

Winlink Operation Overview

Winlink Paradigm

- Asynchronous Communications
 - No schedule times for comms.
 - Messaging performed as time and conditions allow.
- Accurate Communications
 - Based on ICS and other standardized forms
 - Full error correction in data transfer protocols.
- Originally developed for Mariners.
- Expectation of HF modes to be used on barefoot, non-QRP transceivers.
- Extending into Emergency Comms, Winlink focused on Emergency as regional issues.
 - The Internet is working somewhere.
- Peer to Peer or Radio Only via RMS Relay forwarding, were the first attempts for No Internet Comms.
- Recently expanding RMS Relay to include Post Offices for UHF/VHF gateways and Trimode HF Gateways to allow for operation with no Internet.
- Expanded HF forwarding for RMS Relay.
 - Via Local Area Network Telnet connections (ARDEN or COMMS office).

Winlink Operation Overview: RMS Express

- Settings
 - Preferences
 - Form Settings
- Message
 - New Message
 - Standard Templates
 - GIS Enabled
 - ICS-205
 - ICS-213
- Open Sessions
 - Vara HF Winlink
 - Channel Selection

Winlink Express 1.7.23.0 - W7YAM

W7YAM Add Callsign Settings Message Attachments Move To: Saved Items Delete Open Session: Vara HF Winlink Logs Help

No active session... Message has 2 attached files.

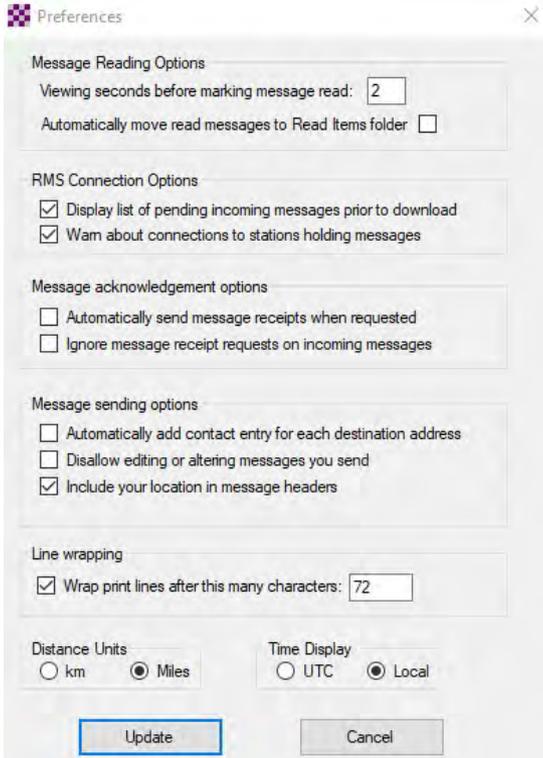
	Date/Time	Message ID	Size	Source	Sender	Recipient	Subject
	2025/04/26 19:27	1NE49K03Q4PW	3017	W7OWO	W7OWO	W7YAM	//WL2K R/ Routine/ Field Situati
	2025/04/11 16:55	TXQTRL1R3HJR	3046	W7OWO	W7OWO	W7YAM	//WL2K R/ Routine/ Field Situati
	2025/04/11 16:54	XGQU6MZQ4HBQ	3044	W7OWO	W7OWO	W7YAM	//WL2K R/ Routine/ Field Situati
	2025/04/06 22:26	NFQ9Z13V6SCR	1772	W7OWO	ETO-FACILI...	ETO-LIASON01	ICS-213: Test Message for adding
	2025/03/31 02:00	667P94GZPSS2	403	SMTP	SMTP:kd6oa...	W7YAM	//WL2K R/ WELCOME
	2025/03/11 22:06	FIXUCYBV2B5P	2571	KM6SO	ETO-DRILL	ETO-ALL	ICS-213: Instruction summary - 2
	2025/02/28 15:53	XLEYAHZTFE63	2363	WA4RMA	WA4RMA	KN4IOU	Water Rescue Required - 2025-03-
	2025/02/28 04:23	5NYSUFJXKVM0	876	KM6SO	ETO-FEEDBACK	W7YAM	Feedback on ETO April and Spring
	2025/02/27 01:52	3R6U5GV5JSRE	906	KM6SO	ETO-FEEDBACK	W7YAM	Feedback on ETO April and Sprine

Message ID: 5YDEJHAB8A3Q
Date: 2025/02/18 13:19 (local)
From: W7OWO
To: W7YAM
Source: W7OWO
Downloaded-from: Telnet:cms.winlink.org
Location: 38.545833N, 106.925333W (SPECIFIED)
Subject: Winlink Check-in EXERCISE - W7OWO - Gunnison CO

Winlink Check-in
0. HEADER
0a: Organization: EmComm Training Organization
0b: Subject: Winlink Check-in EXERCISE - W7OWO - Gunnison CO

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- RMS Connection Options
 - Display list of pending messages allows you to only download the messages of interest. Useful when testing a gateway to prevent downloads on a slow connection.
 - Warn about connections holding messages. This lets you know the station is acting as a Post Office. Helps prevent stranding a message intended for the CMS.
- Distance & Time Units.



The screenshot shows the 'Preferences' dialog box with the following settings:

- Message Reading Options:**
 - Viewing seconds before marking message read: 2
 - Automatically move read messages to Read Items folder:
- RMS Connection Options:**
 - Display list of pending incoming messages prior to download
 - Warn about connections to stations holding messages
- Message acknowledgement options:**
 - Automatically send message receipts when requested
 - Ignore message receipt requests on incoming messages
- Message sending options:**
 - Automatically add contact entry for each destination address
 - Disallow editing or altering messages you send
 - Include your location in message headers
- Line wrapping:**
 - Wrap print lines after this many characters: 72
- Distance Units:** km Miles
- Time Display:** UTC Local

Buttons: Update, Cancel

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- Sending Messages with Form Data
 - Allows you to choose when to send the XML data that duplicates the content of the text message. Used by the HTML Forms.
- Automatic Form Opening
 - Controls when if the HTML Form is displayed with messages using the Standard Template HTML Forms.

The screenshot shows the 'Form Settings' dialog box with the following configuration:

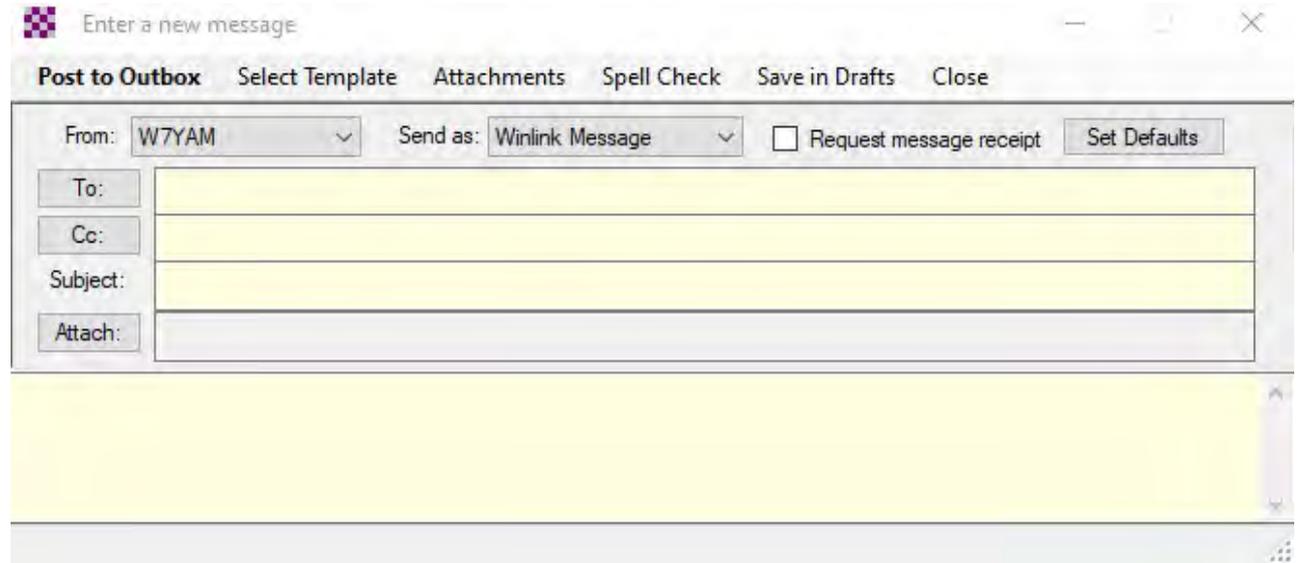
- Form Server:**
 - IP address of form server: localhost
 - IP port of form server: 8001
- Sending Messages with Form Data:**
 - Attach XML files with form data to messages generated by forms
 - Attach XML form files to messages going to Internet e-mail addresses
- Automatic Form Opening:**
 - Automatically open forms when messages are selected
 - Automatically open reply forms when replying to messages with forms
- Force Winlink Express to be shown over web browser after form submission:**
 - Force Winlink Express to be shown over web browser after form submission
- Show on map only most recent report within 100 meters from same sender:**
 - Show on map only most recent report within 100 meters from same sender
- Send Forms as pdf Files:**
 - Send forms as pdf files to Internet addresses

Additional text in the 'Send Forms as pdf Files' section: "If you enable this option, messages with form attachments sent to Internet addresses (e.g., john@xyz.com) have the form information converted to a pdf file. Messages sent to Winlink users (callsigns) continue to have the form data sent in a condensed xml file where it's merged with the display form on the receiving end. Warning: Forms sent as pdf files are much larger than the condensed xml file. Often, messages with pdf forms are 50 kb or larger. They are not suitable for slow radio connections."

Buttons: Save, Cancel

Winlink Operation Overview: Message

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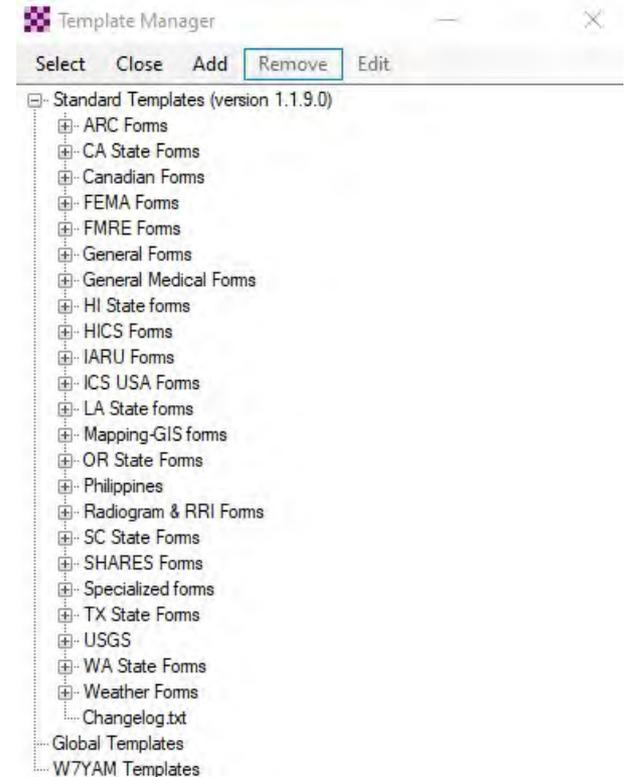


The screenshot shows a window titled "Enter a new message" with a standard Windows-style title bar. Below the title bar is a menu bar with the following items: "Post to Outbox", "Select Template", "Attachments", "Spell Check", "Save in Drafts", and "Close". The main area of the dialog is divided into several sections. At the top, there are two dropdown menus: "From:" with the value "W7YAM" and "Send as:" with the value "Winlink Message". To the right of these is a checkbox labeled "Request message receipt" which is currently unchecked, and a "Set Defaults" button. Below this are four input fields, each with a label and a small button to its left: "To:", "Cc:", "Subject:", and "Attach:". The "To:" field is currently empty. Below these fields is a large, empty text area for the message body. The entire dialog has a light gray background and a standard Windows aesthetic.

- Select Templates to create a HTML Form using one of the Standard Templates.
- Send as should be Winlink Message, unless sending via Peer to Peer or Radio Only

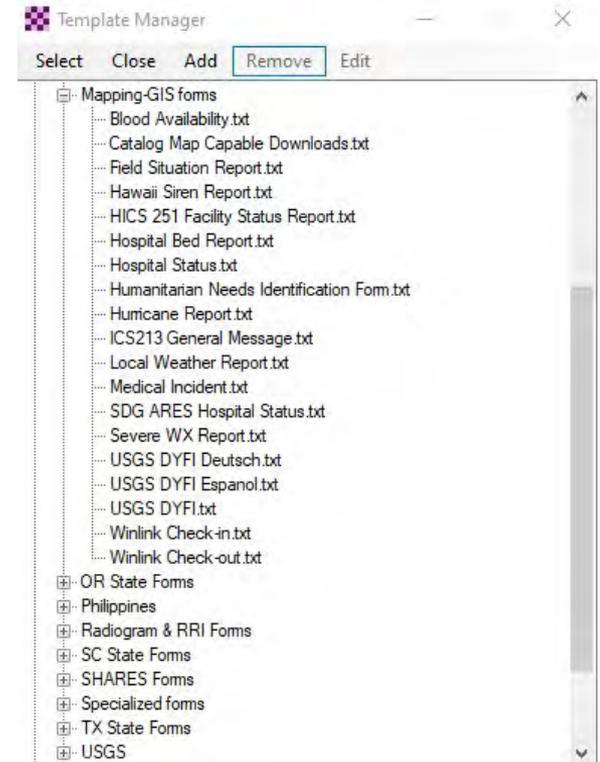
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- These are updated automatically as fixes and new features are added.
- User created templates should be kept under Global or operators call sign.
- State EM groups with special forms will be managed by WDT.
- Similarly with hospital sponsored forms.
- Some forms may be found under multiple groupings.



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- Many of the Forms have been updated to work with the Winlink GIS Mapping tools.
- The USGS has a Did You Feel It form for reporting any felt earthquake.
- Field Situation Report allows for reporting status of Infrastructure.
- Catalog Map can show locations of Winlink Users.
- The tools allow for filtering displayed markers and pop-up data.
- Can work with a configured inexpensive GPS Dongle, or user entered Latitude and Longitude values



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Incident Radio Communication Plan (ICS-205) Continued

- The basis of understanding of how to communicate with internal and external entities.
 - Each entity should have a current ICS-205 and regularly exchange with entities they will need to communicate with.
 - Western Oregon ARES expects at least a yearly update to be provided to all County ARES groups.
- For Winlink it provides a list of the RMS Packet and Trimode Gateways supported. As well as Digipeaters and Post Offices.
 - Should contain a list of HF and UHF/VHF Post Offices that will be polled during Internet outages and Frequency of polls.
- Can be multiple pages (IAP Page field).
- Can work in conjunction with ICS-205A (Communication List).

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General Message (ICS-213)

- The base message
 - Has a specific form for the ICS-213 Reply when replying to an ICS-213.
- Is GIS Enabled, supports filtering by Date/Time, Location, Range, Note, and Entity.
- Has form data load and save to allow saving templates.
- Can be populated by non-amateur subject matter expert via any browser from the HTML file on disk. The save data can be then sneaker netted to the RADO who load it and sends it.

The screenshot shows the 'General Message (ICS-213)' form. At the top, it says 'General Message (ICS-213)' and 'NTS2 Communications Test'. There is a checkbox for 'THIS IS AN EXERCISE' and a button for 'Load ICS213 INITIAL Data'. A red link for 'Form Instructions' is also present. The form fields include: 1. Incident Name (with a note 'Incident name is optional'), 2. To (Name/Position), 3. From (Name/Position), 4. Subject, 5. Date, and 6. Time. Below these is a large text area for the message, with a note 'Be Brief and Concise'. At the bottom, there are fields for '8. Approved by:' and '8b. Position / Title:'. A section for 'Optional Location Coordinates' includes fields for Latitude (47.145833), Longitude (-119.375000), MGRS (Ex:11SNR0184195204), and Grid (DN07HD).

Winlink Operation Overview: Open Sessions

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- Message
 - New Message
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 - ICS-205
 - ICS-213
- Open Sessions
 - Vara HF Winlink
 - Channel Selection

The screenshot shows the Winlink Express 1.7.23.0 - W7YAM interface. The main window displays a list of messages with columns for Date/Time, Message ID, Size, Source, Sender, and Recipient. A message is selected, and its details are shown in the lower pane. The details include the Message ID (5YDEJHAB8A3Q), Date (2025/02/18 13:19 (local)), From (W7OWO), To (W7YAM), Source (W7OWO), and Subject (Winlink Check-in EXERCISE - W7OWO - Gunnison CO). The message content includes a Winlink Check-in header and a block of text: "0a: Organization: EmComm Training Organization". A dropdown menu is open, showing various Winlink channels and protocols, with "Vara HF Winlink" selected.

Date/Time	Message ID	Size	Source	Sender	Recipient
2025/04/26 19:27	1NE49K03Q4PW	3017	W7OWO	W7OWO	W7YAM
2025/04/11 16:55	TXQTRL1R3HJR	3046	W7OWO	W7OWO	W7YAM
2025/04/11 16:54	XGQU6MZQ4HBQ	3044	W7OWO	W7OWO	W7YAM
2025/04/06 22:26	NFQ9Z13V6SCR	1772	W7OWO	ETO-FACILI...	ETO-LIASON01
2025/03/31 02:00	667P94GZPSS2	403	SMTP	SMTP: kd6oa...	W7YAM
2025/03/11 22:06	FIXUCYBV2B5P	2571	KM6SO	ETO-DRILL	ETO-ALL
2025/02/28 15:53	XLEYAHZTFE63	2363	WA4RMA	WA4RMA	KN4IOU
2025/02/28 04:23	5NYSUFJXKVMO	876	KM6SO	ETO-FEEDBACK	W7YAM
2025/02/27 01:52	3R6U5GV5JSRE	906	KM6SO	ETO-FEEDBACK	W7YAM

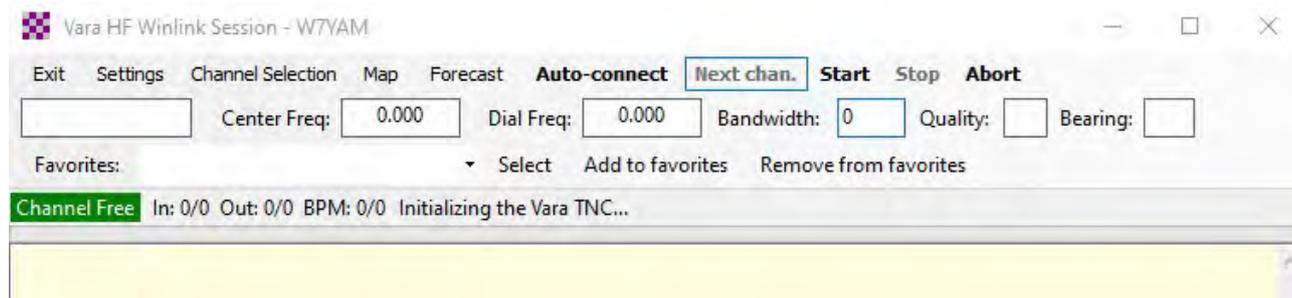
Message ID: 5YDEJHAB8A3Q
Date: 2025/02/18 13:19 (local)
From: W7OWO
To: W7YAM
Source: W7OWO
Downloaded-from: Telnet:cms.winlink.org
Location: 38.545833N, 106.925333W (SPECIFIED)
Subject: Winlink Check-in EXERCISE - W7OWO - Gunnison CO

Winlink Check-in
0. HEADER
0a: Organization: EmComm Training Organization

- Blocks 1 and 4 will only send/receive Standard Winlink Messages.
- Block 2 will only send & receive Peer-to-Peer Winlink Messages.
- Block 3 will only send/receive Radio Only Messages.

Winlink Operation Overview: Vara HF Winlink

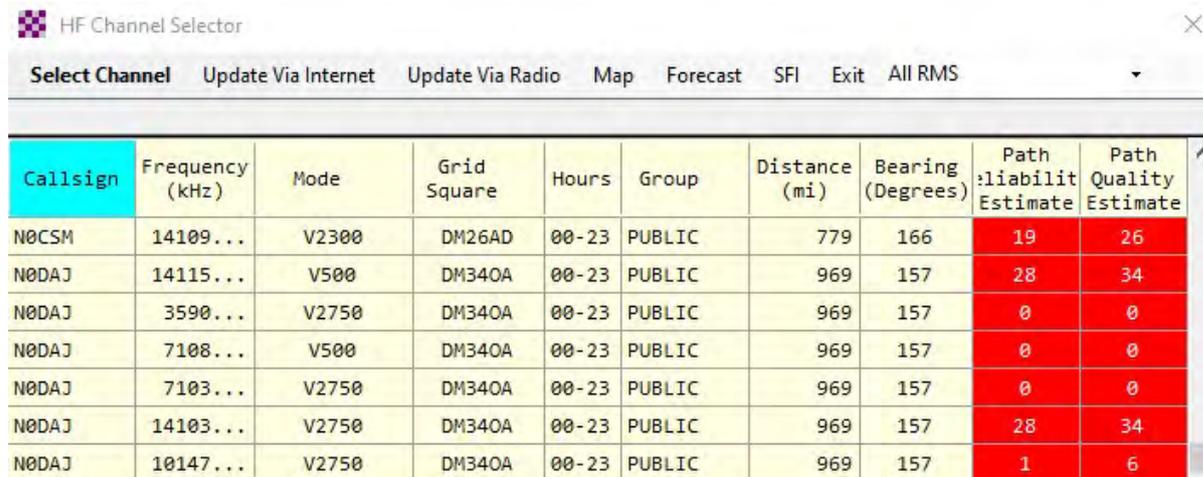
- Open Sessions
 - **Vara HF Winlink**
 - Channel Selection
 - Update over Internet
 - Update over Radio
 - Map
 - Auto-connect
 - Favorites



- On opening, if there is an Internet Connection and SFI index has changed significantly from the last time opened, it asks to recompute the connection statistics.

Winlink Operation Overview: Vara HF Winlink

- Open Sessions
 - Vara HF Winlink
 - Channel Selection
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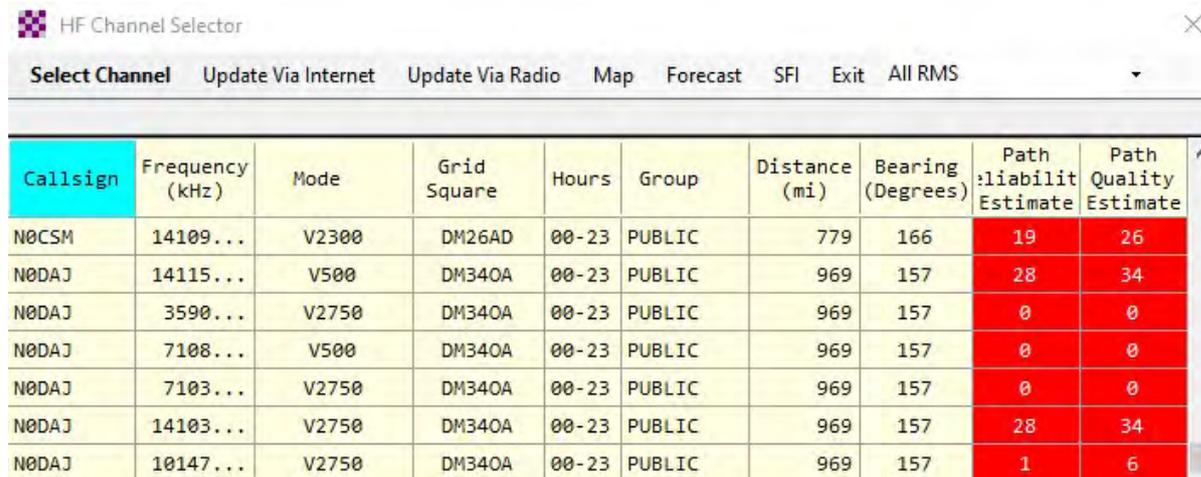
The screenshot shows the 'HF Channel Selector' window with a menu bar containing 'Select Channel', 'Update Via Internet', 'Update Via Radio', 'Map', 'Forecast', 'SFI', 'Exit', and 'All RMS'. Below the menu is a table with the following columns: Callsign, Frequency (kHz), Mode, Grid Square, Hours, Group, Distance (mi), Bearing (Degrees), Path Reliability Estimate, and Path Quality Estimate. The table contains eight rows of data.

Callsign	Frequency (kHz)	Mode	Grid Square	Hours	Group	Distance (mi)	Bearing (Degrees)	Path Reliability Estimate	Path Quality Estimate
N0CSM	14109...	V2300	DM26AD	00-23	PUBLIC	779	166	19	26
N0DAJ	14115...	V500	DM340A	00-23	PUBLIC	969	157	28	34
N0DAJ	3590...	V2750	DM340A	00-23	PUBLIC	969	157	0	0
N0DAJ	7108...	V500	DM340A	00-23	PUBLIC	969	157	0	0
N0DAJ	7103...	V2750	DM340A	00-23	PUBLIC	969	157	0	0
N0DAJ	14103...	V2750	DM340A	00-23	PUBLIC	969	157	28	34
N0DAJ	10147...	V2750	DM340A	00-23	PUBLIC	969	157	1	6

- On opening, if the SFI index has changed significantly from the last time opened, it asks to recompute the connection estimates.
- Sort order is provided by clicking on the column heading.
- Distance and Bearing are related to your Grid Square setting.
- I've found the Path Quality is more important than the Path Reliability.
- Estimates are just that. I often get good throughput even when the estimates are red.

Winlink Operation Overview: Vara HF Winlink

- Open Sessions
 - Vara HF Winlink
 - Channel Selection
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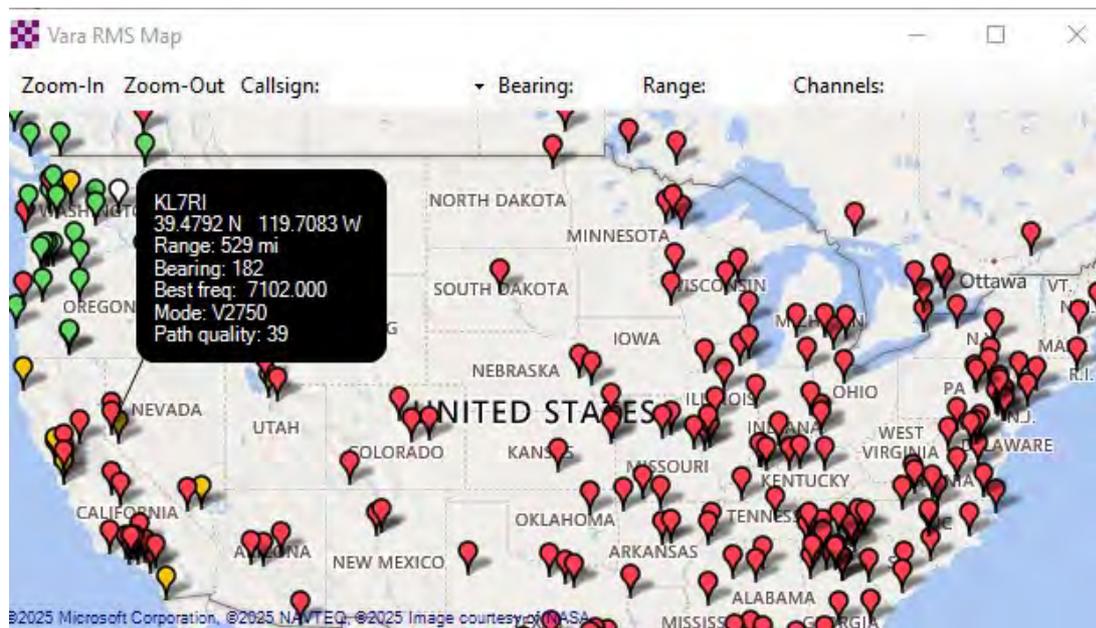
The screenshot shows a window titled "HF Channel Selector" with a menu bar containing "Select Channel", "Update Via Internet", "Update Via Radio", "Map", "Forecast", "SFI", "Exit", and "All RMS". Below the menu bar is a table with the following columns: Callsign, Frequency (kHz), Mode, Grid Square, Hours, Group, Distance (mi), Bearing (Degrees), Path Reliability Estimate, and Path Quality Estimate. The table contains seven rows of data for various gateway callsigns.

Callsign	Frequency (kHz)	Mode	Grid Square	Hours	Group	Distance (mi)	Bearing (Degrees)	Path Reliability Estimate	Path Quality Estimate
N0CSM	14109...	V2300	DM26AD	00-23	PUBLIC	779	166	19	26
N0DAJ	14115...	V500	DM340A	00-23	PUBLIC	969	157	28	34
N0DAJ	3590...	V2750	DM340A	00-23	PUBLIC	969	157	0	0
N0DAJ	7108...	V500	DM340A	00-23	PUBLIC	969	157	0	0
N0DAJ	7103...	V2750	DM340A	00-23	PUBLIC	969	157	0	0
N0DAJ	14103...	V2750	DM340A	00-23	PUBLIC	969	157	28	34
N0DAJ	10147...	V2750	DM340A	00-23	PUBLIC	969	157	1	6

- Updates will also update the list of gateways.
- Gateways shown are only those that have reported via the CMS in the last 4 hours.
- Update via radio will post a message in your inbox. Requires the message to be sent.
- On receipt of the response message estimates will be recalculated.
- Both sending and receiving require connection to an CMS connected gateway.

Winlink Operation Overview: Vara HF Winlink

- Open Sessions
 - Vara HF Winlink
 - Channel Selection
 - Update over Internet
 - Update over Radio
 - Map
 - Auto-connect
 - Favorites



- Allows you to select a gateway from a easy to determine location.
- Colors represent the coding in the Propagation Estimates.

Winlink Operation Overview: Vara HF Winlink

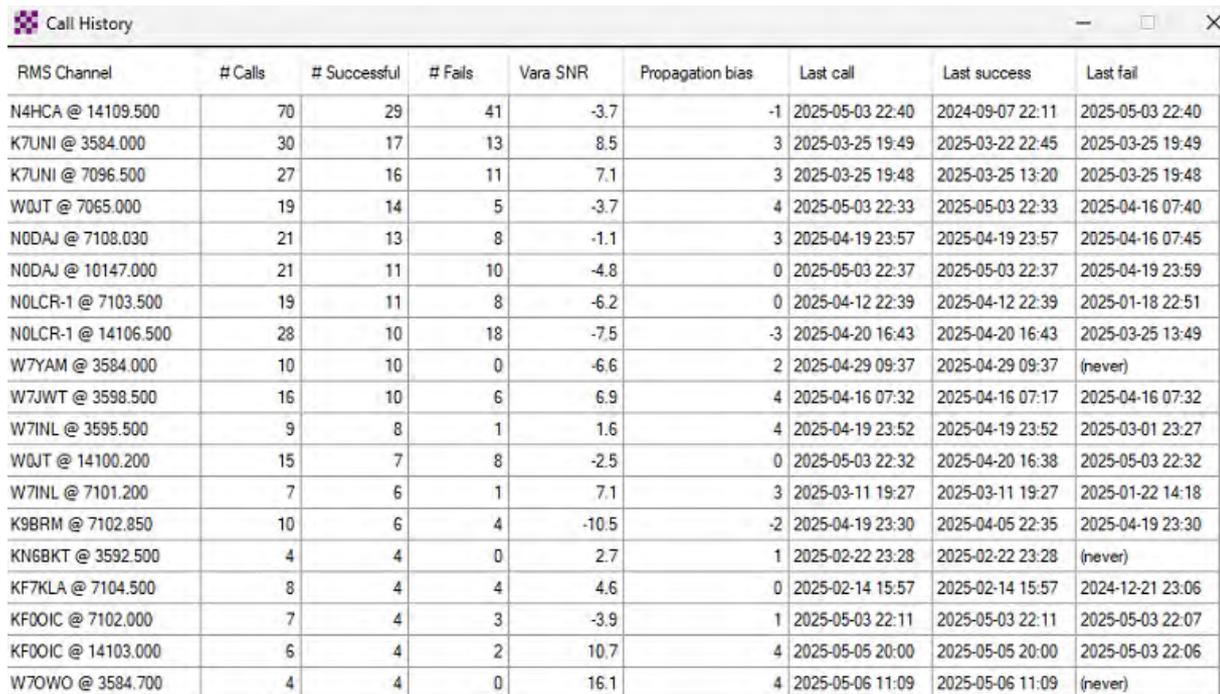
- Open Sessions
 - **Vara HF Winlink**
 - Channel Selection
 - Update over Internet
 - Update over Radio
 - Map
 - **Auto-connect**
 - Favorites

The screenshot shows the 'Auto-Connect Settings' dialog box. It is divided into two main sections: 'Options for Automatic Connection Feature' and 'Allowed Frequency Ranges'. The 'Options' section includes several input fields: 'Minimum Factor level' (set to P3), 'Minimum Vara bandwidth' (set to 500), 'Minimum path quality' (set to 15), 'Minimum distance away' (set to 70 miles), 'Seconds for status to settle' (set to 2), 'Seconds not busy' (set to 3), 'Max call history propagation bias' (set to 4), and 'Minimum Vara SNR' (set to -10.0 dB). There is also a checkbox for 'Restrict radio-only connections to your registered MPS' which is currently unchecked. A 'Show Call History' button is located at the bottom of this section. The 'Allowed Frequency Ranges' section has a text prompt 'Specify one range per line in kHz' followed by a template 'XXXXX.XXX-XXXXX.XXX'. A single range '3000-30000' is entered in the text area. Below this is an 'Excluded RMS' section with a text prompt 'Specify one callsign per line' and an empty text area.

- Clicking on Auto-connect on the Vara FM Winlink session will start searching for a gateway that meets the requirements as specified in the Auto-Connect Settings under Settings.
- Can be limited to band, minimum distance, minimum SNR and other attributes.

Winlink Operation Overview: Vara HF Winlink

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 - Show Call History
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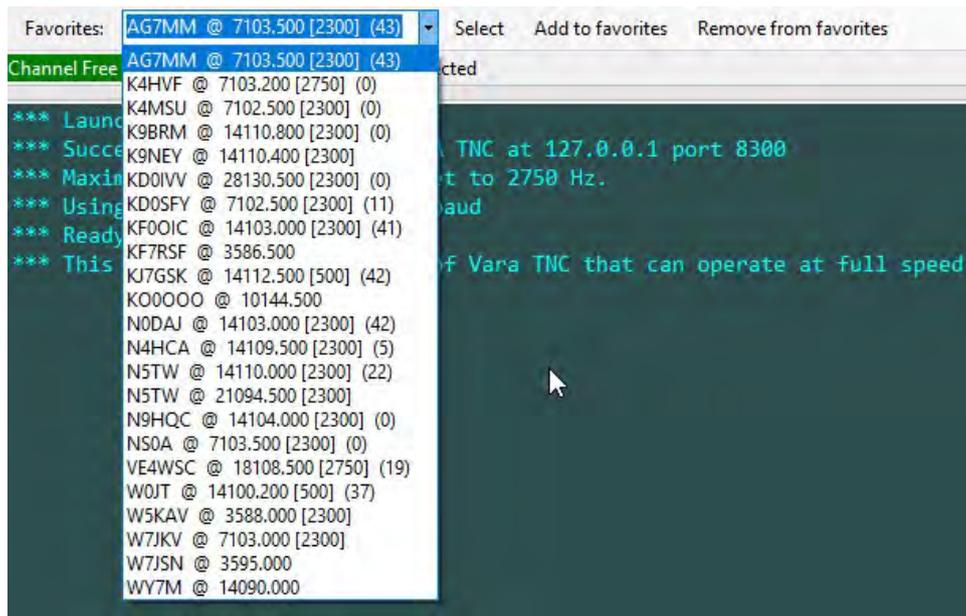


RMS Channel	# Calls	# Successful	# Fails	Vara SNR	Propagation bias	Last call	Last success	Last fail
N4HCA @ 14109.500	70	29	41	-3.7	-1	2025-05-03 22:40	2024-09-07 22:11	2025-05-03 22:40
K7UNI @ 3584.000	30	17	13	8.5	3	2025-03-25 19:49	2025-03-22 22:45	2025-03-25 19:49
K7UNI @ 7096.500	27	16	11	7.1	3	2025-03-25 19:48	2025-03-25 13:20	2025-03-25 19:48
W0JT @ 7065.000	19	14	5	-3.7	4	2025-05-03 22:33	2025-05-03 22:33	2025-04-16 07:40
N0DAJ @ 7108.030	21	13	8	-1.1	3	2025-04-19 23:57	2025-04-19 23:57	2025-04-16 07:45
N0DAJ @ 10147.000	21	11	10	-4.8	0	2025-05-03 22:37	2025-05-03 22:37	2025-04-19 23:59
N0LCR-1 @ 7103.500	19	11	8	-6.2	0	2025-04-12 22:39	2025-04-12 22:39	2025-01-18 22:51
N0LCR-1 @ 14106.500	28	10	18	-7.5	-3	2025-04-20 16:43	2025-04-20 16:43	2025-03-25 13:49
W7YAM @ 3584.000	10	10	0	-6.6	2	2025-04-29 09:37	2025-04-29 09:37	(never)
W7JWT @ 3598.500	16	10	6	6.9	4	2025-04-16 07:32	2025-04-16 07:17	2025-04-16 07:32
W7INL @ 3595.500	9	8	1	1.6	4	2025-04-19 23:52	2025-04-19 23:52	2025-03-01 23:27
W0JT @ 14100.200	15	7	8	-2.5	0	2025-05-03 22:32	2025-04-20 16:38	2025-05-03 22:32
W7INL @ 7101.200	7	6	1	7.1	3	2025-03-11 19:27	2025-03-11 19:27	2025-01-22 14:18
K9BRM @ 7102.850	10	6	4	-10.5	-2	2025-04-19 23:30	2025-04-05 22:35	2025-04-19 23:30
KN6BKT @ 3592.500	4	4	0	2.7	1	2025-02-22 23:28	2025-02-22 23:28	(never)
KF7KLA @ 7104.500	8	4	4	4.6	0	2025-02-14 15:57	2025-02-14 15:57	2024-12-21 23:06
KF00IC @ 7102.000	7	4	3	-3.9	1	2025-05-03 22:11	2025-05-03 22:11	2025-05-03 22:07
KF00IC @ 14103.000	6	4	2	10.7	4	2025-05-05 20:00	2025-05-05 20:00	2025-05-03 22:06
W7OWO @ 3584.700	4	4	0	16.1	4	2025-05-06 11:09	2025-05-06 11:09	(never)

- Screenshot of my call history sorted by successful. Haven't been able to access my #1 for 6 months.
- K7UNI is for when I'm in a hurry but still want to use HF.
- Feature was added a little less than 2 years ago.

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- User managed quick pick list of stations.

Winlink Operation Overview: Connection Monitor

- Connection Monitor
 - Desktop Application
 - Shows all CMS connections within period.
 - Details by hovering over gateway or transmitting station.
 - Last connection shown at bottom of display
- Propagation Map
 - Online Tool
 - https://winlink.org/RMSChannels?qt-live_winlink_information=3#qt-live_winlink_information
 - Defaults to 6 hours
 - Can show up to 24 hours within the last 48 hours

