on screen the previously captured broadcasts.

VarAC will load broadcasts from the past 24 hours.

Load datastream history

VarAC keeps all datastream data (chats and system messages) in its database.

When using tabular mode datastream (enabled by default), you can tell VarAC to populate the datastream section upon startup from its database.

VarAC will load datastream data from the past 24 hours.

Auto accept verbose SNR

Verbose SNR is a great tool to examine propagation during a QSO by sharing an SNR report every minute.

When your partner sends a verbose SNR invitation, your VarAC can automatically accept it.

This is useful if you want to allow stations to perform SNR tests while you are away.

Load chat history upon connection

If activated, upon linking to a station, the data stream will automatically display previous chats you have had with the connected station.

This allows you to conveniently refresh your memory with past correspondence and seamlessly resume the conversation from where you left off.

No Chat History Notification

You'll be notified in the datastream if you connect to a station with no previous chat history.

Suppress "is Typing" in low SNR

"Is typing" events bring a live experience into the chat.
Yet it comes with a price of extra data to be sent.
In the other sides does not copy you well (low/red SNR level)
It may spend earlier QSO time sending this event. So VarAC will not send "Is Typing" events under low SNR levels.

Consider entire frequency list as CF

VarAC restricts some actions (such as VMail forwarding) on official CF-Calling Frequencies (VarAC official frequencies such as 14.105 MHz) to keep these frequencies clear for Beacons, CQ's, Broadcasts, and Link establishments.

However, VarAC allows you to create custom Calling Frequencies by adding them to the frequency dropdown list.

To have VarAC treat all frequencies in the list as calling frequencies and apply the associated limitations to each, enable this option.

Disable leave VMail popup alert

When connecting to an unattended station (in 'Away' status), VarAC will display a popup asking if you'd like to leave a VMail.

You have the option to disable this popup alert.

QSY

Auto QSY	see Auto QSY **and** **see Band skip**
Allow Band skip QSY	see Auto-QSY Allowed Frequency Ranges
Send QSY Freq Offset	see Send QSY Freq Offset

Auto QSY

When a QSY invitation is sent or received, VarAC will automatically QSY to the destination frequency.

To prevent an Auto-QSY outside of allowed ranges, VarAC incorporates an Auto-QSY allowed frequency list.
You can Access and edit it though the VarAC Settings" menu "Auto-QSY allowed frequency ranges".

VarAC will also automatically return QSY to the calling frequency when the QSO ends.

Enabling "Band skip" means you approve the band change in automatic QSY.

Note: This feature is enabled only if you configured frequency control.

Send QSY Freq Offset

They are two ways to send a QSY invitation:

Full Frequency:

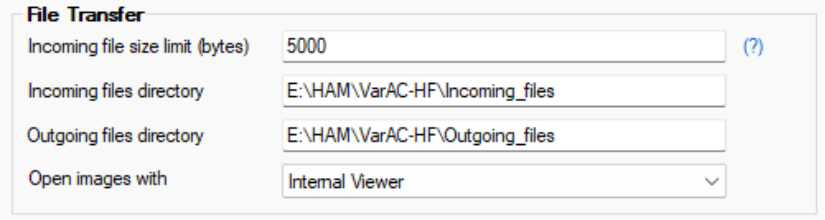
Sends the complete QSY frequency. This results in a longer transmission due to the number of characters.

Frequency Offset:

Sends only the offset from the current frequency, making the message shorter and more emission-efficient.

Use the offset method only if both stations are running recent versions and have CAT control enabled, ensuring both sides know the current frequency and can accurately calculate the target frequency.

File transfer



Incoming file size limit (bytes):
see incoming file size limit

Incoming file directory:
Set the folder for the files to be received.

Outgoing files directory:
Set the folder for the outgoing files

Open images with:
You can select the VarAC Viewer or the Default OS Viewer.

Incoming file size limit (bytes)

You can configure the maximum file size (in bytes) that you want to receive automatically without explicit permission.

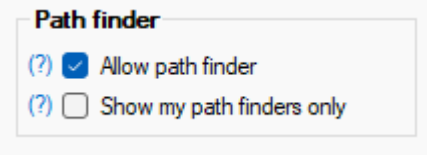
While activity in QSO, if an incoming file transfer exceeds this limit, you will ask to approve or reject the file.

While you are away ("I'm away" status), if someone tries to send you a file that exceeds this limit, it will be automatically rejected.

VMail

[See VMail]

Path finder



Allow path finder : [See Allow path finder].
Show my path finders only: [See Show my path finders only]

Allow path finder

If a station needs to send a VMail to another station but cannot establish a direct connection, it can initiate a 'Path Find' call to check if any other stations have detected the target station and can serve as relay for the VMail.

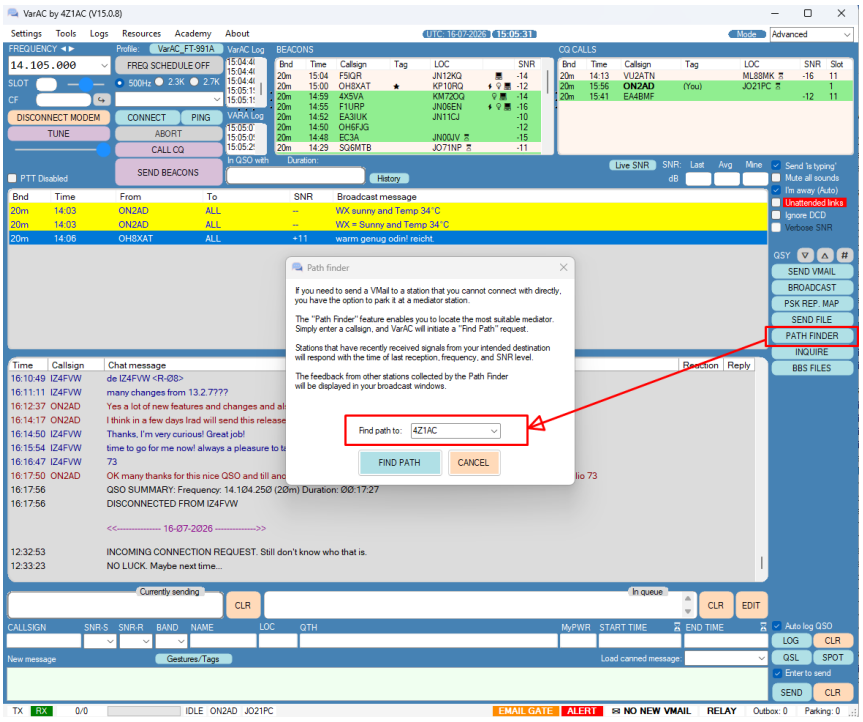
By enabling this function ability, your VarAC will respond to 'Path Find' calls if it has detected the target station within the last 24 hours.

Show my path finders only

By default, all pathfinder broadcasts, including both yours and others, are displayed.
In certain instances, this may overwhelm the broadcast window.

If your station detected callsign in the path finder request someone sends, Your VarAC will respond.

Enable this option if you prefer to show only your pathfinder requests.



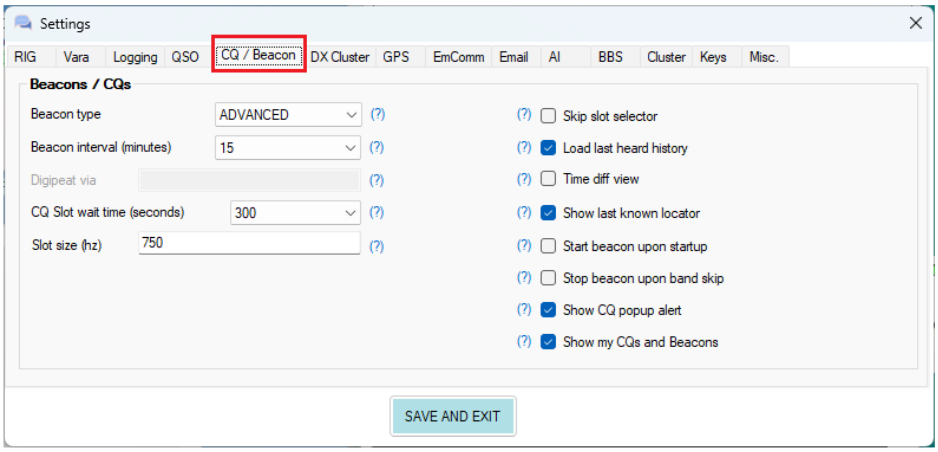
You can send a "Find Path To" query to the universe using the broadcast engine.

If another VarAC user decodes your query and has recently heard the target station you are interested in, they will respond with valuable information such as the frequency, the time it was last heard, and the SNR level.

This feature enables you to identify the optimal station through which you can relay your VMail to reach your final destination.

(Please note: Path finder is available under the advanced UI mode)

CQs/Beacon



Beacon type	see Beacon type
Beacon interval (minutes)	see Beacon interval (minutes)
Digipeat via	see Digipeat via
CQ Slot wait (seconds)	see CQ Slot wait
Slot size (Hz)	see Slot size (Hz)
Skip slot selector	see Skip slot selector
Load last heard history	see last heard history
Time diff view	see Time diff view
Show last know locator	see Show last know locator
Start Beacon upon startup	see Start Beacon upon startup
Stop beacon upon band skip	see Stop beacon upon band skip
Show CQ popup alert	see Show CQ popup alert
Show my CQ's and Beacons	see Show my CQ's and Beacons

Beacon type

VarAC offers two types of beacons

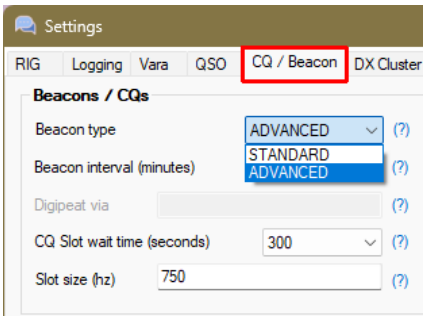
Standard Beacon	A basic beacon transmitted at the lowest possible speed to ensure better reception even under challenging SNR conditions (-22 dB). It includes only your callsign, with an optional flag indicating whether it is an EmComm beacon

Advanced Beacon	Sent at a slightly higher speed (reception possible down to -18 dB). See Advanced Beacon This beacon caries additional information such as your Grid locator, e-mail gateway indicator, and more.

Advanced Beacon

You now have the option to choose between a STANDARD or ADVANCED beacon.
What is an ADVANCED beacon?

- ✅ Uses the AX25-KISS protocol (similar to broadcasts).
- ✅ Operates at SL2 (Speed Level 2), allowing more data to be sent.
- ✅ Can still be decoded at -18/-19 dB (compared to -22 dB for standard beacons).
- ✅ Includes your Grid Locator.
- ✅ Carries additional data such as Email Gateway Announcements, EmComm station status, and more exciting features in the future.



Advanced Beacon Indication

The Beacon button now visually indicates when Advanced Beacon mode is active.

Advanced Beacon Warning with Digipeaters

Clear message shown when enabling advanced beacons on VaraFM with digipeaters, which are not supported.

Advanced Beacon Contact Logging

When sending an advanced beacon with a locator, the contact is saved to VarAC.db to retain the last known locator if the station reverts to a standard beacon.

One-Time Beacon

Simply **RIGHT-CLICK** the Beacon button, and VarAC will fire a single beacon instantly! You can use this feature whether your beaconing is turned off or even between beacon cycles when it's on.



Now, Let's Talk About QSOs!
You're already familiar with the Callsign History tool—it just got a bit of a facelift. But we always felt like something was missing... A central place where you can:

✅ See all your VarAC QSOs in one view
✅ Filter & sort your contacts easily
✅ Generate QSLs on the spot

Beacon interval (Minutes)

You can set VarAC to send beacons periodically to let other stations know you are on frequency.

If you check the "send beacons" checkbox, a beacon with your callsign will be broadcasted every few minutes based on your choice here.

A beacon will only be broadcast if the frequency is not busy for at least 1 minute to avoid running overactive QSOs or beacons.
Once you activate beacons, they will be sent for a period of up to 24 hours and then automatically disabled.

Digipeat

Applicable only for VARA-FM:
VaraFM allows you to digipeat your transmission through one or more parties.

If you wish to CQ/Beacon trough a digipeater, enter it is callsign here.

You can enter more than one callsign if you wish to relay your transmissions to a chain of digipeaters.
Use SPACE as a delimiter. Ex; "4Z1DIG 4Z2DIG"

CQ Slot wait seconds

When you Call CQ, you can wait for incoming connections on another frequency (Slot).

The amount of time VarAC will keep waiting for incoming connection on the Slot is determined by this parameter.

Skip CQ Slot

VarAC slot system allow you to call CQ on a shared calling frequency while encoding into the CQ call the frequency (slot) where you standing will be for an incoming call.

This checkbox disables this CQ mechanism.

Disable the slot - based mechanism **ONLY** if you use VarAC with VARA-FM or if you wish to run your own VarAC net on another frequency without slots.

Ignoring received CQ calls without a Slot ID (unless "skip CQ slot selector" is enabled)

IF YOU USE VarAC ON THE OFFICIAL HF CALLING FREQUENCIES, YOU MUST USE SLOTS
(Hence leave this checkbox un-checked)

Load last heard history

VarAC keeps a log of both CQ calls heard and the last beacons heard.

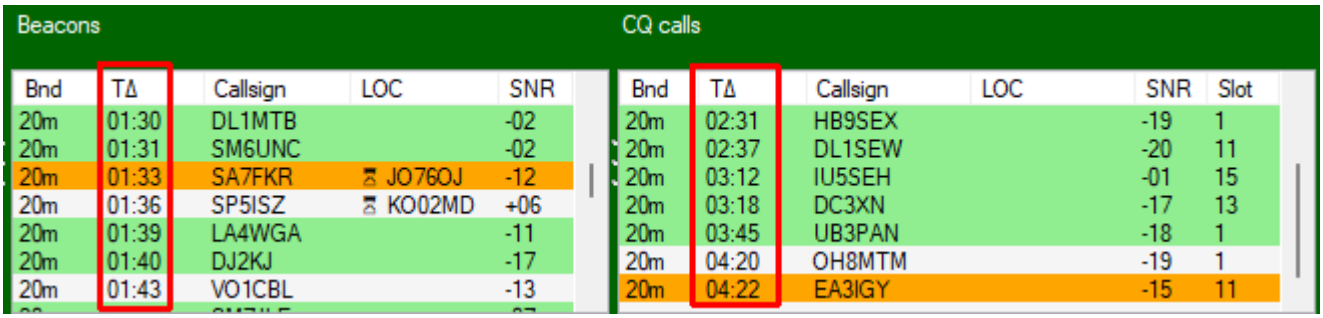
You can ask VarAC to populate the last heard lists upon startup from that log, so if you restart VarAC for any reason you will still see on screen the previous captured CQ calls and Beacons.

VarAC looks back only on the last one hundred rows of the last heard log file.
Please note that you may see less callsigns on the screen as VarAC only shows the last event per callsign.

Time different view

VarAC can show beacon/CQ times either as UTC time or as delta from UTC time.
For example, if a beacon was received at 12:00 and it now 12:02 it will be show as 00:00 in time diff view.
VarAC now displays beacon activity from the previous 24 hours on startup (previously 12 hours).

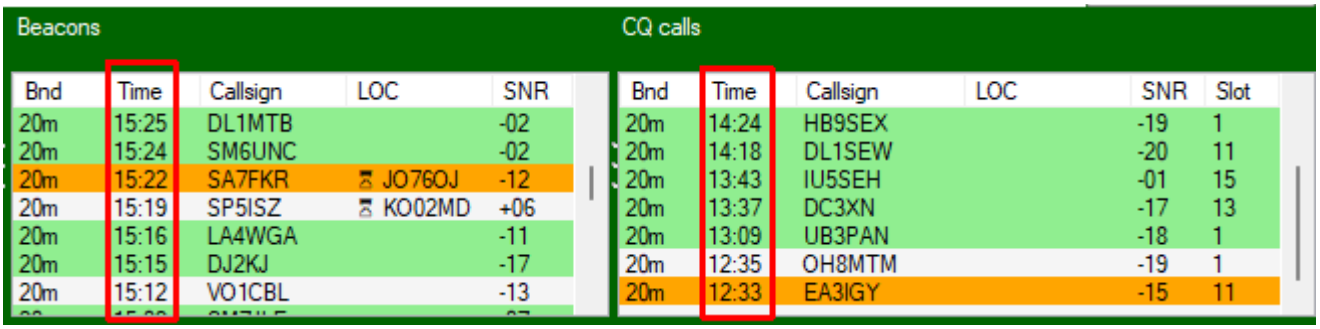
CQ time shown as time diff from UTC



Bnd	TΔ	Callsign	LOC	SNR
20m	01:30	DL1MTB		-02
20m	01:31	SM6UNC		-02
20m	01:33	SA7FKR	JO76OJ	-12
20m	01:36	SP5ISZ	KO02MD	+06
20m	01:39	LA4WGA		-11
20m	01:40	DJ2KJ		-17
20m	01:43	VO1CBL		-13

Bnd	TΔ	Callsign	LOC	SNR	Slot
20m	02:31	HB9SEX		-19	1
20m	02:37	DL1SEW		-20	11
20m	03:12	IU5SEH		-01	15
20m	03:18	DC3XN		-17	13
20m	03:45	UB3PAN		-18	1
20m	04:20	OH8MTM		-19	1
20m	04:22	EA3IGY		-15	11

CQ time shown as absolute UTC

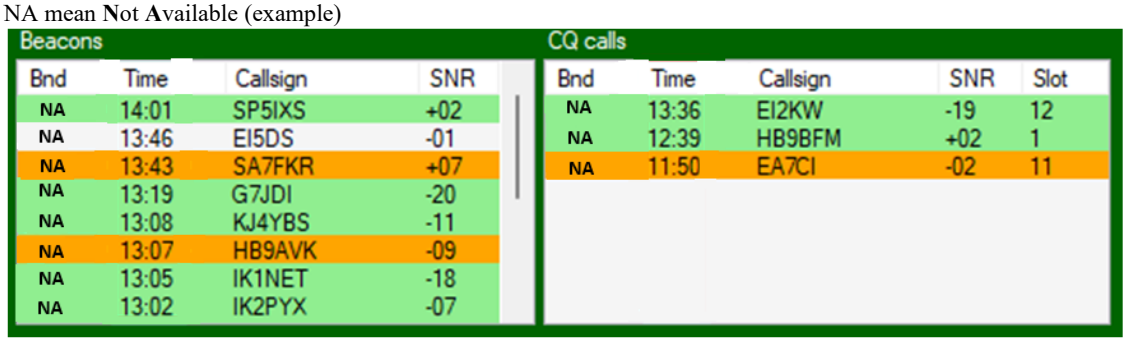


Bnd	Time	Callsign	LOC	SNR
20m	15:25	DL1MTB		-02
20m	15:24	SM6UNC		-02
20m	15:22	SA7FKR	JO76OJ	-12
20m	15:19	SP5ISZ	KO02MD	+06
20m	15:16	LA4WGA		-11
20m	15:15	DJ2KJ		-17
20m	15:12	VO1CBL		-13

Bnd	Time	Callsign	LOC	SNR	Slot
20m	14:24	HB9SEX		-19	1
20m	14:18	DL1SEW		-20	11
20m	13:43	IU5SEH		-01	15
20m	13:37	DC3XN		-17	13
20m	13:09	UB3PAN		-18	1
20m	12:35	OH8MTM		-19	1
20m	12:33	EA3IGY		-15	11

Band (Bnd)

NA mean **N**ot **A**vailable (example)



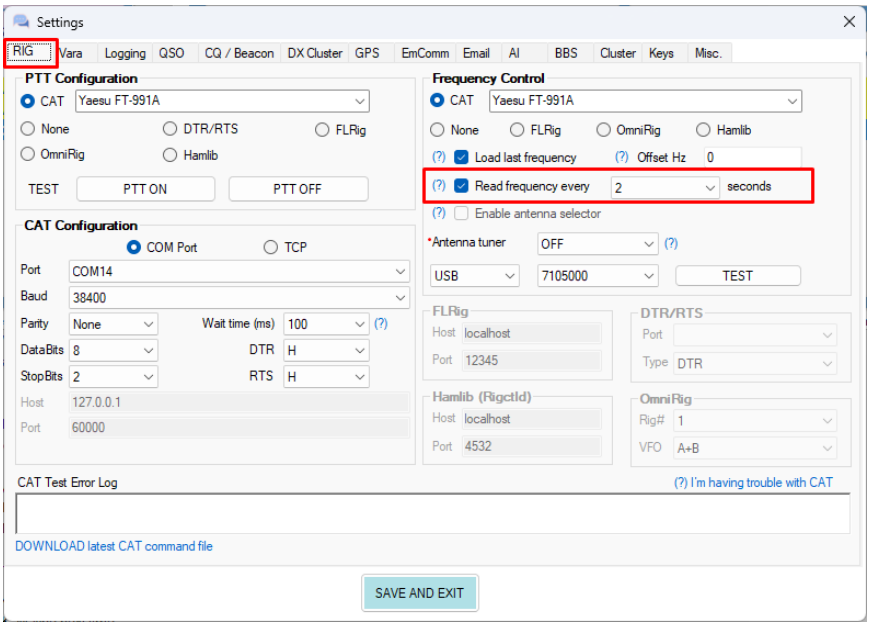
Bnd	Time	Callsign	SNR
NA	14:01	SP5IXS	+02
NA	13:46	EI5DS	-01
NA	13:43	SA7FKR	+07
NA	13:19	G7JDI	-20
NA	13:08	KJ4YBS	-11
NA	13:07	HB9AVK	-09
NA	13:05	IK1NET	-18
NA	13:02	IK2PYX	-07

Bnd	Time	Callsign	SNR	Slot
NA	13:36	EI2KW	-19	12
NA	12:39	HB9BFM	+02	1
NA	11:50	EA7CI	-02	11

If VarAC doesn't know what Freq or Band is in use at the moment, then you will see the "NA" in the Bnd column.

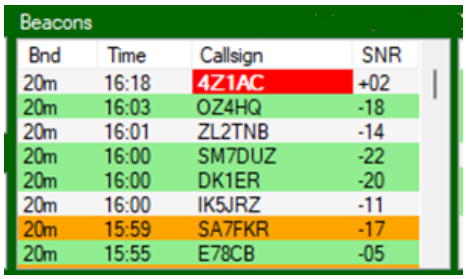
So, if you have the CAT on your TRX installed, then enabled this function in the Menu RIG - Frequency Control.

When "Read frequency every 2 seconds" is enabled, VarAC now verifies that the transceiver reached the requested frequency after a change. If not, it will retry up to 10 times.



Legend of color

Green	-	new callsign (you did not work)
Orange	-	New band for existing worked callsign
Red	-	This mean that a EmComm station is calling
No color	-	Worked before



Slot size (Hz)

Slots are like channels around the calling frequency, to allow multiple QSO's to take place simultaneously.

VARA HF default slots size is 750 Hz and VARA SAT is 2550 Hz.
However, you can set your own slot size, but keep in mind that your partners would need to use the same slot size on their end.

Show last know locator

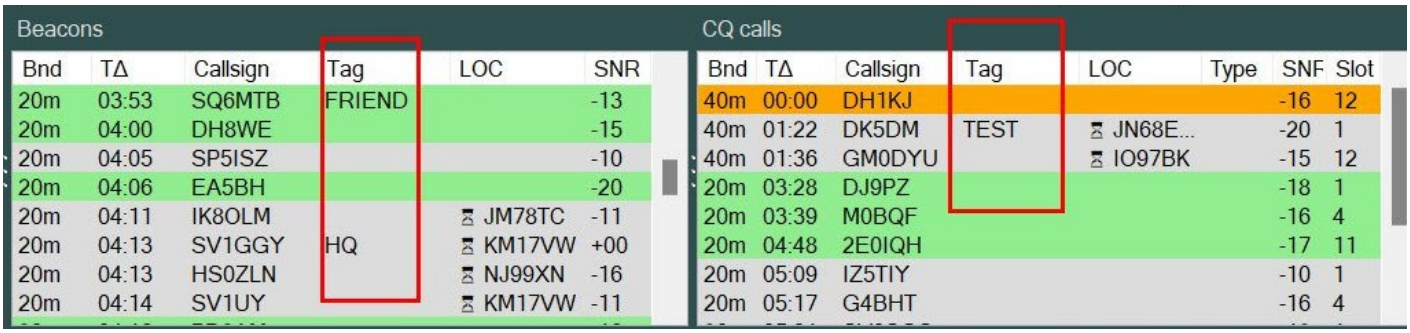
If a "Last Known Locator" is available for a CQ or Beacon, it will appear alongside it with a hourglass icon. If you prefer to disable this feature, you can easily do so in the settings menu.

Standard CQ/Beacon transmissions do not include locator data.

However, when enabled, if you receive a CQ/Beacon from a station you have previously communicated with, VarAC will display that station's locator on the CQ/Beacon 'Last Heard' list using the last know locator information.



Callsign tags



Let's talk about locators.
You may have noticed that Beacons and Standard CQs don't include locators.
Why is that?
It's a limitation of the VARA protocol, which prioritizes using the lowest possible speed in these scenarios allowing only the callsign to be transmitted.
But here's the good news
What if you've already had a QSO with that station and have a "Last Known Locator" saved from a previous exchange?
Now, we can put that information to good use!

Start Beacon upon startup

If you want VarAC to automatically start sending beacons after launch, enable this option.

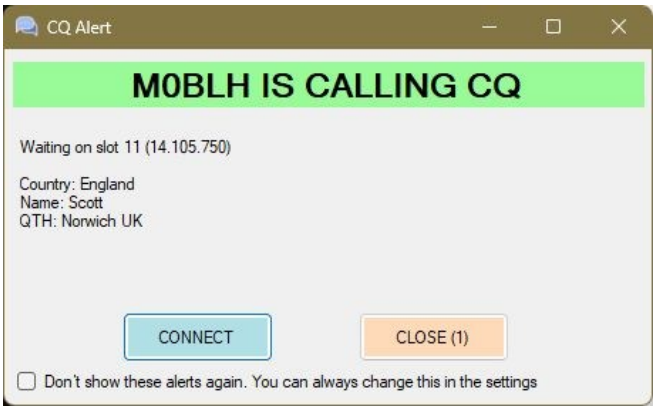
Ensure you are on a valid frequency at startup to prevent beaconing on the wrong frequency.

The same goes for the frequency scheduler—just set it up, and VarAC will handle the rest!

Stop beacon upon band skip

Stop sending beacons when changing bands.
This is useful if you don't have antennas for certain bands and wants to ensure no beacons are transmitted.

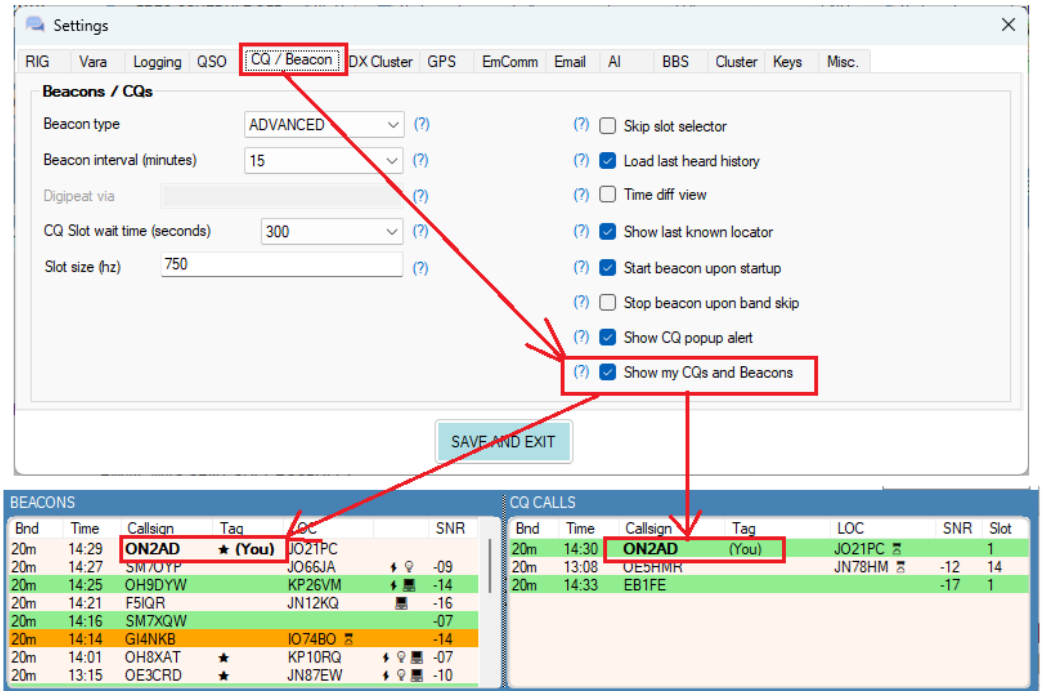
Show CQ popup alert



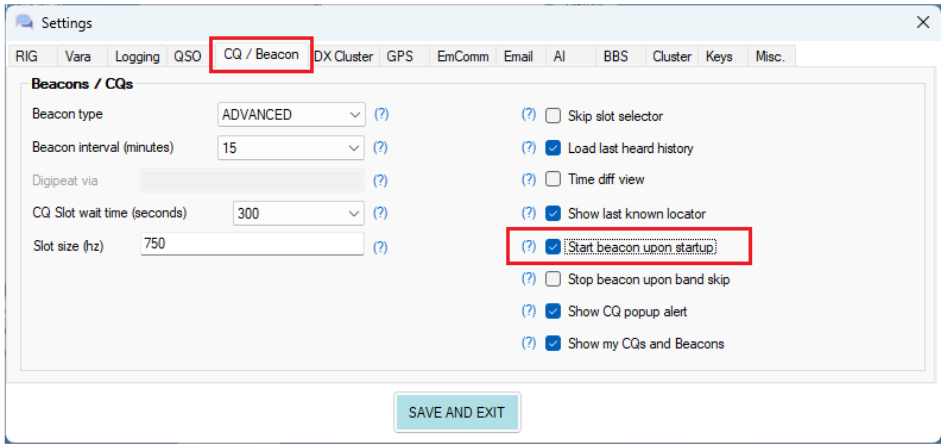
When a CQ is heard, VarAC will display a popup to catch your attention.
You can respond to the CQ directory from this popup.

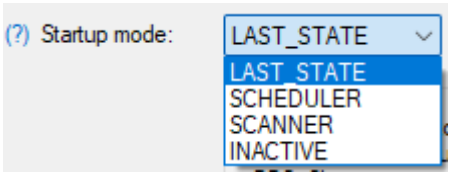
Show my CQ's and Beacons

Enable this to include your own Beacons and CQ in the last Heard Beacons and CQ lists.



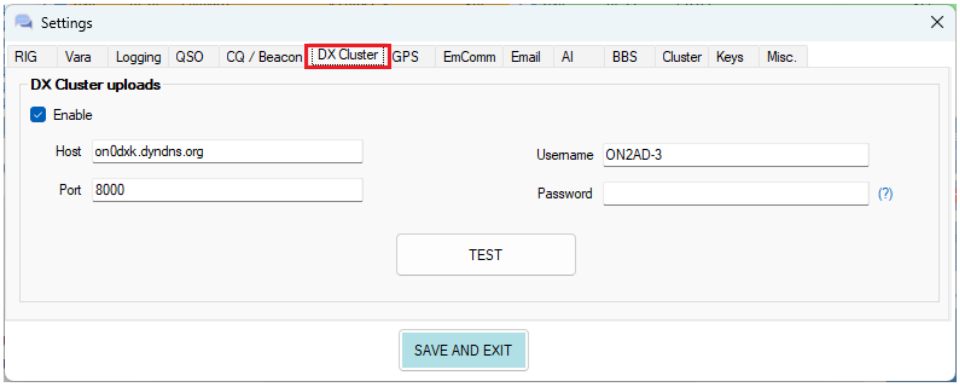
Auto beacon/frequency scheduler start





DX Cluster

DX Cluster uploads

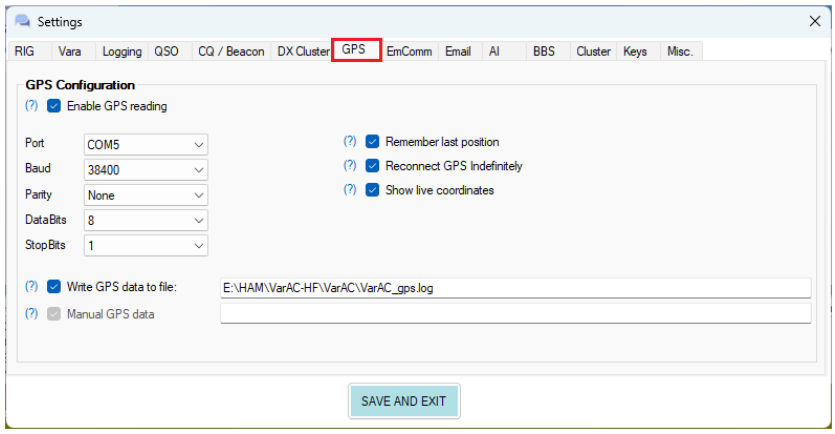


see Additional Cluster configuration

Enable	Check this to use the DX Cluster
Host	Fill in the Hostname
Host	ve7cc.net
Port	23

Username	Fill in your username
Password	Most DX Clusters do not require. Only a username that is your Callsign. If no password is required – leave this field empty.

GPS



Port	Select your COM port
Baud	Select your Baud rate
Parity	Select your Parity
DataBits	Select your DataBits
StopBits	Select your StopBits

GPS integration

- Read GPS data from NMEA GPS device and automatically updates your Locator.
- Support for GPS that sends GNGGA messages
- Adding also new tag <GPSLOC> to share your exact Long/Lat.
- Showing live GPS base grid locator on the bottom status strip.
- Hovering on it, shows the exact Lat/Long.
- Provide warning if no GPS data was received in 5 minutes.

Enable GPS reading	see Enable GPS reading
Remember last position	see Remember last position
Reconnect GPS Indefinitely	see Reconnect GPS Indefinitely
Show live coordinates	see Show live coordinates
Write GPS data to file	see Write GPS data to file
Manual GPS data	see Manual GPS data

Enable GPS reading

VarAC seamlessly integrates with NMEA-based devices via a COM port interface.

By leveraging this integration, VarAC is capable of efficiently reading GPS coordinates and swifty converting them into Grid locators.

This functionality proves invaluable for users engaged in activities such as outdoor activity or emergency communications operations (EmComm), ensuring that their Grid locator remains constantly updated and accurate, even while on the move.



Remember last position

Enabling this feature allows VarAC to store the last Grid locator from GPS.

Consequently, upon restarting VarAC, even in the absence of a connected GPS, it will retain and display your most recent Grid locator.

Reconnect GPS Indefinitely

If enabled, your latest GPS coordinates (latitude and longitude) will appear on the bottom strip of the main screen and update with each new GPS reading.

Show live coordinates

Each time GPS coordinates are received, VarAC will save them to a designated file.

This file can later be used for analysis with geo applications.

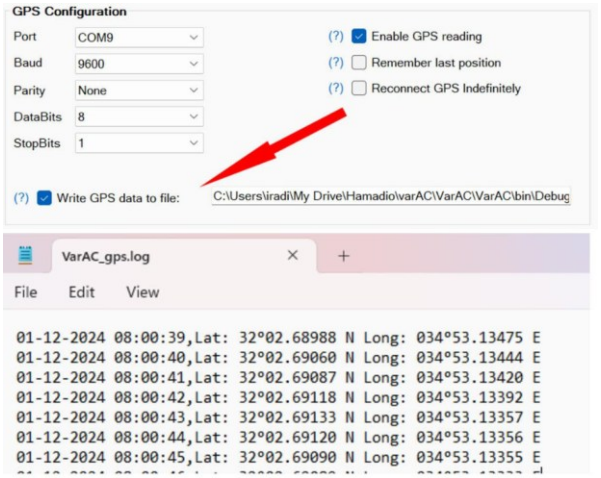
Write GPS data to file

Many of you use VarAC on the go, whether you're participating in POTA or on an EmComm mission.
Until now, VarAC only displayed your GPS position on the screen…

Now, you can also save those GPS readings to a file for logging and analysis purposes.

Just enable the feature in the settings menu, choose a log file name, and you're all set.

Your GPS data will be saved to disk automatically.



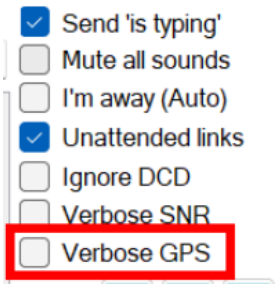
Manual GPS data

If you don't have a connected GPS or your GPS is temporarily unavailable, but you still want send GPS data (using the '<GPSLOC>' tag), you can set a static string containing your GPS coordinates.

GPS Data

GPS coordinates are now formatted for broader compatibility: "32°02.68263 N 034°53.13414 E".
No Lat/Long prefixes.

Verbose GPS



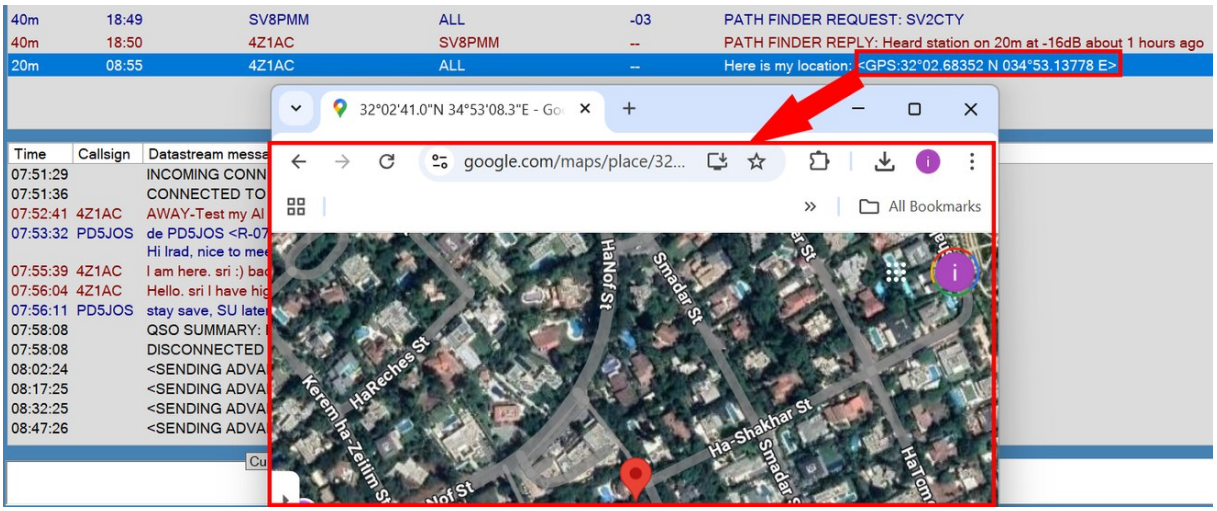
If your VarAC is connected to a GPS device, a new "Verbose GPS" checkbox will appear on your main screen. Enable it during a QSO, and VarAC will start sending your GPS location every minute.

Remark:
This works only if you are connected to someone

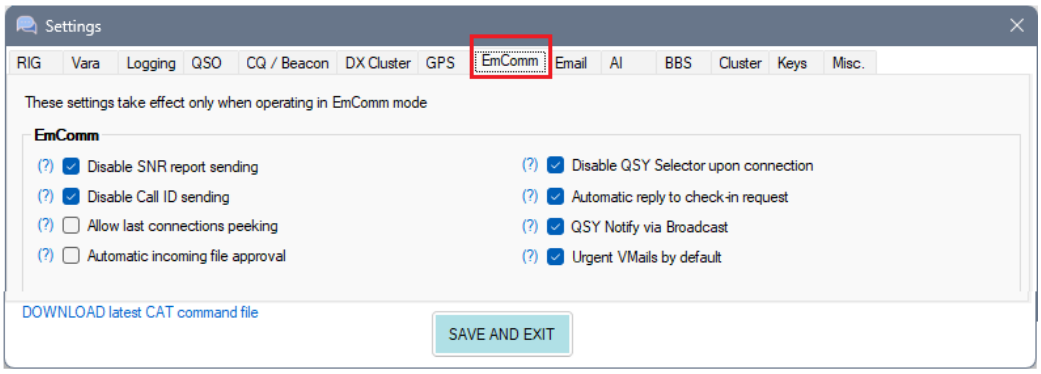
Remark: Verbose GPS will only visible after you have enabled "Enable GPS reading"

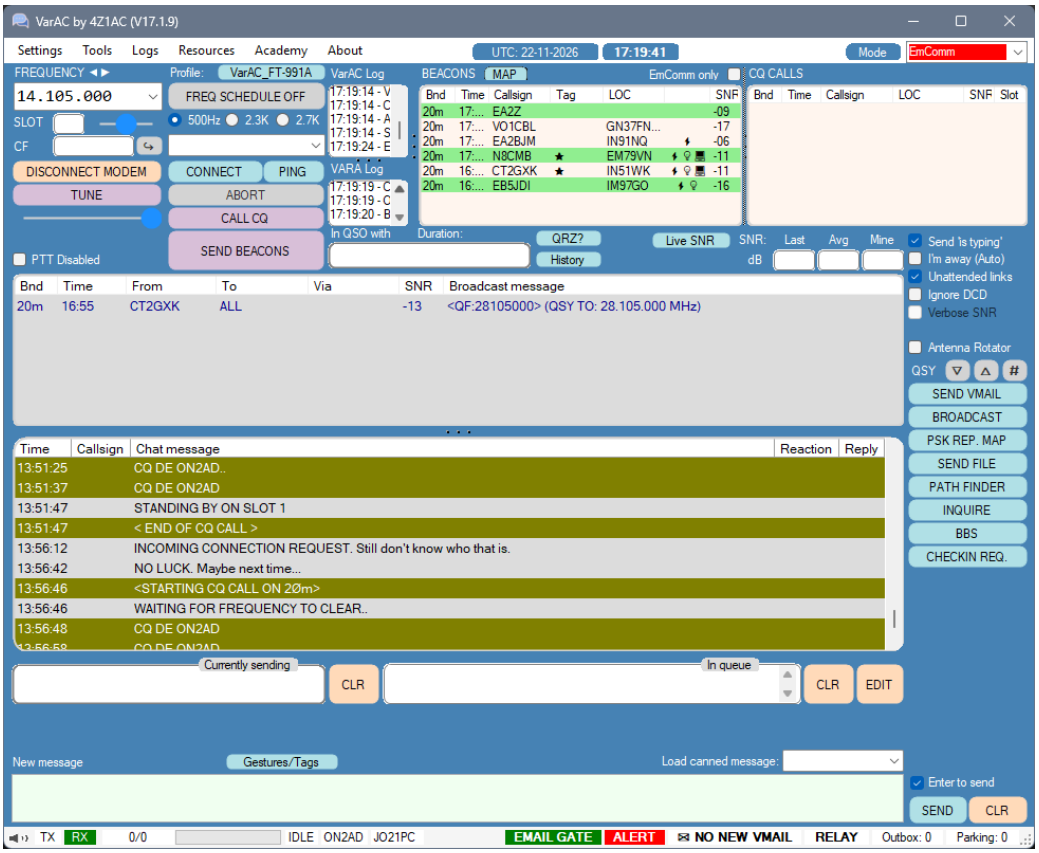
Google Maps & GPS

Many of you use GPS, or at least share a fixed GPS location when Inquired. We've added a neat enhancement: GPS tags are now clickable!
When a GPS location is shared, clicking it will open Google Maps at that exact spot.



EmComm





Disable SNR report sending	See Disable SNR report sending
Disable Call ID sending	See Disable Call ID sending
Allow last connections peeking	See Allow last connections peeking

Automatic incoming file approval	See Automatic incoming file approval
Disable Selector upon connection	See Disable Selector upon connection
Automatic replay to check- in request	See Automatic replay to check- in request
QSY Notify via Broadcast	See QSY Notify via Broadcast
Urgent VMails by default	See Urgent VMails by default

See also EmComm with VarAC

See also Inquire

Disable SNR report sending

In EmComm mode during a crisis, exchanging SNR reports may be unnecessary and could consume valuable transmission time and power.

Disable SNR sending will prevent SNR reports from being sent both upon connection and during a QSO.

Even when disabled, SNR's will still send under the following conditions:
- If you are pinged by another station.
- If you manually enable Verbose SNR.
- When an SNR is requested via an SNR inquiry.

Please be aware that if no SNR report is exchanged, the link may be recognized as a valid QSO for logging purposes.

Disable Call ID sending

Transmitting you callsign at the start of a QSO and periodically throughout is required by local regulations.

If you want to disable callsign transmission during an QSO while in EmComm mode (to conserve time and power), you can enable this feature.

Ensure compliance with local regulations before using this option!

Allow last connections peeking

In EmComm mode, it may sometimes be necessary to know what a fellow EmComm station was connected to previously.

By enabling this feature, a connected station will be able to query your last 5 connections (excluding pings) along with their start times.

Automatic incoming file approval

Incoming files exceeding a specified size (as defined in the QSO => File Transfer) require manual approval from the receiving side.

To automatically accept all incoming files, regardless of size, while EmComm mode, enable this feature.

Disable Selector upon connection

By default, when connecting to a station on the calling frequency, a QSY selector popup will appear, prompting you to perform a QSY.

In EmComm mode, you can disable this popup.

Automatic replay to check- in request

When an EmComm station sends a check-In request, your station will automatically respond by immediately sending a beacon.

NOTE:
Automatic replies will not be triggered on VarAC official calling frequencies.

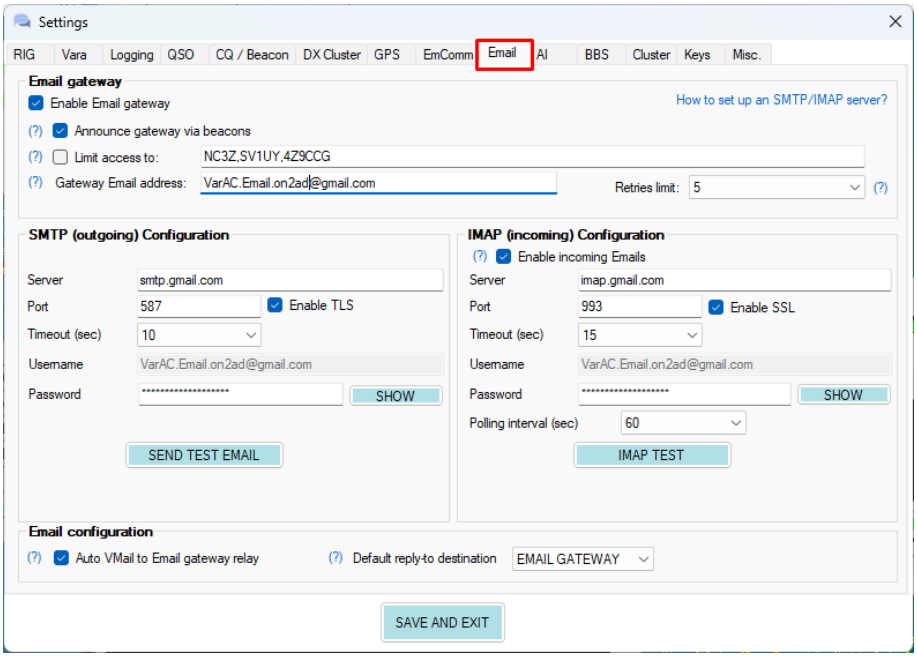
QSY Notify via Broadcast

When you QSY automatically using the frequency scheduler, a broadcast notification will send to all, letting them know which frequency you will be moving to.

Urgent Vmails by default

In EmComm mode, every new VMail you write starts already marked as **URGENT**
Uncheck this to start new VMails as normal. You can still mark a single VMail as urgent before sending it.

Email



Imagine this:

Your internet is down, but you need to send a critical email.

Important

Some virus scanners block certain ports and/or settings.
If you are running Norton, you must disable both,
Scan Inbound Emails (POP3 & IMAP)
AND
Scan Outbound Emails (SMTP).
You can still leave the overall Emil Protection on.

No problem!

You hop on the CF and - BAM! - you spot multiple stations broadcasting in their beacon that they operate an email gateway.
You compose a VMail, connect, relay, and receive a confirmation that your email has been delivered.
This is how it works:

Email gateway



1. Decide if you want to announce your gateway via your beacon or keep it private.
2. Choose whether to limit access by callsign or allow all users.
3. Enter the email address from which emails will be sent.

   Ensure that SMTP is enabled for this email to allow VarAC to send messages successfully.

Announce gateway via beacons

If your email gateway is open to all (not restricted to specific callsigns,) you can announce it through your beacons.

When other stations decode your beacon, they will see a clear indication that your station provides a public email gateway.

To activate this feature, you must:

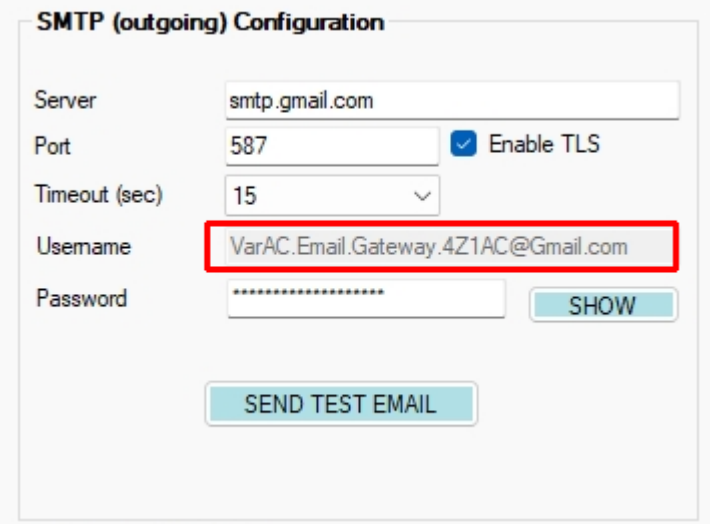
1. Disable the ‘Limit access to’ setting in the email gateway.
2. Set your beacon type to “ADVAVCED” under the ‘CQ/Beacon’ tab.

Retries limit

VarAC will attempt to relay messages through the email gateway up to a set limit. If sending fails, it will retry until the limit is reached.

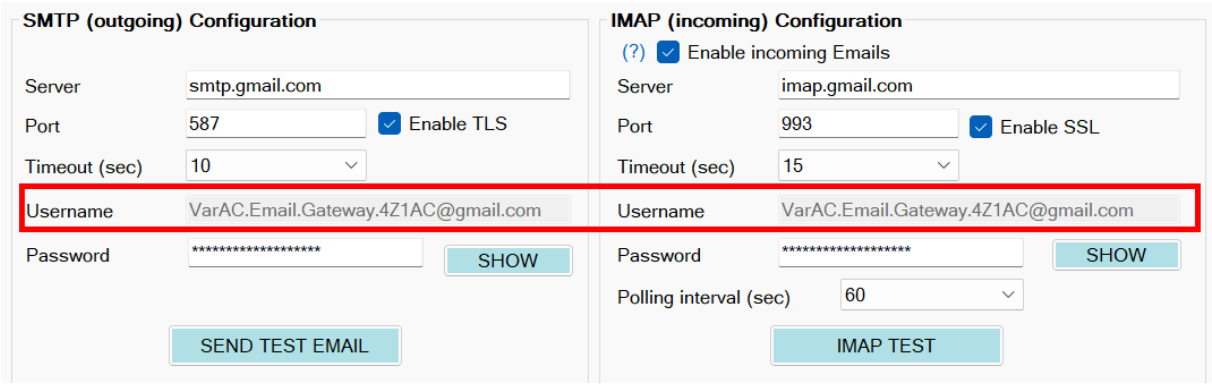
Once exceeded, the email gateway will shut down until the issue is resolved.
A visual indication will appear on the bottom status strip of the main VarAC screen.

SMTP (outgoing) Configuration

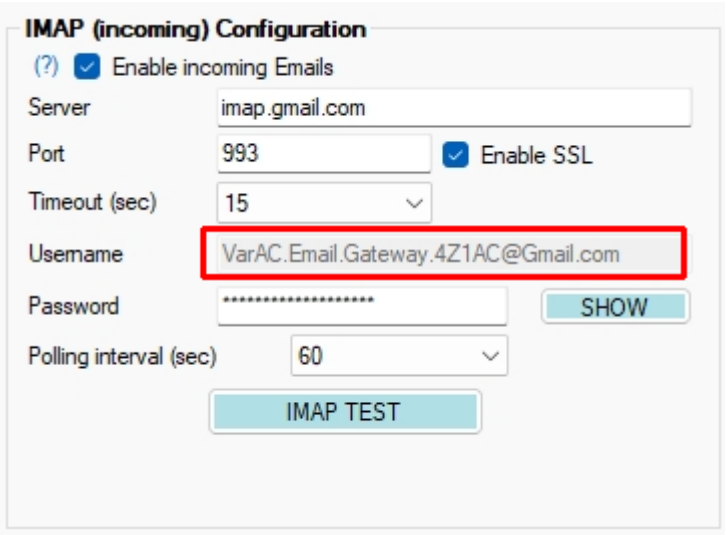


Set up an SMTP email account.
You can use Gmail or any other provider.
To keep things separate, consider creating a dedicated account just for SMTP forwarding.

See this guide for setup instructions.



IMAP (incoming) Configuration



The Email Gateway can send VMails to email addresses via SMTP, but it can also transfer emails – and their replies – back to VMail recipients over the air using IMAP.

Enable this option if you want the gateway to monitor its email account for new incoming messages and forward them as parking emails to your VMail inbox.

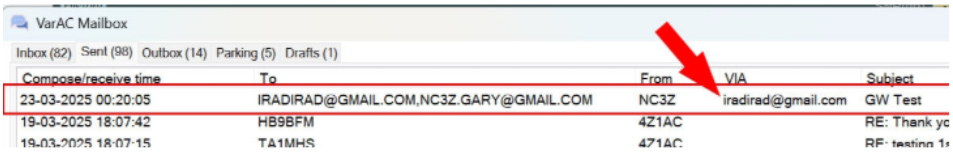
Recipients can then collect these messages using the standard relay notification method.

Email configuration

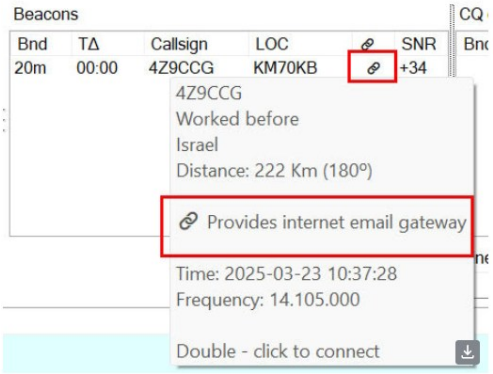
Auto VMail to Email gateway relay	When the station you're connected to indicates that a VMail-to-Email gateway is available, VarAC will automatically relay any VMails in your outbox or parking box that are addressed to an email. If this option is disabled, you'll need to manually send them from your outbox or parking box.
Default reply-to destination	Select the default method for VMail messages sent to email addresses via a gateway. You can always change this settings for individual VMail messages while composing them. **** YOUR EMAIL **** The recipient replies directly to the email address you specify,. By default, this is the email address configured in your profile, but you can enter a different one if needed. **** EMAIL GATEWAY **** The recipient replies through the gateway. Their response is delivered to the gateway's mailbox, stored as a VMail, and held for you to collect. You will receive a relay notification on your next beacon when a reply is waiting.

For Email gateway operator

When your gateway relays a message, it will appear under the "SENT" tab with the VIA field showing your own email address.



And this is how your email gateway announcements will appear to others in your beacon



For Email gateway users

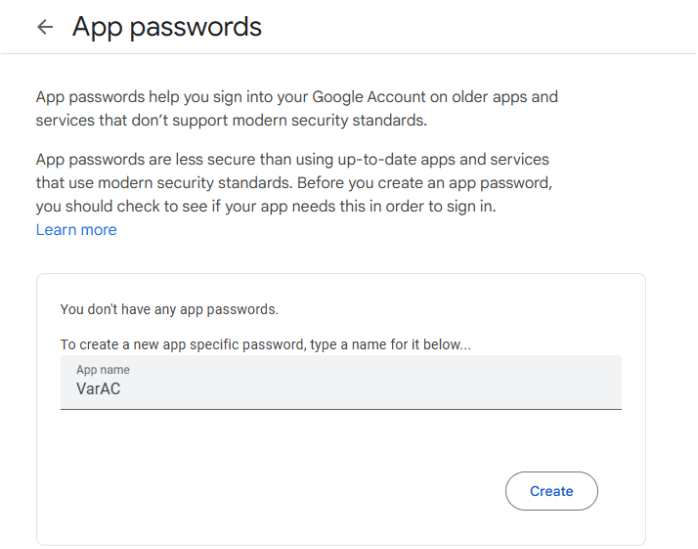
If you want to send a VMail to Email, here's what you need to know:

✅ In the email composing section, you'll see a new "Send to Email" button—just tick it!
✅ A new, user-friendly dropdown will show your recently contacted Emails/Callsigns for quick access.
✅ Under Settings, you can enable automatic email sending whenever VarAC connects to an Email gateway station.



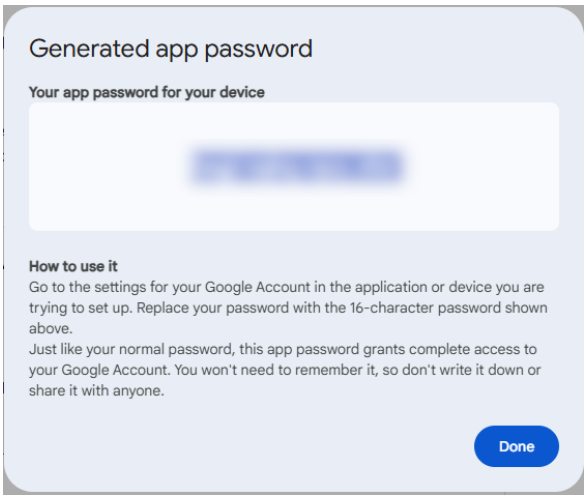
Gmail account as a VarAC e-mail Gateway setup

1. Go to : https://myaccount.google.com/apppasswords
2. Create a new app password. You can call it “VarAC”



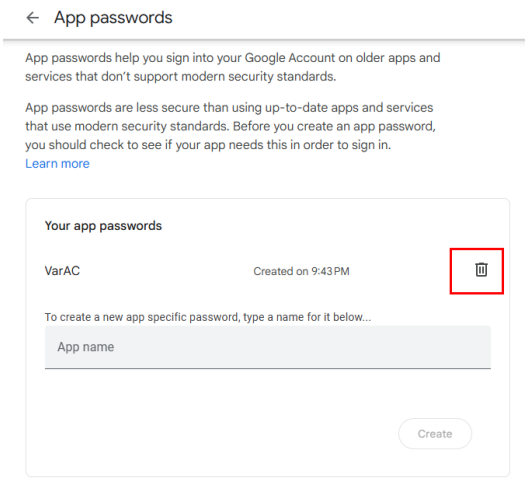
Copy the password you got

1. Go to VarAC settings screen -> Email tab
2. On the top left – Check the “Enable Email gateway”
3. Enter your Gmail email address
4. Set the SMTP password to the **“App password”** you got from your Gmail account.
5. Make sure the following are configured:
    a. **SMTP server:** smtp.gmail.com
    b. **SMTP port:** 587
    c. **Enable TLS** is checked
6. That’s it. Click “SEND TEST EMAIL” and make sure you get a SUCCESS message. If it fails – inspect the VarAC.log file for details.

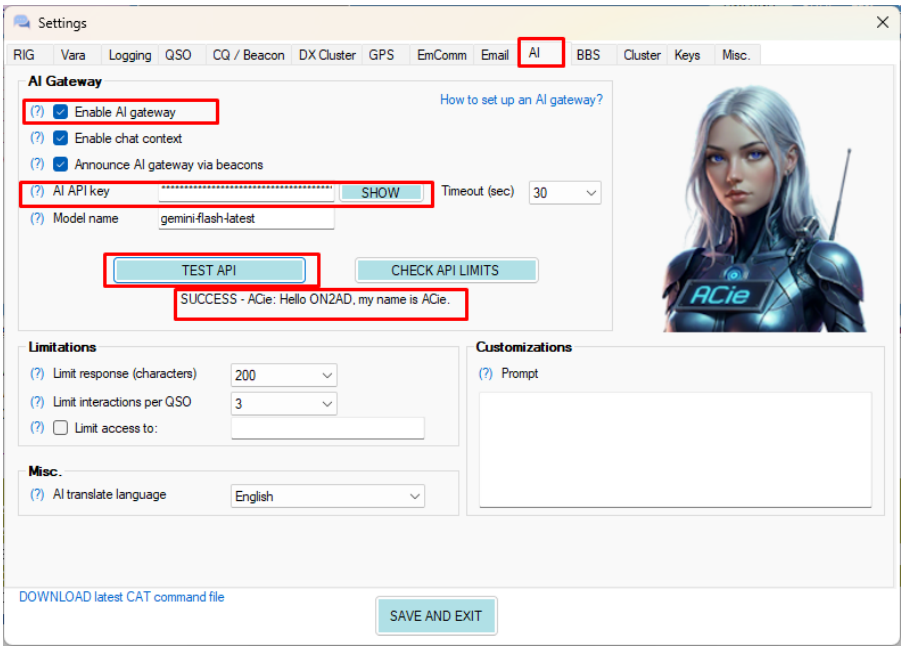


Appendix:

If you ever want to delete this app password – simply go again to: https://myaccount.google.com/apppasswords and delete it:



AI

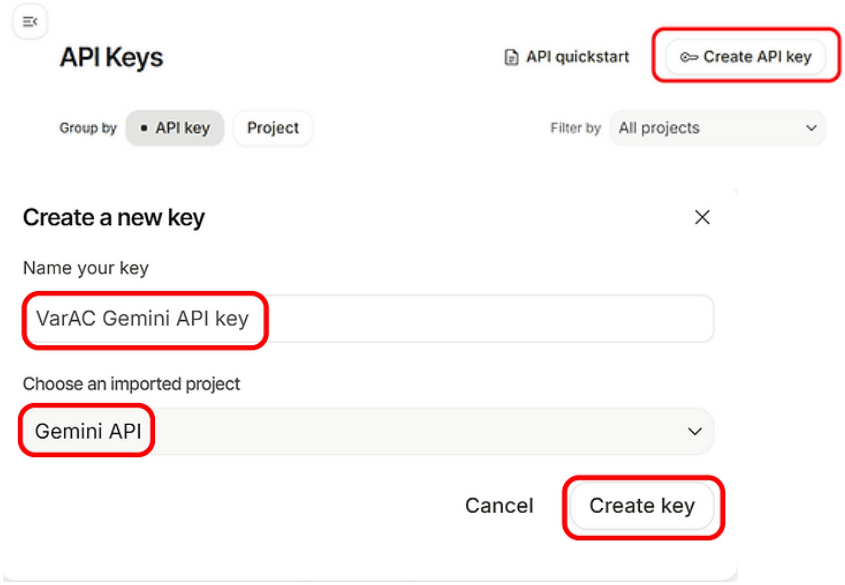


VarAC AI Gateway

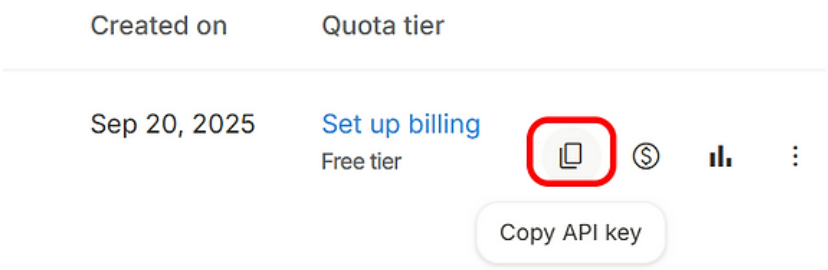
How to set up an AI gateway

If you'd like to run your own AI gateway, here's what you'll need to do:

1. VarAC uses **Google Gemini** as its AI engine. You can use the **free tier** of Gemini there's no need to purchase a pro license. Just make sure you have a **Google account**.
    a. Generate an **API key** by visiting Google AI Studio.
    b. Click **"Create API Key"** in the top-right corner of the page.
    c. Give your key a **meaningful name**, such as **"VarAC Gemini API Key."**
    d. In the dropdown menu, select **"Gemini API."**
    e. Then click **"Create key."**



    f. Great you now have your API key!
    g. Click the **"Copy"** icon to copy your Gemini API key to your **Clipboard**.



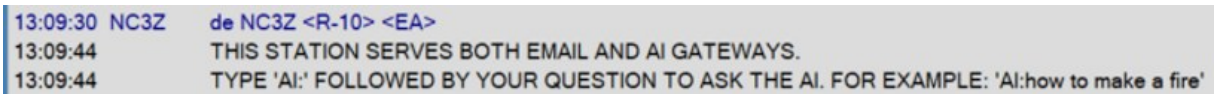
h. Open your **VarAC Settings** and navigate to the **"AI"** tab.
i. Check the box **"Enable the AI Gateway"** and paste your **API key** in the appropriate field.
j. Click **"TEST API"** to verify your connection.
k. If everything is set up correctly, you'll see a **"SUCCESS"** message."
l. That's it! Your AI gateway is now ready to serve the community, allowing others to query important information from the internet.
m. You can now explore the additional options on this AI settings tab, including the limitations you can apply to your AI gateway.

Please note:

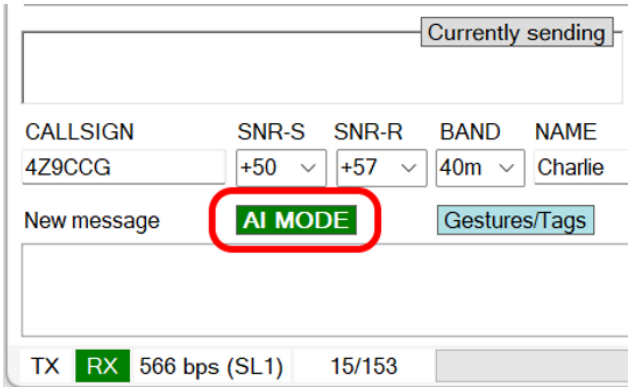
Your AI gateway is fully aware of the **callsigns** involved in the **QSO**, as well as the **names**, **QTH**, **locators**, and your **rig** details. **Acie** uses this information to personalize her responses and can also leverage it to retrieve context-based information for example, the **local weather** at a station's location.

For AI gateway users

1. When you connect to a VarAC station that also operates an AI gateway, you'll be notified immediately upon connection.



2. To start asking questions, simply begin your message with **"AI:"** followed by your question.
3. When ACie responds for the first time, your VarAC will automatically enter **AI MODE**, indicated by a **green label**.
4. From that point on, you don't need to prefix your messages with **"AI:"** VarAC will handle that for you as long as you remain in **AI MODE**.
5. When you tell ACie that you want to end the conversation, or if you click the **AI MODE** label, VarAC will exit **AI MODE**.



AI API Timeout

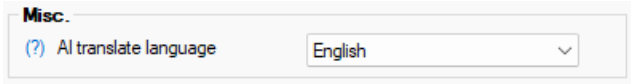
VarAC now handles AI API request timeouts and notifies the other side if the timeout is exceeded.

AI commands

See AI Tags

Misc.

AI translate language



When connected to an AI engine, you can use it to accurately translate text in various areas such as Broadcasts, Chats and VMails.
Select the default language you want AI translations to use.

So, you're out in the field no internet, and suddenly you're facing a challenge. Maybe it's a broken engine or a survival situation, and you realize you don't have the skills you need. You can't help but wish you had access to the internet the one thing that could give you the information to save the day.

However, browsing the web over radio communication can be extremely slow and often impossible. Even a simple HTML page can weigh tens of kilobytes, making it unsuitable for such low-bandwidth links. But if you think about it, in most cases you're only looking for an answer to a question not the entire webpage filled with unnecessary data.

Meet **ACie** a radio-based (HF/VHF/SAT) AI assistant that can fetch the information you need straight from the internet. All you have to do is connect to a VarAC station operating as an AI gateway, and ACie will answer your questions intelligently adapting to the challenging bandwidth limitations of radio communication.

Now we'll walk through how to set up an AI gateway to serve others (or yourself in the field), and how to connect to and use an AI gateway hosted by someone else.

AI Gateway

Enable AI gateway

Enabling the gateway turns your VarAC station into an internet gateway powered by Acie, an AI agent.
Instead of inefficient web browsing with heavy HTML overhead, Acie provides a streamlined way to access online information.
Other operators can simply ask questions like "How to build a field Yagi wire antenna?" and get direct answers through your station.

Enable Chat Context

Acie (the Acie Agent) can operate with or without chat context. When context is enabled, Acie remembers the entire conversation, allowing her to consider everything you've said or asked previously.
If context is disabled, she will respond to each question independently, without recalling earlier messages.
For smoother, ongoing conversation, we recommend keeping context enabled.

Announce AI gateway via beacons

If your AI gateway is open to all (not restricted to specific callsigns), you can announce it through your beacon.
When other stations decode your beacon, they will see a clear indication that your station provides a public AI gateway.

To activate this feature, you must:

- 1. Disable the "Limit access to" settings in the AI gateway.
- 2. Set your beacon type to "ADVANCED" under the "CQ/Beacon" tab

AI API key

VarAC leverages Google Gemini under the hood. Gemini provides both a free tier "with reasonable chat limits" and a paid option. For most users, the free tier is more than sufficient.

How to generate a free Google API key see For AI gateway operators:

Model name

The AI Gateway uses Gemini models. Since the model name may change from time to time by Google, you can update it here.
The default model is 'gemini-flash-latest'.

PLEASE NOTE: Do not change this setting unless you know the exact model name you want to use.

Limitations

Limit response (characters)

You can set a character limit for AI responses, giving precise control over the data transmitted over the air and helping ensure it doesn't take too much time or bandwidth.
For an average HF link, we recommend keeping responses around 200 characters, wile for FM use, you can allow a higher limit.
Please note that AI responses may slightly exceed the set limit; typically, an overage of 10-20% is acceptable.

Limit interactions per QSO

You can limit the number of questions an operator can ask the AI during a QSO.
This helps prevent users from exceeding the limits set by your AI provider (Gemini) and ensures operators don't abuse your AI service.
Set to 0 if you don't want to enforce a limit.

Limit access to

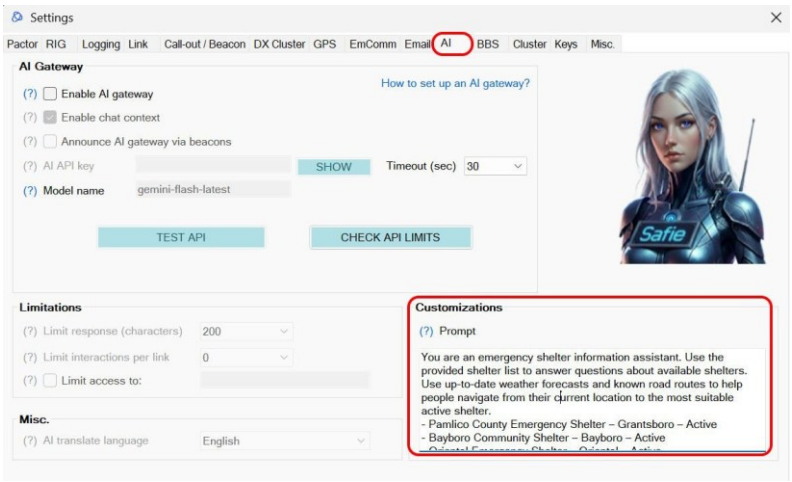
You can restrict your AI gateway service to specific callsigns.
Simply provide a comma-separated list of the callsigns you want your AI gateway to serve

Customization

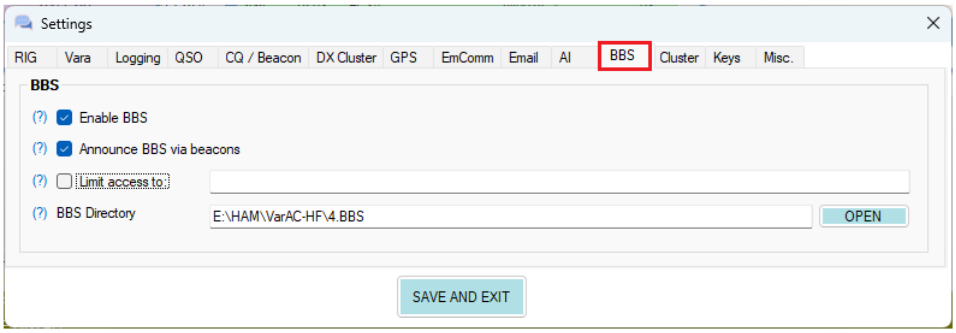
Prompt

If you want to customize your AI agent's responses, -you can add additional instructions that will be used alongside the build-in, hard-coded instructions.
You can use these instructions in many ways, including:

- Narrowing the agent's responses to a specific domain or topic.
- Controlling the tone and style of its responses.
- Providing additional context or data that the agent should consider when answering.
- Defining specific rules or preferences for how it should respond.



BBS



When someone connects to you, VarAC will automatically inform them of all the services you provide, including your BBS.
To use your BBS, they will first need to QSY away from the calling frequency, If they click the new BBS button on the right, VarAC will query your shared BBS directory and display its contents on the remote side, including each file's creation time and size.

Files that exceed the download size limit configured in their VarAC will be highlighted in red, indicating that the transfer may take a significant amount of time.
To download a file, all they need to do is double-click it and that's it.
The file transfer begins immediately.

Enable BBS

BBS is a file server that let stations connected to you download files directly from your system.
You can store all shared files in a dedicated directory, and any connected station can view the file list and download what it needs.
Files can be any type-images, executables, or even simply text files that function like an old-fashioned bulletin board.

Announce BBS via beacons

If your BBS is open to all (not restricted to specific callsigns), you can announce it through your beacons.
When other stations decode your beacon, they will see a clear indication that your station provides a public BBS.

To activate this feature, you must:

- 1. Disable the "Limit access to" settings in the BBS.
- 2. Set your beacon type to "AVANCED" under the "CQ/Beacon" tab.

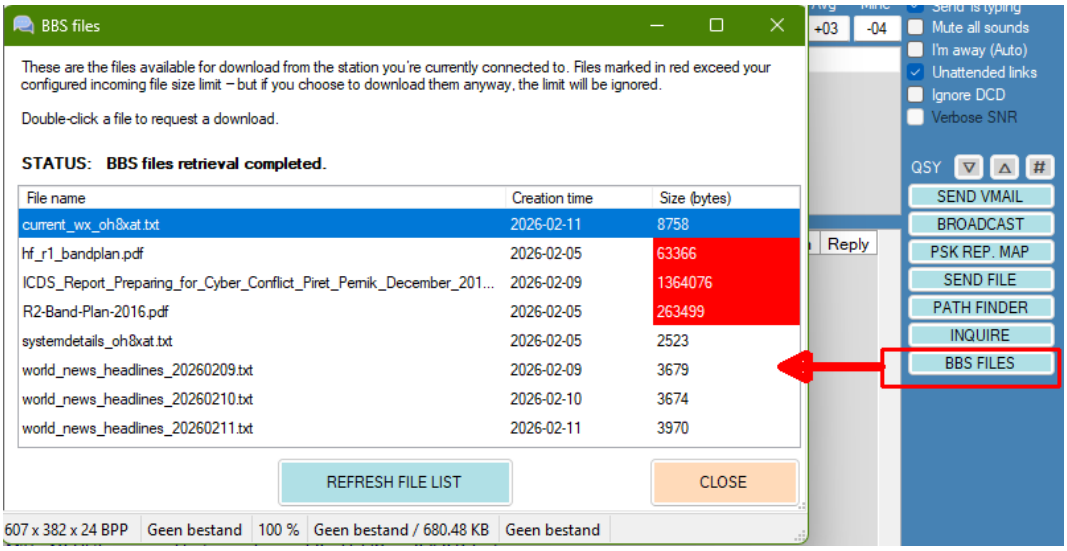
Limit access to "Callsigns"

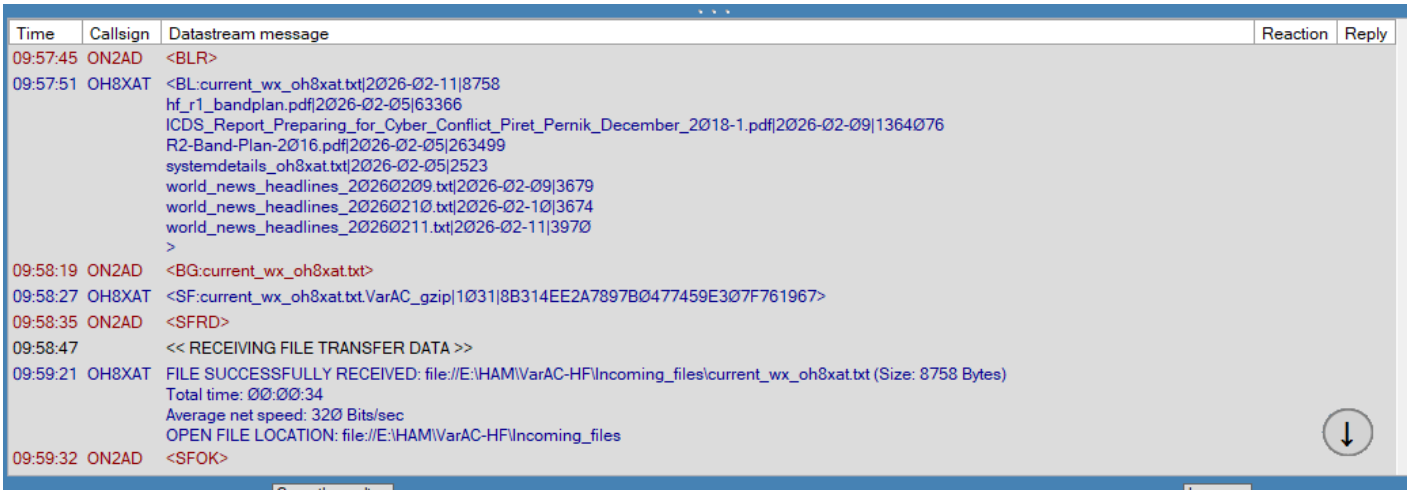
You can restrict your BBS service to specific callsigns.
Simple provide a comma-separated list of the callsigns you want your BBS serve.

BBS Directory

All files stored in the BBS directory can be discovered and downloaded by connected stations.
Please make sure to scan these files for viruses

Access the BBS





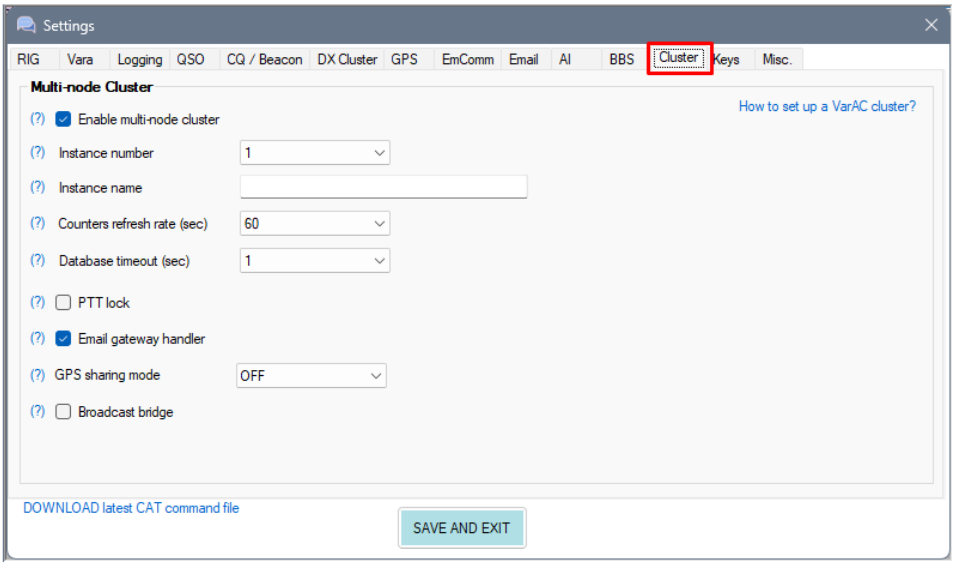
Safer BBS files

Incoming BBS files get more checks: BAT file suffixes are renamed, more file types are blocked from running automatically, and file names are sanitized.

BBS commands

See BBS tags

Cluster



How to set up a VarAC cluster

See VarAC Cluster (Multiple instances) - Quick configuration guide
See VarAC Cluster (Multiple instances)

Enable multi-node cluster

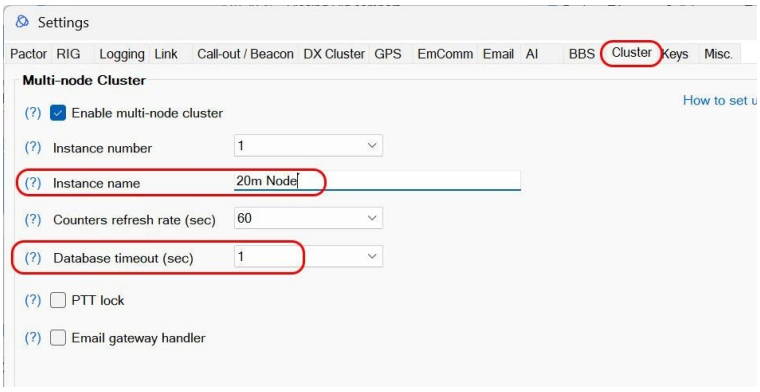
A VarAC Cluster is an advanced setup that enables you to run multiple VarAC instances simultaneously, all connected to a shared database. Each instance operates with its, own RIG and VARA modem, yet they work in a sync to support powerful cross-band capabilities such as VMail forwarding and the Email gateway. Because all instantly use the same shared database, any incoming VMail becomes instantly accessible across all bands. This effectively turns VarAC into a cross-band repeater for both VMails and Email messages.

Additionally, the cluster allows other to perform tasks like 'last heard peaking' helping them identify which band a specific callsign was recently heard on, whether through a beacon or CQ.

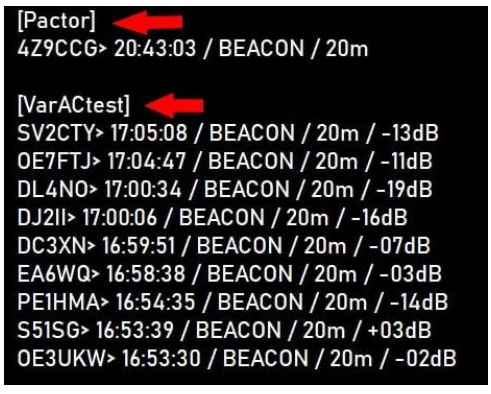
Create multiple VarAC profiles.	Each should have its own VarAC_X.ini file, configurated to work with a dedicated VARA modem and RIG.
Launch all profiles simultaneously	By default, they will connect to the same shred VarAC database (VarAC.db)
Enable Cluster Mode	In the settings of each instance, activate Cluster Mode and assign a shared Cluster ID to all.
Adjust additional parameters	Explore and configure other available cluster settings as needed (see below)
Email Gateway note	If you're running a VarAC Email Gateway, only one instancy should be designated as the gateway handler. Refer to the Gateway Handler settings help for more details

Instance number

Each VarAC instance must have a unique instance number. This number is essential for various cluster operations, such as node-level logging, PTT lock synchronization, and identifying which instance is managing the Email Gateway.



Cluster Last Heard, grouped by node



When a cluster node is actively engaged in a QSO or link, its instance number will be displayed on the consoles of all other cluster nodes.

Instance name

Each instance can have a meaningful name. This will be displayed wherever data is presented at the instance level.
If no name is specified, the instance ID (number) will be used instead.

Counters refresh rate (sec)

VarAC displays various counters, such as incoming VMail, relay notifications, alerts, and more. While each VarAC cluster reflect the most up-to-date values.

This parameter defines the interval (in seconds) at which a VarAC instance fetches updated counters from the shared database and updates the UI accordingly.

There is no more need to modify these settings during standard operation.

Database timeout (sec)

When working with a cluster, multiple VarAC instances read and write to the same database, which acts as a shared 'brain'. This can cause temporary database locks.
By default, VarAC waits up to 1 Second for a database transaction to complete.

If you see frequent database errors in the VarAC log, gradually increase this value until the errors stop.

PTT lock

If you're running VarAC on a shared RIG that supports multi-band operation, such as a modern SDR, but only allows transmission on one band at a time, enable the PTT lock.

When one VarAC cluster node is engaged in transmission, it will signal all other nodes to disable their PTT and refrain from transmitting until the active transmission is complete.

When a PTT lock is in effect, the non-transmitting nodes will display a visual indication on their consoles.

Email gateway handler

In a VarAC cluster that also functions as a email gateway, only one node should be designated as the gateway handler. This prevents multiple nodes from simultaneously sending or receiving the same emails, which could lead duplicate incoming and outgoing messages.

Ensure that only on node in your VarAC cluster in configured as the email gateway handler.

GPS sharing mode

If you want to serve GPS data to all your Cluster nodes, you can configure one node to access the GPS device and act as the publisher, while all other nodes consume this data and use it when needed.
Here is the option you can set for each node:

PUBLISHER	This node read's its GPS position and publishes it to the Cluster with every keepalive.
CONSUMER	This node has no GPS device and uses the position received from the most recent publisher in the Cluster.
OFF	No GPS data sharing.

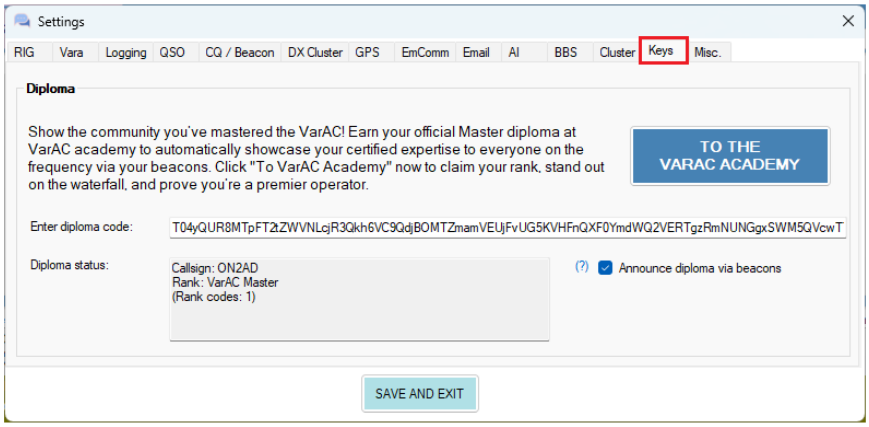
Broadcast bridge

The broadcast bridge lets a broadcast heard on one cluster node be sent again by every other node, so a message from a local VHF/UHF net reaches a wide-area HF net and the other way around.

A station asks for the bridge by adding <CB> anywhere in its broadcast text.
Each node sends the copy as 'AUTHOR>text', trimmed to the broadcast length allowed on its own band.

A station linked to this node can also type <CB:text> to broadcast that text on all other nodes, and will get confirmation from every node that sent it.
When the bridge is off, <CB> broadcasts are ignored and <CB:text> requests are rejected.

Keys



VarAC Academy VarAC Academy

Diploma

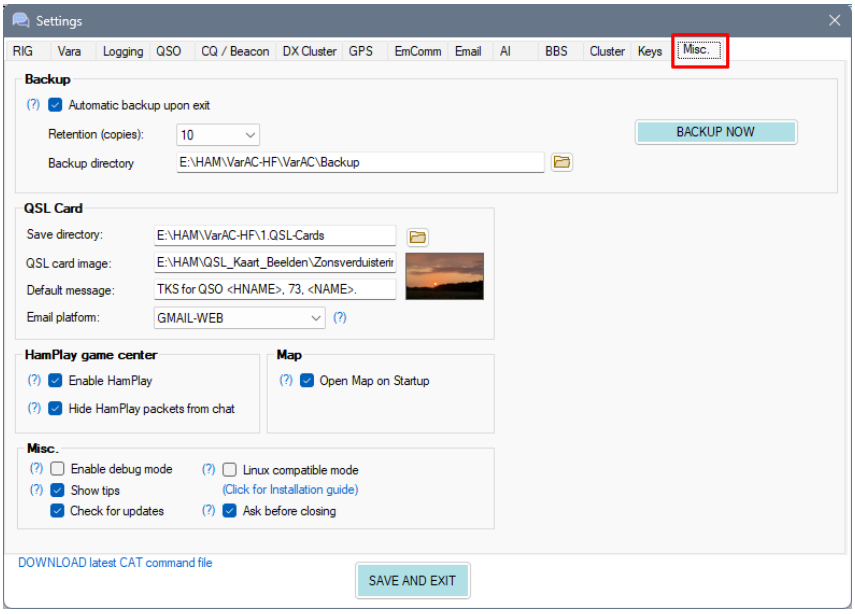
TO THE VARAC ACADEMY

Show the community that you've mastered VarAC! Earn your official Master's degree at the VarAC Academy to automatically showcase your certified expertise to everyone on the frequency via your beacons.
Click "Go to VarAC Academy" now to claim your rank, stand out on the waterfall, and prove that you are a top operator.

Announce diploma via beacons

If you have achieved a diploma, you can announce it through your beacons.
When other stations decode your beacon, they will see a clear indication of your diploma, helping your beacon stand out from the rest.
See Academy

Misc.



Retention (Copies:
select the copies you will have

Backup directory:
Type who you will backup your files

Backup

When enabled, closing VarAC will trigger a backup of all important files into a ZIP archive.
These backups can be used to restore VarAC, either locally or on another computer, preserving all data and configuration.
Backups include the actual database file when using a custom database file path.
Please note that backups might take a few seconds to complete, depending on the size of your VarAC database and log files

QSL Card

Default save directory	Select here the folder wo you will save the received QSL Cards
QSL card image	Select here the folder of your QSL card Images that you will have on your QSO card
Default message	Type here the info, greetings etc you will.
Email platform	When sending a QSL, you can choose which application or website to use

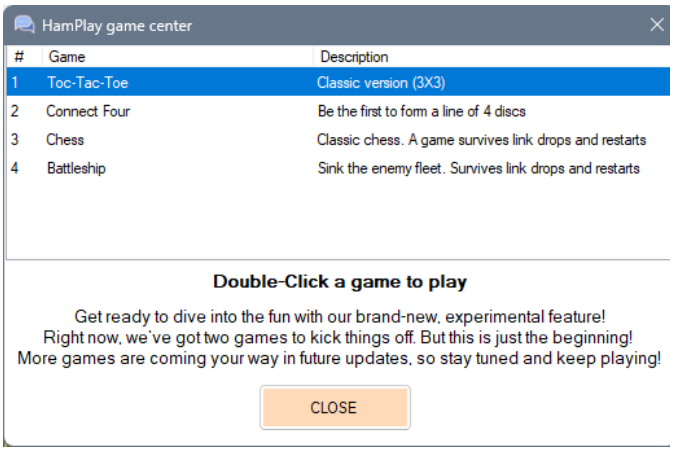
	You'll still need to attach the QSL card manually (from a file or clipboard), but VarAC will automatically fill in the recipient, sender, subject, and message body.

See also the "Callsign History" in the menu Tools
Or see QSL Card creating

HamPlay

Enable HamPlay	HamPlay is VarAC's game center where you can play games with your QSO partner. If you disable this feature, VarAC will automatically decline any HamPlay invitation.
Supress HamPlay move packets from datastream	By default, all incoming and outgoing traffic is displayed in the Datastream. During a HamPlay game, the stream can become cluttered with numerous game move transmissions. Enable this option to hide those transmissions and keep the chat cleaner and clearer during a HamPlay game.

Ham-Play Game center



To play a game, you must connect to someone first to invite them to a game.

Once you've connected with someone and moved off the calling frequency, you can send your QSO partner a HamPlay invitation. They can choose to accept or decline, and if accepted, the fun begins! VarAC will guide you through the game, complete with real-time updates and cool sound effects.

Not into games on the radio? No problem! You can easily disable HamPlay in the new settings section, and your VarAC will automatically reject any HamPlay invitations.

You can chat while playing! but be aware that your Datastream may get cluttered with game-related packets.
If you'd like to minimize those, just enable 'Suppress HamPlay Move Packets' in the settings menu under the new HamPlay tab.

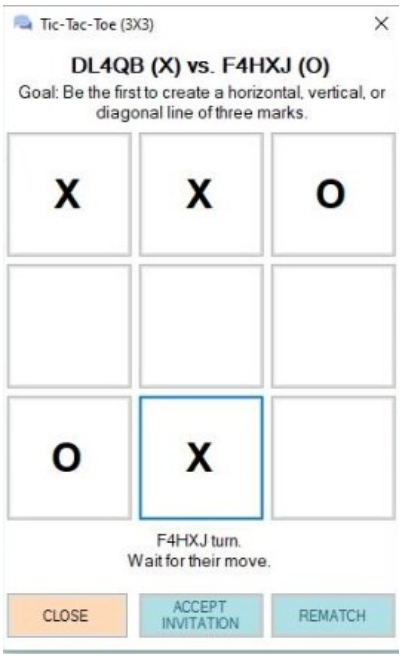
Alright, moving on. Until now, your VarAC console was cluttered with numerous buttons for data inquiries—SNR, LHP, FSP, and more. Aside from the fact that some of these weren't exactly self-explanatory (What on earth is FSP?!), they also took up a lot of valuable screen space...

Tip:

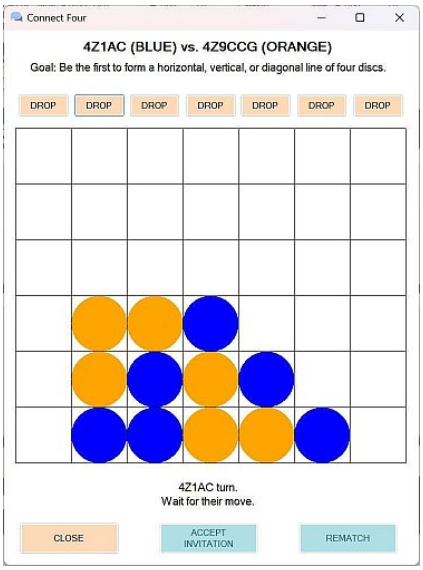
You can use the CQ "Play" option to signal people that you are seeking a game play QSO. See CQ Calling selector

Games

Tic-Tac-Toe

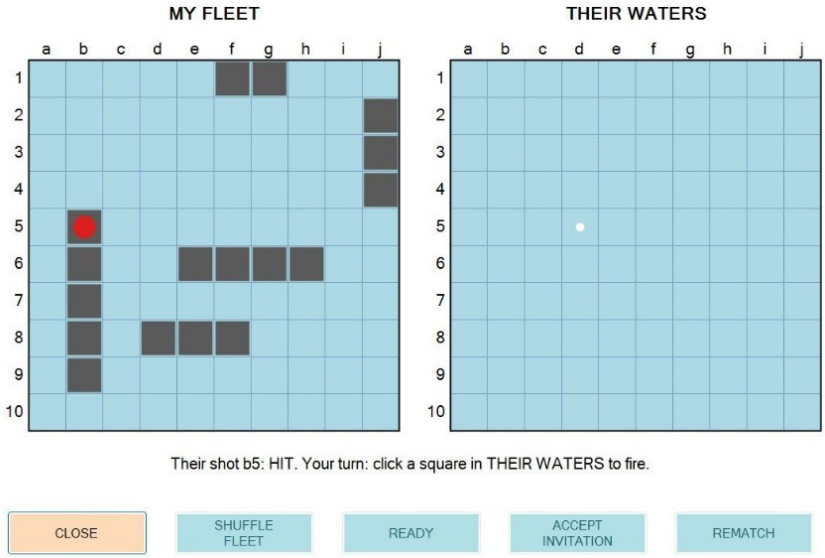


Connect Four



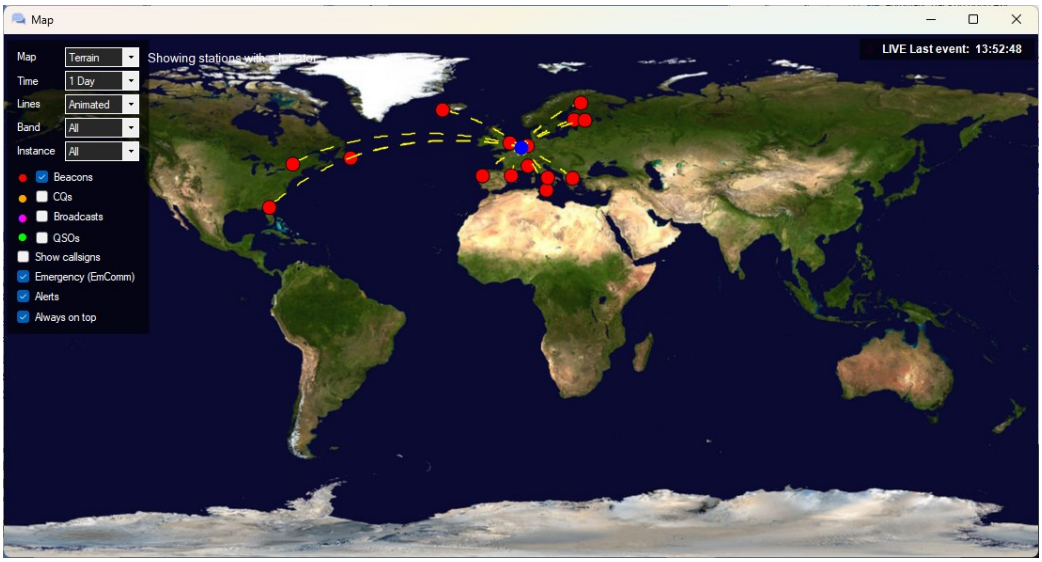
Battleship

Goal: Sink all five ships. Shuffle your fleet, press READY, then click a square in Their Water to fire.
Closing the window pauses the game; it resumes on your next connection.



Live Activity Map

Open the map window automatically on startup. The map remembers where you last left it and reopens there.



Live Activity Map info

What	Info
Map	Here you can select **Terrain**, Band **Night**
Time	Here you can select **15 or 30Minutes, Days, Weeks, Months** or **1 Year**
Lines	Here you can select **Animated**, **Static** or **Hidden**
Band	Here you can select the **Band** you needed
Instance	Here you can select **All** or **1**

Here you can select (enabled or disabled) what you needed

●	☑	Beacons	●	☐	CQs
●	☐	Broadcasts	●	☐	QSOs
☐	Show callsigns		☑	Emergency (EmComm)	
☑	Alerts		☑	Always on top	

PLEASE NOTE: only stations with a known location (grid locator) appear on the map.

Misc.

Enable debug mode	Once this is enabled VarAC creates a new file with all the information VarAC does etc… Enable this ONLY when instructed by the developers of VarAC. Enabling this way may slow down VarAC significantly and may affect / disable some of the VarAC functionalities as many log entries will be written to “one” disk.

Show tips	VarAC provides helpful tips for new operators looking to deepen their understanding of its powerful features. When enabled, tips will appear occasionally at startup until all have been show.
Check for VarAC updates	VarAC will search for updates
Linux compatible mode	VarAC can be used on Linux/Pi/Mac using WINE. Some VarAC elements are managed differently on such a platform so mark this checkbox in case you are running on Linux/Pi/Mac. ■ --- Narrations – Completely disabled. ■ --- Speller – disabled. ■ ---PSKReporter uploads – You can enable manually & test to see if it works on your Linux flavour. see Linux compatible mode
Ask before closing	When on, VarAC asks "Close VarAC?" before it closes. When off, it closes right always during a link or a transmission it still asks, so nothing is cut by mistake.

Linux compatible mode

VarAC can be used on Linux based platform such as WINE.

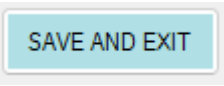
Some VarAC elements are managed differently on such a platform so check this checkbox in case you are running VarAC on Linux.

Please note: Linux compatibility mode disabled the speller feature.

Linux using

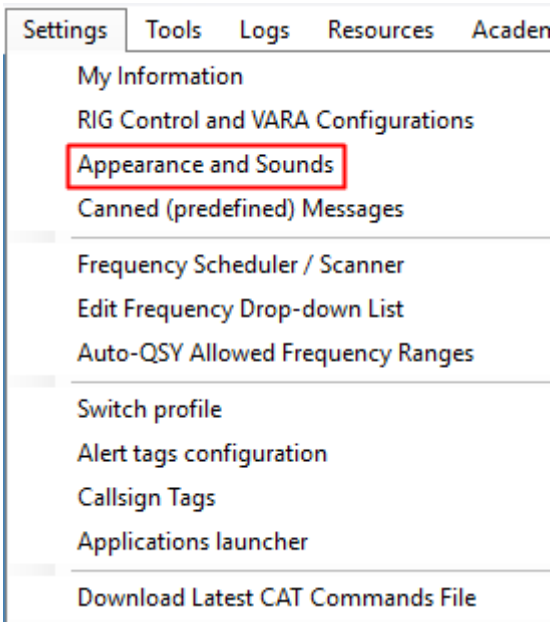
See Linux Installation

Save and Exit



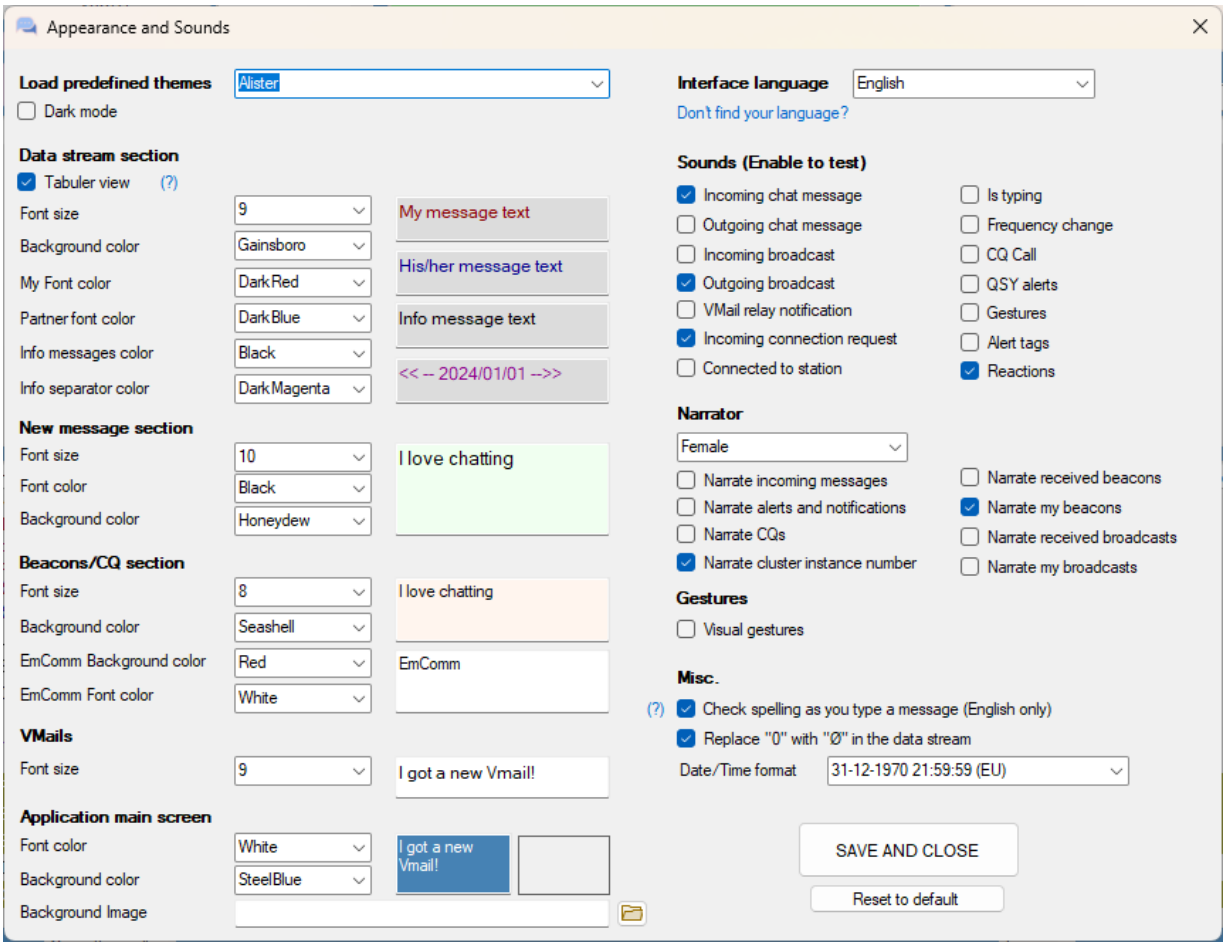
Do not forget to save your settings

Appearance and Sounds



Click on the Menu Settings and then on Appearance and Sounds and next screen is visible.

Appearance and Sounds settings



Tabuler view

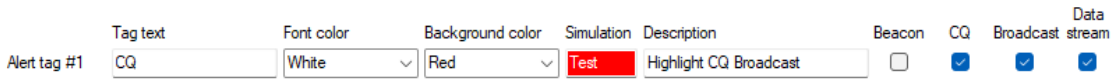
DataStream tabular view provides a more structured way of chatting.
It also includes additional capabilities as Chat Reply button, Chat history load upon startup.
If you want to return to the old-fashioned DataStream mode (non-tabular), then disable this checkbox.

Remark:

If the Tabuler view is enabled, the settings in the "Alert tags configuration" menu are also looked at.

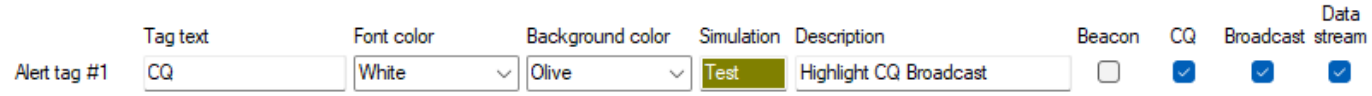
Example:
In the Alert tags Configuration, you have an Alert tag with Tag text = **CQ** and the Background color is **Red,** and these are checked in CQ, Broadcast and Data stream
Then when you press Call CQ, this entire line in the Data stream will be completely Red, see example below.
If this color is too bright, change to another color of your choice.

Or you can simply disable the Alert tag for the Data stream if you only look for CQ in your broadcasts.



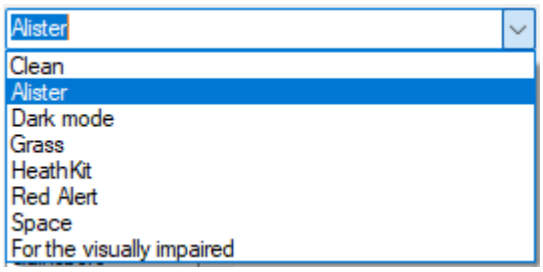


I have change the color in Olive, and here the result.



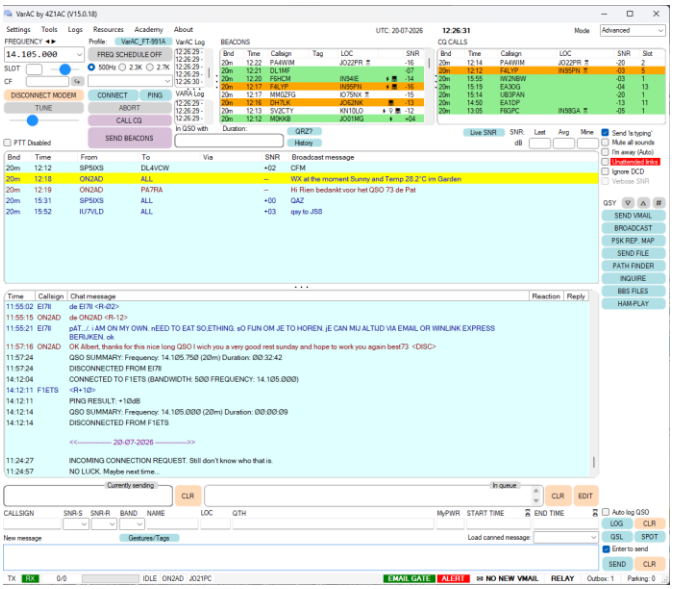


Load Predefined themes

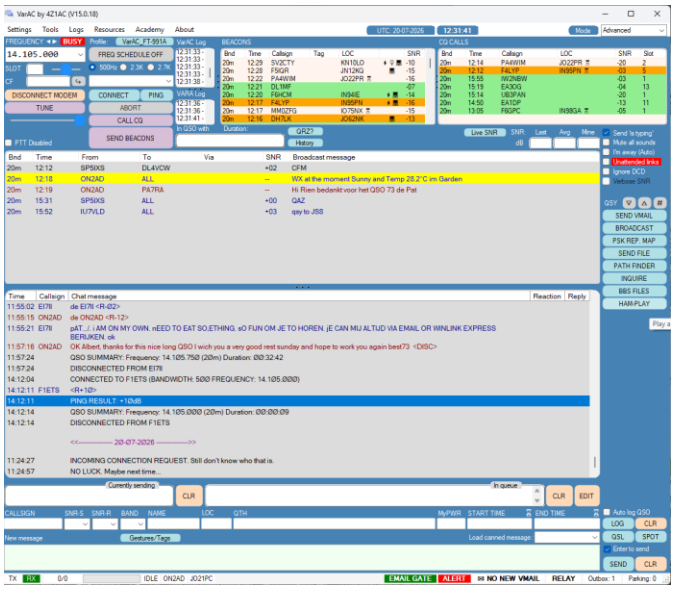


Clean

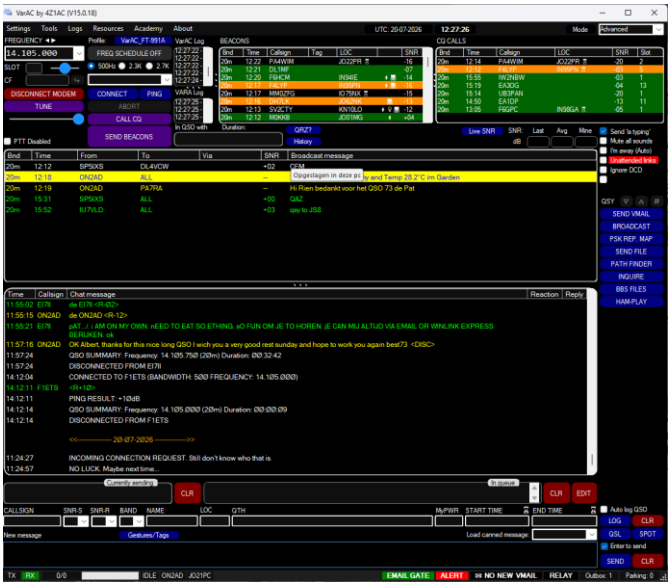
Alister



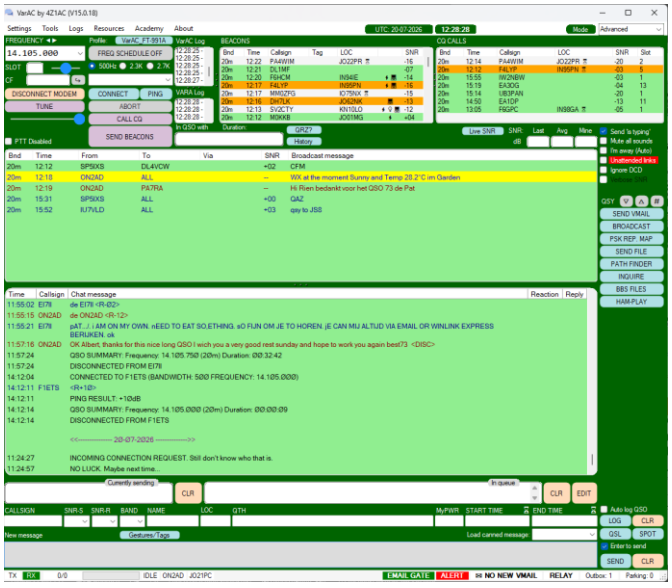
Dark mode



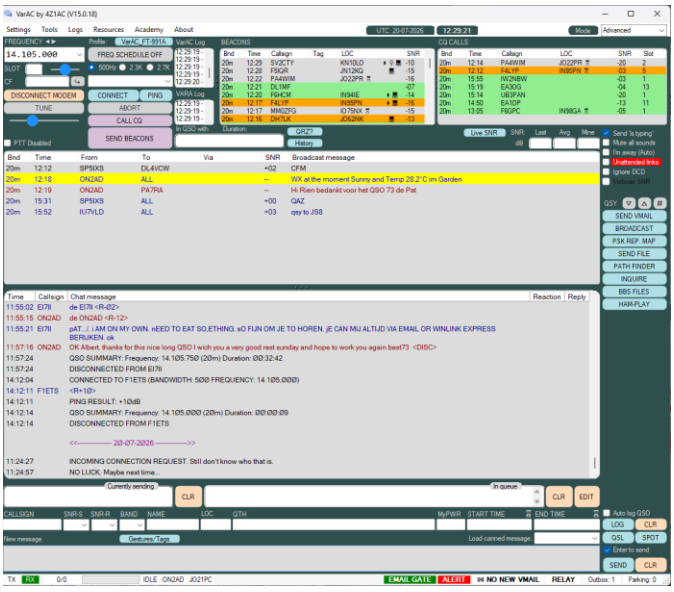
Grass



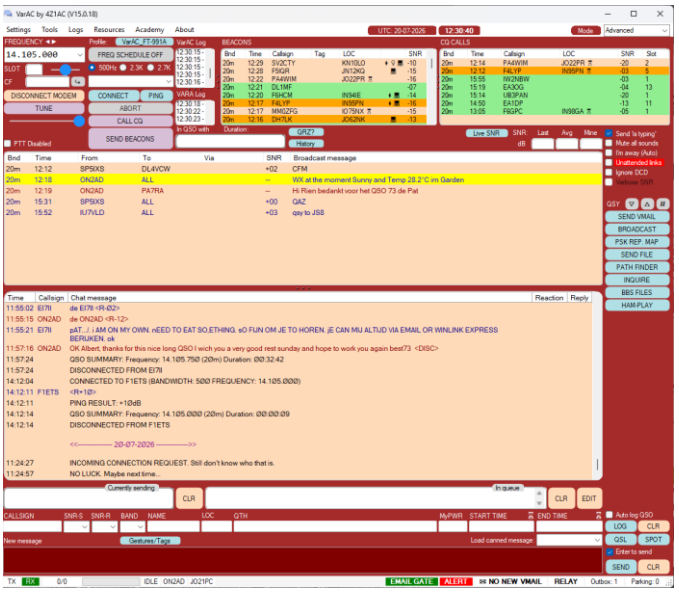
Heathkit



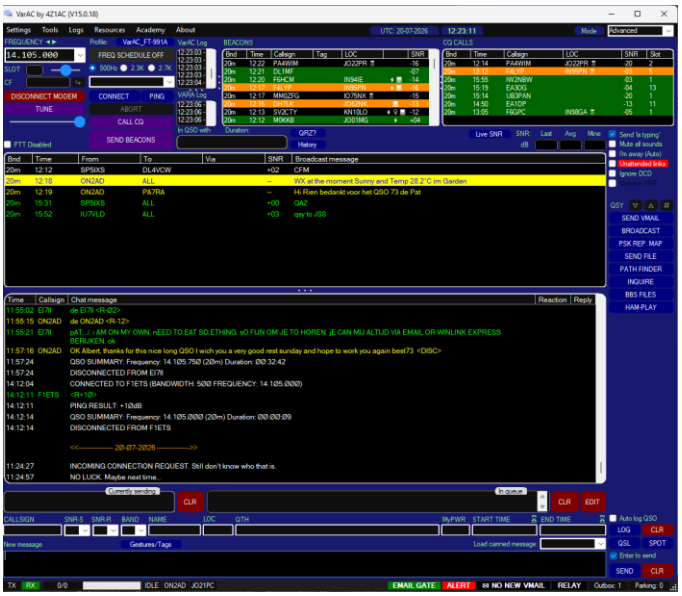
Red Alert



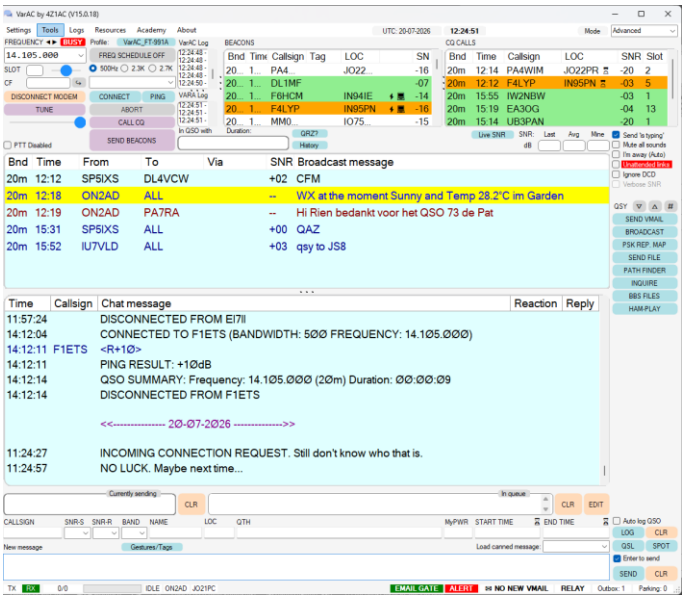
Space

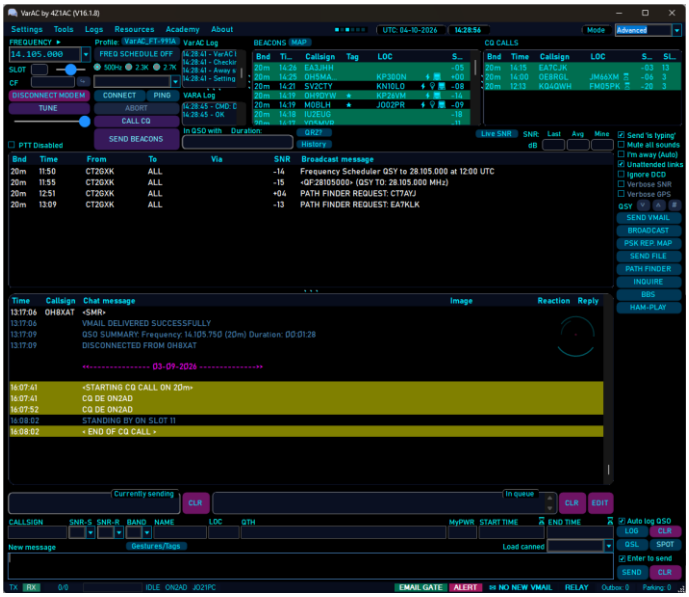


For the visually impaired



Sci Fi HUD





Dark mode:
If enabled then VarAC goes in dark mode.
If disabled then VarAC goes in default modus.

Data stream section:
Data Stream tabulator view providers a more structured way of chatting.
It also includes additional capabilities as Chat Repla button, Chat history load upon startup.
If you want to return to the old-fashioned DataStream mode (non-tabular), disable this checkbox.

New messages section:
Here you can change the Font size, Font color and the Background color

Beacons/CQ section
Here you can change the Font size, Background color.

VMails.

Here you can change the Font size of the VMails.

Application main screen
Here you can change the Font size, Background color.

And here you can select your background image. 

Interface language: see Interface language

Sounds (Enable to test)

When enabled then you will hear a lot of sounds for:

Incoming chat message	Is Typing
Outgoing chat message	Frequency change
Incoming broadcast	CQ Call
VMail relay notification	QSY alerts
Incoming connection request	Gestures
Connected to station	Alert tags
Reactions see Reactions	

Narrator (Text-to-Speech) see Narrator
When enabled you will hear:

Narrate incoming messages.	Narrate received beacons
Narrate alerts and notifications	Narrate my beacons
Narrate CQ's	Narrate received Broadcast
	Narrate my Broadcasts

Gestures
Visual gestures

Misc.
Check spelling as you type a message (English only)
see Check spelling

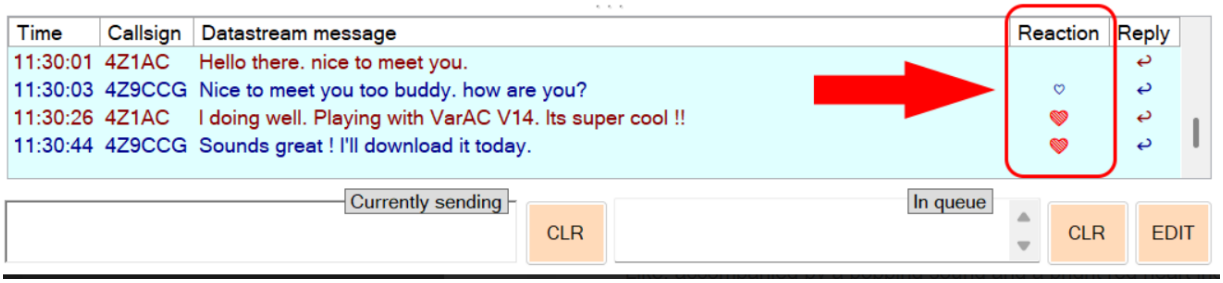
Replace"0" with "ø"

Date/Time format see Date/Time format

Reactions

How many times have you found yourself wanting to simply "Like" a message from your QSO partner instead of replying?
We do it all the time on social media and in instant messaging, so why not in VarAC?

With VarAC, now you can.
Next to every chat message in the data stream, you'll see a small empty heart icon.
Click it to send your QSO partner a Like, accompanied by a popping sound and a bright red heart indicator.



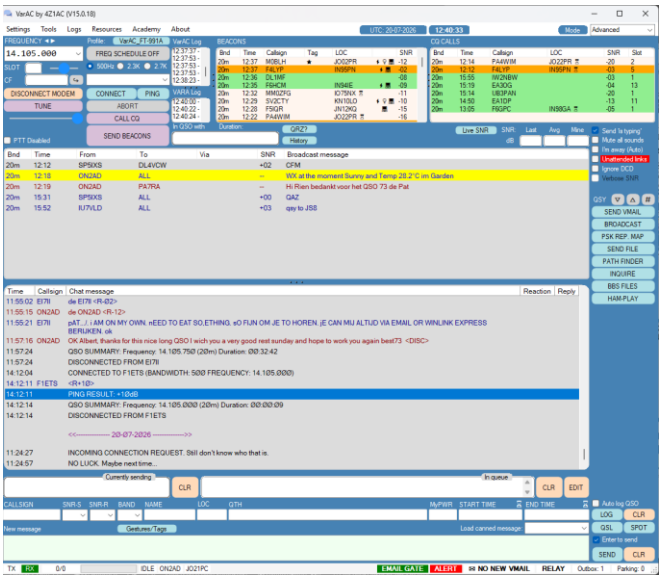
Improved Digipeater Narration

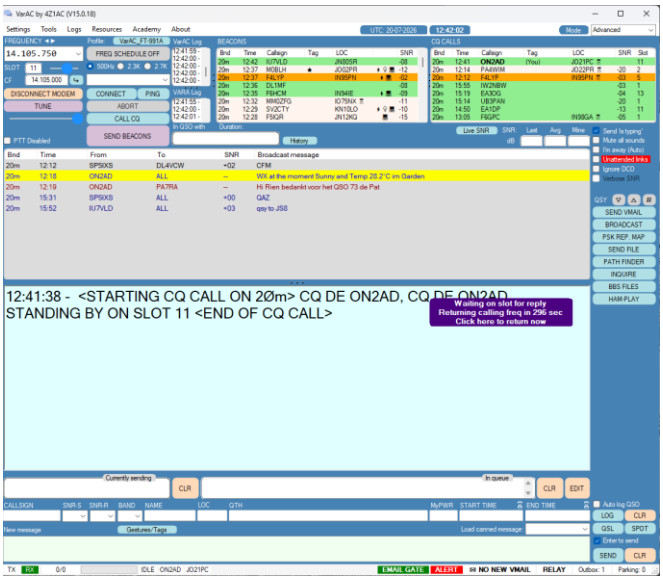
When reading beacons/CQs relayed via digipeaters, "Via" is pronounced properly, and "-" in SSID is narrated as "Dash."

Font

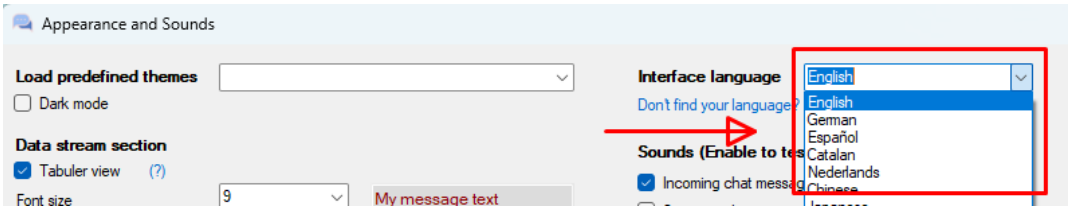
Normal font in the Data stream window with the Tabuler view enabled and in column format. Press the CTRL+Mouse scroll haven't effect.

Normal font in the Data stream window with the Tabuler view disabled and not in column format. By CTRL key and scroll with the mouse you become a bigger font





Language interface



Select here your preferred language.

See Do not find your language

Now you can choose between these languages

English	German	Espanol	Catalan	Nederlands	Chinese	Japanese	Slovak
Hebrew	Polish	Serbian Cyrillic	Français	Italian	Czech	Estonian	Russian
Portugues	Hindi	Arabic					

Don't find your language

The VarAC UI translations are made possible by dedicated members of the VarAC community who generously contribute their time to translate the VarAC UI into their native languages.

This is an ongoing initiative, and additional VarAC screens will continue to be translated into various languages.

If your language is not currently listed, and you wish to contribute to the VarAC project, please send an email to iradirad@gmail.com, specifying the language you would like to translate.

Narrator

Allowing a broader selection of narration voices.
Narration queue - if there are many things to narrate, VarAC will narrate one by one and not together.

Visual gestures

Hidden "easter eggs" await your discovery! These can be disabled under Appearance settings if desired.

Visual Gestures for Reading Messages

Added gesture animations when reading VMails and broadcasts.

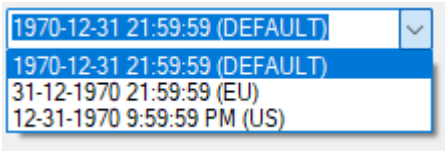
Check Spelling

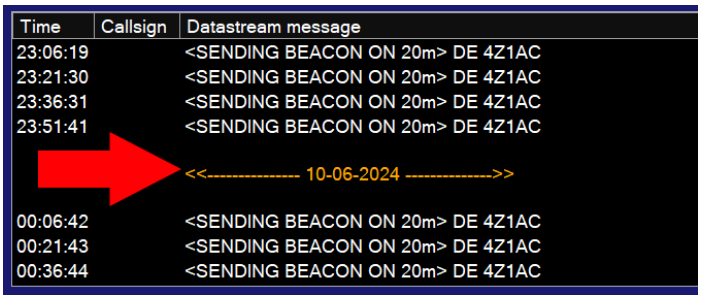
VarAC support speller in the English language only.

Please note: Speller is disabled under Linux compatibility mode.

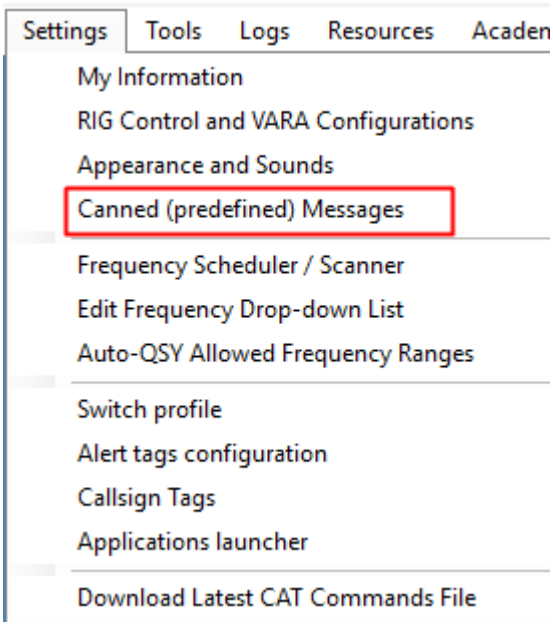
Date/Time format

Select your Date/Time format



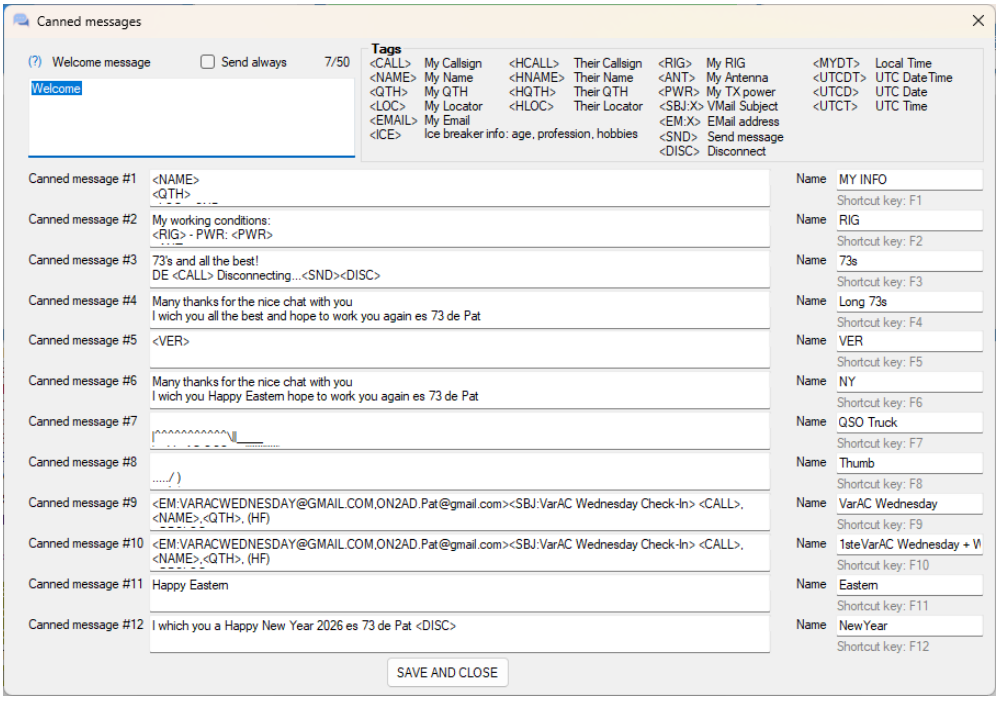


Canned (predefined) messages



Click on the Menu Settings and then Canned (predefined) messages and the following screen will be displayed.

Canned messages



Welcome message:
See Welcome message

Note: If all your info's are right do not forget to press the Save and Close button

Shortcut F keys

The Canned messages can easily be called up by pressing a Shortcut key.
This is how the Shortcut key is:
F1 for the Canned message #1
F2 for the Canned message #2
F7 for the VarAC Wednesday message
Etc…

Tags

See Tags & Gestures

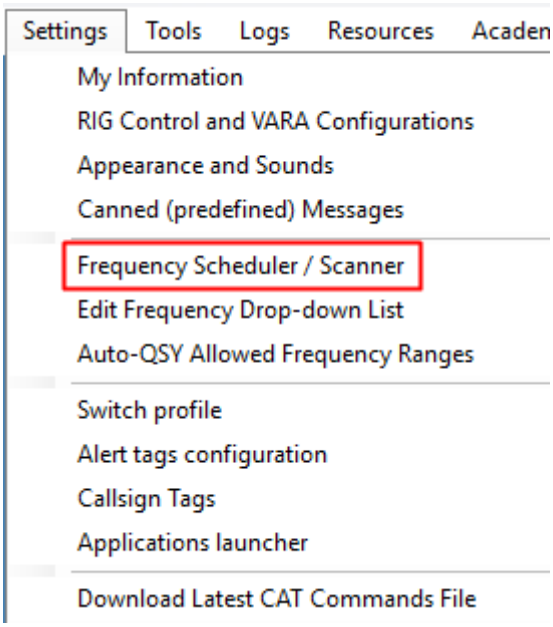
Remark

If you send the Canned message #1 as in the example above: (<NAME> <QTH> <LOC> and <SND>) to the other station, then this data will automatically be entered in the other station's Log.
This way you no longer must pass on or enter everything manually, on both sides

Welcome message

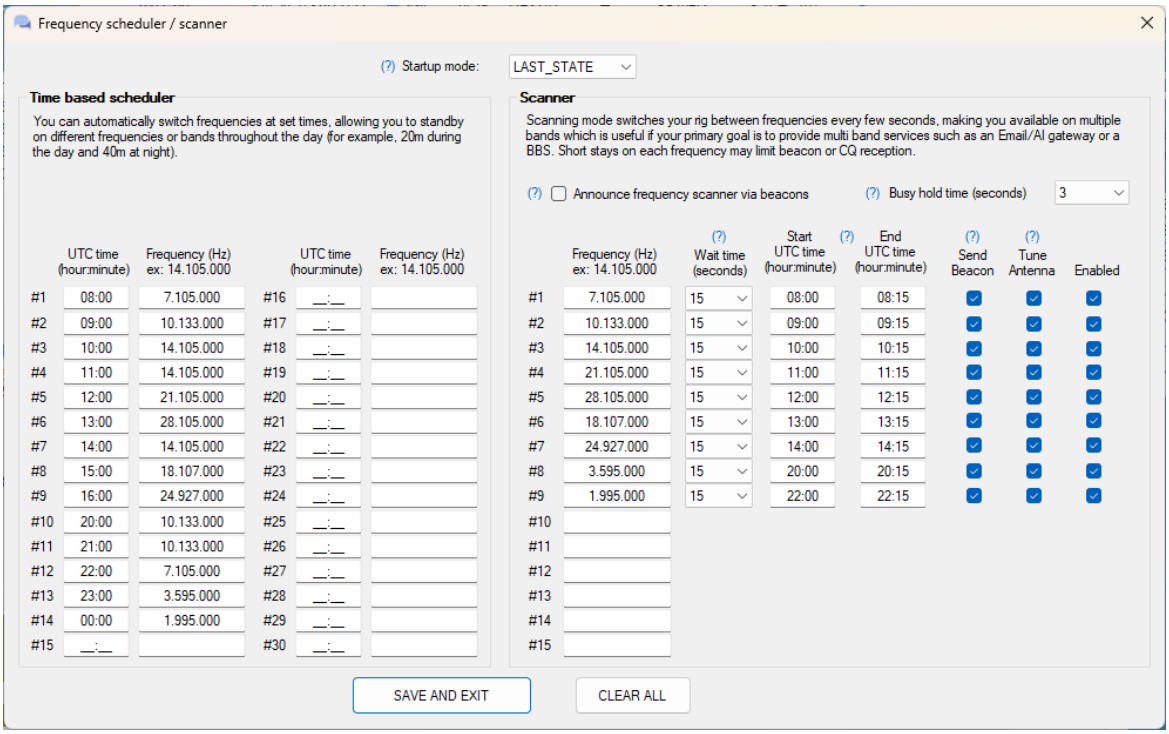
This message will be automatically sent to anyone who connects you while you are not in "I'm away" status.
If you want to send welcome messages even while you're away, enable the 'Send always' checkbox.
Please note that welcome messages are sent only after you move away from the calling frequency
Leave it empty if you do not wish you send anything.
Please note: a 'de YOURCALL" will be assed at the end of your welcome message.

Frequency scheduler / Scanner

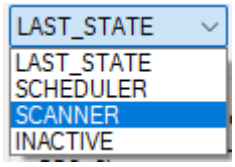


You can configure VarAC to QSY to different frequencies at specific times.
This is useful when you want to QRV on different frequencies / bands across the day.
(ex. 20 meter for daytime / 40 meter for nighttime)
In the column: UTC time you set the UTC time as hours: minutes, Frequency (Hz) you enter the frequency as Hz.

And the Scanning mode switches your Rig between every few seconds, making you available on multiple bands which is useful if your primary goal is to provide multi band services such as an Email/AI gateway or a BBS.
Short stays on each frequency may limit beacon or CQ reception.



Startup mode.



You can define the frequency scheduler's state when VarAC starts.

It can be set to SCHEDULER, SCANNER, INACTIVE, or retain the LAST_STATE from when you last closed VarAC.

Scanner

Announce frequency scanner via beacons

When other stations decode your beacon, they will see a clear indication that your station is in scanning mode.

Busy hold time (seconds)

When the scanner detects a busy signal on a frequency, it normally moves on after the regular scan interval.

If Busy Hold Time is set, the scanner will remail on that frequency for the specified number of additional seconds before continuing to the next one. This is useful for decoding transmissions such as Beacons, CQ calls, or broadcasts that have already started and you want to make sure are decoded.

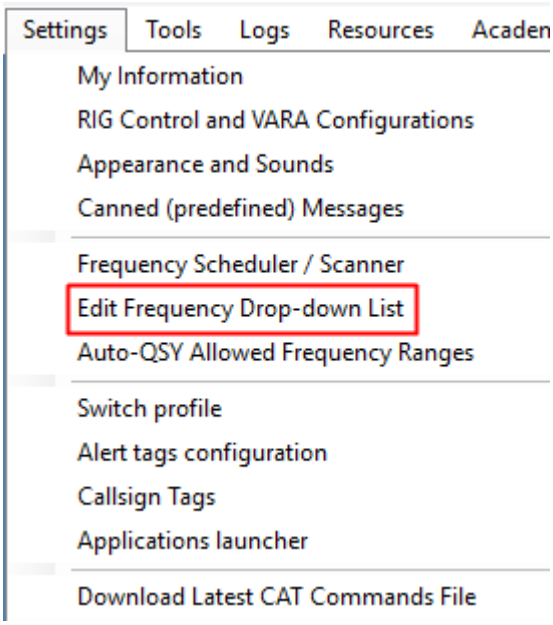
The extra time is added only once per busy detection, not continuously while the busy indicator remains on.

Set to 0 to disable this behavior.

Heading	Informations
Busy hold time (seconds)	When the scanner detects a busy signal on a frequency, it normally moves on after the regular scan interval. If busy Hold Time is set, the scanner will remain on that frequency for the specific number of additional seconds before continuing to the next one. This is useful for decoding transmissions such as Beacons, CQ calls, or broadcasts that have already started and you want to make sure are decoded The extra time is added only once per busy detection, not continuously while the busy indicator remains on. Set to 0 (null) to disable this behaver.
Wait time (seconds	The frequency scanner switches from one frequency scanner switches from one frequency to another, allowing you to stand by on multiple frequencies for incoming connections. You can set the number of seconds to remain on each frequency before the scanner moves to the next one. This lets you choose longer wait times for frequencies where you prefer to stay available for a longer period. Please note that the minimum wait time depends on whether you choose to transmit a beacon or tune the antenna when switching frequencies, as these actions require additional time.
Start UTC time (hour:minute)	

Start UTC time (hour:minute)	You can configure specific frequencies to be scanned during certain hours instead of all the time. This is useful when propagation is band-dependent, for example scanning 10 meters only during daylight hours when conditions are favorable. If you want the frequency to be scanned at all times, simply leave these fields empty.
Send Beacon	Enable this option if you want to let other know you are on this frequency through a beacon. Please note that the beacon is transmitted once per the configured beacon interval, not on every frequency switch
Tune Antenna	Activate this option only if you want to tune your antenna on this frequency at **EVERY** switch. **ATTENTION: this may put significant load on your antenna tuner.** Please note that if beaconing is enabled for this frequency, and your antenna tuner is already controlled through the VarAC rig settings, the system will automatically tune before transmitting a beacon to protect your equipment. In that case, there is no need to enable this option.

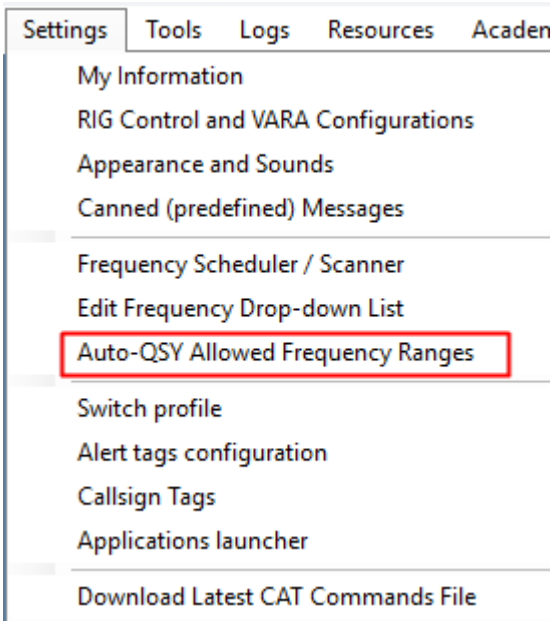
Edit Frequency Drop-down List



This are the default frequencies for CQ Calling.			
If needed, you can add some other frequencies			
14.105.000	**|**	**20m**	**Main**
7.105.000	**|**	**40m**	**Main**
14.108.750	**|**	**20m**	**Sunday roundtable**
1.995.000	**|**	**160m**	
3.595.000	**|**	**80m**	
5.355.000	**|**	**60m**	**Non US**
10.133.000	**|**	**30m**	
18.107.000	**|**	**17m**	
21.105.000	**|**	**15m**	
24.927.000	**|**	**12m**	
28.105.000	**|**	**10m**	
50.330.000	**|**	**6m**	
144.170.000	**|**	**2m**	**SSB**
144.950.00	**|**	**2m**	**FM**
432.550.00	**|**	**70cm**	**SSB**
439.600.00	**|**	**70cm**	**FM**

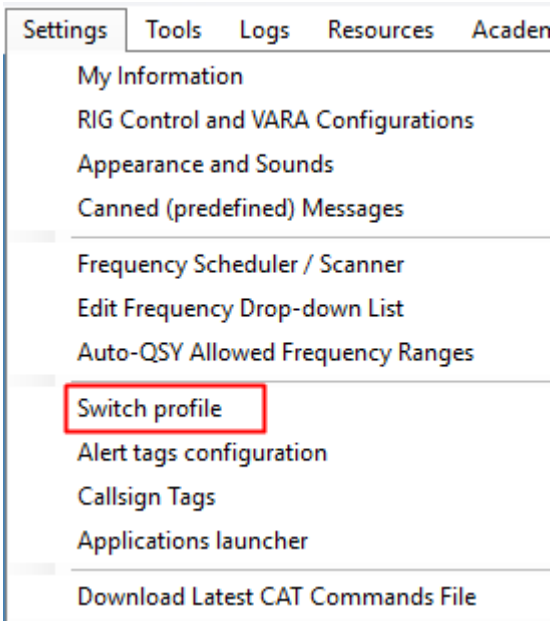
This file contains a list of math calling frequencies of VarAC.
These frequencies appear on the main frequency drop-down selector on the main VarAC screen.
You can add more frequencies to this list.
#
NOTE: REMEMBER TO RESTART VarAC AFTER CHANGING THIS FILE!
To add comments to a freq - use the '|' as a delimiter.
Example: 14.105.000|Comment 123

Auto-QSY Allowed Frequency Ranges



Info	From	-	To
This file contains ranges of frequencies that you allow to auto-QSY to without your intervention.	14.101.250	-	14.108.750
When a QSY invitation is received, and you are in 'allow auto-qsy' mode, VarAC will make sure the target QSY frequency is within the allowed range. Otherwise, the QSY invitation will be rejected	7.101.250	-	7.108.750
	1.991.250	-	1.998.000
	3.591.250	-	3.598.000
	10.129.250	-	10.136.750
These are 'Dial' frequencies. VARA will occupy an additional 1.75KHz from the dial freq.	18.103.250	-	18.110.750
	21.101.250	-	21.108.750
It is your responsibility to know what your band limits are.	24.923.250	-	24.930.750
	28.101.250	-	28.108.750
	50.326.250	-	50.333.750
	144.000.000	-	146.000.000
	430.000.000	-	434.000.000

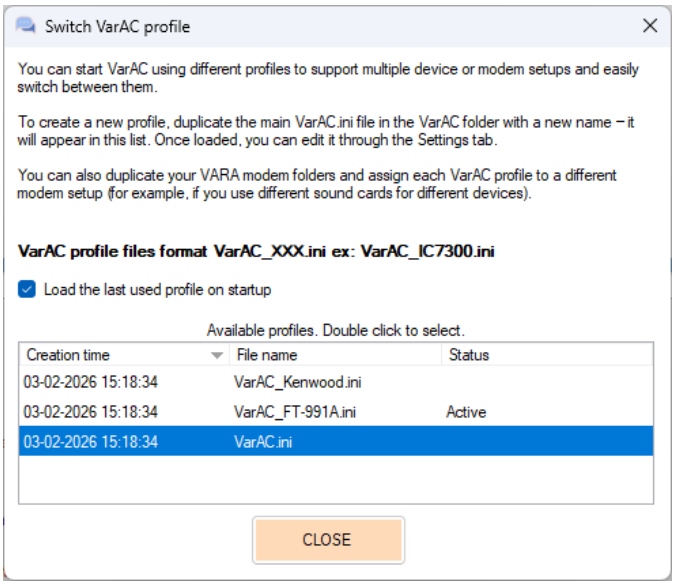
Switch profile



Select Switch profile to switch to another profile or setting

IMPORTANT

If you change profiles, all adjustments will be made in this profile and NOT in the Default VarAC.ini.
In the example below, the profile has been changed to VarAC_FT-991A.ini with all necessary adjustments for using the FT-991A. These adjustments are NOT included in the VarAC.ini.



You can start VarAC with different configuration files (profiles) to support multiple Rig/VARA modem configurations and easily switch between them.

Simple duplicate the main VarAC.ini file under a different name within the VarAC directory and it will show up here. Once loaded, you can edit it through the settings tab.

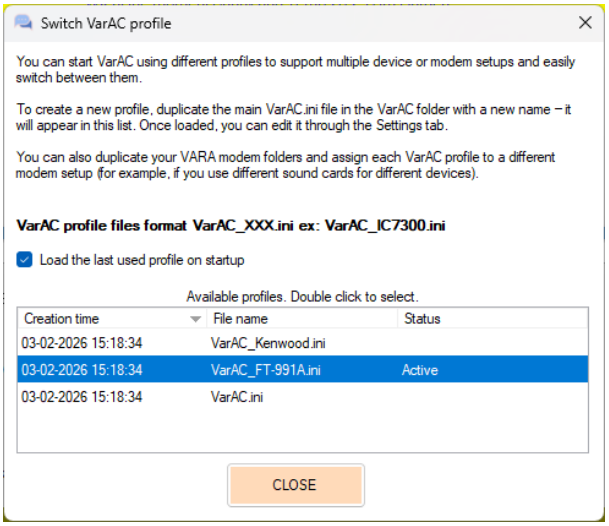
You can also duplicate your VARA modem directories and point each VarAC profile to a different VARA modem settings (ex: in case different sound cards are used for different Rigs)

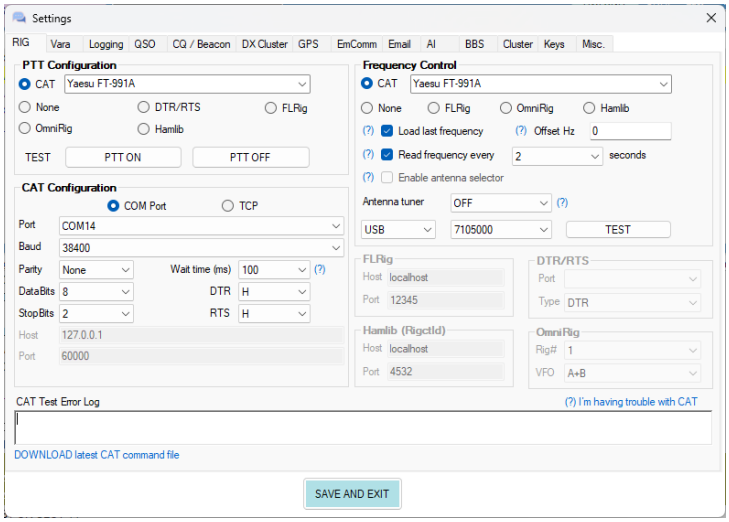
VarAC profile files format:
VarAC_XXX.ini
Ex:
VarAC_Kenwood.ini
VarAC.ini

Load the last used profile on VarAC startup

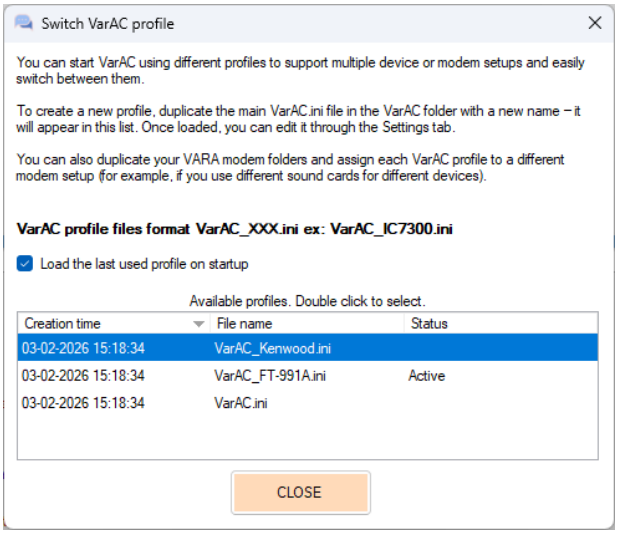
Under the Switch Profile form, you can now configure VarAC to automatically launch with the last used profile.

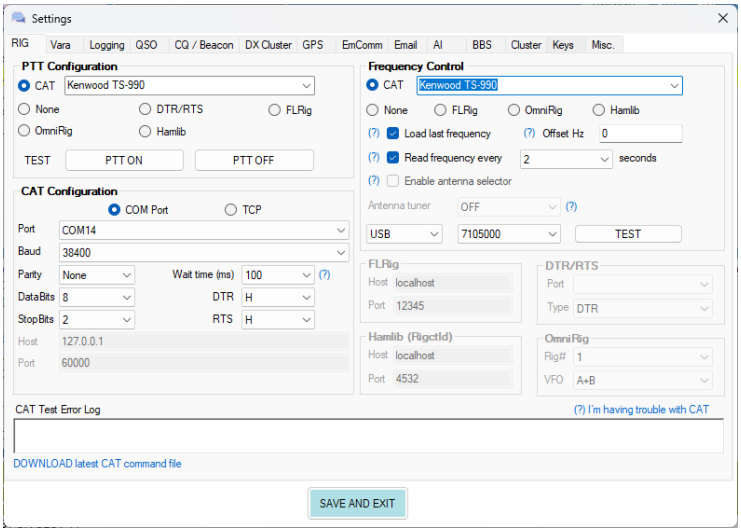
VarAC_FT-991A.ini





VarAC_Kenwood.ini

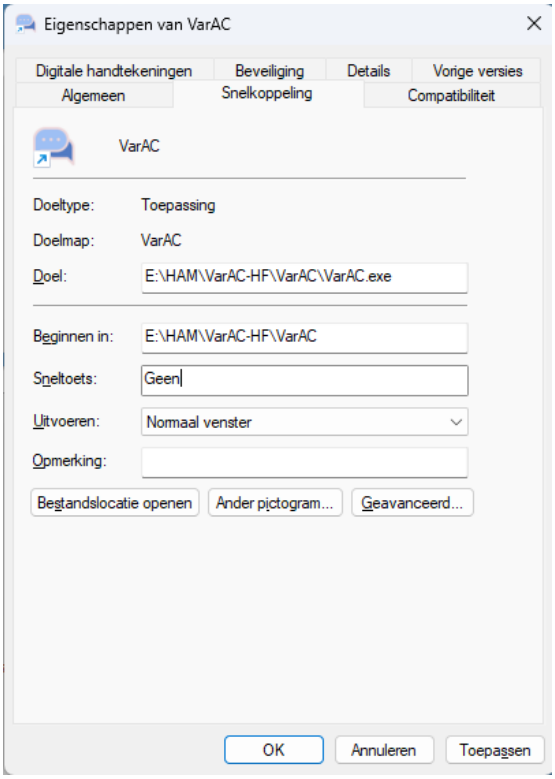




Shortcut for VarAC and specific transceiver

If you always want to start VarAC with the same configuration, you can change this in the shortcut

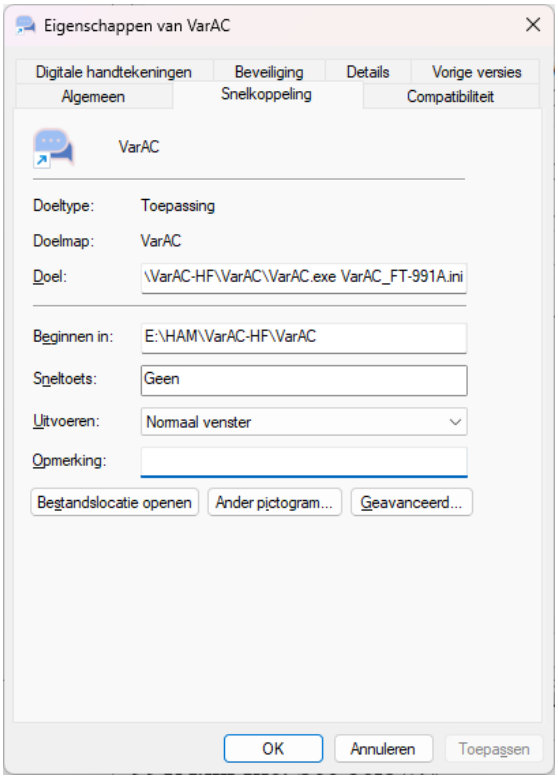
Normal shortcut



Here's a normal shortcut

E:\HAM\VarAC-HF\VarAC\VarAC.exe

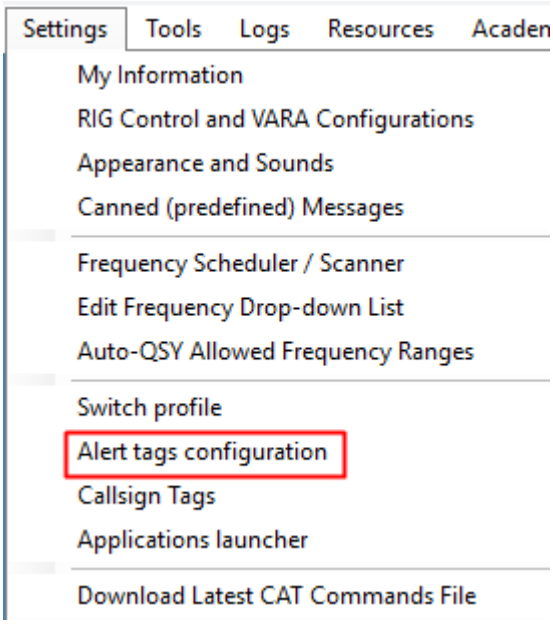
FT-991A shortcut



To open VarAC with the FT-991A.ini setting, the same setting is used as for a normal shortcut, but with the appendix of the FT-991A.ini file. See below.

E:\HAM\VarAC-HF\VarAC\VarAC.exe VarAC_FT-991A.ini

Alert tags configuration



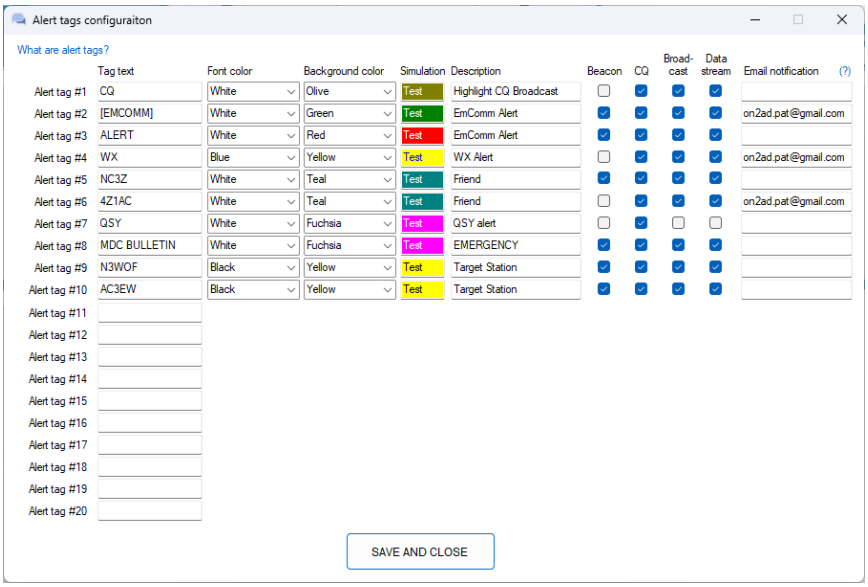
Information

Alert tags are strings that trigger alerts if received.

When an alert is detected in a beacon / CQ / Broadcast or during a chat, an alarm sound is fired and the triggering message is highlighted in a color of your choice. You can disable the alert tags alert sound under “Appearance and sounds” menu.

Alert tags can used in various ways such as:

- EmComm – Broadcast an emergency with an alert tag that will trigger an alarm and visual effect on all stations.
- Personalized notification – get notified about certain Broadcast message such as CQ's or WX updates.
- Track Callsigns – get notified when a certain Callsign calls CQ or Beacons.
- Special CQ alerts – Get notified when someone calls a CQ POTA / NA etc.

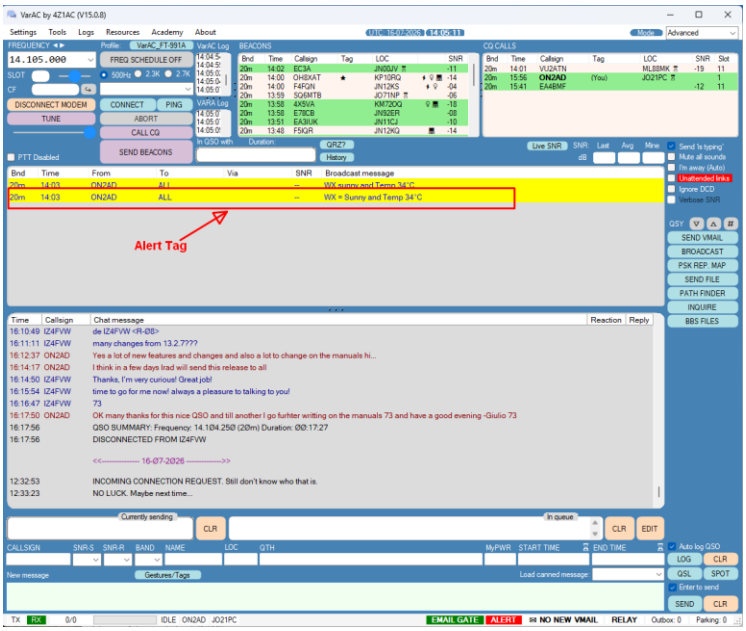


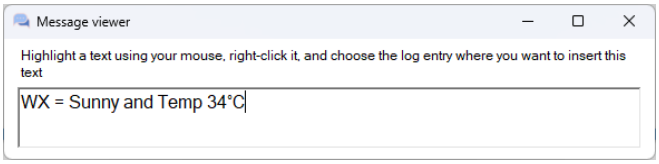
Tag	Info
Alert tag #1	CQ will highlight a CQ broadcast.
Alert tag #2	[EMCOMM] will alert a EMCOMM
Alert tag #3	[ALERT] is a general alert.
Alert tag #4	when sending (or decoding) WX you will be alerted.
Alert tag #5	any time you decode a broadcast from NC3Z it will alert.
Alert tag #6	any time you decode a broadcast from 4Z1AC it will alert.
Alert tag #7	sending (or decoding) QSY will alert if you did not enter it with **[ ]** you do not need to use them.
Alert tag #8	MDC Digital EMCOMM Challenge (MDC = Maryland DC, ARRL Section)
Alert tag #9	Target station
Alert tag #10	Target station

The Alert keyword must be exactly sent as to how it is setup. As this example here of [ALERT] you must sent with the [ ] If you set one up as say just Test it must be sent as Test . Here are using the [ ] just to highlight it a bit more and not trigger a false alert. So must be exact (which is a good thing to prevent falsing).

Alert tags now searched in all broadcasts elements (FROM/TO/MSG), CQs and Beacons.
You can now get alert for specific prefixes calling CQ/Beacon, set a Broadcast alert group etc.

In this example here to trigger the first alert tag you must sent it exactly as typed [ALERT] sending is as just ALERT will not trigger it.





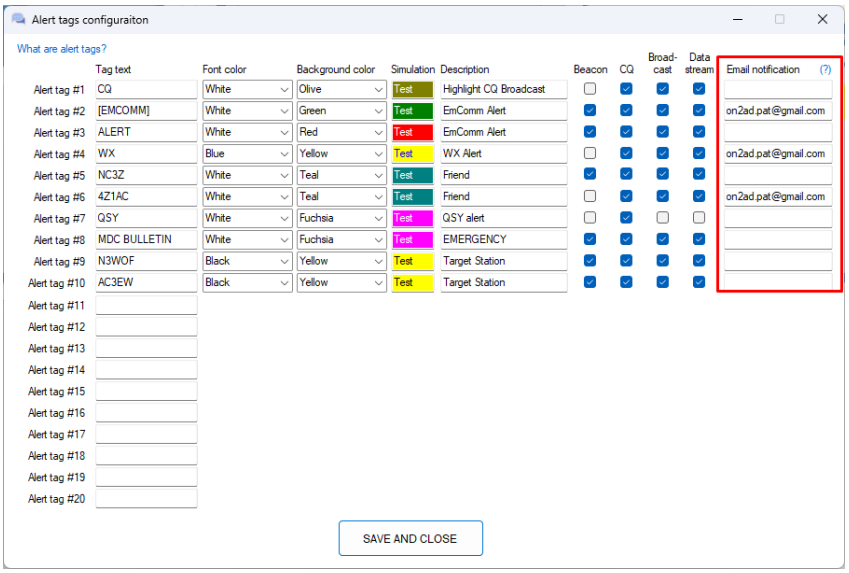
This screen will open after double clicking on the ALERT tag so you can read the full message.

Email notification for Alert Tags

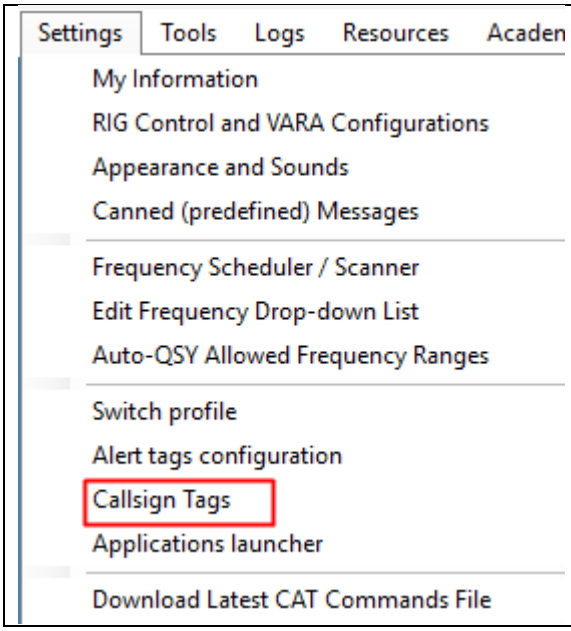
If you're operating an email gateway (configured under Settings), you can enable certain alerts to also be sent via email to one or more recipients (separate multiple addresses with commas).

If your gateway supports inbound email, replies to these alerts will be queued and delivered to the callsign that triggered the original alert.

And here's a bonus: now that we support a bi-directional email gateway, any reply to an email alert will be forwarded back through the gateway to the station that triggered the alert. This is possible because VarAC includes the <RELAY_TO_CALLSIGN:XXX> tag in email alerts as well.



Callsign Tags

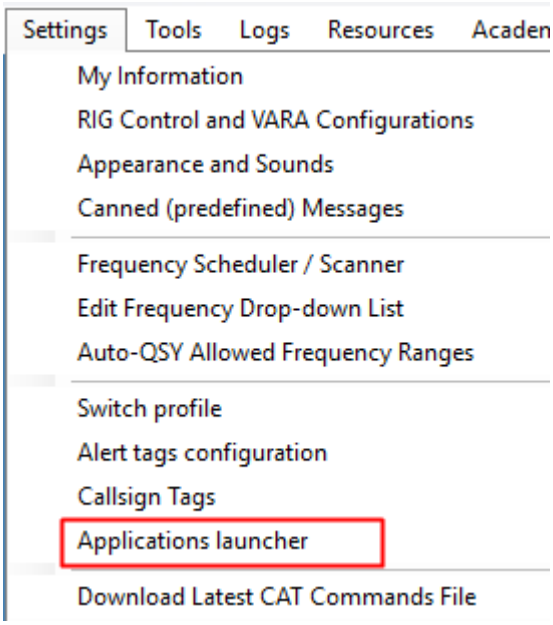


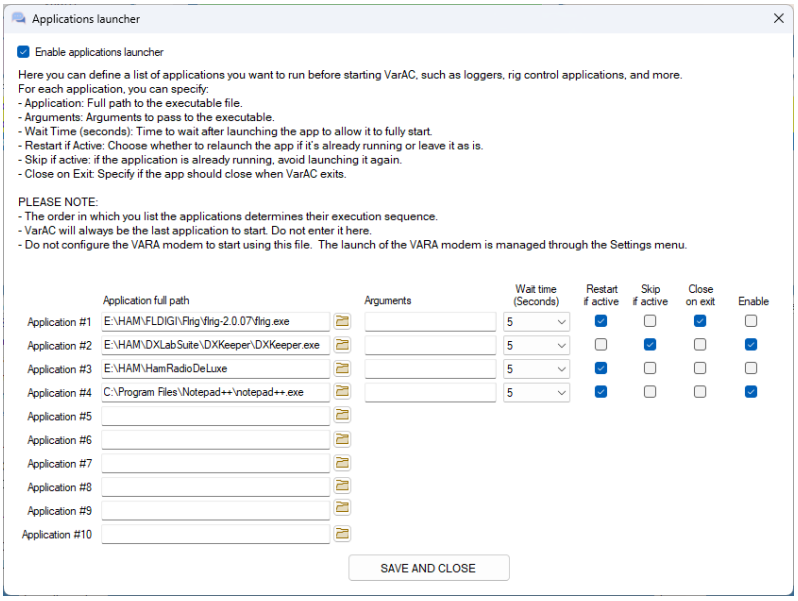
Callsign tags are brief texts displayed alongside a callsign in the Last Heard CQ or Beacon sections.
They can serve as 'friendly identifiers for callsigns or represent role names in emergency communication(EMCOMM) operations, where each station is assigned a specific role(e.g., HQ).

Add callsign tags in the following way: **CALLSIGN,TAG_TEXT**
Example:

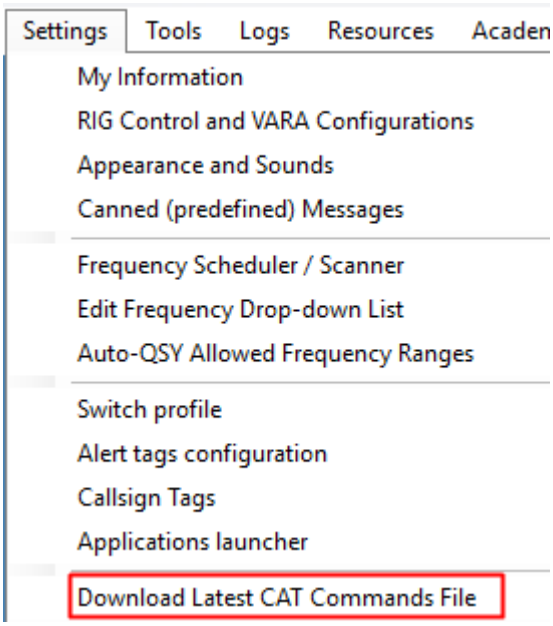
4Z1AC,FRIEND
PA7RA,FRIEND
ON6AT,FRIEND

Applications launcher





Download Latest CAT Commands File

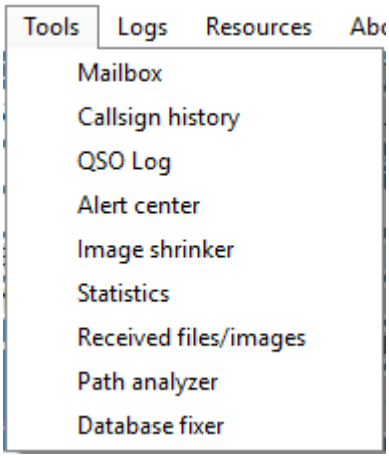


When click on DOWNLOAD latest CAT command file will open the [RIG control file | VarAC] website who you can download the latest CAT command file.

CAT Commands

VarACStartCmd	**You can place any CAT commands (separated by Comma if you want more than 2)** **Like settings a specific filter, ACC, notch, NB....**
[WAIT:XXX] Command	Added support for [WAIT:XXX] in the CAT commands file, allowing you to chain CAT commands with specified wait times (in milliseconds)

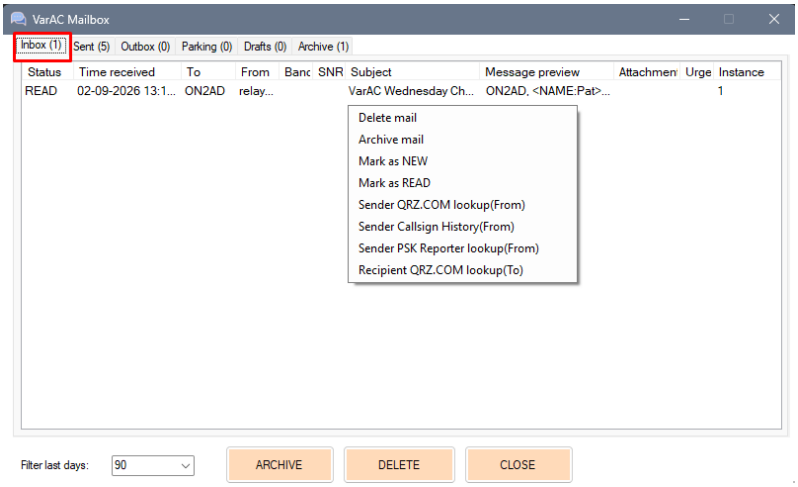
Tools



MailBox	see Mailbox
Callsign history	see Call history
QSO Log	see QSO Log
Alert center	see Alert center
Image shrinker	see Image shrinker
Statistics	see Statistics
Received files/images	see Received files/images
Path analyzer	see Path analyzer
Database fixer	see Database fixer

Mailbox

Inbox

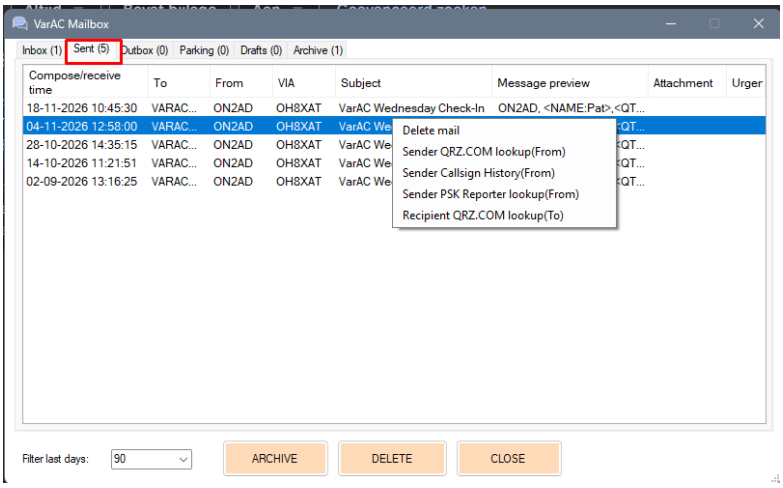


Inbox: This contains the already received VMails.

Here you have the choice of:

Delete mail
Mark as NEW
Mark as READ
Sender QRZ.cm lookup (From)
Sender Callsign History (From)
Sender PSKReporter (From)
Recipient QRZ.com lookup (To)
Filter last days: Select the filter of the **Inbox** messages

Sent



Sent: Here the VMails to be sent are set when sending the VMails

You have the choice of:

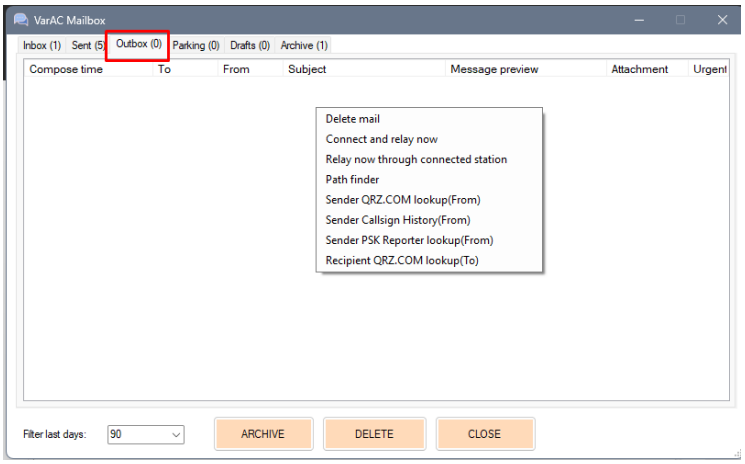
Delete mail
Sender QRZ.cm lookup (From)
Sender Callsign History (From)
Sender PSKReporter (From)
Recipient QRZ.com lookup (To)
Filter last days: Select the filter of the **Sent** messages

Example:
Sent message to 4Z1AC

After sending a VMAIL, you will receive a confirmation that the VMAIL has been delivered successfully.

```
14:31:25 - 4Z1AC> <R-15>
14:32:48 - ON2AD> <SM><TO:4Z1AC><FRM:ON2AD><SBJ:Test><MSG:Test for new Manual>
14:33:02 - 4Z1AC> <SMR>
14:33:02 - VMAIL DELIVERED SUCCESSFULLY
14:34:10 - QSO SUMMARY: Frequency: 14.105.000 (20m) Duration: 03:43
14:34:10 - DISCONNECTED FROM 4Z1AC
```

Outbox



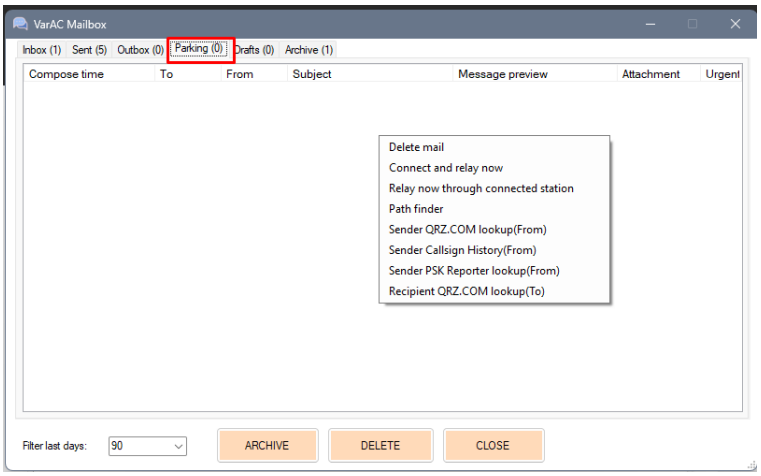
Outbox: The VMails to be sent are placed here, and they are only sent when there is a connection with the counterpart station.

Here you have the choice of:

Delete the mail
Connect and relay now
Relay now through connected station
Path finder
Sender QRZ.cm lookup (From)
Sender Callsign History (From)
Sender PSKReporter (From)
Recipient QRZ.com lookup (To)

Filter last days: Select the filter of the **Outbox** messages

Parking



Parking: This is where the VMails are parked

Whenever your station decodes a beacon, it will check if you are holding VMails for that station (either VMails you have written or VMails written by others that park in your mailbox). Here you have the choice of:

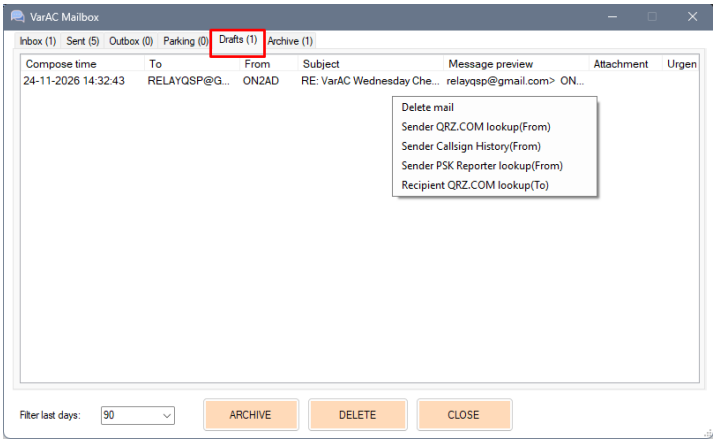
Delete the mail
Connect and relay now
Relay now through connected station
Path finder
Sender QRZ.cm lookup (From)
Sender Callsign History (From)
Sender PSKReporter (From)
Recipient QRZ.com lookup (To)

Filter last days: Select the filter of the **Parking** messages

Remark:

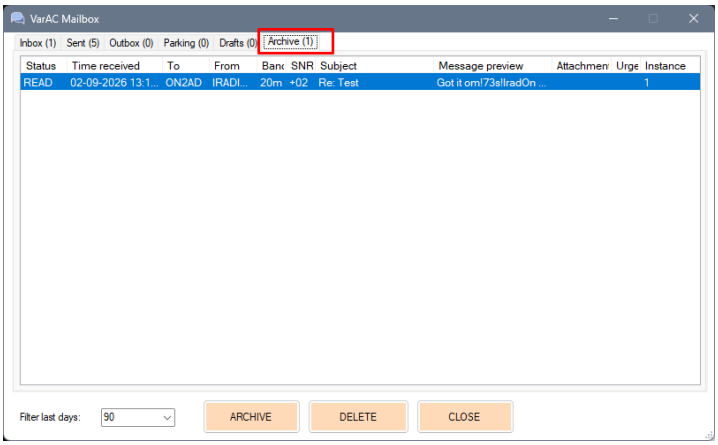
The VMAIL will not auto connect, only if you connect with the destination station (or vice versa) will your message relay.

Drafts

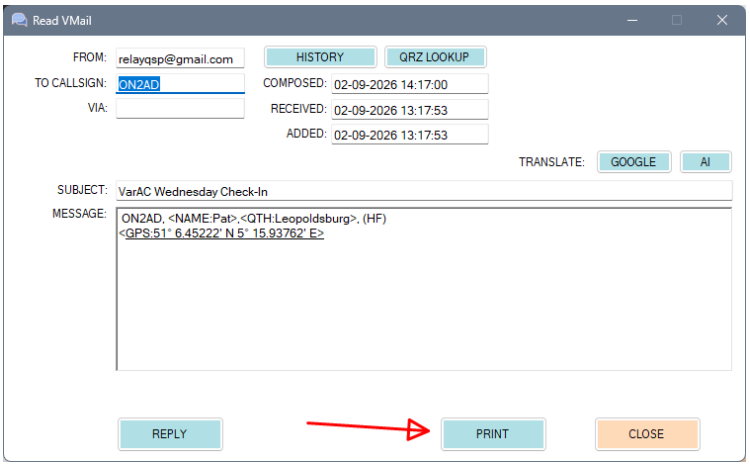


Delete the mail
Sender QRZ.cm lookup (From)
Sender Callsign History (From)
Sender PSKReporter (From)
Recipient QRZ.com lookup (To)
Filter last days: Select the filter of the **Parking** messages

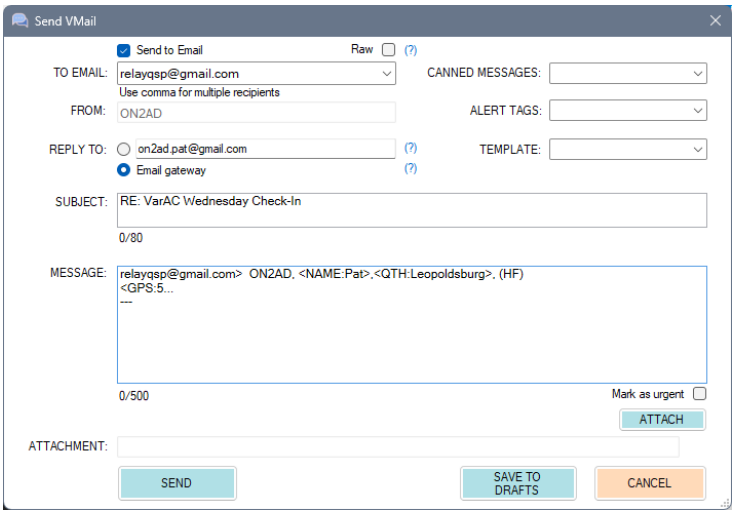
Archive



VMail printing



Replay VMail



Tags in Vmail

Tags now function in VMails, allowing easy incorporation of data using <INFO>, <NAME>, <LOC>, <GPSLOC>, etc...

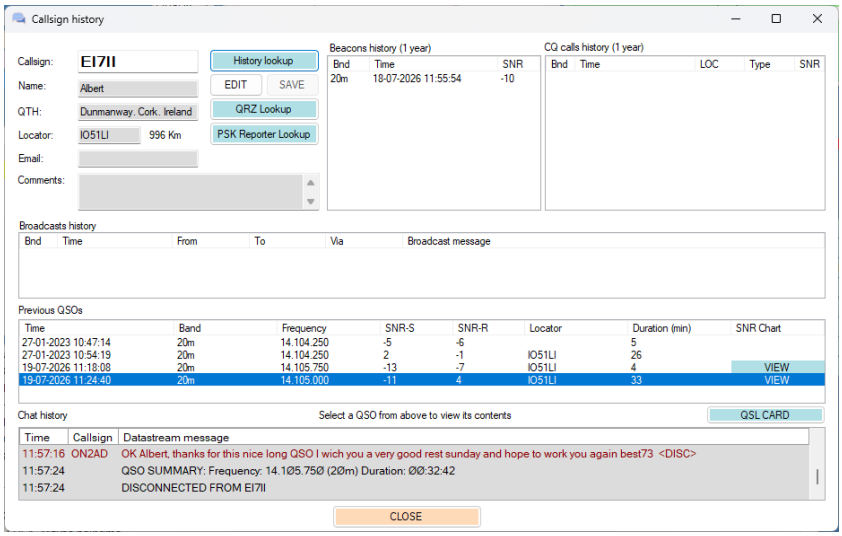
Callsign history

Once you are connected to that counterpart station, you can click on “See History” to view the complete “Previous QSO’s” the “Chat History” and the “Broadcast history” with this counterpart station.
The menu bar is the same as the main VarAC screen.

When clicking QRZ lookup a new QRZ.com window opens
There is also an option to activate the PSKReporter by clicking on the PSKReporter Lookup.

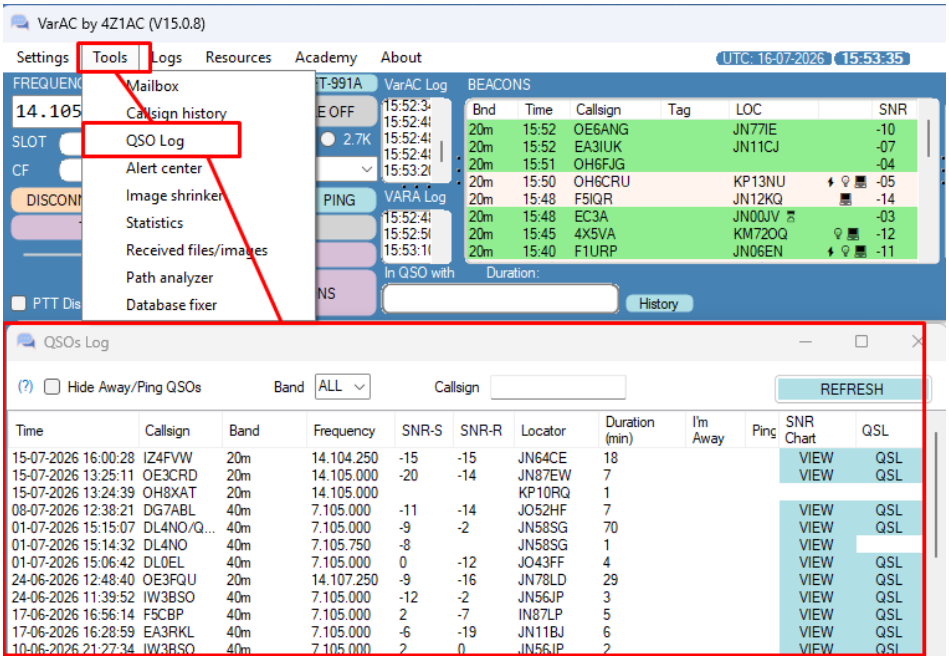
Callsign-history allows contact details edits and adding comments.
Click on “Close” to close this window

QSL CARD see QSL CARD

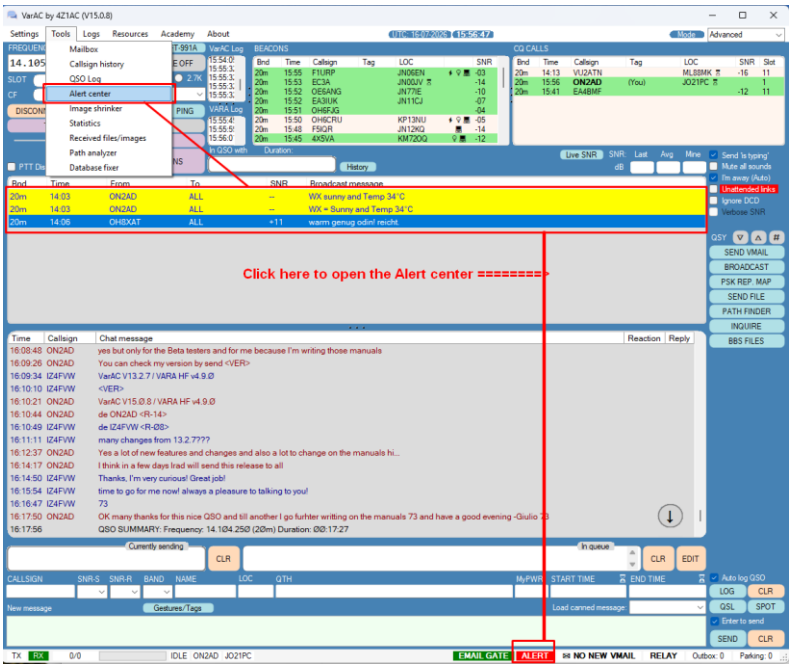


QSO Log

Words are not needed, this picture says it all!

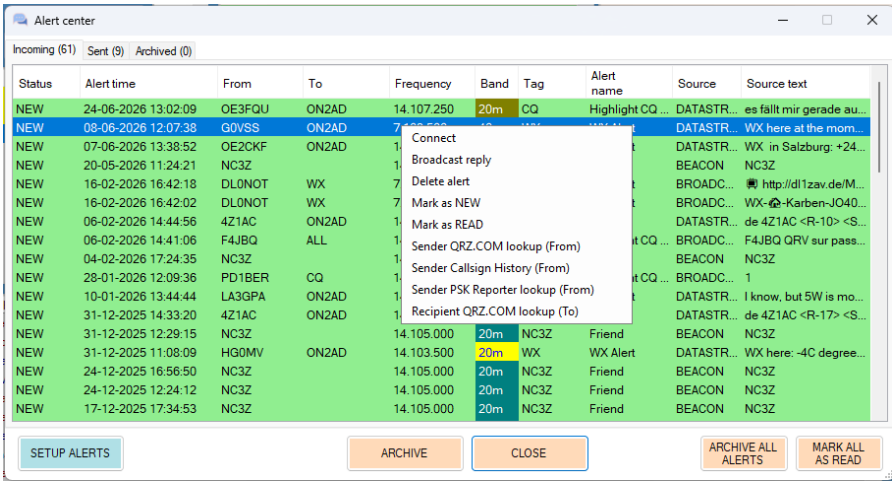


Alert center



Clicking on the **ALERT** or on the Alert center will open the Alert screen.

Incoming Alert



Incoming: This is where the Incoming ALERTS are placed
See Alert tags configuration

Here you have the choice of:

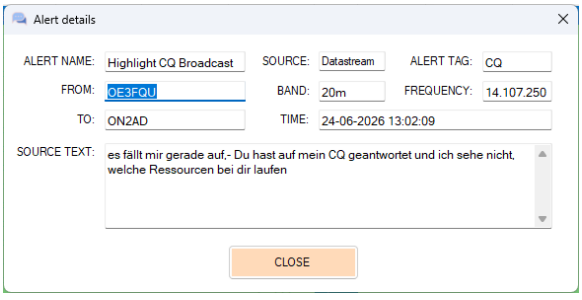
Connect
Broadcast reply
Delete alert
Mark as NEW
Mark as READ
Sender QRZ.cm lookup (From)
Sender Callsign History (From)
Sender PSKReporter (From)
Recipient QRZ.com lookup (To)

Setup Alerts: See Alert tags configuration
Archive All Alerts: Archive all the Alerts

Close: Close this window
Mark All as Read: Mark all as read

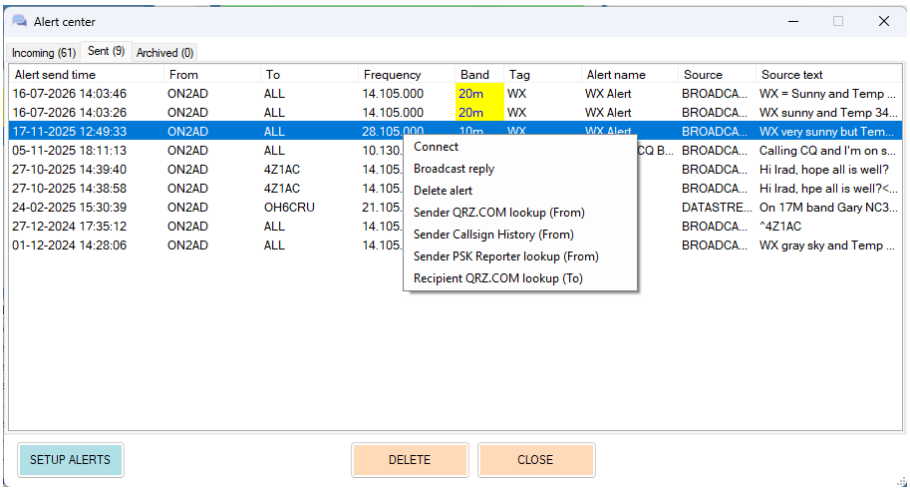
Archive: Archive this Alert

Twice clicking on an Alert tag will open a new window



This screen open after twice clicking on the ALERT tag, so you can read the full message

Sent Alert



Sent: This is where the Sent ALERTS are placed.
See Alert tags configuration

Here you have the choice of:

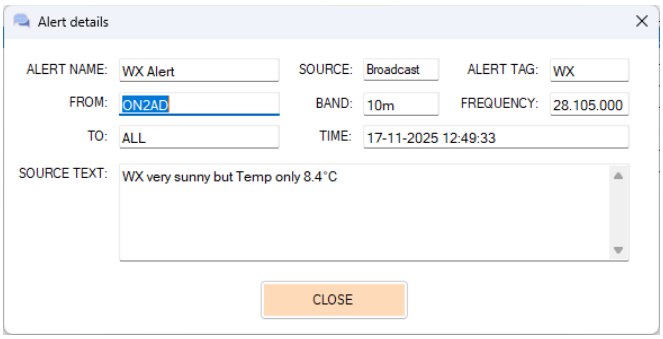
Connect
Broadcast reply
Delete alert
Mark as NEW
Mark as READ
Sender QRZ.cm lookup (From)
Sender Callsign History (From)
Sender PSKReporter (From)
Recipient QRZ.com lookup (To)

Setup Alerts: See Alert tags configuration
Archive All Alerts: Archive all the Alerts

Close: Close this window
Mark All as Read: Mark all as read

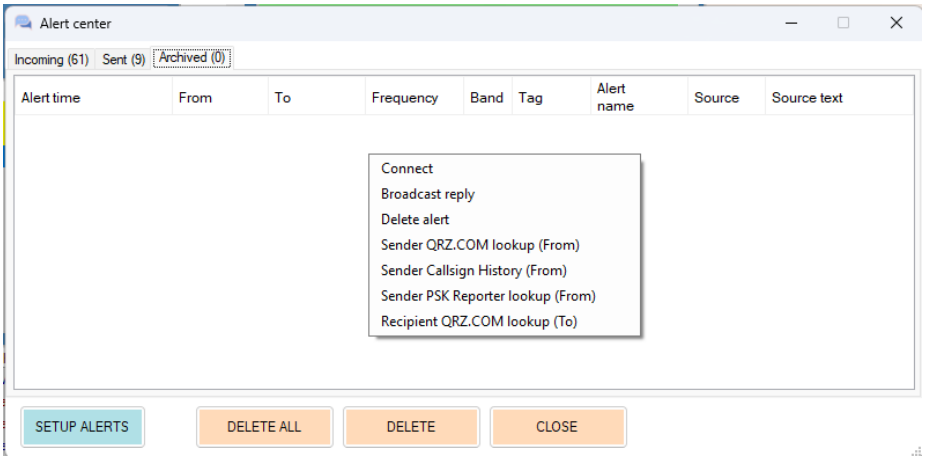
Archive: Archive this Alert

Twice clicking on the Alert tag will open a new window



This screen open after twice clicking on the ALERT tag, so you can read the full message.

Archived Alert



Archived: This is where the Archived ALERTS are placed.
See Alert tags configuration

Here you have the choice of:

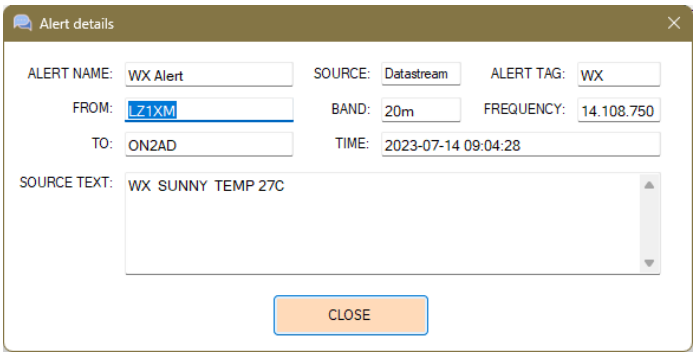
Connect
Broadcast reply
Delete alert
Sender QRZ.cm lookup (From)
Sender Callsign History (From)
Sender PSKReporter (From)
Recipient QRZ.com lookup (To)

Setup Alerts: See Alert tags configuration
Archive All Alerts: Archive all the Alerts

Close: Close this window
Mark All as Read: Mark all as read

Archive: Archive this Alert

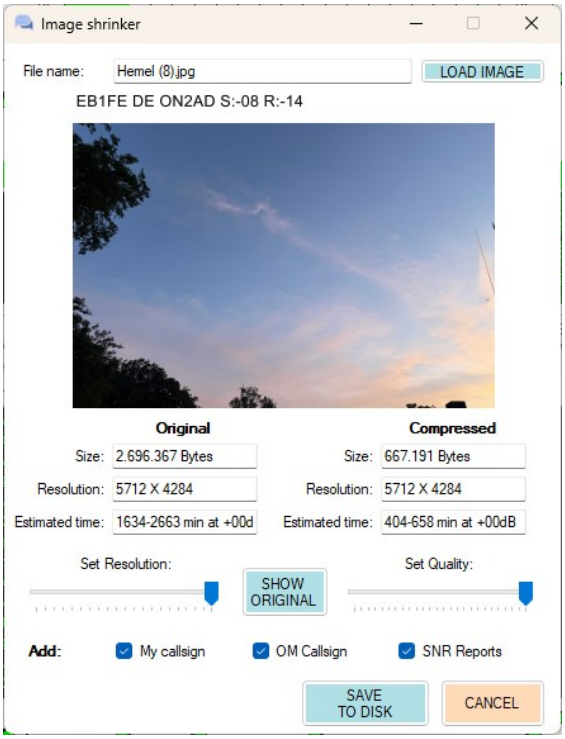
Twice clicking on the Alert tag will open a new window



This screen open after twice clicking on the ALERT tag, so you can read the full message

Image shrinker

Offline Image shrinker



Let us delve into the realm of images.

It was a tedious process sending an image of 100,000, only to find out that it takes forever. Plus, compressing an image can be a daunting task, especially if you are not well-versed in graphics editing software.

But VarAC now offers a handy offline image compression tool with a unique twist. Taking inspiration from SSTV (Slow Scan Television), you have the option to incorporate your own callsign and SNR (Signal-to-Noise Ratio) reports directly into the image.

Now it becomes easy to send large images by compressing them first.
In the example you see a file of 495,000 Bytes with a resolution of 2930 x 2084 that is compressed to 19,725 Bytes and only has a resolution of 703 x 500.

This distinctive feature sets it apart, ensuring a personalized touch to your compressed images.

Let us shift the focus from images and turn our attention to Alerts.

Alerts have become the cornerstone of VarAC EmComm operations, serving as a vital tool for monitoring critical messages and stations on a daily basis.

However, the challenge lies in keeping track of alerts originating from various sources such as Beacons, Broadcasts, and CQs.

Statistics

You have thought about the following questions:

How many VarAC QSOs have I already done?

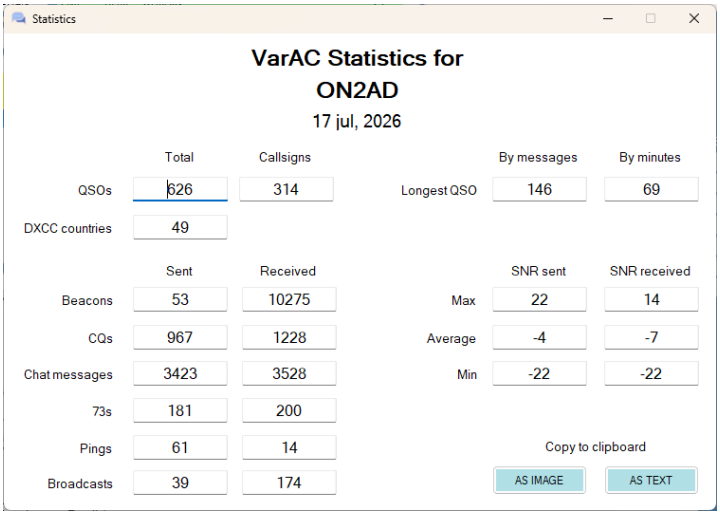
What was the highest SNR report I have ever received?

etc...

To access your individual statistics dashboard, simply navigate to Tools -> Statistics.

There is also an option to save this information as a text or image.

You can save this as an Image or as Text



As Text **As Image**

QSO (Total): 626
QSO (Distinct callsigns): 314
DXCC Countries: 49

Longest QSO:
By minutes: 69
By messages: 146

Beacons Sent: 53
Beacons received: 10275

CQs Sent: 967
CQs received: 1228

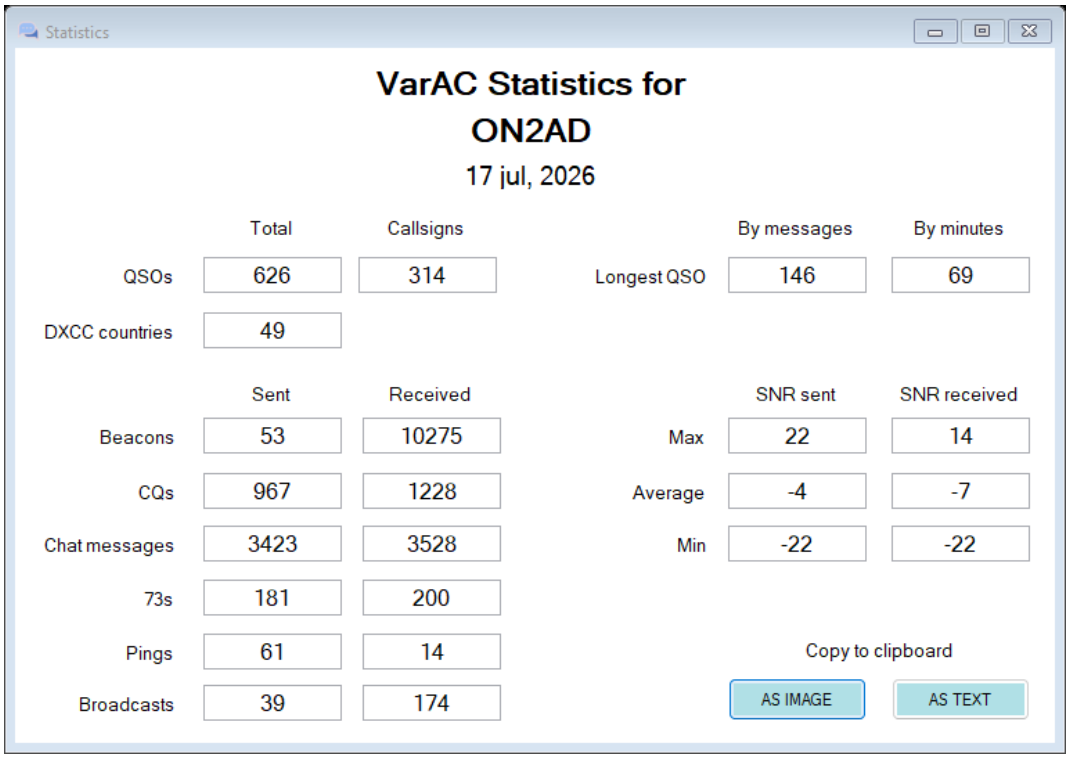
Chat messages Sent: 3423
Chat messages Received: 3528

73s Sent: 181
73s Received 200

Pings Sent: 61
Pings Received: 14

Broadcasts Sent: 39
Broadcasts Received: 174

SNRs Sent:
Max : 22
Avg : -4
Min -22
SNRs Received:
Max : 14
Avg : -7
Min -22

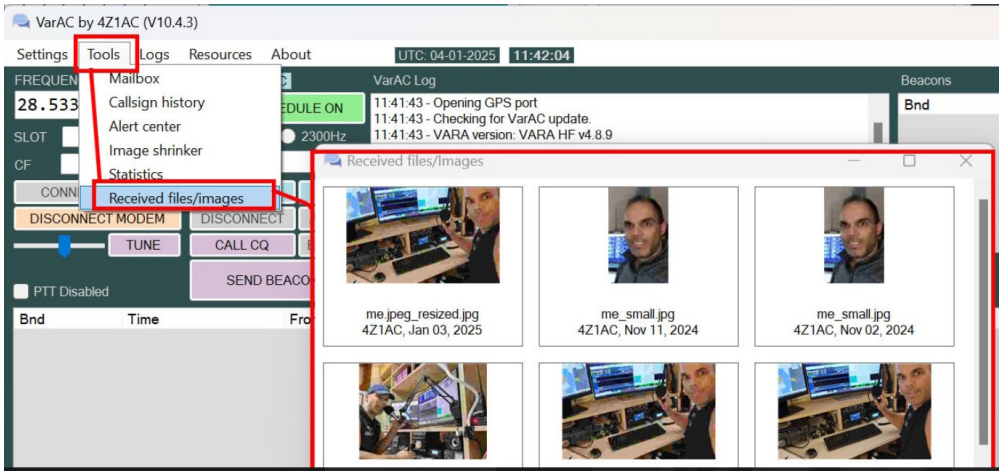


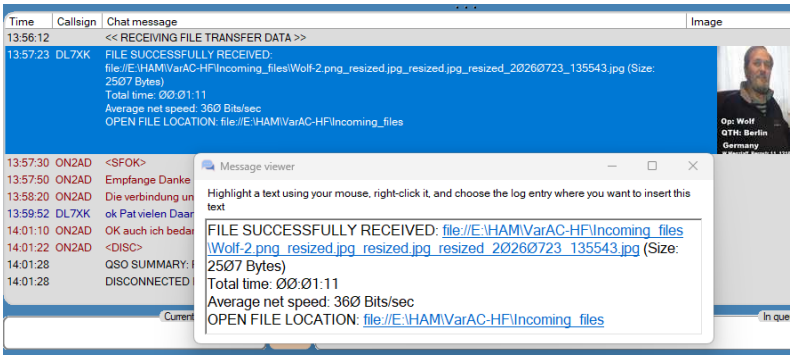
Received files/Images

Over time, you've received countless files and images during your QSO so now they are access in one place?

Simply navigate to Tools → Received Files/Images, and you'll enter the File & Image Gallery, where all your incoming files are neatly organized with: File Name, Callsign of the sender and Received Date.

Click on any file to open it instantly—or, if it's an image, enlarge it for a better view!





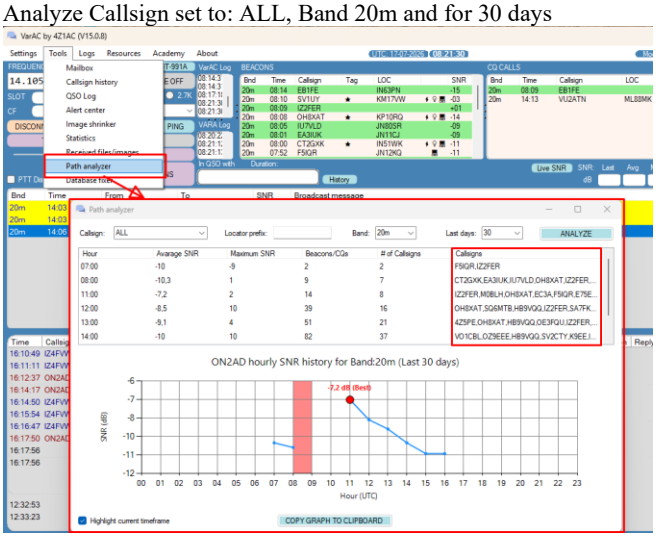
Path analyzer

Path Analyze lets you explore the SNR reports stored in the VarAC database and answer questions such as:

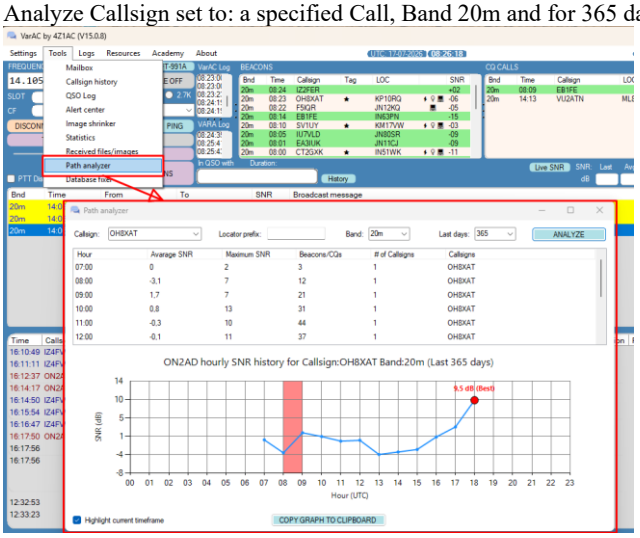
What is the average SNR per hour? Per band?
What is the best time of day for me on 20M?
What is the average SNR I receive from a specific Grid locator on 40M throughout the day?
I want to chat with my friend Irad 4Z1AC, what is the best hour and band to reach him?
What are the activity times of NC3Z on each band?

These are just a few examples of how you can use this tool.
You can access Path Analyze from the Tools menu, or, when connected, you now have two SNR graphs:
Live which you're already familiar with.
Past SNR which opens Path Analyze, focusing on the **connected station and band**.

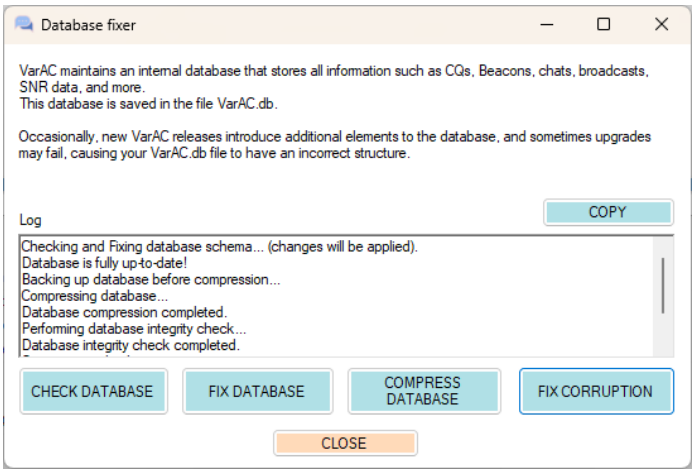
Analyze Callsign set to: ALL, Band 20m and for 30 days



Analyze Callsign set to: a specified Call, Band 20m and for 365 days



Database fixer

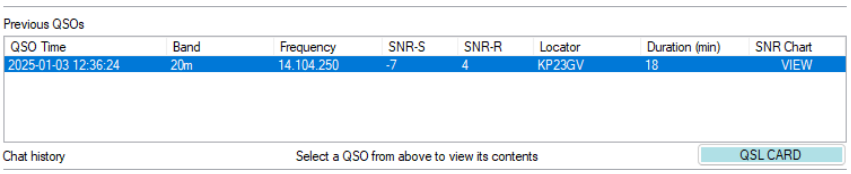


A tool for advanced users to inspect the structure of your VarAC.db for any missing elements.

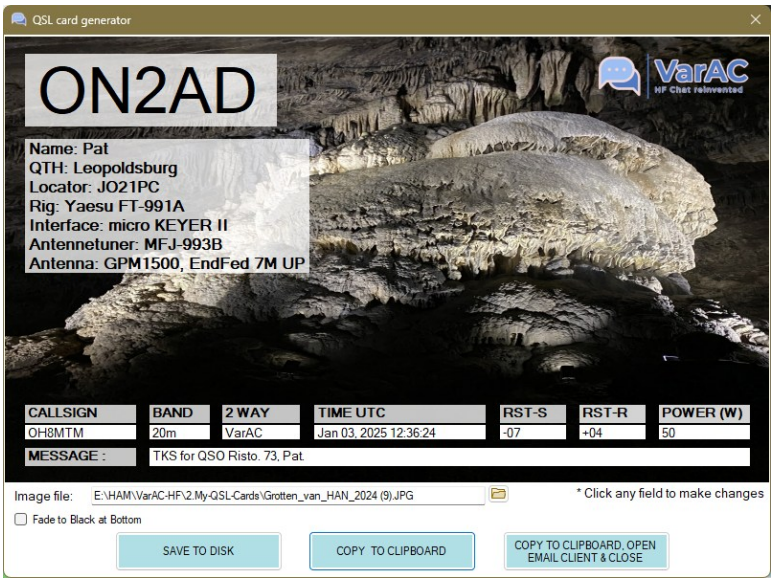
QSL Card

QSL creating

When open the Callsign history in the menu Tools and you fill in the callsign you worked and will send a QSL card and you press the "QSL CARD" button. You will see the result as below, but with you info and image.



1. Open the "Callsign History" tool.
2. Enter a callsign you've had a QSO with.
3. Select any QSO from the list.
4. Click the "QSL Card" button.



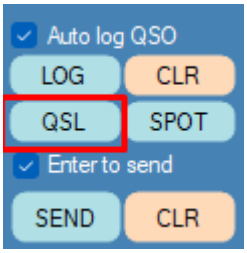
You can customize your QSL with a personalized touch:

- Change the background image.
- Adjust the bottom color for better text visibility.

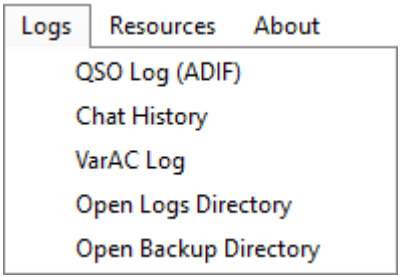
Once your QSL is ready, use the Copy to Clipboard option to paste it into an email and send it effortlessly.

Quick Access to QSL Generator

- On the main screen, you'll now find a brand-new "QSL" button in the bottom right corner.
  During a QSO → Clicking it will open the QSL generator preloaded with your current QSO data.
- After disconnecting → It will automatically load details from your most recent QSO, ready for you to generate and send your QSL instantly.



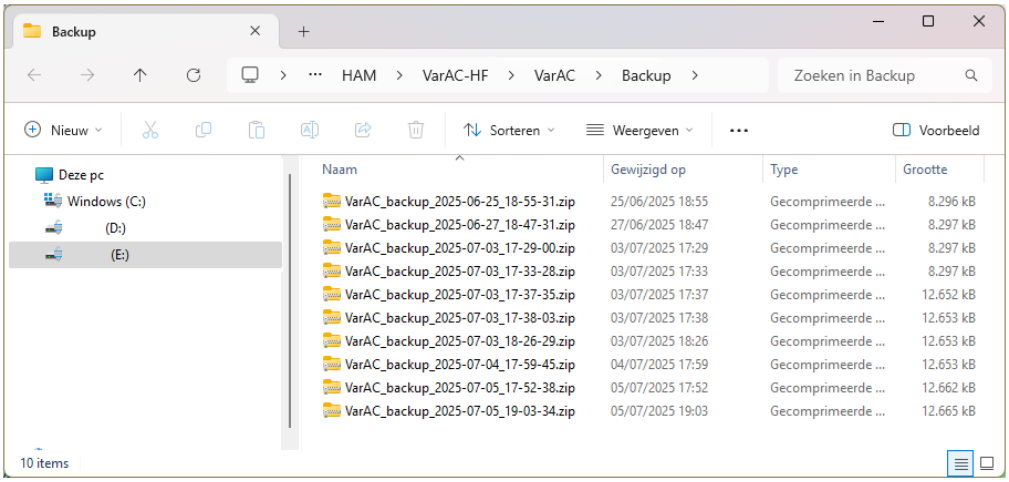
Logs



Easy access to all VarAC logs like:

QSO log (ADIF): here are your log in ADIF format(xxx.adi).
Chat history: Your chat history.
VarAC Log: Here are the whole VarAC log (not the logbook).
Open log directory: This open the VarAC folder.
Open Backup Directory: see Open backup directory

Open Backup directory



Here you can find your backup files in the directory which are selected in the menu

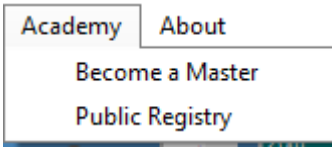
Rig Control and VARA Configurations / Misc.

Resources



Quick Start Guide	**Opens the VarAC Quick Start Guide page at VarAC Quick Start Guide**
User Manuals	Open the complete end-to-end VarAC manual page at VarAC user manuals
VarAC Facebook Group	Opens the Facebook page of VarAC at (3) VARA operators - Digital mode for HF radio | Facebook
VarAC Telegram Chat group	Opens the Telegrams Chat group
VarAC Discord Channel	Open a Discord Channel
VarAC Forum	Opens the VarAC Forum page at https://www.varac-hamradio.com/groups
Troubleshooting	Opens the troubleshooting page at https://www.varac-hamradio.com/group/troubleshooting/discussion
FAQ	Opens the most Frequently Asked Questions page at FAQ | VarAC

Academy



Become a Master VarAC Academy
Public Registry Academy | VarAC
VarAC now has an official training program.

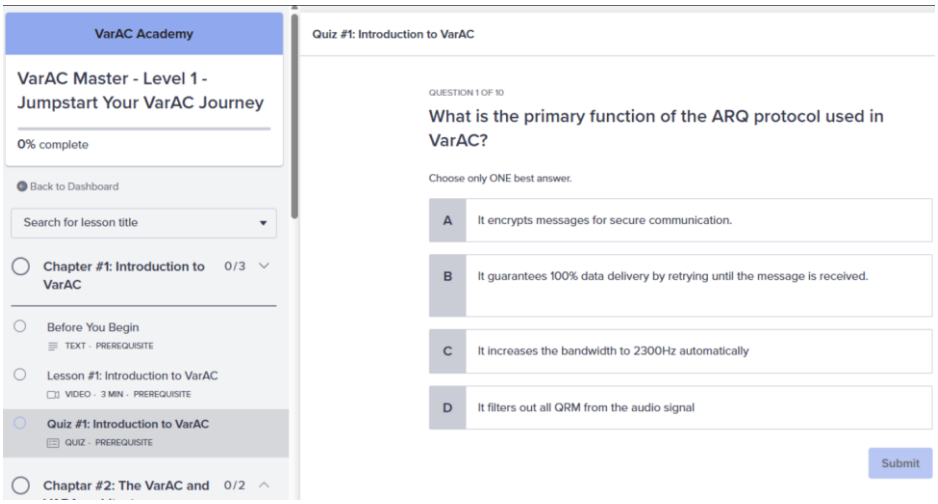
We have been working on this project for a year and have carefully developed an online program that introduces three levels of ranks in VarAC. Today, we are pleased to announce the launch of the first level

VarAC Master

This online course consists of 13 carefully curated video tutorials, designed to provide both new and advanced tutorials
VarAC users have everything they need to know to operate VarAC with confidence.



But that's not all. After every lesson, you will find a quiz designed to ensure that you have successfully absorbed the material.



However, that is not all. If you pass all quizzes with a score of 80 or higher, you will receive two diplomas:

1. A digital diploma that you can print and proudly share on our social media, so everyone can see that you are an official VarAC Master.
2. And a **diploma on the radio**, letting everyone in the band know that you are an official VarAC Master, so they can acknowledge your achievement.

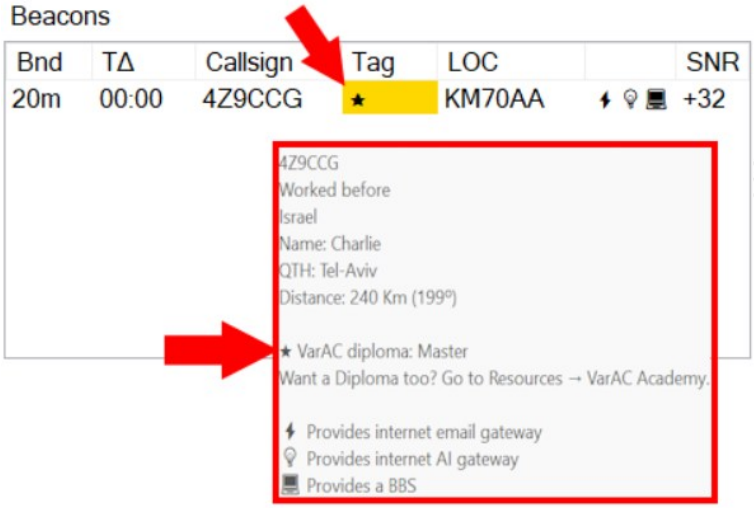
More training sessions, new ranks, and badges will be introduced soon, so stay tuned.

To learn more about VarAC Academy's online courses,

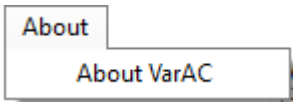
Click here:

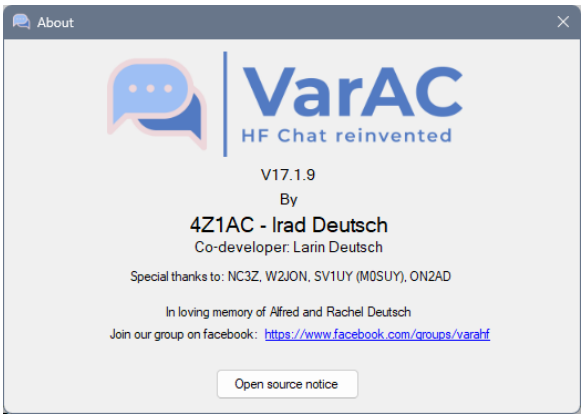
https://www.varac-hamradio.com/academy

You can sign up and experience the first lesson for free as a taster before deciding if you want to take the full course.



About





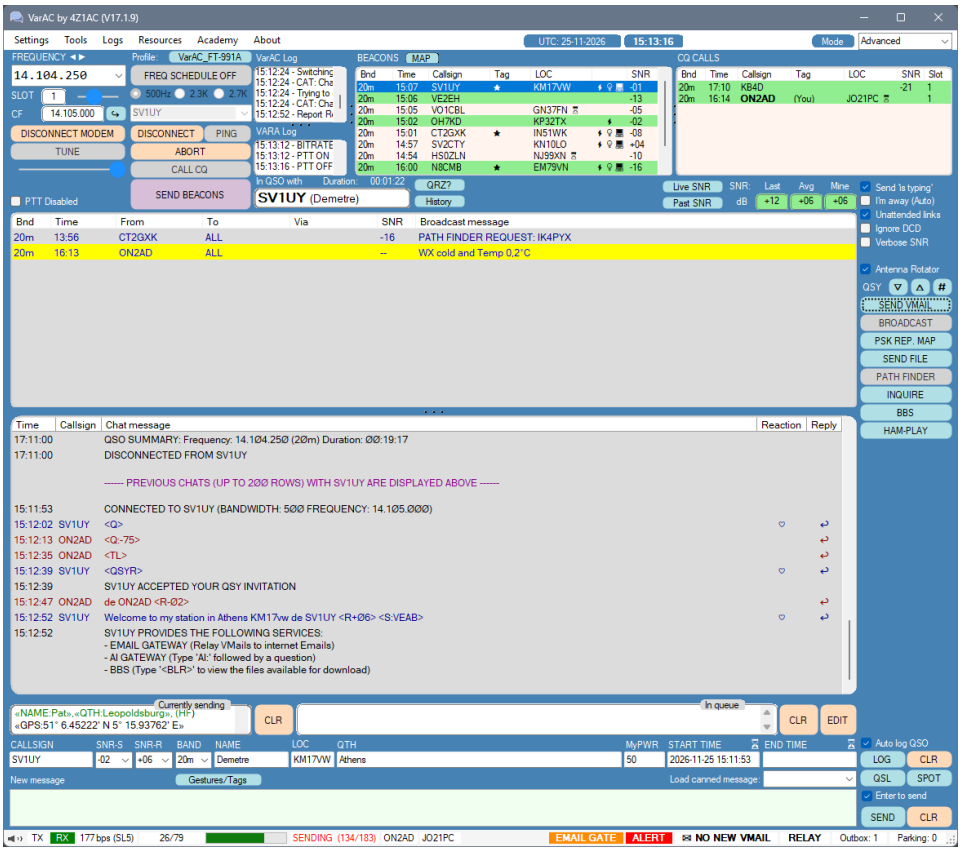
Bottom menu



	The mute button now lives in the lower strip on the left, as a clickable speaker icon.
TX RX	Receive modus
TX RX	Transmit modus
61bps (SL3)	Link speed indicator
0/0 IDLE	Idle Sent/Receive indicator

0/0 SENDING (15/23)	Sent indicator
474/476 RECEIVING (79/151)	Receive indicator
ON2AD	Your Callsign like setup in the Menu My Informations
JO21PC	Your locator
EMAIL GATE	The e-mail Gateway is deactivated
EMAIL GATE	The e-mail Gateway is active
EMAIL GATE	The e-mail Gateway is active but there is no active sender node in the cluster.
The Email gateway is INACTIVE. CLICK TO ACTIVATE	Hovering over the bottom strip now provides real-time status feedback on the Email gateway sender node.
ALERT	ALERT center
✉ NO NEW VMAIL	No new VMails
✉ 1 NEW VMAILS	1 New VMail
RELAY	VMail_Relay
Outbox: 2	Outbox
Parking: 0	Parking

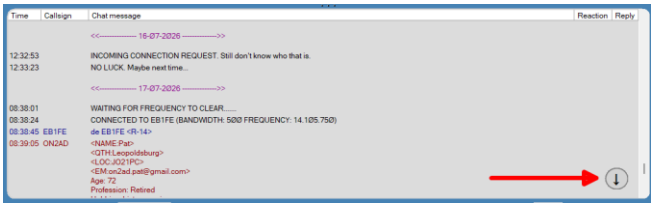
VarAC main screen



Scroll down indicator

When you scroll up, VarAC will automatically display a "quick scroll down" button.

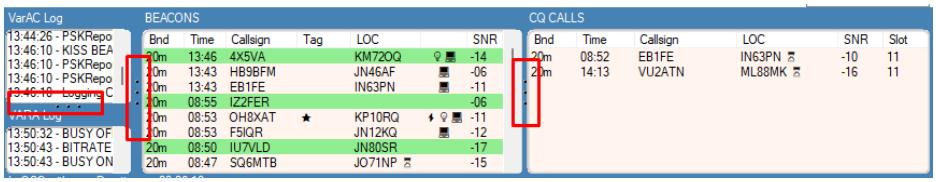
However, if a new message arrives while you're focused on an earlier part of the QSO, the icon will flash green, alerting you to a new message waiting further down.



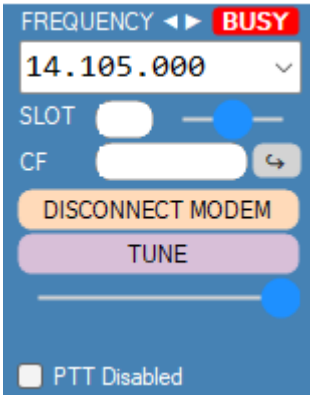
Adjustable Beacons/CQ/Log size

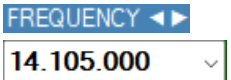
You can now easily resize those sections by dragging and dropping the separators (the 3 dots) between them.

Don't worry VarAC will remember your settings, so when you launch it again, everything will be just the way you left it.



VarAC Commands



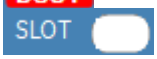


Increase or decrease the frequency by 750 Hz

Select a frequency with a drop-down button. See



Frequency BUSY indicator.



Here you see the SLOT number



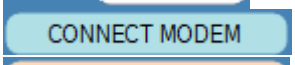
Slot slider



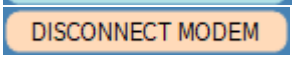
CALL Frequency



Returns to the **C**all **F**requency



Connecting to the VARA modem



Disconnect the VARA modem



Set the VARA modem ALC level and keys the PTT to test it.



When dragging the Tune slider with your mouse, the exact frequency offset value is now displayed.





Tune signal. Note: only works with the paid VARA version
Safety mechanism for stuck PTT: Auto turning PTT off every minute while in in active transmission



Switching the PTT on and off see VarAC cluster PTT lock

Disconnect modem

Double-click Disconnect Modem protection

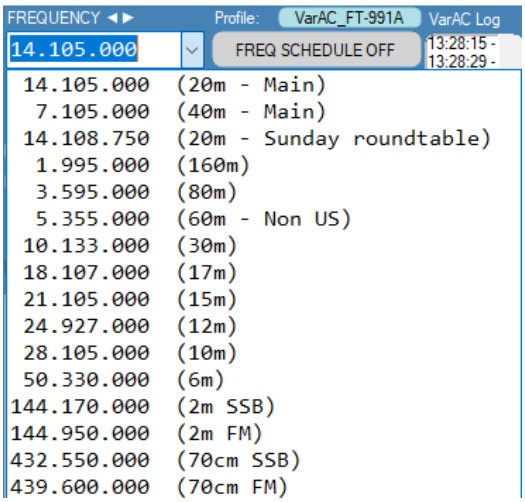
Disconnecting the modem now requires two clicks on the DISCONNECT MODEM button to prevent accidental disconnection.

User Interface Improvements

Common functionality buttons have been consolidated for a cleaner interface:

- Connect / Disconnect Modem → Combined into a single button.
- Call-Out (CQ) / End Call-Out → Combined into a single button.
- Connect / Disconnect Station → Combined into a single button.

Calling Frequency (CF) (USB dial)



Band	-	Freq	MHz	
20M	-	14.105.000	MHz	Primary – day time
40M	-	7.105.000	MHz	Primary – night time
20M	-	14.108.750	MHz	Sunday roundtable
160M		1.995.000		
80M	-	3.595.000	MHz	
60M		5.355.000	MHz	Non US
30M	-	10.133.000	MHz	
17M	-	18.107.000	MHz	
15M	-	21.105.000	MHz	
12M	-	24.927.000	MHz	
10M	-	28.105.000	MHz	
6M	-	50.330.000	MHz	
2M	-	144.170.000	MHz	SSB
2M	-	144.950.000	MHz	FM
70CM	-	432.550.000	MHz	SSB
70CM	-	439.600.000	MHz	FM

Important note:

Some Emcomm groups start their own frequencies for their operations. This means that they add additional frequencies to the dropdown and use the other frequency as their CF for their EmComm operations.

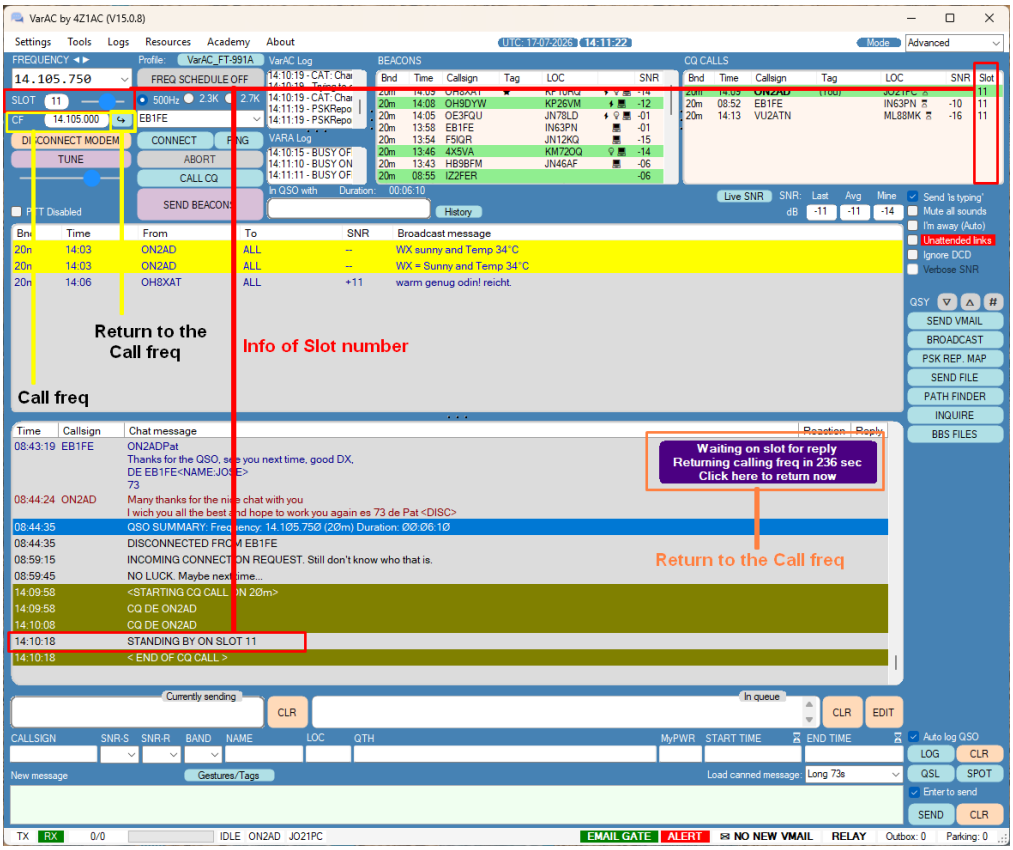
What they have found is that Vmails are being forwarded on the CF, while they also want their team members to QSY to a slot around their CF. Thus, there is a VarAC CF restriction on other frequencies.

This means - any frequency listed in the dropdown is considered a CF and therefore has restrictions.

Your VarAC will not forward VMail or send a file while tuned to a frequency listed in the dropdown.

If you want VarAC to disable all restrictions in the calling frequencies list, uncheck this option in the Consider entire frequency list as CF menu.

Slots



The problem

VarAC QRGs becomes highly busy. The QSY UP/DOWN frequencies are sometimes also in use simultaneously. This leaves no room for people to CALL CQs or conduct long QSOs.

The Solution

Creating a SLOT-based mechanism. Here are the main principles of this model:

Band plan:

1. A single calling QRG (ex. 14.105.000) per band.
2. 10 slots around the main QRG with +-750Hz steps. Ex.:
   a. Above QRG : 14.105.750, 14.106.500, 14.107.250, 14.108.000, 14.108.750
   b. Below QRG: 14.104.250, 14.103.500, 14.102.750, 14.102.000, 14.101.250
3. Each slot will be given a number – AKA SLOT-ID: Ex. SLOT-ID 1,2,3…

QSO-workflow

4. User clicks "Call CQ"
5. User A chooses a SLOT
6. Checks that the SLOT is not occupied:
   A SLOT SNIFFER button – this button will allow the user to temporarily QSY to the SLOT and listen if it is free.
   Holding the button down will listen on the SLOT.
   Releasing it will jump back to the calling QRG.
7. User A calls CQ on the main QRG with an SSID that points to the SLOT-ID that the user desires to have a QSO on.
   Example: CQ DE 4Z1AC-4 which stands for: "I standby on Slot #4"
8. After the CQ, User A will automatically QSY to the relevant SLOT waiting for an incoming connection request.

9. The CQ call will appear on Last-Heard-CQ with the SLOT-ID indication for users that monitors the calling QRG.
10. User B double click User A callsign on the LH CQ list.
11. User B automatically QSY to the identified SLOT and makes a connection attempt.
12. User A and User B connect on the SLOT and conduct a QSO.
13. Once the QSO ends, Both users will remain on the slot. A “Back to Calling frequency” button will be enabled to allow them an easy skip back.

New configurable parameters under settings

CQ SLOT WAIT TIME = from 60 till 3600 seconds (1 to 60 minutes): how much time a station will park on the SLOT for incoming calls following a CQ call. See CQs/Beacons

Additional notes

If a QSO takes place on the main QRG for any reason, CQ calls can still be decoded quite well by others so it will have some, yet minimal effect on the model.

The model is relative. Meaning that SLOT ID frequencies will be calculated based on the parking QRG. Users can create their own SLOT plans on other frequencies just be deciding on an agreed calling QRG.

The QSY UP/DOWN/# will remain as is. People can still move around in case of QRM.

500Hz, 2300Hz or 2750Hz



Well, we want to be efficient. So, by default all VarAC QSOs are made in 500Hz. if you want to test a wider bandwidth, feel free to do so, but choose another frequency not listed in the VarAC QRGs and try it out. Just be respectful to other HAMs on the band

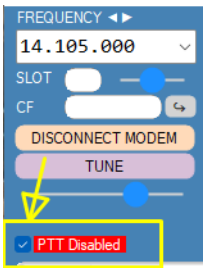
Note: On the VarAC CQ frequency, the 2300 Hz is locked

VarAC cluster PTT lock

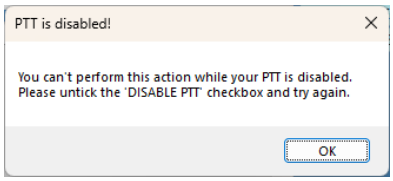
see Additional Cluster configuration

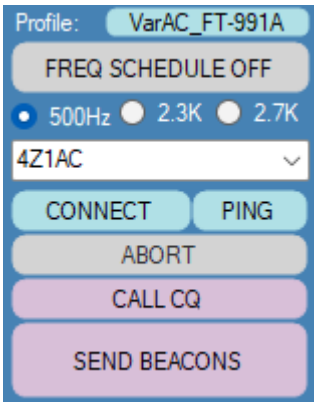


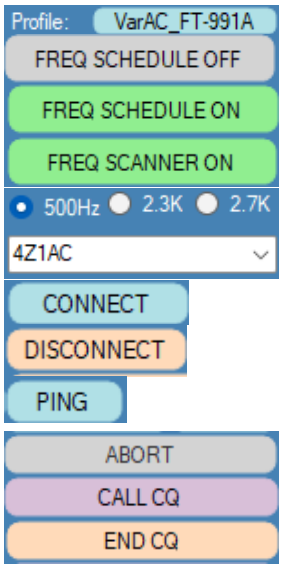
If “Disabled PTT” is enabled and you try to connect, a window will appear reminding you to disable it first.



This feature to ensure that when one VarAC is active, whether in a QSO or relaying VMail, it will now automatically lock the PTT for all other VarACs, preventing the attempt of simultaneous transmissions.







This is your selected Profile see Switch profile
see Frequency schedule

see Freq schedule ON

See Freq scanner

The selected bandwidth see 500Hz or 2.3K or 2.7K

see Instant Connect by Callsign Entry

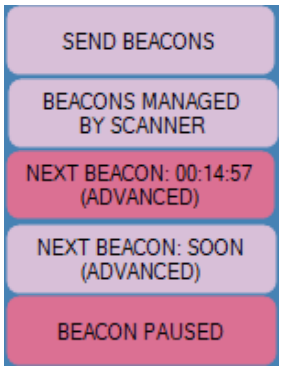
Make your connection with a Station

Disconnect from a Station.

Connect only to get a report followed by a disconnect.
Limiting Ping time to 80 seconds on the CF
Abort

Click this button to send your CQ

Click this button to end the CQ call



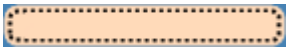
send your beacon see CQ/Beacons

Beacon managed by your scanner see Freq scanner

Time for the next Beacon transmit see CQ/Beacons

Next beacon will send soon

If you are in Beacon modus and disabled the PTT then you become this paused message

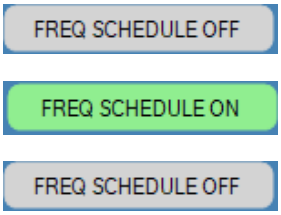


This jagged line indicates that this button is active

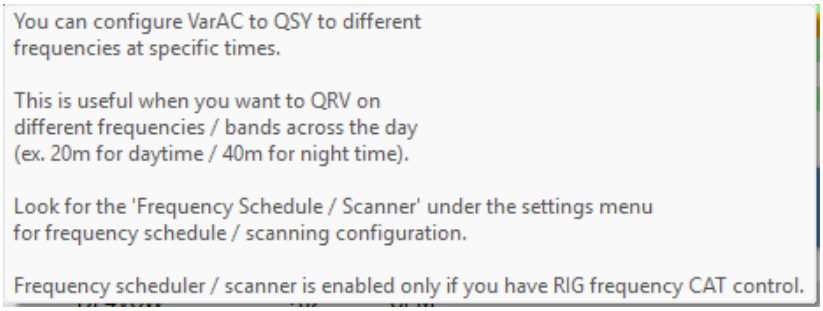
Instant Connect by Callsign Entry

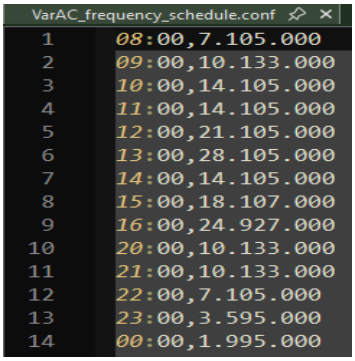
Pressing Enter after typing a callsign or after selecting one from the dropdown will immediately initiate a connection.

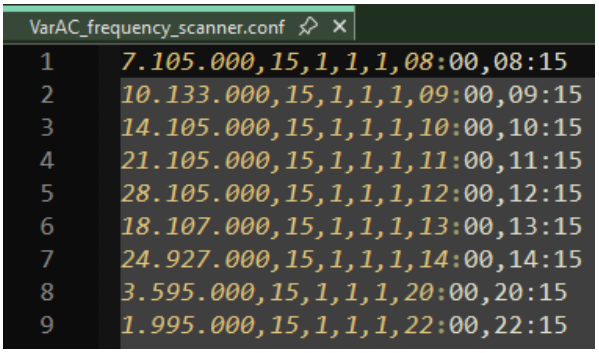
Freq / Scanner schedule ON



Move your mouse over Freq Schedule….
and the following text will appear.







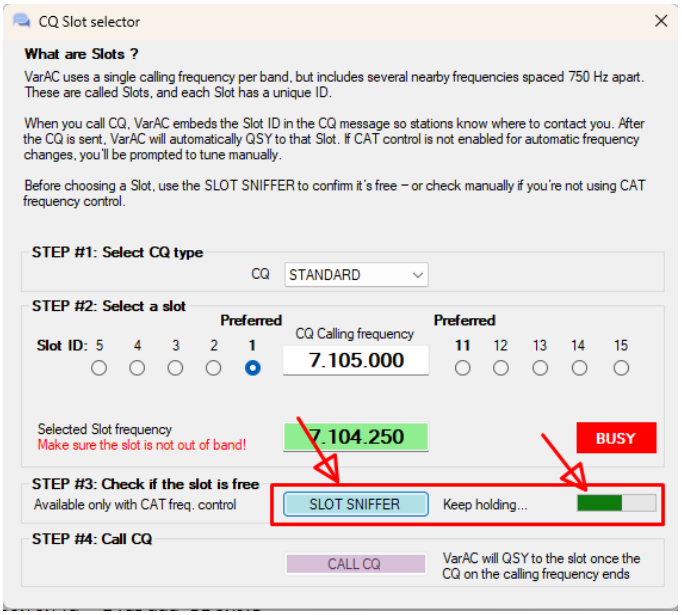
CALL CQ

See also Slots

What are Slots?

CQ Slot selector

VarAC has a single calling QRG per band. However, there are multiple manual frequencies around that QRG that are 750 Hz apart. These frequencies are called "SLOTS" while each slot has a unique ID.



When clicking the CALL CQ button, the following window will appear.
Here you can choose from different “Slots”.

When you call CQ, VarAC encodes into the CQ call the slot ID where you will be standing by incoming connections.

VarAC will automatically QSY to the slot once the CQ Call ends. If you do not use CAT control, for automatic frequency change, you will be asked QSY manually.

Please use the "SLOT SNIFFER" to make sure the slot is not occupied or check manually if you have no CAT frequency control.

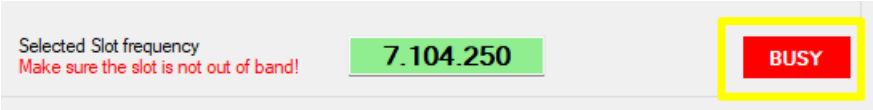
If no answer, your Rig will QSY back to the CF (Call Frequency)



To incentivize users to invest more time in QSY sniffing before sending a QSY invitation, a small countdown progress bar will now appear upon sniffing the QSY frequency.

CQ Slot BUSY Indicator

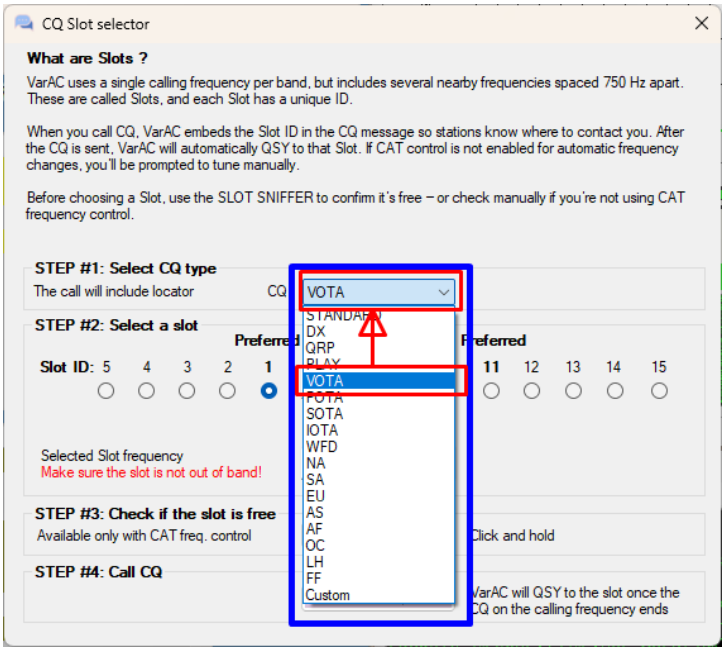
A BUSY indicator has been added so you can quickly see whether a slot is free before transmitting



QSY Slot Sniffer 8s

The QSY slot sniffer now monitors for up to 8 seconds, giving you more reliable slot detection.

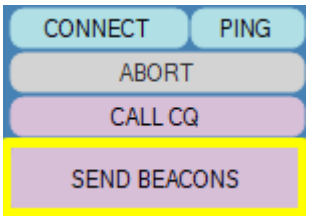
CQ Calling selector



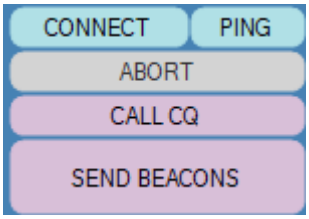
Here you have the option to choose how you wish to send CQ.
Standard
DX
QRP
PLAY
VOTA
POTA
SOTA
IOTA
WFD
NA
SA
EU
AS
AFR
OC
LH
FF
or your own choice that you select via Custom, such as
CQ TEST

Note: If you do not have CAT control or wish to do a QSO on the call frequency then you must check the “Skip CQ slot selector” in the menu “Settings/Rig Control and VARA Configurations”.
Please note this method is NOT recommended.

Send beacons



[See Beacon interval (minutes)]



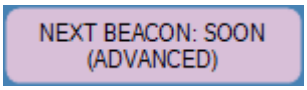
In the box NEXT BEACON: xx:xx:xx min you can see when the next beacon will be broadcast.

To stop broadcasting the beacons just click:

SEND BEACONS



NEXT BEACON: xx:xx:xx
Remark
xx:xx:xx indicates the duration



It's mean that the Frequency is busy, and when the Freq is free, the beacon will send

CQ and beacons

VarAC offers two different ways to let other VarAC users know that you are online.

What should I use?

- Looking for someone to chat with NOW? Press the CQ button.
  Did not get an answer? try it a few more times.
- Want to leave your RIG open and accept incoming connections while you are with other business - press the BEACON button.

Tip

Leaving your RIG on the QRG with VarAC open will intercept other users' beacons.
Right click a beacon to connect.

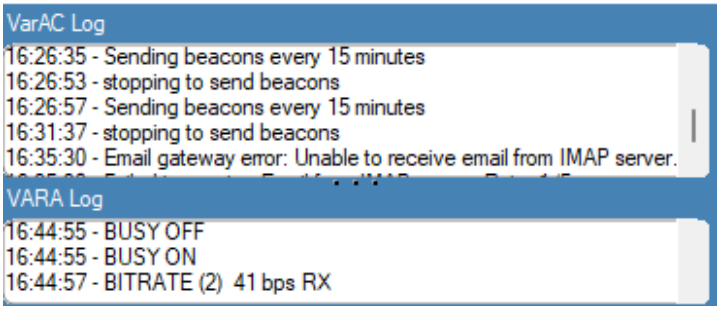
What are the limitations of using VarAC beacons?

Beacons are great. But they can also become a nightmare for your fellow HAMs. Therefore, some limits are built in:
Beacons turn off automatically after 24 hours.
Minimum beacon period is 15 minutes.

Beacons will not activate if the frequency is identified as BUSY with a pending VARA QSO or other beacons/CQ calls. It waits 60 seconds from the time the frequency is cleared before sending a beacon.

Beacons will not activate while in the middle of a QSO/CQ, even if it is enabled. In other words, you do not have to turn off beacons while chatting or CQing. It stays lit once you end your CQ/Chat.

Log & VARA commands



Clock and the UTC time.
as YYYY-MM-DD hh:mm:ss
VarAC Log:
Here you can see all the info like Connected to VARA modem.
That the band with is 500 Hz
That OmniRig change the frequency

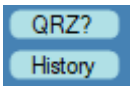
That you Call CQ
Or you call via the Beacon
That you are connected to station XXXXX etc…
VARA commands:
Vara OK or ….
Is Pending
Your PTT is ON or OFF
Frequency is busy
The SN is visible etc…

In QSO with



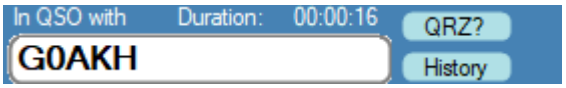
If you are connected to a counterpart station, the callsign of the counterpart station will be displayed, and you can see the History and QRZ.com page

See History



See Callsign history

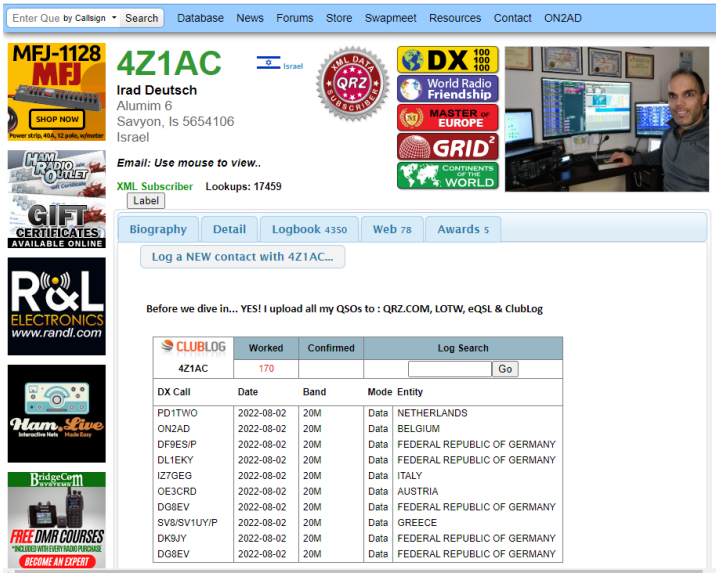
See QRZ.com



If you are connected to a counterpart, the counterpart's callsign will be displayed



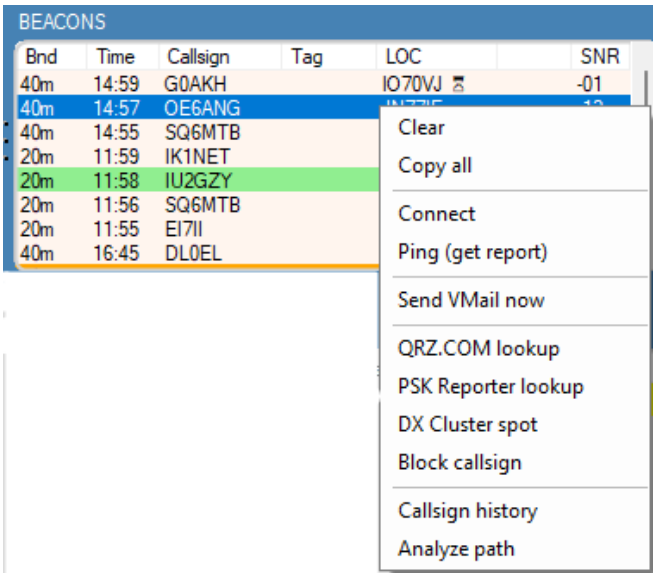
Clicking on the QRZ opens the QRZ.com page of your chat partner



Last heard beacons

NOTE: If you run in Linux compatible mode you don't see the icons there just plain text.

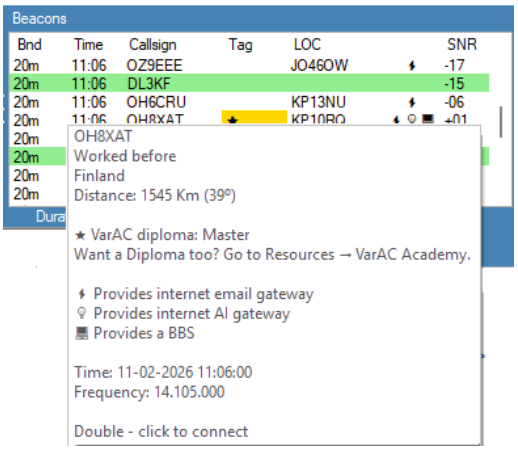
Here you find a list of stations that have access the beacon function.
When you hoover with your mouse in a green/orange/non-coloured line you will get a tooltip explaining the coloured lines.



By select a Call and press on the right mouse button on that Callsign a new window open for the next info:

Clear	Select that Call and then left mouse click for clear this Callsign.
Copy all	Copy it all.
Connect	Connect this Callsign.
Ping (get report)	Select that Call and then left mouse click for get your report.
Send VMail now	Send your VMail.
Broadcast reply	Replay of a broadcast.
QRZ.COM lookup	Select that Call and then left mouse click for lookup QRZ.com.
PSK Reporter Lookup	see their PSKReporter spots.
DX Cluster spot	see Additional Cluster configuration
Block callsign	Right-click on a callsign in the main screen to block it instantly.
Callsign history	Go to the Callsign history.

Analyze path see Analyze path



Move your mouse over a Callsign and you will see some info.

As:
His callsign
Worked before or new Callsign
Country
Showing VMail relay notification in the beacons list
And…

See Legends of color



The relay notification mechanism has been enhanced. In addition to the RELAY alerts displayed at the bottom strip, they will now also be highlighted in a more prominent manner within the Beacons sections. If you notice a small envelope icon, it indicates that this station has a VMail waiting for you.

See Legends of color

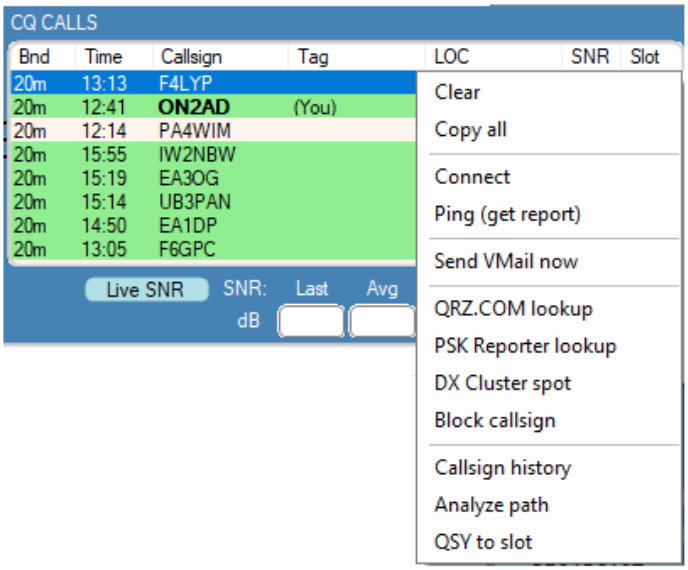
Indicators of the icons

★	VarAC diploma Master
★★	SafecomLink diploma: Elite
ϟ	Provides internet email gateway
💡	Provides internet AI gateway
💻	Provides a BBS
✉	It indicates that this station has a VMail waiting for you.
	Based on the last know locator
	It indicates an urgent message
<<	It indicates that this station is scanning multiple frequencies

Last heard CQ Calls

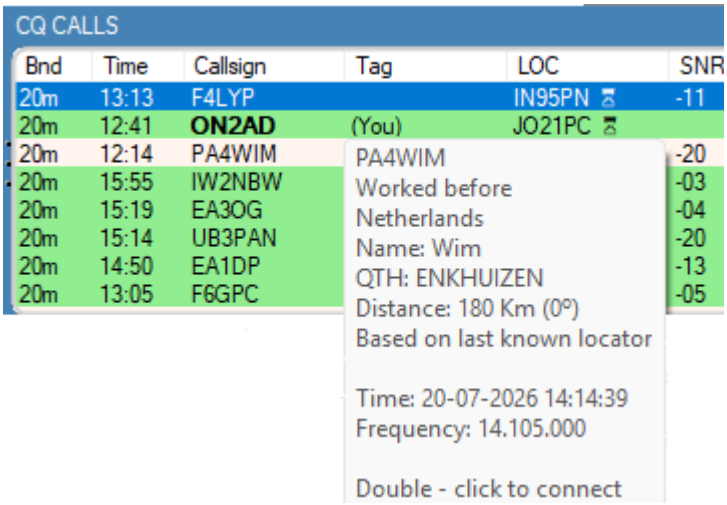
NOTE: If you run in Linux compatible mode you don't see the icons there just plain text.

Here you find a list of stations that have calling CQ.



By select a Call and press on the right mouse button on that Callsign a new window open for the next info:

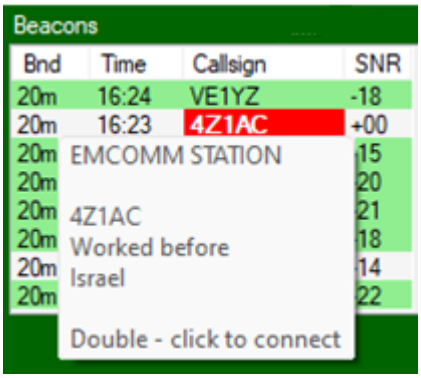
Clear	Select that Call and then left mouse click for clear this Callsign.
Copy all	Copy it all.
Connect	Connect this Callsign.
Ping (get report)	Select that Call and then left mouse click for get your report.
Send VMail now	Send your VMail.
Broadcast reply	Replay of a broadcast.
QRZ.COM lookup	Select that Call and then left mouse click for lookup QRZ.com.
PSK Reporter Lookup	see their PSKReporter spots.
DX Cluster spot	see Additional Cluster configuration
Block callsign	Right-click on a callsign in the main screen to block it instantly.
Callsign history	Go to the Callsign history.
QSY to Slot	QSY to slot



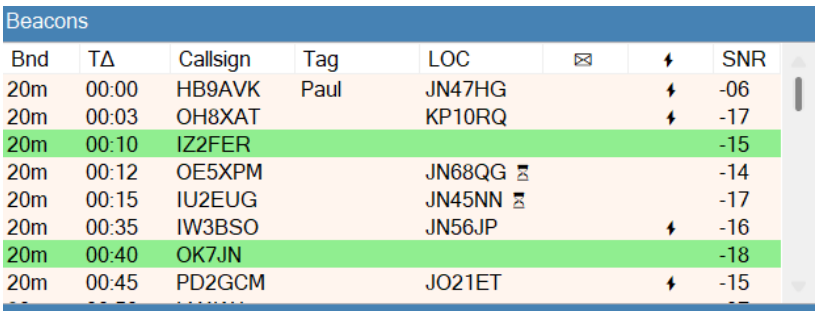
Move your mouse over a Callsign and you will see some info.

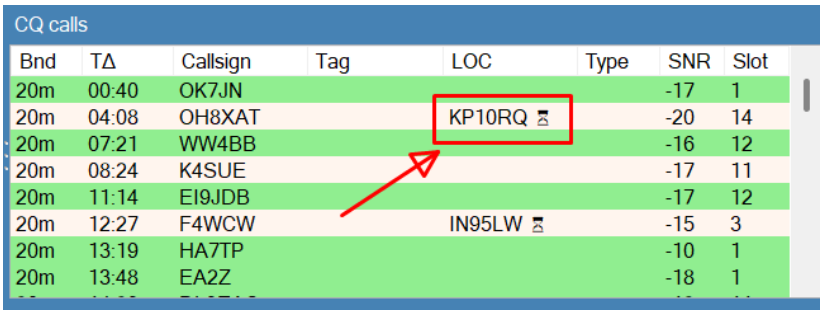
As:
His callsign
Worked before or new Callsign.
Country
Locator in special CQs
And…

See Legends of color



Here you will see that an EmComm station is calling a beacon



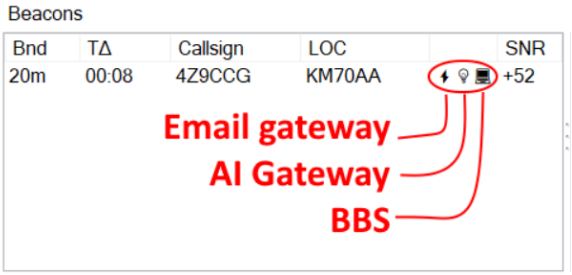


The revolution in VARA broadcasts now enables VarAC to utilize the new VARA un-proto packets for enhanced functionalities.
In addition to the standard CQ, users can now initiate a special CQ, comprising two additional elements:
CQ type (selectable from a dropdown list or enter your own)
Grid Locator
This new CQ is transmitted in SL2, which is nearly as efficient as SL1, the speed of standard CQ transmissions.
The CQ wizard has been updated to accommodate these new CQ options.

Please note that the additional Type & Locator fields will only appear if you have received at least one special type of CQ.

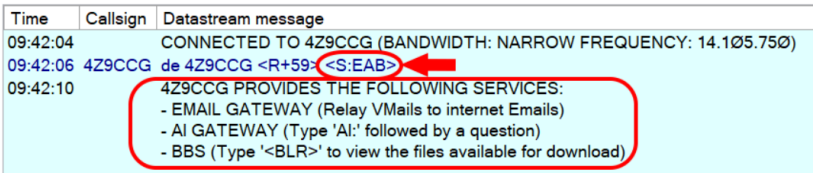
Multiple Services through beacons

VarAC has reshaped the way services are announced.
It can now announce any of the three services you provide, or all of them.
You can now choose for each service (Email gateway, AI gateway, and the new BBS) whether you want it to be announced in your beacons.
Each service is represented by a different icon, and when you hover over a beacon, you get a detailed list of the services available on that station.

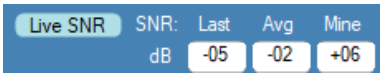


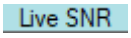
Multiple Services Upon Connection

Not only that, upon connection, even if you missed their beacon, the station will send a special tag that notifies your VarAC about the available services, so you know exactly what you can use.

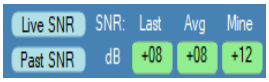


Middle menu



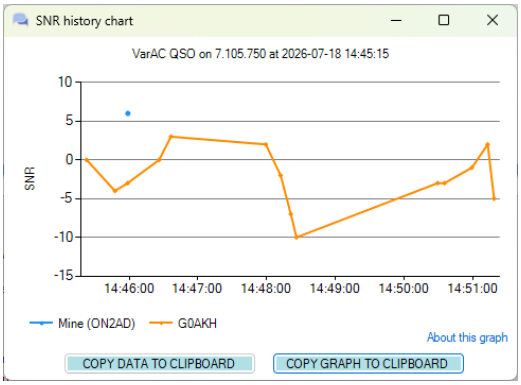


see Live SNR



SNR (dB):
Last: His signal in dB
Avg: signal in dB
Mine: My received signal in dB

Live SNR



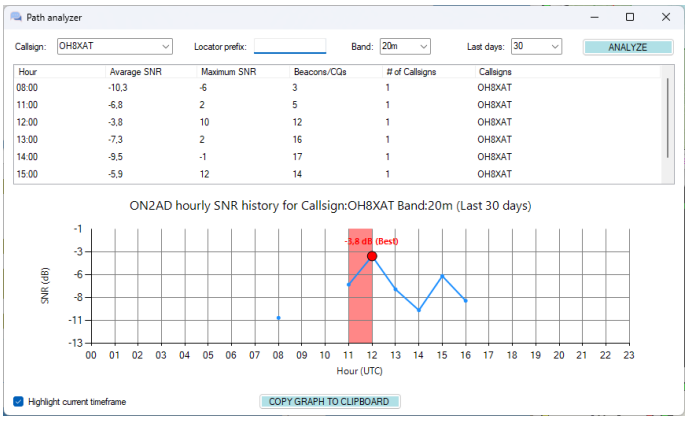
Here you can track the SNR reports during the QSO.

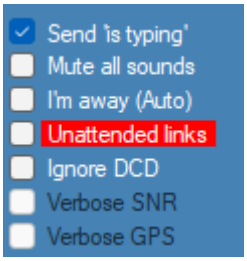
There are more reports of your partner as VarAC tracks the SNR every time a message is received while your SNR is reported by your QSO partner only occasionally.

Use the SNR button on the main screen if you wish to get an updated SNR report.

Hovering over points on the Live SNR graph shows tooltips with data values.

Past SNR





Send is typing	see send is typing
Mute all sounds	see also Appearance and sounds settings
I am away (auto)	see Auto away
Unattendend links	see Unattended links
Ignore DCD	see Ignore DCD
Verbose SNR	see Verbose SNR
Verbose GPS	see Verbose GPS Works only if the GPS reading etc is enabled

Ignore DCD

When persistent noise triggers the BUSY indicator, instruct VarAC to temporarily disregard it during tasks such as Beaconing, Calling CQ, Tuning, or Broadcasting.

PLEASE NOTE: Use this feature sparingly activating it only when needed.

Note that this setting resets itself to 'Inactive' within 2 hours or upon VarAC startup.

Sticky Ignore-DCD setting –The Ignore-DCD option now remembers its last state.
Removed Ignore-DCD time limitation –Ignore-DCD is no longer restricted by a time limit. Updated default DX Cluster reporting destination – Changed the default DX Cluster used for reporting.

Unattendend links

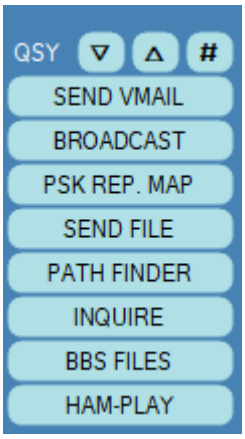
Certain regulations, like FCC Part 97.221, authorize unattended links on specific frequencies, with beaconing remaining a permissible operation. If you want to maintain beaconing functionality while, for any reason, you need to disable incoming connections, you can now find a new checkbox on the primary VarAC console to achieve this.

More Information

Unattended link works in parallel with your away status.
So, let's say you don't want unattended links.
So, you uncheck it.
Now it is all down to your away status.
If you want manual control, simply disable the "auto away" feature under settings.
Otherwise leave it there and once you do not touch VarAC, you away status will automatically kick in and no unattended links will be made.

When "Unattended Links" is disabled, the option is now highlighted in red to indicate limited functionality.

IMPORTANT:
By change to the EmComm mode UI will the Unattended links and the Auto log QSO reset, and they are hidden, you cannot change this.
So if you go after the EmComm UI to the Normal or Advanced UI, disable the Unattended links, if you for some reasons will not have Unattended links.



see QSY code of conduct

See Send VMail
See Broadcast

See PSK report map

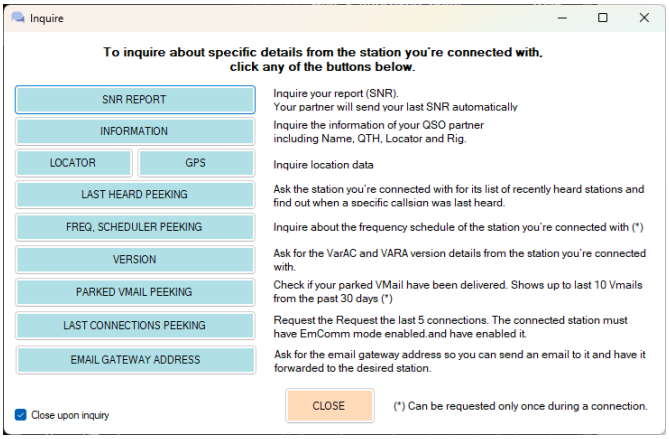
Click this button and select the file you wish to send.
See Path Finder

See Inquire
See BBS files

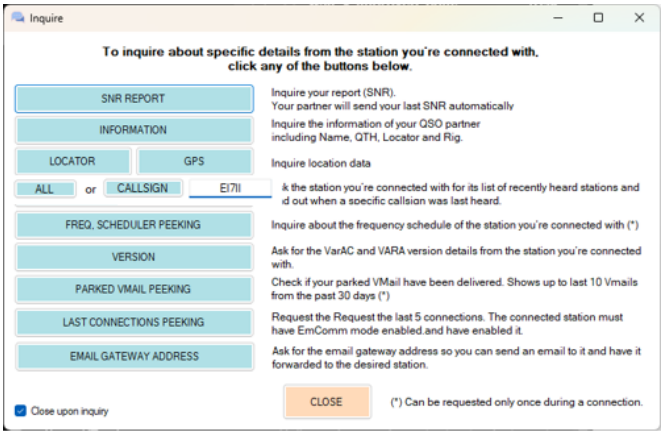
See HAM-PLAY (This button is only visible when it is enabled in Setting/Misc./HamPlay game center)

Inquire

Not connect with another station



Connected with another station

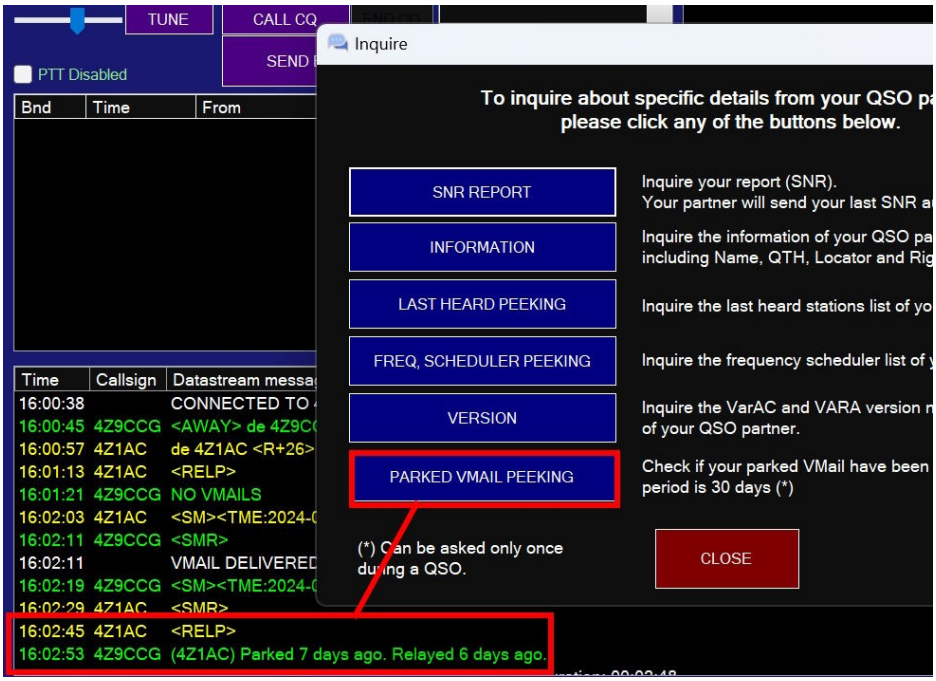


SNR Report	As command **<SNR>**		See Request data tags
Information	As command **<INFO>**		
Locator	Inquire only the locator of you QSO partner		
GPS	You can now request the exact GPS location of your QSO partner using the Inquire module!		
All or Callsign	Request the last heard stations list from your QSO partner or check when a specific callsign was last heard see Command **<LHC>**		
Last heard peeking	As command **<LHP>**		
Freq. scheduler peeking	As command **<FSP>**		
Version	As command **<VER>**		
Parked VMail peeking	As command **<RELP>**	See Parked VMail Peeking	
Last Connections Peeking	As command **<LCR>** and **<LCJ>**	See Last connection peek	
Email Gateway Address	See Email Gateway Address		

Inquire Window Control

Option to close the Inquire window after each inquiry or keep it open for additional inquiries.

Parked VMail Peeking



Have you ever parked a VMail at a mediator station, hoping it would reach its destination but never got confirmation of delivery?
Not anymore.

With V10, when you connect with someone, simply use the new 'Inquire' feature, 'Parked VMail Peeking.

You'll receive a report from the mediator, letting you know if and when your messages were delivered.

Last Connection Peek

Request the last 5 connections. Works only if they are in EmComm mode and have enabled it.

Email Gateway Address

Press **EMAIL GATEWAY ADDRESS** in Inquire and the other station sends you its Email Gateway address.
It works during a link and over broadcast.

BBS files

The BBS file list displays the files available for download from the station you are currently connected to. It shows only when:

1. You are actively connected to a station that operates a BBS.
2. You're not on an official VarAC calling frequency.

VMAIL

Information

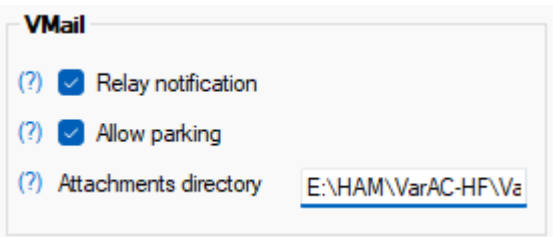
VarAC now empowers every user to operate their own bi-directional Email Gateway, allowing your station to seamlessly:

- Forward VMails from HF to Email, and
- Receive Emails and route them back into HF as VMails.

For sending VMails via Email see Email

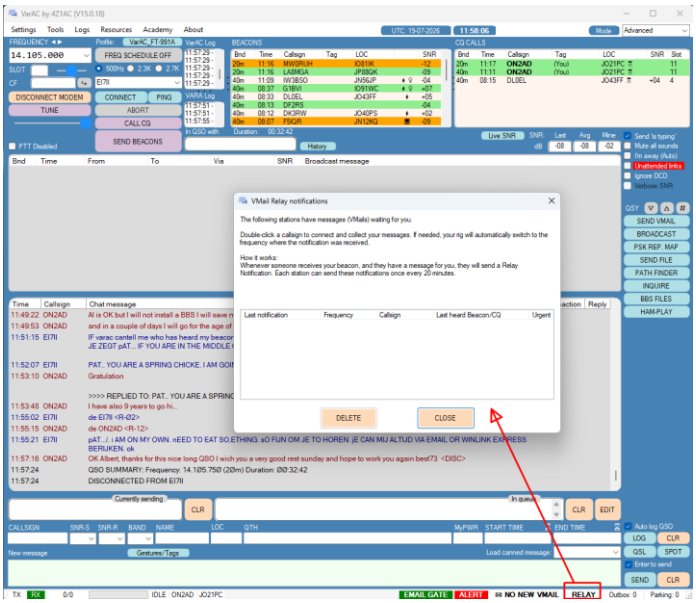
Unread VMail Always Visible

Unread messages will appear regardless of the date filter applied in the VMailbox.



Select **VMail**
Relay notification : See VMail Relay
Allow parking : See Allow parking
Attachments directory: See Attachments directory

VMail Relay



When your VarAC hears a beacon of a station, it checks if it has parking VMails waiting for that station.

If there are, it will send a asynchronous packet (broadcast) letting that station know you hold VMails that waiting to be collected.

Your VarAC also receives relay notifications and show you in indication for VMails that are waiting to be collected.

You can enable or disabled this incoming & outgoing notification using this checkbox.

Allow Parking

VarAC allows you to store and forward VMails for third parties.

Users can connect you and leave VMails for third parties.
Your VarAC notifies users about parked (waiting) VMails through the "Relay notification" mechanism, and forward the VMail, once the destination station connects to you.

If you do not which users to park messages on your VarAC due to local regulations or other reasons, you can disable this feature here.

Compact VMail Packets

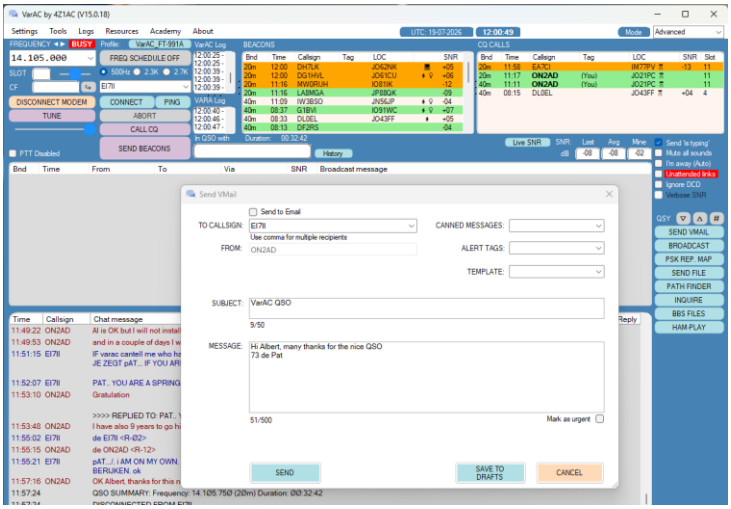
When exchanging VMail between two connected stations, TO/FROM callsigns are omitted. Additionally, the COMPOSED_TIME field is skipped if the message was composed within the last 10 minutes.

Attachments directory

VMail attachments

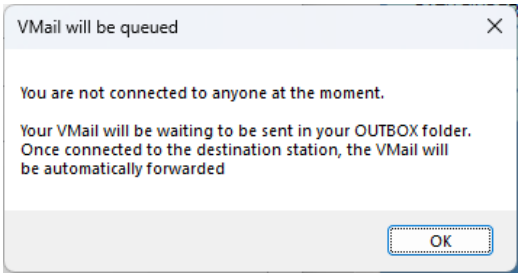
Files attached to the VMails you receive are saved in this directory, including VMails that arrive through the email gateway.
Please make sure to scan these files for viruses.

Send VMail

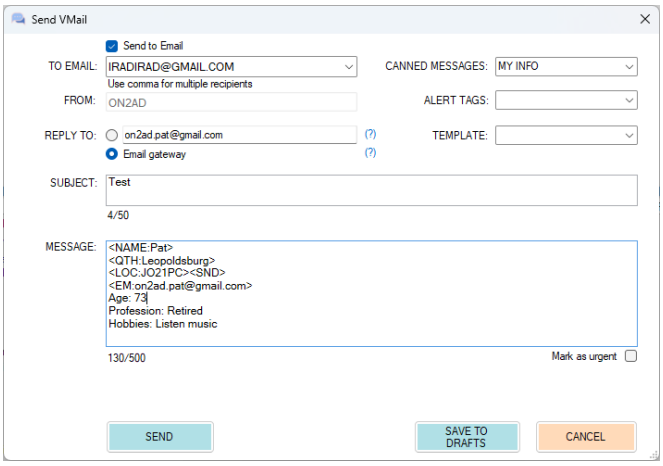


Clicking on the SEND VMAIL button open a new screen fill all in what need and press SEND.

Note:
Before you send a VMail you must be connected or you become a screen like below.

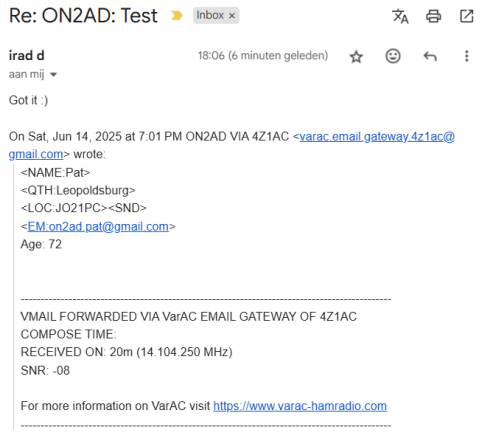


Send an E-mail via VMail



The same as above, you must be connected to the station I was connected with Irad, and send the Test message. Here the info:

```
15:59:50  4Z1AC   de 4Z1AC <R-11> <E>
15:59:50          THIS STATION SERVES ALSO AS AN EMAIL GATEWAY.
15:59:59  ON2AD   <SMR>
16:01:54  ON2AD   <SM><TO:IRADIRAD@GMAIL.COM><SBJ:Test><MSG:«NAME:Pat»
                  «QTH:Leopoldsburg»
                  «LOC:JO21PC»«SND»
                  «EM:on2ad.pat@gmail.com»
                  Age: 72
                  ><EG><RE:on2ad.pat@gmail.com>
16:02:06  4Z1AC   <SMR>
16:02:06          VMAIL DELIVERED SUCCESSFULLY
16:02:16  4Z1AC   <ER>
16:02:16          EMAIL WAS SENT SUCCESSFULLY
16:06:08  4Z1AC   got your email :)
16:06:23  4Z1AC   HI!
16:06:49  ON2AD   I got your e-mail to now
16:07:19  4Z1AC   nice :) anyhow - I have to go so leaving you to play along. 73s!
```



Below the received e-mail after I send this VMail and E-mail via the Send VMAIL

Preferred Reply-To Method

When a station sends an email through a connected gateway, they now have the flexibility to choose how replies are handled:

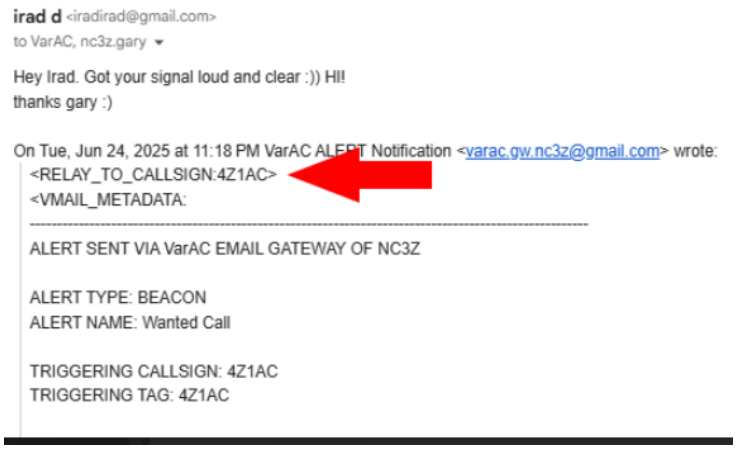
- **Reply via Email** – The response will be delivered directly to their external email inbox (outside the VarAC network).
- **Reply via VarAC Gateway** – The response will be sent back to the gateway, where it will be converted into a VMail and made available for pickup via HF.

This gives the sender full control over how and where they want to receive replies, whether through traditional email or directly back into the VarAC ecosystem.

Redirection Mechanism

- When the email recipient replies, the message lands in the gateway's email inbox.
- VarAC periodically scans the inbox, looking for emails that contain the <RELAY_TO_CALLSIGN:XXXX> tag.
- If the tag is found, VarAC converts the reply into a parked VMail inside the VMailbox of the specified callsign.
- This triggers a VMail relay notification, so the next time that callsign beacons, they'll be notified of a new incoming VMail—even though it originally came from an email reply.

This smart tagging system closes the loop, enabling smooth and traceable communication between HF and the outside email world.

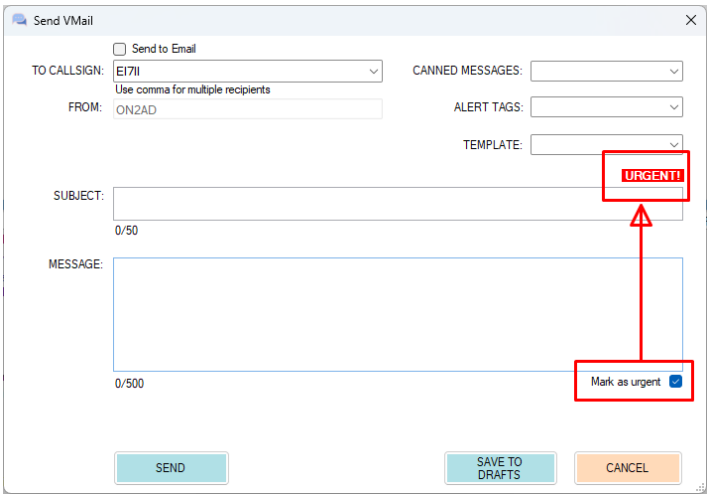


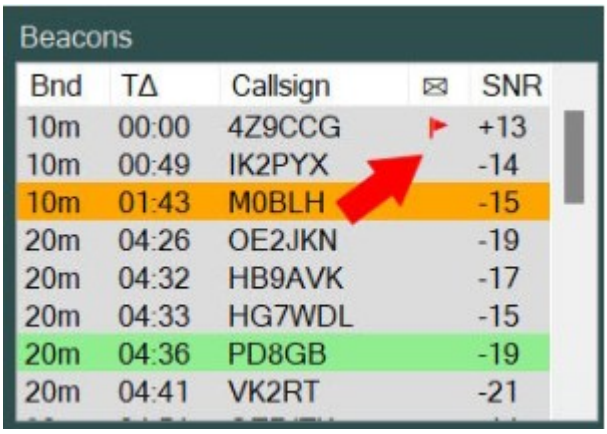
Send Urgent VMails

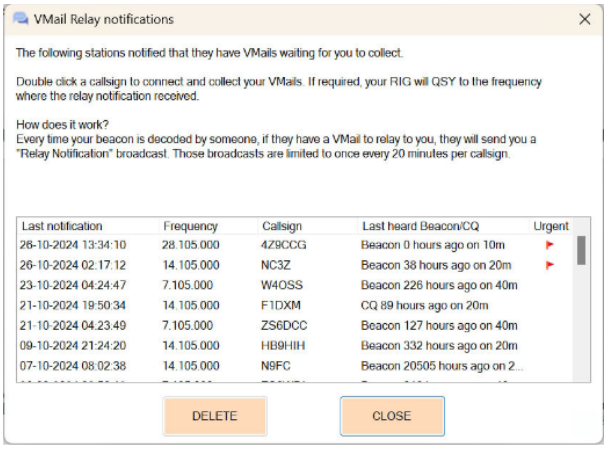
A relay notification will appear as "Urgent" on the recipient's end, marked with a small red icon in both the Relay Center and Beacon list.
In the Mailbox, Urgent VMails will also be flagged with a red symbol for visibility.

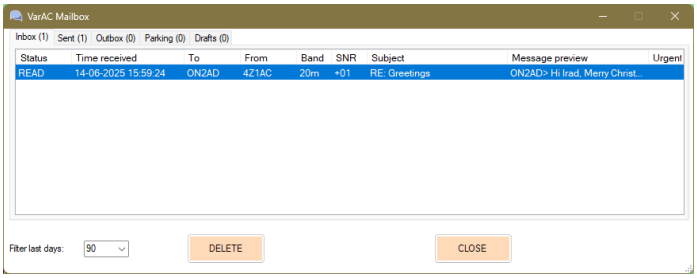
By default, any VMails composed while in EmComm mode will automatically be marked as Urgent, unless the operator chooses otherwise.

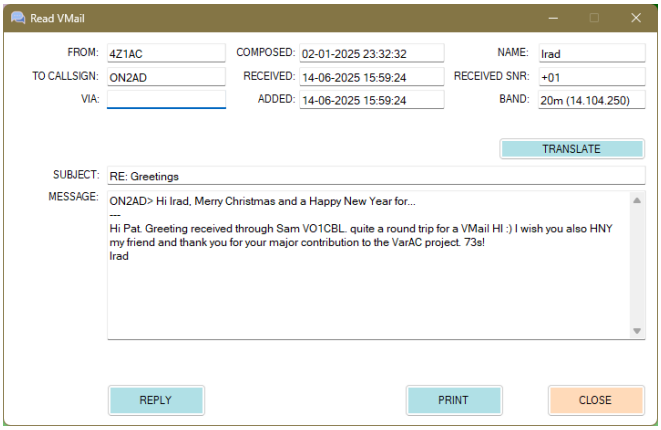
Note: Urgent relay notifications work only if both users are on V10.2. or higher

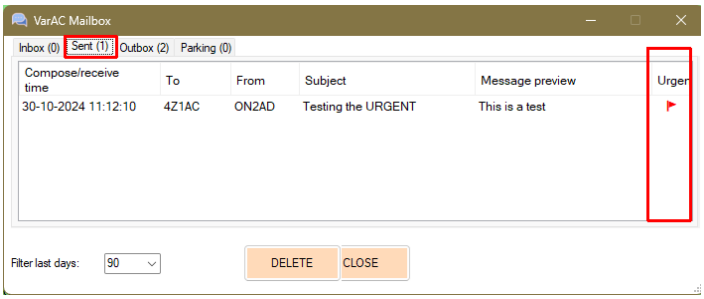


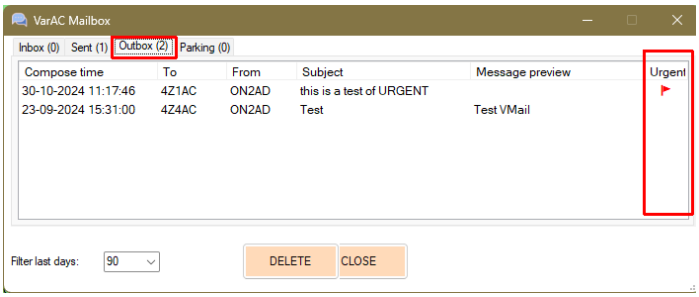






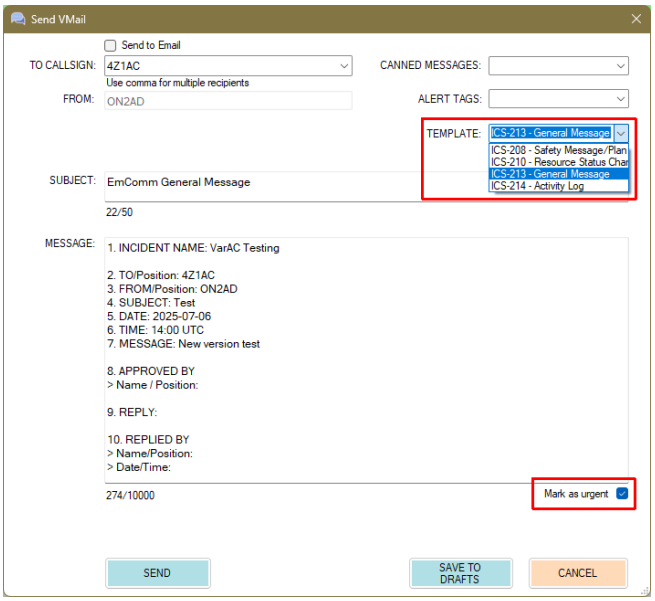






Your VarAC stores a significant amount of data: QSO logs, chat history, SNR readings, beacons, CQs, and more.
Losing this information due to a malfunction can be both frustrating and costly.

Send EmComm VMail



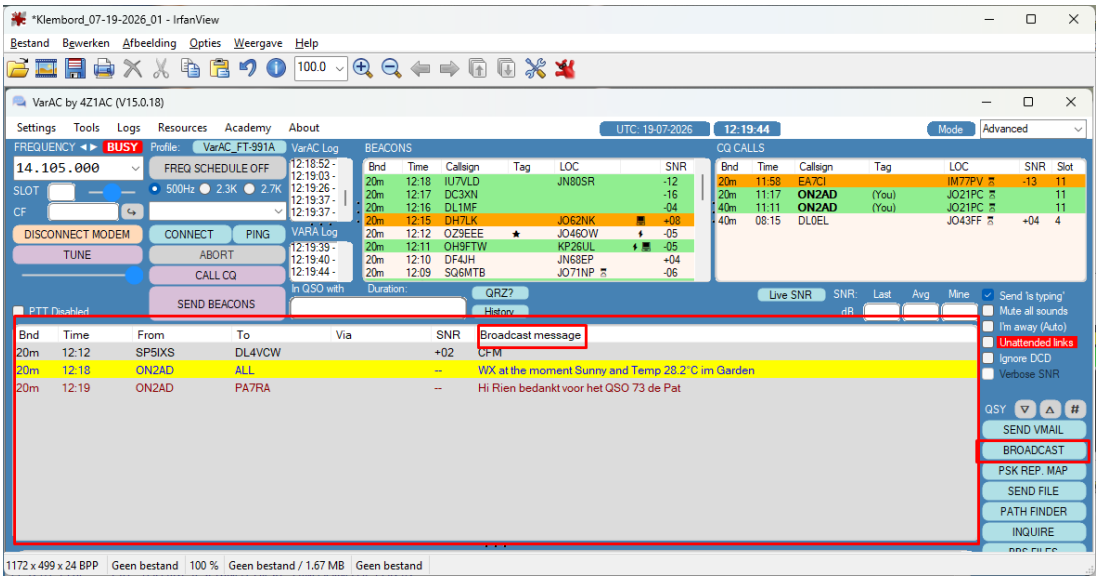
VarAC templates

NOTE:

To use EmComm templates you must select the EmComm mode.

This document includes VarAC VMail templates and forms, which are utilized for composing messages following specific structures, like the EmComm ICS form.
To add templates, simply insert a line in the following format:
Template_name=Subject_test|Message_text
You can also generate a template containing only message text without a subject by omitting the "|" sign.
To insert a new line, simply use this string within the message text: "[NL]".

Broadcasts



Adaptive Broadcast speed

VARA and VarAC now offers three Speed Levels (SL) for broadcasts:

SL1	-	**18bps**	-	the lowest speed capable of reliable decoding even at -21dB
SL2	-	**41bps**	-	can be decoded at -18dB
SL4	-	**88bps**	-	can be decoded at -14dB

The previously available **SL5** level has been deprecated in this version due to inefficiency for our needs.
To ensure a seamless experience, VARA speed will now be selected based on the message length. In essence, shorter messages that can fit into one or two VARA packets will be sent at the lowest possible speed. While there is not a definitive line for message lengths, your callsign length and destination callsign also play a role. In summary:

SL1	**-**	**Up to 3 characters**	Stretching to 5-6 for messages sent to "ALL" with a short sender callsign. Ideal for simple greetings like "HI" or "GE"
SL2	**-**	**3-33 characters**	
SL4	**-**	**33-81 characters**	

In the next version of VarAC, we will enforce an 81-character limit (currently 91).

This feature marks a significant improvement in our ability to conduct round-table discussions using broadcasts. I have personally seen decoding at -21dB recently, a notable improvement from the typical -12dB using SL5.

Additionally, the next VarAC version will leverage this capability by sending Pathfinder requests and VMail relay notifications at the lowest speed possible, extending their reach to greater distances.

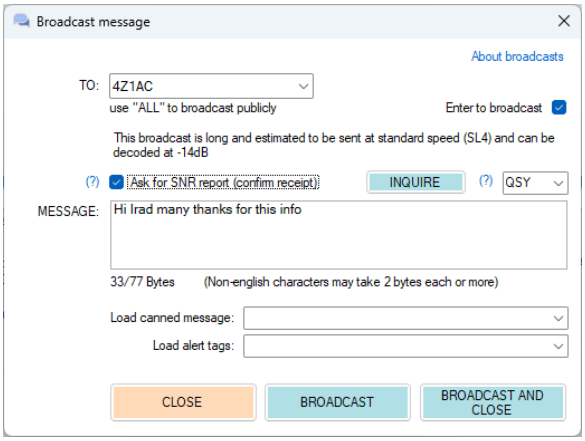
VarAC broadcasts are async messages that are sent in AX25 protocol (like APRS).

Broadcasts do not have a “delivery guaranteed” mechanism like a VARA link and they may not be received (it depends on received signal strength)

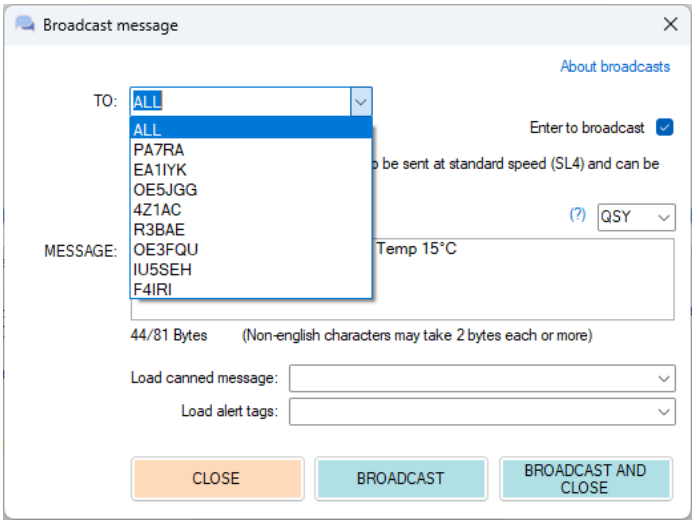
You can send a broadcast to a specific callsign or to all.

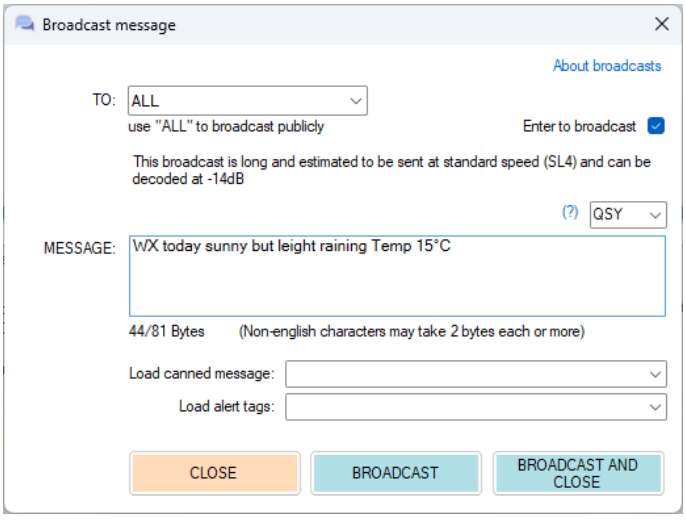
With VARA-FM you can also use digipeaters:

- Up to 2 digipeaters are allowed.
- Use SPACE between digipeater callsigns.
- SSID’s are not allowed for digipeater callsigns.
- Number of digipeaters affect the message size limit.

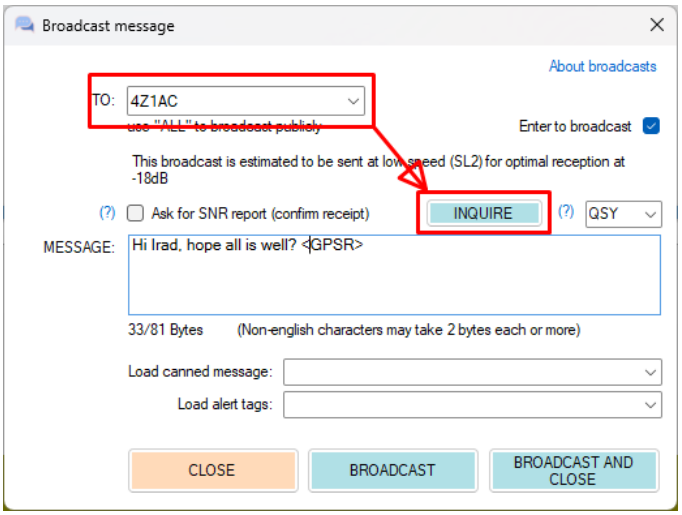


You can now select your destination callsign from a drop down populated with stations you previously sent broadcasts to the send broadcast form includes a checkbox to request an SNR report in your broadcast.
This signals the recipient to send you a report back automatically.
Please note that this feature is only available when sending a broadcast to a specific station.
You can't request a report from "ALL".



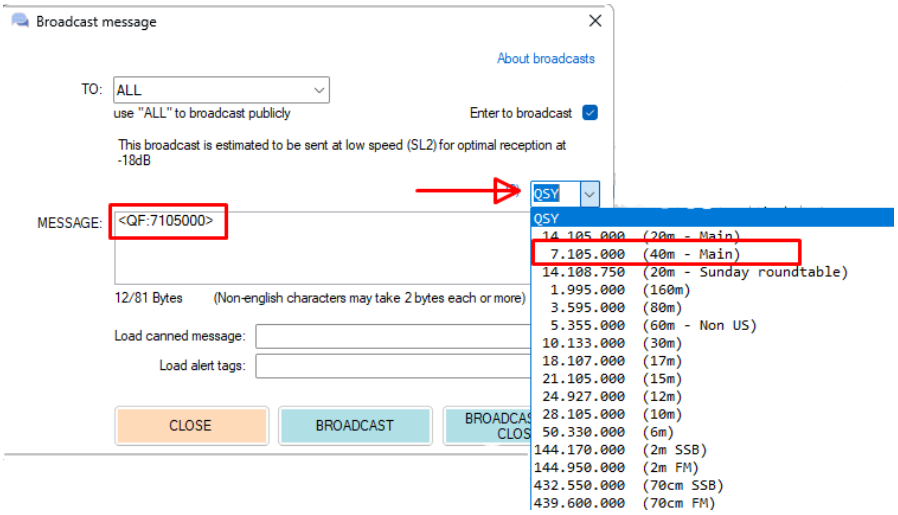


Broadcast Inquire



The Inquire function sending to "ALL" is not supported

QSY Notification sending



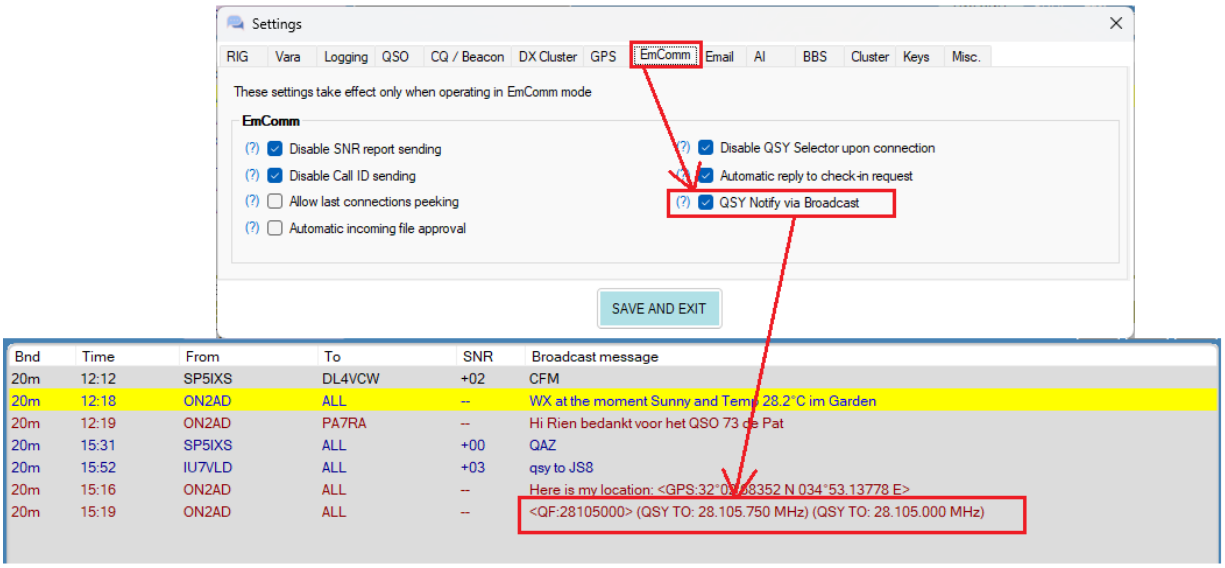
And it's not just about sending a QSY notification, the broadcast itself is clickable!
When someone clicks your QSY broadcast, their rig will instantly switch to that frequency.

QSY for EmComm users

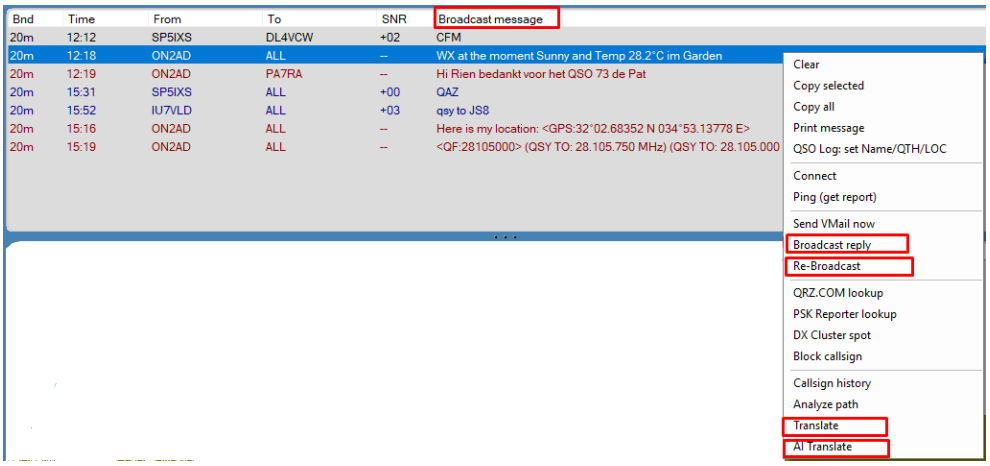
Especially for our **EmComm** enthusiasts:
During a crisis, when operating an EmComm station, you want to ensure everyone on the frequency gets a heads-up before you QSY to another frequency.

While using a frequency scheduler in EmComm mode, you can enable this feature so that, before a QSY occurs, VarAC sends a QSY notification to everyone on the frequency. Shortly afterward, it automatically QSYs.

Please note: This automatic QSY notification feature is limited to EmComm mode only and will not work on official VarAC calling frequencies, as it could jam the channel with QSY notifications.



Broadcast message



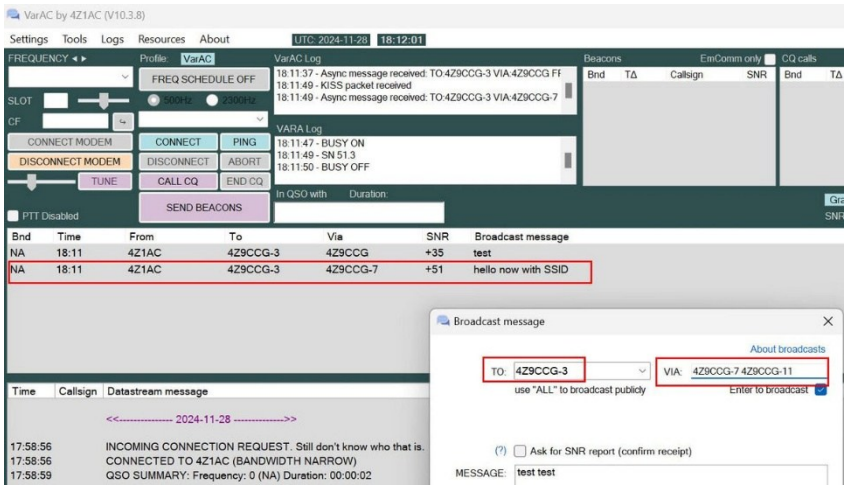
Right mouse click in the Broadcast screen open another window with next info

SSID support

SSIDs are now supported across most VarAC features, including CQs, Broadcasts, and even with digipeaters.

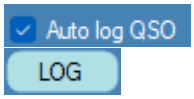
However, please note that there are some limitations if you set an SSID for your own VarAC callsign.

Don't worry—VarAC will inform you of these limitations when you make the change.



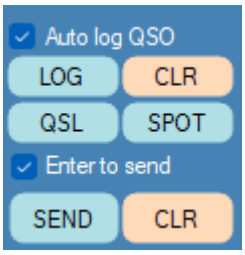
Path Finder

See Path Finder



QSO is logged automatically when enabled

See Logging QSO





Clear the log input

Create a QSL card from an ongoing or a previous QSO

Spot to the DX Cluster

Send your text by clicking Enter see Enter to Send
Send your message see Send

Clear the New message info's

Logging QSO

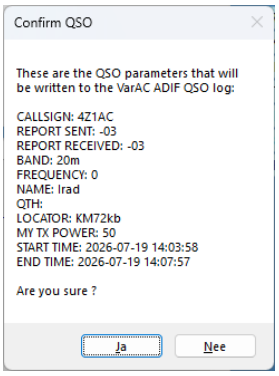


If Auto log QSO is not checked and you wish to save a QSO, the following window will appear.

Where then all the data of the counterpart station is stored and you are asked if you are sure to save this QSO

VarAC logs QSOs in an ADIF file in the VarAC installation directory under the name VarAC_qso_log.adi.

You can set VarAC to log your QSO automatically when disconnected, or you can log it manually by clicking the "LOG" button.



Manual Log Saves to VarAC.db

Clicking "LOG" manually now logs the QSO to the internal VarAC database as well as the ADIF file.

Locator Format Validation

Incoming locator data (beacons/CQ/QSO/Contacts) is validated before being written to the database.

Enter to Send

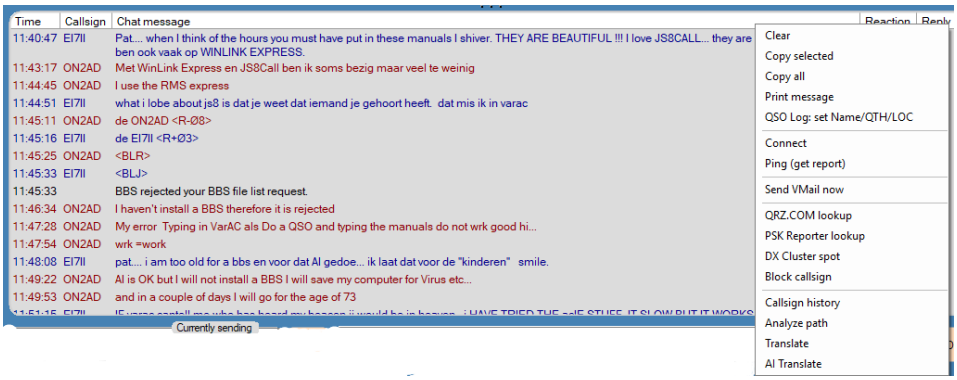
The last setting of "Enter to Send" is now saved in the VarAC.ini file for consistent behavior across sessions.

Send

Using CTRL+ENTER will always send a message, regardless of the "Enter to Send" setting.

Data stream

VarAC loads automatically within 24 hours of DataStream activity when it is started, so that the data will be sent back and forth.



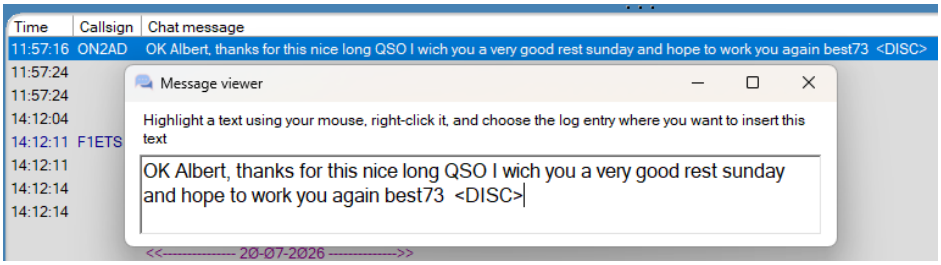
If you right click on a Callsign, name, QTH or Locator, this window will open which explains itself.

Previous chats



Previous chats
Up to 300 rows

Datastream viewer



Twice clicking on info open a Message viewer.

See the picture who I twice clicked on:

OK Albert, thanks for this nice long QSO I wich you a very good rest sunday and hope to work you again best73 <DISC>

QSO log data

When you connect to a station, it will now automatically populate your QSO log information based on your previous QSOs. However, should new data be received during the ongoing QSO, the preloaded information will be seamlessly overwritten.

Data picker

QSO Log: Set as Name/QTH/Loc

Previously, it could be challenging to choose specific segments of your chat as the DataStream continually filled with new messages, causing everything to shift. Now, however, you can effortlessly right-click on a row and choose "QSO Log – Set Name/QTH/Loc," which will open the message in a separate window so you can easily copy or tag specific parts of it.

Highlight a text using your mouse, right-click it and choose the Log entry where you want insert this text

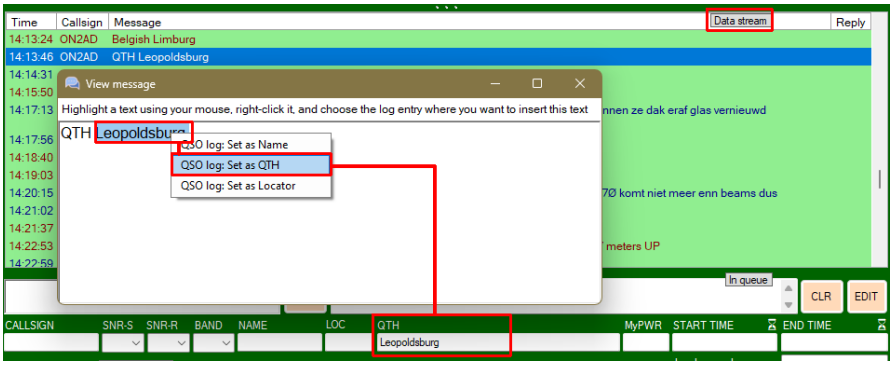
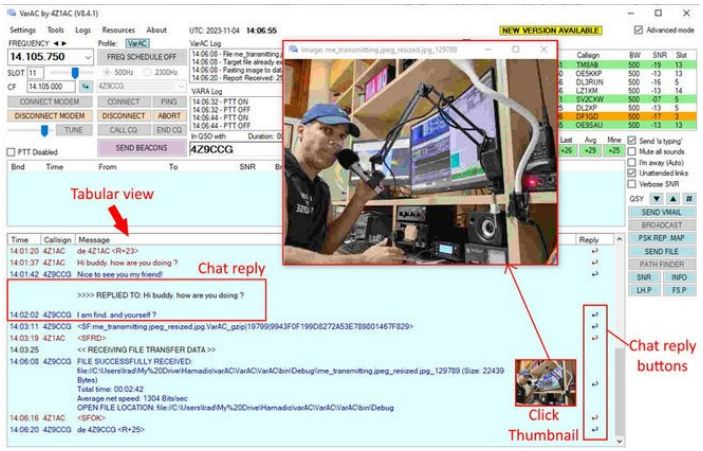


Image viewer

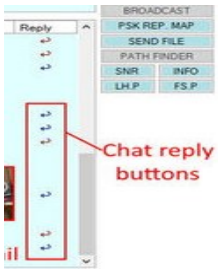
Upon receiving an image, it will now be displayed as a compact thumbnail within its designated column in your DataStream.
Clicking on this thumbnail will open the image in a separate window, allowing you to expand it for better visibility, making resizing a breeze.



Reply on message

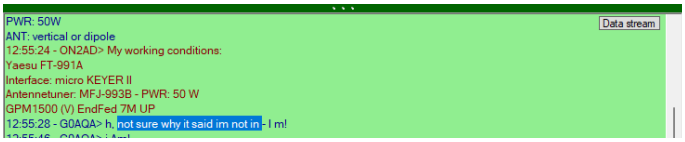
We've all experienced this situation during a leisurely QSO, where your response to a message/question can be delayed and, and seems disconnected from the ongoing conversation.

Following the convention of contemporary chat applications, you can now utilize the "Reply" icon located on the right. When used, your reply will be neatly linked to the corresponding message, ensuring context is maintained.



Translate

Select the text you will have translated and click on the right mouse button. Click on Translate and the Google translater will open.
This work also for the “Translate broadcast” function.



I have selected:
not sure why it said im not in (English) and I will translate it in the Nederlands (Dutch) language.
Result: ik weet niet zeker waarom er stond dat ik er niet bij was



Outgoing chat message progress indication



This is subtle yet highly impactful improvement for your chat experience:

You can now easily discern which part of your message has already been received by the other party.

The part that has been sent and acknowledged will be highlighted in green.

HAM is typing



This appears when the opposite station is typing

Suppressing 'Is Typing'

Now activates in low SNR conditions, even when the other station’s signal is weak.

Log & messages



See Gestures/Tags

Currently sending



Messages in this window are sent.



Messages that are not send will delete.

In Queue



These are the messages that are in the waiting area, ready to go to the "Message Currently being sent" to be sent.



Messages that are not send will delete.



Edit the unsent text in the "Message currently being sent" and put it in the "New Message" window to edit your text.

Callsign, Report,etc…

In a normal QSO the fields like Callsign RST-s etc… will automatically filled with the received info from the other station.
But you can also fill manual enter some broken info in this fields.

Load a canned message

This is a drop-down menu with some info's to sent see Canned messages

New message

By select a canned message you will see this message in this screen, press SEND, this message goes to Messages in queue and then to Message currently being sent.
But you can also type manual some enter info in this New Message field.

QSY code of conduct

The collection frequencies are only used for finding QSO partners and for short QSOs.
If you enjoy your QSO and want to continue chatting with your partner, ask your partner for QSY after about 5-10 minutes.

You do this by clicking on the following in the chat:

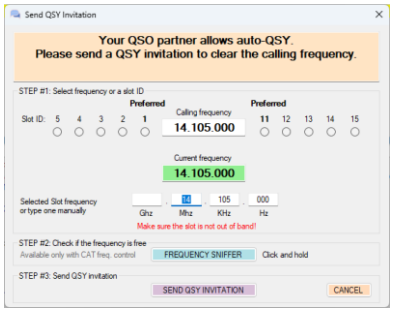


QSY 750Hz down - Right mouse click and hold while connected for QSY sniffer

QSY 750Hz up - Right mouse click and hold while connected for QSY sniffer



By clicking on this button, the follow window will open where you can setup the frequency
When this is done press SEND QSY INVITATION

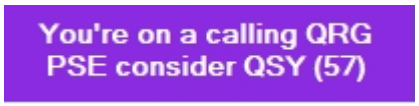


These tags initiate a QSY request that instructs both parties to change the frequency while chatting.
There is no need to disconnect before or during QSY.

A quick QSY

To make a quick QSY when using OmniRig CAT Control, pre-populate the VarAC_frequencies.conf file with +/- 750Hz frequencies and simply select the desired QSY frequency from the frequency drop-down menu.

An automatic message will appear to warn you to do a QSYD to keep the calling frequency free.



Maximum time on a Calling Frequency

The Connection on a **C**alling **F**requency (**CF**) is limited to (36Ø Seconds (6 Minutes)) after this you will Disconnected from the CF.

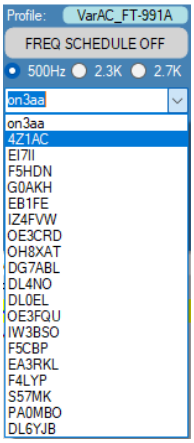
QSY back to default frequency



When you have done a QSY and the QSO is done, you will automatically be asked if you want to go back to the default frequency

Digipeater connection

Used for VARA-FM



You can connect through one or two digipeaters.
Simply type the following in the
"CONNECT TO" field:
DESTCALL VIA DIGICALL1 DIGICALL2

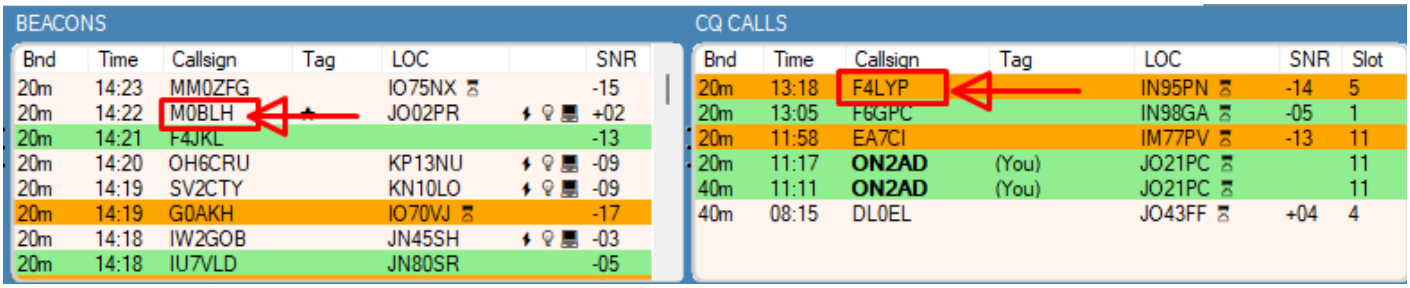
Examples:

To connect to 4Z1AC through NC3Z type:
4Z1AC VIA NC3Z

To connect to 4Z1AC through NC3Z and W1IZZ type:
4Z1AC VIA NC3Z W1IZZ

How do I contact someone?

There are 3 easy ways to start a QSO:
1. Double click on a callsign in the section “Last heard CQ calls”.
2. Double click on a callsign in the section “Last heard beacons”.
3. Type the callsign you want to connect to in the text box “Connect to” and press on “Connect station”.



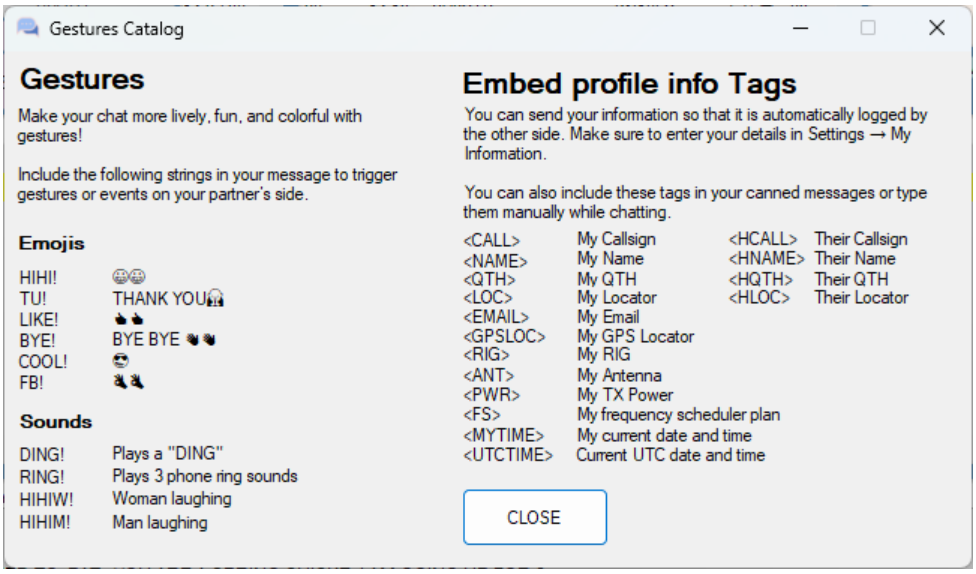
Reports and Regulations

What are all these lyrics and songs that I see when I am connected with someone?
At connections you see texts like "<R-10>" or "de YOURCALL"
• As in FT8, VarAC exchanges SNR reports with the other side so you know how you are being listened to and for logging purposes.
• VarAC periodically transmits your callsign to follow "self-identification" regulations.

Gestures – Tags - QSO protocol

Click on the “Gestures/Tags” button and the VarAC Gestures Catalog will appear.

Tags are text codes that, when typed as part of your chat message, will trigger an event on the other side, such as:
More info on Canned Messages / Tags



Tags & Gestures

Last updated: 13 Nov 2026 by Irad

With VarAC you can make your chat a more lively, funny and colourful experience with VarAC gestures.

Emojis

Tag	Operation
HIHI!	makes a smiley emoji
TU!	"Thank You "
LIKE!	makes a thumbs up emoji
BYE!	
COOL!	
FB!	

Sounds

Tag	Operation
DING	Play a “DING” sound.
RING	Play 3 “RING” sounds.
HIHIW!	Woman laughing.
HIHIM!	Man Laughing

Sending my data

Tag	Operation	Response example
<CALL>	Send your callsign	
<NAME>	Send your name	Transform to this format: **<NAME:XXX>**
<QTH>	Send your QTH	Transform to this format: **<QTH:XXX>**
<LOC>	Send your grid locator	Transform to this format: **<LOC:XXX>**
<EMAIL>	Send your Email address	Transform to this format: **<EM:XXX>**
<ICE>	Send your Ice breaker data (hobbies, profession…)	
<GPSLOC>	Send your location	Transform to this format: **<GPS:XXX>**
<RIG>	Send your RIG info	
<ANT>	Send your Antenna	
<PWR>	Send your Power	
<FS>	Send your frequency scheduler plan	
<MYDT>	Send your local date & time	
<UTCDT>	Send UTC date & time	
<UTCD>	Send UTC date only	
<UTCT>	Send UTC time only	
<HCALL>	Send your QSO partner callsign	
<HNAME>	Send your QSO partner name	
<HQTH>	Send your QSO partner QTH	

<HLOC>	Send your QSO partner grid locator	
<Rxxx>	Send SNR report (ex: <R+10>	
<FC:callsign>	Send your full callsign. Example: **<FC:W/4Z1AC>**	
<S:XXX>	Services announcement – the services this station serves: **A** = AI Gateway; **E** = Email gateway; **B** = BBS; **C** = Cluster; **V** = accepts VMails with attachements.	
<SF:	Head of a send file header	• **<SFRD>** Ready to receive file • **<SFOK>** File received successfully • **<SFFA>** receiving file failed • **<SFAB>** Send file rejected • **<SFB>** Send file packet
<SFM:	Head of a VMail attachment file header. Same format as **<SF:>**, different tag so old versions ignore it.	Same responses as **<SF:>**

Vmail tags

Tag	Operation	Response example
<SM>	Header of a VMail message	• **<SMF>** Receiving VMail failed • **<SMFP>** Not accepting parked VMails • **<SMR>** VMail received successfully • **<SMJ>** VMail rejected (VMail is off on the other side)
<TO:XXX>	Vmail to callsign/email	
<FRM:XXX>	Vmail from callsign/email	
<TME:XXX>	Vmail compose time	
<SBJ:XXX>	Vmail subject	
<MSG:XXX>	Vmail message body	
<EG>	Vmail is intended for Email gateway relay	• **<EJ>** - Email gateway relay rejected • **<ER>** - Email delivered by the gateway • **<EF>** - Email delivery failed
<U>	Urgent VMail	
<RA>	Raw email - the gateway sends the subject and body as is (Saildocs queries etc.)	
<RE:XXX>	Email address to reply to - the VMail is a reply to an email received through the gateway	
<RELAY_TO_CALLSIGN:XXX>	Written inside the email the gateway sends, so a reply email is relayed back to callsign XXX	
<SMP>	Broadcast: relay notification - a VMail is parked for a station	
<SMU>	Broadcast: urgent relay notification - an urgent VMail is parked for a station	

Request data

Tag	Operation	Response example
<SR>	Ask for SNR report	**<R+10>**
<INFO>	Ask for your partner info (Name, QTH, LOC...)	**<INFOJ>** if request rejected
<LOCR>	Locator	**<LOC:KM72KB>**
<LHR>	Last heard peeking request – List of stations your partner recently spotted on this band	• List of callsigns • **<LHE>** if list is empty • **<LHJ>** is request is rejected
<LHC:CALLSIGN>	Last heard peeking of a specific callsign	• List of callsigns • **<LHCE>** is list is empty
<FSR>	Frequency scheduler peeking - know where your partner parks along the day	• List of frequencies • **<FSO>** if scheduler is not active
<VER>	Ask for your partner VarAC version number	VarAC V10.4.10 / VARA FM v4.3.8
<VRP>	Parked VMail peeking – check if there is a parked VMail for you	**<VRPJ>** - Request rejected
<LCR>	Last connection peeking – List of recent connection the station had	**<LCJ>** - Request rejected
<GPSR>	Request GPS data from your QSO partner	
<EGA>	Ask for your partner email gateway address (also works in a broadcast)	Email address, or N/A

<SQ>	Services inquiry - asks your partner to send its services tag (used before sending a VMail with attachments)	**<S:XXX>**

Trigger events

Tag	Operation	Response example
<AWAY>	Signals that you are away and Triggers "send message" at your partners side	
<AWQ>	Same as away but notifying that you accept QSY invitations	
<Q>	Just signals the other side you accept QSY invitation	
<SND>	Automatically click" enter" to queue a message	
<DISC>	automatically disconnect upon message delivery (usually used in final QSO message)	
<VSI>	Invite your partner for verbose SNR mode	**<VSIJ>** if invitation is rejected **<VSIR>** if invitation it accepted
<VSS>	Notify your partner that you exited verbose SNR mode	
<IE>	Connection Idle time exceeded on the other side and they signal you they are about to disconnect	
<AE>	Connection Idle time while away exceeded on the other side and they signal you, they are about to disconnect	
<EC>	EmComm check-in request, sent as a broadcast to EMCOMM. Stations reply automatically	
<VW>	Notifying the other side you have waiting VMails for them and a QSY off the calling frequency is required.	
<TL>	Test link – sent after QSY to make sure stations are still seeing each other.	
<QSYU>	Invite your partner to QSY UP / Down 750Hz	**<QSYJ>** - QSY invitation rejected **<QJO>** - QSO rejected due to out of allowed frequency range **<QSYR>** - QSY invitation accepted
<QSYD>	Invite your partner to QSY DOWN 750Hz	
<Q:XXX>	Invite your partner to QSY using a frequency offset. Example : **<Q:-75>** which is down 750 Hz.	
<QSYF>XXX</QSYF>	(Obsolete) Free form QSO invitation Example: **<QSF>14105000</QSYF>**	
<QF:XXX>	New - Free form QSO invitation Example: **<QF:14105750>**	
<P:x>	Invite to play a game on HamPlay	**<PJ>** - HamPlay invitation rejected **<PR>** - HamPlay invitation accepted
<PM:x>	Sending a HamPlay move	
<PA>	Aborting an HamPlay game	
<PE>	Invite for a HamPlay rematch	
<PU:game,count,lastmove>	Resume a saved HamPlay game. Both sides send it; equal move counts = play on	

AI

Tag	Operation	Response excample
AI:	Activates AI mode on the other side	**<ACIE>** hi there **<AIJ>** - AI request rejected **<AIE>** - AI error (usually due to API timeout) **<AIL>** - AI limit exceeded
<DISAI>	Close AI mode on the other side	
<A>	Notifying the connected station you serve an AI gateway	
<EA>	Notifying the connected station you serve both email and AI gateways	

BBS

Tag	Operation	Response example
<BLR>	Request BBS files list	**<BL:hello.txt|2025-01-01|5>** **<BLJ>** BBS file list request rejected
<BG:>	A file download request. Example: **<BG:hello.txt>**	**<BGJ>** download request rejected

Cluster

Tag	Operation	Response example
<CCR>	Request the list of stations connected to the cluster	• **<CC:list>** Connected stations list • **<CCE>** List is empty
<CIR>	Request the list of active cluster instances	• List of instances (id|name) • NO OTHER INSTANCES

<CM>	Added at the end of every chat message that came through a cluster interconnect	
<CB>	Inside an on-air broadcast: send this broadcast again on every other cluster instance (broadcast bridge)	
<CB:text>	In a link: broadcast this text on every other cluster instance	• **<CBS:instance>** That instance sent your broadcast • **<CBJ>** The bridge is off on this node

Pactor

Tag	Operation	Response example
<SP:x>	Ask to change the Pactor speed level to x in the middle of a link	• **<SPR>** Change approved • **<SPJ>** Change rejected

Other tags

Tag	Operation	Response example
<SR>	Ask for SNR report	**<R+10>**
<INFO>	Ask for your partner info (Name, QTH, LOC...)	**<INFOJ>** if request rejected
<LOCR>	Locator	**<LOC:KM72KB>**
<LHR>	Last heard peeking request – List of stations your partner recently spotted on this band	• List of callsigns • **<LHE>** if list is empty • **<LHJ>** is request is rejected

No tags but information

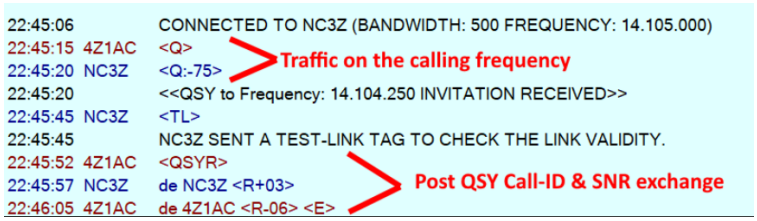
Info	Operation
<CHAT CONTROL DATA>	System data that is exchange. In most cases it is for the "**Is Typing**" indicator
<SENDING REACTION>	Sending a reaction (**Like!**) to a chat message These are not tags. this is an indication in the "**message queue**" and "**currently sending**" windows that indicated that a "**LIKE**" operation (the new **heart** click on a chat) is being transmitted

Superstation Tags

Info	Operation
<ROLL>	The <ROLL> is used by SUPERSTATION which a game extension to VarAC.

Post-QSY Call-ID/SNR exchange

The timing of exchanging call ID and SNR data is changed this exchange now happens only after the QSY (frequency change) takes place.
This means there will be minimal traffic between two stations on the calling frequency until a QSY is initiated.
Our measurements show that with this approach, the QSY process now takes about 10-15 seconds from connection—compared to 30-40 seconds under the previous method. This improvement significantly enhances our ability to share the calling frequency with fewer collisions and less congestion.



The only data exchanged on the calling frequency before QSY will be:

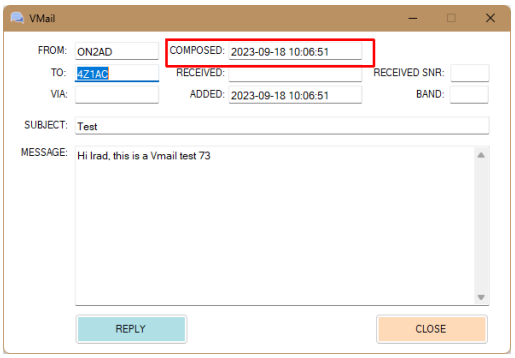
- **<AWQ>** indicating "I am away but allowing auto-QSY"
- **<Q>** (new tag) indicating "I am here and allowing auto-QSY"

Please note: If auto-QSY is disabled, the system will revert to the current behavior—exchanging Call-ID and SNR on the calling frequency as before.

GPS tag

Tag	Operation
<GPSLOC>	This tag is to share your exact Long/Lat.

Composed



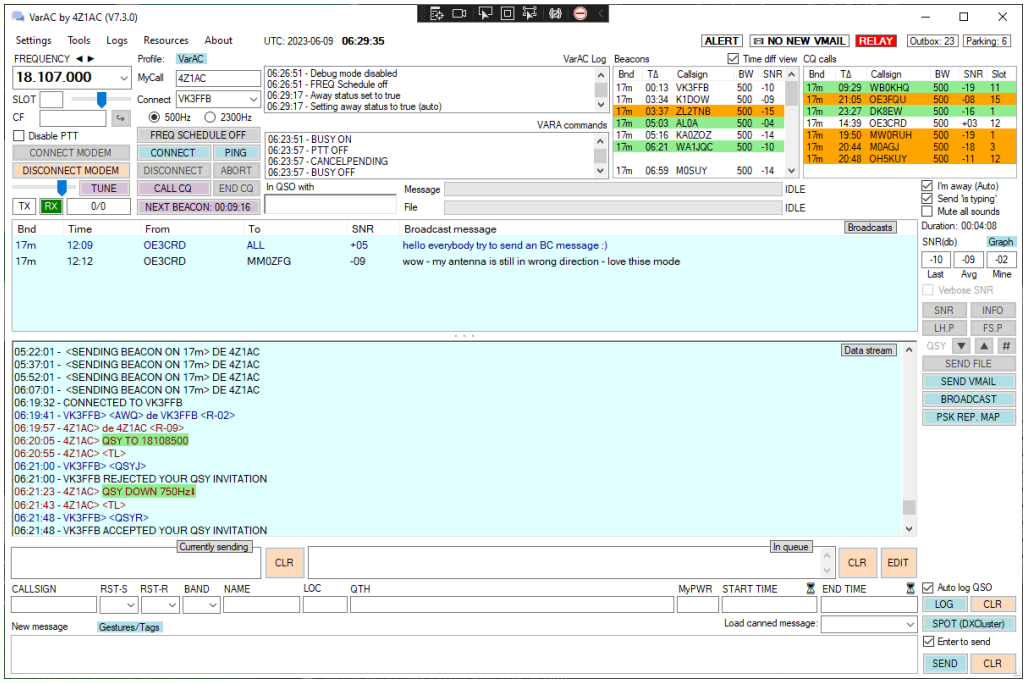
It is a tag that is used in the VMail delivery system. it is not a tag for use during a QSO.

QSYR and QSYJ

I tried to QSY VK3FBB to SLOT 12 on 17m and its the Slot where CW beacons are so his station refused.

My station did a QSY recovery and after it went back to the CF, I was given the QSYJ from him.

I then tried to shift to another freq and it was ok with a <QSYR>

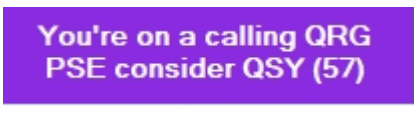


Tags

With VarAC you can send your information in a way that is automatically registered by the other side.
You can set those tags in your template messages or type them manually while in QSO.
More info on Canned Messages / Tags

QSO protocol

An automatic message will appear to warn you to possibly do a QSYD to keep the call frequency free.



Tip

Connected to someone, but they are not there?
Write "RING" to make some noise on their side to alert them of your call.

Canned messages and VarAC tags

Canned messages are predefined texts like your information, 73, greetings, ASCII art etc…
In most manuals for HAM's, you will mainly find "Macro" messages as names instead of "Canned Messages"
You can configure your canned messages in the settings menu.

You can then add one to your message by selecting it from the 'Load a standard message' drop-down menu.

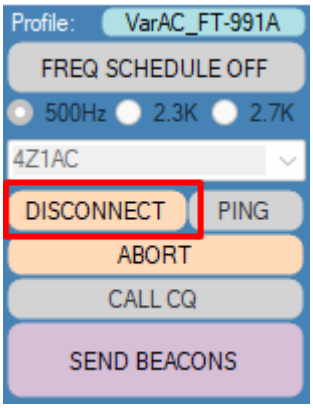
VarAC tags are used manually or in template messages to send information decoded by the other side and automatically populate the QSO log with your name, QTH and locator.

you can read more about VarAC tags in this document.

QSO ending

Be courteous, say 73's (or use one of the configurable default messages) and press the "DISCONNECT" button.

Quick ejection? Press the "ABORT" button".

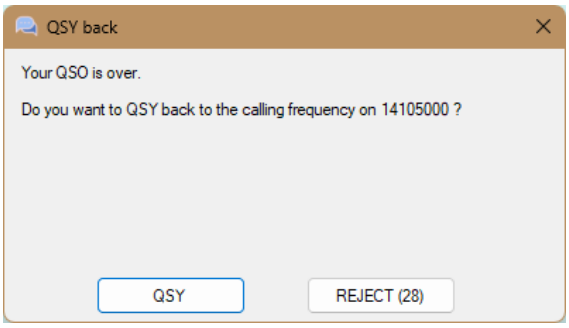


QSO ending and QSY

By end a normal QSO you will see the next window

Now you can press on:

QSY
Reject



QRZ.COM uploaded

You can have your QSO automatically uploaded to QRZ.COM and other logging systems. See Logbook programs

Multiple configuration files

Load VarAC with different config files to support various rigs or settings.
Example: "VarAC.exe MyVarAC.ini"

VarAC Cluster (Multiple instances)

By NC3Z, Gary Mitchelson

VarAC will allow you to run multiple and separate instances of VarAC. Depending on your radio or radios you will be able to operate VarAC on multiple bands at once using a single install of VarAC.

Running multiple VarAC in a cluster format allow all VarAC instances to share the same resource such as log files, ADIF file as well as, mailbox.

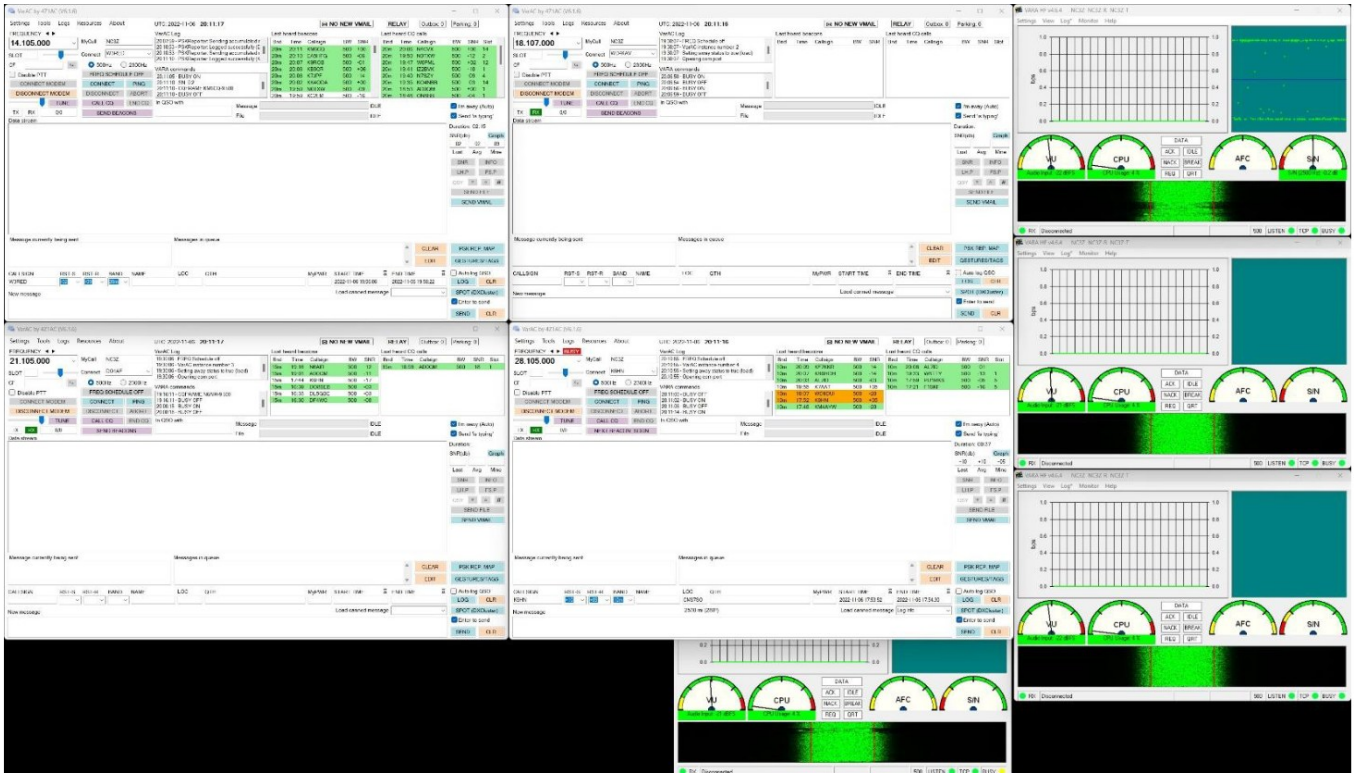
This allows you for example to function as a cross-band mailbox while VMails that are parked on Band A will be forwarded on Band B.

To form a VarAC cluster, all that is needed is:

- Separate .ini file for each instance in your one VarAC folder, each properly configured.
- Each .ini file will need to be configured with a unique “Instance Number”.
- Separate VARA HF (modem) folders for each instance.

In the example below here are four instances running on the same PC. The radio is a Flex 6500 which can operate as 4 radios at once.
But you could easily be using any number of separate radios.

Multiple VarAC instances working as a cluster sharing the same VMail Mailbox





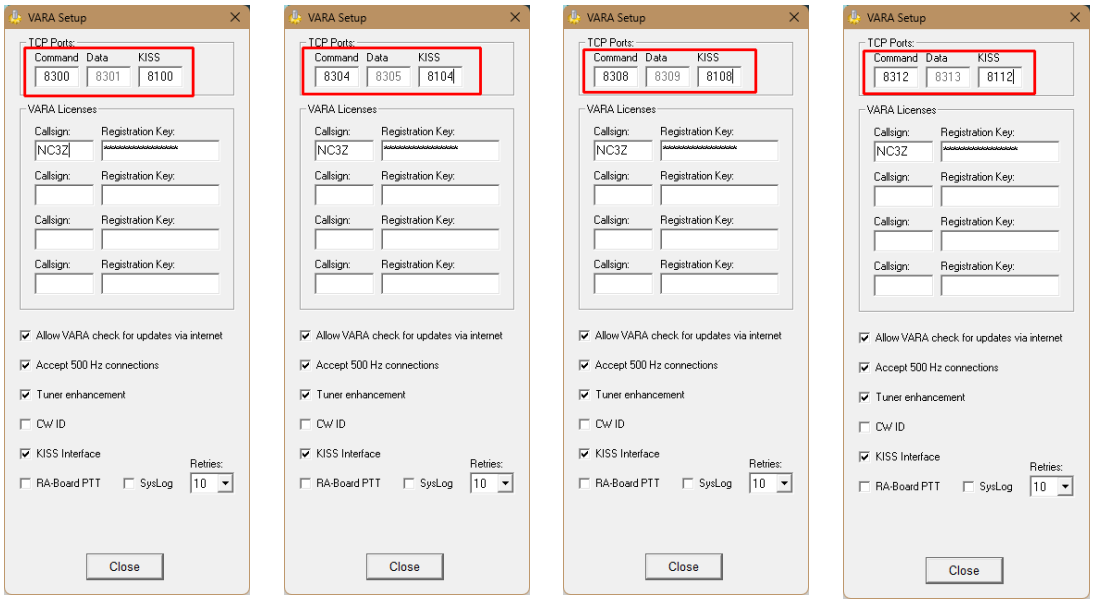
Step #1

Separate VARA HF folders for each instance. Just make copies of each VARA HF folder:

VARA 1	17-Aug-22 07:54	File folder
VARA 2	19-Nov-21 16:25	File folder
VARA 3	21-Nov-21 15:21	File folder
VARA 4	23-Apr-22 13:18	File folder
VARA 5	30-Jun-22 20:13	File folder
VARA WL	08-Nov-21 14:36	File folder

Step #2

Configure each VARA HF
with its own unique ports (COMMAND, DATA and KISS)
that do not conflict



Step #3

Configure different VarAC.ini files with different names.

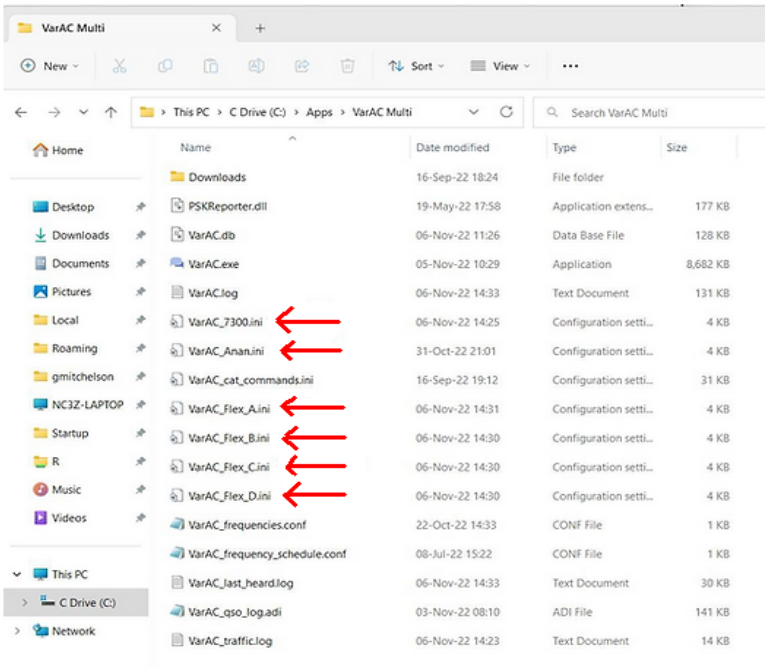
Use a meaningful name - like your RIG type you intend to use for each VarAC instance.

Each .ini file will need to be configured with a unique “Instance Number”.

[VMAIL]
SendRelayNotifications=ON
AllowParking=OFF

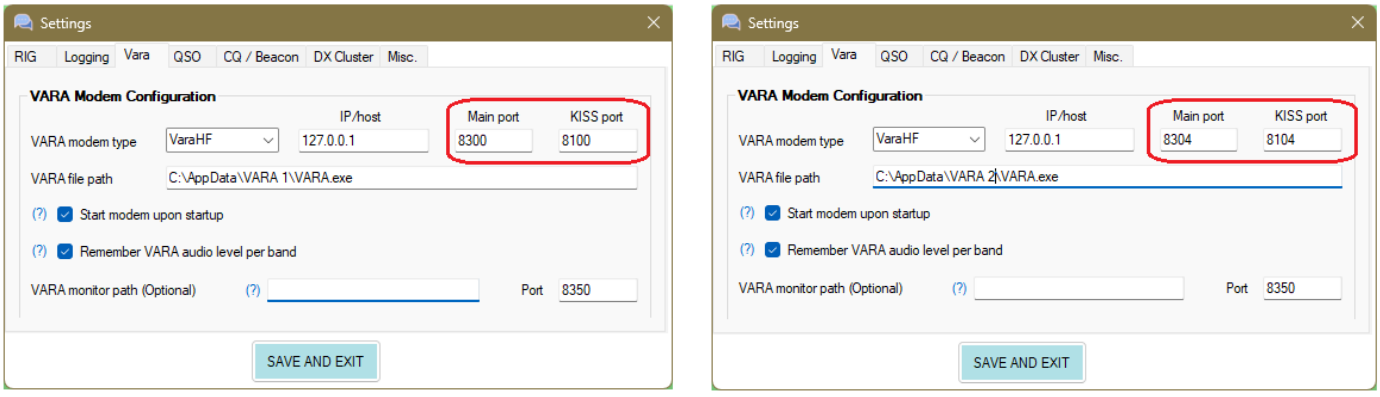
[VARAC_CLUSTER]
ClusterEnabled=ON
InstanceNumber=1
MailboxRefreshRateSec=60

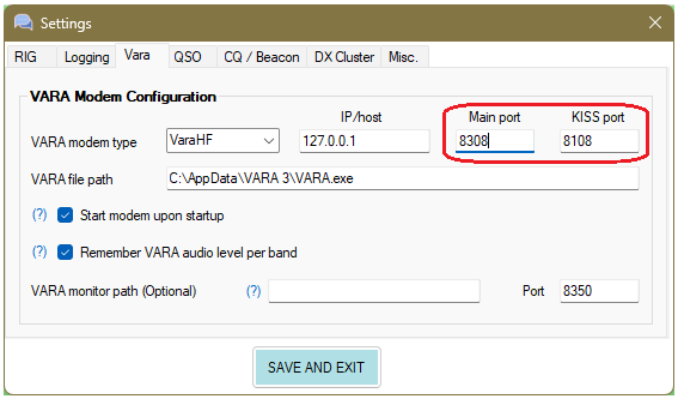
[OTHER]
LinuxCompatibleMode=OFF

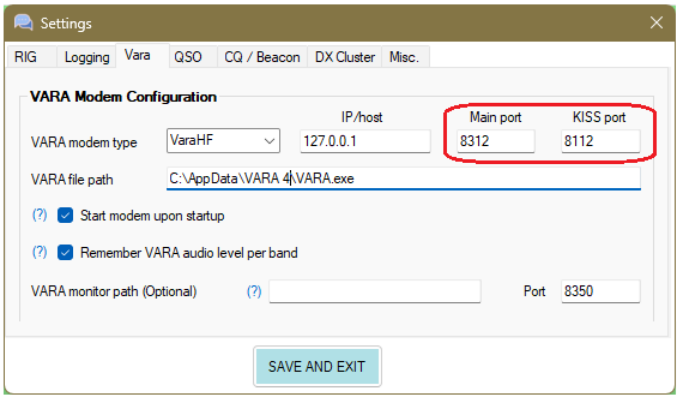


Step #4

For each VarAC settings, set the relevant VARA ports and path
If you use Monitor you will need to do the same and take the same precautions.



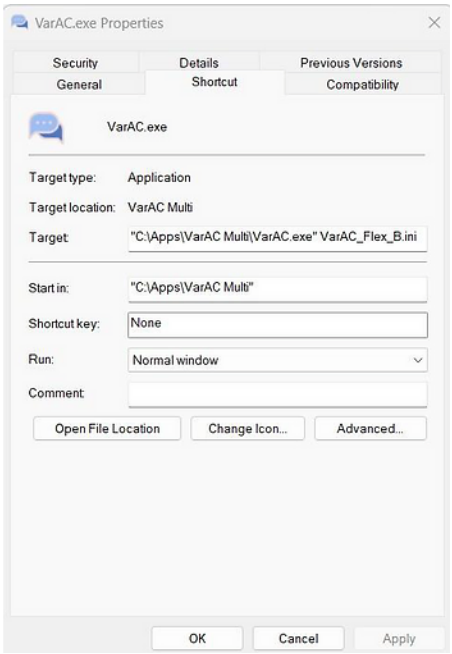




Step #5

Once all that is set, you will need to tell each VarAC instance which .ini file to use.
That is simply done with a command line switch in the shortcut.
If you want to run instances from separate PC's you will need to do this using a "Shared" drive for SQLite (main VarAC DB) to work properly in s shared environment.

Example of shortcut for one of the instances



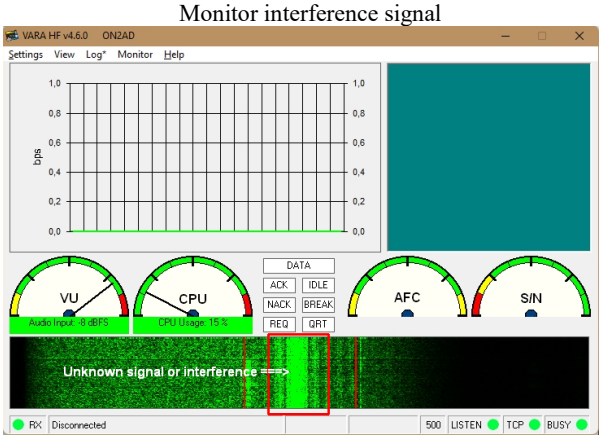
Strange signals and noise.

I use two 23 Inch IPS LED monitors from LG and on some frequencies, I see a strange signal in the waterfall, and I hear a monotonous noise (sound) in my speakers.

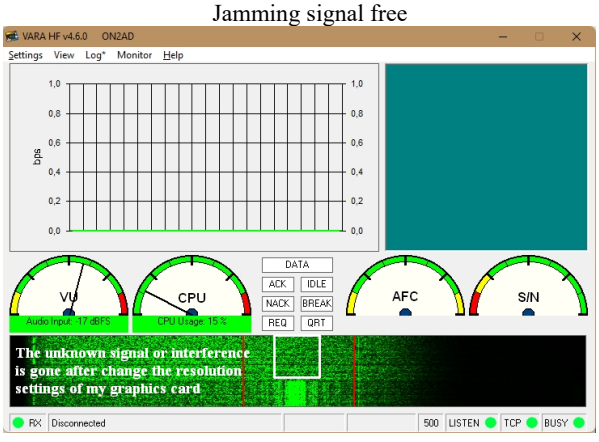
Further research shows me that if I turn off the monitors, the noise is gone.

So, open the advanced display settings in Windows or open the resolution settings of the graphics card and adjust the refresh rate for 1 or more screens until the interference is gone.

Monitor interference signal



Jamming signal free



VarAC.ini file

New VarAC.ini parameters (Only available by manually editing the file)

ShowNoCatQSYPopup	Suppress QSY popups when no CAT control is available
FrequencyListCustomFilePath	Set a custom frequency list file using a new VarAC.ini parameter
SafetyPTTOffEveryMinute	enable/disable the safety mechanism of PTT OFF every minute while idle
VarACLogFileRetentionDays	How many days to keep entries in the VarAC.log file (default 30 days)
PTTDisableAfterFreqChangeSeconds	Temporarily disable PTT for X seconds after frequency change (for those antennas that need a long tune cycle before TX)
SlotStepHz	Custom Slot size - to set up your own slot-system gaps
BeaconGraceTimeSeconds	Wait time from when you switch frequency until the beacon is fired (default 10)
FrequenciesCustomFilePath=	If you manage multiple VarAC profiles, you can now have a separate frequency file (Frequency dropdown list) for each profile! Simply update this parameter in your VarAC.ini profile file

Additional Cluster configuration

In the VarAC.ini file there is a section with VarAC cluster parameters. Here is an example:

[VARAC_CLUSTER]
ClusterEnabled=ON
InstanceNumber=1
CountersRefreshRateSec=60
PTTLock=OFF

Lets delve into each:
ClusterEnabled=
Possible values: ON/OFF
This set the instance as part of a cluster.
This means that cluster will report to the shared database about its status so all other cluster member will be aware of its existence.

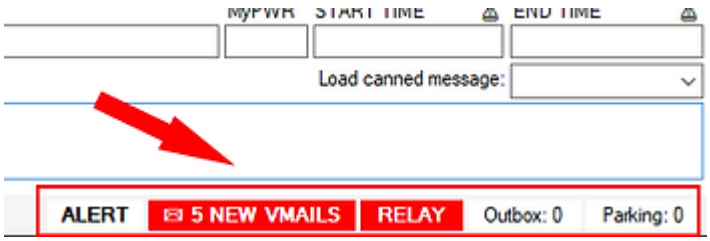
InstanceNumber=
Possible values: number (a unique identifier)
This is a unique identified of a cluster instance.
Every instance should have its' own dedicated number (ex: 1,2,3...)

CountersRefreshRateSec=

Possible values: Number of seconds (default 60)

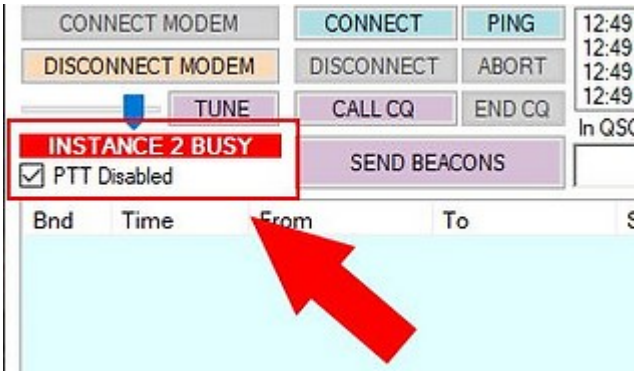
A VarAC cluster can be used to forward VMails between different bands as all instances share the same VarAC.db file.

All instances refreshes their VMail counters every minute. Once a VMail is received in one instance inbox, it will show up on the other instance inbox counters in up to 60 seconds.
You can change this refresh time using this parameter.



PTTLock=

Possible values: ON/OFF
This parameter defines what happens if one of the instances is currently transmitting. If set to ON, then when an instance is currently transmission (in QSO/Beacon/Broadcast/CQ/TUNE...), then all other instances will disable their PTT to avoid multiple instances transmitting at once.
This is useful in case some of your cluster members are using a shared transceiver (such as SDR) that can listen on many frequencies but can only transmit on one at any given moment.
When an instance is busy transmitting, all other instances will show a "Instance Busy" alert and their PTT will be disabled until the transmitting instance finishes.



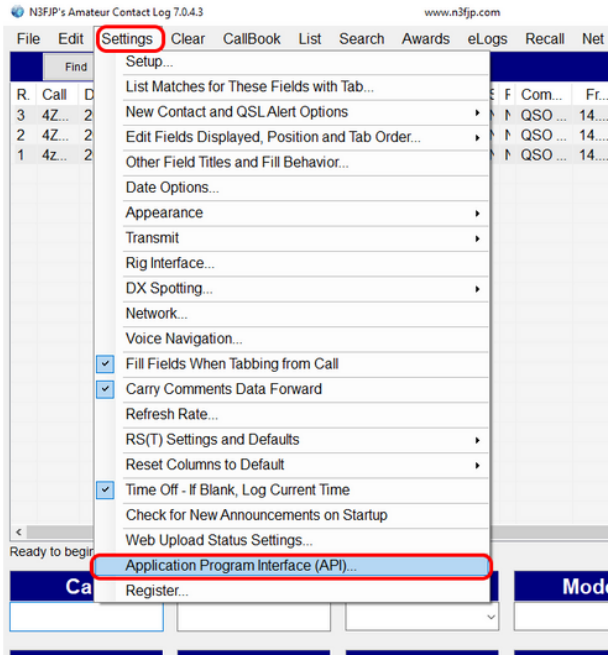
Logbook programs

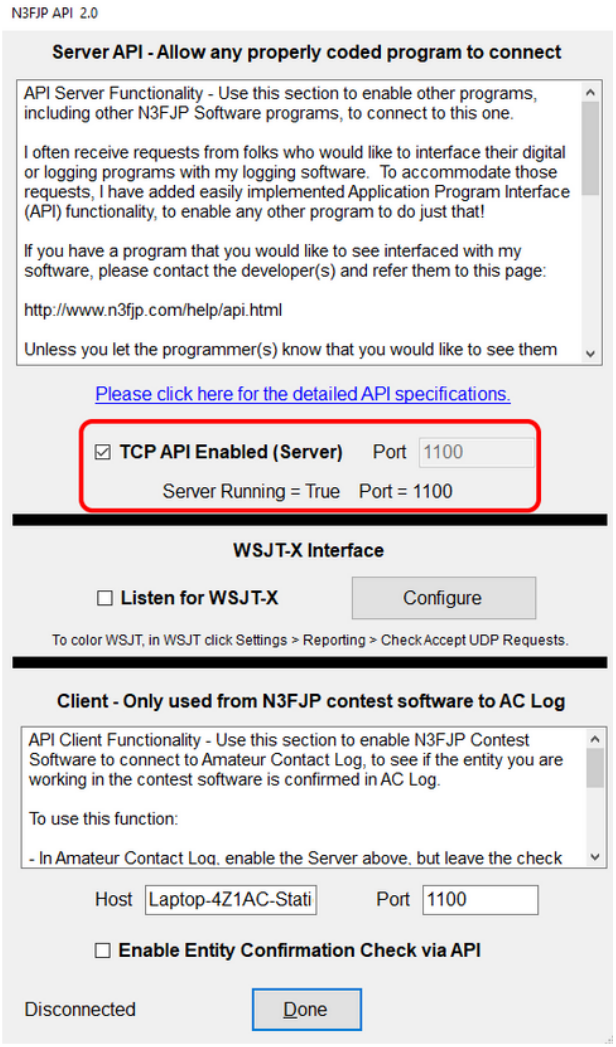
AC Log (Amateur Contact Log)

Please note - Logging QSO to AC Log works only with AC Log version 7.0.5 and above.

AC Log provides with TCP support for external logging:

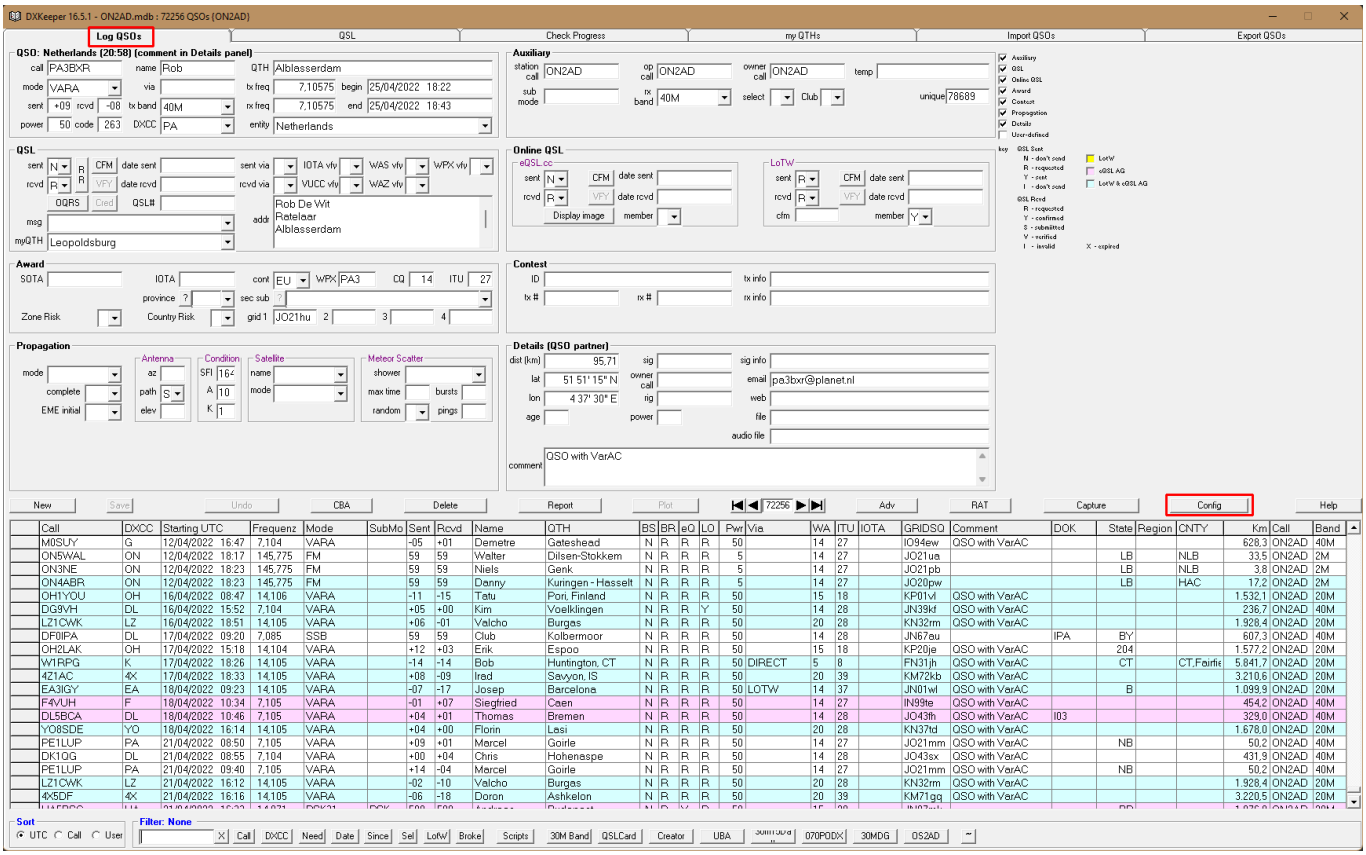
1. Go to Settings --> Application Program interface (API)
2. Enable the "TCP API Enabled (server)
3. If you change the port - make sure it is aligned with the port you have selected in VarAC.
4. Click DONE

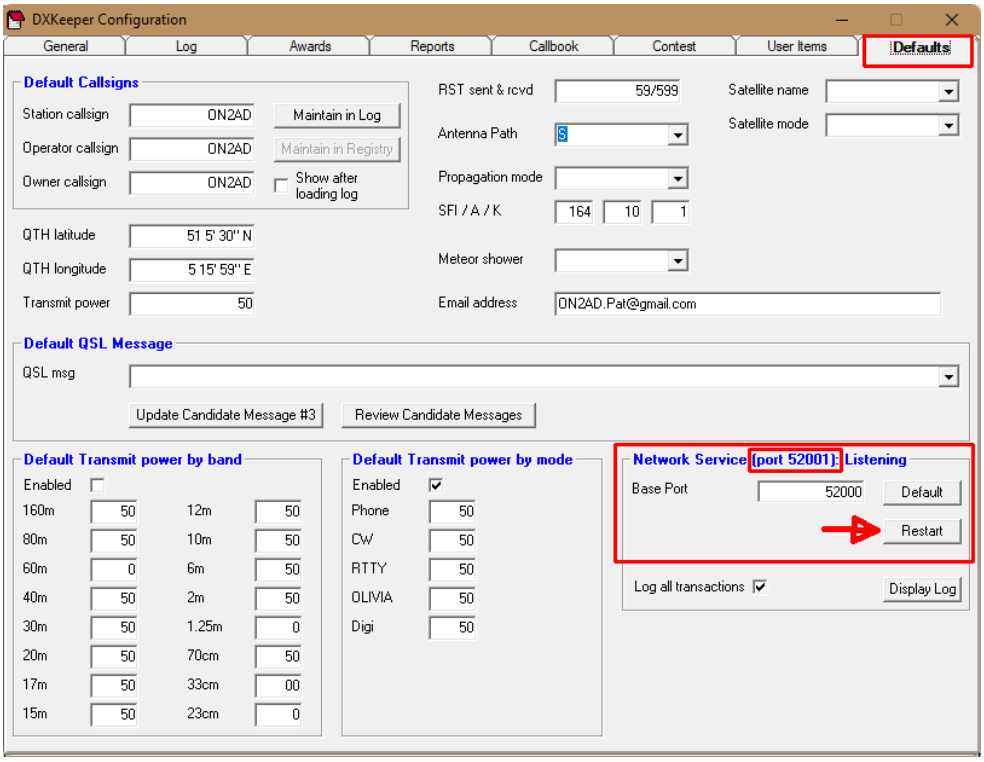




DXKeeper (DXLabSuite)

1. Go to the panel Log QSOs click on Config.
2. Select the "Defaults" panel.
3. Under network service - set the Base port. **Important - 52000 means that DXKeeper is listening on 52001.**
4. If you change the port - make sure it is aligned with the port you have selected in VarAC.
5. Click "Restart".



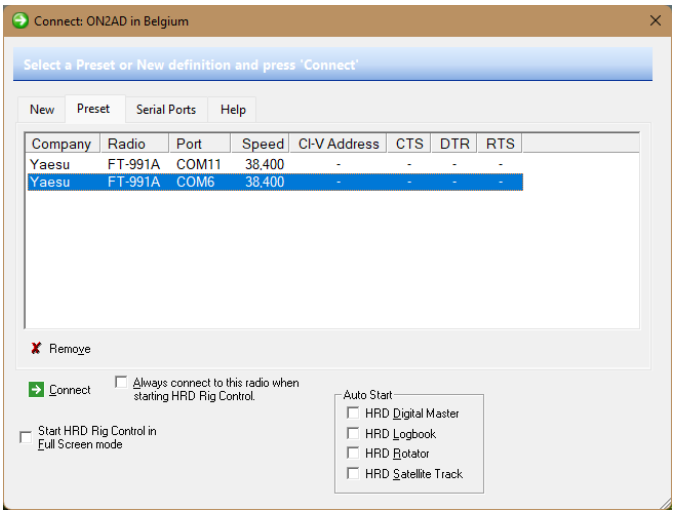


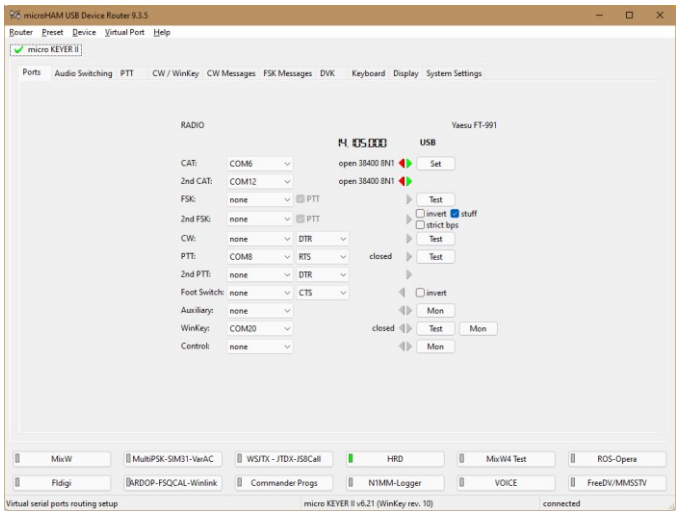
Ham Radio Deluxe

Settings

Ham Radio Deluxe 6

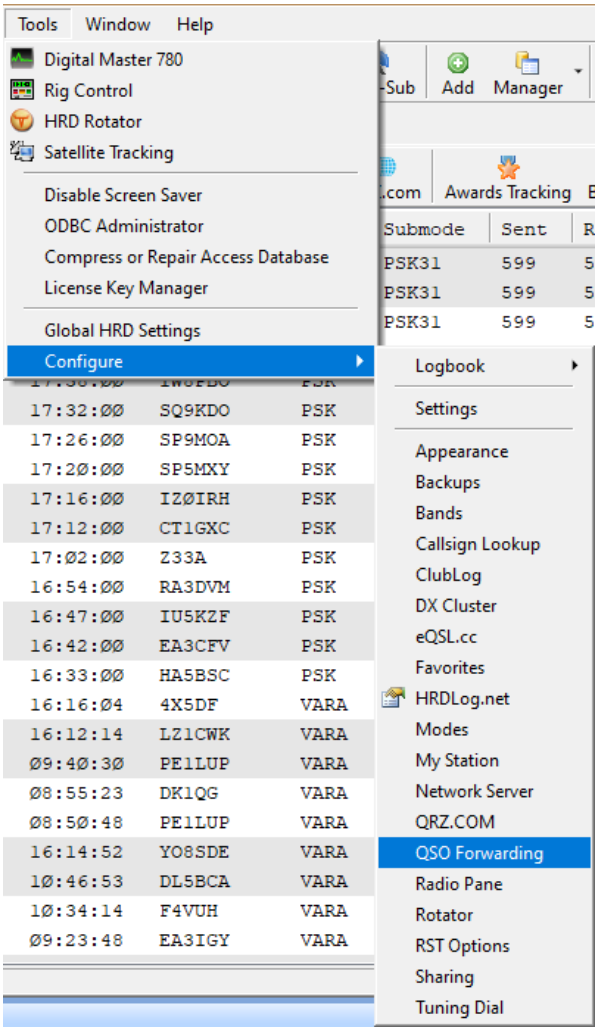
microHAM USB Device Router

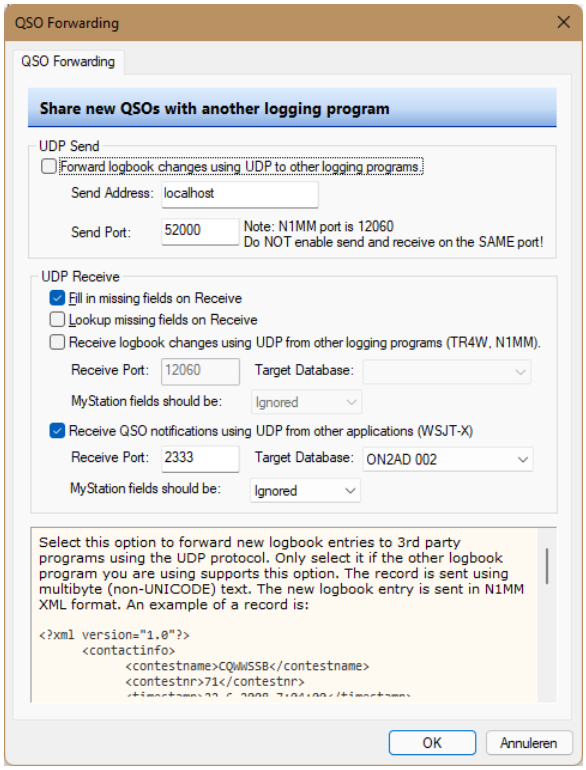




Ham Radio Deluxe 6 setup

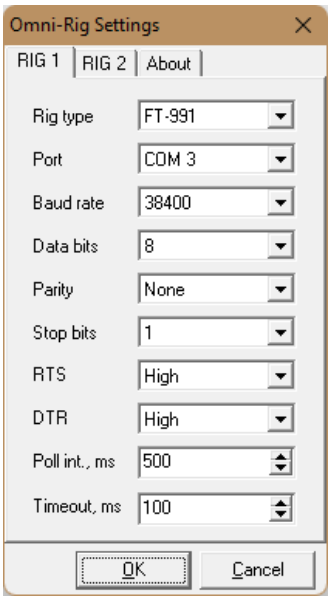
1. Go to Tools --> Configure --> QSO Forwarding
2. Enable the "Receive QSO notifications using UDP from other applications (WSJT-X)
3. Selected the desired target database.
4. If you change the Port - make sure it is aligned with the Port you have selected in VarAC.
5. Click OK

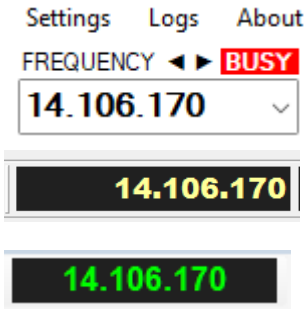




OmniRig setup

With the micro KEYER II interface and the USB cable connected, both connected from the FT-991A to the computer, the frequency in the main screen of VarAC and the frequency in Ham Radio Deluxe (Logbook and DM-780) are adjusted along with it, when I adjust to the VFO turn.



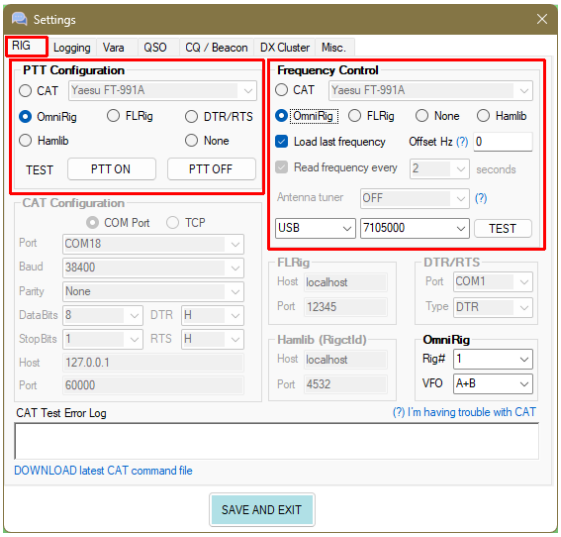


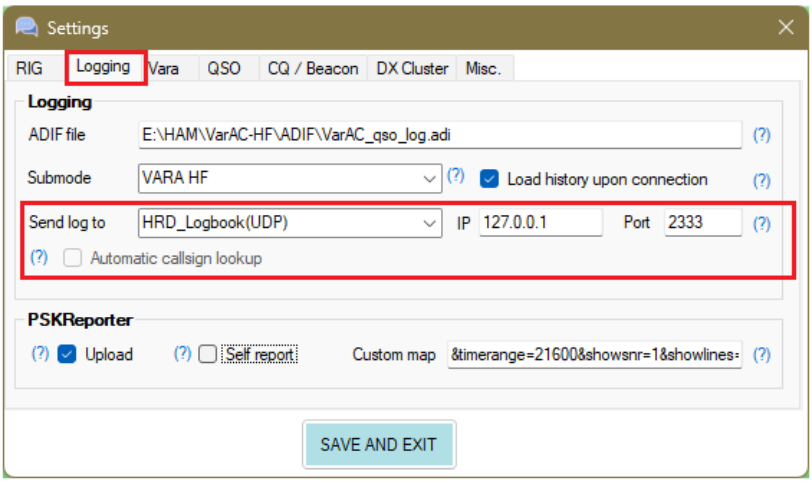
Frequency in VarAC

Frequency in the HRD logbook

Frequency in DM-780

VarAC setup





Log4OM

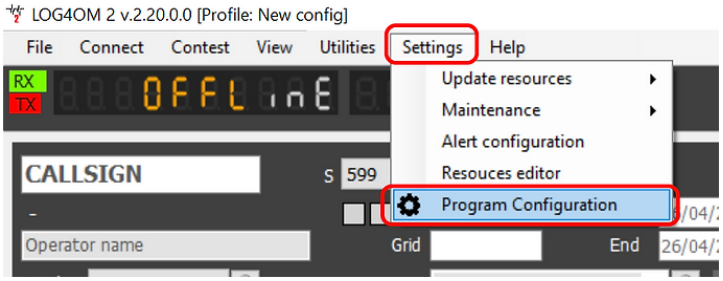
Log4OM provides with UDP logging.

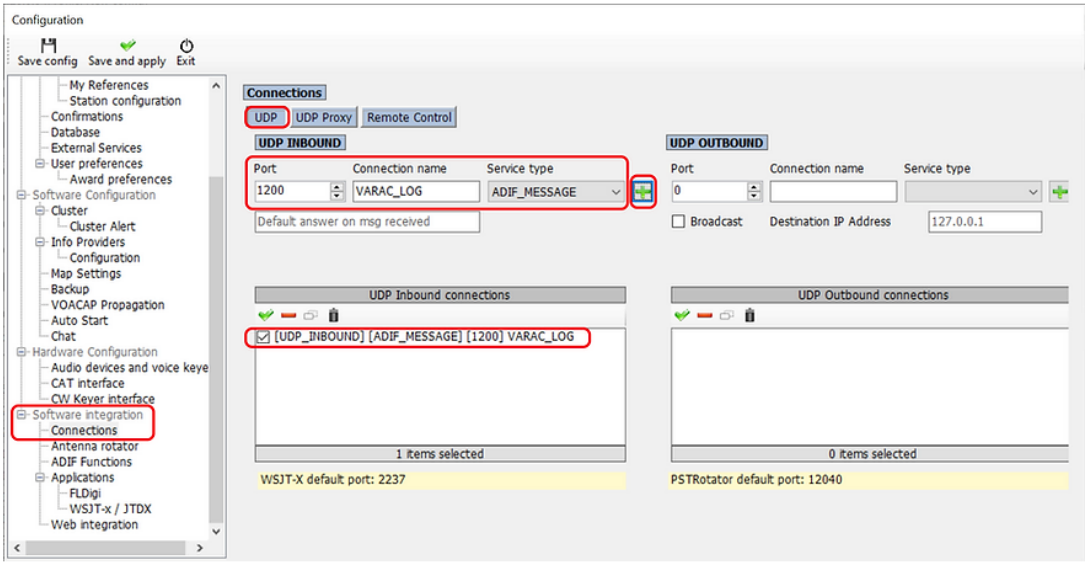
However, Log4OM2 also provides with a unique Logging option - tapping directly to VarAC log ADIF file.
This option is preferred as Log4OM will never miss a log entry if it was not running at the time the QSO was logged.

Both options are show below:

This is how you set the UDP logging with Log4OM:

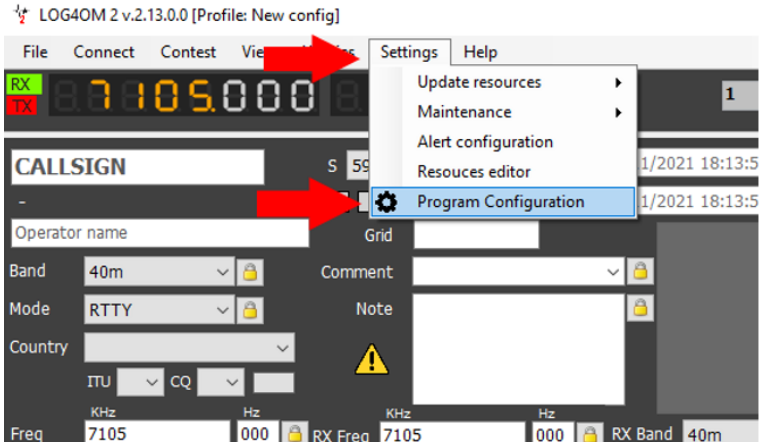
1. Go to Settings --> Program Configuration
2. On the left menu - select Software integration --> Connections
3. Click UDP and go to UDP INBOUND
4. Enter a port number (ex: 1200)
5. Give it a meaningful name (ex. VARAC_LOG)
6. Select Service Type: "ADIF_MESSAGE"
7. Click the "+" button.
8. Make sure the new recorded is there and marked with a "V" sign.
9. Click "Save and Apply"

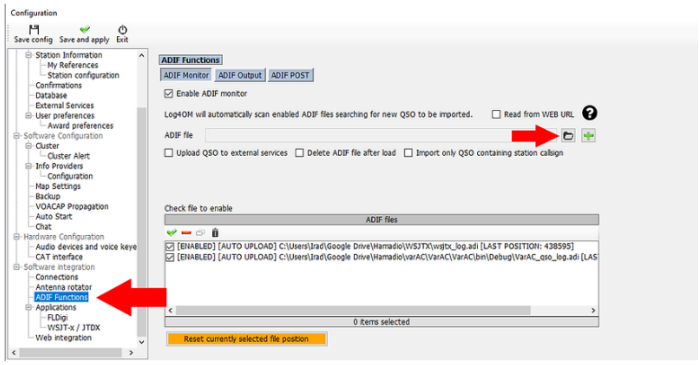


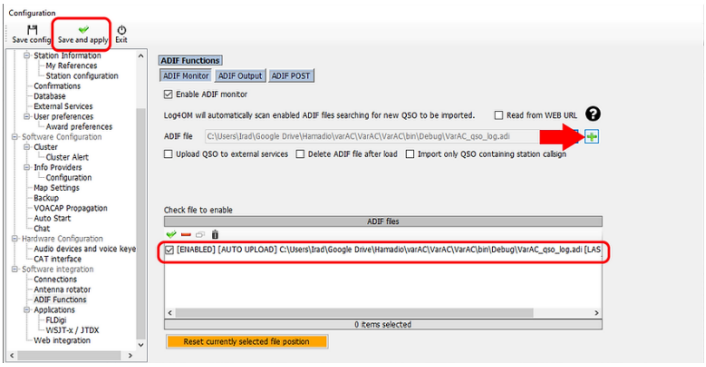


This is how to configure LOG4OM2 to collect your VarAC QSOs automatically from the VarAC ADIF log file.

1. Open Log4OM 2 and click **Settings --> Program configuration.**
2. On the left, Click **ADIF Functions** and click the **folder** icon to select a file.
3. Go to the VarAC installation directory (or where you placed your ADIF file) and select the **VarAC_qso_log.adi** file.
4. Now click the **"+"** icon to add the file for Realtime ADIF file monitoring.
5. Make sure the VarAC ADIF file appears here and set as ENABLED and marked with a "V" sign.
6. "Save and apply"





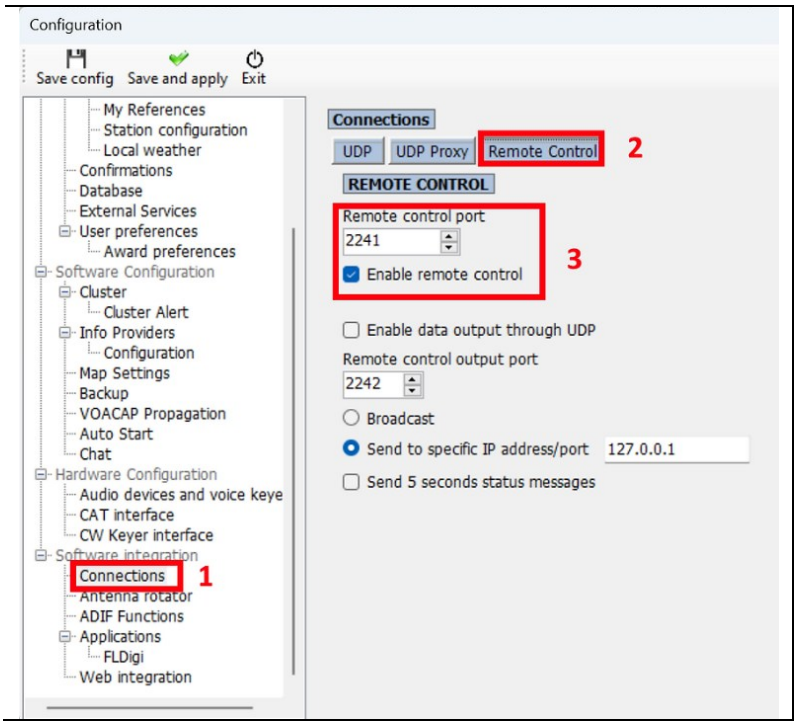


Automatic Callsign lookup

Starting VarAC 8.7, VarAC offers the capability to initiate a callsign lookup on Log4OM once a connection to a station is established. To enable this feature, navigate to the VarAC settings.
However, it's essential to confirm that Log4OM has "Remote control" enabled as well.

Here is how:

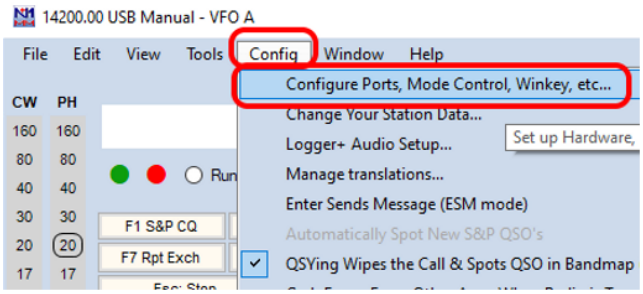
Please note - once disconnected, VarAC will call Log4OM to clear the callsign lookup.

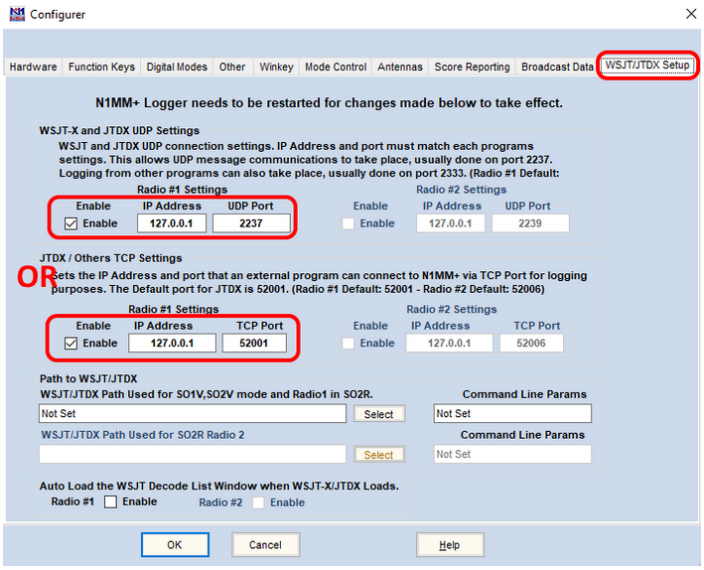


N1MM

N1MM provides with two options for Loggins. TCP or UDP. VarAC support both.

1. Go to Config --> Configure Ports, Mode control, Winkey etc...
2. Go to the WSJT/JTDX Setup
3. Enable either the UDP or TCP options as show on the screenshot below.
4. If you change the port - make sure it is aligned with the port & method (UDP/TCP) you have selected in VarAC.
5. Click OK





Swisslog

Swisslog started to provide TCP logging support from V5.104. Make sure you upgrade to this version or later before trying to integrate with VarAC.

This is how you set the UDP logging with Log4OM:

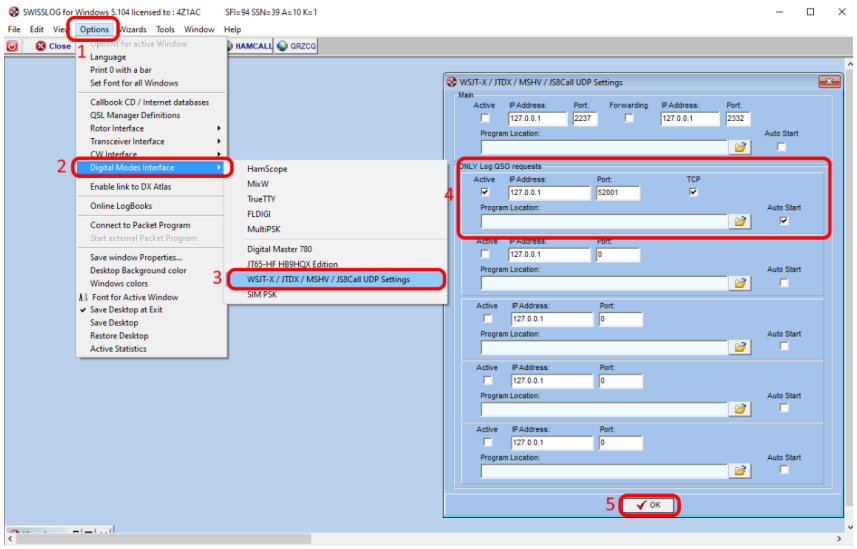
Go to Options --> Digital modes interface --> "WSJT-X / JTDX / MSHC / JS8Call UDP settings".

Under "Only Log QSO requests" locate the first line.

Check the "Active", "TCP" & "Auto start" checkboxes.

Set the IP address to 127.0.0.1 and Port to 52001.

Click OK



UcxLog

UcxLog provides with UDP logging.
No special configuration is required on UCX log.

WinLog32

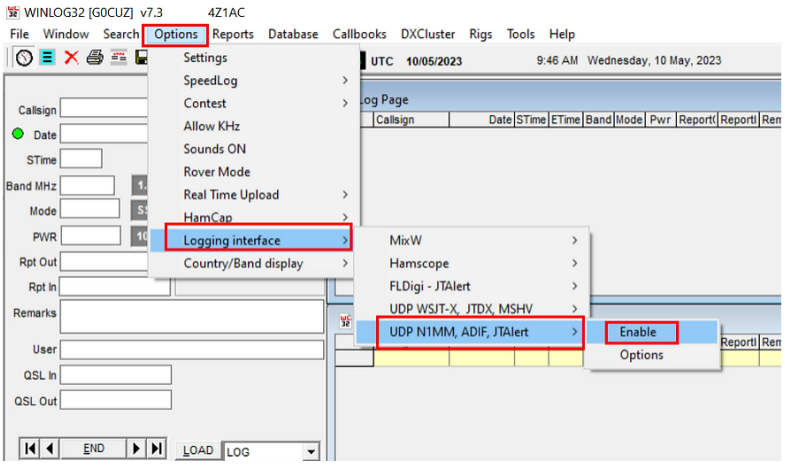
Winlog32 provides with UDP logging.

Logging to Winlog32 is available in VarAC V7.2 or higher. For previous VarAC versions simply select "Log4OM(UDP)"

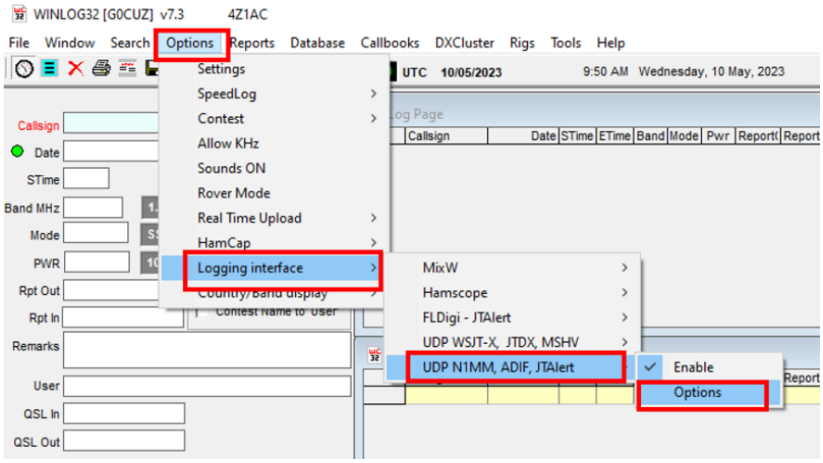
You must use Winlog32 Version v7.3.47 or higher.

Here is how to configure it on Winlog32:

1. Go to "Menu/Options/logging Interface/UDP" --> "N1MM, ADIF, JTAlert" --> "Enable"



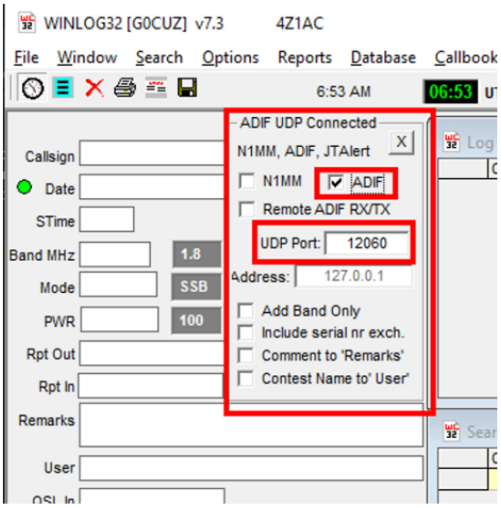
2. Go to "Menu/Options/logging Interface/UDP" --> "N1MM, ADIF, JTAlert" --> "Options"



3. Enable option 'ADIF' (to work with VarAC or other software sending ADIF via UDP from local machine.

4. Make sure the UDP port number matches on both VarAC and Winlog32 (default 12060)

5. Restart Winlog32



Logger32

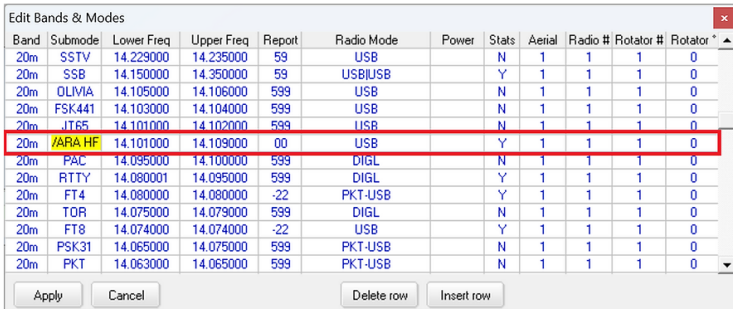
Logger32 provides with TCP based logging which is similar to DXKeeper. If you are using an old version of VarAC without native Logger32 support, you can select DXKeeper as your logger program.

Here is how to configure it on Logger32:

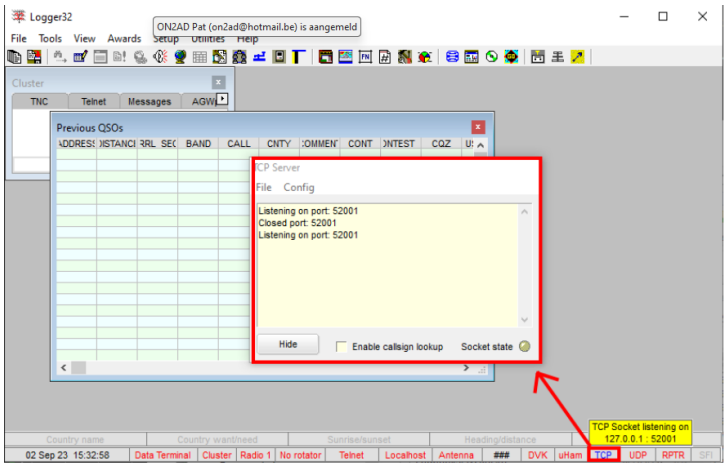
Edit the C:\Logger32\ADIFModes.txt file using notepad and add the DYNAMIC submode on all bands. Here are the lines you should add in the end of the file.

.
.
DOMINO =DOMINOEX,DOMINOF
DSTAR
DYNAMIC =VARA HF,VARA FM, VARA SAT
FAX
FM
.

Go to Tools --> Setup Bands & Modes, and add the following line



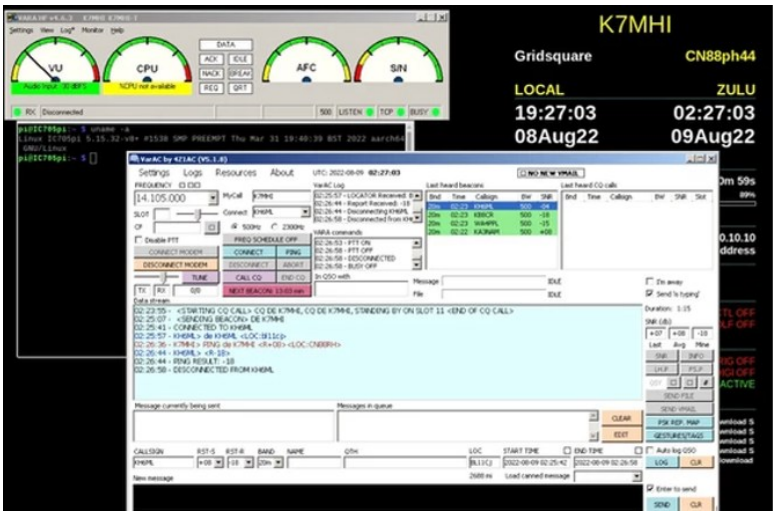
Click Apply
Right-click the "TCP" button on the bottom right side of Logger32.
Select "Click to open socket"



Linux Installation

This manual was based on the documentation of K7MHI @kellykeeton

This is how it looks...



I assume this will work on 32bit Debian (had a report of no)
I do run in 64bit mode bullseye RPi4 fully updated to the day of this post.
The nice Build-A-Pi project is also used to load ham software.

There are some nice tools for ham radio included in this project.

https://github.com/km4ack/pi-build

Install WineLink

WineLink deploys WINE with a full Winlink RMS version and VARA using this following project script. We only need the WINE and the VARA modem part of it but this installer simplifies the installation.
https://github.com/WheezyE/Winelink

Install WINE fonts that are needed by VarAC

sudo apt install *ttf-mscorefonts-installer*
Also follow the instructions here to install "Segoe UI Emoji" font which is also required by VarAC.

Download VarAC

Download, unzip and place the files in the **~/.wine/drive_c/VarAC** directory

Launch VarAC

Using the following command. You can use in a menu. desktop object:
env WINEDEBUG=-all wine /home/pi/.wine/drive_c/VarAC/VarAC.exe

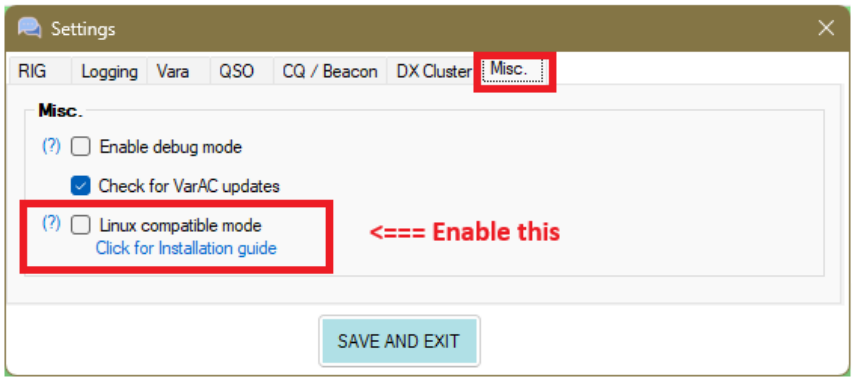
I had to launch a few times and get the settings saved and working but it did work with no major issues! using an IC-705.

Enable "Linux compatible mode" in VarAC settings

Go to Settings --> Rig control & Vara configuration.
Check the "Linux compatible mode" checkbox:
Click Save & Exit

You can do it by directly editing the VarAC.ini file using the following command:

sed -i 's/LinuxCompatibleMode=OFF/LinuxCompatibleMode=ON/' ~/.wine/drive_c/VarAC/VarAC.ini



OS/HW specific configuration

Pi5 & Bookworm

Pi5 only bookworm 16K pagesize is incompatible with wine/box (Dec42023)

- Switch to 4k-page by adding 'kernel=kernel8.img' to /boot/config.txt
- Reboot

To manually install VARA and VarAC on a Pi:

- Load up Pi-Apps via http://pi-apps.io
- run: wget -qO- https://raw.githubusercontent.com/Botspot/pi-apps/master/install | bash
- Use the Pi-Apps GUI navigate to Tools->Emulation
- Install Box86 (also installs wine)
- Install DLL with winetricks by running "winetricks" from CLI
- Press OK for 'default prefix'
- Choose install a DLL or component
- Select some needed DLL and press OK to install
- comdlg32ocx, pdh-nt4, vb6run
- Download Vara, VarAC
- Install them all, if you install VarAC first it will open the Vara Modem download page
- from CLI you can run setup's with "wine setup.exe"
- copy all the OCX files in VARA rather then set paths or register
- cp ~/.wine/drive_c/VARA/OCX/* ~/.wine/drive_c/VARA/

EmComm with VarAC

by Irad Deutsch, 4Z1AC

VarAC: A Lifeline in Emergency Situations

In the realm of emergency communications, reliability and speed are paramount. VarAC, delivers on both fronts, providing an unparalleled solution for individuals and organizations to stay connected even when traditional communication channels fail.
Utilizing HF/VHF/UHF radio frequencies, VarAC ensures constant, grid-independent data exchange, making it an indispensable tool during crises.

Key Features and Their Value in Emergency Situations

1. Reliable Communication Under Poor Conditions

VarAC excels in challenging environments where low power, small antennas, and tough locations typically hinder communication.
It maintains reliable links at -22dB SNR (Thanks to the VARA protocol), ensuring that critical messages get through regardless of the conditions.
This feature is crucial during emergencies when standard communication infrastructure is often compromised.

2. Guaranteed Message Delivery

Utilizing VARA ARQ mode, VarAC guarantees 100% message delivery despite changing propagation conditions and noise.
This rock-solid reliability is vital for emergency responders who need to ensure their messages are received and acted upon without fail.

3. Realtime Alerts Triggered by Tags

In emergency scenarios, timely information dissemination is critical.
VarAC allows users to send agreed-upon keywords that trigger visual and sound alerts throughout the EmComm chain.
This feature ensures widespread awareness of incidents with just one transmission, enhancing the response time and coordination among emergency teams.

4. Alert Center for Managed Communications

VarAC's Alert Center helps manage important messages without a direct connection by locating appropriate intermediaries.
This feature is particularly valuable in scenarios where direct communication links are unavailable, ensuring messages still reach their intended recipients.

5. Constant Beaconing for Team Tracking

To ensure continuous availability and presence of EmComm teams, VarAC uses beacons as keepalive signals.
This constant beaconing helps track the propagation of team members, providing real-time updates on their locations and ensuring that teams remain informed and coordinated during a crisis.

6. Fast File Transfers

VarAC facilitates rapid transfer of forms, images, and documents, even with unattended EmComm stations.
This capability is essential for sharing critical information swiftly, such as medical forms, maps, or photographic evidence, which can significantly aid in rescue and relief operations.

7. GPS Integration for Location Updates

Real-time updates of team locations are crucial during emergencies.
VarAC's GPS integration allows for effortless reflection of current locations, ensuring all team members are informed of each other's precise whereabouts, which aids in strategic planning and execution of rescue missions.

8. High Data Speeds with VARA Protocol

The VARA protocol used by VarAC boasts unmatched data speeds, with HF speeds up to 7,050 Bps and V/UHF FM speeds up to 25,000 Bps.
This rapid data transfer is essential for sending large amounts of data quickly, a common requirement during emergency situations.

9. Efficient Broadcasting and Group Communication

VarAC allows for individual or group message broadcasts, extending coverage via digipeater chains and facilitating group chats for EmComm operators.
This capability ensures that important information is disseminated quickly and efficiently to all relevant parties, enhancing coordination and response efforts.

10. Path Finder to Reach Unreachable Locations

In scenarios where direct communication is not possible, VarAC assists in finding appropriate intermediaries to deliver messages.
This path-finding feature ensures that even the most remote or inaccessible locations receive critical communications.

11. High Concurrency with Multiple Channels

VarAC's slot-based technology allows multiple EmComm operators to tune to a single frequency and QSY to a slot upon connecting, managing multiple links simultaneously without the need for extensive frequency lists.
This high concurrency is particularly beneficial in large-scale emergencies where numerous teams need to communicate concurrently.

12. VMails and Relay Notifications

VarAC simplifies the process of sending mails to individuals or groups, with smart relay notifications alerting operators of pending messages.
This feature ensures that important messages are promptly retrieved and acted upon, maintaining efficient communication flow during emergencies.

13. Pre-existing Forms and Templates

VarAC offers a variety of pre-existing ICS message templates tailored to various emergency scenarios, along with the ability to customize templates to specific needs.
These ready-to-use forms facilitate quick and accurate information exchange, streamlining the communication process during critical situations.

VarAC stands as a robust, versatile, and indispensable tool for emergency communications.
Its array of features, from guaranteed message delivery to real-time alerts and high-speed data transfers, ensures that emergency responders can focus on managing crises effectively, confident in their ability to communicate reliably and efficiently.
When traditional communication networks fail, VarAC delivers, making it the ultimate solution for emergency communications.

The complete EmComm Tactical scenarios guide V.1.2

Tactical EmComm scenarios covered in this guide

This guide provide examples to real-life EmComm tactical need and how VarAC can be leveraged to address them.

1. EmComm operators' “Check-ins”
2. Sending an emergency alert to all EmComm operators.
3. Send emergency VMail without direct link to your destination.
4. Sending an images of a missing person
5. Group chat/check-ins of all EmComm operators.
6. Live chat between stations with no direct link (through digipeater)
7. Find a path to an unreachable station.

* Please note: When showcasing digipeaters use cases – these are available with VaraFM only.

Tactical need #1

EmComm operators' check-ins

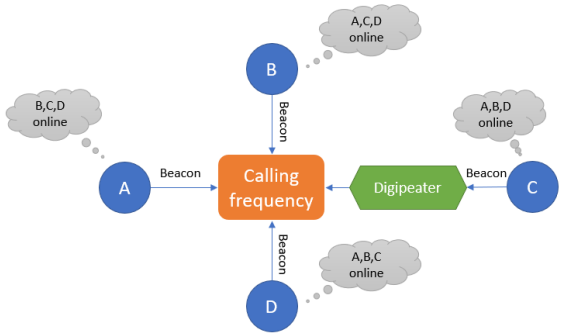
VarAC Features used:

Beacons

VarAC Beacons are a great tool to notify your EmComm network that you are online and available for any type of communication.

How ?

1. All operates set a beacon to fire every X minutes on an agreed calling frequency.
2. All Operators can see each other on the “Last heard beacons” with the latest timestamp.
3. Digipeaters can be used to extend reach.



Tactical need #2

Sending an emergency alert to all EmComm operators.

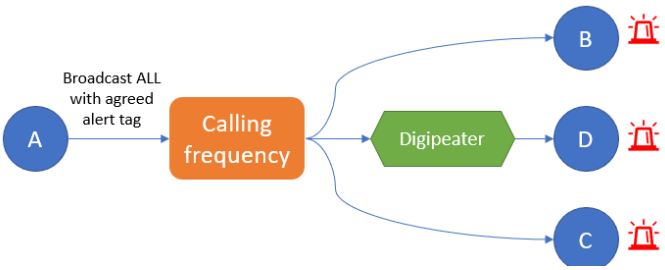
VarAC Features used:

Alert tags, Broadcast

Broadcast can be used as s one-to-many transmission that can also propagate through VaraFM digipeaters. Coupled with a pre-defined alert tag, it is a great way to quickly distribute a critical message through the entire EmComm network in seconds.

How ?

1. Define an alert tag and share among all your EmComm networks. (Alert tags definition is stored in a file you can easily distribute prior to the operation.)
2. If VaraFM digipeater is available, configure it under settings.
3. Send a Broadcast to “ALL” with the alert tag as part of the text.
4. A visual and vocal alert will be triggered on all EmComm stations.



Tactical need #3

Send emergency VMail without direct link to your destination

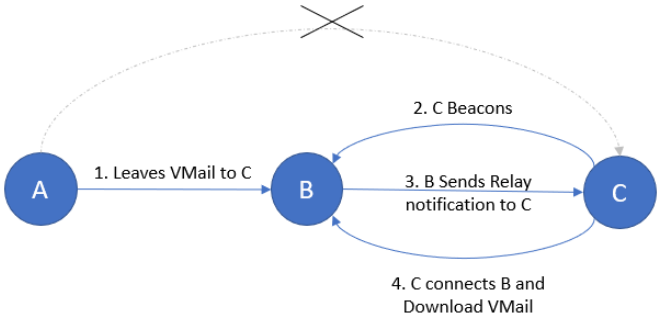
VarAC Features used:

VMails, Parking, Relay notifications, Beacons

VarAC allows you to send VMail through third parties. VMails can be temporarily parked at a third-party station. Once the destinations beacons, the third party notifies it that there is a parked VMail waiting to be collected.

How ?

1. A connects B and leave a VMail for C
2. C Beacons
3. When B decodes the beacons, it sends C a “relay notification alert”
4. C Connects B.
5. B relays the message to C



Tactical need #4

Sending a images of a missing Person

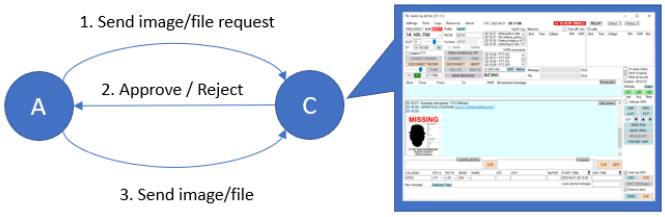
VarAC Features used:

Send file

VarAC provides lightening fast file transfer including images. Received images appear on screen in the conversation windows (Like in instant messaging apps). The destination can set the file size under which files will be received without manual approval.

How ?

1. A connects B
2. A sends a “send file request”.
3. B approves automatically/manually
4. A sends the image.
5. Image appears on B screen.
6. Digipeaters can be used.



Tactical need #5

Group chat/round-table/check-ins of all EmComm operators

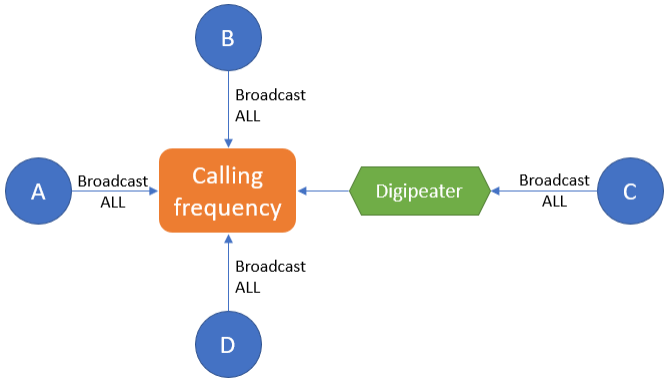
VarAC Features used:

Broadcasts

VarAC broadcasts allows multiple operators to conduct a roundtable chat in a many-to-many fashion. Broadcasts can also be distributed through digipeaters to reach a longer distance while allowing more operators to participate in the roundtable.

How ?

1. All EmComm operators are tuned on the same frequency.
2. Each station sends a broadcast to “ALL”
3. VaraFM Digipeaters can also be used.



Tactical need #6

Live chat between stations with no direct link

VarAC Features used:

Chat, Digipeater

Chatting with VarAC is possible either direct or through VaraFM digipeaters. Up to two digipeaters are allowed. This allows a live chatting over 2 hops.

How ?

1. Set a digipeater under settings.
2. Type in the destination callsign.
3. Connect



Tactical need #7

Find a VMail path to an unreachable station – Way #1

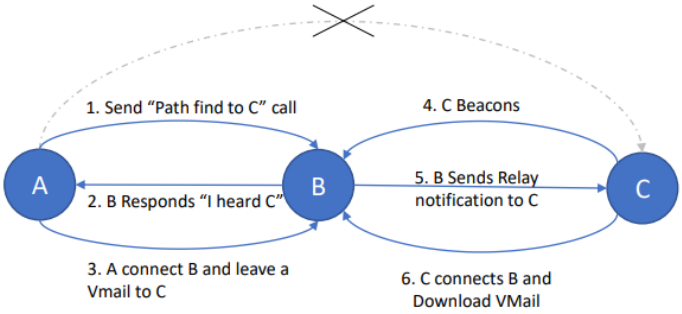
VarAC Features used:

VMail, Path finder

VarAC provides you with ways to find a path for VMAIL relay to a station you can not access directly.

How ?

1. A send a “Path find to C” call.
2. B respond that it heard C
3. A connects B.
4. A leave a VMail to C at B.
5. B will notify C about a parking VMail
6. C connects B to collect the VMail



Tactical need #8

Find a VMail path to an unreachable station – Way #2

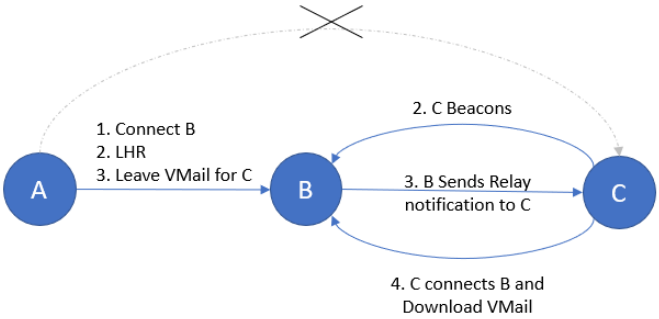
VarAC Features used:

VMail, Last Heard (LHR)

VarAC provides you with ways to find a path for VMAIL relay to a station you can not access directly.

How ?

1. An intercepted a beacon from B.
2. A Connect B and pull last heard stations list using the LHR button.
3. If your destination station C is on that list, A leave a VMail to C at B.
4. B will notify C about a parking VMail.
5. C connects B to collect the VMail.



VarAC Tactical drills checklist

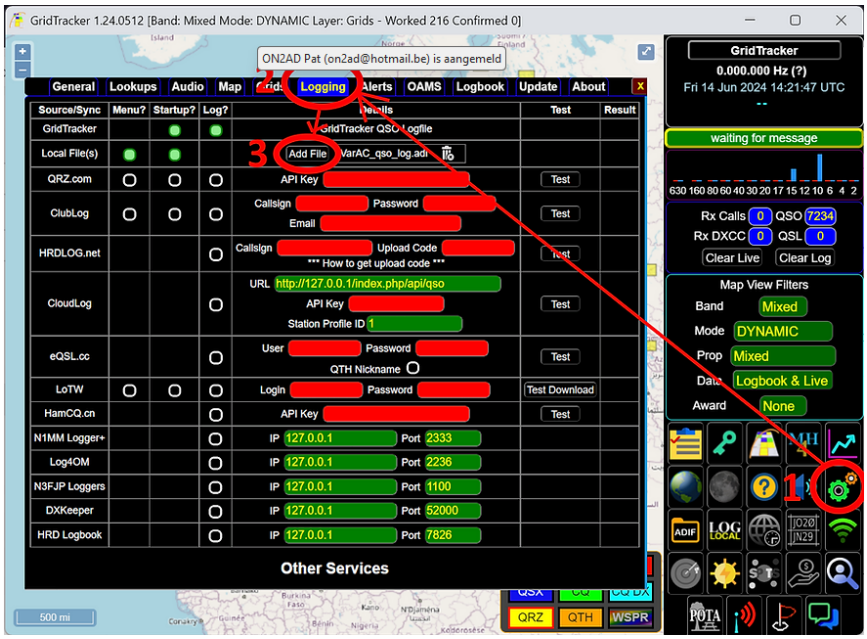
#	Tactical scenario	Status	Comments
1	EmComm operators' “Check-ins”	□ Success □ Fail □ Skip	
2	Sending an emergency alert to all EmComm operators.	□ Success □ Fail □ Skip	
3	Send emergency VMail without direct link to your destination.	□ Success □ Fail □ Skip	
4	Sending an images of a missing person	□ Success □ Fail □ Skip	
5	Group chat/check-ins of all EmComm operators	□ Success □ Fail □ Skip	
6	Live chat between stations with no direct link (through digipeater)	□ Success □ Fail □ Skip	
7	Find a path to an unreachable station (Way #1)	□ Success □ Fail □ Skip	
8	Find a path to an unreachable station (Way #2)	□ Success □ Fail □ Skip	

GridTracker

GridTracker is mostly used to show worked grids on a map and not as a primary logging QSO software.
It can be configured to track your VarAC QSOs and show them on the grid map.
There are 2 things you need to configure to make it work:

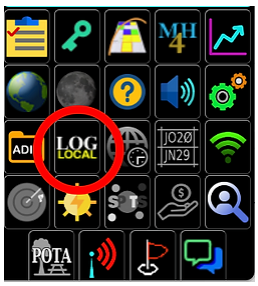
1. Configure GridTracker to scan the VarAC ADIF log file.
2. Add the VarAC ADIF mode name (DYNAMIC) to the GridTracker mode catalog.

Configure GridTracker to scan the VarAC ADIF file



Launch GridTracker
Click the settings icon on the bottom left
Click the "Logging" tab
On the "Local File(s)" row, click "Add File"
Navigate to the VarAC installation directory and select the file **"VarAC_qso_log.adi"** and click Open.

Now GridTracker knows where to find your VarAC ADIF file, and will scan it every time you start GridTracker, or when you click the "Log Local" icon



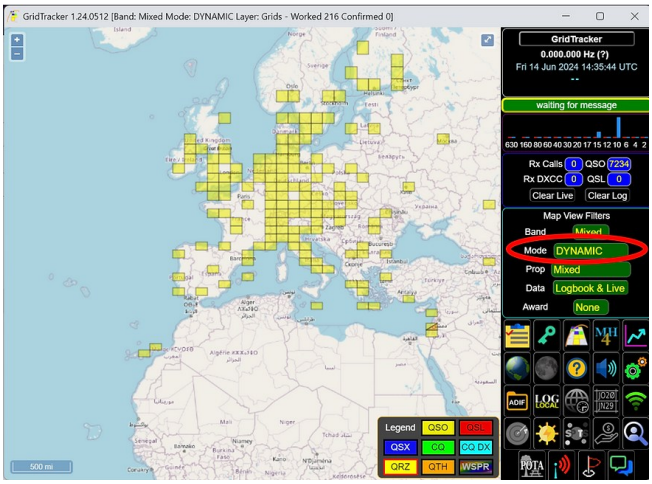
Adding the VarAC ADIF mode name (DYNAMIC) to the GridTracker mode catalog

Navigate to the GridTracker installation directory and go to the **"data"** directory. By default this should be in **"C:\Program Files (x86)\GridTracker\data"**
Open the files **"modes.json"** using a **notepad**.
Add the mode "**DYNAMIC**" like shown here

```
...
"DSTAR": false,
"DSSTV": true,
"DYNAMIC": true,          <------
"FAX": false,
"FM": false,
...
```

Save the file. And relaunch Grid Tracker.

That's it. Now to see all your VarAC QSOs on the map simply select the mode **"DYNAMIC"** from the dropdown list



Annexes

Introduction

The purpose of these appendices is to offer a better insight into how certain settings are made and this with the different transceiver devices.

Also discussed are the CAT settings of some Interfaces and the use of a CAT cable.
If you have a properly working VarAC with an Interface or transceiver not yet listed, please send it to us so that we can complete these manuals. They are an immense help to other HAMs.

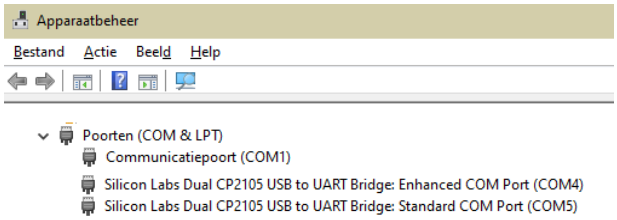
CAT cable connected to the USB port

FT-991A with a USB cable

(by Pat, ON2AD)

Installing the Communication Ports (COM)

Go to YAESU's website select the FT-991A click Files and download the FT-991A / SCU-17 USB driver (virtual com port driver)



After installing these drivers, two com ports are created.

The Enhanced COM Port is used for CAT control.
The Standard COM Port is used for the TX.

(the COM ports may be different from those in the example)

You can view the installed COM ports in device manager

FT-991A Setup for DATA-USB modus

If you are using DATA-USB instead of USB mode, set up your FT-991A with the next settings.
Set menu.

NR	=	Modus	Remark:
060	=	RTS	**Don't forget to change the mode to USB-D or DATA-U in the VarAC settings in the RIG Submenu, and select the right COM port.**
071	=	DAKY	
072	=	**USB**	**And also make the correct sound card settings in VARA (NOT VarAC).**
109	=	**DATA**	

FT-991A Setup for USB modus

If you are using USB instead of DATA USB mode, set up your FT-991A with the next settings.
Set menu.

NR	=	Modus	Remark:
060	=	RTS	**Don't forget to change the mode to USB in the VarAC settings in the RIG Submenu, and select the right COM port.**
071	=	DAKY	
072	=	**USB**	**And also make the correct sound card settings in VARA (NOT VarAC).**
109	=	**DATA**	

FT-991A Setup for automatic USB or USB-D or DATA-U mode

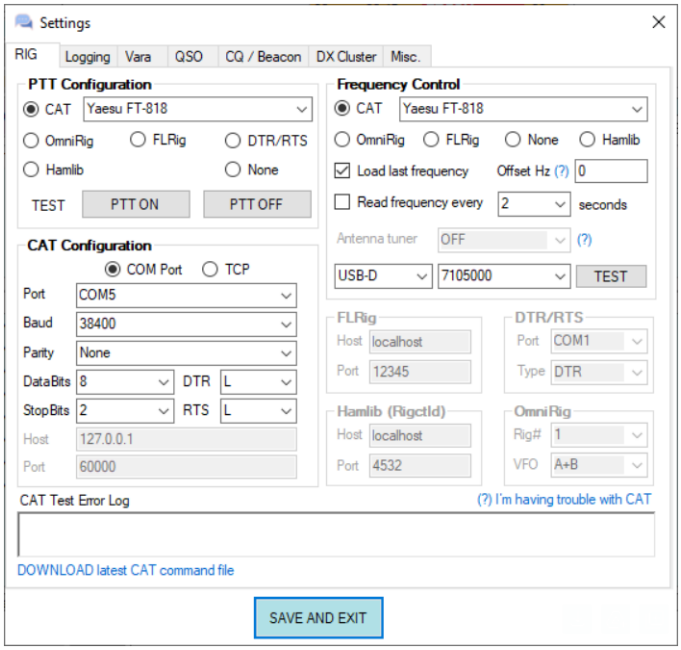
This setup only applies if you are in:
Menu Settings/Rig Control and VARA Configurations and submenu RIG, in the Frequency panel set USB or DATA-U or USB-D as mode

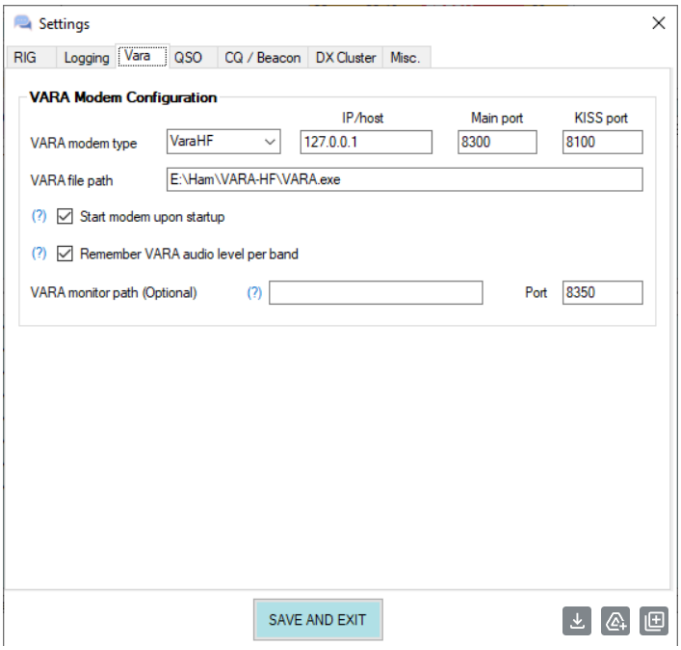
Setup your FT-991A with the next settings.

NR	=	Modus	Remark:
060	=	RTS	**Select the right COM port settings, and also the correct sound card settings in VARA (NOT VarAC).**
071	=	DAKY	
072	=	**USB**	
109	=	**USB**	

FT-818 with a USB cable

Tnx Pietro, I2OIM





Micro HAM-interfaces

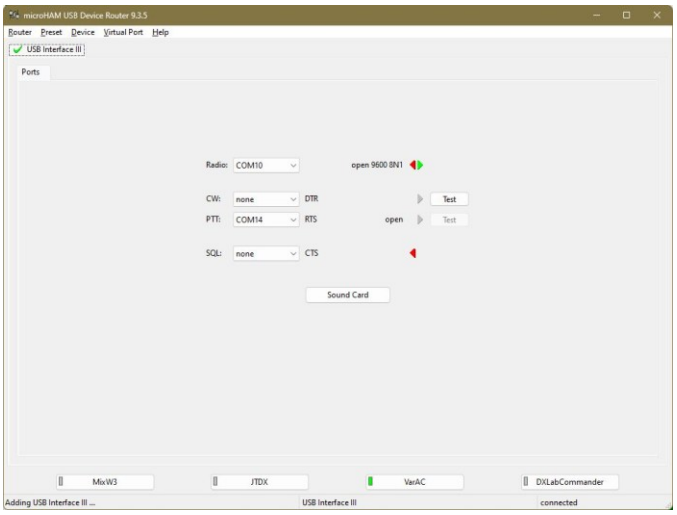
The microHAM interfaces use the Eltima Virtual Serial Port drivers, which are installed when installing the microHAM USB Device Router. To do this, go to the Virtual Port menu and select the necessary COM ports that you think you will use. Personally, I have selected 13 COM ports.

Kenwood

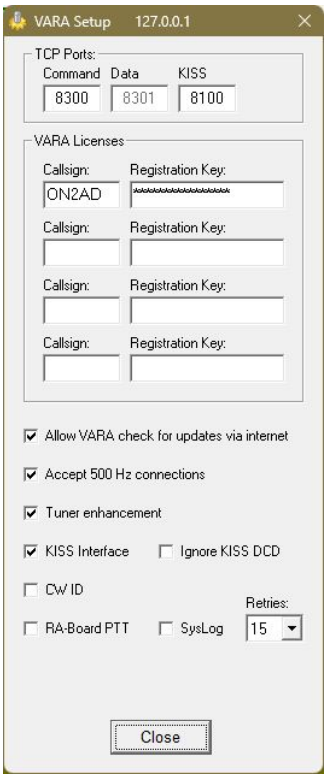
(By Pat, ON2AD)

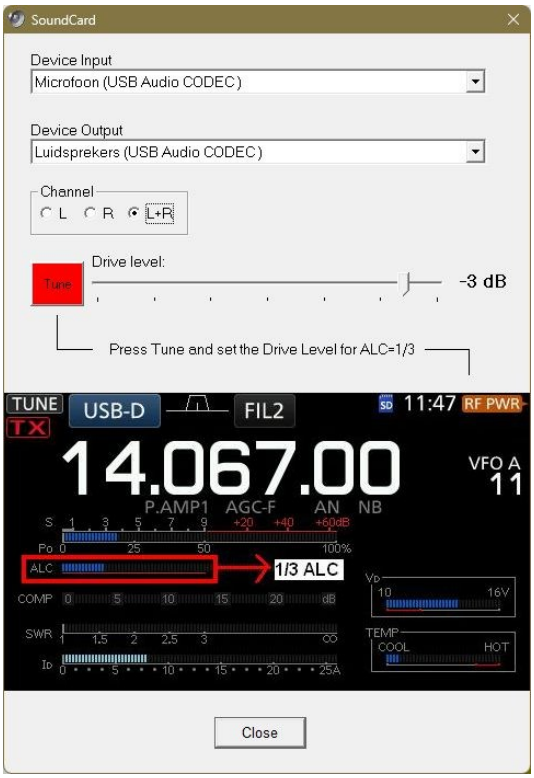
TS-2000 with a USB Interface III

microHAM USB Device Router settings

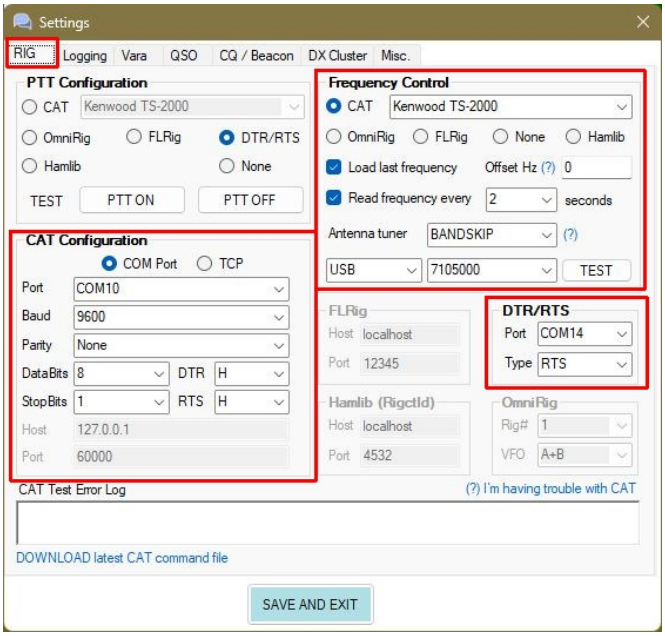


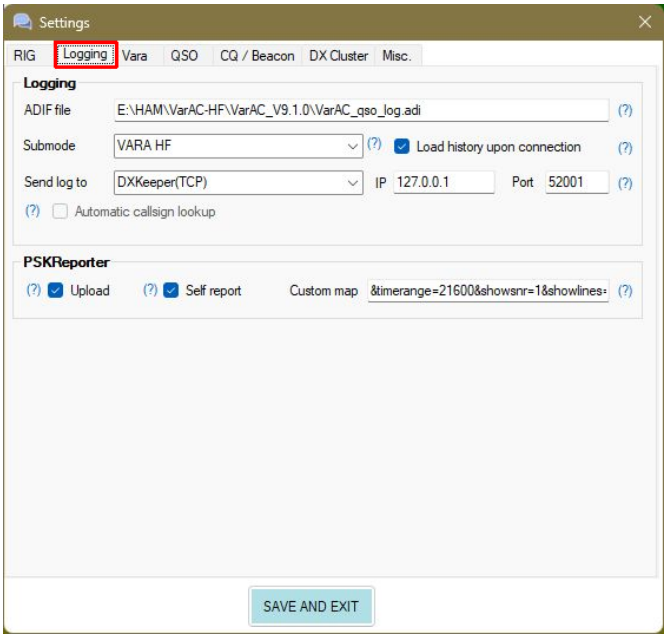
VARA Setup

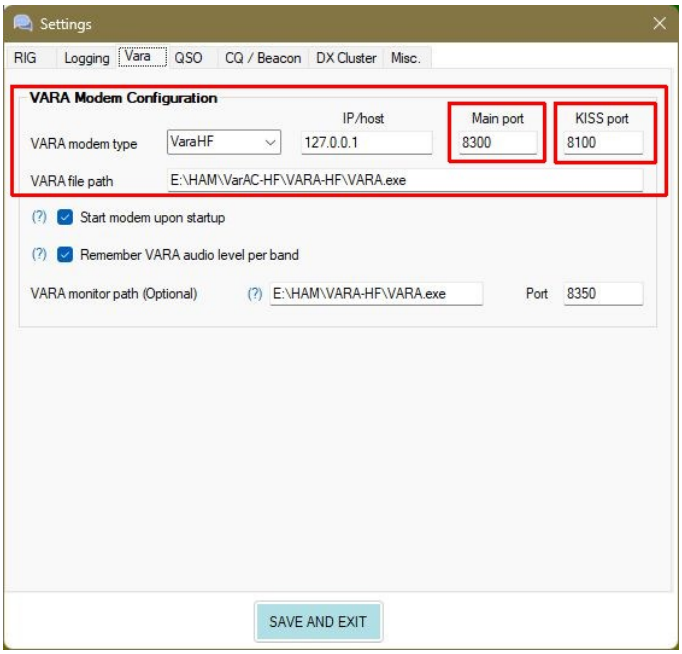

VARA Setup 127.0.0.1
TCP Ports:
Command Data KISS
8300 8301 8100
VARA Licenses
Callsign: Registration Key:
ON2AD
Callsign: Registration Key:
Callsign: Registration Key:
Callsign: Registration Key:
Allow VARA check for updates via internet
Accept 500 Hz connections
Tuner enhancement
KISS Interface
Ignore KISS DCD
CW ID
Retries:
RA-Board PTT
SysLog
15
Close


SoundCard
Device Input
Microfoon (USB Audio CODEC)
Device Output
Luidsprekers (USB Audio CODEC)
Channel
L R L+R
Tune
Drive level:
-3 dB
Press Tune and set the Drive Level for ALC=1/3
TUNE
TX
USB-D
FIL2
11:47
RF PWR
14.067.00
VFO A
11
P.AMP1 AGC-F AN NB
ALC
1/3 ALC
COMP
SWR
TEMP
COOL
HOT
Close

VarAC Setup


Settings
RIG
Logging
Vara
QSO
CQ / Beacon
DX Cluster
Misc.
PTT Configuration
CAT
Kenwood TS-2000
OmniRig
FLRig
DTR/RTS
Hamlib
None
TEST
PTT ON
PTT OFF
Frequency Control
Load last frequency
Offset Hz
Read frequency every
seconds
Antenna tuner
BANDSKIP
USB
7105000
TEST
CAT Configuration
COM Port
TCP
Port
COM10
Baud
9600
Parity
None
DataBits
8
DTR
StopBits
1
RTS
Host
127.0.0.1
60000
FLRig
Host
localhost
Port
12345
Hamlib (RigctId)
Host
localhost
Port
4532
DTR/RTS
Port
COM14
Type
RTS
OmniRig
Rig#
VFO
A+B
CAT Test Error Log
(?) I'm having trouble with CAT
DOWNLOAD latest CAT command file
SAVE AND EXIT


Settings
RIG
Logging
Vara
QSO
CQ / Beacon
DX Cluster
Misc.
Logging
ADIF file
E:\HAM\VarAC-HF\VarAC_V9.1.0\VarAC_qso_log.adi
Submode
VARA HF
Load history upon connection
Send log to
DXKeeper(TCP)
IP
127.0.0.1
Port
52001
Automatic callsign lookup
PSKReporter
Upload
Self report
Custom map
&timerange=21600&showsnr=1&showlines=
SAVE AND EXIT



Yaesu

FT-991A with a micro KEYER II

(By Pat, ON2AD)

FT-991A Setup for DATA-USB mode

If you are using DATA-USB instead of USB mode, set up your FT-991A with the next settings.
Set menu.

This setup only applies if you are in:
menu Settings/Rig Control and VARA Configurations and submenu RIG, in the Frequency panel set DATA-U or USB-D as mode

NR	=	Modus	Remark:
060	=	RTS	**Don't forget to change the mode to USB-D or DATA-U in the VarAC settings in the RIG Submenu, and select the right COM port.**
071	=	DAKY	
072	=	**DATA**	**And also make the correct sound card settings in VARA (NOT VarAC).**
109	=	**USB**	

FT-991A Setup for USB mode

If you are using USB instead of DATA USB mode, set up your FT-991A with the next settings.
Set menu

This setup only applies if you are in:
menu Settings/Rig Control and VARA Configurations and submenu RIG, in the Frequency panel set USB as mode

NR	=	Modus	Remark:
060	=	RTS	**Don't forget to change the mode to USB in the VarAC settings in the RIG Submenu, and select the right COM port.**
071	=	DAKY	
072	=	**USB**	**And also make the correct sound card settings in VARA (NOT VarAC).**
109	=	**DATA**	

FT-991A Setup for automatic USB or USB-D or DATA-U mode

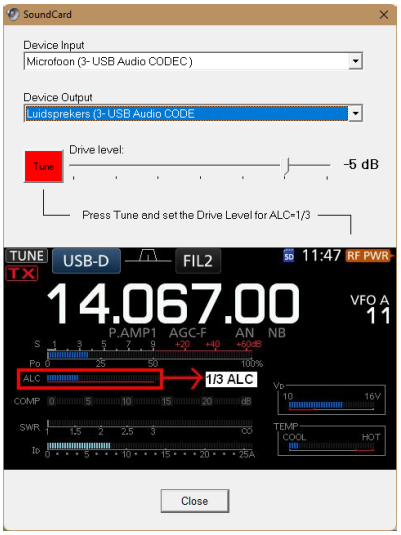
This setup only applies if you are in:
Menu Settings/Rig Control and VARA Configurations and submenu RIG, in the Frequency panel set USB or DATA-U or USB-D as mode

Setup your FT-991A with the next settings.

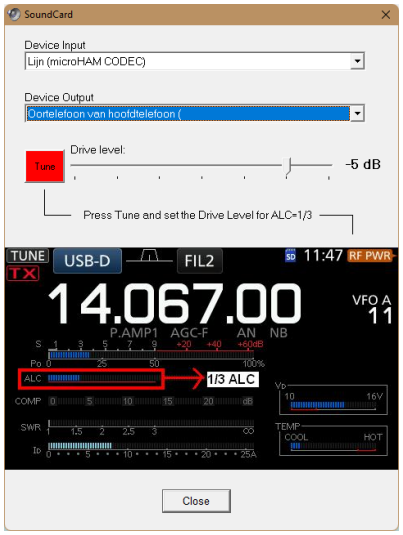
NR	=	Modus	Remark:
060	=	RTS	**Select the right COM port settings, and also the correct sound card settings in VARA (NOT VarAC).**
071	=	DAKY	
072	=	**DATA**	
109	=	**DATA**	

VARA Soundcard settings

With use of the USB cable

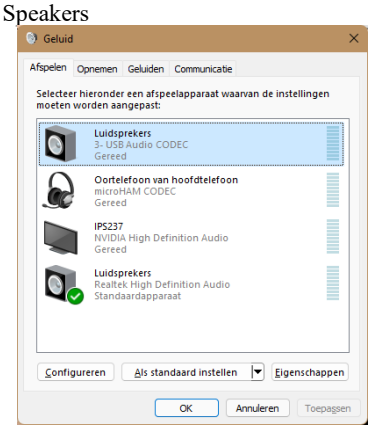


For use with the microHAM interface

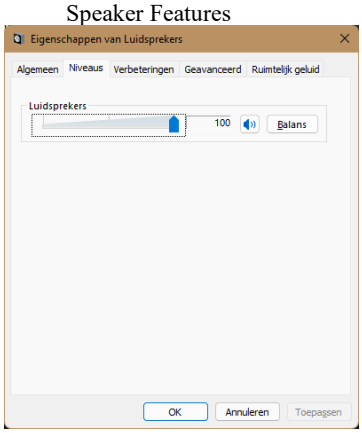


Soundcard settings

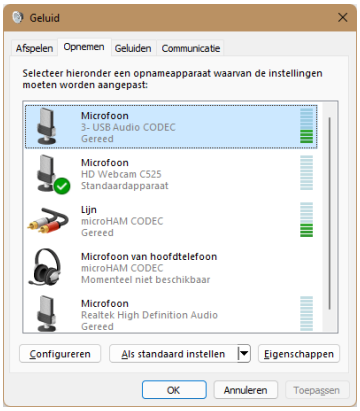
Speakers



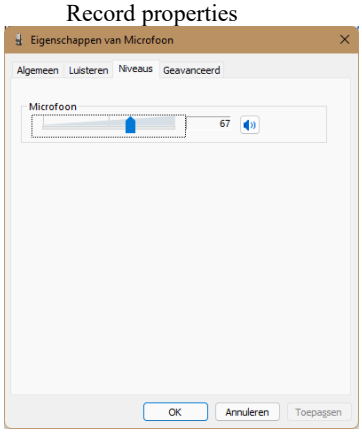
Speaker Features



Record



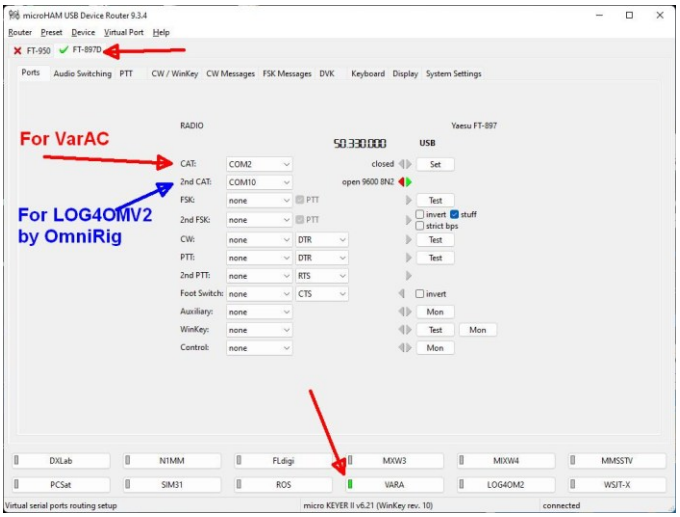
Record properties

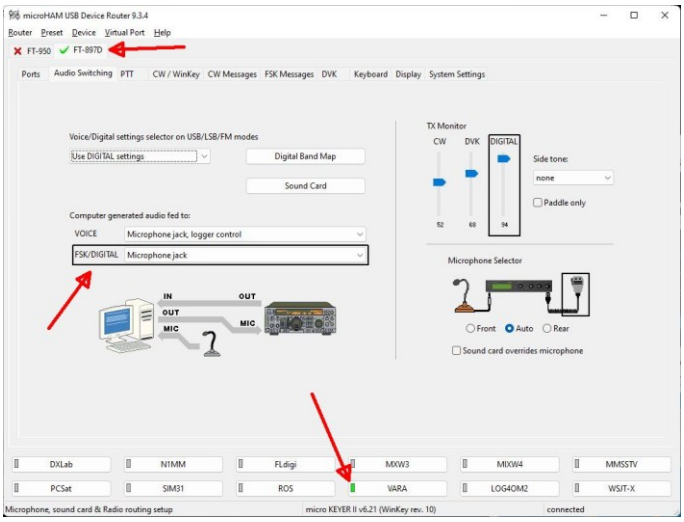


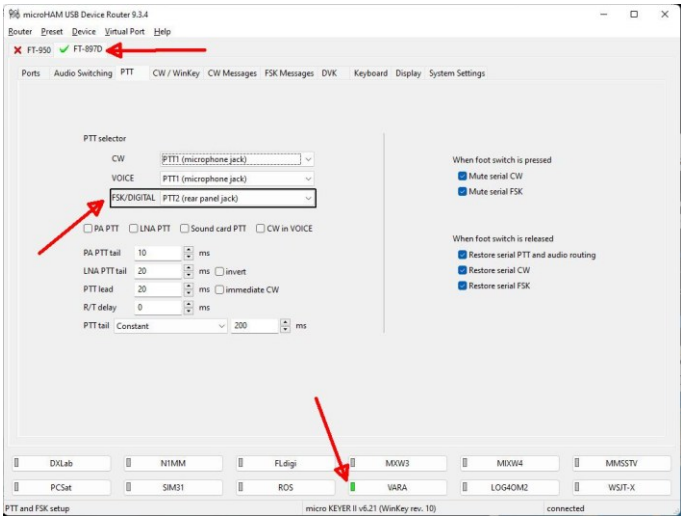
FT-897 connected with the micro KEYER II and OmniRig

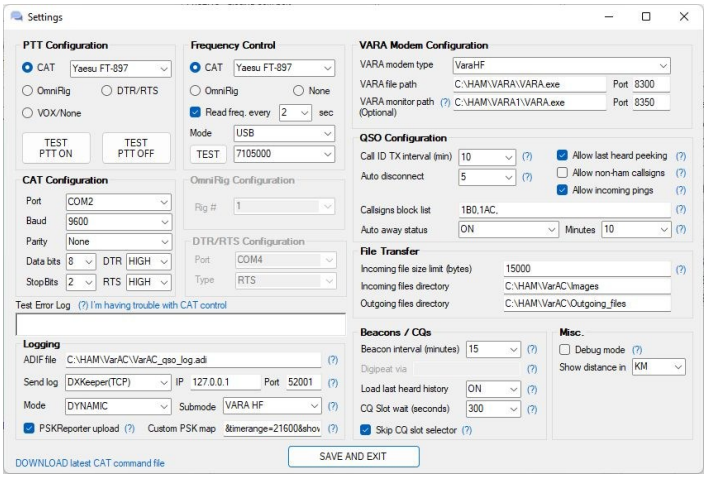
Info ON6AT, Patrick

Micro Keyer settings

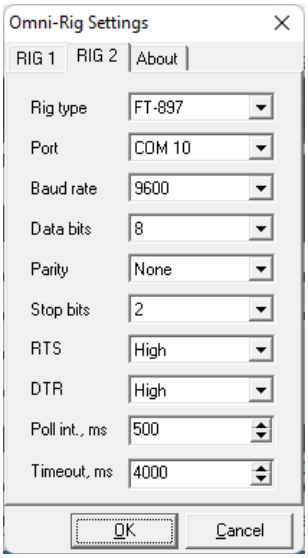


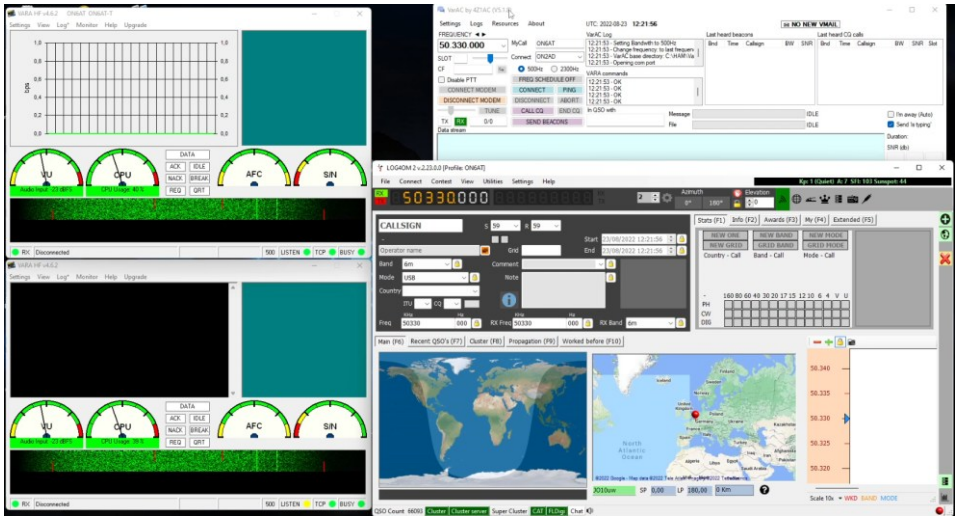






Omni-Rig & VARA-HF & Log4OM





FT-897 Menu setup

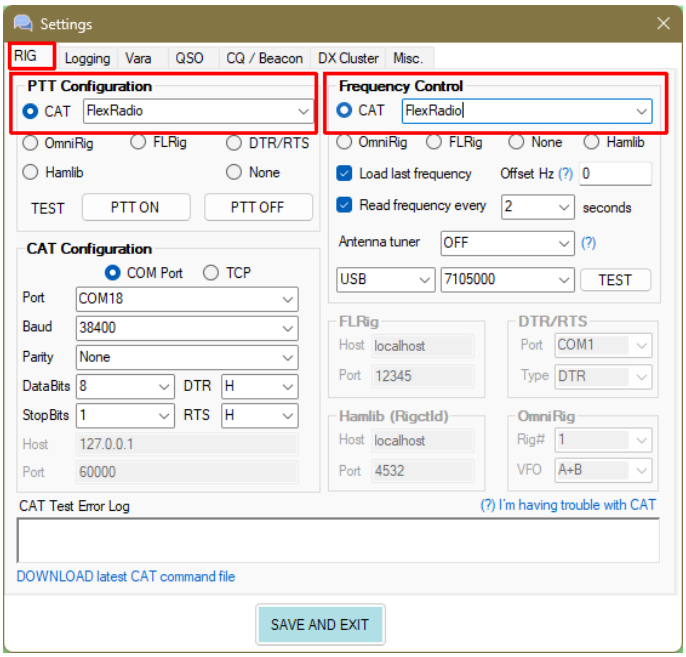
Menu	CAT mode	Setup
019	CAT Rate	9600bps or select another, but change also the MKII baudrate
020	CAT/LIN/TUN	CAT
037	DIG GAIN	10
038	DIG MODE	USER-U or USER-L
039	DIG SHIFT	0 Hz
040	DIG VOX	0

Flex radio's

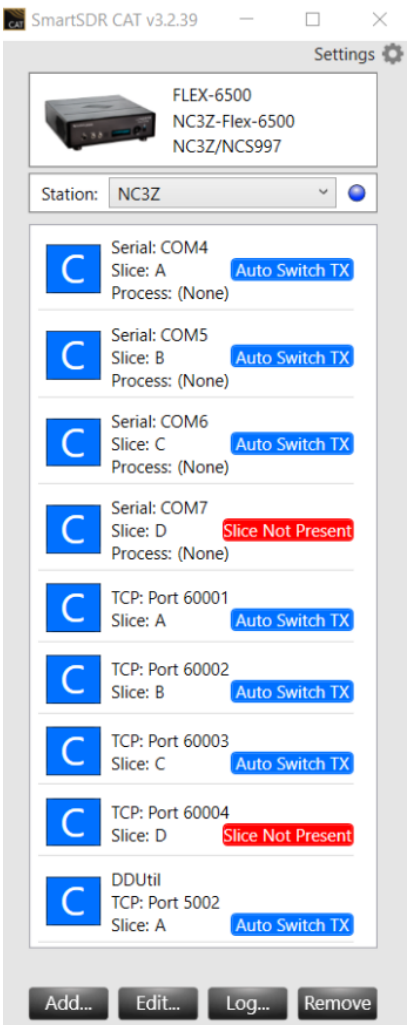
Flex 6400M

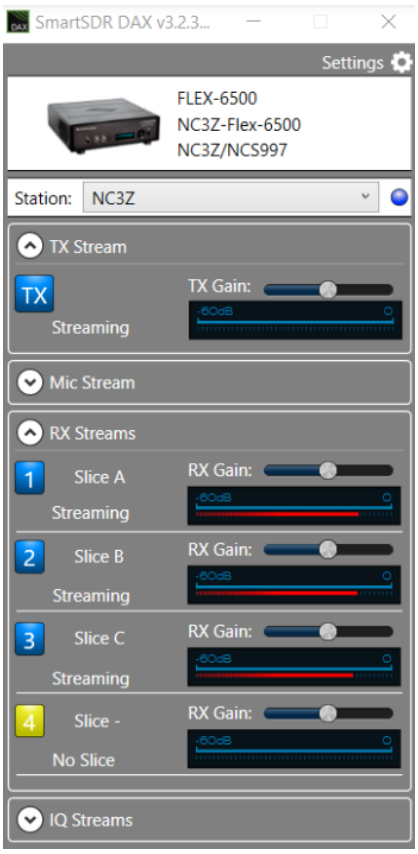
Info from VarAC-Forum

VarAC settings



SmartSDR +VARA Soundcard settings

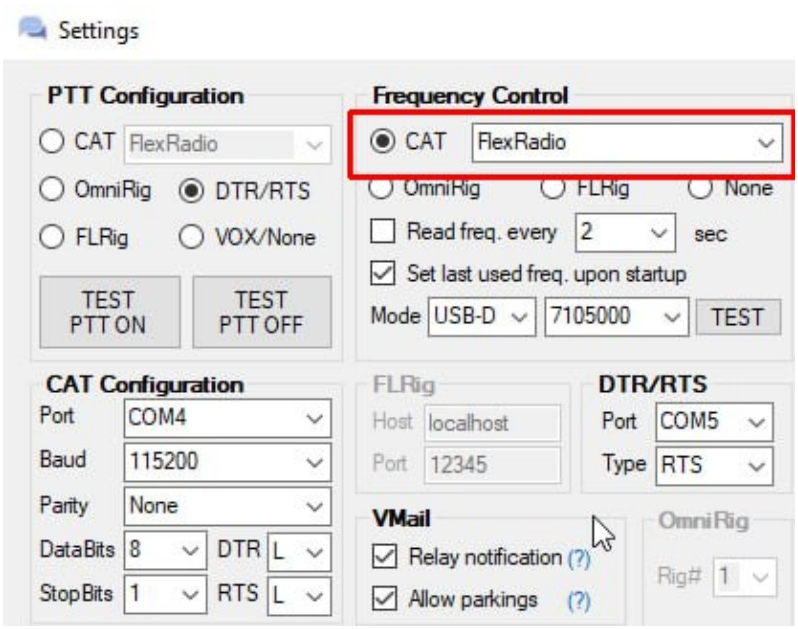


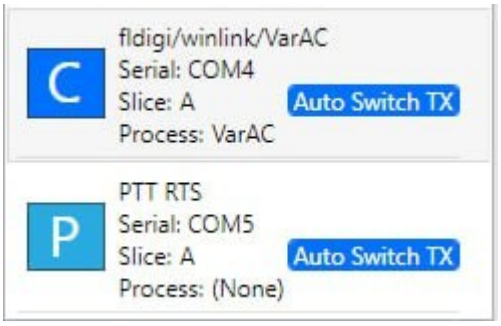




Flex 6600

Tnx, K5CG, Danny

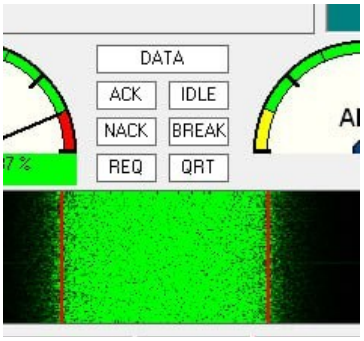




The Big C in the blue box indicates it is a CAT port

The Big P in the other indicates PTT use





Icom

IC-7300

VarAC Configuration

(by K5CG, Danny)

Duplicate your VarAC.ini file to a file with a name like VarAC_IC-7300.ini (VarAC_ prefix required).
Replace the following sections of the new file with the following sections - setting COM? to the USB COM port number in Windows where your IC-7300 is connected.

VarAC_IC-7300.ini

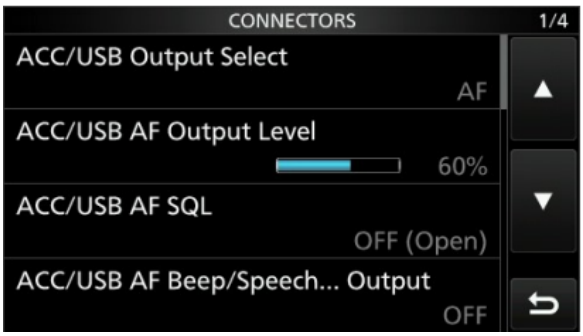
```
[RIG_COM_CONFIGS]
ComPort=COM?
BaudRate=115200
DataBits=8
StopBits=1
Parity=None
DTR=L
RTS=L
PortWaitTimeMs=100
RigPTT=Icom IC-7000
RigFreqControl=Icom IC-7300
ControlMethod=COMPORT
TCPHost=127.0.0.1
TCPPort=60000

[RIG_CONTROL]
RigPTTControlType=DTR_RTS
RigFreqControlType=CAT
RigCatFreqRead=ON
RigCatFreqReadIntervalSeconds=2
```

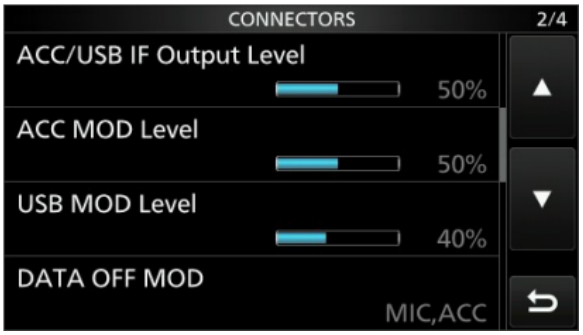
```
UsbMode=USB-D
FrequencySchedule=ON
LastFrequency=14.256.000
LastFrequencyLoadUponStartup=ON
SafetyPTTOffEveryMinute=ON
PTTDisableAfterFreqChangeSeconds=0
FrequencyOffsetHZ=0
ActiveAntennaTunerFreqChange=ALWAYS
FrequencyListCustomFilePath=
FrequencyScheduleCustomFilePath=

[DTR_RTS]
ComPort=COM?
Type=RTS
```

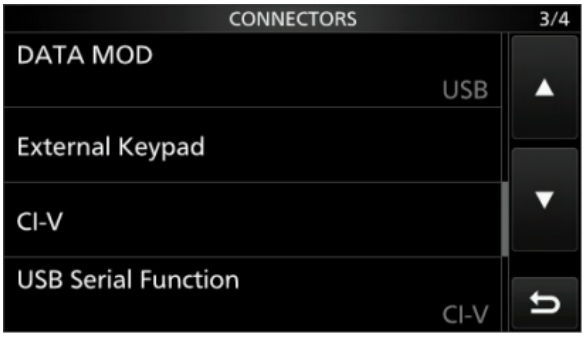
Create a Windows Shortcut to VarAC.exe on your Desktop, passing this new file name as argument to specify the startup profile. The command should look something like... C:\\VarAC.exe VarAC_7300_Direct.ini

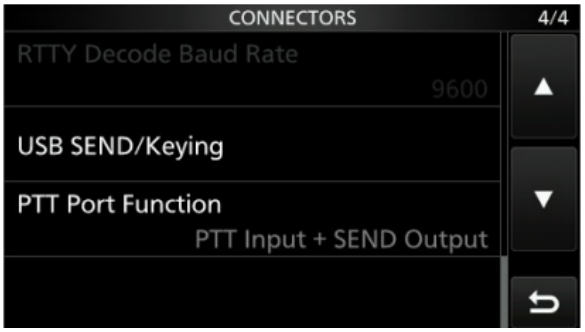
Radio Configuration

From the front of the Radio push Menu → Set, then tap “Connections” on the screen. There are four pages of options in the Connections menu, shown below.

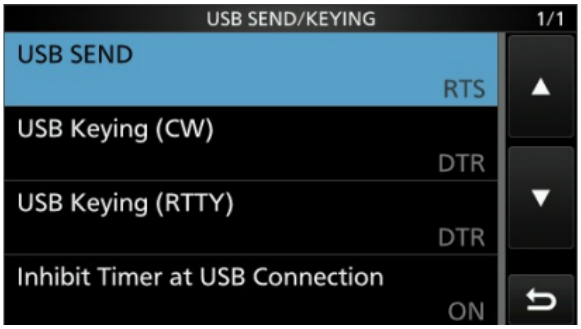








click “USB SEND/Keying”



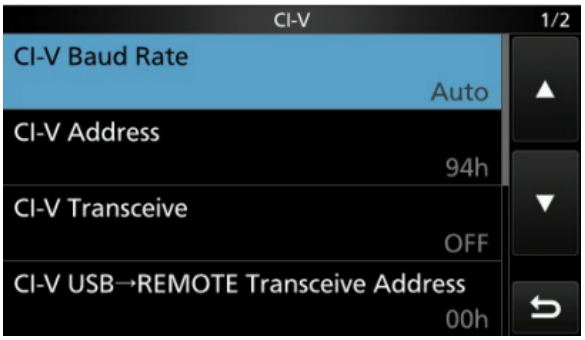
Set “USB SEND” to RTS (for PTT). For “USB Keying (CW)” and “USB Keying (RTTY)”, I set both to DTR for later use with other applications.

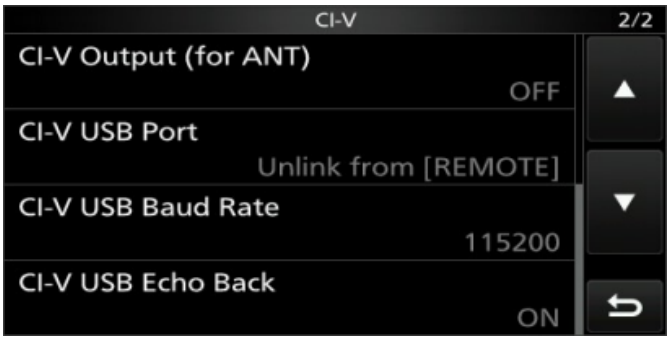
Click the Back arrow to go back to the Connections pages.

On Page 3 select “CI-V”.

In “CI-V” settings on page 1, set as below.

Then, the same on page 2.



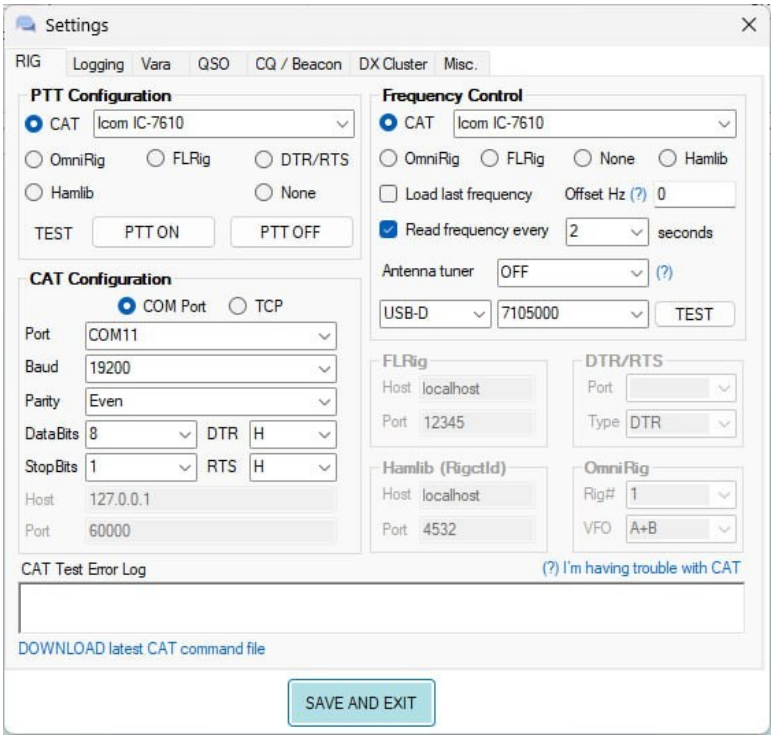


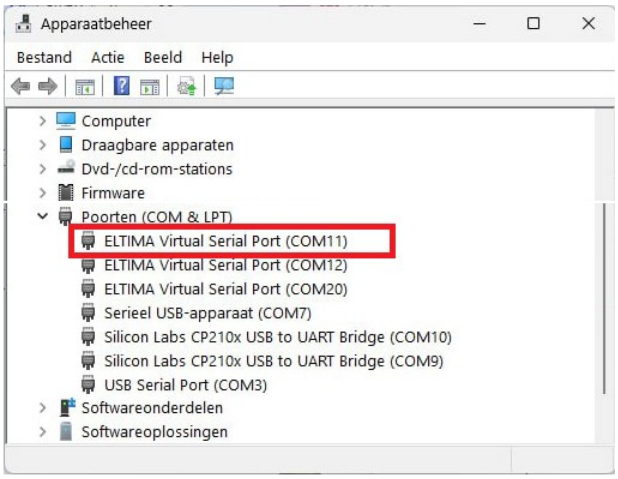
Click the Back arrow until you are at the main screen of the radio.
Start VarAC with the Desktop shortcut created earlier (selects the correct ini file), and your radio should be good to go on VarAC.

IC-7610 connected with the micro KEYER II and in DATA-USB modus

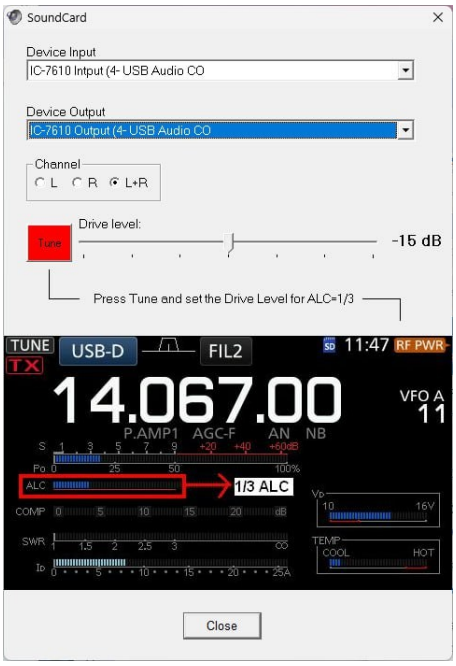
Tnx Rien, PA7RA

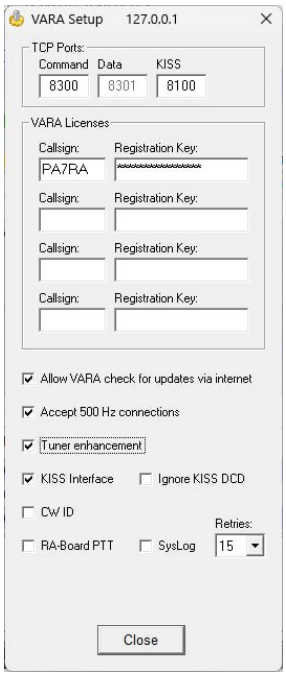
RIG





VARA setup





Release updates

You can find all the “New features”, “Enhancements/Changes” and “Bug fixes” at:

https://www.varac-hamradio.com/forum/manuals/varac-releases-list/

Wednesday with VarAC

By Mark KB0US

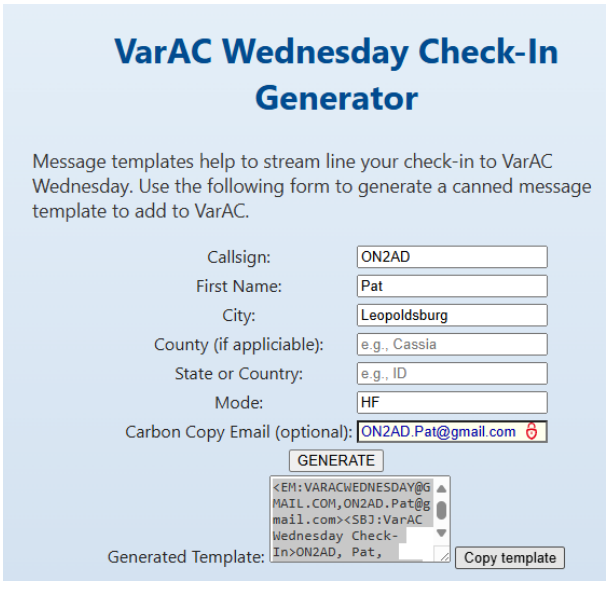
Purpose

In brief, Winlink Wednesday allows Winlink users the chance to send a test Internet email message to a Net Control station using the Winlink system via VARA every Wednesday. Some 800 hams from around the world participate.

We have the same need to practice the process of sending emails through the new Email Gateway. It is also a demonstration of the system under the situation where a number of users want to send emails on the same day.

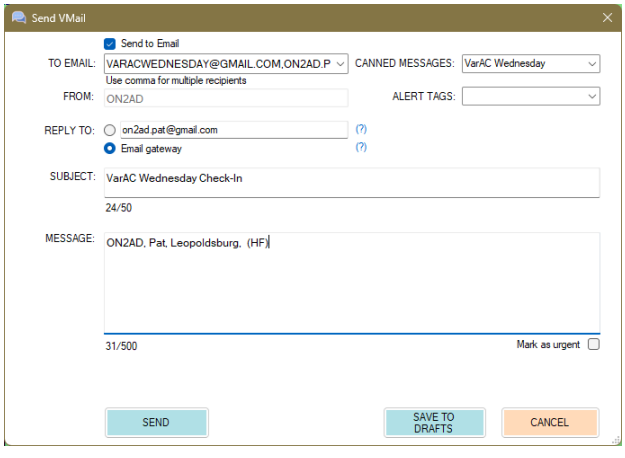
VarAC Check-in Emails

VarAC Wednesday Check-In Generator



You can use this utility at:
VarAC Wednesday - Check-in generator tool
for create your Canned message.

This will be the result.



The message format for a “Standard VarAC Wednesday Check-in” is:
To: varacwednesday@gmail.com
Subject: VarAC Wednesday Check-In

Message body:

call sign, first name, city or town, county, state (HF or VHF, etc.)

EXAMPLE 1:
WA8YNQ, Mark, Cincinnati, Hamilton, OH (HF)

EXAMPLE 2:
ZS1OSS, Daniel, Cape Town, South Africa (VHF)

EXAMPLE 3:
VE3XYZ, John, Toronto, Canada (HF)

If your check-in for Winlink Wednesday is different, use that for VarAC Wednesday as well.

On the first Wednesday of each month, a weather report is requested but not required.
The emphasis is on brevity and communicating the information rather than applying a strict format.

Note: Weather goes on a second line.

EXAMPLE 1: At 0934 local time, it is clear, sunny and 51°F. Winds are out of the NE at 10 mph.
To: varacwednesday@gmail.com
Subject: VarAC Wednesday Check-In

Message body:
KB0US, Twin Falls, ID, (HF)
0934L, Clear, Sunny, 10mph NE, 51F

EXAMPLE 2: At 1317 UTC, it is overcast with light rain, 10°C, wind from the SW at 5 km/u
To: varacwednesday@gmail.com
Subject: VarAC Wednesday Check-In

Message body:
VE3XYZ, John, Toronto, Canada
1317Z, overcast, light rain, 5 km/h SW,10C

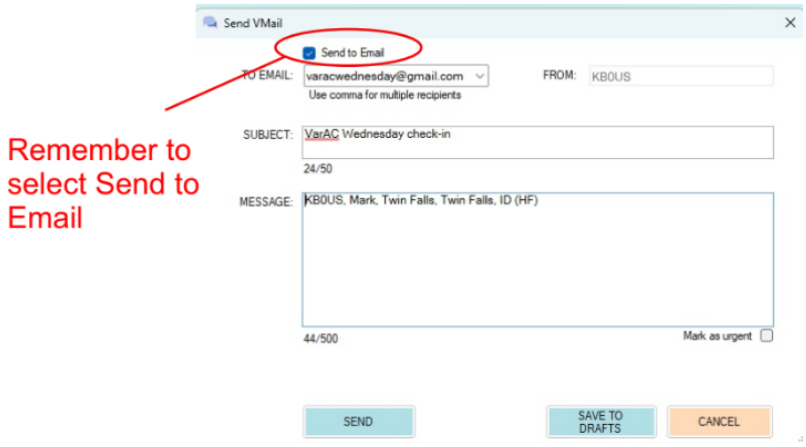
On the third Wednesday of each month, using ICS-213 is an option but not required.
For those interested in ICS-213, see the section on this topic. Most users will be using the “Standard VarAC Wednesday Check-in.

Sending your VarAC Wednesday Message

Write an Internet email in VarAC addressed to varacwednesday@gmail.com.

Click SEND to put it in your Outbox.

You may also choose to copy yourself by adding a comma and your personal Internet email.



1.	Identify a clear slot to pass your email to a beacon. Using the Slot Sniffer in the CALL CQ menu is probably easiest although some will just look at their panadapter.
2.	Return to calling frequency.
3.	Connect to a beacon displaying the Email Gateway symbol.
4.	Send a QSY request to the beacon for the slot you identified as open.
5.	You and the beacon both automatically move to the open slot.
6.	The email is automatically transferred.
7.	Disconnect when the email is transferred.

The entire process should look like this:

```
                <<---------- 2025-04-23 ---------->>

17:53:19        CONNECTED TO KA3NAM (BANDWIDTH: 500 FREQUENCY: 14.105.000)
17:53:27 KA3NAM <AWQ> de KA3NAM <R+03> <E>
17:53:35 KB0US  de KB0US <R-08>
17:53:36        THIS STATION SERVES ALSO AS AN EMAIL GATEWAY.
17:53:51 KB0US  <QSYF>000014105750</QSYF>
17:53:59 KB0US  <VW>
17:54:02        YOUR QSO PARTNER IS AWAY. YOU CAN LEAVE THEM A VMAIL.
17:54:09 KA3NAM <QSYR>
17:54:09        KA3NAM ACCEPTED YOUR QSY INVITATION
17:54:21 KB0US  <TL>
                <SM><TME:2025-04-23 17:48:09><TO:VARACWEDNESDAY@GMAIL.COM><FRM:KB0US><SBJ:VarAC Wednesday check-in><MSG:KB0US, Mark, Twin Falls, Twin Falls, ID (HF)><EG>
17:54:27 KA3NAM <SMR>
17:54:28        VMAIL DELIVERED SUCCESSFULLY
17:54:36 KA3NAM <ER>
17:54:36        EMAIL WAS SENT SUCCESSFULLY
17:54:50        QSO SUMMARY: Frequency: 14.105.750 (20m) Duration: 00:01:30
17:54:50        DISCONNECTED FROM KA3NAM
```

NOTE: VarAC will likely display a number of information pop-ups that will clear themselves automatically. You do not need to manually clear these. In fact, if both you and the beacon are set up correctly, you should not have to touch the keyboard after sending the QSY request; everything should continue automatically up until you need to click DISCONNECT or send a <DISC> to the beacon.

When Do I Send My VarAC Wednesday Email?

Send your email every Wednesday between 0000 and 2400 your local time.
Use the weather email on the first Wednesday of the month (not required) and standard check-ins the rest of the month.

On the third Wednesday, you may optionally use ICS Form 213. For further information on this form, see Using the ICS-213 on the Third Wednesday section.

Testing Your Setup

Feel free to send test emails to varacwednesday@gmail.com on days other than Wednesday.
Net Control, currently KB0US, will reply to these as time is available.

Posting Results

The Net Control, currently KB0US, will total all the emails received and post the results on Facebook and the varac-hamradio forums on Thursday barring a visit from The Sweet Meteor of Death.

Remember that you can add your own Internet email to the message as a verification that it was delivered to the beacon successfully.
For example, varacwednesday@gmail.com , KX4YZ@arrl.net

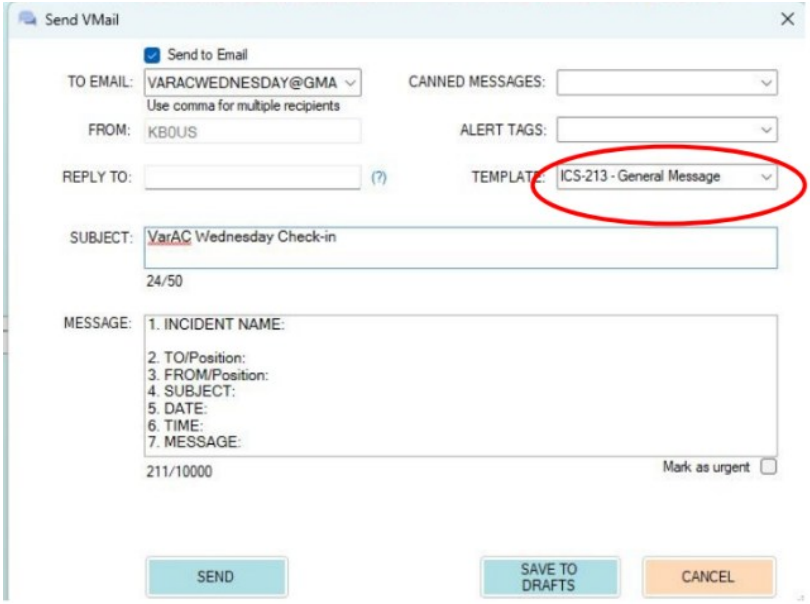
Additional Information

1. Check-ins who do not use a VarAC EMAIL GATEWAY will not be counted.
2. You must be on V11.0.7 or greater.
3. YOU DO NOT NEED AN EMAIL GATEWAY ON YOUR INSTALLATION OF VarAC TO CHECK IN!
   You will be using the EMAIL GATEWAY of the beacon displaying the icon that you connect with.
4. In V11.2.0 and above, canned messages are available in the VMAIL dialog box making participation in VarAC Wednesday even easier!

Using the ICS-213 Template on the Third Wednesday

Incident Command System (ICS) forms were developed by FEMA (the U.S. Federal Emergency Management Agency) and are designed to facilitate structured communication during disaster response, exercises, or other coordinated efforts. The most commonly used ICS form in Winlink is the ICS-213, a general message form for transmitting formal messages between agencies or operators.
In Winklink Express, these are HTML forms which are filled out in a browser that is then transferred to a Winlink Express email as text for sending. We don't have the HTML form, BUT we do have the text form as a TEMPLATE in the SEND VMAIL dialog box — but only in EMCOMM mode.
For those wishing to practice sending ICS forms using VarAC, VarAC Wednesday gives you an opportunity to do so.

1. INCIDENT NAME: VarAC Wednesday
2. TO/Position: KB0US, Net Control
3. FROM/Position: WA8YNQ, Participant
4. SUBJECT: VarAC Wednesday Check-in
5. DATE: 2025-04-15
6. TIME: 17:12L
7. MESSAGE:
WA8YNQ, Mark, Cincinnati, Ohio (HF)
8. APPROVED BY
> Name / Position: Mark Rosneck, Net Participant
9. REPLY:
10. REPLIED BY
> Name/Position:
> Date/Time:



There are actually a number of ways to produce the ICS-213 message including:

1. Fill out the form in EmComm mode, change the subject to "VarAC Wednesday Check-in", press send to put the message in the Outbox, and connect to a beacon in EmComm mode to experience the entire emergency message system.
2. Fill out the form in EmComm mode, press send to put the message in the Outbox, change the mode to Advanced, and connect to a beacon station. This avoids any concerns of sending traffic in EmComm mode which, while it is a drill, is certainly not emergency traffic.
3. If you are also participating in Winlink Wednesday, you could fill in the form on Winlink Express and copy it into a regular VarAC email.
4. You could create a prefilled form as a canned message (now available in V11.2.0 in the VMAIL dialog box) and then manually change the time and date.

Only for developers
VarAC Sqlite database structure (for developers)

Since VarAC V5, VarAC has a SQLite database as its main data engine.
This allows developers to integrate in a super flexible, SQL based way to the VarAC traffic for various types of integrations.

Unlike APIs that are limited to a particular use case, accessing directly the VarAC database provides unlimited options for integrations.

To allow "track changes" data reading, each table has two identifiers for every row that you can use:
1. **A sequential ID** – which can be used as a high watermark.
2. **A unique UUID** based identifier.

The VarAC SQLite DB can be found in the VarAC directory under the name: **VarAC.db**

By design, the VarAC SQLite database **is not** protected by a password or encryption to allow anyone to integrate with its content.

The tables in the VarAC SQLite database can be found on:

VarAC Sqlite database structure (for developers) | VarAC

Acknowledgment

Thanks to all those who have already written a manual in one language or another.

With name.
1. Irad Deutsch, 4Z1AC auteur van VarAC.
2. Ivan Valentin, K3IV
3. Gary Mitchelson, NC3Z
4. Rick Lanford, N8SDR
5. Roy Beiser 4X5BR
6. Pat, ON2AD (Dutch - English & German manuals)
7. Michael, HB9FGU / DF8WI, correction of any spelling errors in the German language
8. And all those we forgot to mention.