

Amateur Radio Digital Data Signals

Computer Applications

Computer applications to generate the signals, for the most part, are free

Winlink

Winlink (<https://www.winlink.org/>) - a worldwide radio email service that uses radio pathways where the internet is not present, and is capable of operating completely without the internet--automatically--using smart-network radio relays. Winlink provides its users email with attachments, position reporting, weather and information bulletins, and is well-known for its role in interoperable emergency and disaster relief communications.

- Good but dated introduction video (20 mins): <https://www.youtube.com/watch?v=qGhUfW8pjY8>
- More up-to-date PowerPoint presentation: www.philsherrod.com/Winlink/Winlink_PowerPoint.pdf
- Most popular modem used by Winlink, VARA is by EA5HK (<https://rosmodem.wordpress.com/>). Slow mode is free. High speed = \$69.
- Go to the main Winlink page (www.winlink.org),
 - Select Download/User Programs
 - Download Paclink, README and Winlink Express
 - Expand the Zip files and install Packlink and Winlink
- Go to <http://www.greg-hand.com/versions/> to download the propagation prediction program
 - Scroll down to the bottom and download the last one without word "test"
 - Unpack Zip file and install
- Go to <https://rosmodem.wordpress.com/> to download VARA modems
 - Download VARA HF and VARA FM
 - Unpack ZIP files and install
- Using Winlink is like using an old dial-up Internet connection. When you initiate a connection to the system, it will download any available messages into the Inbox, send out any messages in the Outbox and then disconnect. This is done to minimize the amount of time you are connected to one of their servers, either over the air or via the Internet.
- Start Winlink Express and the Setup window should appear. As a minimum, you will have to provide your call sign and grid square or Lat/Lon coordinates.
- Your Winlink account must be created by sending an email using the Winlink Express application. Send a message to an account that is not on the Winlink system.
 - Select "Message/New"
 - Put another email address into the "To" field – one not on the Winlink system.
 - Put in a Subject and short body
 - Select "Post to Outbox"
 - In the selection block, on the right hand side, select "Telnet Winlink". All other selections require you to connect over the air.
 - Select "Open Session". The telnet window will open.
 - Select "Start". Your computer will connect, over the Internet, to the Winlink servers. Any

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messages waiting for you (if new account, none) will be downloaded. Any message in the Outbox will be sent and the connection will close. Your account is now created.

- Setting up Winlink and VARA modem(s) to operate over the air.
 - Select “Vara HF Winlink” in the modem selection block
 - Select “Open Session”. The session window will open.
 - Select “Settings/Radio Setup”. The radio setup window will open
 - Select the radio model (for Icom, ensure the address is correct), and mode
 - Select the radio control port (com port that you saved above) and baud
 - The PTT port will normally be the same as the radio
 - Select “Update” to save and close
 - Select the Vara Modem in the task bar
 - Select “Settings/SoundCard”
 - Select the sound card that you saved before
 - Select a drive level and press “Tune”. You need to adjust for proper ALC level.
 - Close this window
 - You are now ready to operate over the air
 - In the Session window, select “Channel Selection”. Choose an appropriate station for your antenna – the higher in the list, the better. Press “Select Channel”.
 - Select “Start” to make a connection. If you cannot connect with a given station, select another and try again.
 - When done, select “Exit”
 - Send some messages to get used to the application.