Winlink Email

Newport County Radio Club

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Winlink is an Email system
That was first in use in the 1980s, and really took off around 2000

Just like traditional email systems…

- You can send and receive messages
- You can have attachments (size limited to about 120,000 bytes)
- You can run the Winlink email client (**Winlink Express**) on your Windows desktop attached to the public internet

There are more than 23,000 registered users!

But unlike traditional email…

- No public internet connection is required!
- You connect to gateways (machines that are on the public internet but have other connection methods like):
  - HF gateways 80/40/30/20
  - VHF gateways 2m/70cm
  - Mesh networks
  - Iridium satellites
- Many useful Emergency Communication Forms are BUILT-IN

Versatility comes with some limitations

- Messages are limited in size to around 120,000 bytes (built-in compression allows several times that size)
- This isn't a massive email system like Gmail – so messages don't exist forever (think days)
- Some RF channels, especially HF are slow!
  - HF speeds about 1000 to 4000 characters/minute
  - VHF speeds about 10 to 20 times faster
  - A typical 4K file might take 30 seconds to 2 minutes on HF (A 26K message came in this morning via 40-meter HF and took 6 minutes)

Given the limitations why use Winlink?

- Think of a disaster like a tornado. Cell phones and internet are down in the region.

- The area where communications have been disrupted is the "Donut Hole".   This might be a few tens or hundreds of square miles

- Surrounding that hole is where all the good stuff is still working, like the public internet.

- Winlink RF is used to communicate outside of the Donut hole!

Does Winlink replace traditional VHF FM?

- VHF FM radios can be used for voice communication outside the Donut Hole as well, but are better suited to "Tactical Communication", which are short messages with simple tasks and information.

- Winlink is better suited for Logistical Communication. Think of a shelter asking for a long list of supply items. These are better conveyed using some sort of digital form or spreadsheet than trying to accurately communicate them via voice.

What is necessary to setup a Winlink station

- Windows Computer
- VHF or HF Radio, Power Supply, Antenna
- Radio to Computer Interface
  - Modulation & Demodulation for TX and RX Audio
  - Rig Control (PTT)

Typical Radio to Computer Interfaces

- Signalink – about $120 to $150 with radio cable

- DRA-50 – about $125 with cables (DIN)

- Built-in like IC-7300 and IC-9700

Install and register Winlink software

- Go to the download page of Winlink.org

- Registration will require your call sign information and mailing address

- Winlink is free but you are encouraged to donate $25, which gets you a registration key

- You call sign becomes your winlink address like WB4SON@winlink.org

- If you are running VARA HF or FM you can use it in slow speed mode for free or register it for $70 to obtain faster modes

What is VARA FM and HF?

- They are software versions of old hardware TNCs.

- Slow speed version is free and installs with RMS Express

- Registered version covers both VARA FM and HF and costs $70
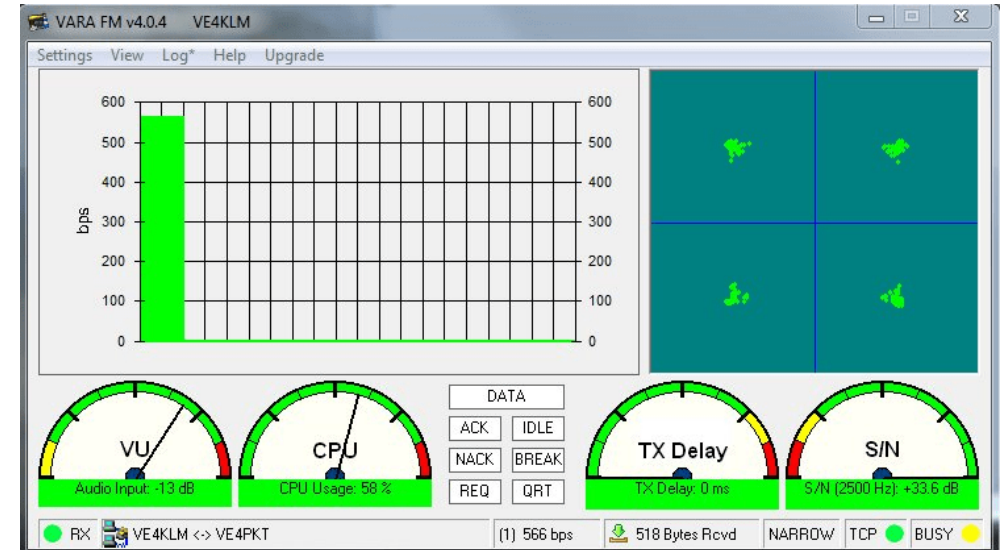
If you have a spare $1400, you can purchase a P4 Dragon Hardware PACTOR TNC that will outperform VARA HF by a tiny bit due to FCC restrictions on HF data. Everywhere else it is 2x faster.
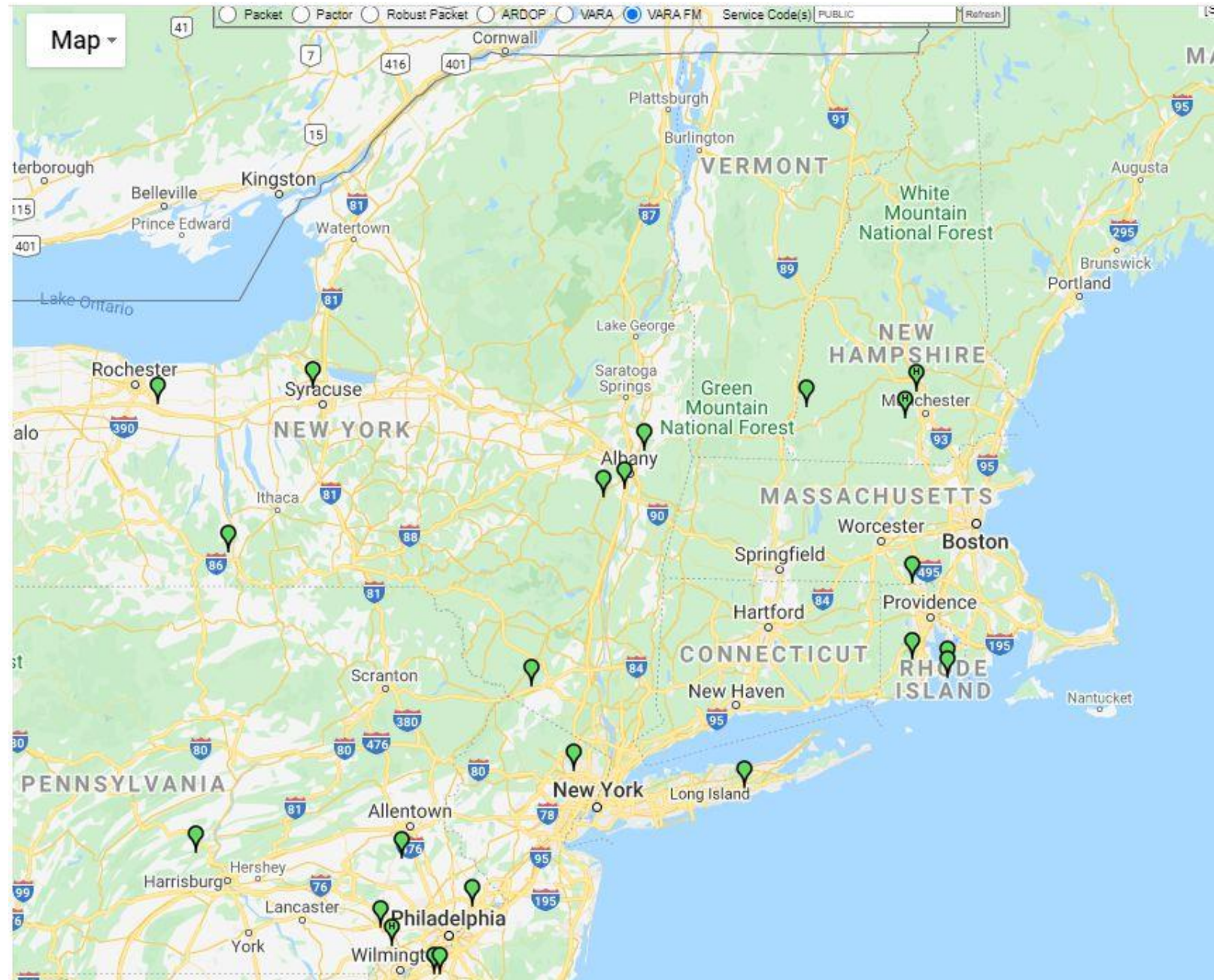
What does RMS Express look like?
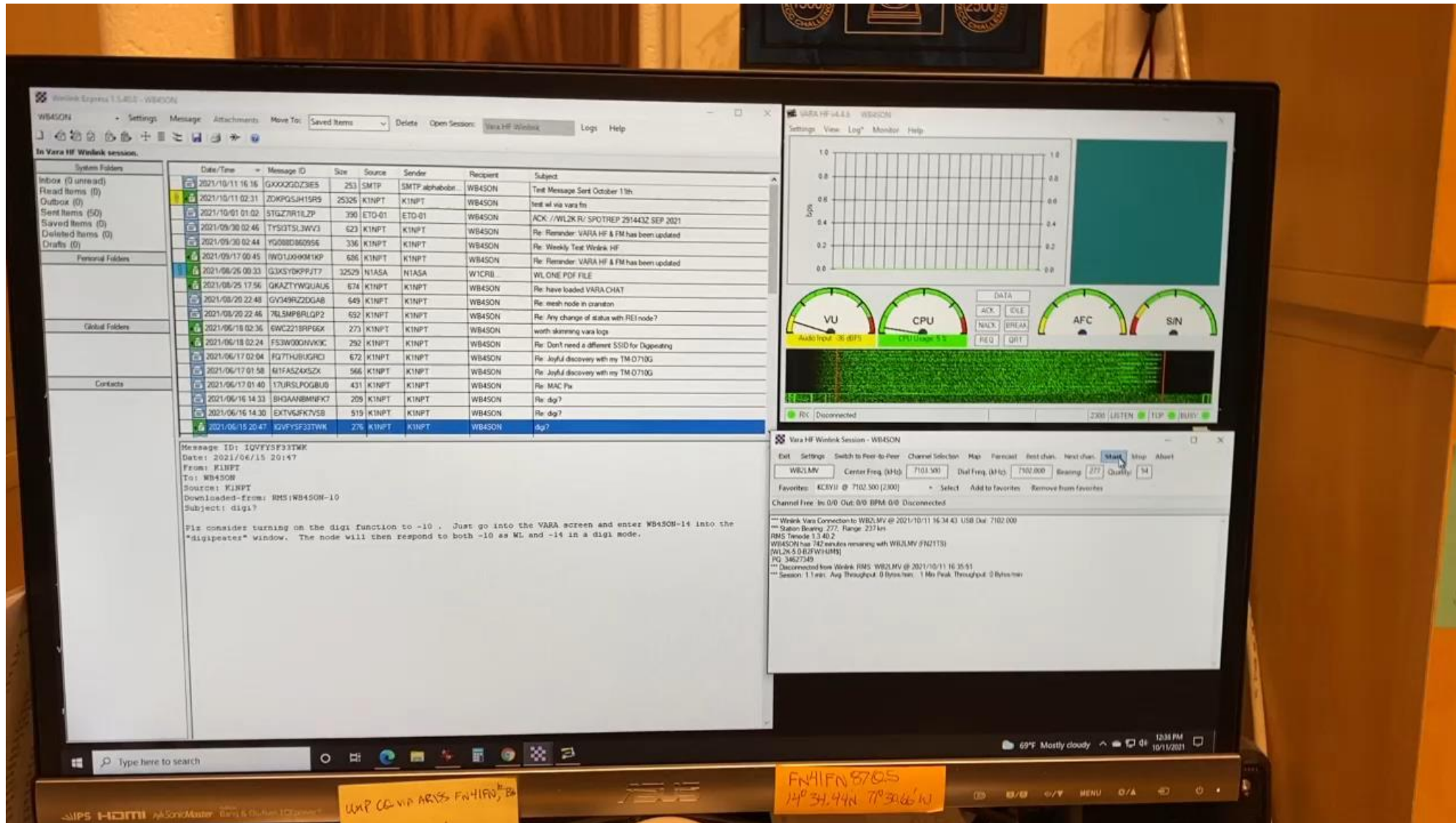
VARA HF Gateway Stations
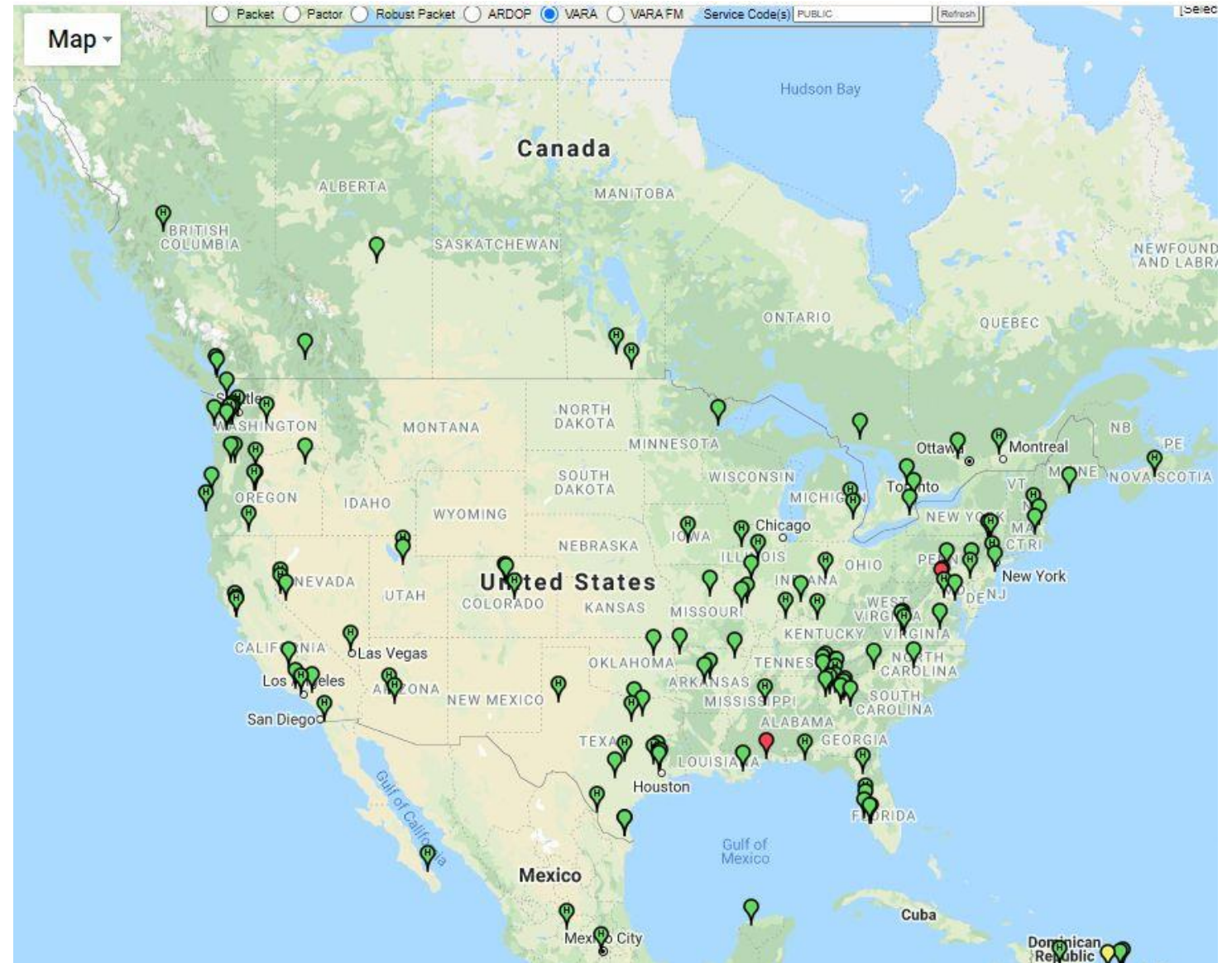
VARA FM Gateway Stations

There are currently FOUR VARA FM Gateway Stations in RI

DEMO RMS on Desktop

RMS Express on HF

References

- Winlink webpage: https://www.winlink.org/

- VARA FM and HF: https://rosmodem.wordpress.com/

- Signalink: https://www.tigertronics.com/slusbmain.htm

- Winlink "Book of Knowledge": https://www.winlink.org/content/winlink_book_knowledge