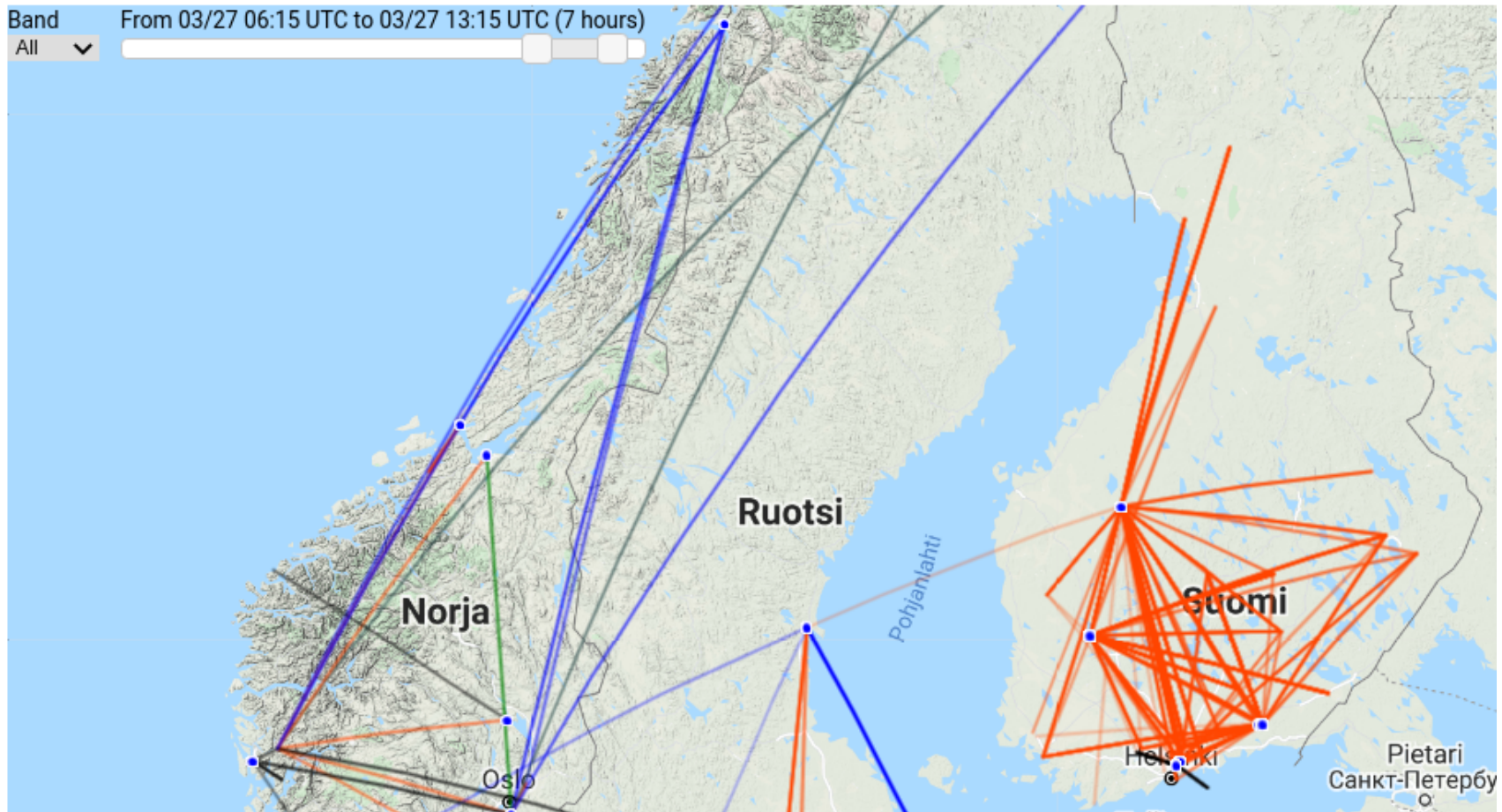


# OH EMCOMM Drill Mar 2021 Winlink Radio-Only / VARA HF



# About the drill

- The North Karelia Amateur Radio Club and The National Defence Training Association of Finland (MPK) jointly organized a mainly home station based amateur radio EMCOMM drill.
- The theme of the drill was messaging in Winlink Radio-Only mode using Winlink Express & VARA-HF modem.
- Although a regional drill, stations all over Finland were allowed to participate. 19 MPK course participants + 10 others.
- The participants were encouraged to generate an unusually high amount of messages to each others (which would not happen in a real emergency). The participants were encouraged to set three Message Pickup Stations in the Winlink Radio-Only network making the messages to be copied in three mailboxes using radio forward.

# About the data

- The data was extracted from VARA HF modem logs of some of the 80m band Winlink Hybrid Network gateways participating in the drill. The gateways were in "simulate internet outage" mode.
- The data is from Mar 27th 0900 – 1500 Finnish time
- The gateway/mailbox stations:
  - OH3NJC: a home station in a very quiet location nr. Tampere
  - OH6IJ: a home station in a very quiet location nr. Seinäjoki
  - OH5ZN: a home station with some man-made interference in Kouvola
  - OH2RBB: 24/7/365 Winlink station operated by a club. An urban station in Vantaa city near Helsinki. (Showing only 80m traffic, local stations using 6m SSB VARA-HF port not shown.)

# Some message statistics

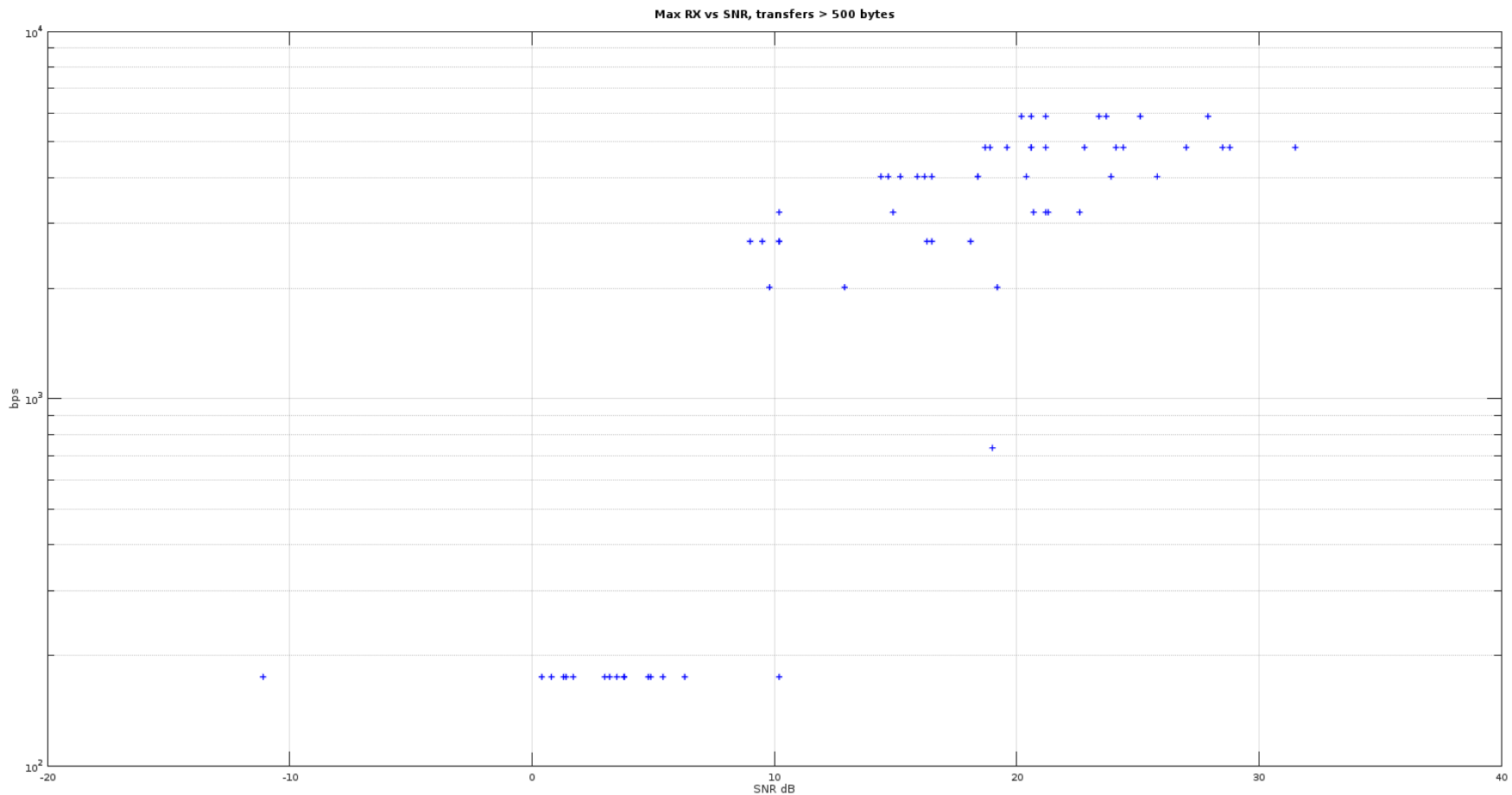
- OI7AX: HQ station, 200 messages
- OH2RBB: 504 messages, 69 connects, TX 115807 bytes, RX 135398 bytes
- OH5ZN: 698 messages, 145 connects, TX 270648 bytes, RX 262271 bytes
- OH6IJ: 455 messages, 112 connects, TX 251705 bytes, RX 152190 bytes
- OH3NJC: 115 connects, TX 226311 bytes, RX 175826 bytes





# Max RX speed vs. SNR at OH3NJC

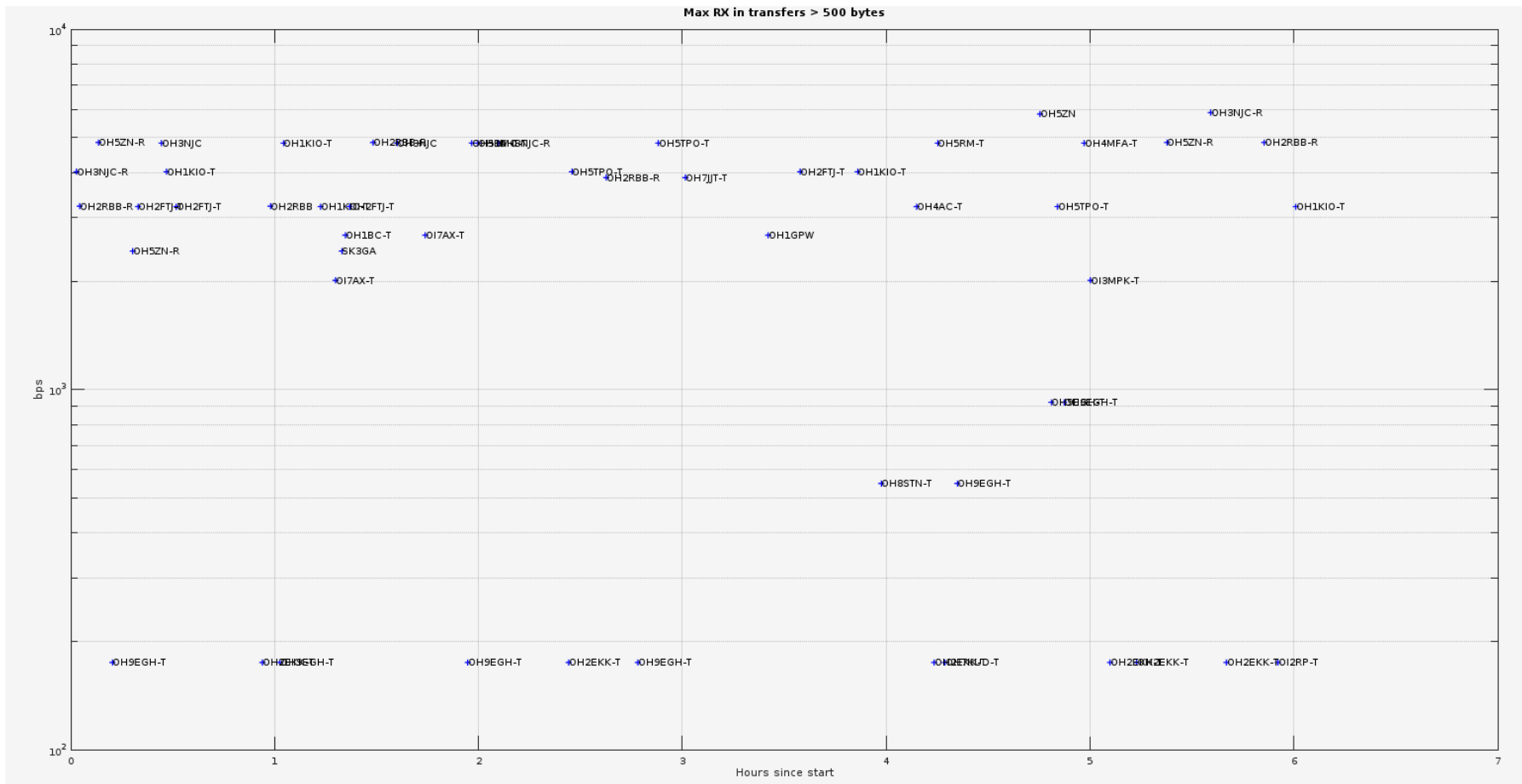
only connections with > 500 bytes RX





# Max RX speed at OH6IJ

only connections with > 500 bytes RX



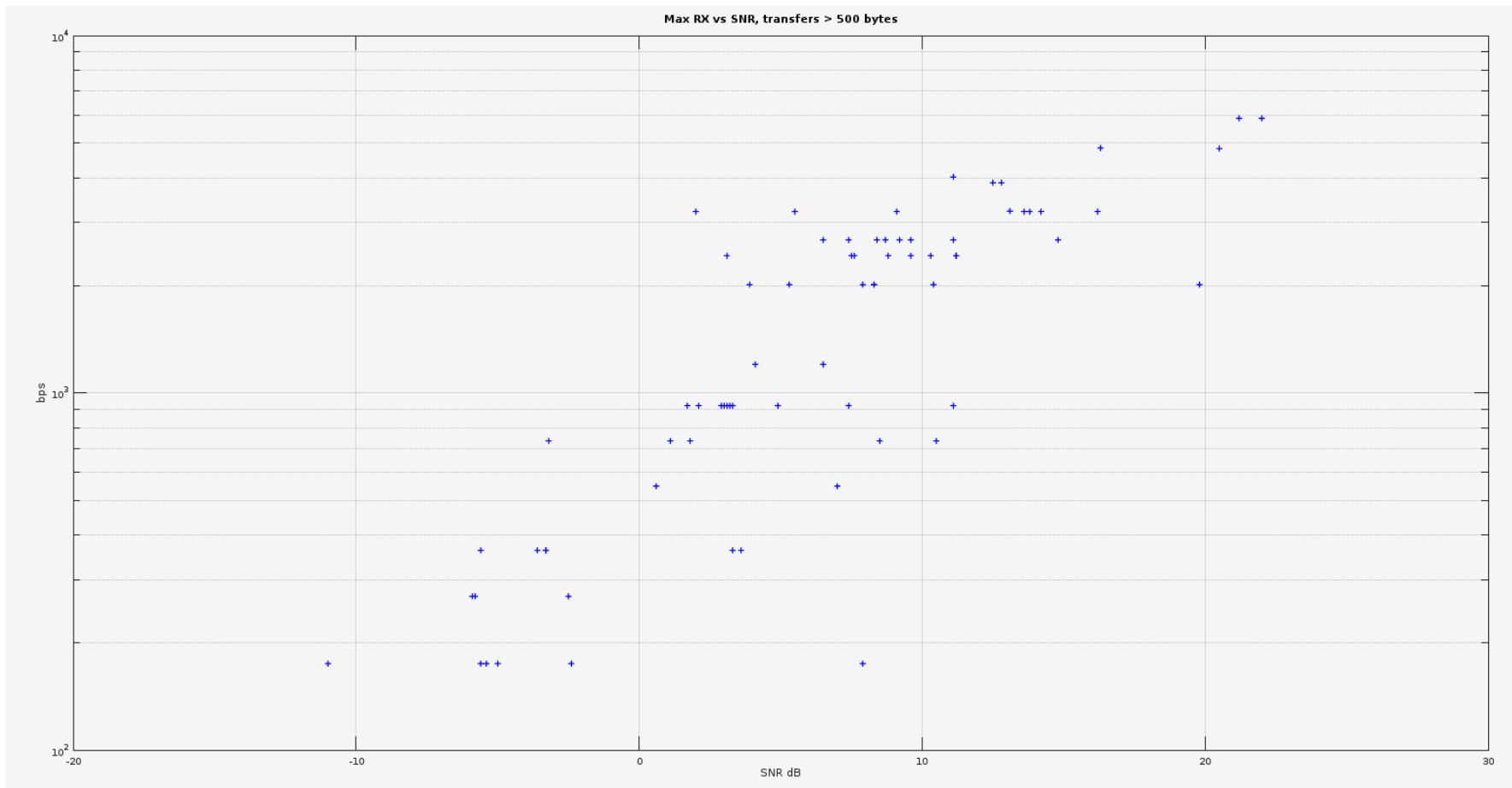




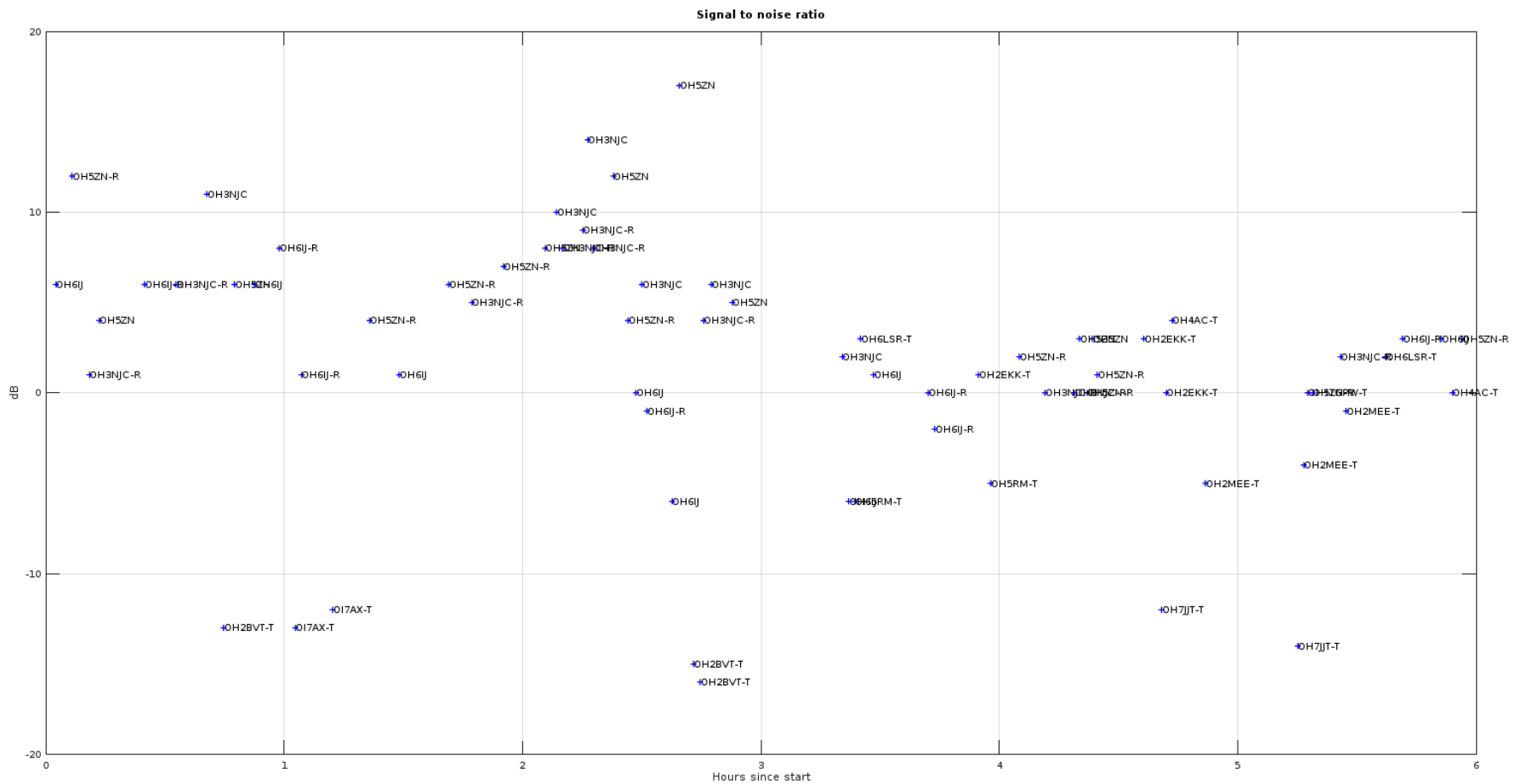


# Max RX speed vs SNR at OH5ZN

only connections with > 500 bytes RX

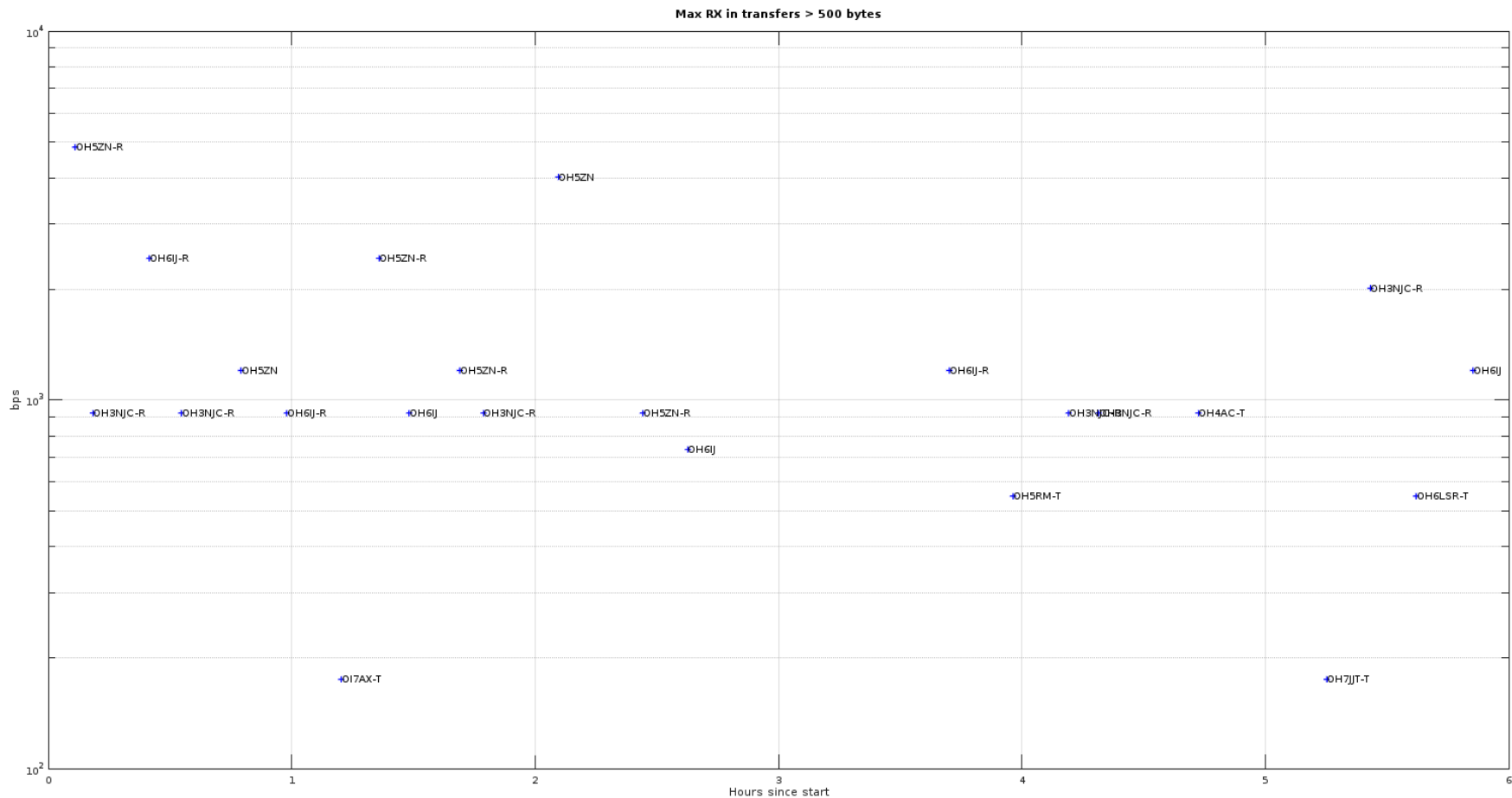


# SNR at OH2RBB



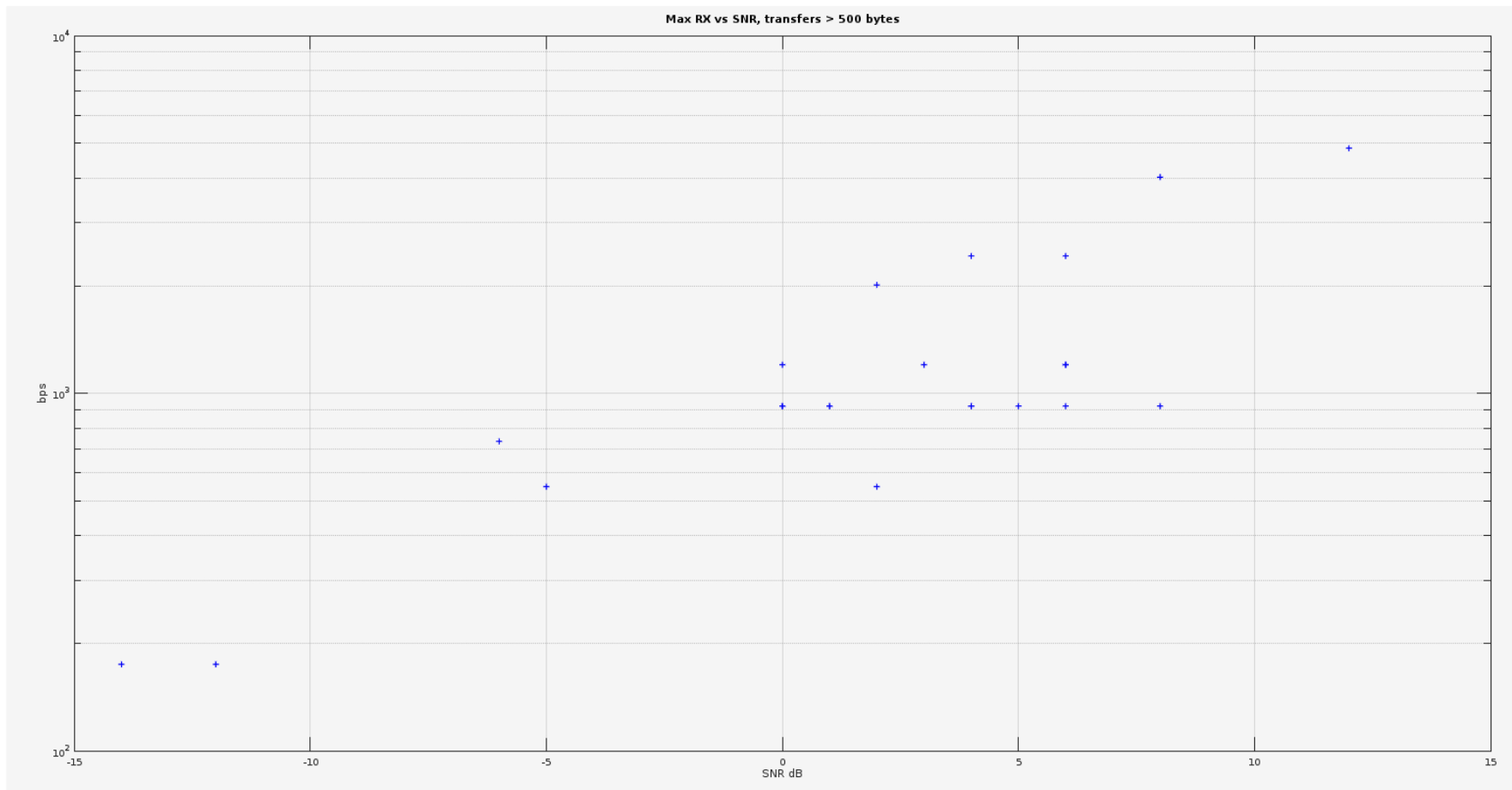
# Max RX speed at OH2RBB

only connections with > 500 bytes RX



# Max RX speed vs. SNR at OH2RBB

only connections with > 500 bytes RX



# OH3NJC personal conclusions

- VARA HF modem performance is good!
- Some QRP stations or stations with bad antennas did not perform adequately. Only stations with 100 W or more and with center-fed real half-wave dipoles (or comparable) should be encouraged to join the networks.
- Some stations did not have a \$69 VARA license making their max data speed 175 bps. They were slowing down the networks considerably.