

Winlink:

**Everything you need to know
to get started**

Scenario 1:

Everything is out: > Electricity > Cellular service > Internet

How do you get word to your relatives in Phoenix, AZ that you are safe and well?

Scenario 2:

Everything is out: > Electricity > Cellular service > Internet

How do you get word to FEMA that Montgomery is cut off from supplies due to road closures from flooding?

Scenario 3:

Everything is out: > Electricity > Cellular service > Internet

How do you get word to State EMA in Clanton not to send their trucks down I-65 because the bridge is out?



Winlink Global Radio Email®...

...is a network of amateur radio and authorized government stations that provide worldwide radio email using radio pathways where the internet is not present. The system is built, operated and administered entirely by licensed "Ham" volunteers. It supports email with attachments, position reporting, weather and information bulletins, and is well-known for its role in interoperable emergency and disaster relief communications.

RMS

Radio Message Service

A station that receives Winlink messages by radio and relays them automatically to appropriate email addresses.

These email addresses are automatically white-listed which means they can answer you to your Winlink address (for six months).

Asynchronous

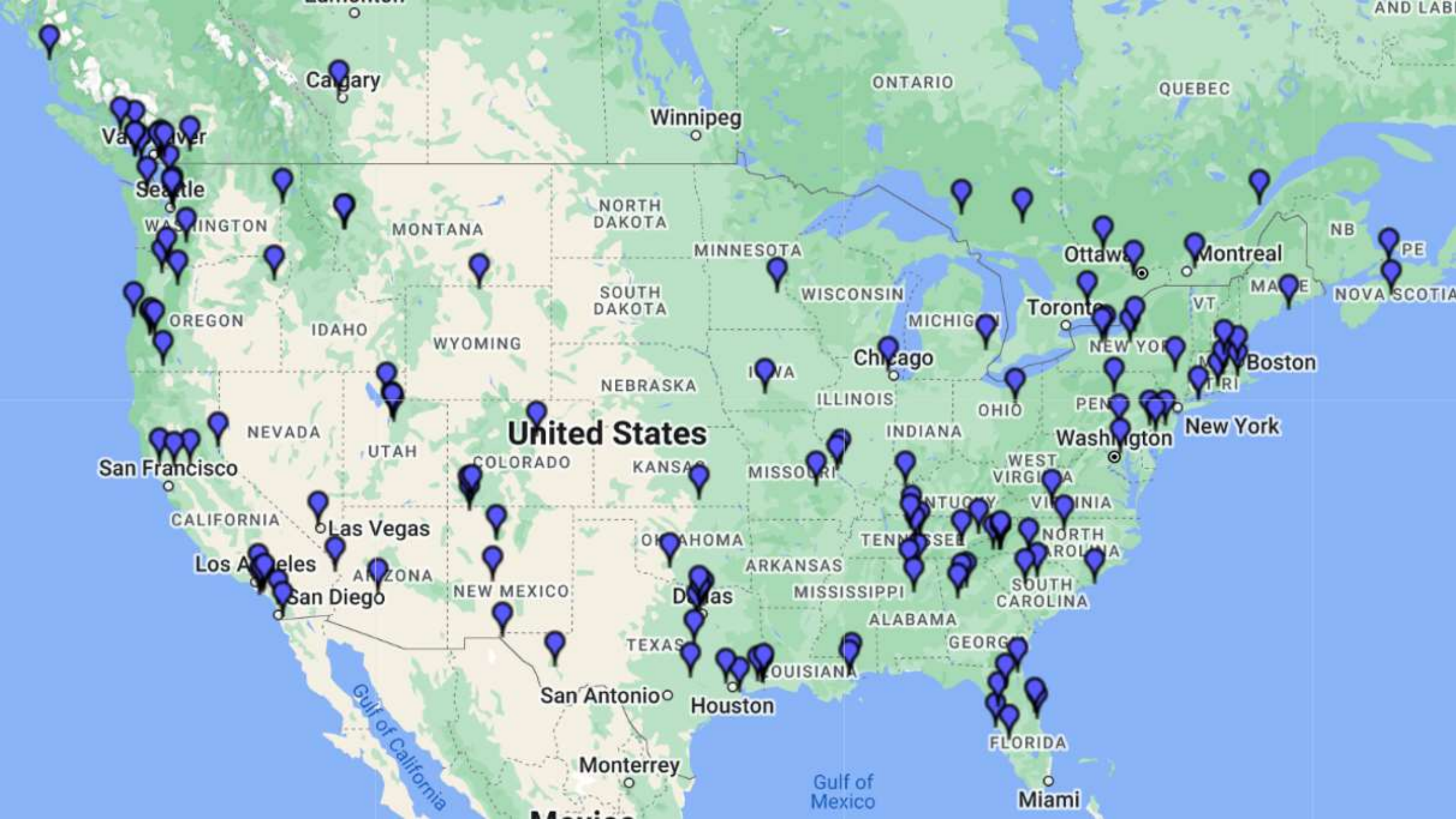
Means you and the other party do not have to be at the radio at the same time.

Emails are asynchronous. You can send an email at 8:00 AM and the recipient can read it at 3:00 PM.

P2P

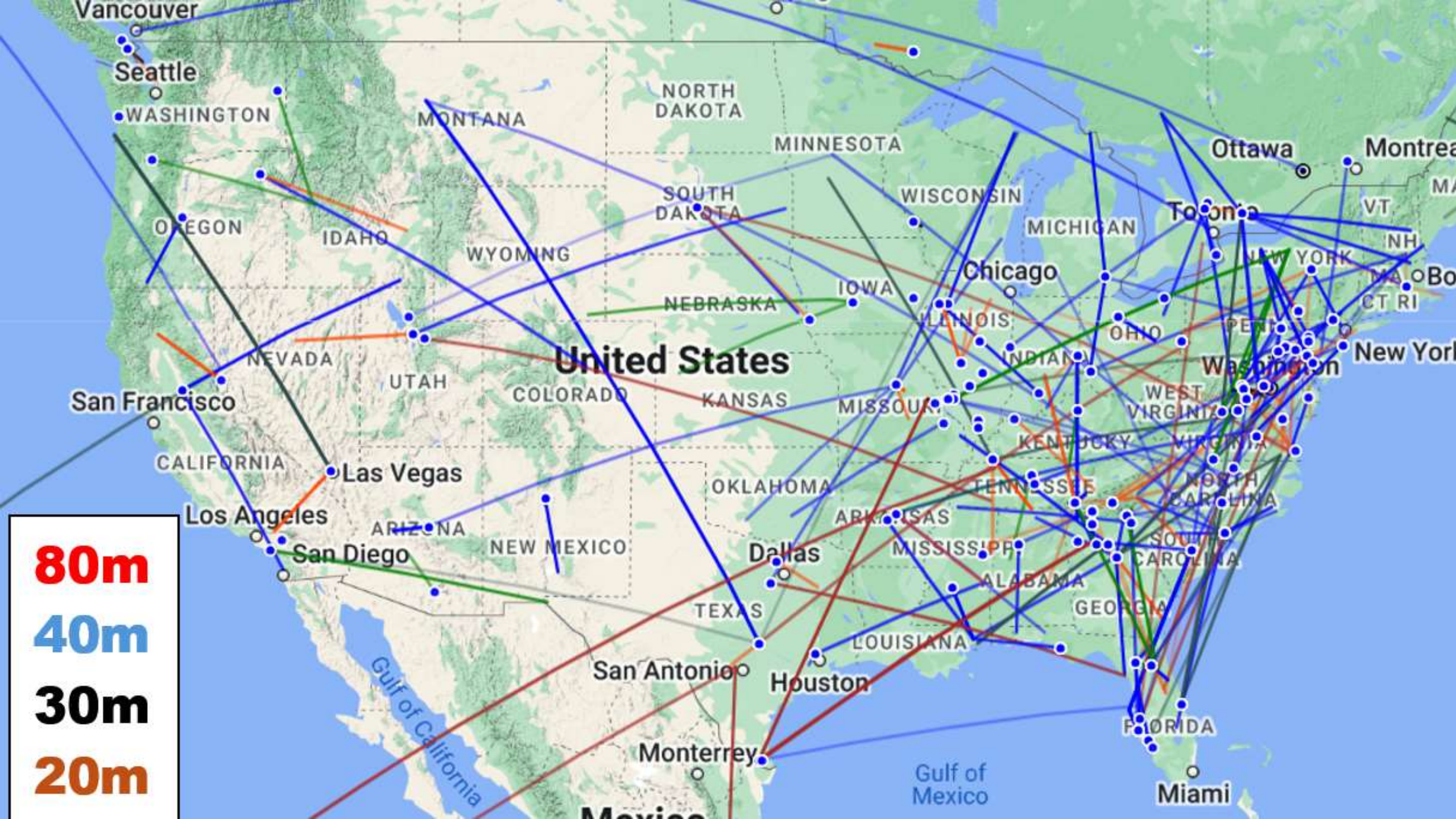
P2P is the Winlink protocol for a direct connection between two ham radio stations. For P2P to work, the modem, TX bandwidth, RX bandwidth, and frequency for both must be the same and both operators must be at the radio. P2P does not use the email system. We are mentioning that just as an FYI.

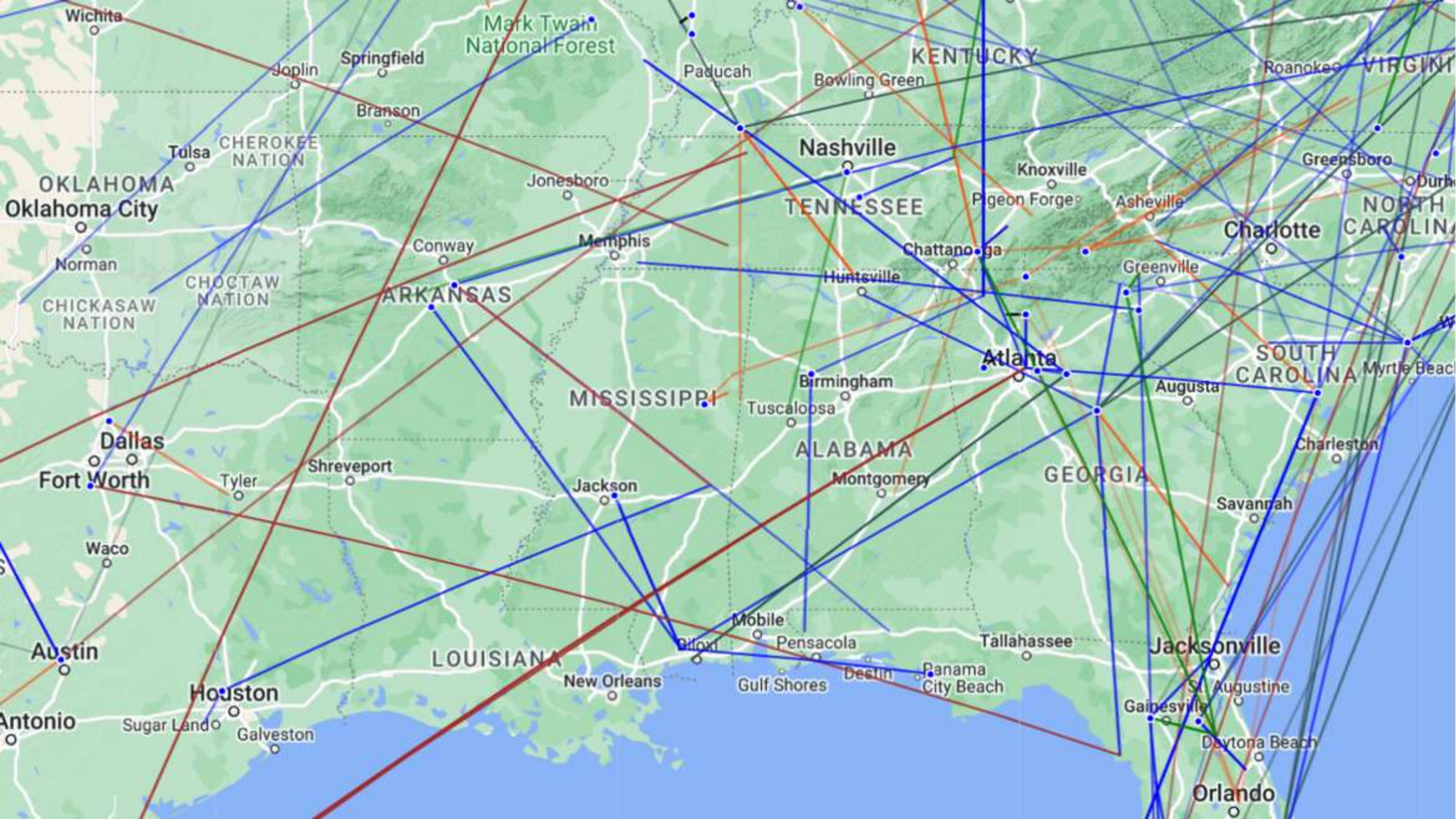




RMS Station = Radio Message Service = Gateway stations

They are usually pretty active.







Installation first steps:

Before you do anything, download the driver for your radio and the USB connection. Install the driver. Most radios use drivers from Silicon Valley.

These drivers translate various signals (like TTL) into USB (Universal Serial Bus) signals. USB has replaced older serial ports.



Go to winlink.org

Download Winlink Express

Vara HF modem

Register Winlink Express

(consider buying the Vara HF modem)

Installation of Winlink Express involves entering your call, location, name, and registration information.

That is your email program. It has nothing to do with the radio. It simply allows you to write messages, post them to the Outbox, and read messages that have arrived.

Call Signs

My Callsign: N4UZZ

My Password: ●●●●●●
(Case sensitive)

Callsign suffix (optional): (Used for country code)

Change password

Password recovery e-mail: caskywam@gmail.com

(Non-Winlink e-mail address where lost password will be sent when requested)

Remove Callsign

Request password be sent to recovery e-mail

Auxiliary Callsigns and Tactical Addresses

Add Entry

Remove Entry

Edit Entry

My Grid Square: EM62WI

Lat/Lon to Grid Square

Winlink Express registration key: B27A08466F06E71F7CB9B25F6674889F

Service Codes

PUBLIC

(Use PUBLIC for ham call signs. Separate multiple service codes by spaces.)

If you change service codes, you must update the list of channels.

Update

Cancel

Help

Contact Information (Optional)

Name: Otto Amoscht

Street address 1: 7159 Old Southwick Pl

Street address 2:

City: Montgomery

State/Province: Alabama

Country: US

Postal code: 36117

Web Site URL (optional): http://www.w4ap.org

Phone number: 13343999115

Non-Winlink e-mail: drojamoscht@gmail.com

Additional information (optional):

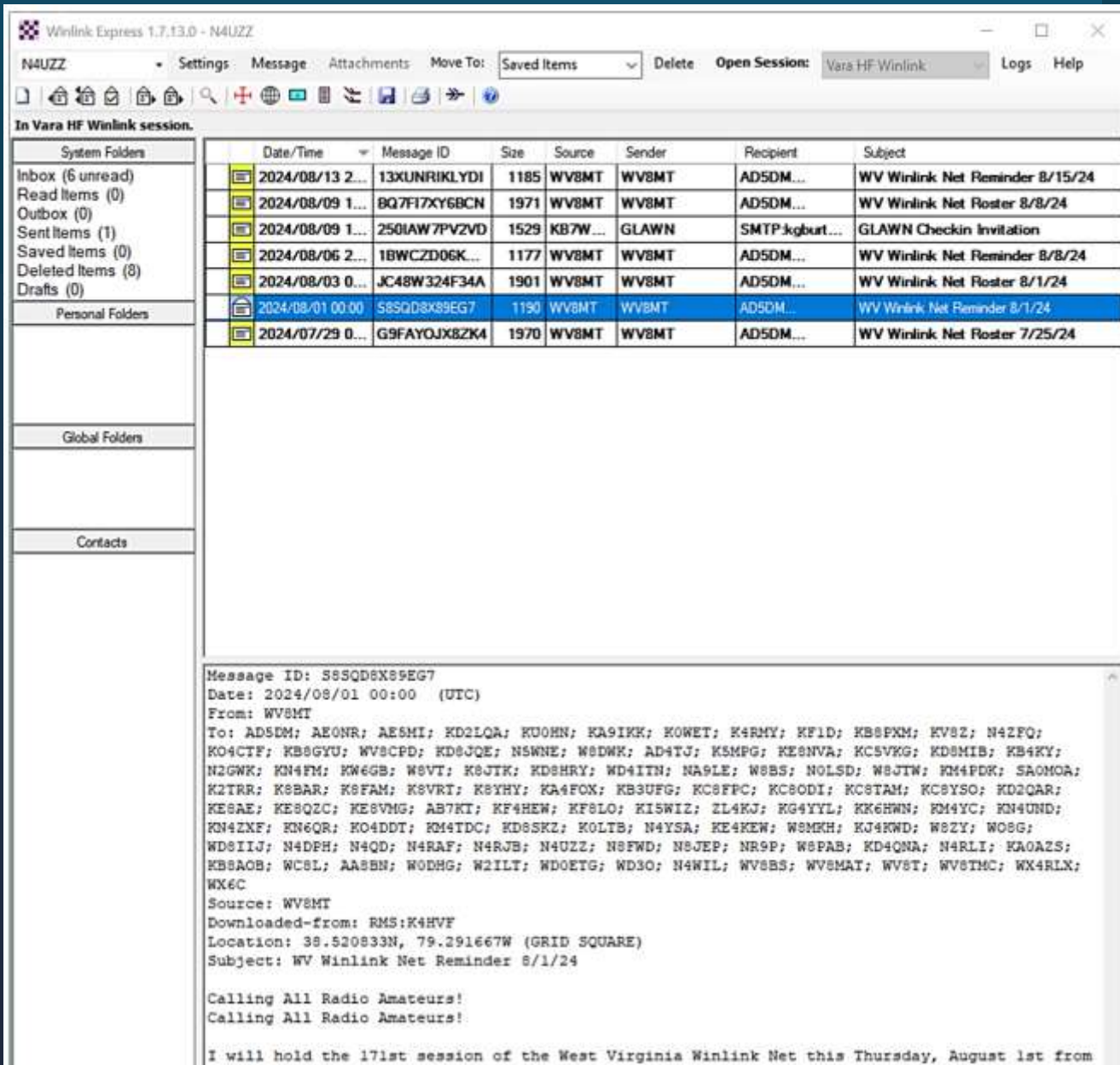
Recalculate HF path quality if SFI changes more than: 10

Keep logs for 2 weeks.

Keep deleted messages for 720 days.

- ☐ Display list of pending incoming messages prior to download
- ☒ Warn about connections to stations holding messages
- ☐ Automatically install field-test (beta) versions of Winlink Express
- ☐ Automatically install updates without prompting

When you write messages, Winlink Express gives you lots of templates for various types of messages, such as Red Cross messages and ICS-213 messages.





Winlink Express 1.7.13.0 - N4UZZ



N4UZZ



Settings

Message

Attachments

Move To:

Saved Items



Delete

Open Session:

Vara HF Winlink



Logs

Help



In Vara HF Winlink session.

System Folders		Date/Time ▼	Message ID	Size	Source	Sender	Recipient	Subject
Inbox (6 unread)		2024/08/13 2...	13XUNRIKLYDI	1185	WV8MT	WV8MT	AD5DM...	WV Winlink Net Reminder 8/15/24
Read Items (0)		2024/08/09 1...	BQ7FI7XY6BCN	1971	WV8MT	WV8MT	AD5DM...	WV Winlink Net Roster 8/8/24
Outbox (0)		2024/08/09 1...	250IAW7PV2VD	1529	KB7W...	GLAWN	SMTP:kgburt...	GLAWN Checkin Invitation
Sent Items (1)		2024/08/06 2...	1BWCZD06K...	1177	WV8MT	WV8MT	AD5DM...	WV Winlink Net Reminder 8/8/24
Saved Items (0)		2024/08/03 0...	JC48W324F34A	1901	WV8MT	WV8MT	AD5DM...	WV Winlink Net Roster 8/1/24
Deleted Items (8)		2024/08/01 00:00	S8SQD8X89EG7	1190	WV8MT	WV8MT	AD5DM...	WV Winlink Net Reminder 8/1/24
Drafts (0)		2024/07/29 0...	G9FAYOJX8ZK4	1970	WV8MT	WV8MT	AD5DM...	WV Winlink Net Roster 7/25/24
Personal Folders								
Global Folders								
Contacts								

Then you start the Vara HF session.

Here you have two setup screens.

- 1. The VARA Modem registration**
- 2. The soundcard setup**

VARA Setup 127.0.0.1

TCP Ports:

Command	Data	KISS
8300	8301	8100

VARA Licenses

Callsign:	Registration Key:
N4UZZ	XXXXXXXXXXXXXXXXXXXX
Callsign:	Registration Key:
Callsign:	Registration Key:
Callsign:	Registration Key:

☒ Allow VARA check for updates via internet

☒ Accept 500 Hz connections

☒ Tuner enhancement

☒ CW ID

☒ KISS Interface

☐ RA-Board PTT ☐ SysLog

Retries: 15

Close



Exit Settings Channel Selection Map Forecast **Auto-connect** Next chan. Start Stop Abort

WM4RB

Center Freq: 3598.500

Dial Freq: 3597.000

Bandwidth: 2300

Bearing: 019

Quality: 53

Favorites:

Select

Add to favorites

Remove from favorites

Channel Free In: 0/0 Out: 0/0 BPM: 0/0 Disconnected

FC EM S8SQD8X89EG7 2126 1160 0

FC EM 250IAW7PV2VD 3064 1502 0

FC EM JC48W324F34A 3504 1866 0

F> 7B

FS YYYYY

*** Receiving 1BWCZD06K03R

*** 1BWCZD06K03R - 2051/1130 bytes received

*** Bytes: 1194, Time: 02:20, bytes/minute: 511

*** Receiving 13XUNRIKLYDI

*** 13XUNRIKLYDI - 2063/1137 bytes received

*** Bytes: 1201, Time: 01:07, bytes/minute: 1060

*** Receiving S8SQD8X89EG7

*** S8SQD8X89EG7 - 2084/1143 bytes received

*** Bytes: 1207, Time: 00:34, bytes/minute: 2121

*** Receiving 250IAW7PV2VD

*** 250IAW7PV2VD - 3022/1486 bytes received

*** Bytes: 1547, Time: 01:24, bytes/minute: 1098

*** Receiving JC48W324F34A

*** JC48W324F34A - 3462/1850 bytes received

*** Bytes: 1917, Time: 01:01, bytes/minute: 1882

FF

FC EM G9FAYOJX8ZK4 3713 1934 0

FC EM BQ7FI7XY6BCN 3610 1936 0

F> 28

FS YY

*** Receiving G9FAYOJX8ZK4

*** G9FAYOJX8ZK4 - 3671/1918 bytes received

*** Bytes: 1986, Time: 04:20, bytes/minute: 457

*** Receiving BQ7FI7XY6BCN

*** BQ7FI7XY6BCN - 3568/1920 bytes received

*** Bytes: 1987, Time: 01:01, bytes/minute: 1948

FF

FQ

*** -- End of session with WM4RB at 2024/08/14 10:48:12 --

*** Messages sent: 0. Total bytes sent: 0, Time: 13:24, bytes/minute: 0

*** Messages Received: 7. Total bytes received: 11039, Total session time: 13:24, bytes/minute: 824

*** Disconnected from Winlink RMS: WM4RB @ 2024/08/14 10:48:19

*** Session: 13.5 min; Avg Throughput: 806 Bytes/min; 1 Min Peak: 806 Bytes/min; Average SNR: -3.1 dB



Radio Selection

Select Radio Model

Icom 7610



Antenna Selection

Default



Icom Address

98

USB ☐USB Digital ☒FM ☐Use Internal Tuner ☐Use Internal Soundcard ☒

Codan Radios

☐ Codan login and optional password:

Filter width:

2.4 kHz

☐ Enable ALE scanning after session completes

Radio Control Port

Serial Port to Use

COM3



Baud

19200

Enable RTS ☒Enable DTR ☐TTL ☐

PTT Port (Optional)

Serial Port to Use

Icom 7610



Baud

9600

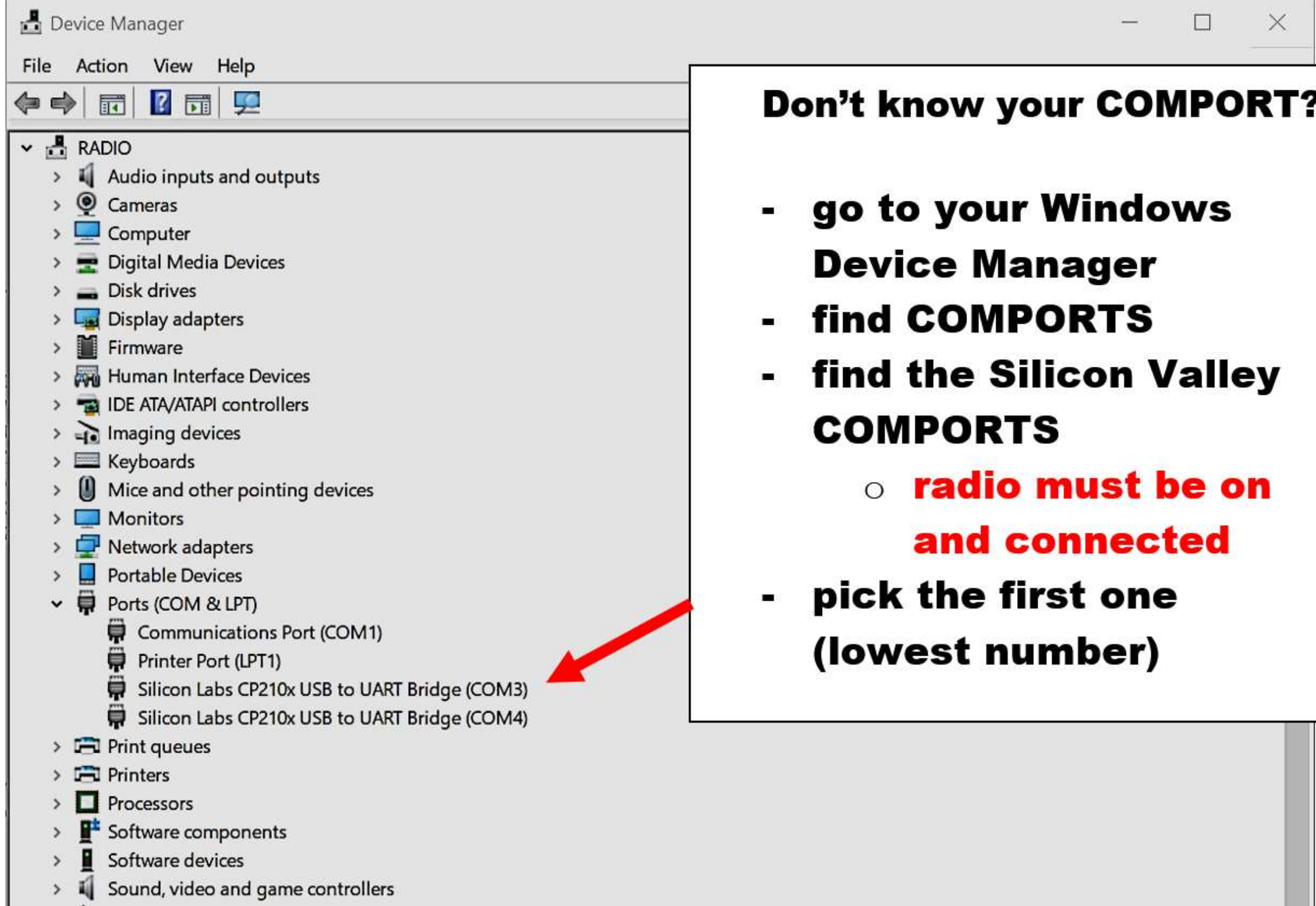
Enable RTS ☐Enable DTR ☐☐ Log radio control commands

Update

Cancel

- **select your radio**
 - **(everything is populated based on that)**
- **select your COMPORT**

Don't know your COMPORT?



Don't know your COMPORT?

- go to your **Windows Device Manager**
- find **COMPORTS**
- find the **Silicon Valley COMPORTS**
 - **radio must be on and connected**
- **pick the first one (lowest number)**

Winlink Express

the email program to compose and read messages

Vara HF

the modem to actually send signals to and from the radio

Propagation Prediction – Channel Selection

**to help you pick the best frequency and RMS station
then click on [Start]**

Winlink Express 1.7.12.D - N4UZZ

N4UZZ Settings Message Attachments Move To: Saved Items Delete **Open Session:** Vara HF Winlink Logs Help

In Vara HF Winlink session.

System Folders	Date/Time	Message ID	Size	Source	Sender	Recipient	Subject
Inbox (0 unread) Read Items (0) Outbox (0) Sent Items (1) Saved Items (0) Deleted Items (8) Drafts (0)	2024/08/01 00:00	S8SQD8X89EG7	1190	WV8MT	WV8MT	AD5DM	WV Winlink Net Reminder 8/1/24

Personal Folders

Global Folders

Contacts

Message ID: S8SQD8X89EG7
Date: 2024/08/01 00:00
From: WV8MT
To: AD5DM; AEONR; AESMI; KD2LOA; KU0HN; KA9IKK; K0WET; K4RMY; KF1D; KB8PKM; KV8Z; N4LFG;
K04CTF; KB8GYU; WV8CPD; KD8JQE; NSWNE; W8DWK; AD4TJ; K5MPG; KE8NVA; KC5VKG; KD8HIB; KB4KY;
N2GWK; KN4FM; KN6GB; W8VT; K8JTK; KD8HRY; WD4ITN; NA9LE; W8BS; N0LSD; W8JTW; KN4PDK; SA0MOA;
K2IRR; K8BAR; K8FAM; K8VRI; K8YHY; KA4FOX; KB3UFG; KC8FFC; KC8ODI; KC8TAM; KC8YSO; KD2QAR;
KE8AE; KE8QZC; KE8VMG; AB7KT; KF4HEW; KF8LO; KI5WIZ; ZL4KJ; KG4YYL; KK6HWN; KM4YC; KN4UND;
KN4ZXF; KN6QR; K04DDI; KM4TDC; KD8SKZ; K0LTB; N4YSA; KE4KEW; W8MKH; KJ4KWD; W8ZY; W8BG;
WD8IJJ; N4DPH; N4QD; N4RAF; N4RJB; N4UZZ; N8PWD; N8JEP; NR9P; W8PAB; KD4QNA; N4RLI; KA0AZS;
KB8A0B; WC8L; AA8BN; W0DHG; W2ILT; W0ETG; WD3O; N4WIL; WV8BS; WV8MAT; WV8T; WV8TMC; WX4RLX;
WX6C
Source: WV8MT
Downloaded-from: RM5:K4HVF
Location: 38.520833N, 79.291667W (GRID SQUARE)
Subject: WV Winlink Net Reminder 8/1/24

Calling All Radio Amateurs!
Calling All Radio Amateurs!

I will hold the 171st session of the West Virginia Winlink Net this Thursday, August 1st from
00:00 to 23:59. I will take check ins all day at your convenience. Please make sure your check
in follows the following format in the message body:

WV8MT, MIKE, SUGAR GROVE, PENDLETON, WV (VHF, HF, or P2P)

VARA P2P SESSION!
The VARA P2P Session will take place from 6pm and 9pm Thursday. This week we will be on 3530.5

Vara HF Winlink Session - N4UZZ

Exit Settings Channel Selection Prop Forecast Auto-connect Next channel **Start** Stop Abort

K4HVF Center Freq: 7103.500 Dial Freq: 7102.000 Bandwidth: 2500 Bearing: 326 Quality: 43

Favorites: Select Add to favorites Remove from favorites

Channel Free In: 40/1866 Out: 0/0 BPM: 9144 Disconnected

FC EM 9MMVS8M2LCSV 2102 1154 0
F> F7
FS YYYYY
*** Receiving UK056UY5XT00
*** UK056UY5XT00 - 404/336 bytes received
*** Bytes: 373, Time: 01:51, bytes/minute: 200
*** Receiving ZQN7HVP1GR9I
*** ZQN7HVP1GR9I - 578/407 bytes received
*** Bytes: 451, Time: 01:17, bytes/minute: 349
*** Receiving FTLFDIOVSMYJ
*** FTLFDIOVSMYJ - 657/526 bytes received
*** Bytes: 566, Time: 01:55, bytes/minute: 295
*** Receiving D29401NFT401
*** D29401NFT401 - 1435/748 bytes received
*** Bytes: 802, Time: 01:03, bytes/minute: 764
*** Receiving 9MMVS8M2LCSV
*** 9MMVS8M2LCSV - 2060/1138 bytes received
*** Bytes: 1202, Time: 01:29, bytes/minute: 810
FF
FC EM S8SQD8X89EG7 2126 1160 0
FC EM NQ00JHHD62U 2217 1209 0
FC EM 26B5Q00Y51RO 3477 1830 0
FC EM JC48W324F34A 3504 1866 0
FC EM G9FAUJX8ZK4 3713 1934 0
F> 7A
FS YYYYY
*** Receiving S8SQD8X89EG7
*** S8SQD8X89EG7 - 2084/1143 bytes received
*** Bytes: 1207, Time: 02:31, bytes/minute: 477
*** Receiving NQ00JHHD62U
*** NQ00JHHD62U - 2175/1193 bytes received
*** Bytes: 1293, Time: 01:12, bytes/minute: 1073
*** Receiving 26B5Q00Y51RO
*** 26B5Q00Y51RO - 3435/1815 bytes received
*** Bytes: 1882, Time: 08:27, bytes/minute: 222
*** Receiving JC48W324F34A
*** Disconnected from Winlink RMS: K4HVF @ 2024/08/05 16:24:39
*** Session: 30.1min; Avg Throughput: 257 Bytes/min; 1 Min Peak Throughput: 257 Bytes/min

VARA HF v4.8.4 N4UZZ

Settings View Log* Monitor Help

1.0
0.8
0.6
0.4
0.2
0.0
bps

A new VARA version is available
Download

VU CPU AFC S/N

Audio Input: -31 dB CPU Usage: 47%

DATA
ACK IDLE
NACK BREAK
REQ QRT

RX: Disconnected 2300 LISTEN TCP DCD



HF Channel Selector

**Select Channel**

Update Via Internet

Update Via Radio

Map

Forecast

SFI

Exit

All RMS



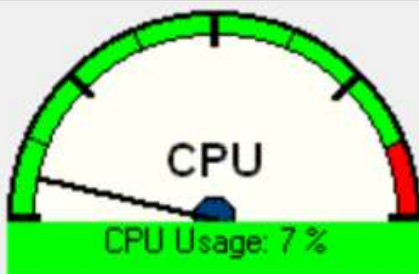
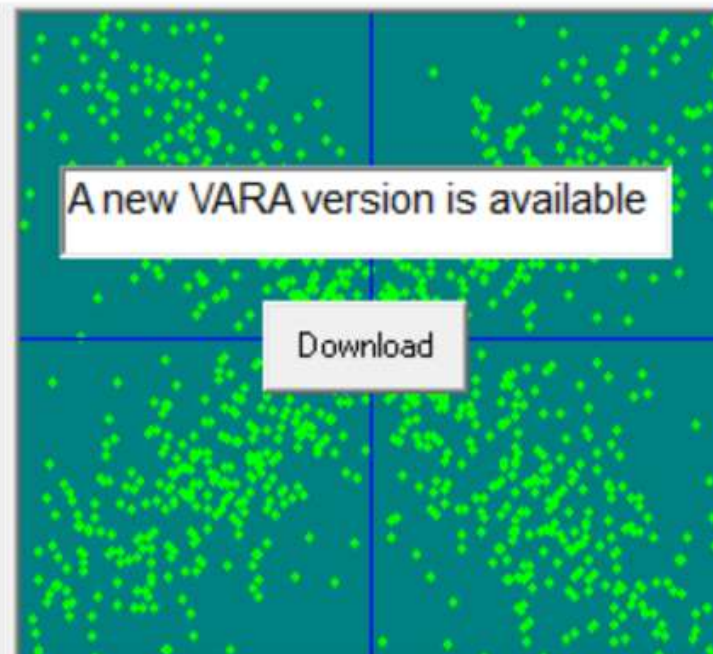
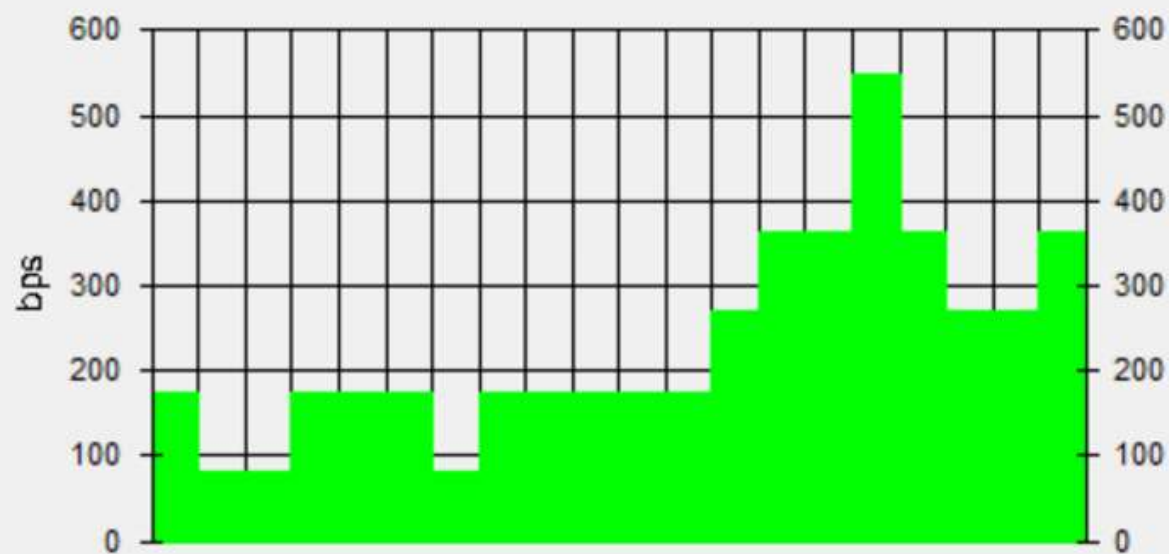
Callsign	Frequency (kHz)	Mode	Grid Square	Hours	Group	Distance (km)	Bearing (Degrees)	Path Reliability Estimate	Path Quality Estimate
K5FIT	7102.300	V2300	EM42XI	00-23	PUBLIC	367	271	71	45
W5WA-10	7102.500	V2750	EM50PM	00-23	PUBLIC	318	231	71	45
KK4DIV-10	7103.500	V500	EM70EF	00-23	PUBLIC	240	168	71	46
K4HVF	7103.500	V2300	EM63IS	00-23	PUBLIC	191	326	70	46
AK4ZX	7103.500	V2300	EM75KA	00-23	PUBLIC	311	017	69	45
W5RGV	14110.000	V2300	EL16DE	00-23	PUBLIC	1313	242	68	46
W4NWG	7103.000	V2750	EM74UL	00-23	PUBLIC	292	035	68	45
W4KIB	7103.000	V2750	EM73WT	00-23	PUBLIC	247	048	68	45
WM4RB	7101.500	V2750	EM75ME	00-23	PUBLIC	333	019	68	45
KD5VE	14102.200	V2300	EL07GM	00-23	PUBLIC	1390	251	68	46
K5RAV	14110.000	V2300	EL16CE	00-23	PUBLIC	1320	242	68	46
KN4CCQ	7101.500	V2750	EM65QT	00-23	PUBLIC	387	353	68	45
W5STX	14110.000	V2300	EL16DF	00-23	PUBLIC	1311	242	68	46
W5KAM	10146.500	V2300	EM20BE	00-23	PUBLIC	956	258	67	44

VARA will call the RMS station

Your station will connect to the RMS station

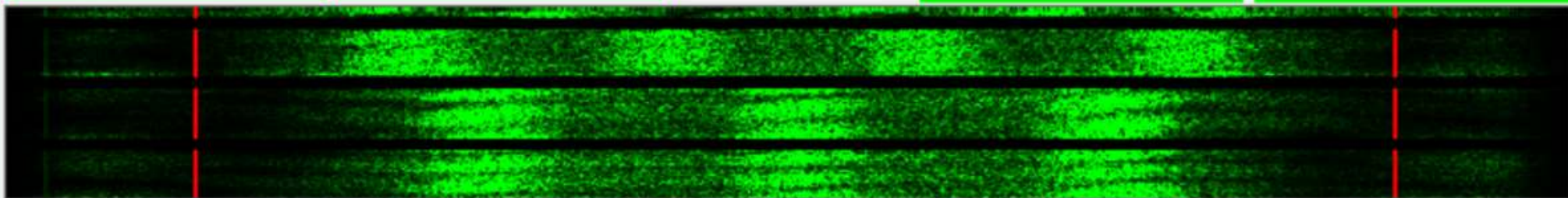
Emails that have collected for you at the RMS station will be sent to you.

Emails that you have posted to the Outbox will be sent to the RMS station.



DATA

ACK	IDLE
NACK	BREAK
REQ	QRT



Exit Settings Channel Selection Map Forecast Auto-connect Next chan. Start Stop Abort

WM4RB Center Freq: 3598.500 Dial Freq: 3597.000 Bandwidth: 2300 Bearing: 019 Quality: 53

Favorites: Select Add to favorites Remove from favorites

Connected In: 680/1147 Out: 0/0 BPM: 397 SNR: -1.8 dB Connected to WM4RB

*** Winlink Vara Connection to WM4RB @ 2024/08/14 10:34:48 USB Dial: 3597.000 Signal bandwidth 2300 Hz

*** Station Bearing: 019, Range: 333 km

RMS Trimode 1.3.54.1 Welcome to WM4RB RMS Gateway-P3/4, VARA & ARDOP

N4UZZ has 120 daily minutes remaining with WM4RB (EM75ME)

{SFI = 260 On 2024-08-14 10:00 UTC}

[WL2K-5.0-B2FWIHJMS]

;PQ: 27247532

CMS via WM4RB >

;FW: N4UZZ

[RMS Express-1.7.13.0-B2FHMS]

;PR: 19833897

; WM4RB DE N4UZZ (EM62WI)

FF

;PM: N4UZZ 1BWCZD06K03R 1147 WV8MT@winlink.org WV Winlink Net Reminder 8/8/24

;PM: N4UZZ 13XUNRIKLYDI 1153 WV8MT@winlink.org WV Winlink Net Reminder 8/15/24

;PM: N4UZZ S8SQD8X89EG7 1160 WV8MT@winlink.org WV Winlink Net Reminder 8/1/24

;PM: N4UZZ JC48W324F34A 1866 WV8MT@winlink.org WV Winlink Net Roster 8/1/24

;PM: N4UZZ BQ7F17XY6BCN 1936 WV8MT@winlink.org WV Winlink Net Roster 8/8/24

;PM: N4UZZ G9FAYOJX8ZK4 1934 WV8MT@winlink.org WV Winlink Net Roster 7/25/24

;PM: N4UZZ 250IAW7PV2VD 1502 GLAWN@winlink.org GLAWN Checkin Invitation

FC EM 1BWCZD06K03R 2093 1147 0

FC EM 13XUNRIKLYDI 2105 1153 0

FC EM S8SQD8X89EG7 2126 1160 0

FC EM 250IAW7PV2VD 3064 1502 0

FC EM JC48W324F34A 3504 1866 0

F> 7B

FS YYYYY

*** Receiving 1BWCZD06K03R



System Folders

Inbox (6 unread)
Read Items (0)
Outbox (0)
Sent Items (1)
Saved Items (0)
Deleted Items (8)
Drafts (0)

Personal Folders

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Global Folders

1. <i>What is the purpose of the study?</i> The purpose of the study is to determine the effect of the use of the Internet on the learning of English as a second language.	
2. <i>What are the research questions?</i> The research questions are: (1) What is the effect of the use of the Internet on the learning of English as a second language? (2) What are the factors that influence the learning of English as a second language?	
3. <i>What are the hypotheses?</i> The hypotheses are: (1) The use of the Internet will have a positive effect on the learning of English as a second language. (2) The factors that influence the learning of English as a second language are: (a) the use of the Internet, (b) the learning style, and (c) the motivation.	
4. <i>What are the variables?</i> The variables are: (1) the use of the Internet, (2) the learning style, and (3) the motivation.	
5. <i>What are the methods?</i> The methods are: (1) the use of the Internet, (2) the learning style, and (3) the motivation.	
6. <i>What are the results?</i> The results are: (1) The use of the Internet has a positive effect on the learning of English as a second language. (2) The factors that influence the learning of English as a second language are: (a) the use of the Internet, (b) the learning style, and (c) the motivation.	
7. <i>What are the conclusions?</i> The conclusions are: (1) The use of the Internet has a positive effect on the learning of English as a second language. (2) The factors that influence the learning of English as a second language are: (a) the use of the Internet, (b) the learning style, and (c) the motivation.	

Contacts

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	Date/Time	Message ID	Size	Source	Sender	Recipient	Subject
	2024/08/13 2...	13XUNRIKLYDI	1185	WV8MT	WV8MT	AD5DM...	WV Winlink Net Reminder 8/15/24
	2024/08/09 1...	BQ7F17XY6BCN	1971	WV8MT	WV8MT	AD5DM...	WV Winlink Net Roster 8/8/24
	2024/08/09 1...	250IAW7PV2VD	1529	KB7W...	GLAWN	SMTP:kgburt...	GLAWN Checkin Invitation
	2024/08/06 2...	1BWCZD06K...	1177	WV8MT	WV8MT	AD5DM...	WV Winlink Net Reminder 8/8/24
	2024/08/03 0...	JC48W324F34A	1901	WV8MT	WV8MT	AD5DM...	WV Winlink Net Roster 8/1/24
	2024/08/01 00:00	S8SQD8X89EG7	1190	WV8MT	WV8MT	AD5DM...	WV Winlink Net Reminder 8/1/24
	2024/07/29 0...	G9FAYOJX8ZK4	1970	WV8MT	WV8MT	AD5DM...	WV Winlink Net Roster 7/25/24

To: AD5DM; AEONR; AE5MI; KD2LQA; KUOHN; KA9IKK; KOWET; K4RMY; KF1D; KB8PXM; KV8Z; N4ZFY;
KO4CTF; KB8GYU; WV8CPD; KD8JQE; N5WNE; W8DWK; AD4TJ; K5MPG; KE8NVA; KC5VKG; KD8MIB; KB4KY;
N2GWK; KN4FM; KW6GB; W8VT; K8JTK; KD8HRY; WD4ITN; NA9LE; W8BS; NOLSD; W8JTW; KM4PDK; SA0MOA;
K2TRR; K8BAR; K8FAM; K8VRT; K8YHY; KA4FOX; KB3UFG; KC8FPC; KC8ODI; KC8TAM; KC8YSO; KD2QAR;
KE8AE; KE8QZC; KE8VMG; AB7KT; KF4HEW; KF8LO; KI5WIZ; ZL4KJ; KG4YYL; KK6HWN; KM4YC; KN4UND;

There are several Winlink nets.

Winlink Wednesday

West Virginia Winlink Net

Great Lakes Area Winlink Net

The Alabama ARES Digital Net

address your check-in to AK4NG

You can address messages to hams who have Winlink accounts simply by their call.

You can address messages to email addresses.

You cannot address messages to groups.io

**They will not accept the message because they
do not see your winlink address as a registered user**

Annoyance

The channel selector will select RMS stations on different bands depending on propagation.

When this results in a band change, there is no provision to tune the radio and antenna.

FLDIGI has a [TUNE] button. Winlink does not.

So, before actually starting a Winlink session, you have to manually tune the radio/antenna.



Operating Hint

The propagation forecast (Channel Selector) requires frequent updating.

Updating via RF would be unworkably slow – might take an hour or two. So update by internet is needed.

Question: if you need the internet, then why use Winlink to begin with????



Answer:



You do not need the internet if you prepare ahead of time. This shows distance ranges where RMS stations will be on 80m and 40m.



UNLESS THERE
ARE MORE
HUGE CORONAI
MASS

EJECTIONS
HEADING TO
EARTH.

Prepare for communications without internet by having in your favorite list

- **nearby NVIS stations on 80m and 40m (yellow)**
- **moderate distance stations on 80m and 40m (blue)**
- **long-band stations on 80m and 40m (brown)**
- **for 30m and 20m stations in different directions**

Also have this list of stations on paper with comments

Additional set-up note:



If you are using a Signalink interface with an older radio, you may need to set the frequency manually.

VARA will tell you what the dial frequency should be. The mode should be USB with the filter set as wide as possible.



That's all Folks!