



Jay Taft, K1EHZ
Hillsborough County ARES Zoom Meeting
August 12, 2020



Overview of the Winlink System

Winlink System Overview

This overview is about how the Winlink system works, not about how to set it up yourself.

It covers a lot of material to help convey the range of capabilities Winlink provides, because it's difficult to know in advance which features may interest a particular group or individual.



One Tool in the
ARES Toolbox



One Tool in the ARES Toolbox

along with NBEMS, verbal
radiograms, tactical messaging,
NCS skills, etc

Perspective & Context

Hillsborough County
Compared to State of
New Hampshire

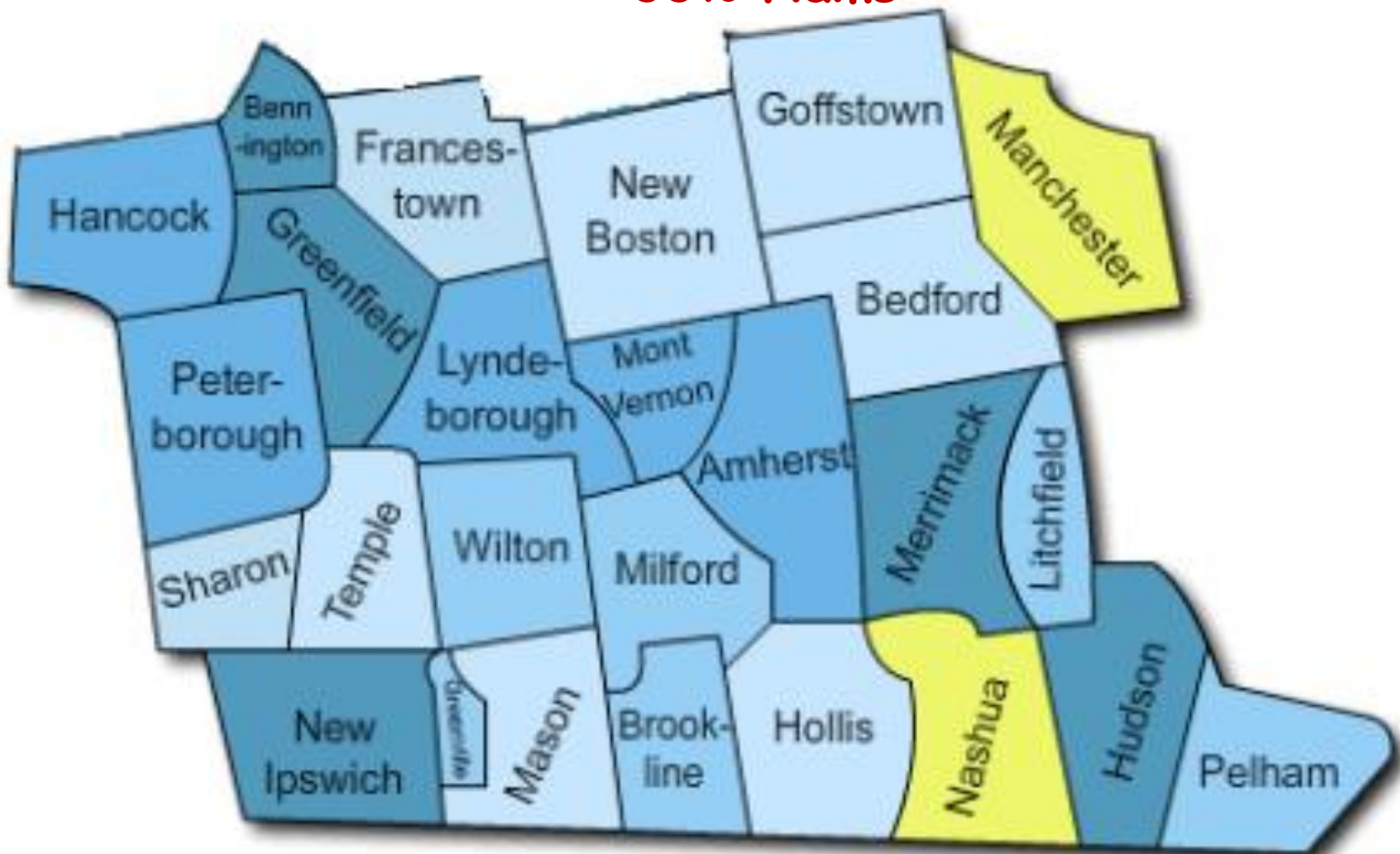
Hillsborough County

Area = HC 892 sq mi vs NH 9,350 sq mi

Population = 410,000 (2,179 Hams)

Population of NH = 1,356,000 (6,678 Hams)

**Hillsborough County = 9.5% Area, 30% People,
33% Hams**



Topics

- Objectives
- Winlink Structure and Function
- Hardware and Software
- Key Features of Winlink Express
- Our Winlink Hybrid Gateway
- Potential Training Opportunities



Objectives

To understand the basics of the Winlink system and how it complements other messaging tools, and

To encourage you to continue exploring Winlink if you like.



In other words, does Winink
provide interesting possibilities
for you or for our ARES group?

What I was thinking when first asked
to explore learning Winlink --



More
Software???

I'm still
Learning
FLdigi !!!

Happily, with help I found Winlink
easier to learn than FLdigi



I'm Learning
Winlink !!!

Happily, with help I found Winlink
easier to learn than FLdigi



I'm Learning
Winlink !!!

and I'm still
Learning
FLdigi !!!



What is Winlink?

World-wide store and retrieve
email system, using radio
and internet.

Exchange email with any
valid email address in the world,
not just with hams.



Operated by the all volunteer
Amateur Radio Safety
Foundation



Brief History

- Winlink's roots can be traced back to the 1980s
- Amlink was a text-based messaging that was adapted for the Navy MARS and the ARRL National Traffic System.
- Winlink Classic was developed for Windows.
- Winlink + Netlink developed for internet email.
- Winlink 2000 planning started in 1998.

Operating Systems

- Winlink has been tied to the Windows operating system since the early days
- The Winlink Development Team has no plans to write Winlink for other operating systems
- However, there are other clients that work with some Winlink features
 - Outpost, Airmail, Pat, Paclink-Unix, Paclink
 - More details here

<https://winlink.org/ClientSoftware>

Operating Systems

- Winlink on Linux and iOS using Wine
- Link to more information -
 - https://winlink.org/content/installing_winlink_express_mac_and_linux
- Links to Wine on K6ETA Blog
 - <http://k6eta.com/linux/installing-rms-express-on-linux-with-wine>
 - <http://k6eta.com/mac/installing-rms-express-on-mac-free-wine-option>

Operating Systems

- Some have had success with non-Windows implementations of Winlink Express, others have not
- One approach is to run Winlink Express in a Windows partition on a dual-boot computer
- Another approach is to have a separate small computer with Windows just for Winlink Express and other Windows-based software

Winlink is used extensively in the southeastern states subject to tropical storms, and in western states where wild fires occur annually. For example

ARRL Web Page - 3/14/2019

Winlink already is well-known for its role in emergency and disaster relief communication, providing email with attachments, position reporting, weather reports, and information bulletins.

The system was extensively used in the aftermath of the high-impact 2017 hurricane season in the Caribbean.

Carr Wildfire - California

August 1, 2018 — Briefing excerpt:

Winlink continues to be the go-to mode to communicate with the Red Cross Disaster Operations Center. There are no voice channels that can reach Sacramento.

There was hope that Carla system would work, but a Carla node burned in the fire.

(What is Carla?)

CARLA

California Amateur Radio Linking Association

The C.A.R.L.A. System is an open repeater network covering California and Western Nevada comprised of 30+ mostly UHF and a few VHF repeaters.

Lessons Learned for us:

- Linked repeaters are great until the one you need burns in a fire or is otherwise disrupted.
- Applies to regular repeaters as well.
- Have a Plan B.



Winlink System Structure



Structure Based on
Common Message Servers (CMS)
on the internet and
Radio Message Servers (RMS)
that bridge radio to internet

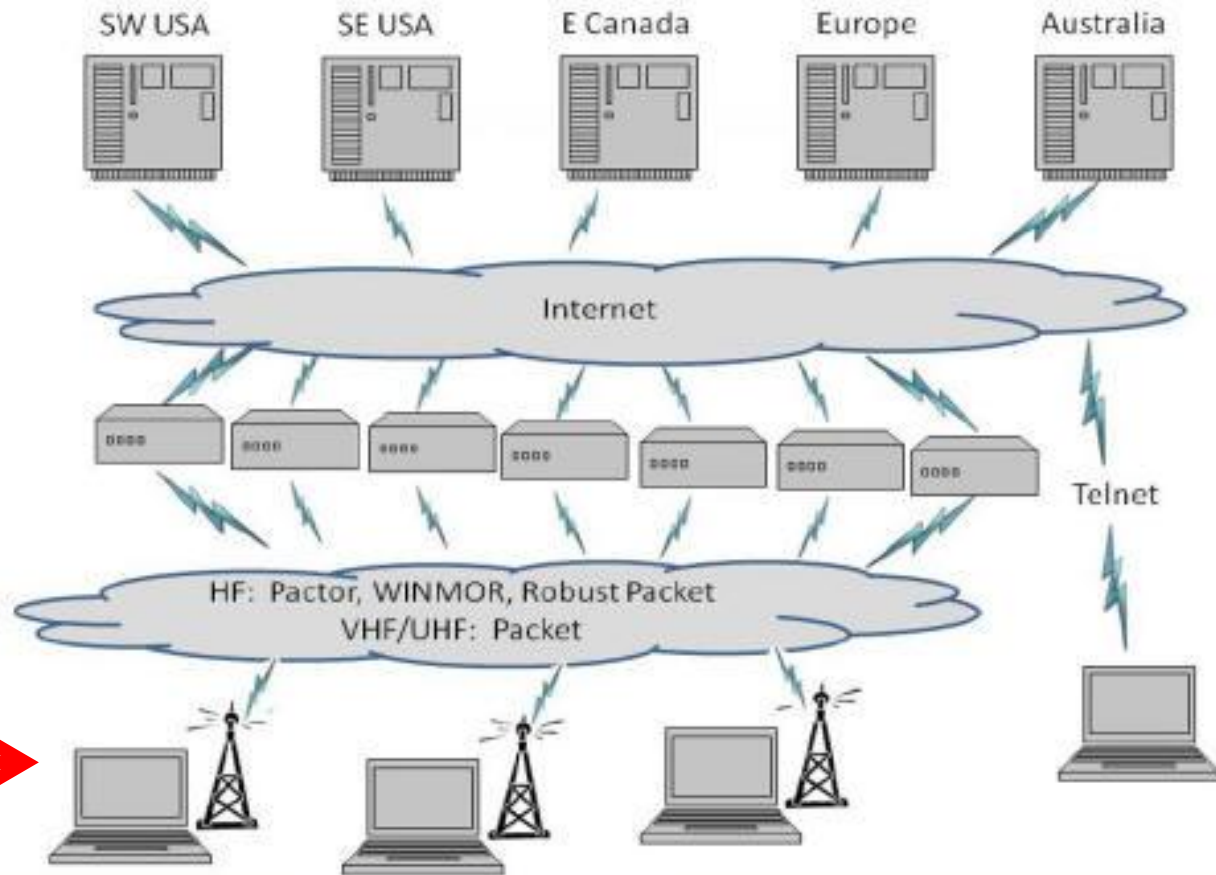
Global Winlink Network

Winlink Normal Network Operation

CMS

RMS
(gateways)

Client
(us)



Winlink Express software

Global Winlink Network

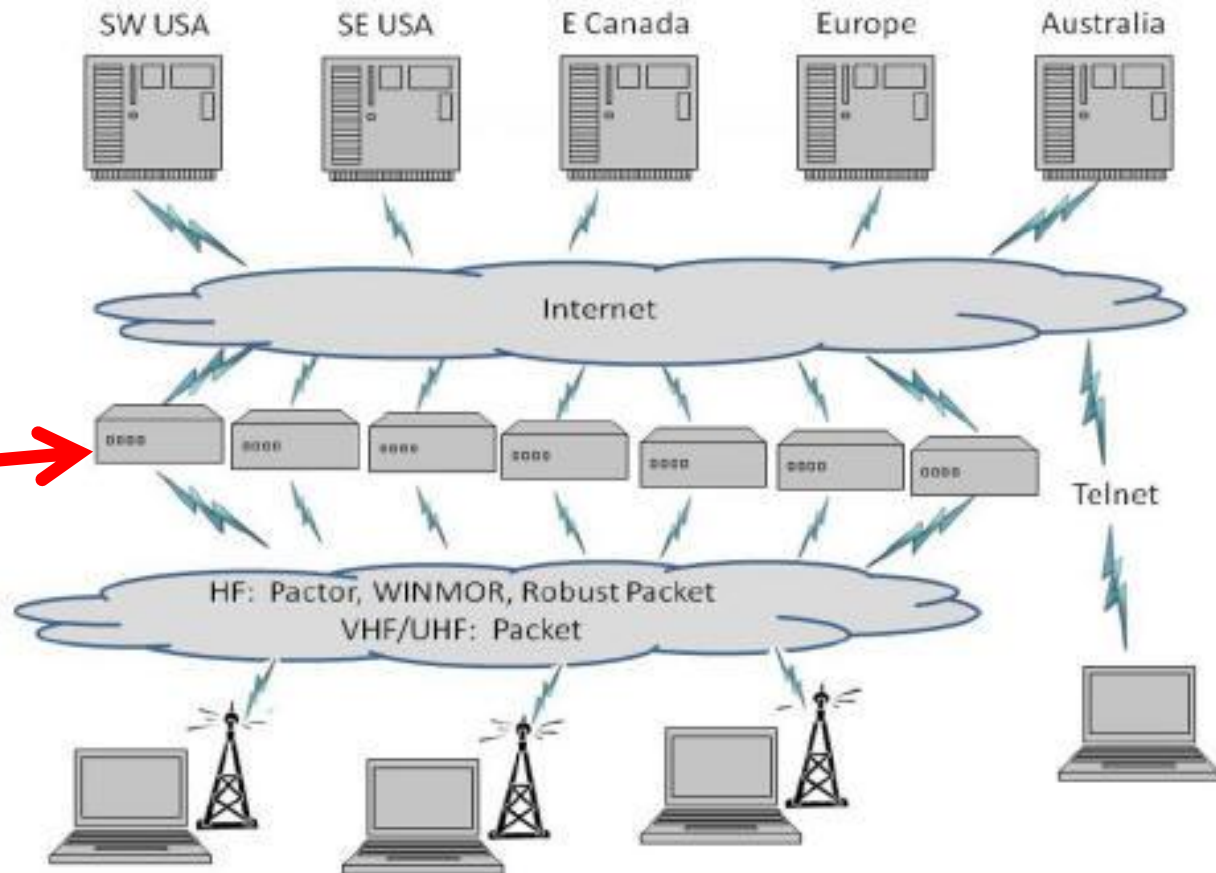
Winlink Normal Network Operation

CMS

RMS
(gateways)

VHF / HF Radios
connected
to the Internet

Client
(us)



Global Winlink Network

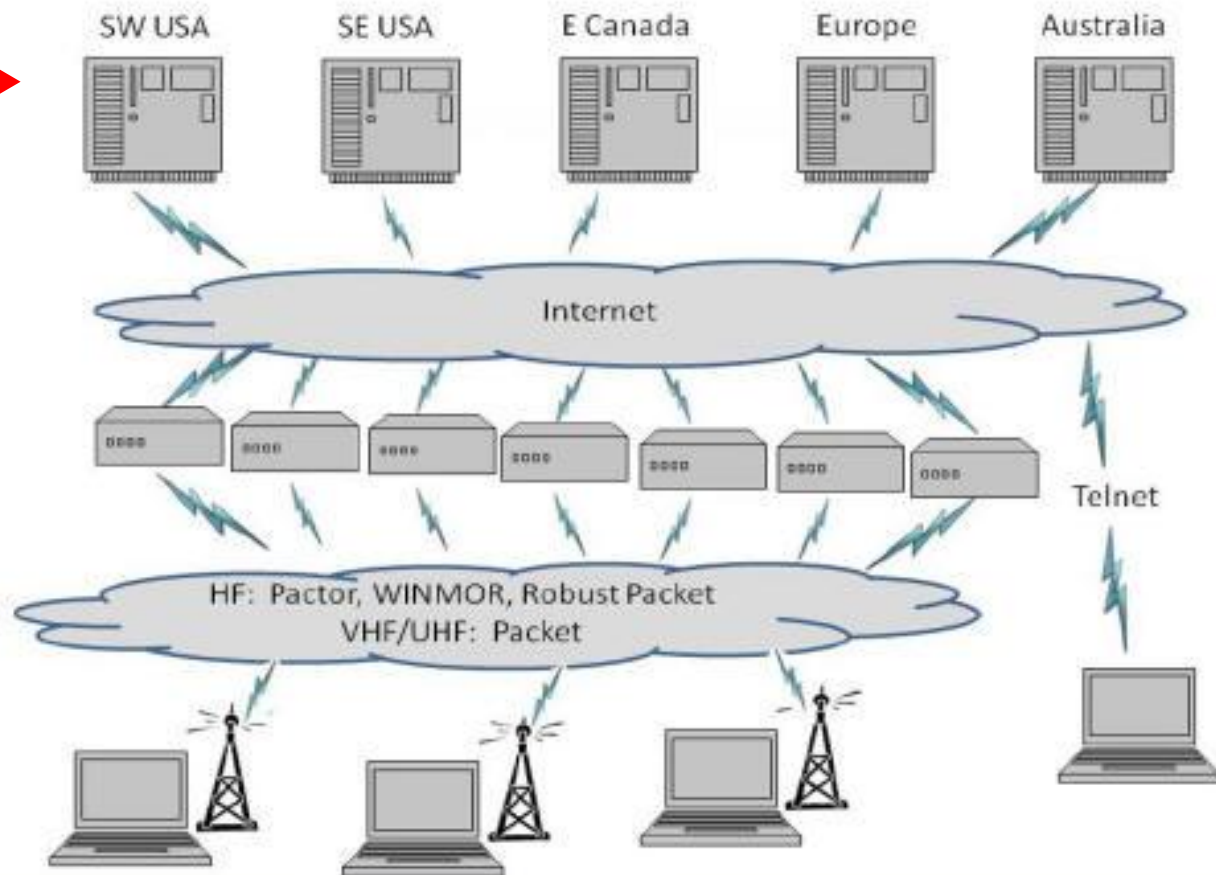
Winlink Normal Network Operation

CMS
(AWS)



RMS
(gateways)

Client
(us)



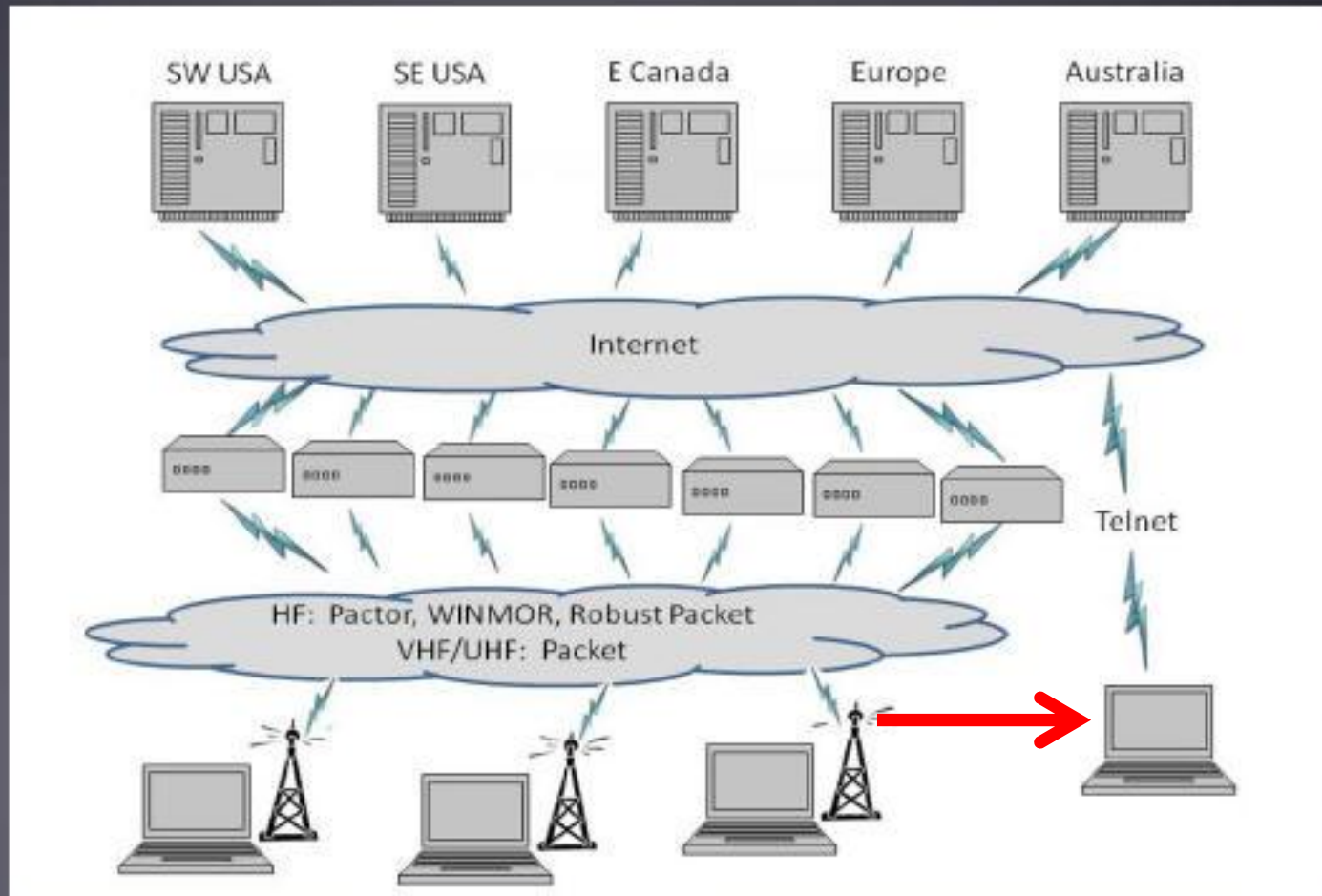
Global Winlink Network

Winlink Normal Network Operation

CMS

RMS
(gateways)

Client
(us)



Winlink Express software

Winlink Webmail

Check mail using a browser on
smartphone, tablet, computer

<https://webmail.winlink.org:446/>

Email resides on all 5 CMS
until retrieved, *after which
email is deleted from all CMS.*

CMS



Consider reading all Winlink email on same device.
Otherwise, different messages will download to
different devices.

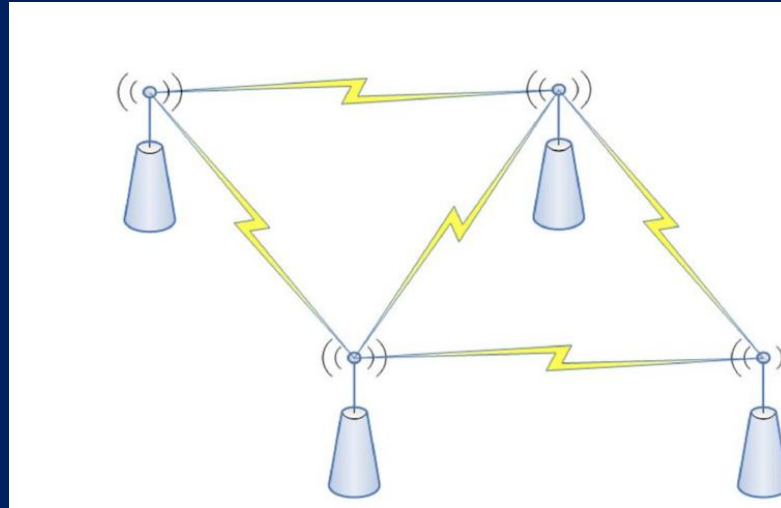
RMS Gateways



Some are "H" Gateways



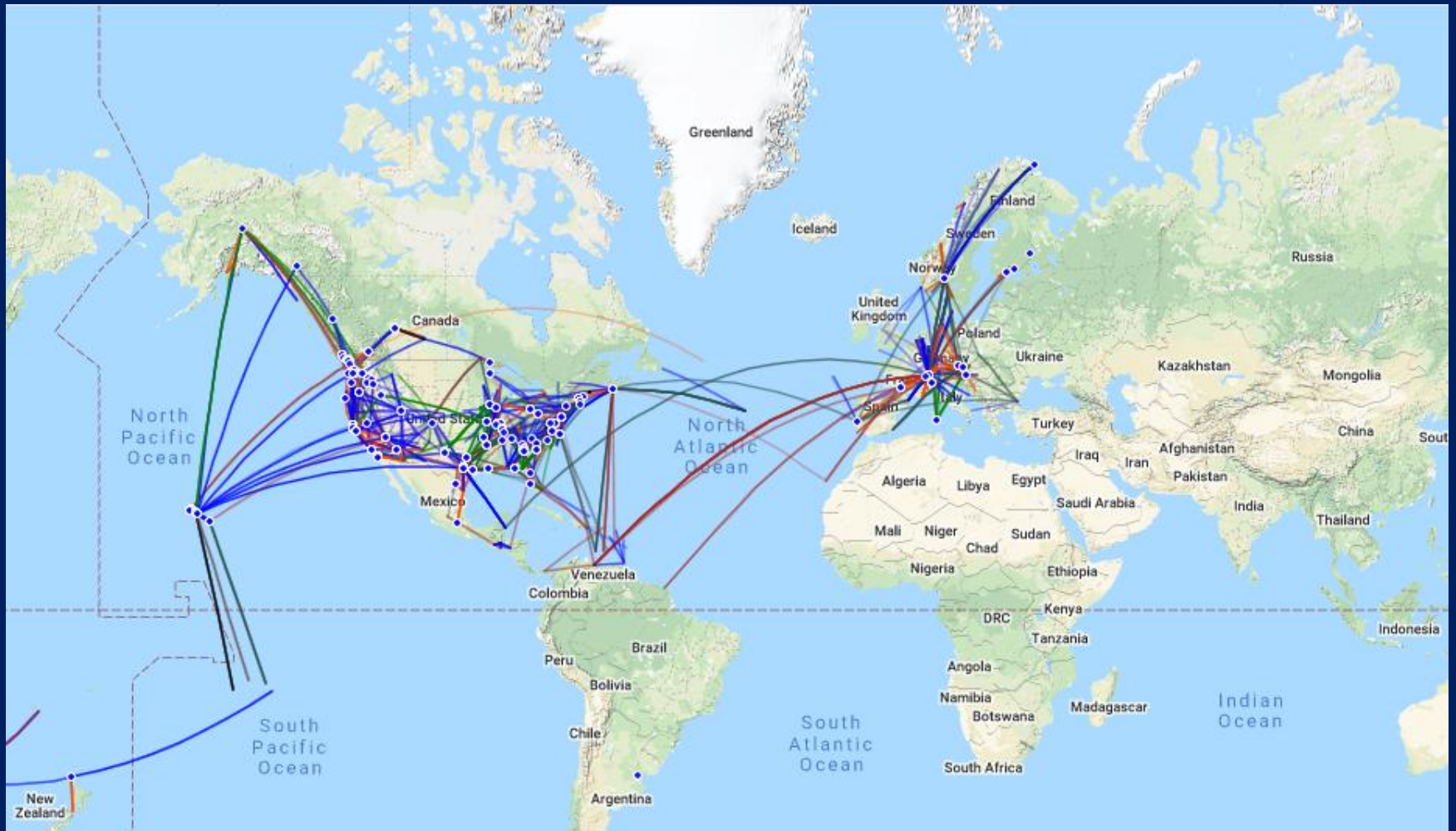
H = Hybrid Gateway Network



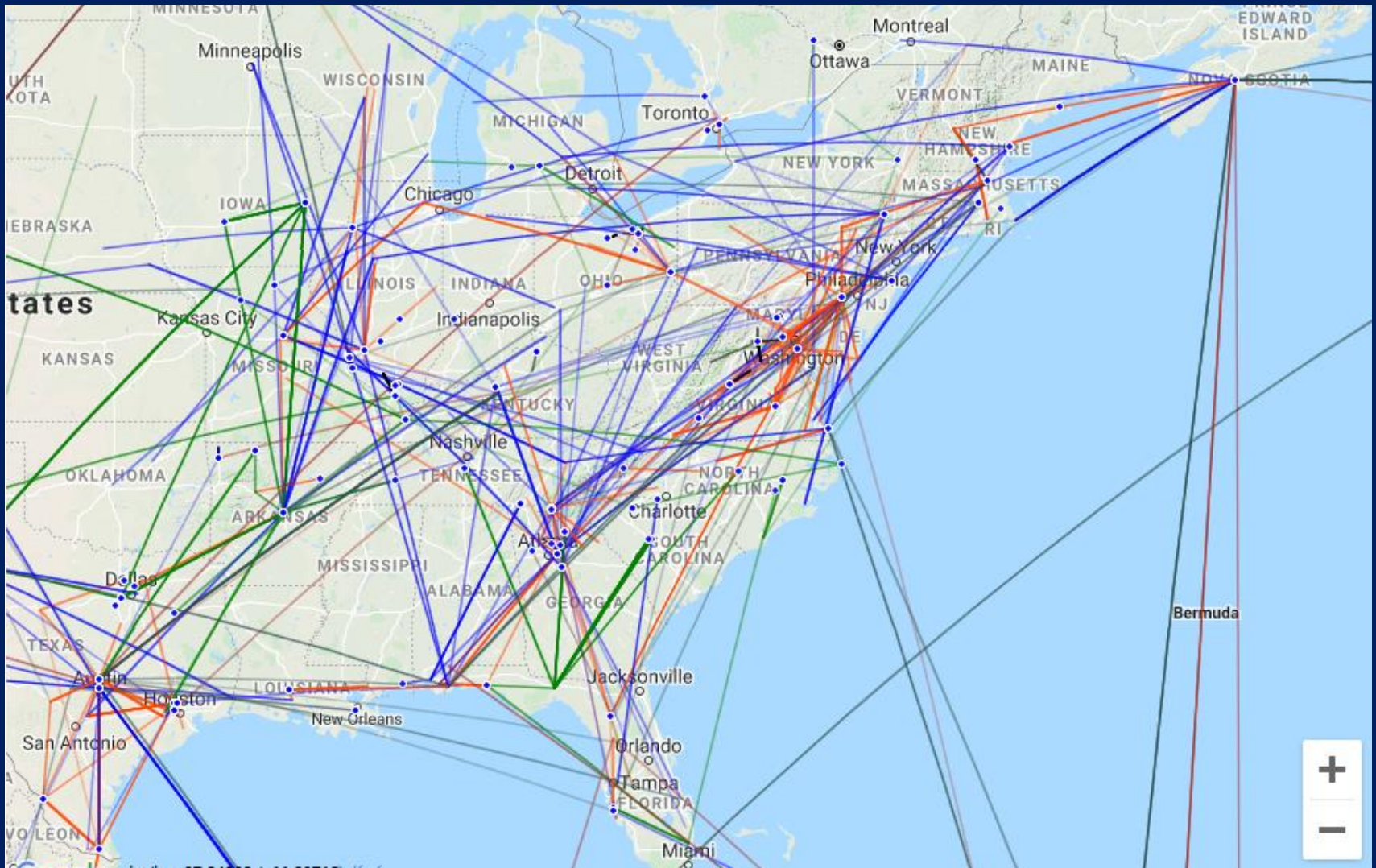
H = Hybrid Gateway Network

- Self-Healing Mesh Network (Pactor)
- Auto-Forwards Email from VHF to HF
- Auto-Forwards Email from HF to HF
- Until Email Reaches the Internet or the Addressee

Winlink System Radio Connections 24-hour Snapshot



Winlink Regional Radio Connections 24-hour Snapshot



Equipment

Terminal Node Controller (TNC)
supports AX.25 packet protocol
over radio

Equipment

Terminal Node Controller

Can Be

Hardware or Software

Basic Elements of Packet Radio



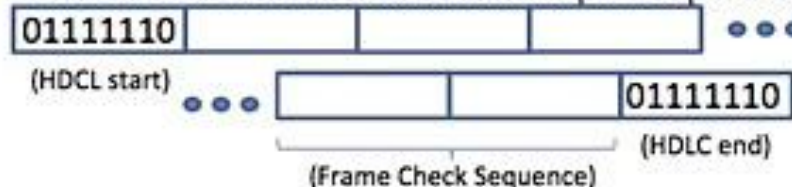
1. Hardware: Radio, TNC/modem, Computer

TNC can be implemented in software only on computer: interface uses analog/audio soundcard connection between computer and radio.

2. Encoding

- Computer<->TNC: serial port, ASCII (text) characters
- TNC<->Radio: typically two or three wires
Audio Frequency Shift Keying (Bell 202, 1200 baud)
1200 hz: mark, 2200 hz: space
0: change in tone, 1: no change in tone
- Data Link: AX.25

Derived from X.25 communications packet protocol



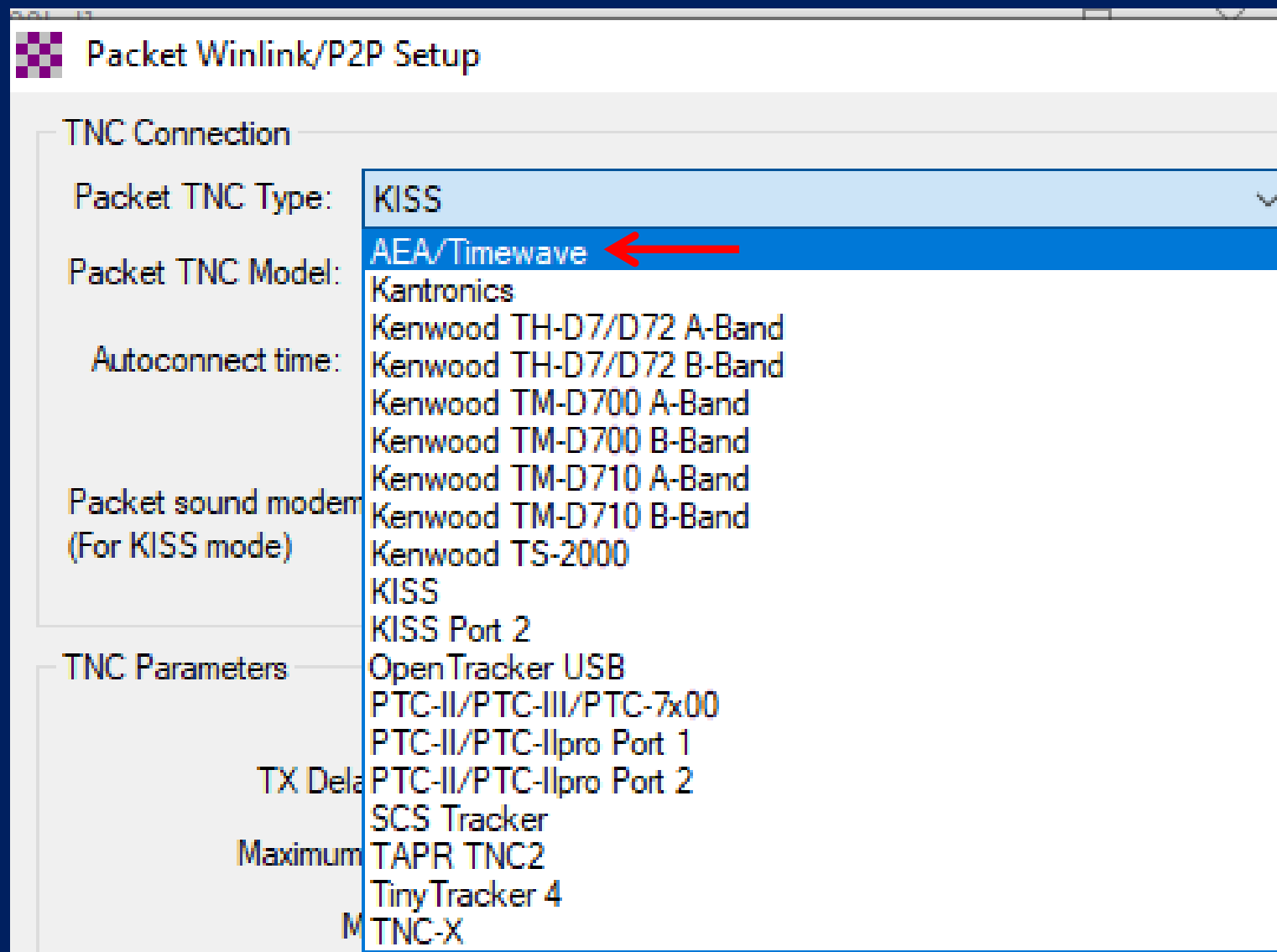
3. Applications

- SCC ARES/RACES: detailed reports (Situation Report, etc. using Outpost and PacForms)
- Automatic Packet Reporting System (APRS): a multi node system for reporting and recording packets that typically includes station ID and position/telemetry

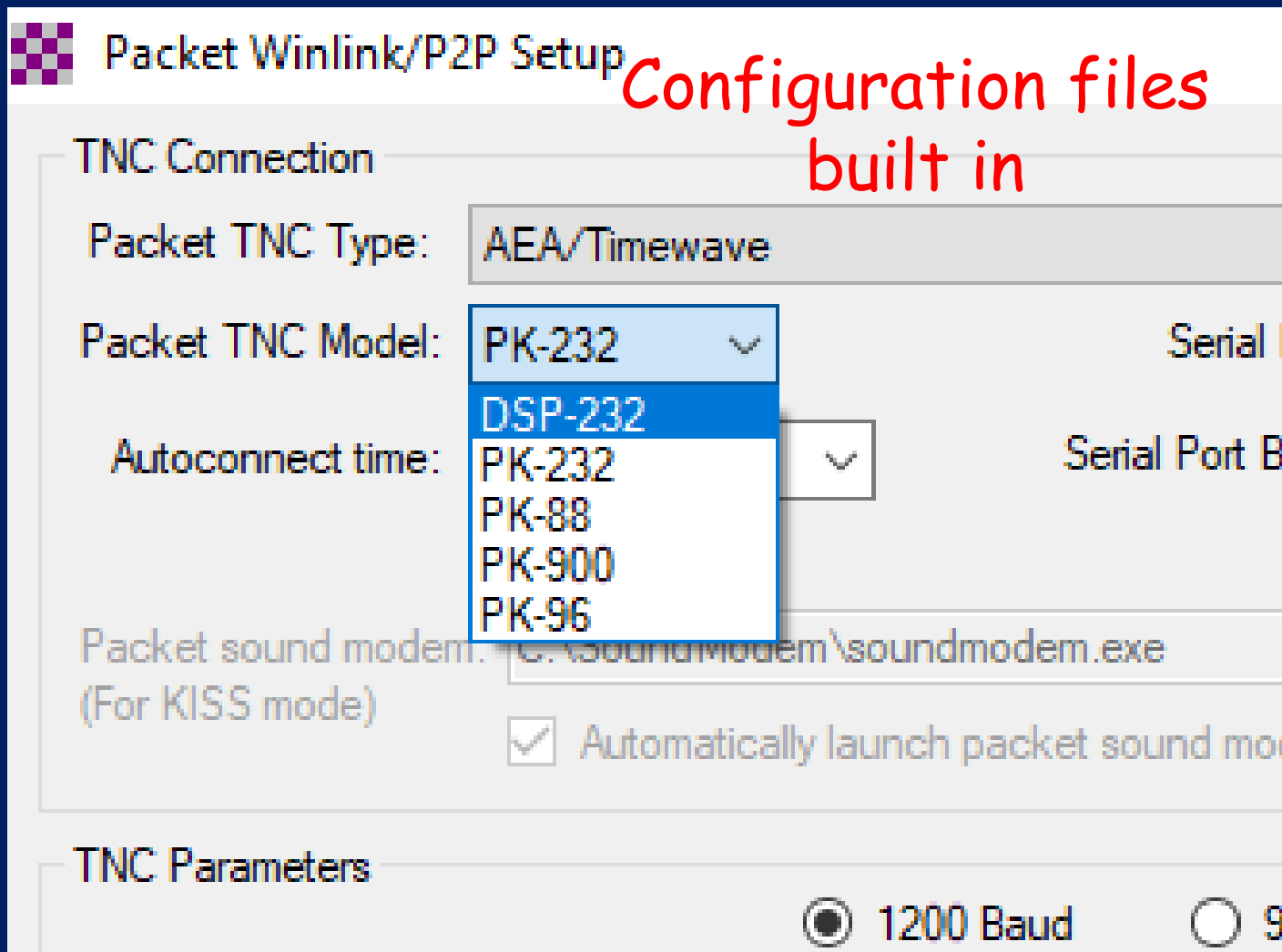
Hardware TNCs



TNCs Winlink Express Supports



TNCs Winlink Express Supports

The image shows a screenshot of the 'Packet Winlink/P2P Setup' window. The window has a title bar with a small icon and the text 'Packet Winlink/P2P Setup'. Below the title bar, there are two main sections: 'TNC Connection' and 'TNC Parameters'. In the 'TNC Connection' section, there are four rows of settings. The first row is 'Packet TNC Type:' with a text box containing 'AEA/Timewave'. The second row is 'Packet TNC Model:' with a dropdown menu showing 'PK-232' and a list of other options: 'DSP-232', 'PK-232', 'PK-88', 'PK-900', and 'PK-96'. The third row is 'Autoconnect time:' with a dropdown menu showing 'PK-232'. The fourth row is 'Packet sound modem:' with a text box containing 'C:\soundmodem\soundmodem.exe' and a checkbox labeled 'Automatically launch packet sound modem'. In the 'TNC Parameters' section, there are two radio buttons: '1200 Baud' (selected) and '9600 Baud'.

Packet Winlink/P2P Setup

Configuration files built in

TNC Connection

Packet TNC Type: AEA/Timewave

Packet TNC Model: PK-232

Autoconnect time: PK-232

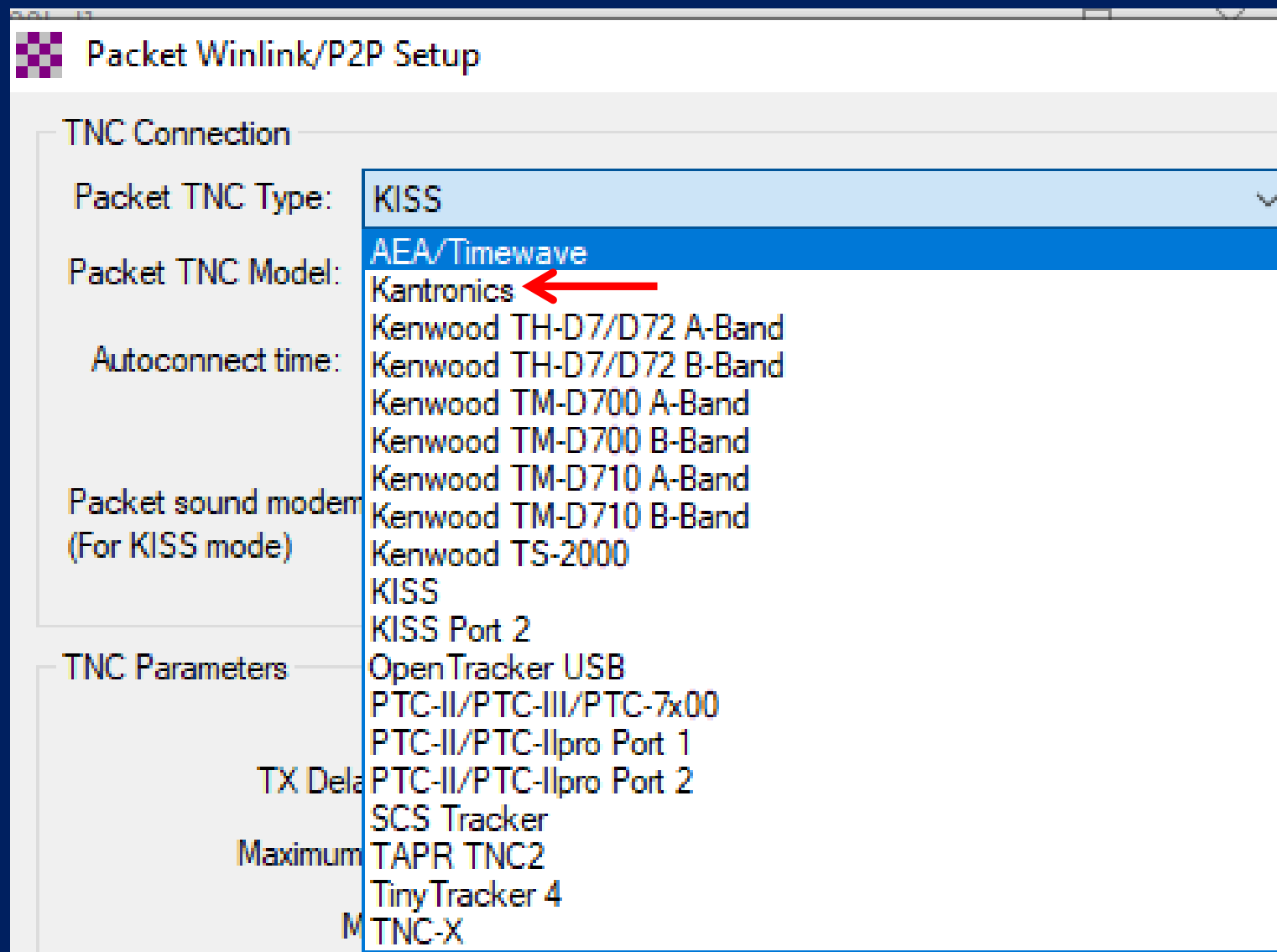
Packet sound modem: C:\soundmodem\soundmodem.exe
(For KISS mode)

☒ Automatically launch packet sound modem

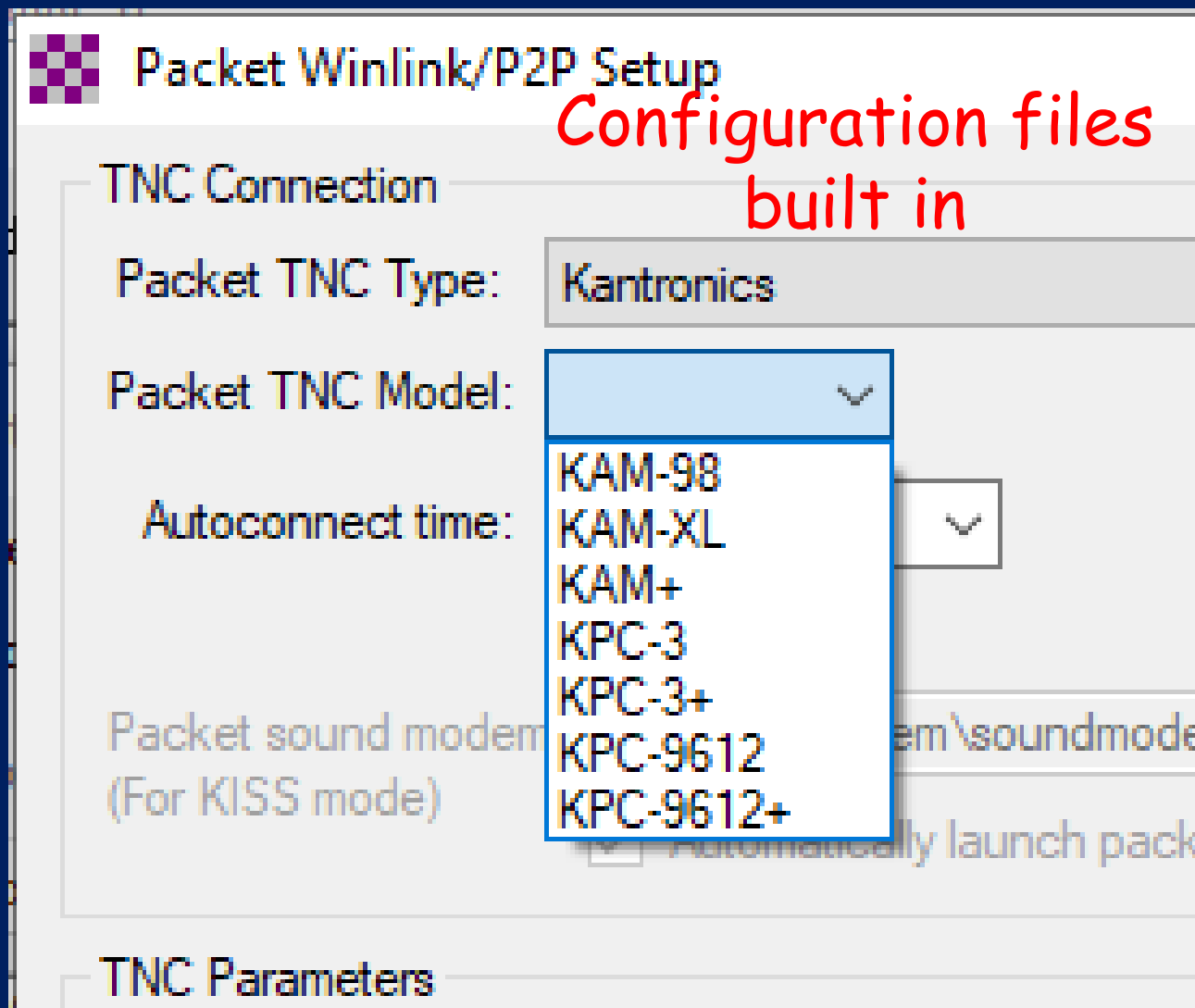
TNC Parameters

☒ 1200 Baud ☐ 9600 Baud

TNCs Winlink Express Supports



TNCs Winlink Express Supports



Software TNCs...

Computer converts

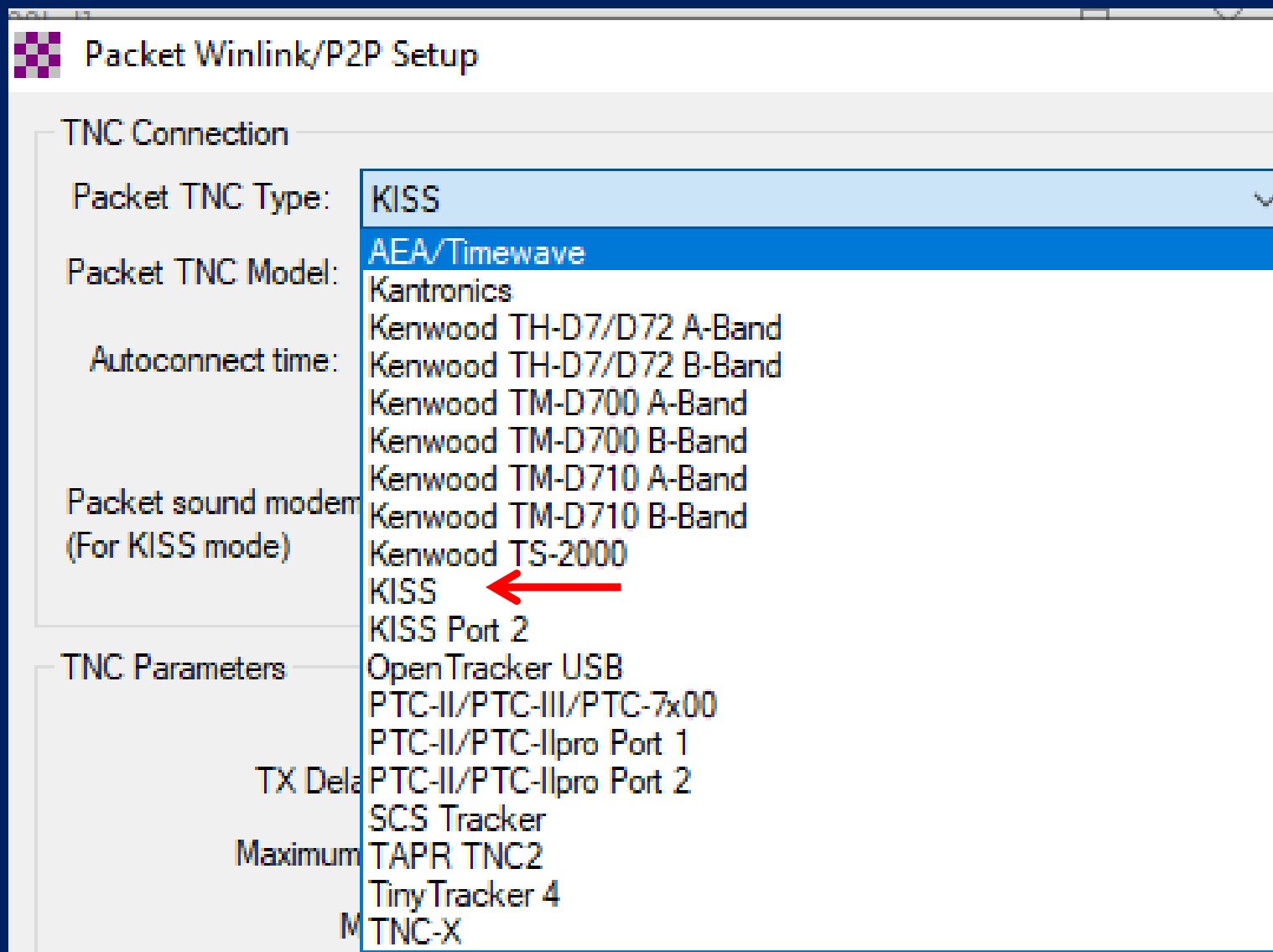
ASCII to AFSK

use KISS TNC

with a sound card

Signalink, Rig Blaster, etc.

TNCs Winlink Express Supports



Soundcard Interfaces

Signalink



Rig Blaster



Soundcard + Software TNCs

- Packet on HF with ARDOP, VARA TNCs
- Packet on VHF with SoundModem TNC

Software Downloads (Free - Donation Requested)

- Winlink Express (= RMS Express)

<https://downloads.winlink.org/User%20Programs/>

- SoundModem for VHF Packet

http://uz7.ho.ua/modem_beta/soundmodem105.zip

Winlink Complements NBEMS

- Both operate on HF and on VHF/UHF with a variety of operating modes and frequencies for differing band conditions.
- Winlink is a radio-to-email system offering 3 modes with 5 redundant world-wide servers, and Message Pickup Stations when internet is out.
- The Narrow Band Emergency Messaging System (NBEMS) is our primary local to regional system offering dozens of modes for a wide variety of propagation conditions.

Winlink Complements NBEMS

Both programs can be open on the computer simultaneously, share a Signalink, & share a frequency.

If you are equipped with a soundcard for NBEMS, you are equipped for Winlink.



Our Local Winlink Gateway

VHF Packet RMS Gateways

VHF stations with internet connections

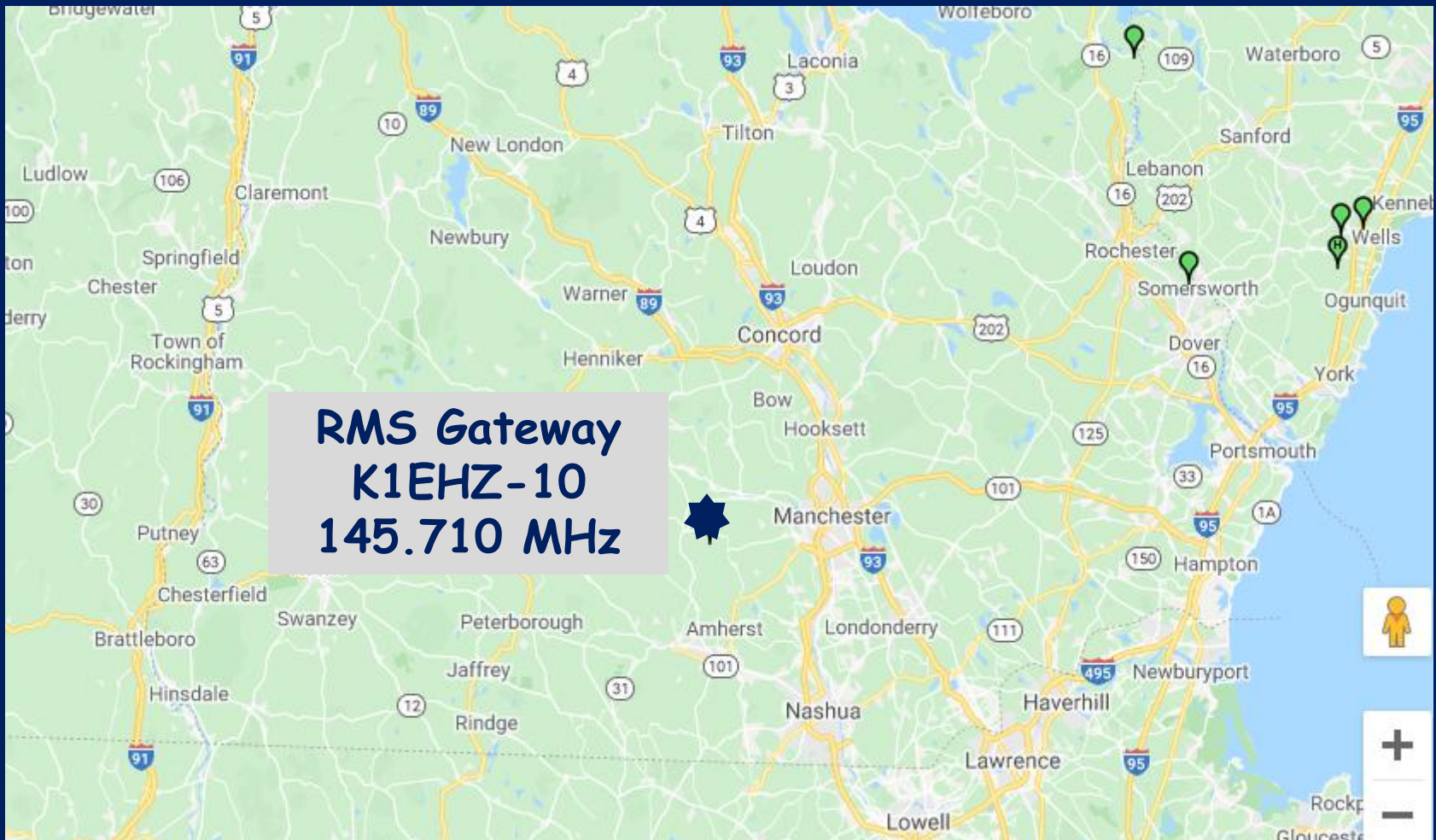


VHF Packet RMS Gateways

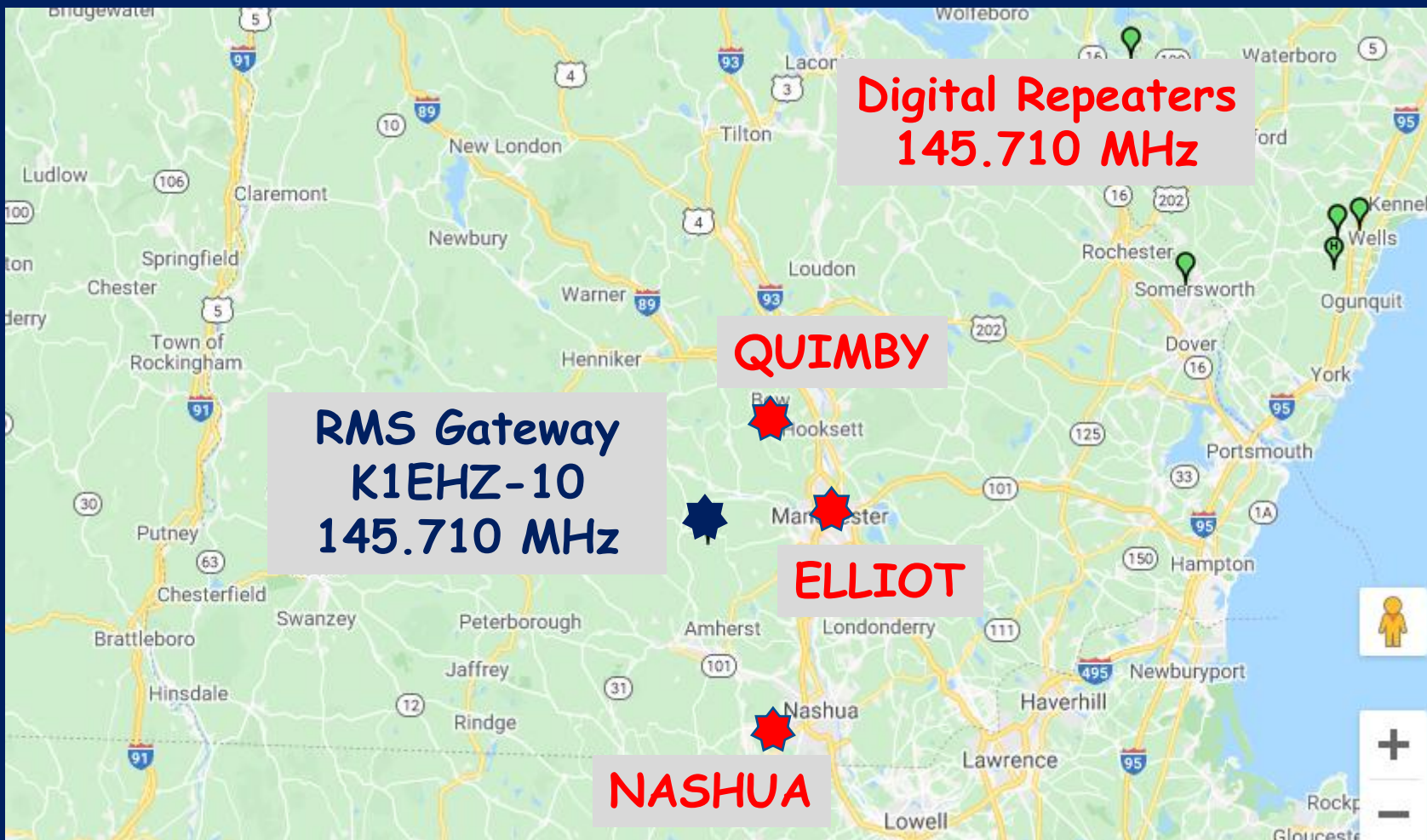
VHF stations with internet connections



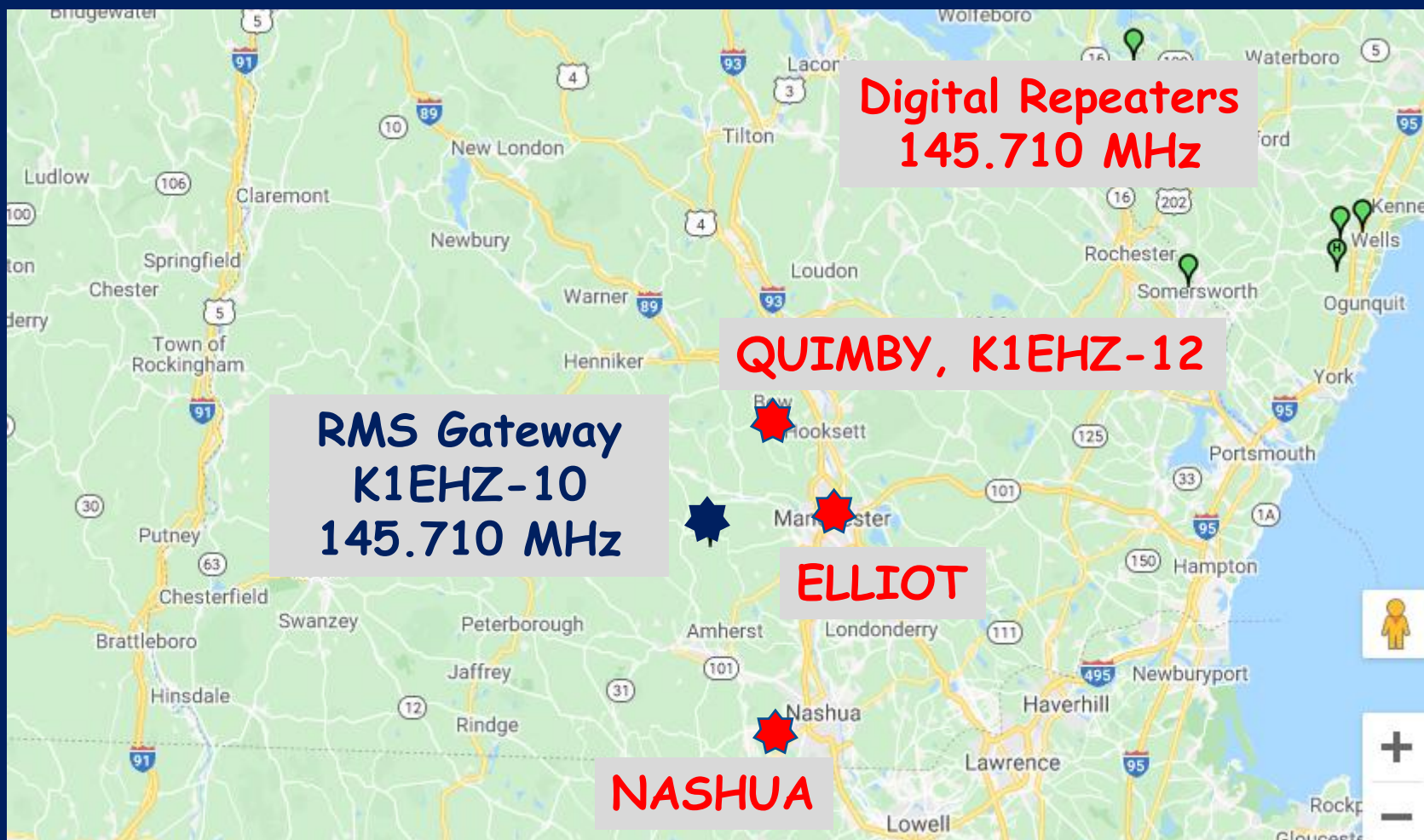
VHF Side of Our Hybrid Gateway



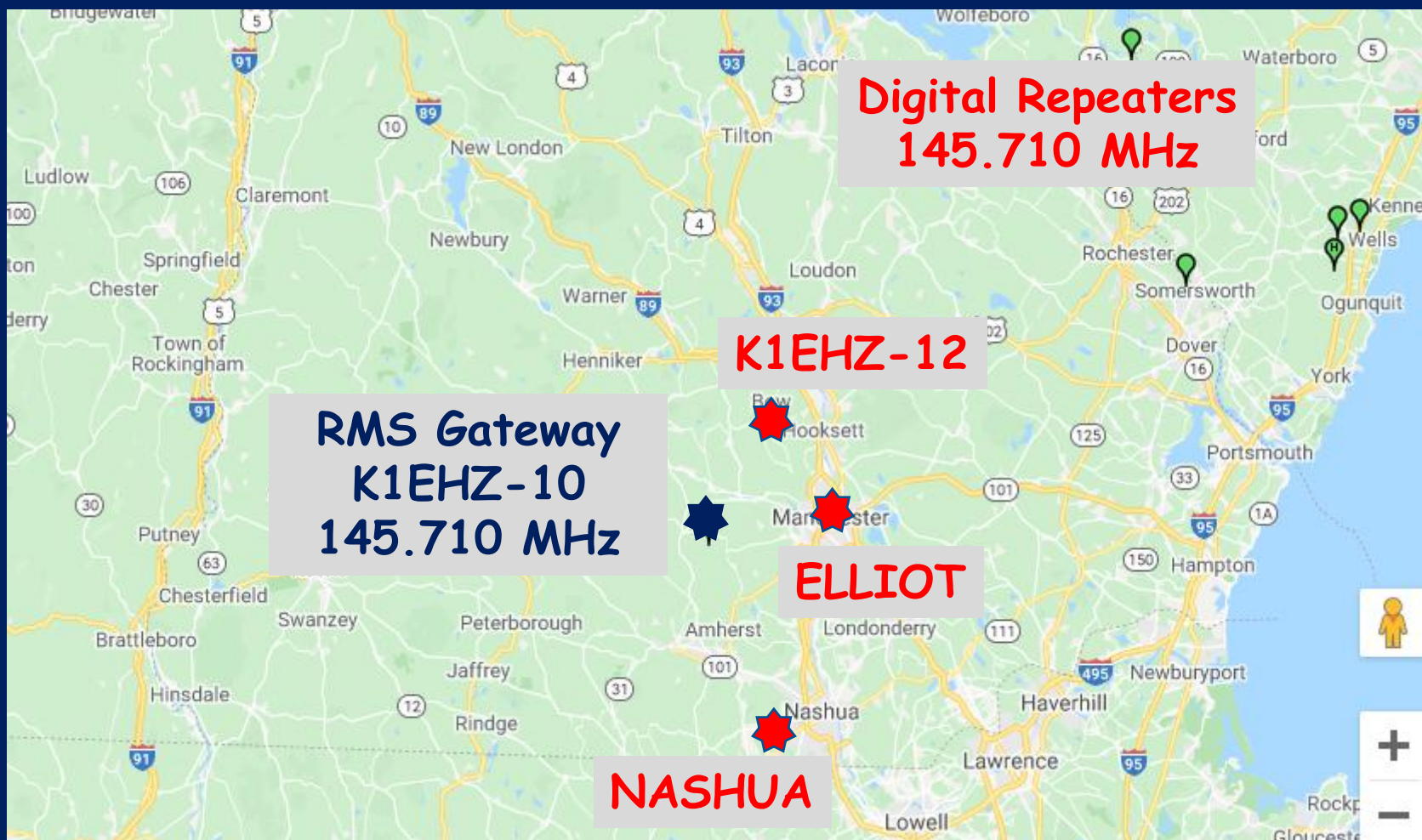
VHF Side of Our Hybrid Gateway with Digipeaters added



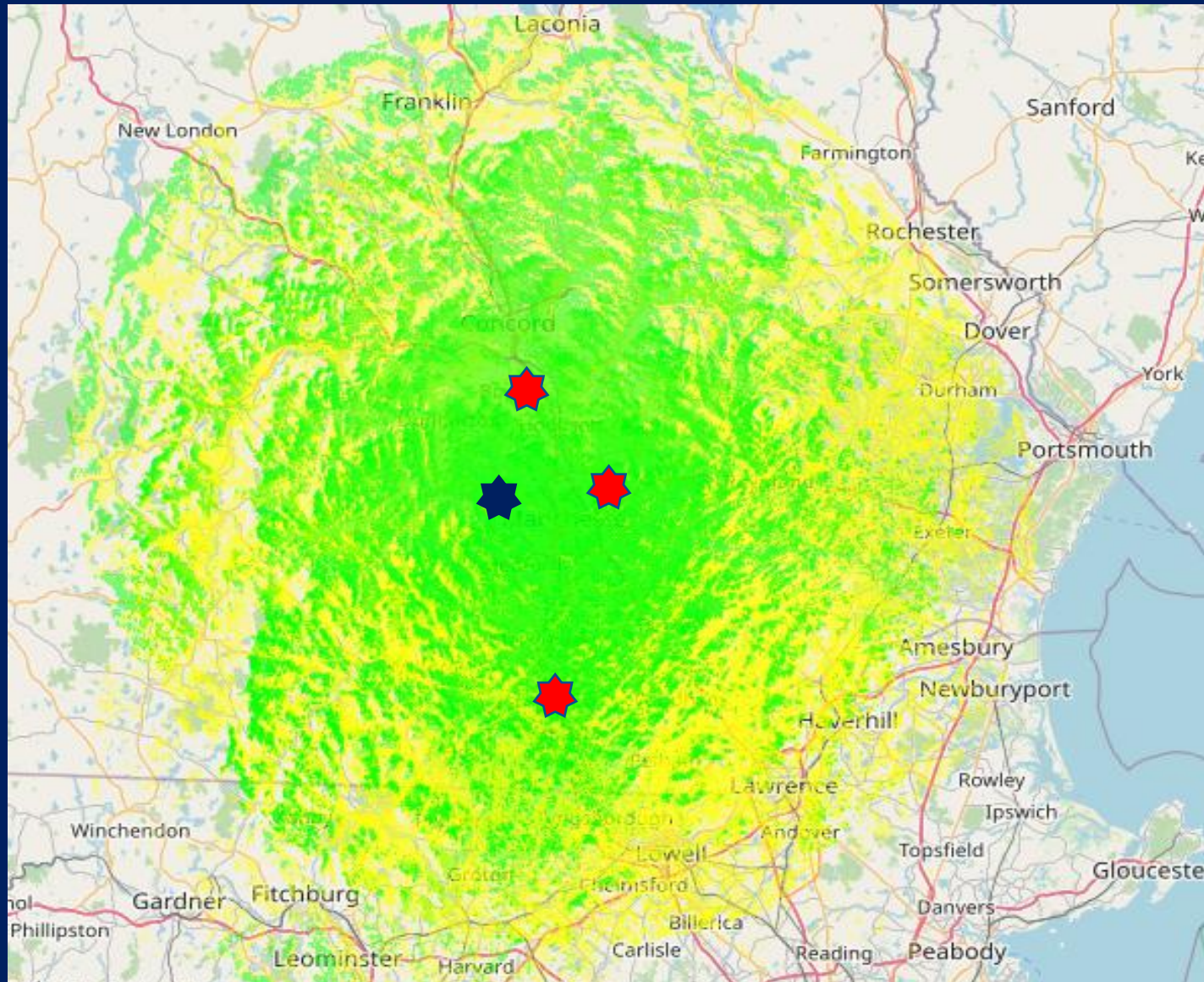
VHF Side of Our Hybrid Gateway with Digipeaters added



VHF Side of Our Hybrid Gateway with Digipeaters added



VHF Winlink Coverage - 145.710 MHz



How could we expand VHF coverage?

- Add fixed or mobile digipeaters
- Add VHF Gateways
- Place Gateway on a repeater frequency
- For drills and incidents, currently have the OK to use Winlink on the
 - Fort Mt, Epsom 70cm repeater (HARP)
 - Uncanoonuc Mt, Goffstown 2m repeater

Digipeater



FM Radio

TNC

Power
Supply

Digipeater + Computer =
RMS Local Standalone Post Office



Digipeater + Computer + **Regular Repeater** =
Local Post Office Covering Wider Area

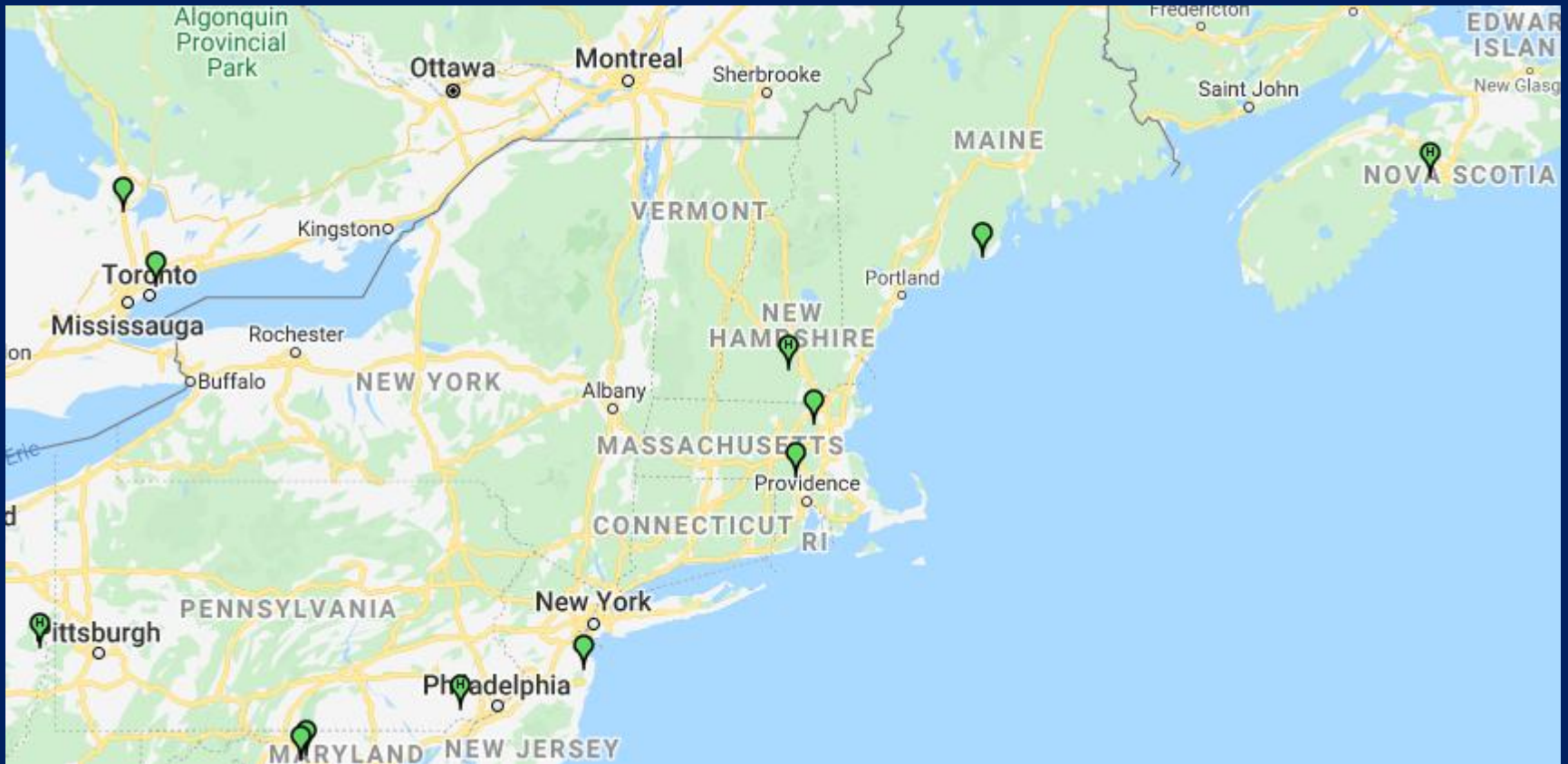


Digipeater + Computer + **Internet** =
VHF RMS Gateway to Winlink Global System



HF RMS Gateways

HF stations with internet connections



HF RMS Gateways

HF stations with internet connections



HF Side of Our Hybrid Gateway





Hillsborough
County and
Greater
Manchester
ARES
Winlink Hybrid
Gateway



HF Pactor Modem
P1 to P4 Capability

LDG-200 Auto Tuner
Auto-Forward on 160-10m

VHF/UHF Radio - FT-991

Winlink RMS Server
Dell Optiplex 780

VHF Packet TNC - KPC-3+

HF Radio - IC-718

Signalink for ARDOP & VARA on HF



HF Capability
Receive 160 - 10m
Transmit 160 -10m

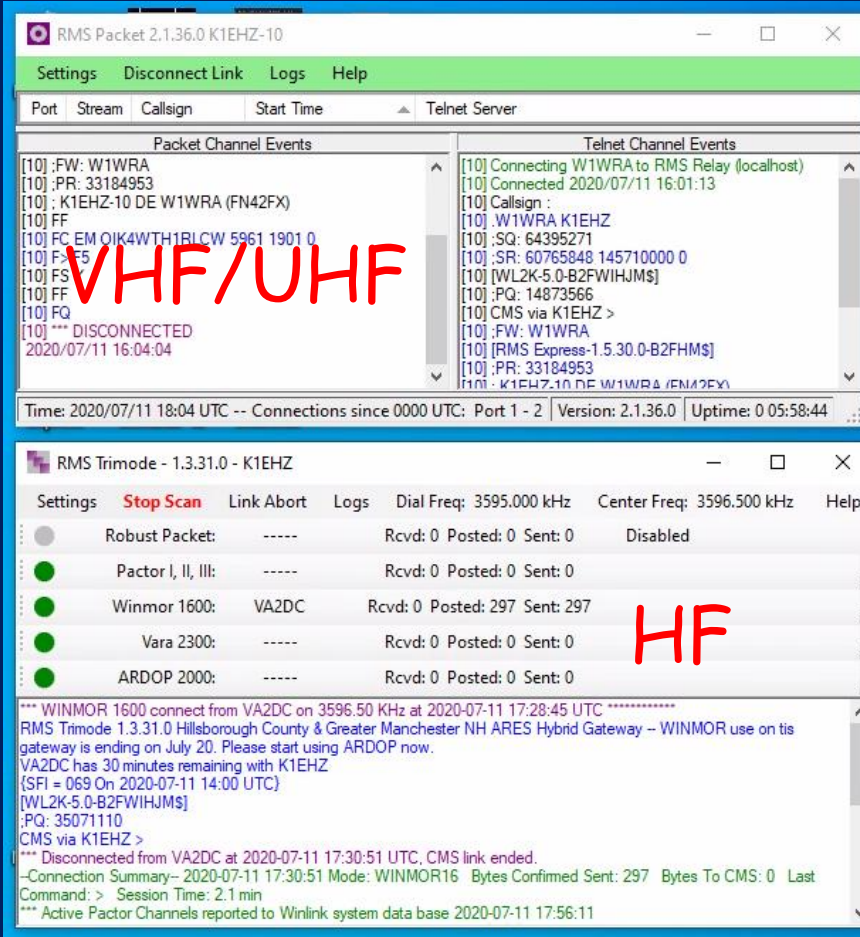
Currently listening on
80m with Auto-Forward
on 160-10m

Easily expand listening
to additional HF bands
with software setting

Remote server
management with
NoMachine software

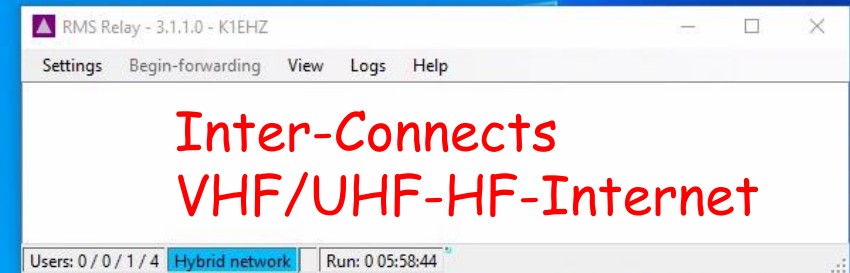
Solar-Battery, Generator

RMS Gateway Server



RMS Packet

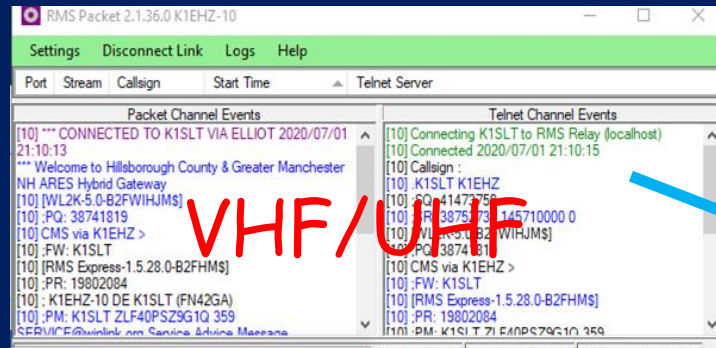
RMS Relay



RMS Trimode

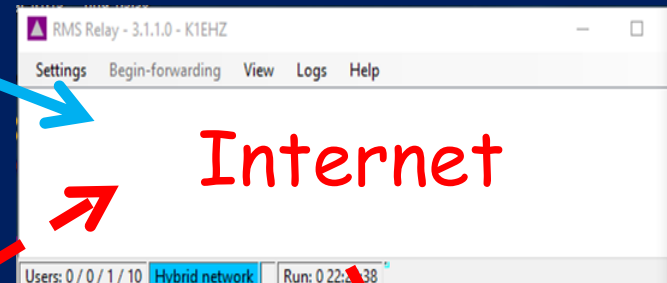
3 Programs Interact

When internet is available

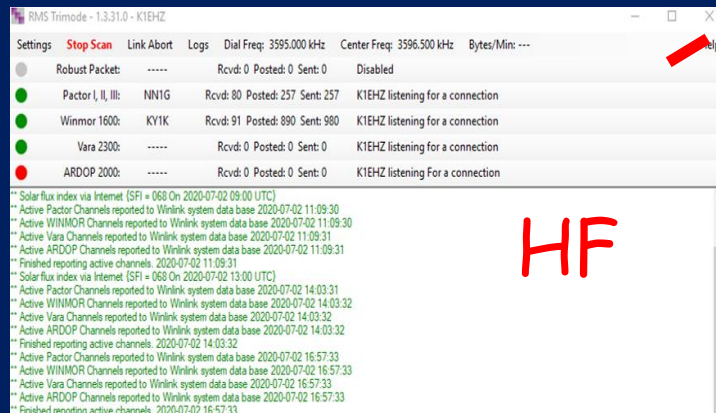


VHF/UHF

RMS Relay



Internet

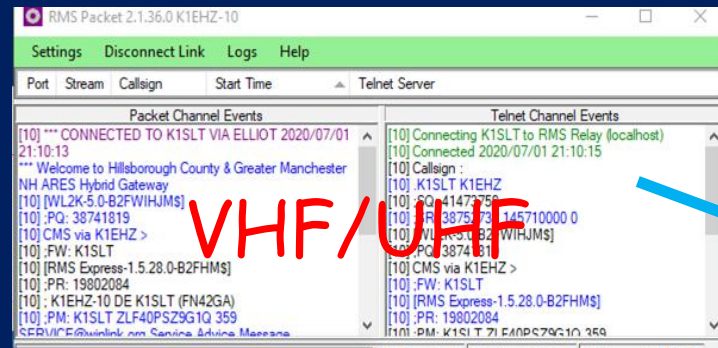


HF

To Internet

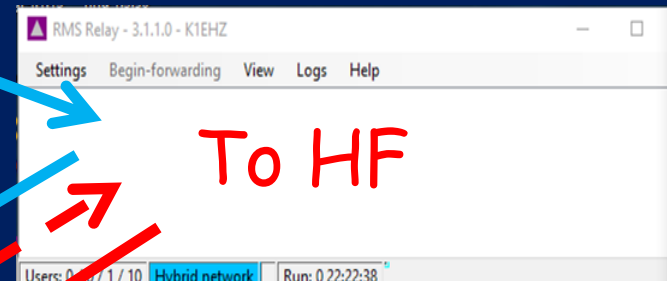
3 Programs Interact

When internet is not available

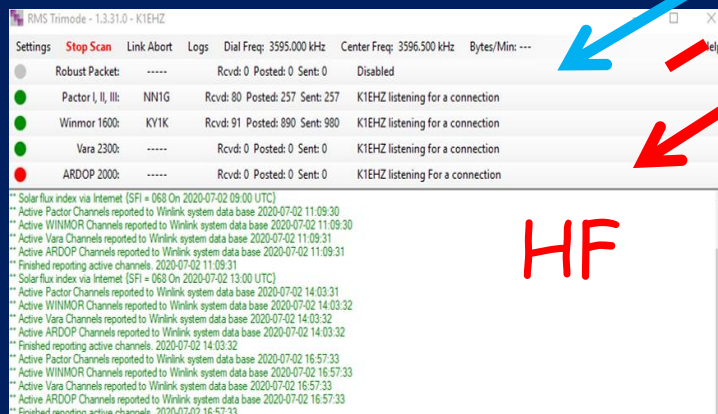


VHF/UHF

RMS Relay



To HF



HF

Auto-Forwarding

How does Auto-Forwarding work?

- Propagation forecast downloaded daily
- Software uses Reliability and Quality estimates in forecast to determine frequency and station for forwarding
- Software steps radio through calls to stations in decreasing order of Reliability and Quality until message is forwarded
- Pactor 2,3 have been the forwarding modes
- Pactor 4 used when FCC declares emergency
- New high-speed VARA mode may also be used for forwarding

Auto-Forwarding Propagation Forecast

Voice of America Coverage Area Prediction Model

Callsign	Frequency (kHz)	Mode	Grid Square	Hours	Group	Distance (mi)	Bearing (Degrees)	Path Reliability Estimate	Path Quality Estimate
W1EO	1845.000	P2, P1	FN42IM	00-23	PUBLIC	36	151	100	100
K1EHZ	3596.500	P3, P2, P1	FN42EX	00-23	PUBLIC	0	000	99	99
W1EO	3597.900	P3	FN42IM	00-23	PUBLIC	36	151	99	99
W1EO	7102.500	P3	FN42IM	00-23	PUBLIC	36	151	96	96
KQ4ET	7102.700	P3, P2, P1	FM16XU	00-23	PUBLIC	483	210	78	54
KQ4ET	7101.500	P3, P2, P1	FM16XU	00-23	PUBLIC	483	210	78	54
WD1O	3589.500	P3, P2, P1	FN53IX	00-23	PUBLIC	136	059	78	53
KC8YJJ	7102.500	P3, P2, P1	EN90PL	00-23	PUBLIC	498	253	78	54
VE1YZ	5405.000	P4, P3	FN84BQ	00-23	PUBLIC	403	070	76	52
AJ4FW	7103.700	P3, P2, P1	FM07BC	00-23	PUBLIC	595	230	74	50
W6IDS	7084.500	P2	EM79NV	00-23	PUBLIC	717	257	67	45
W6IDS	7061.500	P2	EM79NV	00-23	PUBLIC	717	257	67	45
W3JY	3591.000	P3, P2, P1	FN20FA	00-23	PUBLIC	287	226	63	44
N2LEE	7102.000	P3, P2, P1	FM18HX	00-23	PUBLIC	407	229	63	47
VE1YZ	7096.500	P4, P3	FN84BQ	00-23	PUBLIC	403	070	62	46
N3HYM-10	7102.500	P3, P2, P1	FM19FK	00-23	PUBLIC	392	233	61	46

Reliability = % Time Path SNR meets or exceeds Required SNR

Auto-Forwarding Propagation Forecast

Voice of America Coverage Area Prediction Model

Callsign	Frequency (kHz)	Mode	Grid Square	Hours	Group	Distance (mi)	Bearing (Degrees)	Path Reliability Estimate	Path Quality Estimate
W1EO	1845.000	P2, P1	FN42IM	00-23	PUBLIC	36	151	100	100
K1EHZ	3596.500	P3, P2, P1	FN42EX	00-23	PUBLIC	0	000	99	99
W1EO	3597.900	P3	FN42IM	00-23	PUBLIC	36	151	99	99
W1EO	7102.500	P3	FN42IM	00-23	PUBLIC	36	151	96	96
KQ4ET	7102.700	P3, P2, P1	FM16XU	00-23	PUBLIC	483	210	78	54
KQ4ET	7101.500	P3, P2, P1	FM16XU	00-23	PUBLIC	483	210	78	54
WD1O	3589.500	P3, P2, P1	FN53IX	00-23	PUBLIC	136	059	78	53
KC8YJJ	7102.500	P3, P2, P1	EN90PL	00-23	PUBLIC	498	253	78	54
VE1YZ	5405.000	P4, P3	FN84BQ	00-23	PUBLIC	403	070	76	52
AJ4FW	7103.700	P3, P2, P1	FM07BC	00-23	PUBLIC	595	230	74	50
W6IDS	7084.500	P2	EM79NV	00-23	PUBLIC	717	257	67	45
W6IDS	7061.500	P2	EM79NV	00-23	PUBLIC	717	257	67	45
W3JY	3591.000	P3, P2, P1	FN20FA	00-23	PUBLIC	207	226	63	44
N2LEE	7102.000	P3, P2, P1	FM18HX	00-23	PUBLIC	407	229	63	47
VE1YZ	7096.500	P4, P3	FN84BQ	00-23	PUBLIC	403	070	62	46
N3HYM-10	7102.500	P3, P2, P1	FM19FK	00-23	PUBLIC	392	233	61	46

Reliability = % Time Path SNR meets or exceeds Required SNR

Pactor Connection with N2LEE (VA)

RMS Trimode - 1.3.31.0 - K1EHZ

Settings	Start Scan	Link Abort	Logs	Dial Freq: 3595.000 kHz	Center Freq: 3596.500 kHz
<input type="radio"/>	Robust Packet:	-----		Rcvd: 0 Posted: 0 Sent: 0	Disabled
<input checked="" type="radio"/>	Pactor I, II, III:	N2LEE		Rcvd: 316 Posted: 712 Sent: 656	P3 200 Sending ARQ Repeating
<input type="radio"/>	Winmor 1600:	-----		Rcvd: 0 Posted: 0 Sent: 0	Blocked
<input type="radio"/>	Vara 2300:	-----		Rcvd: 0 Posted: 0 Sent: 0	Blocked
<input type="radio"/>	ARDOP 2000:	-----		Rcvd: 0 Posted: 0 Sent: 0	Blocked

*** Pactor 2 connect from N2LEE on 7102.00 KHz at 2020-07-13 13:13:40 UTC *****

RMS Trimode 1.3.31.0 Dropping Support for WINMOR on Aug 1st - Please use VARA 4.0 or ARDOP

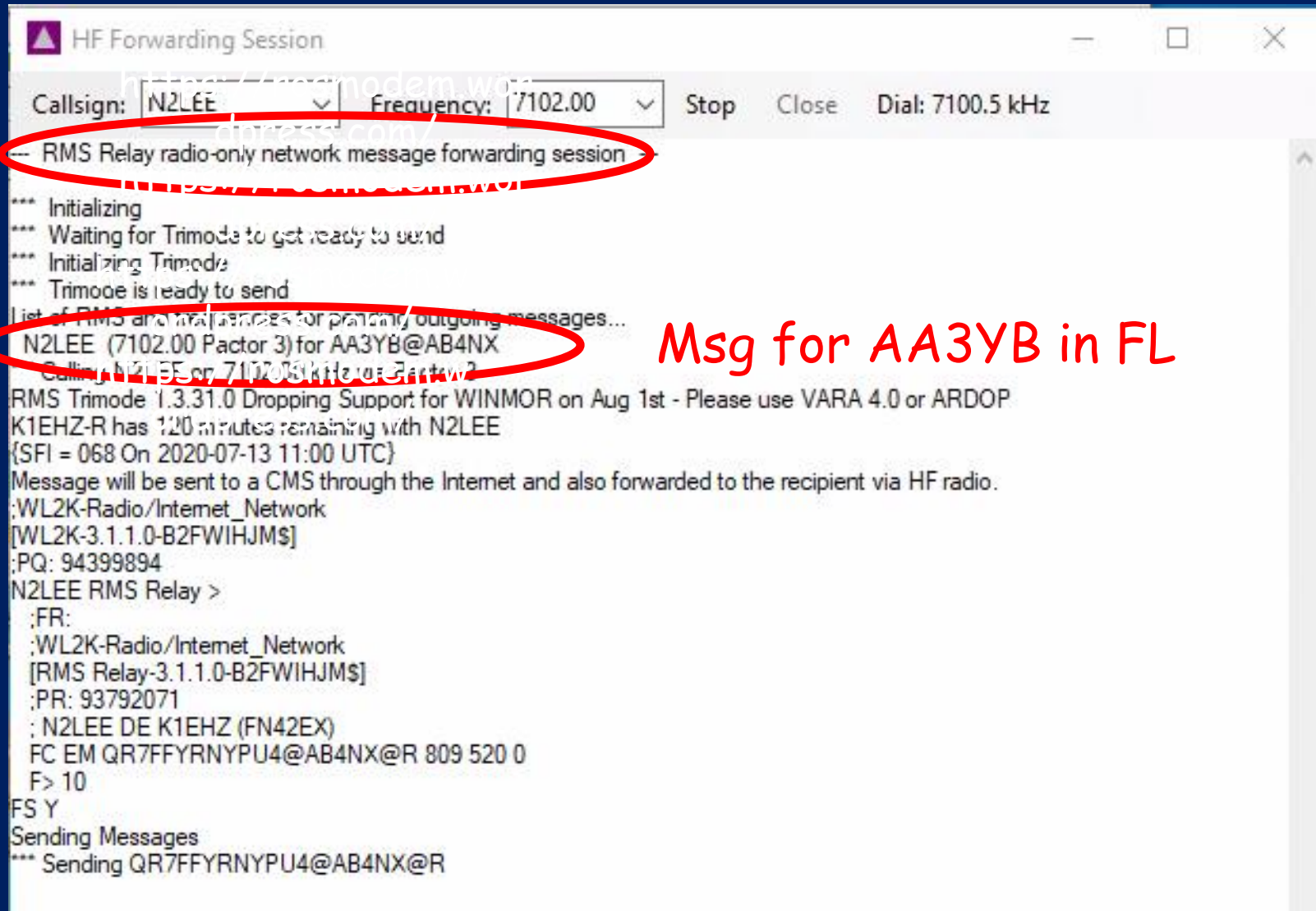
K1EHZ-R has 120 minutes remaining with N2LEE

Message will be sent to a CMS through the Internet and also forwarded to the recipient via HF radio.

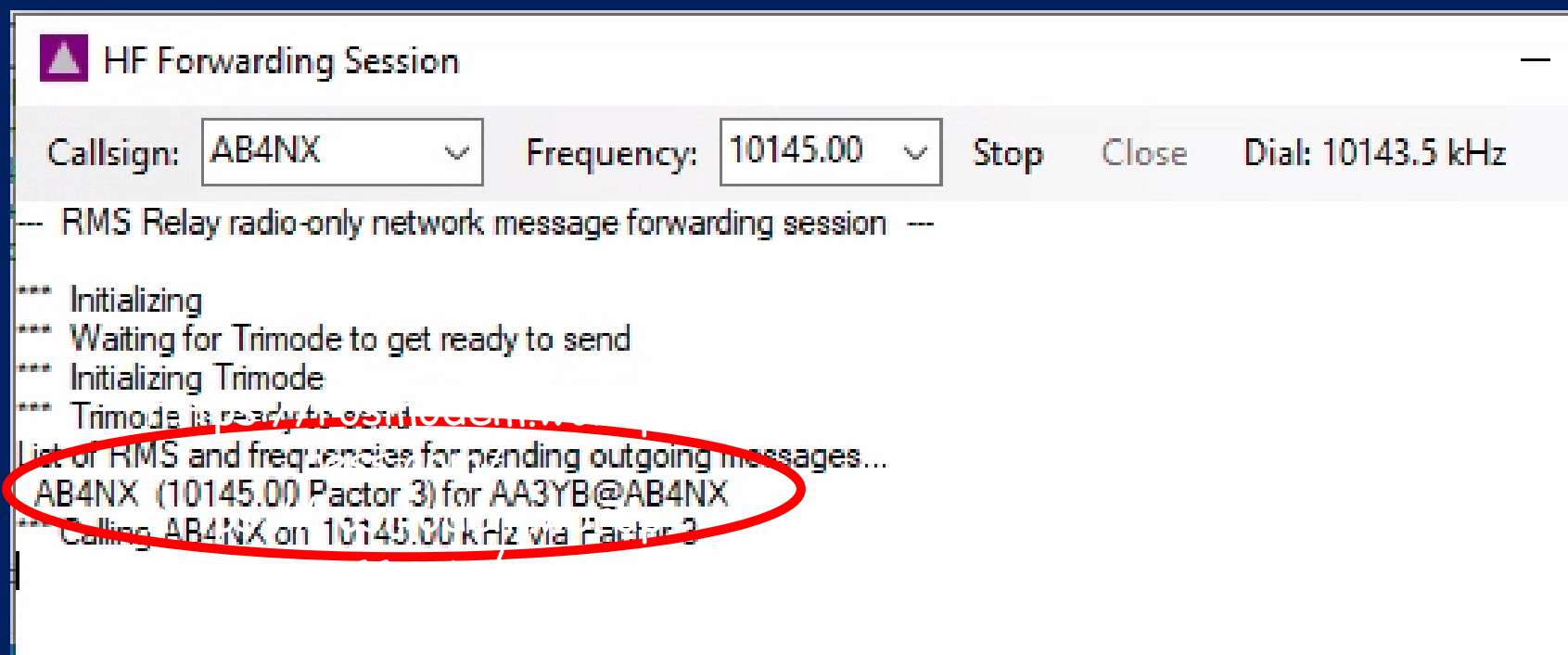
;WL2K-Radio/Internet_Network
[WL2K-3.1.1.0-B2FWIHJM\$]
;PQ: 94399894
N2LEE RMS Relay >

;FR:
;WL2K-Radio/Internet_Network
[RMS Relay-3.1.1.0-B2FWIHJM\$]
;PR: 93792071
; N2LEE DE K1EHZ (FN42EX)
FC EM QR7FFYRNYP4@AB4NX@R 809 520 0
F> 10
FS Y
[Transferring binary data to Pactor TNC]

Radio-only Message for AA3YB on 7102 KHz



Auto-Forwarding to AB4NX (GA) Message Pick-up Station on 10145 KHz

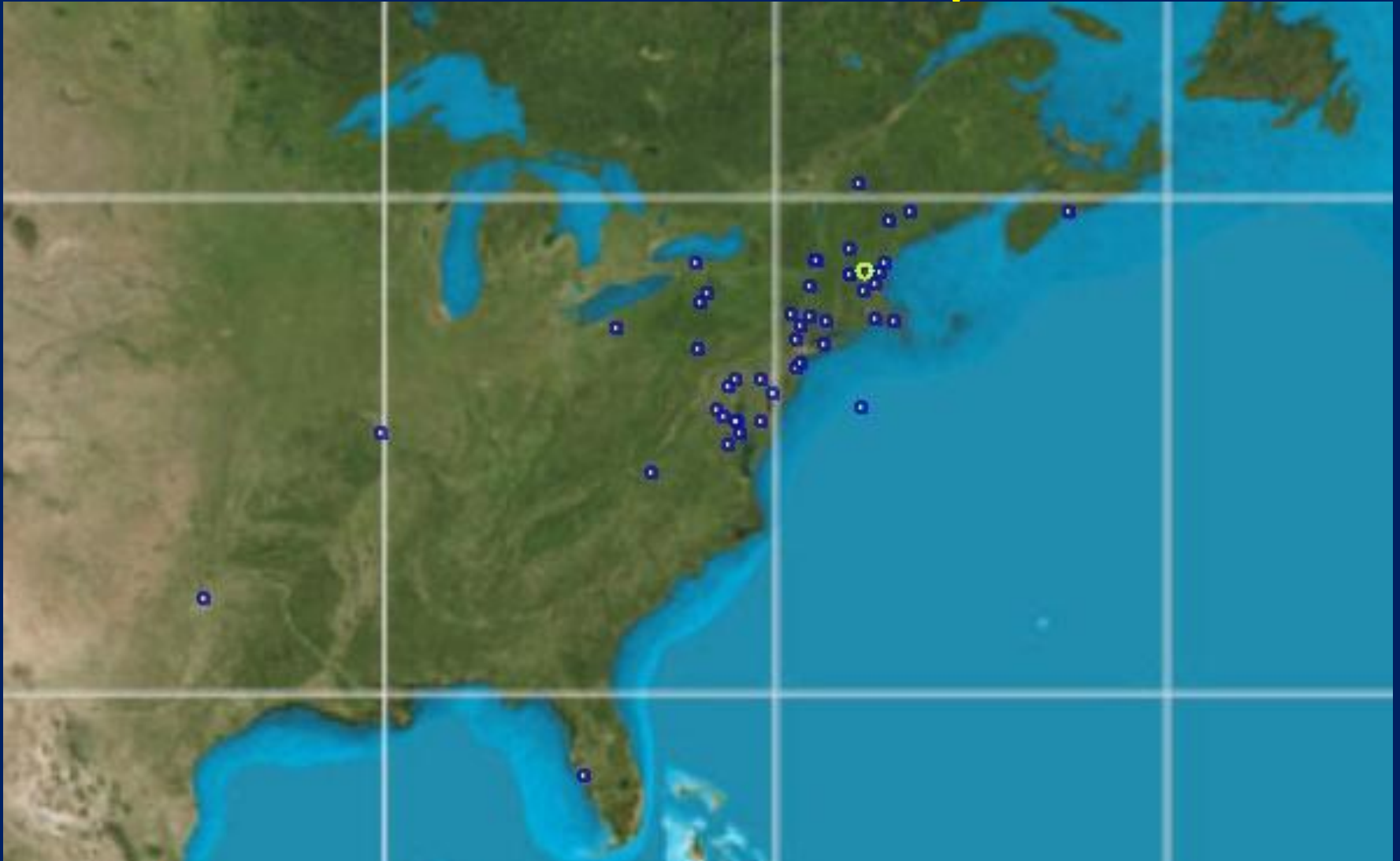


Winlink Mode Simulations - N5TW

PERFORMANCE VERSUS SNR: MPG

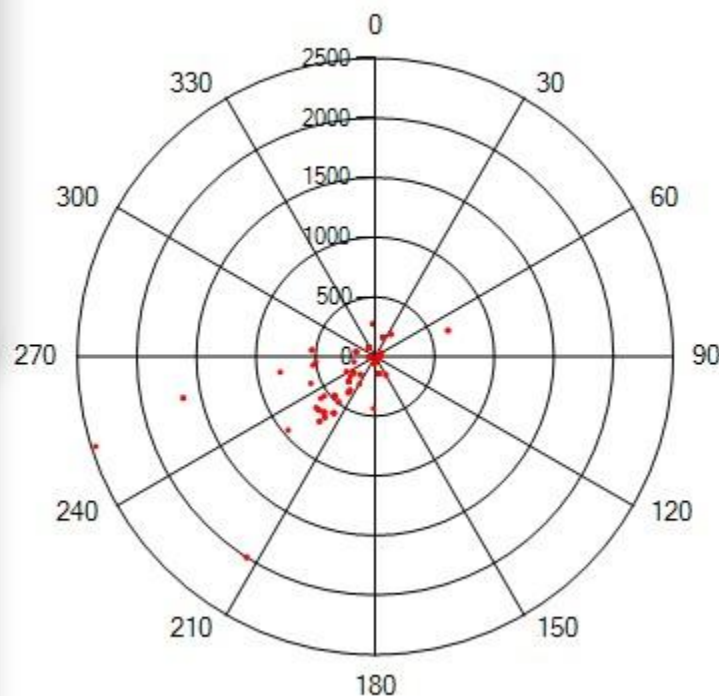
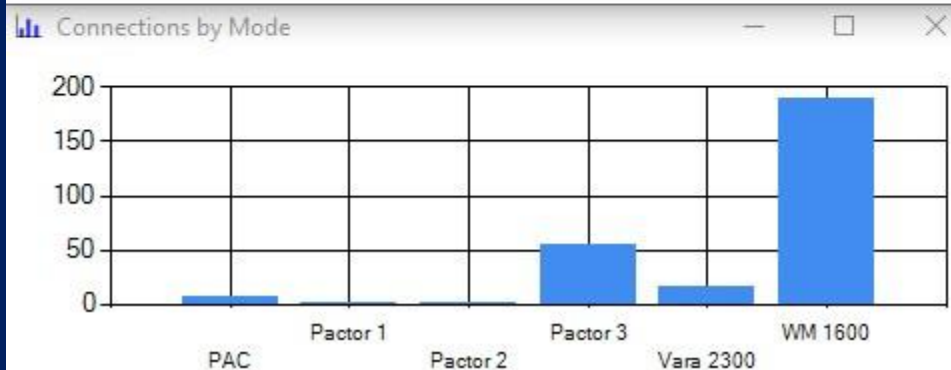
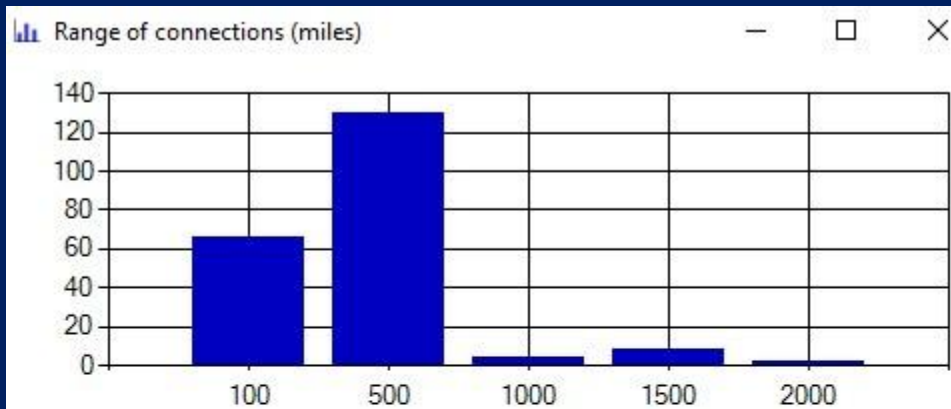


30-day Snapshot of Stations Using Our HF Gateway



30-day Snapshot of 80m Gateway Use

Intentionally NVIS for Regional Coverage



ARES Groups Use Our HF Gateway

- ARES groups in several states use our HF gateway for training, including check-in nets, sending net reminders and rosters to their ARES members, and doing radio-only messaging drills.
- FL, VA, MD, DE, OH, PA and NY ARES groups use the HF side weekly to monthly.
- WI and MI ARES groups use the HF side occasionally.
- AR and LA ARES used it once or twice.
- VA has state-wide Wednesday Winlink Check-in.

Importantly, if these groups can reach our gateway, we should be able to reach gateways in their areas if (when) the internet is out here.



Winlink Express

Key Features

Winlink Express

=

RMS Express

Winlink Express Client

Winlink Express 1.5.30.0 - K1EHZ

K1EHZ Settings Message Attachments Move To: Saved Items Delete Open Session: Packet Winlink Logs Help

No active session...

	Date/Time	Message ID	Size	Source	Sender	Recipient	Subject
Inbox (0 unread)	2020/06/30 19:57	66C45627YU19	241	NF1L	NF1L	K1EHZ...	Winlink Wednesday Net
Read Items (0)	2020/06/19 05:21	W3G01JMHQSV	161	W1EAA	W1EAA	K1EHZ	test chromebook
Outbox (0)	2020/06/19 05:18	235W07D0PU36	172	W1EAA	W1EAA	K1EHZ	test chromebook
Sent Items (95)	2020/06/19 00:40	0WG7K2EYLVQU	332	NF1L	NF1L	W1EAA...	Winlink Wednesday Net
Saved Items (76)	2020/06/11 17:47	2EGMMI T4I W21	206	K411IN	K411IN	K1EHZ	Test
Deleted Items (1)							
Drafts (0)							

System Folders

Personal Folders

Global Folders

Contacts

USERS

Message ID: F1029DXLBSGM
 Date: 2020/03/02 16:46
 From: N5EI
 To: AB1AV; AB1ST; K1ACL; K1CHR; K1CMD; K1FDP; K1HIL; K1MHT; K1MWV; K1NCS; K1PJS; K1ROC; K1SGA; K1STF; K1WRK; K1VGM; KB1CFL; KD1TD; KL1WD; N1AMD; N1CKM; N1GB; N1MEO; N1RCQ; W1CEN
 Cc: W1COS; W1CPL; W1GRF; W1MHT; W1PID; W1ROC; W1RTM; W1SEC; W1SUL; WA1OEZ; WA1YZN; WA1ZCN; WQ2H; WX1GYX; K1EHZ; KA1TWX; KB1SWW; KB8RPO; KC3DOW; NK1N; WB2GAI; KB1NEK; K3EUI; KB3SAR; KC3JUD; K1CFI; W1WNS; K3SKS; K3BFP
 Source: N5EI
 Downloaded-from: Telnet:CMS-SSL
 Subject: Quarterly Test of Winexpress Capability

All NHDN users.
 This is a test of your WinExpress capability and attention to your WinExpress mail.

Please respond with the SUM of 3, 5, and 7.

We will use the results for WinExpress peer to peer traffic generation.

73,
 Ed N5ET

Operating Modes

- Telnet Winlink
- Packet Winlink
- Pactor Winlink
- Robust Packet Winlink
- Winmor Winlink
- Ardop Winlink
- Vara HF Winlink
- Vara FM Winlink
- Iridium GO Winlink
-
- Packet P2P
- Pactor P2P
- Robust Packet P2P
- Winmor P2P
- Ardop P2P
- Vara P2P
- Vara FM P2P
- Telnet P2P
-
- Pactor Radio-only

- Vara HF Winlink
- Vara FM Winlink
- Iridium GO Winlink
-
- Packet P2P
- Pactor P2P
- Robust Packet P2P
- Winmor P2P
- Ardop P2P
- Vara P2P
- Vara FM P2P
- Telnet P2P
-
- Pactor Radio-only
- Winmor Radio-only
- Vara Radio-only
- Telnet Radio-only
-
- Telnet Post Office

Operating Modes

Packet Winlink
Pactor Winlink
Robust Packet Winlink
Winmor Winlink
Ardop Winlink
Vara HF Winlink
Vara FM Winlink
Iridium GO Winlink

Packet P2P
Pactor P2P
Robust Packet P2P
Winmor P2P
Ardop P2P
Vara P2P
Vara FM P2P
Telnet P2P

Pactor Radio-only



**Modes for Connecting
to Radio Message
Servers over the air**

Operating Modes

Peer-to-Peer
(Point-to-Point)
Modes
Don't Need
Radio Message
Servers or
Internet



Telnet Winlink	▼
Vara HF Winlink	▲
Vara FM Winlink	
Iridium GO Winlink	

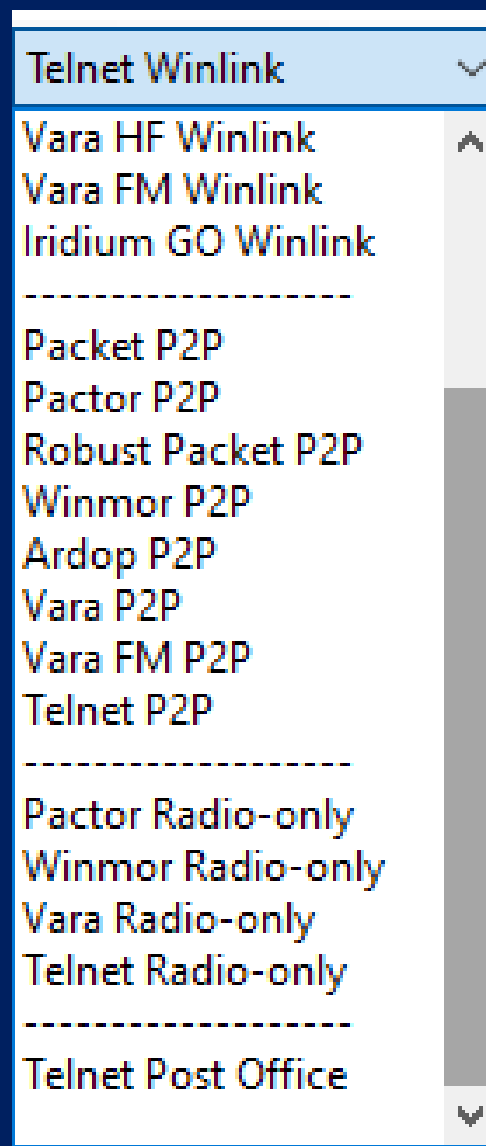
Packet P2P	
Pactor P2P	
Robust Packet P2P	
Winmor P2P	
Ardop P2P	
Vara P2P	
Vara FM P2P	
Telnet P2P	

Pactor Radio-only	
Winmor Radio-only	
Vara Radio-only	
Telnet Radio-only	

Telnet Post Office	▼

Operating Modes

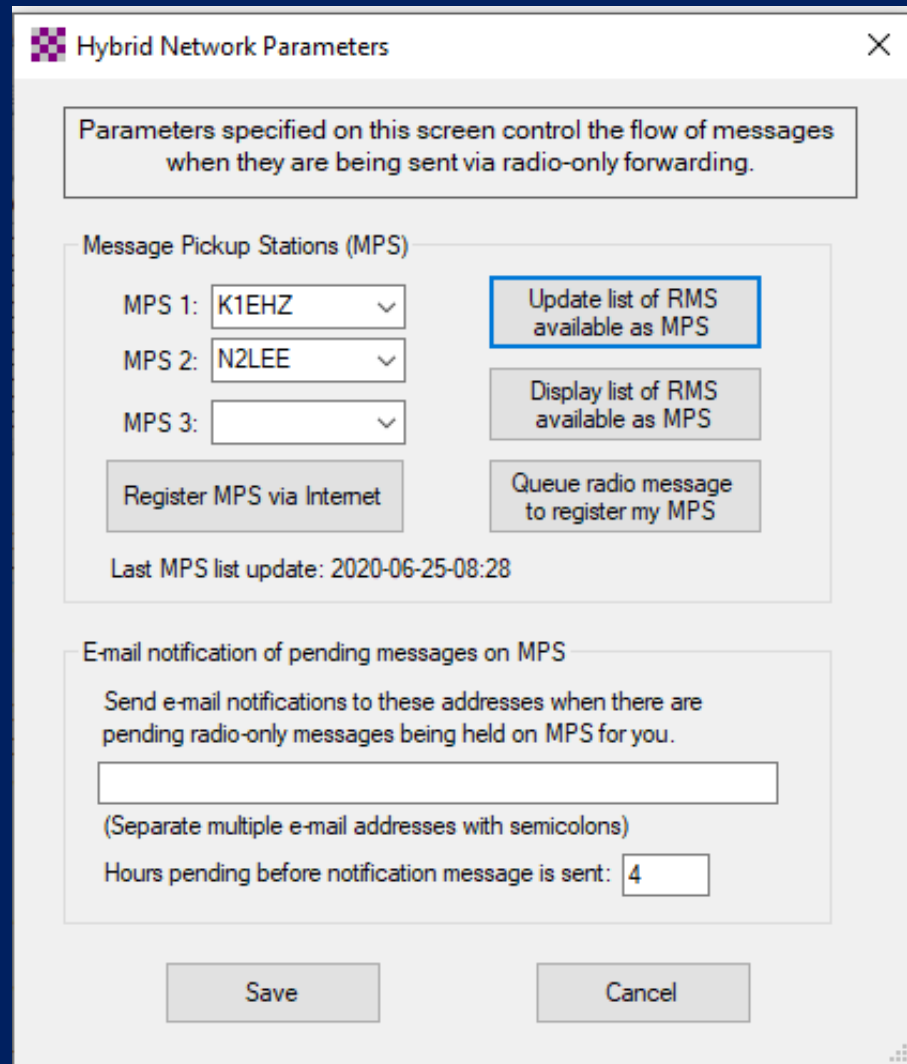
Radio-only Modes
Don't Need
Internet



Message Pick-up Stations

During internet outage we still need a place to drop-off & pick-up email

Radio Message
Severs on the
Hybrid Network
Have Built-in
Post Offices



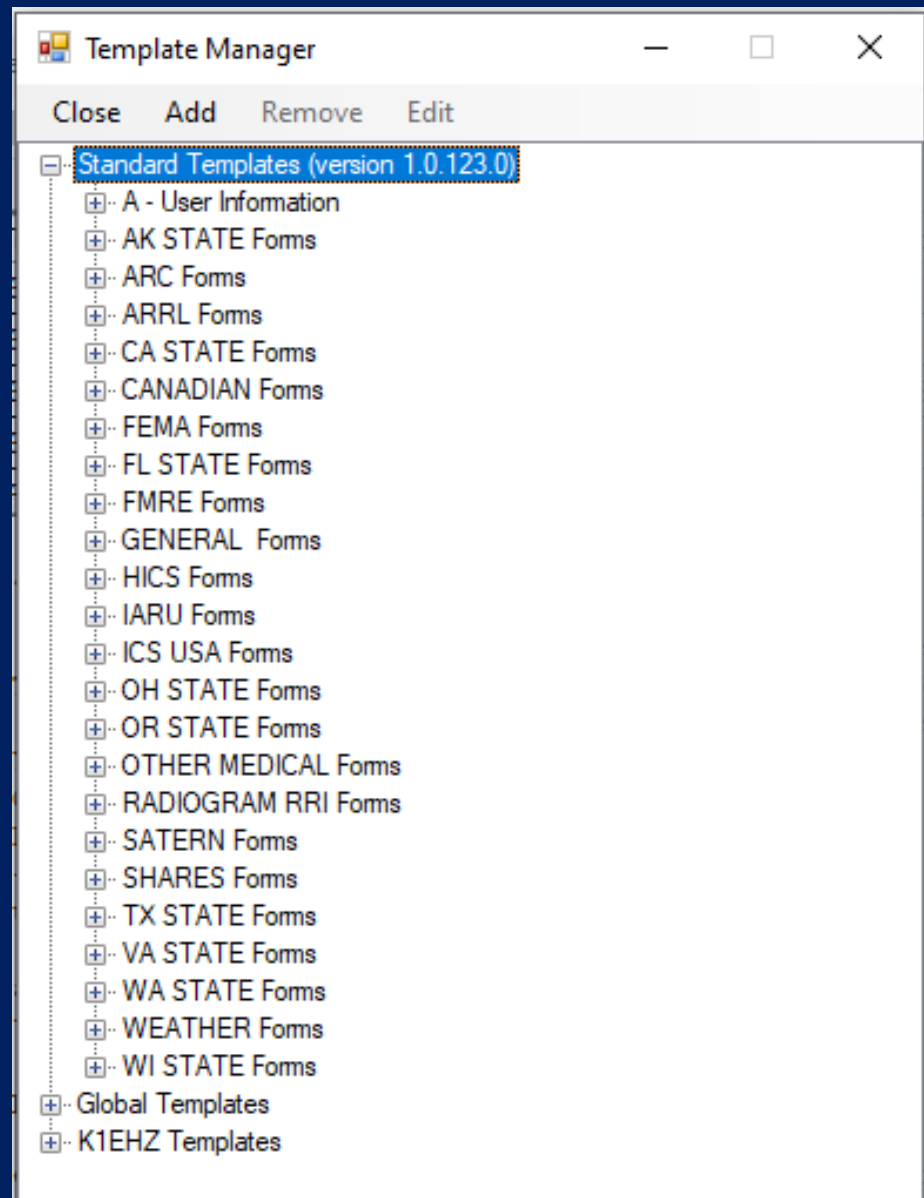
The screenshot shows a software window titled "Hybrid Network Parameters" with a close button (X) in the top right corner. Inside the window, there is a text box stating: "Parameters specified on this screen control the flow of messages when they are being sent via radio-only forwarding."

Below this is a section titled "Message Pickup Stations (MPS)". It contains three dropdown menus labeled "MPS 1:", "MPS 2:", and "MPS 3:". The first two are set to "K1EHZ" and "N2LEE" respectively. To the right of these are two buttons: "Update list of RMS available as MPS" (highlighted with a blue border) and "Display list of RMS available as MPS". Below the dropdowns are two more buttons: "Register MPS via Internet" and "Queue radio message to register my MPS". At the bottom of this section, it says "Last MPS list update: 2020-06-25-08:28".

Below the MPS section is another section titled "E-mail notification of pending messages on MPS". It contains a text box with the instruction: "Send e-mail notifications to these addresses when there are pending radio-only messages being held on MPS for you." Below this is a text input field. Underneath the field, it says "(Separate multiple e-mail addresses with semicolons)". At the bottom of this section, there is a label "Hours pending before notification message is sent:" followed by a text input field containing the number "4".

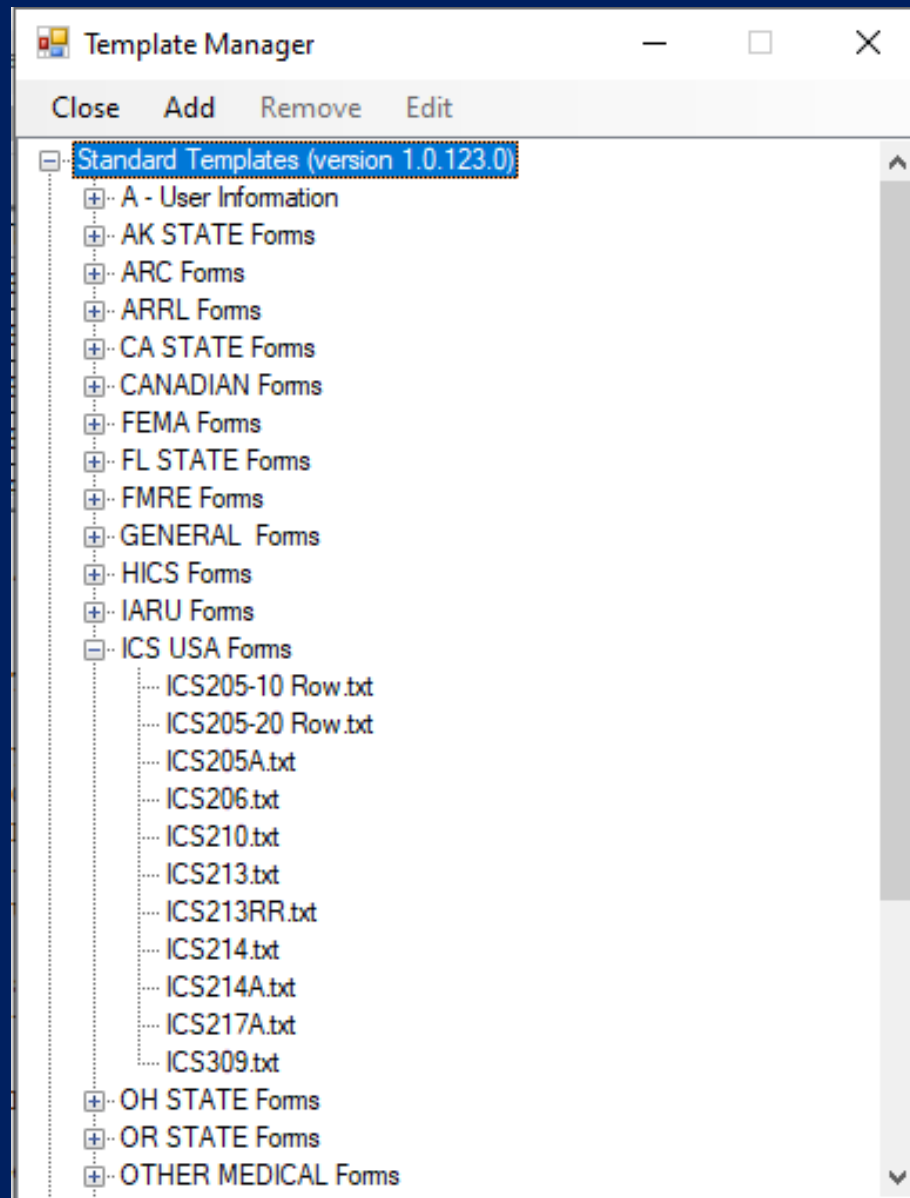
At the very bottom of the window are two buttons: "Save" and "Cancel".

Standard Forms



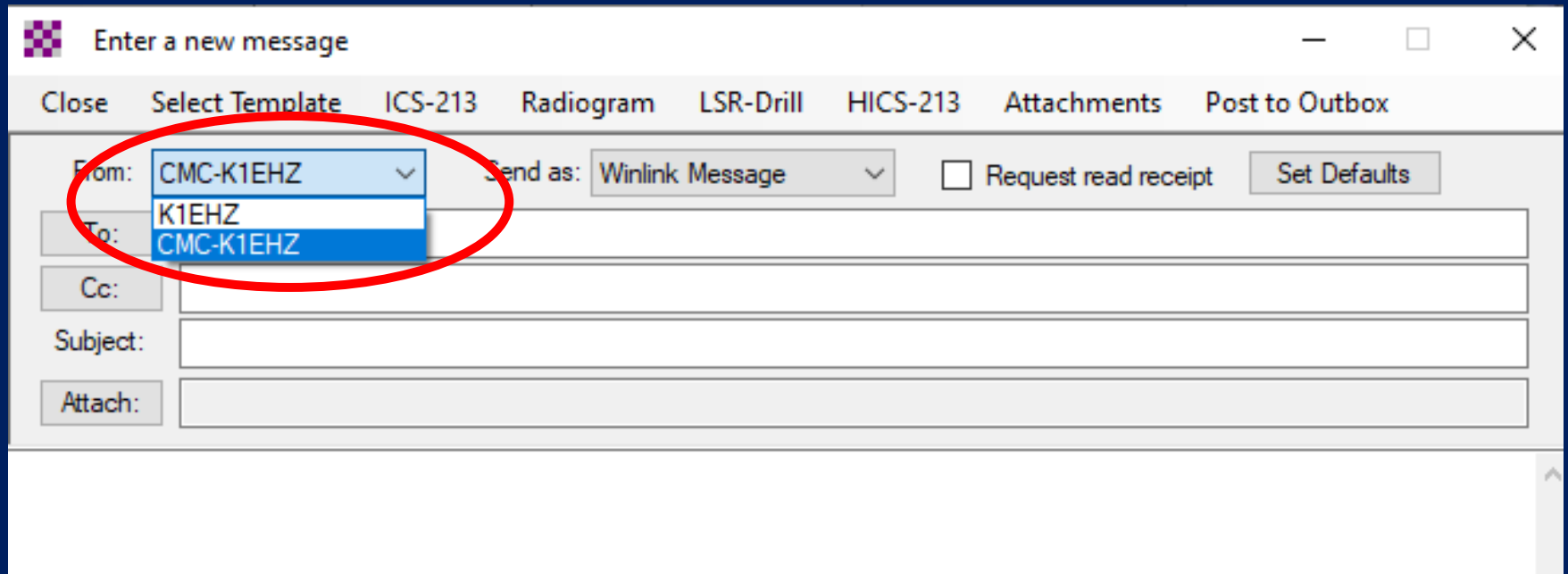
Standard Forms

ICS
Forms



Message Form

FCC or Tactical Callsign Address



The screenshot shows a software window titled "Enter a new message" with standard window controls (minimize, maximize, close). Below the title bar is a menu bar with the following items: "Close", "Select Template", "ICS-213", "Radiogram", "LSR-Drill", "HICS-213", "Attachments", and "Post to Outbox". The main form area contains several fields: "From:", "To:", "Cc:", "Subject:", and "Attach:". The "From:" field has a dropdown menu open, showing three options: "CMC-K1EHZ" (highlighted in blue), "K1EHZ", and "CMC-K1EHZ". A red circle is drawn around the "From:" field and its dropdown menu. To the right of the "From:" field is a "Send as:" dropdown menu set to "Winlink Message", a checkbox for "Request read receipt" which is unchecked, and a "Set Defaults" button.

Enter a new message

Close Select Template ICS-213 Radiogram LSR-Drill HICS-213 Attachments Post to Outbox

From: CMC-K1EHZ ▼
K1EHZ
CMC-K1EHZ

To:

Cc:

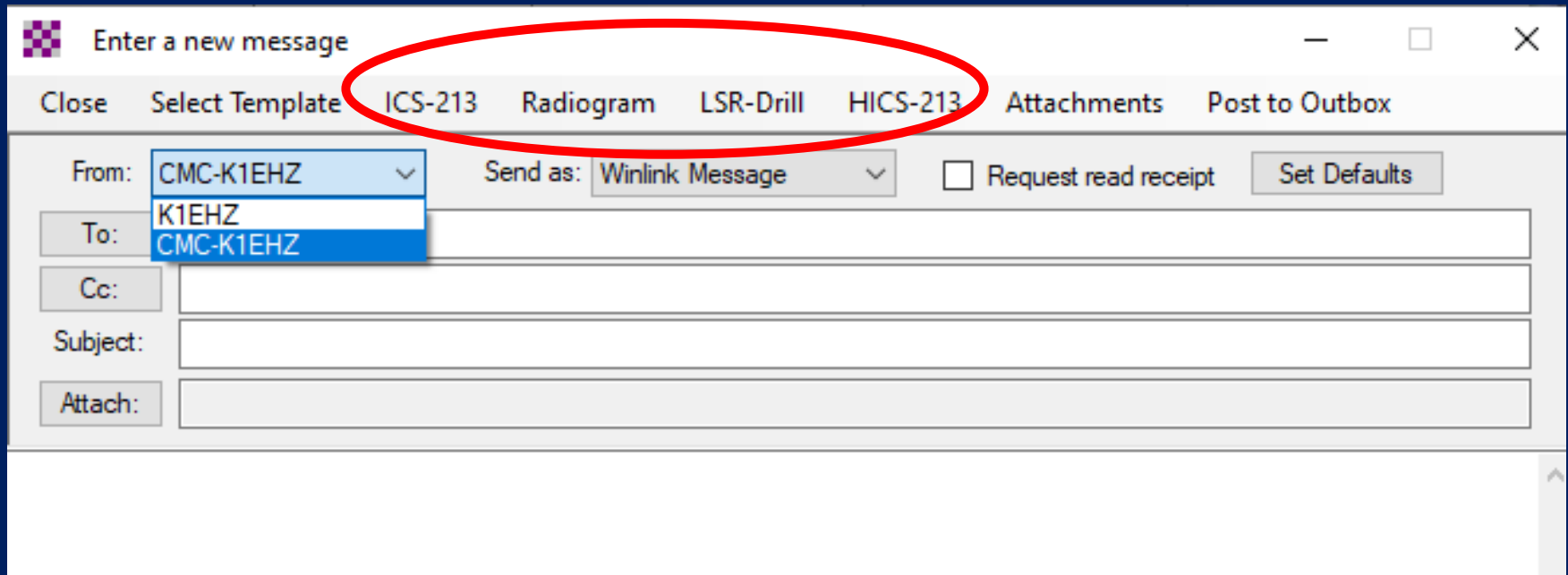
Subject:

Attach:

Send as: Winlink Message ▼ ☐ Request read receipt Set Defaults

Message Form

Favorite Message Templates



The screenshot shows a 'Enter a new message' window. A red circle highlights the 'Select Template' button and its dropdown menu. The dropdown menu is open, showing three options: 'K1EHZ', 'CMC-K1EHZ', and 'CMC-K1EHZ'. The 'From' field is set to 'CMC-K1EHZ'. The 'Send as' field is set to 'Winlink Message'. The 'Request read receipt' checkbox is unchecked. The 'Set Defaults' button is visible. The 'To', 'Cc', 'Subject', and 'Attach' fields are empty.

Enter a new message

Close Select Template ICS-213 Radiogram LSR-Drill HICS-213 Attachments Post to Outbox

From: CMC-K1EHZ

Send as: Winlink Message ☐ Request read receipt Set Defaults

To: K1EHZ
CMC-K1EHZ

Cc:

Subject:

Attach:


ICS-213 Template Like Custom Forms in NBEMS

General Message (ICS 213)			
Load ICS213 INITIAL Data		Form Instructions	
1. Incident Name: <input type="text" value="Incident name is optional"/>			
2. To (Name/Position): <input type="text"/>			
3. From (Name/Position): <input type="text"/>			
4. Subject: <input type="text"/>		5. Date: <input type="text" value="2020-06-24"/>	6. Time: <input type="text" value="12:05"/>
7. Message: <div><div>Be Brief and Concise</div><div></div></div>			
8. Approved by: <input type="text"/>		Position / Title: <input type="text"/>	
Save ICS213 INITIAL Data	Submit	Reset Form	Ver 41.3

Radiogram Like Custom Forms in NBEMS

Amateur Radio RADIOGRAM Text Creator Read Help and Instructions!						
Number <input type="text" value="20"/> <input type="checkbox"/> SVC (If and/or use)	Precedence R EMERGENCY P W <small>Emergency not to use at this time.</small>	Handling Instructions NONE FOA FOO Add Help ADD MORE PK INFO	Station Of Origin K1GHC <small>Change if not you.</small>	Check <input type="text" value="0"/>	Place of Origin <input type="text"/>	Time <input type="text" value="Optional"/> Date <input type="text" value="JUN 24"/> <input type="radio"/> UTC Time <input type="radio"/> Local Time <input checked="" type="radio"/> No Time
TO: Name: <input type="text" value="FIRST AND LAST NAME MINIMUM"/> Call Sign: <input type="text" value="IF ANY OR KNOWN"/> Address: <input type="text" value="OPTIONAL"/> City / Town: <input type="text" value="VERIFY YOUR SPELLING"/> State or Province: <input type="text" value="ST"/> Learn Codes Zip: <input type="text" value="USA/CAN"/> Country: <input type="text" value="OPTIONAL"/> Phone: <input type="text" value="555 555 5555"/> Extension: <input type="text" value="Rx ONLY"/> E-mail: <input type="text" value="NEED EMAIL, PHONE, OR BOTH TO ENSURE DELIVERY"/> Op Note about this Radiogram: <input type="text" value="OPTIONAL - KEEP IT SHORT!"/>						
MESSAGE TEXT Check: <input type="text" value="0"/> Ask Message Numbers Help <div>SUGGESTION IS NO MORE THAN 25 GROUPS (WORDS)</div> <div><input type="text"/></div> <div>Click here to preview for accuracy BEFORE you SUBMIT</div>						
Signature (name) of person for whom message originated: <input type="text" value="PERSON WHO ORIGINATED THIS MESSAGE"/> Operator Note: <input type="text" value="OPTIONAL - KEEP IT SHORT!"/>						
*** NEW! MARK HTML and select a known Station *** <input type="text" value="YOU MAY ENTER ANY ADDRESS HERE"/> <input type="button" value="Submit"/> <input type="button" value="Reset Form"/> Contact K1GHC about this form Ver 10						

Easily Print ICS-309 Log

 Generate ICS-309 Communication Log

Generate an ICS-309 Communication Log as a pdf File

Select Message Mailboxes

<input checked="" type="checkbox"/> Inbox	<input type="checkbox"/> Outbox	<input type="checkbox"/> Drafts	<input type="checkbox"/> Personal 1: <input type="text"/>
<input checked="" type="checkbox"/> Read	<input checked="" type="checkbox"/> Sent	<input type="checkbox"/> Deleted	<input type="checkbox"/> Personal 2: <input type="text"/>
<input checked="" type="checkbox"/> Saved			<input type="checkbox"/> Global: <input type="text"/>

Message Date Range

<input checked="" type="checkbox"/> Limit start date/time:	<input type="text" value="2018-10-01"/>	<input type="text" value="09:43"/>	(Local time)
<input checked="" type="checkbox"/> Limit end date/time:	<input type="text" value="2019-09-13"/>	<input type="text" value="09:43"/>	(Local time)

Page Layout Options

☐ Separate entry for each recipient
☒ Combine recipients into a single entry

Format of Dates on Report

☐ UTC time

Task ID:

Task Name:

Operational period:

Operator name:

Station ID:

Output pdf file:

Easily Print ICS-309 Log

COMMUNICATIONS LOG		TASK # Combined Entry Log		DATE PREPARED: 06/24/20 TIME PREPARED: 11:50	
OPERATIONAL PERIOD # 11/14/2018 to 9/16/2019			TASK NAME: Winlink Training		
RADIO OPERATOR NAME: jt			STATION ID: K1EHZ		
LOG					
TIME	FROM	TO	SUBJECT		
10/01/18 13:49	KA1UN	K1EHZ	//WL2K ELH		
10/01/18 18:23	W1EAA	K1EHZ	//WL2K winlink		
10/03/18 17:13	K1EHZ	KA1UN W1EAA K1EHZ	//WL2K Digipeater Test Message		
10/03/18 17:17	K1EHZ	KA1UN W1EAA K1EHZ	//WL2K Digipeater Test Message #2		
10/03/18 17:33	KA1UN	K1EHZ	//WL2K Test		
10/03/18 17:40	K1EHZ	KA1UN	Re: //WL2K Test		
10/04/18 10:23	W1EAA	K1EHZ	//WL2K digipeater		
10/10/18 08:48	WQ2H	K1EHZ	//WL2K Test for Pactor		
10/10/18 10:28	K1EHZ	WQ2H	ACK: //WL2K Test for Pactor		
10/18/18 19:07	K1EHZ	KA1UN jtafh@comcast.net	//WL2K Winlink by HT		
10/18/18 20:43	KA1UN	K1EHZ	//WL2K Update		
10/20/18 09:11	jtafh@comcast.net	K1EHZ	Test message 1		
10/25/18 09:24	K1EHZ	jtafh@comcast.net	//WL2K Test Attachment		
10/25/18 09:25	K1EHZ	jtafh@comcast.net	//WL2K Attachment Test		
10/25/18 13:21	K1EHZ	jtafh@comcast.net	//WL2K Attachment test		
10/25/18 13:50	K1EHZ	KA1UN ham1radio@comcast.net	//WL2K Test sending attachment		
10/25/18 19:28	WA1QBY	K1EHZ	//WL2K test		
10/27/18 17:12	K1EHZ	jtafh@comcast.net	//WL2K Test ICS213 Attachment		
10/27/18 17:16	K1EHZ	jtafh@comcast.net	//WL2K Attachment Test ICS213		
10/29/18 11:08	W1EAA	K1EHZ	//WL2K pactor		
10/29/18 13:04	K1EHZ	W1EAA f8doc@comcast.net	Re: //WL2K pactor		
10/29/18 15:53	K1EHZ	N1MEO	//WL2K Welcome to Winlink!		
10/31/18 14:53	K1EHZ	jtafh@comcast.net	//WL2K Test thru to HF		
10/31/18 14:57	K1EHZ	jtafh@comcast.net	//WL2K Test message 2 thru HF gateway		
10/31/18 15:24	K1EHZ	jtafh@comcast.net	//WL2K Test Message 3		
11/02/18 13:52	N1MEO	K1EHZ	TEST		
11/02/18 22:20	K1EHZ	N1MEO k1ehz@arrl.net	//WL2K Re: TEST		
11/13/18 08:08	K1EHZ	NF1L	//WL2K Nashua Digipeater		
11/14/18 08:34	NF1L	K1EHZ	Re: //WL2K Digipeater Order		
11/14/18 09:46	K1EHZ	NF1L	Re: //WL2K Digipeater Order		
11/14/18 10:19	K1EHZ	NF1L	//WL2K Gateway Test		
11/14/18 10:58	K1EHZ	NF1L	//WL2K HF Forwarding		

Easily Print ICS-309 Log

COMMUNICATIONS LOG		TASK # Combined Entry Log		DATE PREPARED: 06/24/20 TIME PREPARED: 11:50
OPERATIONAL PERIOD # 11/14/2018 to 9/16/2019			TASK NAME: Winlink Training	
RADIO OPERATOR NAME: jlt			STATION I.D. K1EHZ	
LOG				
TIME	FROM	TO	SUBJECT	
10/01/18 13:49	KA1IJN	K1EHZ	//WL2K ELH	
10/01/18 18:23	W1EAA	K1EHZ	//WL2K winlink	
10/03/18 17:13	K1EHZ	KA1IJN W1EAA K1EHZ	//WL2K Digipeater Test Message	
10/03/18 17:17	K1EHZ	KA1IJN W1EAA K1EHZ	//WL2K Digipeater Test Message #2	
10/03/18 17:33	KA1IJN	K1EHZ	//WL2K Test	
10/03/18 17:40	K1EHZ	KA1IJN	Re: //WL2K Test	
10/04/18 10:23	W1EAA	K1EHZ	//WL2K digipeater	
10/10/18 08:48	WQ2H	K1EHZ	//WL2K Test for Pactor	
10/10/18 10:28	K1EHZ	WQ2H	ACK: //WL2K Test for Pactor	
10/18/18 19:07	K1EHZ	KA1IJN jltaft@comcast.net	//WL2K Winlink by HT	
10/18/18 20:43	KA1IJN	K1EHZ	//WL2K Update	
10/20/18 09:11	jltaft@comcast.net	K1EHZ	Test message 1	

Potential Training Opportunities

- Assistance setting up Winlink
 - Help Individuals by Phone - K1EHZ
 - Small Group Workshops by Zoom - K1EHZ
- Wednesday Winlink Net Check-in
 - Email NF1L@winlink.org by HF, VHF, or UHF
 - Email K1EHZ@winlink.org by Winlink Express Telnet
- Quarterly Winlink Email Test - AI1R
- Radio Messaging Drills via Local Post Office
- Radio Messaging with other ARES Groups
- SET - NBEMS \longleftrightarrow Winlink messages
- You will come up with more training ideas

Winlink System Summary

- ✓ Local, regional & global coverage
- ✓ System is mature & software is well-supported
- ✓ Complements NBEMS & uses same hardware
- ✓ Access mail by VHF, HF, Telnet, Browser
- ✓ Expand coverage with digipeaters or repeaters
- ✓ Radio-only mail boxes when internet is out
- ✓ Automatic forwarding by HF radio
- ✓ Peer-to-Peer = Point-to-Point messaging
- ✓ Built-in message forms, reports, bulletins
- ✓ Modes for various band conditions
- ✓ Easily generates ICS-309 Message Logs

Watch Winlink Tutorials
by K4REF on YouTube

<https://www.youtube.com/user/K4REF/videos>

Contact Jay Taft at
k1ehz@arrl.net
for training / assistance

K6OLI Winlink Workshops
<https://vimeo.com/user107547861>

Hillsborough County Digital webpage
<http://k1hil.org/>



WINLINK

Global Radio Email®