WINLINK + VARA HF
QUICK FIELD GUIDE

SEND AND RECEIVE EMAIL VIA HF • NO INTERNET REQUIRED • COMMUNICATE LOCALLY OR WORLDWIDE

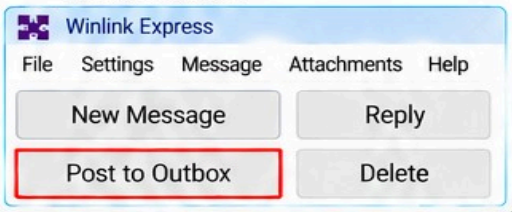
1 DOWNLOAD & INSTALL

- Download and install:
  - **Winlink Express**
  - **VARA HF**
- Open both programs and complete the initial setup with your station information and callsign.
- Configure your TNC/interface (DigiRig, Signalink, etc.) as needed.
- No internet connection is required for operation.

Winlink Express | VARA HF

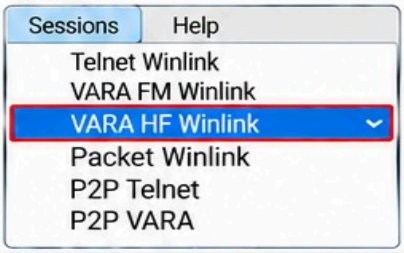
2 COMPOSE MESSAGE

- **In Winlink Express:**
  - Click New Message.
  - Enter the recipient callsign/email.
  - Add a subject (use proper message precedence if needed).
  - Type your message and click **Post to Outbox.**



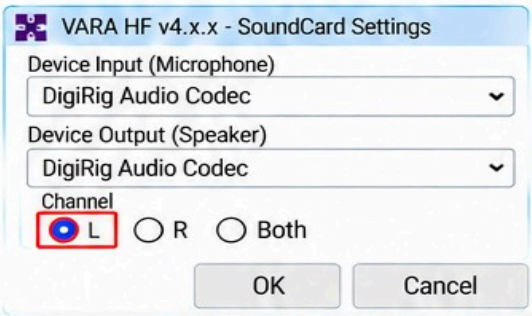
3 OPEN VARA HF SESSION

- In Winlink Express go to: **Session** → Select **VARA HF Winlink.**
- Click **Open Session.**
- The VARA HF modem window will open.



4 SET UP AUDIO (SOUNDCARD)

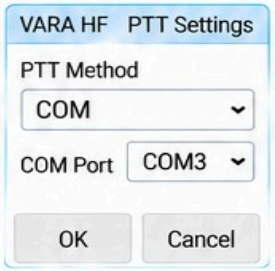
- In the VARA HF window go to **Settings → SoundCard.**
- Select the audio devices associated with your radio/interface.
- If using a DigiRig, select the audio codec and choose "L" (Left).
- Close the SoundCard settings when finished.



5 SET UP PTT

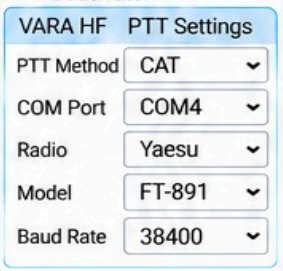
DigiRig / COM Port

- Select COM port.
- Choose the COM port assigned to your DigiRig/interface.



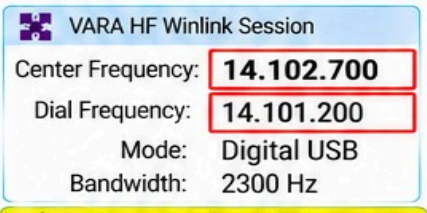
CAT Control

- Select CAT.
- Choose the correct COM port.
- Select your radio brand and model.
- Set the correct Baud rate.



6 SELECT HF SETTINGS

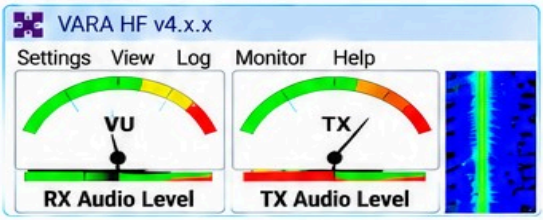
- Tune your radio to the correct **center frequency** and **mode** (Digital USB).
- Use approved Winlink HF channel plans and current band plans.
- Confirm your radio frequency, mode and bandwidth in the VARA HF window.



Use approved Winlink frequencies and follow current band plans. Frequencies change, always check current listings.

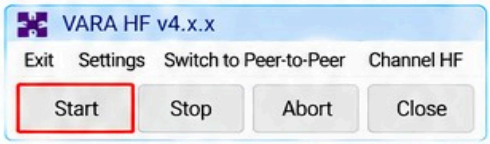
7 CHECK AUDIO LEVELS

- Before connecting, check and adjust your audio levels.
- Watch the VARA HF level indicators.
- Adjust transmit and receive levels as needed.
- Avoid excessive audio levels or overdriving the radio.



8 CONNECT & SEND

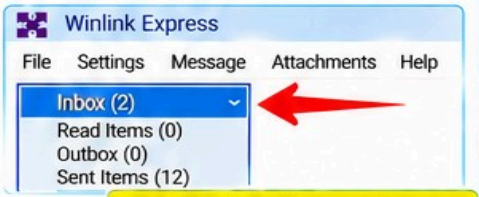
- Confirm the radio is on the correct frequency, mode (Digital USB) and bandwidth.
- In Winlink Express, click **Open Session.**
- In the VARA HF window, click **Start.**
- Let the session run. Winlink will send your Outbox and retrieve any messages.



Messages will be sent and received automatically. You will see a message when the session is complete.

9 CONFIRM & CHECK INBOX

- When the session completes, you should see a message indicating that messages were sent and/or received.
- Close the VARA HF window and return to Winlink Express.
- Check your Inbox for new messages.



You should now see your new messages in your Winlink inbox.

QUICK FIELD CHECKLIST

- [ ] Radio on and tune to proper frequencies
- [ ] Mode set to **Digital USB**
- [ ] Audio devices selected (SoundCard)
- [ ] PTT/CAT configured
- [ ] Audio levels adjusted (RX/TX)
- [ ] Open session and Start
- [ ] Send and receive messages
- [ ] Check Inbox for new messages

IMPORTANT NOTES

- Use approved Winlink frequencies and follow current band plans.
- Do not use outdated frequency lists.
- Mode: Digital USB (not SSB).
- Bandwidth: 2300 Hz (VARA HF default).
- Frequencies change, always check current listings.
- Use a stable power source.
- Keep audio levels in the green (avoid red).
- Use a good interface (DigiRig/Signalink).
- Perfect for emergency/SHTF communications.
- Practice regularly so it's ready when needed.

TIPS FOR SUCCESS

- Keep audio levels in the green (avoid red).
- Use a good interface (DigiRig/Signalink).
- Use a stable power source.
- Try at different times if the gateway is busy.
- Keep messages short and include key information (callsign, location, needs, status).
- Use the latest Winlink and VARA HF versions.
- Perfect for emergency/SHTF communications.
- Practice regularly so it's ready when needed.

WINLINK EXPRESS + VARA HF

Complete Beginner's Step-by-Step Field & Classroom Guide

Unified Radio Group | Brian / KN4KSW

Combined and expanded from the supplied WL HF Guide and the HamCompass "Winlink + VARA HF: Email Over HF" lesson (November 2026).

Goal: Configure a Windows computer, HF radio and VARA HF modem; select an RMS gateway; exchange a test email over radio without requiring internet at your station.

Before you begin: how it works

Winlink Express prepares email. VARA HF turns data into audio for your HF transceiver. Your station makes an HF connection to an RMS (Radio Message Server) gateway, which normally forwards messages through the Winlink network. The computer at your station does not need internet during the radio session, although you should install software and refresh channel lists beforehand. VARA HF and VARA FM are different modem programs.

Equipment & prerequisites

• Windows PC with Winlink Express and VARA HF installed; configure your Winlink account/callsign.

• HF transceiver and properly matched antenna for the chosen band; stable power source rated for data operation.

• Built-in radio USB audio or an external sound-card interface (DigiRig, SignaLink, etc.) and correct cables.

• Working PTT via CAT, RTS/DTR serial control, or another supported method; radio drivers and COM port identified.

• Appropriate amateur radio privileges and compliance with the applicable band plan. In the US, General or higher is practical for most HF Winlink channels; Technician HF data privileges are limited.

Part 1 — Install & prepare (before going offline)

1. Download and install **Winlink Express** from **winlink.org** / **downloads.winlink.org**. Start it and complete initial station setup with your callsign and requested information.

2. Download and install **VARA HF** from the official VARA source linked by Winlink or **varamodem.com**. Do not install VARA FM in its place. VARA HF may operate unregistered at reduced speed; optional registration details and fees can change.

3. Install manufacturer USB/serial drivers before plugging in the radio if required. Connect radio audio, CAT/PTT and USB cables. Connect an appropriate antenna or dummy load before transmitting.

4. In Windows sound settings, note the **recording/input** device that receives radio audio and the **playback/output** device that feeds the radio. Disable sound enhancements where possible; verify neither is muted. Note any COM port number in Device Manager.

5. Optional initial check: use a **Telnet Winlink** session while internet is available to confirm the Winlink account and message workflow. Telnet is not the HF radio path.

Part 2 — Set the HF radio

6. Select the radio's appropriate upper-sideband data mode: **USB-D, DATA-USB, DATA-U**, or the manufacturer's equivalent. Make sure the selected mode uses the intended data audio input, not an unintended microphone path.

7. Disable speech compression and other transmit audio processing; avoid noise reduction/equalization that interferes with data signals. Use the manufacturer's digital-mode instructions.

8. Set modest RF output and confirm antenna match/SWR. VARA data transmissions can be sustained; respect the radio's digital duty-cycle and cooling limits.

Part 3 — Open and configure VARA HF

9. In Winlink Express, choose **VARA HF Winlink** in the session selector and click **Open Session**. If prompted, locate the VARA HF executable.

10. In the separate **VARA HF modem** window, choose **Settings** → **SoundCard**. Set the input to the radio receive-audio device and output to the transmit-audio device. For interfaces requiring a particular left/right channel, use the interface documentation (some DigiRig arrangements use Left).

11. Open **Settings** → **PTT** in VARA HF. For CAT, select the correct radio model, COM port and matching baud rate. For serial PTT, choose the supported COM port and RTS or DTR signaling as wired. A typical DigiRig serial PTT arrangement uses RTS, but confirm your specific interface/cable.

12. Verify that transmit keys and releases cleanly using an authorized, clear frequency or dummy load. If the radio repeatedly keys/unkeys, stop and inspect conflicting CAT/PTT methods, COM-port ownership, wiring and VOX settings.

Part 4 — Set clean transmit audio and ALC

13. Begin with a low Windows/interface playback level. Check that the radio is using the intended data audio input and that speech processing is off.

14. With a dummy load or on a clear authorized frequency, use the modem's available **Tune** / transmit test. Watch output power, SWR and ALC.

15. Increase transmit audio gradually to obtain clean, appropriate RF output. Follow the radio manufacturer's ALC guidance: excessive drive creates distortion and makes decoding worse. Do not chase maximum power.

16. Stop the test and verify that PTT releases. Save settings; retest if cables, USB ports, sound devices, operating modes or radio power settings change.

Part 5 — Choose the RMS HF gateway

17. In the **VARA HF Winlink session** window (not the modem window), open **Channel Selection**. Refresh/update the RMS channel list while internet is available.

18. Select a suitable gateway and band using propagation estimates, distance and time of day. A familiar station is not guaranteed to be reachable on every band or at every hour.

19. Read the selected entry carefully. Set the transceiver to the listed **dial frequency**, not the center frequency. For the conventional Winlink HF USB listing, the center frequency is **1.5 kHz above** the dial frequency; follow

the actual channel listing and the software's frequency-control instructions.

20. Confirm USB/data mode, authorized band privileges, bandwidth and antenna. Listen first; do not transmit over existing traffic. No repeater shift or PL tone is used for this HF connection.

Part 6 — Compose, connect and receive

21. In Winlink Express, click **New Message**. Enter the recipient address or callsign, subject, and a short body. For a first test, use a known recipient who can reply.

22. Click **Post to Outbox**. The message remains queued until successfully transferred.

23. Return to the **VARA HF Winlink session** window. Select the gateway/channel, verify the radio's dial frequency and mode, and click **Start**. The separate VARA modem handles tones and connection status.

24. Watch for connection and message-transfer indications. Let the session complete, then close it. In Winlink Express, check **Sent Items** and **Inbox**; if a connection fails, the outgoing message may remain in **Outbox**.

25. Ask the recipient to reply, then run another HF session to collect incoming mail. Your radio station need not have internet for these HF sessions, but the RMS normally requires its network path to deliver mail beyond the gateway.

Part 7 — Email from family and other non-hams

Winlink can send to conventional email addresses. To reduce unwanted inbound mail, incoming messages from internet addresses may require authorization. A practical preparation step is to **send each contact a test message first**, which ordinarily adds them to your accepted correspondents; you can also manage your acceptlist. The HamCompass lesson also describes the **//WL2K** subject prefix as a permitted incoming-mail method. Verify current Winlink policies before relying on a particular method in an emergency.

Part 8 — Message precedence and subject tags

The supplied PDF includes an illustrated precedence reference. Use tags only when the message truly warrants that priority; routine traffic normally needs no special prefix.

Precedence	Subject prefix	Typical use
Flash	//WL2K Z/	Extremely urgent life-safety traffic
Immediate	//WL2K O/	Urgent, time-sensitive traffic
Priority	//WL2K P/	Important traffic ahead of routine
Routine (default)	//WL2K R/	Ordinary messages; tag can be omitted

Part 9 — Troubleshooting

Symptom	Checks / next action
VARA HF does not open	Confirm installation and modem executable path in session setup.
No RX audio	Verify Windows recording device, radio audio routing, cable, input level and mute.
Radio does not key	Check CAT model/baud/COM port or RTS/DTR setting, wiring and conflicts.

Symptom	Checks / next action
Rapid TX/RX cycling	Stop; disable unintended VOX, verify single PTT method and serial wiring.
Keys but does not connect	Check dial frequency (not center), USB data mode, clear channel, propagation and gateway choice.
Distorted / weak transfer	Reduce audio drive, check ALC, antenna match, power supply and receive audio.
No gateways reachable	Refresh channels online; try another band, gateway or time.
Mail still in Outbox	Check session log for actual transfer; retry a working gateway.

Before clicking START — field checklist

[ ] Radio on correct listed dial frequency, correct USB data mode and authorized band

[ ] Matched antenna connected; frequency checked clear

[ ] Correct VARA HF input/output sound devices selected

[ ] PTT keys and releases; clean audio and appropriate ALC

[ ] RMS channel chosen from current list; suitable propagation

[ ] Message posted to Outbox; ready to monitor transfer

My station setup worksheet

Fill in these settings during class and keep this sheet with your radio equipment.

Callsign: _____

Radio / firmware: _____

Interface / cable: _____

Windows recording device (radio RX): _____

Windows playback device (radio TX): _____

VARA HF sound channel (L / R / Both): _____

PTT method (CAT / RTS / DTR / other): _____

COM port: _____ Baud rate: _____

Radio DATA mode / input selection: _____

TX audio level: _____ RF power: _____

Preferred RMS gateway(s): _____

Band(s) / dial frequency(ies): _____

Antenna / tuner / SWR: _____

Date tested: _____ Successful send / receive: _____

Further learning and source notes

Source 1: supplied *WL_HF_Guide.pdf*, pages 1–7 (quick field guide, detailed steps, troubleshooting, precedence infographic and reminder). Source 2: *HamCompass — Winlink + VARA HF: Email Over HF*, https://hamcompass.com/skills/winlink-vara-hf-email-over-hf (accessed November 11, 2026).

Official reference sites: **winlink.org** | **downloads.winlink.org** | **varamodem.com**. Software menus, gateway channels, prices and network policies may change. Always check current official instructions, FCC privileges and the radio manual.



WINLINK MESSAGE PRECEDENCE AND SPAM CONTROL

USE THE PROPER SUBJECT LINE FORMAT TO HELP KEEP WINLINK RUNNING EFFECTIVELY!

A MESSAGE FROM STEVE TAYLOR / W1HQL

PRESIDENT, EVERGLADES AMATEUR RADIO CLUB

With the local increase in Winlink messaging, I thought it would be a good idea to share some basic information pertaining to establishing a message precedence in the SUBJECT LINE of any message you are sending via Winlink.

Do your best to follow the suggestions below. If you forget... No harm, no foul... But it is a good habit to follow and will prepare you to use the system as it is designed to do, especially during emergency situations.

MESSAGE PRECEDENCE OVERVIEW

Precedence indicators control the order in which messages get processed and sent across slow radio iinks through the Winlink system. It also includes a mechanism to block SPAM – unwanted and unexpected mail – from the system.

PRECEDENCE	SUBJECT LINE TAG	DESCRIPTION
Z (Flash)	**//WL2K Z/**	**Flash** For urgent message use only. Reserved for life-safety or extremely urgent situations.
O (Immediate)	**//WL2K O/**	**Immediate** For urgent message use only. High priority, time sensitive.
P (Priority)	**//WL2K P/**	**Priority** Important messages that should be processed ahead of routine traffic.
R (Routine)	**//WL2K R/**	**Routine (Default)** For all **normal traffic.** Unless there is a special circumstance or urgent routing need, use R/. **"R" is the default if omitted.**

EXAMPLE SUBJECT LINES

- **//WL2K Z/**EOC FLOODING
- **//WL2K O/**SHELTER STATUS - FULL
- **//WL2K P/**Food and bedding inventory request
- **//WL2K R/**Supplies received
- **Re://WL2K R/**Generator manual needed
- **FW://WL2K R/**Please bring Gasoline.

REPLIES AND FORWARDING

"Reply" and "forwarded" messages will be treated with the same priority as the original unless the precedence indicator is changed in the subject line when replying or forwarding.

WHY IT MATTERS

- Helps get important messages delivered first
- Keeps the Winlink system efficient
- Supports emergency communications
- Reduces unwanted SPAM

Let's keep our Winlink traffic organized and effective!

– Steve Taylor / W1HQL
President
Everglades Amateur Radio Club

A FRIENDLY WINLINK REMINDER!

A message to everyone who attended today's class

Be sure to share your **Winlink email address** with your family, loved ones, and friends! Encourage them to save it alongside your regular contact information.

Take some time to practice sending them a Winlink email, and have them reply to you as well. Getting comfortable with sending and receiving messages now can help prevent confusion or unexpected issues when you really need the system to work.

Remember, practice builds confidence, and preparation makes all the difference!

I hope you enjoyed today's class and continue practicing the skills and operating modes we've covered. The knowledge you've gained today is just the beginning! As you continue learning and upgrade your amateur radio license privileges, these skills will grow with you, opening the door to even more exciting modes and opportunities within this incredible hobby.

Thank you all for your interest, participation, and willingness to learn. I encourage you to keep experimenting, keep practicing, and most importantly, **have fun with it!**

I hope to catch you in my Winlink inbox and on the air!

73 de Brian / KN4KSW