TNC'S TO TRY PACKET RADIO

- I Currently have 2 spare TNC's that I have on-hand that are available if you want to get into packet. These are available if you belong to MGRA, CGARC, or the local ARES (Tri-county / Houston County / Macon-Bibb).

- The loaners are if you are interested in trying packet radio but you are unsure if packet radio is for you. I will assist making a cable or you can order a cable for your radio online. You will need a 2m FM radio with 10 watts or higher, a cable that goes from the TNC to the radio, and a computer.

- Loaners are only for 2-4 weeks, after that I will need it back but will assist you in finding a TNC or using Direwolf (Software TNC**)
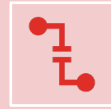
CURRENT BANDS / FREQUENCIES

- Node is located in SW Warner Robins (Grid EM82DN86FS)
- VHF FM Packet 1200 – 145.030Mhz
- HF LSB Packet 300 – 14.105Mhz ("Network 105")*
- HF USB Packet 300 – 14.1017Mhz*
- HF USB VARA – 14.1017* (Dial Frequency for RMS!)

- Packet is inverse capable – Meaning stations can use either SSB mode
- Only Packet or Only VARA can be used on HF – after a connect, the other is locked out until stations disconnect from the node

NODE SERVICES

- Winlink Gateway – Provides Winlink Mail access (Known as RMS Gateway)
- BBS: BBS, PacketMail, Bulletins, Floods, WorldWide!!
- Chat: Multi-station chat channels or rooms – Think IRC or Internet Chat
- Switch: Connects from node to other pathways (Internet, HF, VHF)
- Digipeater: In same-band will digipeat from "Dash Seven"
- Internet Access – Text Based Browser, not always on! Reserved for EmComm

NODE INFO

Emergency Power – The Node has backup power to permit operation in case of power failure at node location.

N3BYR-7 : This is the primary connection and recommended except for Winlink Connections*. All functions are accessible from 7 to include Node Switch (ports), BBS, Chat, Winlink Gateway, Digipeater, etc.

N3BYR-1 : Direct connect to the BBS system and Relay

N3BYR-10 : Direct connect to RMS gateway and Relay
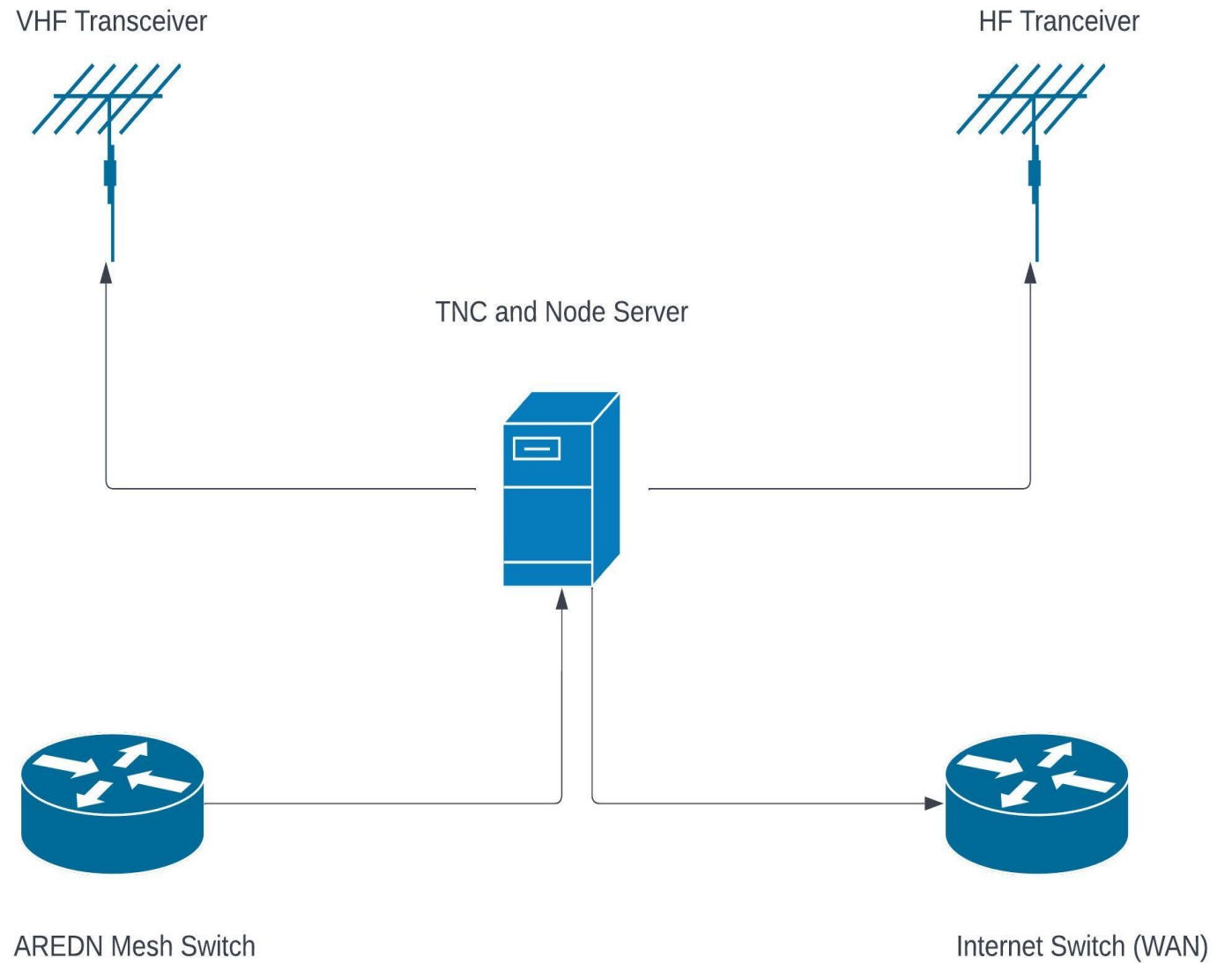
N3BYR-12 : Direct connect to Live Chat (think IRC)

N3BYR has an additional SSID for internet access that is turned on occasionally – Text Based Browser Access
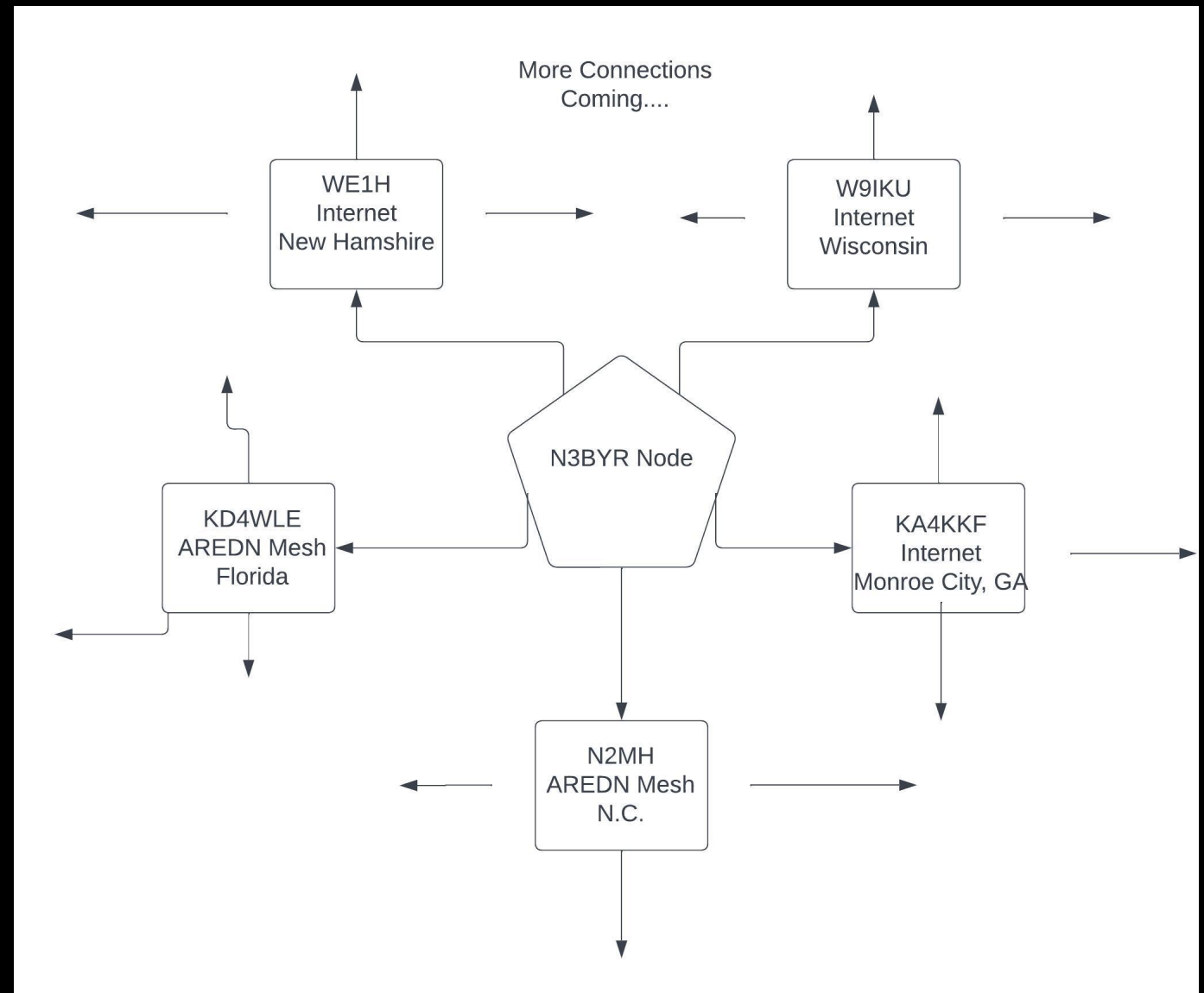
N3BYR STATION CONNECTIONS

BASIC IDEAS*

SOME ASSEMBLY REQUIRED

VHF Transceiver

HF Tranceiver

TNC and Node Server

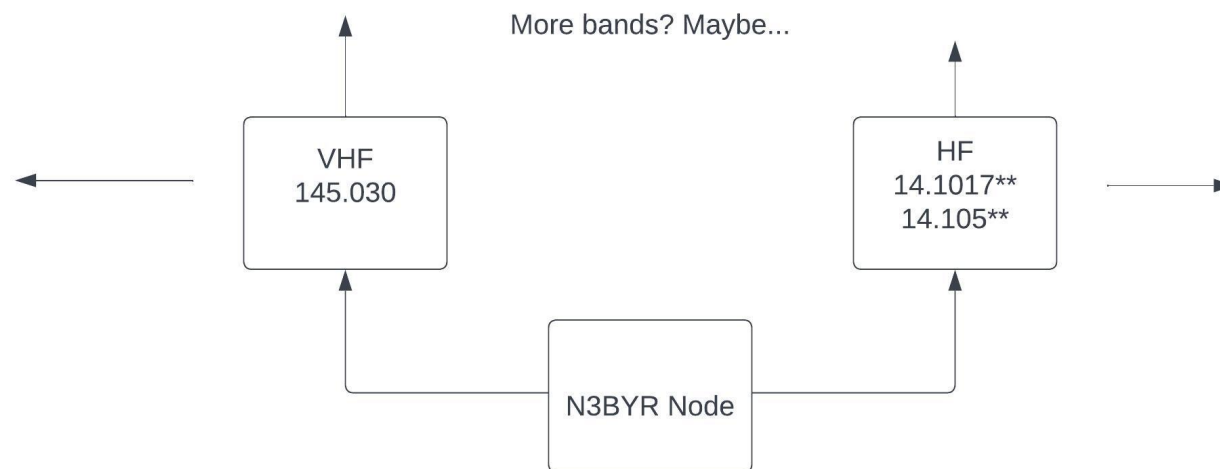AREDN Mesh Switch

Internet Switch (WAN)

NETWORKED CONNECTIONS

- Other connections will be added

- Dual Networked Server on both AREDN and Regular Internet permits a bridgeway for those on AREDN

- Each connected node has many other connections creating a large "Web" of connections

- All of these nodes are accessible from N3BYR Node and then reaching out past that…

- Traffic flow permits world wide packet messages to pass over internet, AREDN Mesh, and even via RF connections!

More Connections Coming....

WE1H
Internet
New Hamshire

W9IKU
Internet
Wisconsin

N3BYR Node

KD4WLE
AREDN Mesh
Florida

KA4KKF
Internet
Monroe City, GA

N2MH
AREDN Mesh
N.C.

RF CONNECTIONS

- HF connections allow VARA HF and Packet – Both incoming and outgoing! Digipeating is possible on HF Packet extending that reach!

- VHF connections permit local area connections within the footprint of the N3BYR Node – Digipeating gives even further reach!

- VHF and HF are available to any connection to the Node allowing a bridge from a distance HF station jumping to VHF to reach a local station

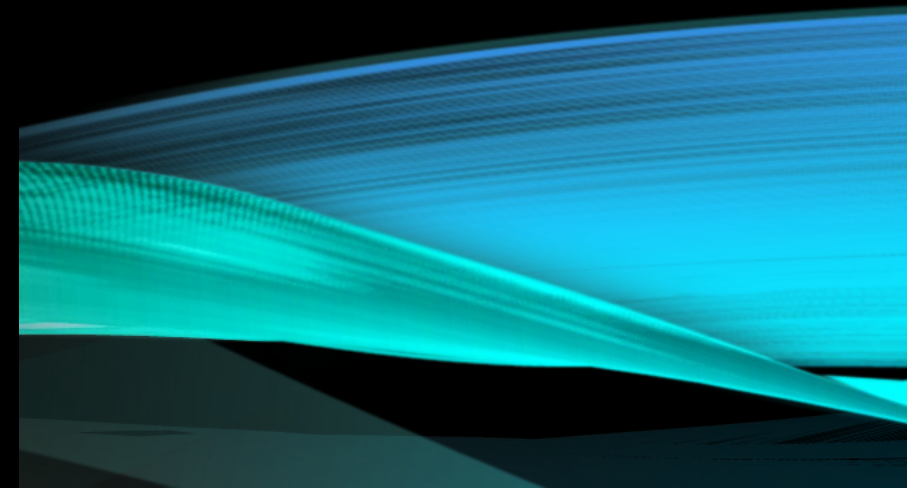- Packet HF is not sensitive to cross SSB usage… meaning USB or LSB are both interoperable!

More bands? Maybe…

VHF
145.030

HF
14.1017**
14.105**

N3BYR Node

IS IT COMPLICATED TO SET UP?

- A huge learning curve involved, the software chosen was BPQ, there are others out there also.

- A lot of setup time and considerations

- Establish rapport with distant ops willing to establish direct links

- Having HF VARA and HF Packet on the same TXR is a pain… the use of an audio mixer was necessary to tie a sound card in with a TNC. Even if using software TNCs for Packet additional soundcards and mixers are required

- Current Node has two dedicated transceivers – Yaesu FTM-3000 and Icom IC-718 – which also means dedicated antennas for full 24/7 operations

- Currently I am considering adding a 3rd band – Not sure which though…

HOW DO I USE THE NODE….

WINLINK GATEWAY

- The N3BYR node has RMS Relay – if internet is dead the message will store until the node can find another method of delivery or Internet returns!!!
- For HF users of the gateway – USE VARA HF, do **_NOT_** use HF Packet. Set your dial frequency to 14.1017 Upper Side Band (Center frequency is 14.1032 which you need to set in RMS Express!!!)
- For VHF users – Only Packet 1200 is available currently – set the SSID to N3BYR-10
- If you want to use the BBS for Winlink Messages you must: (Only if RMS Express is unavailable)
  - Connect to either N3BYR-1 (or -7 and type BBS)
  - Set your Winlink Password in the Node BBS (I have no access to this!)
  - Turn on POLLRMS "POLLRMS Enable" at the BBS prompt
  - Send Winlink emails to callsign@Winlink.org (or external email address)
  - Retrieve messages from your Winlink account to the BBS
  - Turn off POLLRMS if you want to use RMS Express ("POLLRMS Disable")
  - I cannot guarantee how well this works but have tested a few times

BBS GENERAL USE

- The N3BYR Node BBS works like all the other mailboxes – except its also connected to the rest of the packet universe! Hundreds of bulletins, announcements, and traffic are listed. Preferred use of LL # to list the last X number of messages in the system (Start with 25-40! E.g., "LL 40")

- You can send WW, USA, State, NOAM (North America), or other "bulls" (bulletins) to what area you need using "SB @WW" or "SB @GA"

- Sending regular messages works as usual – Any linked BBSs you can send to those users via any linked BBS – e.g. I send messages to WE1H from my own node because it knows where to send it – we're directly connected!

- Always use the "?" (Question mark) in the main menu for help!

CHAT USE GENERAL

- Connect to N3BYR-7 and type "chat" or connect to N3BYR-12

- All commands are preceded by a forward slash in chat "/" and to get help just type "/?" in chat.

- Chat allows MANY packet stations to converse simultaneously – additional stations can join from other connected nodes – Chat can include stations on HF, VHF, AREDN Mesh, Internet Link, and even via VARA HF!

- Nets can be held via Chat – and I encourage it!

- You can create other chat "channels" within the chat menu to use

- Other nodes have linked chats with MANY users globally!! Try them!

PORTS, BRIDGE, AND SWITCH

- Connect to N3BYR-7

- Type "ports" and choose which port you want to use for a connection

- For all ports (EXCEPT VARA HF) type "c portnumber callsign-ssid" to connect to another station. E.g., if connecting to KK4IB-1 by port 2 (VHF) you type the command as "c 2 KK4IB-1" or KB9PVH-1 on HF (port 3) use "c 3 KB9PVH-1"

- Adding an "s" to any connect command tells the node to not disconnect you after you disconnect from the forward station "c 2 KK4IB-1 s" – its short for "stay connected to N3BYR"

- Typing MHU PortNum at the prompt of -7 give you a list of any stations heard on THAT port – for HF do "MHU 3"

- To make a VARA connection you must "Attach" the VARA TNC first… to attach the port use "attach 5" and you should see "ok", "busy", or "failed".
  - Busy means VARA is in use, only one user at a time!
  - Failed (or other message) means that VARA is not running correctly – Please let me know if you get the error several times.
  - OK means the VARA TNC connected and your ready
- After getting OK you do NOT type the port number, just "C" and the callsign, e.g. "c WE1H-7" – You need to know that the other stations is VARA capable!
- At disconnect you will either return to the -7 node (if you used "s") or you get disconnected from the node.

FUTURE PLANS

*EQUIPMENT AND LOCATION NEEDED

Adding	Adding 6m, 40m, or 70cm (I have antennas)
Moving	Moving the Node to a tower or better location with higher elevation – Better coverage
Expanding	Expanding VARA to include VARA FM
Activating	Activating the DRATS Reflector

THANKS!

Feel free to ask questions or reach out to me

https://www.n3byr.com