

Digital Modes On 2m

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KNOMAP

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Presentation Overview

- Background
- Packet Mode
- VARA FM
- JS8Call (FT8)



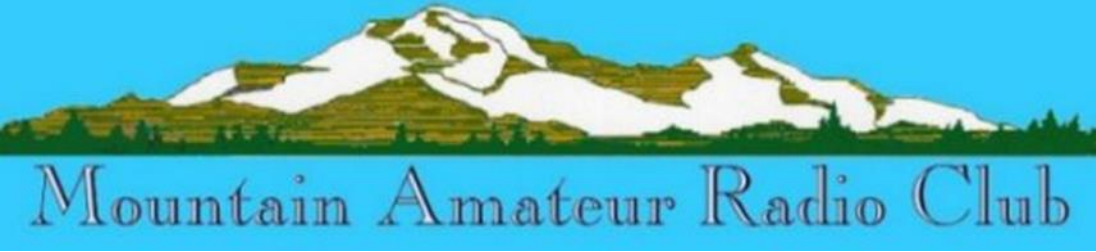
Background

- Looking for a method to keep in touch in the area without having to be at the radio all day
- Wanted to be able to use the upper bands (VHF / UHF) so as not to restrict functionality to HF and General or above class license
- Low power and weak signal capabilities
- Work with a wide variety of radios

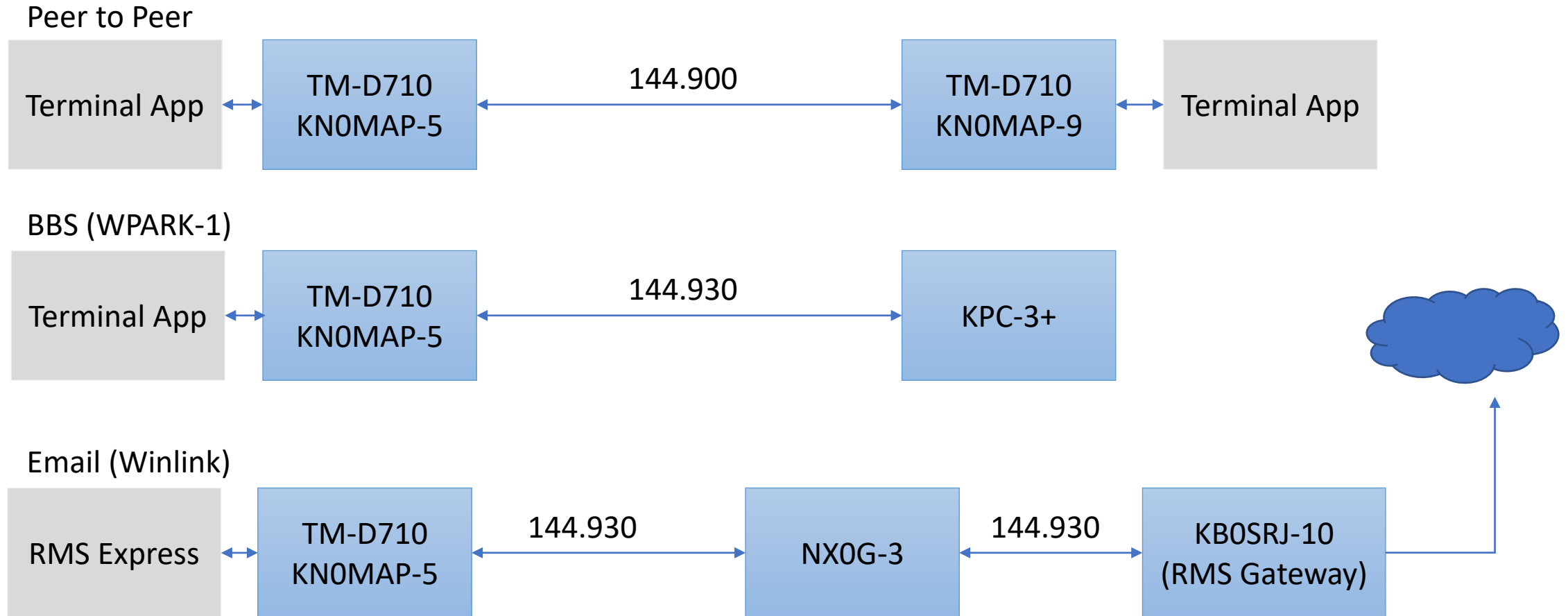


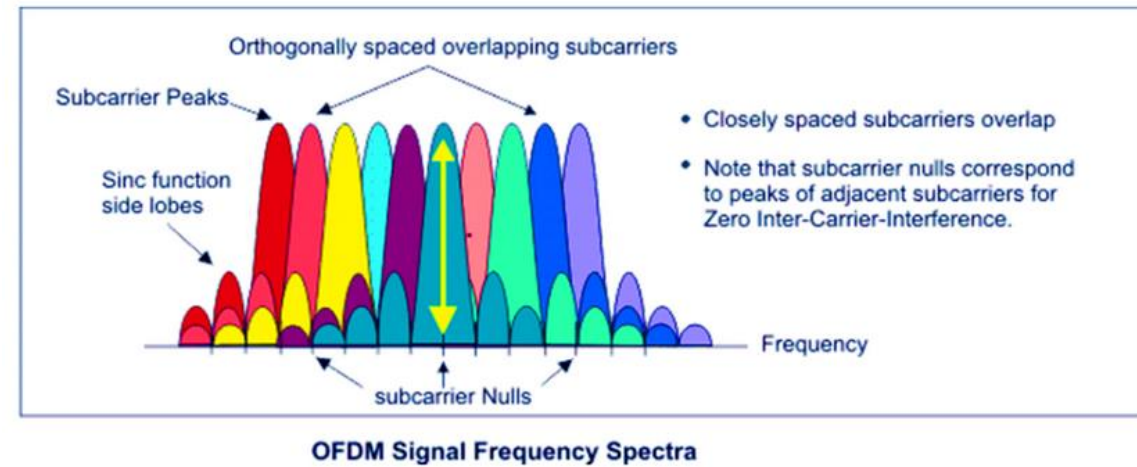
Packet Radio (AX.25)

- Requires a TNC (Terminal Node Controller)
 - Either hardware based like the Kantronics KPC-3+ or built-in Kenwood TM-D710
 - Or soundmodem application:
 - Direwolf (<https://packet-radio.net/direwolf/>),
 - AGWPE (<https://www.soundcardpacket.org/>),
 - UZ7HO (<http://uz7.ho.ua/packetradio.htm>)
- APRS network is based on Packet radio
 - Send position reports, message stations, email
- Capabilities:
 - Connect to remote nodes for direct chat
 - Able to Digipeat (route through another node)
 - BBS capabilities built into the Kantronics devices (WPARK-1 on 144.930)
 - Extensive email capabilities via RMS Express (Winlink)



Packet Radio (AX.25) -- Demonstration





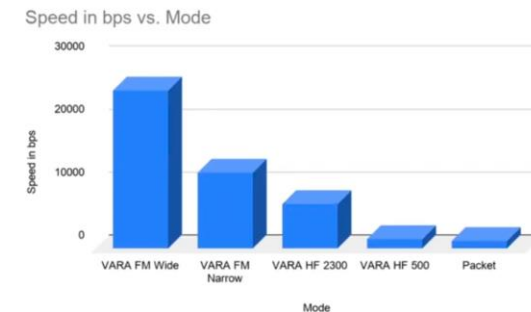
VARA FM *

- Developed by a Spanish Ham (EA5HVK) <https://rosmodem.wordpress.com/>
- Requires a soundcard interface
 - Built-in like ICOM IC-7100
 - External Device
 - Digital Radio Adaptor (DRA-50) -- <https://www.masterscommunications.com>
 - Signalink USB -- <https://www.tigertronics.com/slusbmain.htm>
- Capabilities:
 - Works well with weak signals
 - Peer to peer terminal and chat applications
 - Extensive email capabilities via RMS Express (Winlink)

Speed comparison

The slowest leg determines file size!

- VARA FM Wide: 100 kb/min
- VARA FM Narrow: 50kB/min
- VARA HF 2300: 20kB/min
- Packet/VARA HF 500: 5kB/min

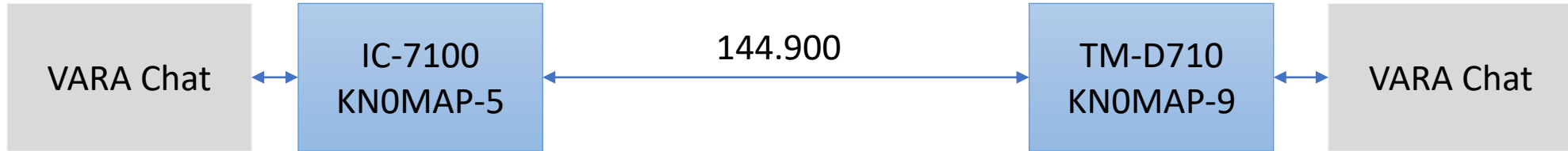


* Wide mode requires purchasing a license ~\$70

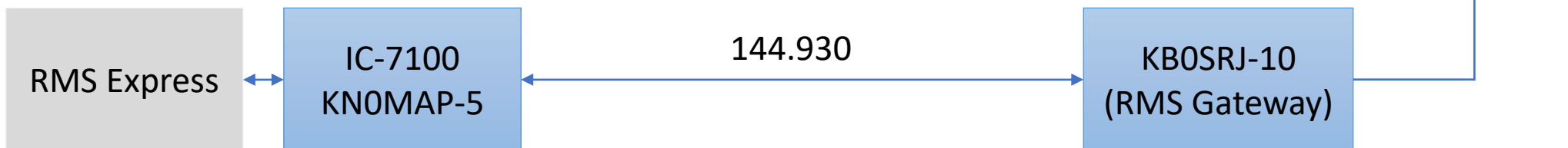


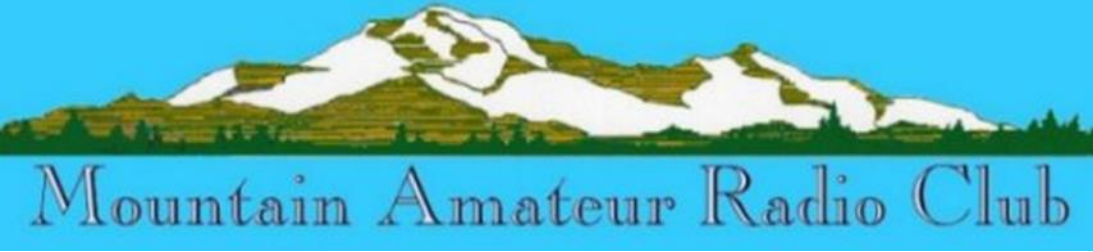
VARA FM -- Demonstration

Peer to Peer



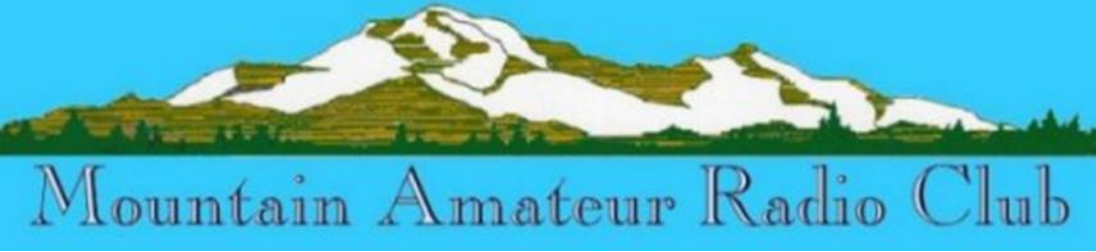
Email (Winlink)



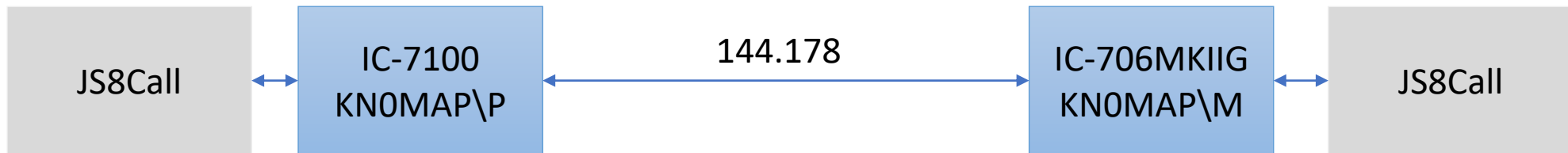


JS8Call (FT8)

- Requires a soundcard interface (same as VARA)
- Radio capable of SSB on VHF
- Extensive EMCOMM Capabilities (from Groups.io post)
 - Store messages anywhere for others to retrieve at any time
 - Many stations run 24/7/365 and does not require direct interaction
 - Retrieve messages on other machines
 - Check stations hearing list, in case you do not have direct path to target you can route via others who can communicate with them
 - The recipient doesn't have to be at their machine to receive messages, give SNR reports, pass stored messages, confirm a link, etc.



JS8Call -- Demonstration





Resources:

- **VARA FM**

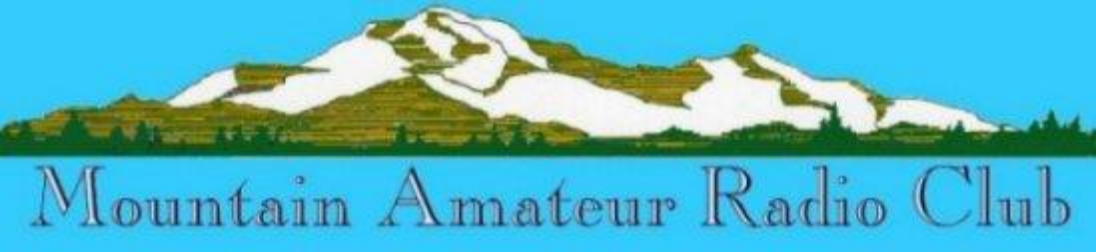
- Main Site:
 - <https://rosmodem.wordpress.com/>
- Forum:
 - <https://groups.io/g/VARA-MODEM/>

- **JS8Call**

- Main Site:
 - <http://js8call.com/>
- Forum:
 - <https://groups.io/g/js8call/>

- **Packet Radio**

- Ask one of the old guys.....



Mountain Amateur Radio Club

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Did we make it?