VGC| Vero VR-N7500

Dual Band VHF & UHF

Setup and Instruction V1

Option Extras

Bluetooth Speaker Micrphone For VR-N65Two Way R....

Bluetooth Ring PTT For VERO N Series Two Way Radio

Speaker Microphone Mounting For VERO,YAESU,QYT,....

Product Overview

The Vero Telecom VGC VR-N7500 is a brand new 50 watt VHF/40 watt UHF Headless ham transceiver with a solid build quality. It is very different in design compared to any other ham radio you have used in your mobile or base.

The VR-N7500 can implement a smartphone as a control panel. The fuselage can be installed in the trunk, the mobile phone is connected to the body through Bluetooth, and the automatic horizontal screen state is fully intelligently connected. At this time, the car hands-free intercom can be realized through the Bluetooth PTT.


Multiple Bluetooth Connections
- **Connect to bluetooth PTT**
- **Connect to bluetooth headset (e.g. Cardo, Schuberth, Viper, Sena, Interphone and Vimoto etc.)**
  This is very useful for cycling enthusiasts, omitting the cumbersome wiring.
- **Connect to cell phone to programming the radio**
- **Connect to bluetooth speaker microphone**
- **Connect to other bluetooth 2.0+ accessories**

Global Walkie Talkie / Network Radio (Android Only)
Create a network channel in app and then invite friends to the same Channel, no matter where they are in the world, they use a mobile phone or a walkie-talkie with the VERO N series, you can contact in real time.   * Note it is NOT designed to Cross Band VHF to UHF*
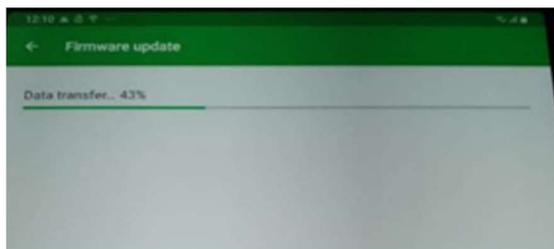
Software updates are simple and quick via the phone and may be offered the first time they are switched on.

Display – Main

Main screen will show the present location on the map the frequency for Tx and what it connected to Frequency or Network.

The screen will change between Vertical/Landscape and Horizontal mode of phone and show frequency channels.

Note you may need to exit the screen your on for changes to be made by the radio.

The centre shows connection radio or network channel with one of the main setup screens with the message screen which shows contacts on and off line.

The search finds contact on the network and can indicate their location

When the phone is turned from portrait to landscape the frequency will show. Red the TX when set on one memory.

When set on 2 memories one will be Red (Tx) and the other Black, this will swap over when a signal is heard on the second channel.

The can be zoomed out to see if there are other network stations in the area or APRS stations. Different layers of the map can be done under the main menu button.
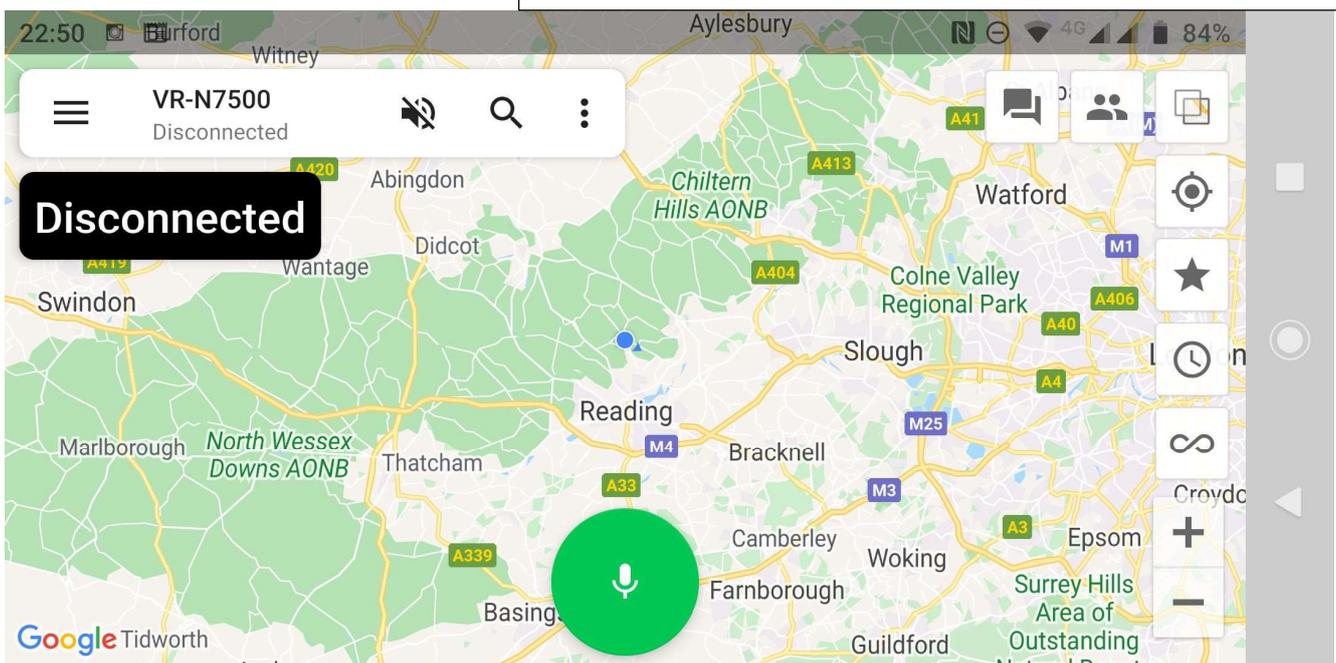
The audio for the phone can be isolated or turned on.

The PTT on the screen will put the radio into TX mode.

One's location can be centered on the map via the button above the star button highlights your station.
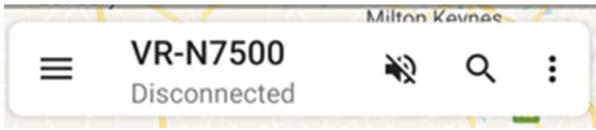
The clock gives time period for listing stations seen.

The station tracking button is below that with the zoom in and out of the map buttons

Horizontal Mode

Setup of APP - Android

 This gives you access to the main radio and channel settings turning the network & audio on and off as you wish editing and sharing networks.

NOTE – Long press on the picture top left takes you into the HT page details below.

Binding a new device – Walkie-Talkie and Wireless PTT

Joining a new channel or creating your own group.

The APRS page can be entered from here turning on and of the internet for APRS enabling the sending messages, with the ability to see the location on the map.

 Connection to radio or network – connected or disconnected.

 Audio on Phone On or Off – pressing icon turns it on or off

 Spy Glass – Search for people in group.

 Settings

- Establish Voice Connection,
- Save Voice History
- Settings
- Exit from APP.

Settings

- Channel Manager – List of all frequency information in memories and CTCSS Tone settings
- Region Manager – List of Memory Banks
- APRS Settings – Main APRS Setup page (See APRS section)
- Keep Screen on (will drain phone battery quicker) turn off if not required.
- Save Voice History TX and Network communications stored.
- Morse code – Speed and pitch ??????
- DTMF – Speed ???
- About – Version of Software (1.4.1.0) at time for writing.
- Open source of software details

HT Page settings

- Change image by pressing image square – Take image, Chose Image from Gallery or Remove Photo.
- Nick Name – Name and Call sign…..(suggestion)
- ID Signaling – This turns on a tail end data tone on TX audio (Suggest turn off)
- Location – Data Tone
- Allow Position Check – Shows location on the map which other can see your call sign.

Automatic Share Location (Beaconing)

- Internet Sharing -   Time Adjustable Off to 30 minutes intervals
- Radio Sharing –   Time Adjustable Off to 30 minutes intervals
- Send Power Voltage -   Status with Beacon
- Message   -   Beacon Message
- Use APRS Format

Button for APRS Format – Below
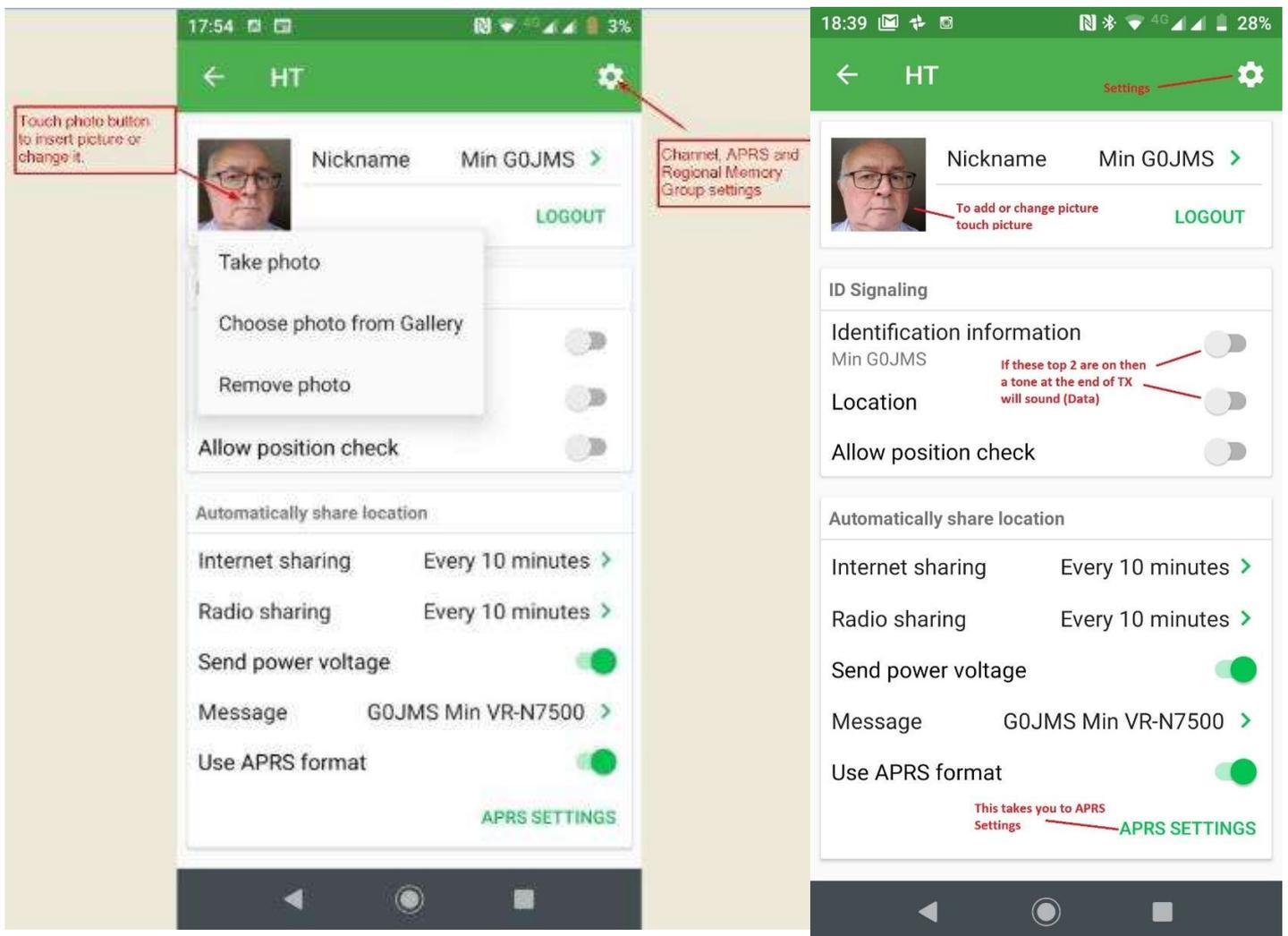
Bluetooth Connections

To bind or connect an item by BT press the power button twice when the radio is on and it will go into pairing mode.

Red and Green lights flashing.

You can pair it via the APP but that does not always put the radio into pairing mode.

Some phones may need authorization check phone menu and confirm via the APP what is paired.

BT PTT – put radio in pairing mode and press the button PTT long and then and again and pairing should take place.

BT Speaker Microphone – Radio in pairing mode and turn on the mic and double press to entre pairing.

APRS settings

Login

- Call Sign and SSID - http://zlhams.wikidot.com/aprs-ssidguide
- Password (Passcode) – Obtained from the internet
  https://apps.magicbug.co.uk/passcode/

Get password button and Verify Password (Passcode)

- Igate Service – Connected to internet
- Server – for UK select Europe & Africa
- Radio to Internet
- Internet to Radio
- Receive messages via internet
- Receiving Range adjustable – suggest keep low or there will be heavy traffic from server.
-

Share Location

- Auto share location over internet on/off – suggestion use www.aprs.fi
- Internal – Adjustable (Beacon) period
- Icon – Select by touching the icon.
- Send power voltage – on/off detail sent in beacon
- Send Operation frequency – on/off - main frequency radio is set to.
- Preview – Beacon preview message.
- Message – You insert your message

Routing

- Time to live – adjustable – How many hops the radio beacon or timed ID will go.
- Maximum forwarding time – Number of hops (don't use a high setting)

Horizontal APRS View Primary & Secondary (RX on 2nd channel level and number of APRS stations heard in region of map.
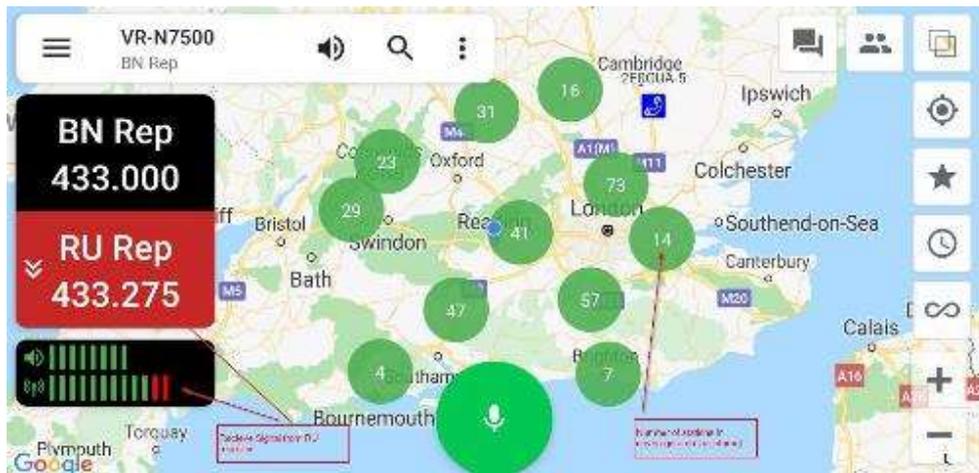
APRS -2
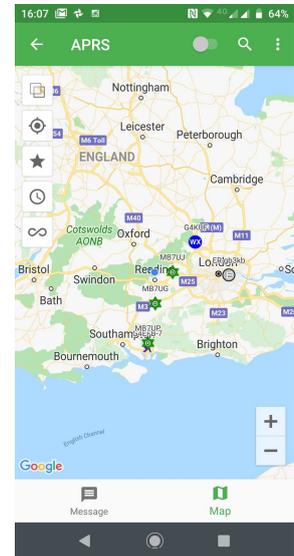
Settings

Map Screen and APRS show signals received

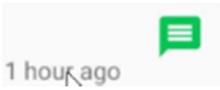 Turns on/off APRS internet IGate Service – yours and other station positions.

  Search for a Station by call sign, list will appear if they have Beaconed.

  APRS Settings Page
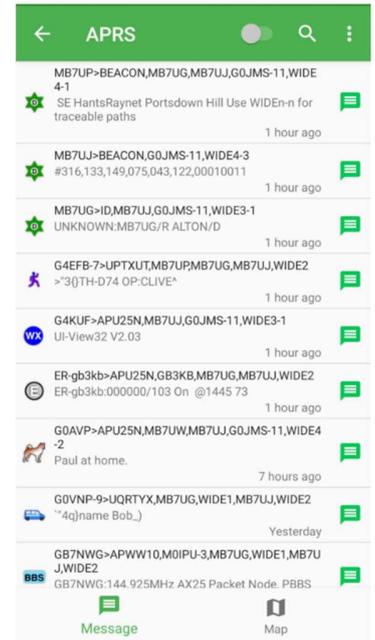
APRS Screen – Message Page
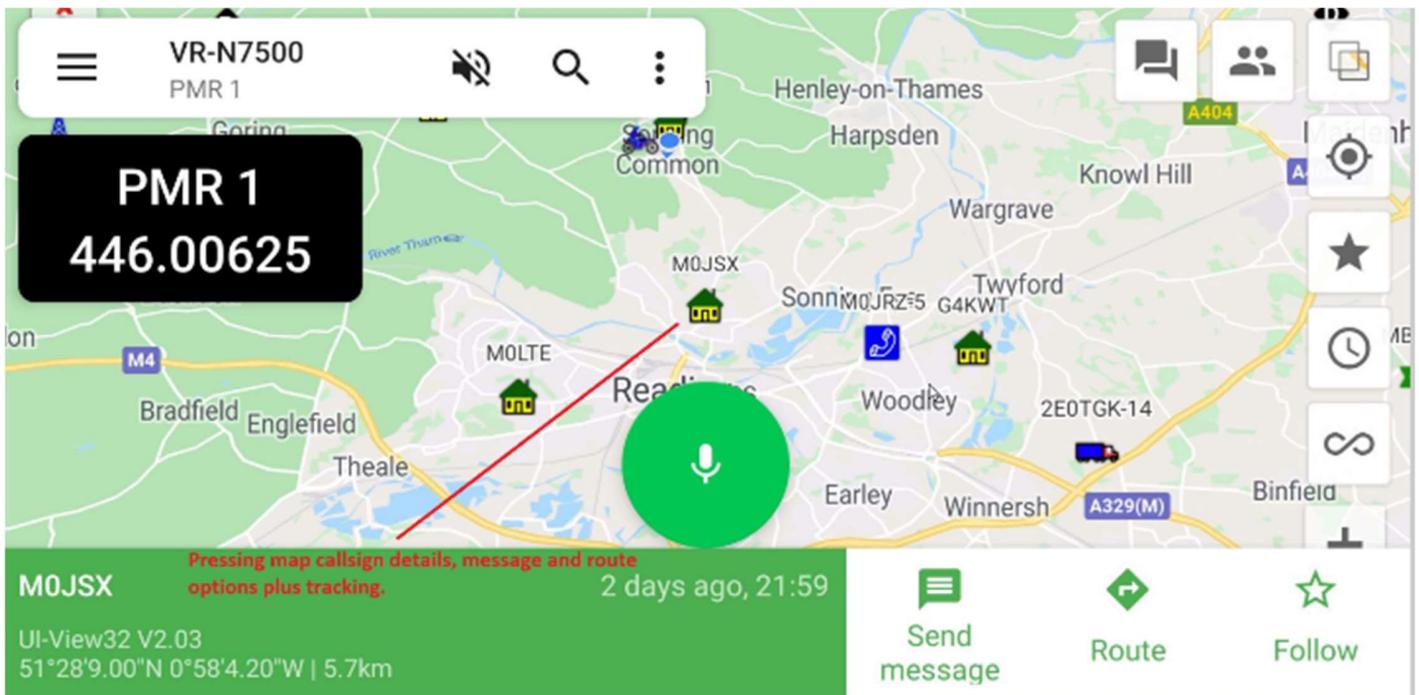
Signal received by IGate

 Green button gives access to message/chat page to that station.

Below is the station Beacon Data – His call sign and SSID

It shows the route of the APRS taken and his comment (Name)

G0VNP-9>UQRTYX,MB7UG,WIDE1,MB7UJ,WIDE2
`*4q)name Bob_)   Yesterday

APRS 3 – Location and Direction Page

By finding by search or screen a station can be found, message, routing to that location plus the option to follow (if moving) that station.

In the top of the page you can see that the radio is set for 1 memory (S21) and in horizontal mode it also shows the frequency on the LHS of the screen.

You can change map layers (Square over Square)

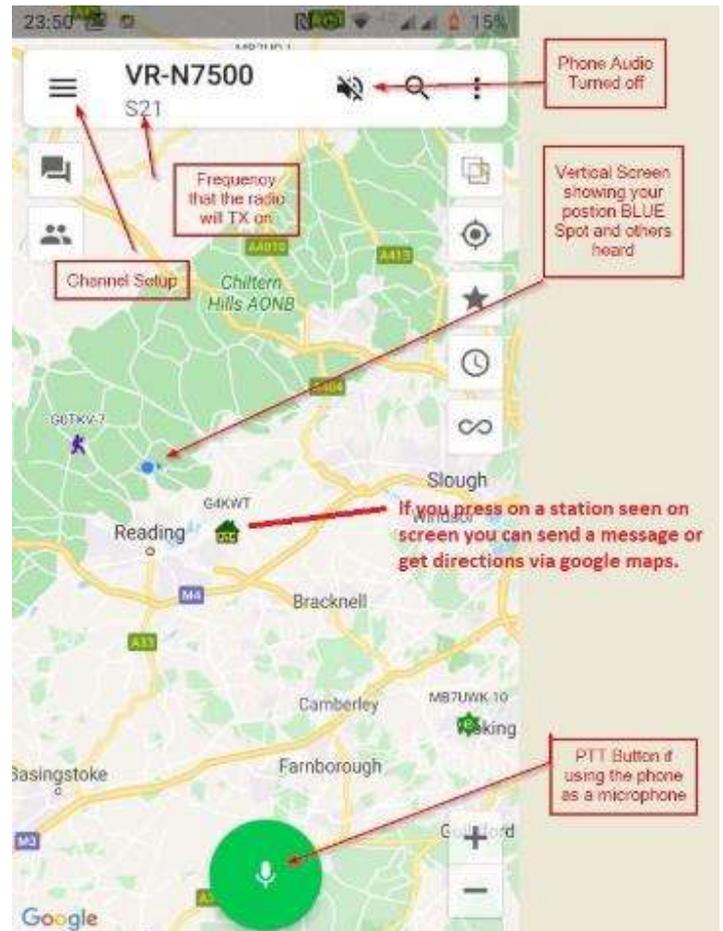Central and zoom into position with star button

By Turning off/on the star you will show only your station or you and others

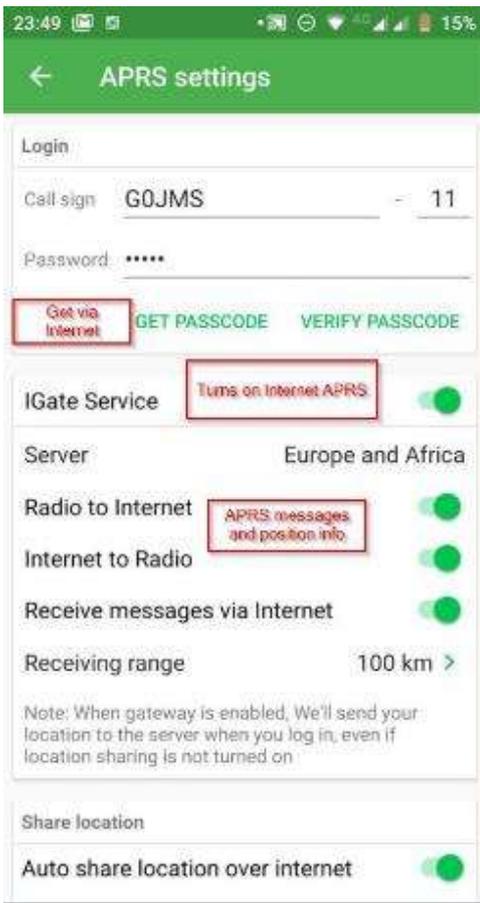Clock is the time of other stations beaconing last 15 min to all day.

Screen PTT for TX Network or Radio Frequency (Channel)
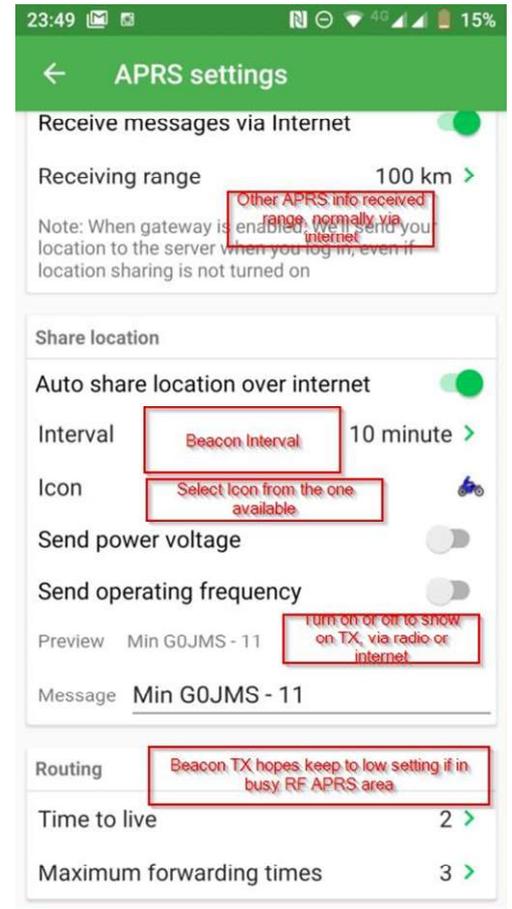
Microscope – Find call sign/station

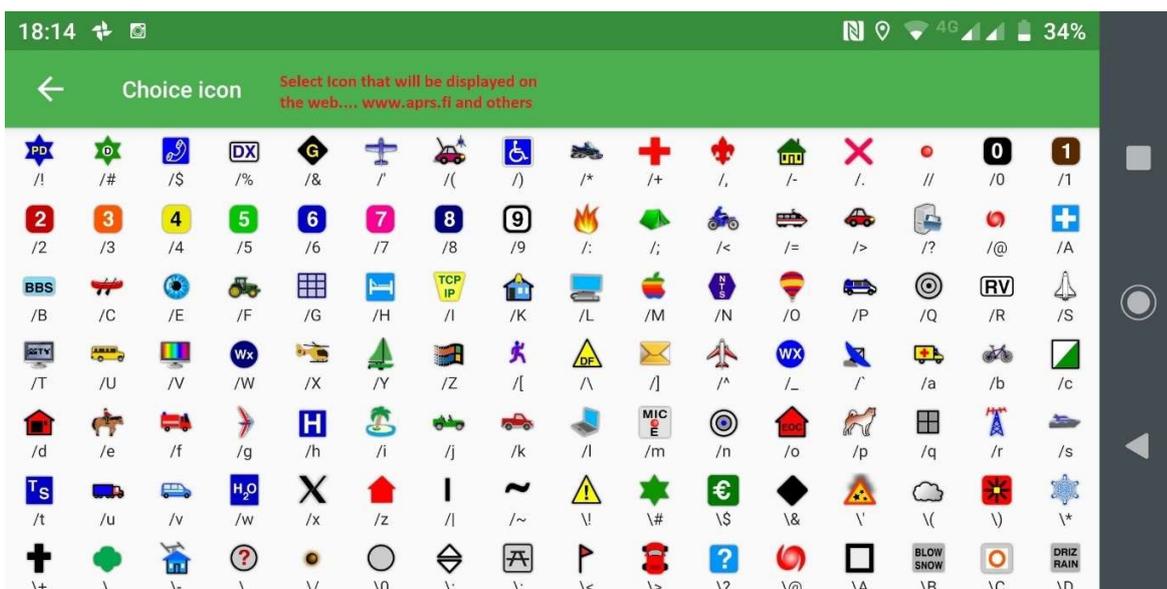Speaker to turn audio on phone on or off.

APRS 4 – Example Pages – Suggestion settings

What the APRS settings do and how you may want to set them.

APRS Icons that can be used and will show up on APRS search engines.

Memory Setup Page 1

Main Memory Page

Power status to radio

Memory Pages and Groups of memories 16 Memories per Group volume of Groups (A lot)   +
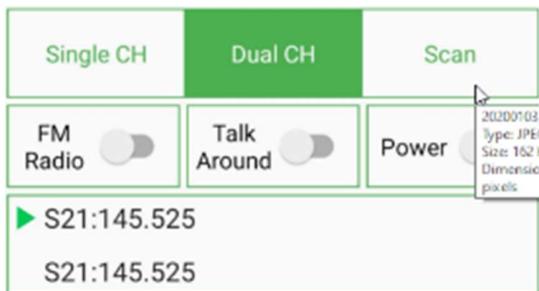
FM Radio

??????

Disconnect you from Radio

Select Channel – Long press will offer edit, bind a Network Channelor delete.

TX Setting press to change

Single or Dual memories

Scan – will scan the memory channels of the bank

FM Radio – takes you to screen for FM radio frequencies

Talk Round – Repeater/frequency bypass (It will TX on the RX memory frequency) removing the repeater shift.
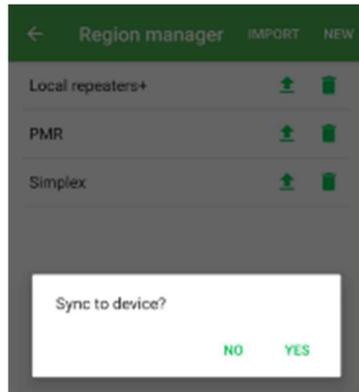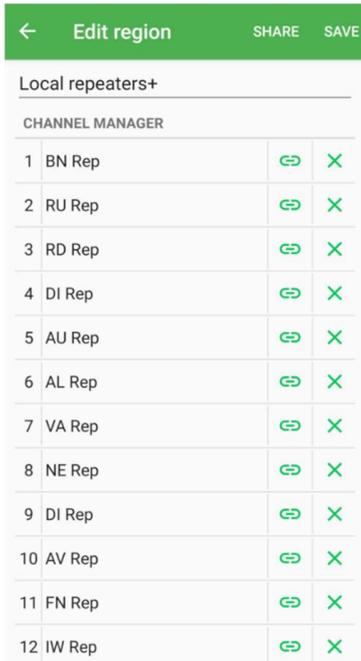
Power – Remoter power on/off of radio.

Panel above shows that is was set to TX and receive on S21 memory channel during testing.
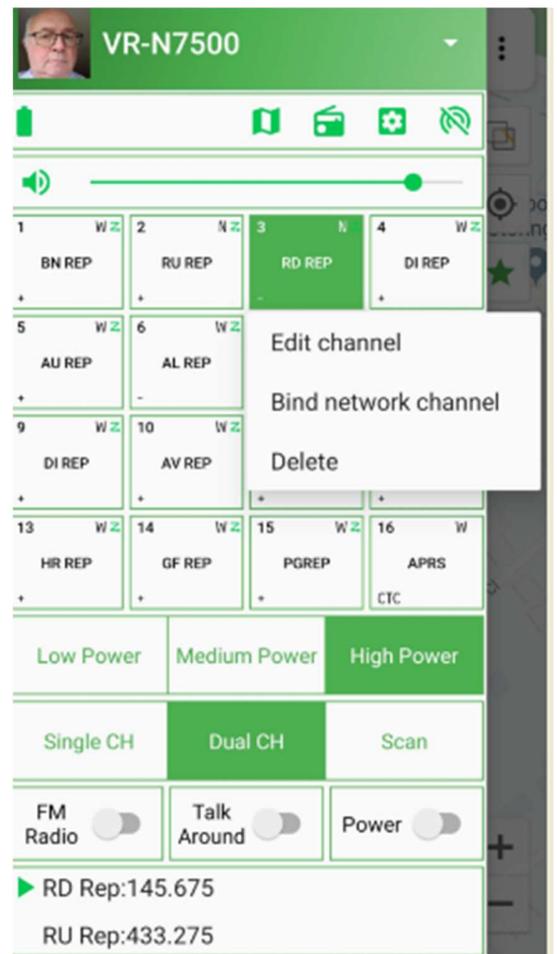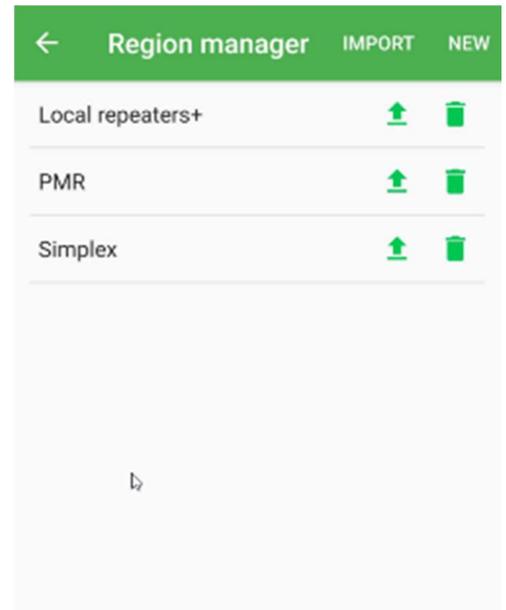
Memory Setup Page 2

Regional Manager Page allows you to add groups of 16 channels to the radio.

- Note save to radio when asked to sync.
- Import and export
- Delete Group.

The Edit region page allows you to alter the memories or delete them.

You can share and save when any changes made.

Memory Page allows you change which memory you want to use for the 1 channels plus bind a network channel to a frequency and this can receive and TX into and out of the radio and network. – Further details on that later.

(Do this with care – others may be using the frequency)

Edit Channel – Change memory settings frequency, tone, power and off set. Even turn off TX very hand for out of band listening.

On testing a frequency or Channel that has its TX turned off will still show the red TX led but no TX (thanks David KE6IPU) tested OK no RF output.

I found no limit to the number Groups of 16 channels that can be set up (If you find a max let us know)

Network Setup Page 1

Setting up a Network

From Main screen, button top LHS gives a page like this, you can add Network channels by "Join Network Channel" button, this will give you a Join or Create a New Channel. (I would advise joining before advancing to create a channel that you may never use)

I have setup "Vero UK" and at the moment doesn't require a password.

Search for a channel via join existing channel and use the search spy glass, just put a letter in at a time and the search will take place with a list showing up.
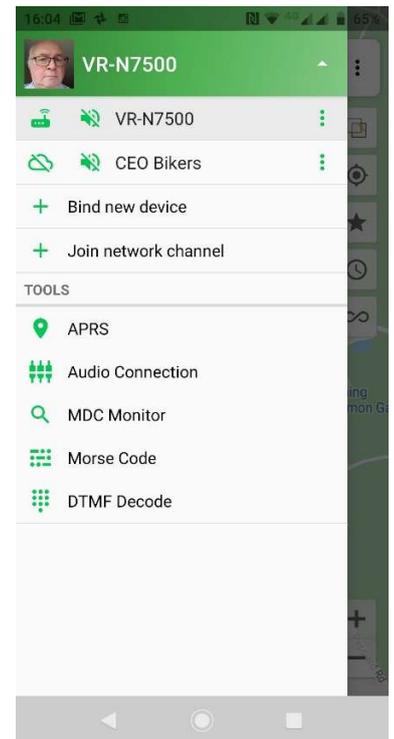
Select "Join" and it will be saved to the list.

If it's a closed group permission for access may be required (TBC)

You can turn on and off and on the Network channels listening to the one turned.

There is a small green spot that shows any activity and you can see who is on line at the time and who members are but not on line.

Selecting a Network Channel puts it at the top of the screen and on the main screen the group button will give you members, messages (If feature is turned on to save messages), members on and those in the group, plus location (if that's turned on by the member) (Managers of group can ban and make them Administrators. (Details later thanks David KE6IPU) plus Delete (sounds serious). Map will give you your position and others by expanding the map.

This button gives you direct screen of the Network voice recording from whom with picture and length of message **(remember there is a 1 minute time out on Network calls)**

The "Hold to Speak" button…… if you need to ask

When you have network coverage and connection it will show you "Please Speak" (1 minute timer starts)

Replies show the person calling and I would suggest use of call sign (Yours's at the end of TX or say over to you/back to you) otherwise has there been a break in the network signal…..

Network Setup Page 2

You can network from the phone APP to another person or group simply (above)

Network from RF to Network and RF needs authorization/permission by the owner of the channel.

Below is the principle diagram for Network to Network. (sceenshot from Moonraker website)
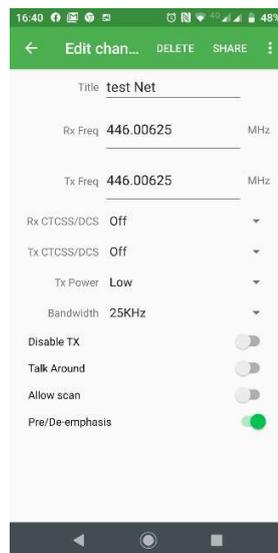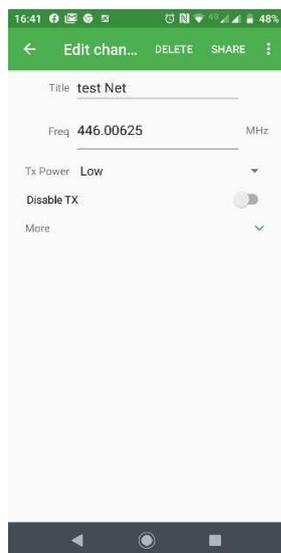

Binding Network Channel to Memory Channel with RF. (Help from David KE6UPI)

Step 1 – Memory frequency setup page (I setup and used memory 4 as a test)

2. Select the channel (no.4 for me) by long press on button and you need to edit the channel

This will be your RX and TX frequency if "Relay Mode" is enabled.

This freq was selected to do some simple testing into a dummy load.

Caution on use of this is required and keep within your license agreement.

You worked for it don't loose it.

Network Setup Page 3

When the memory is correctly setup you want to use save and press the button again then press "Bind Network Channel"

Your selected channels will show up on page Pick a Channel. Pick a channel.

This will be put into that memory screen and the name added to the memory view.
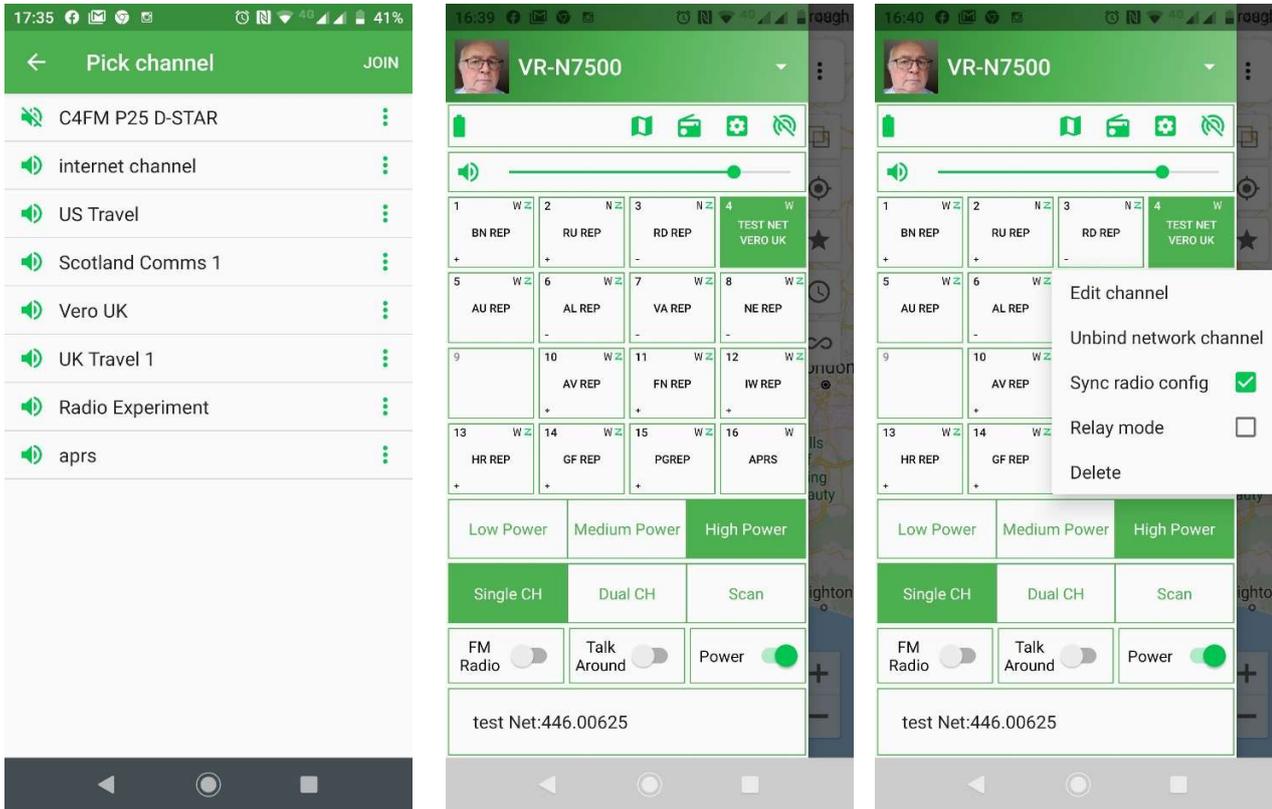

Press the memory button again and now this will show Edit, Unbind, Sync radio Config, Relay Mode and delete.

Press "Sync radio config" This will allow TX from RF frequency into Network.

If you have permission or you're the owner of the Channel then the "Relay Mode" will go green. This gives you RX and TX into the network from and too RF.
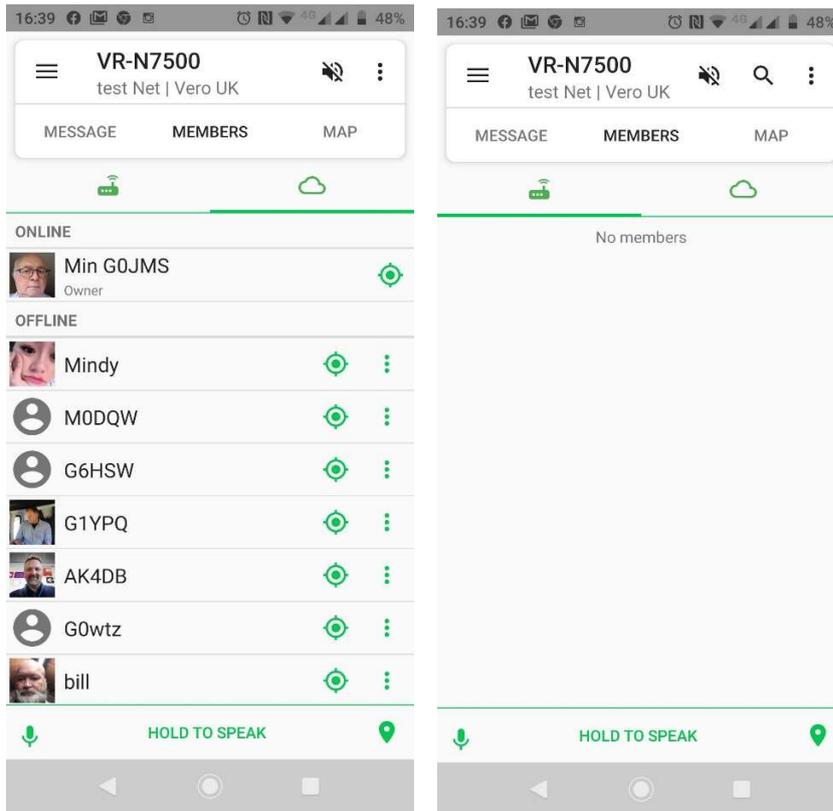
Use this feature with caution.

The Main screen here shows the APRS station and at the top the Memory Channel and the Network you have selected.
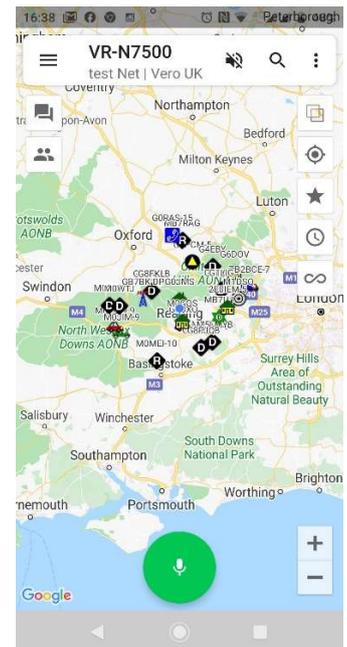
You can see who is on the Channel at that moment and who's off line, plus their locations if that's been set up.


Operation – Caution and you will only have a 1 minute network period per over.

Network Manager linking ownership is held by the person who setup the Network Channel and they can allow other to use the Relay Mode.

To remove is the same as changing the memories by deletion or turning them off

Pressing the cloud turns on/off that channel from the internet.

Audio that channels audio is on/off.
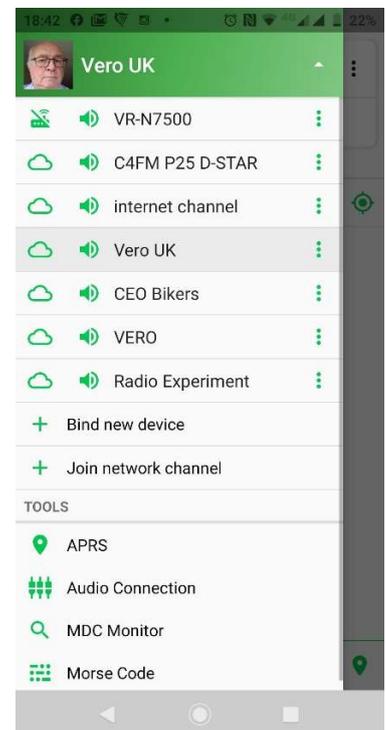
Auxiliary Items Page 1

Remote PTT

I wanted to connect up the radio for motorcycling and have the Bluetooth setup without loads of wires, so I purchased the button BT unit.

This functioned very well before I fitted it to the bike and it slipped to the opposite side of the radio on the handle bars.

It lost connection to the radio and was intermittent by the way I had connected via BT. I tried several options with the microphone connected and without, on the test bench.

Finding that the button BT PTT has only about 2 m distance and permanent solution of a wired system has been tested.

By connecting terminals 3 & 5 to a PTT the system works well and the BT headset and GPS operate on the bench so far as designed.
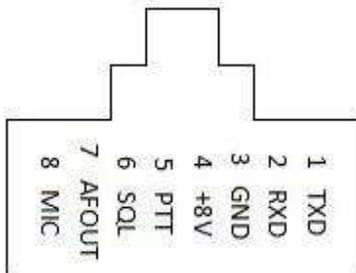
Plug 8 way towards the radio.

Connecting 3 & 5 put the radio into TX and the audio is via the BT headset, removing the risk of accidental turning on the cable microphone and also not picking up audio as it's disconnected.

Will complete report when fitted to bike and test is completed.

18th Jan 2020