

DMR Overview

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Agenda

- Getting an ID
- Registering on Brandmeister
- Hotspot Considerations
- Radio Considerations
- Rules of the Road

Getting an ID

- <https://radioid.net/account/register#!>
- Fill in call sign and email, you will get a reply email
- Check your email to confirm registration
- Agree to terms
- Upload your official FCC License Copy

Account Registration

Callsign

Email

Password

Country / Territory

I'm not a robot

reCAPTCHA
Privacy - Terms

Please go check your email. Leave this window open.
Once you see the "Thank you" message in your email,
come back here.

Please read and review the policies below as you will be agreeing to these to use this service

- Privacy Policy
- Terms and Conditions
- Cookie Policy
- Acceptable Use Policy

Data Privacy

- Digital ID, Callsign, First or Given name and Country are minimum public required personal information in order apply for a Digital ID and will be made publicly available
- You will have access to change most information, callsign and Firstname will only be changed via an Admin action once verified.
- You agree to allow RadioID.net to host your information, which can be changed/modified at your convenience.
- You agree to allow RadioID.net to share your information via database dumps, partners and searches for public consumption.

I AGREE TO THE ABOVE TERMS, CONDITIONS AND POLICIES

LICENSE UPLOAD REQUIRED FOR ACCOUNT COMPLETION

**** IF THE LICENSE DOCUMENT YOU UPLOAD DOES NOT LOOK LIKE THE SAMPLE(S) BELOW, IT WILL BE REJECTED! ****

No file chosen

**** Official Gov't. Document must match your Name and Callsign above ****

How to Get Official License Copy

- <https://wireless2.fcc.gov/UlsEntry/licManager/login.jsp>
- Click the green bar at the top that asks you to download your official copy
- Add the license you want an official copy for in the picker, click add, then click Select all on the right hand box
- Click download in the lower right
- Save the PDF File

My Licenses License WJ4V At A Glance

Download your official electronic authorizations [here](#).

Call Sign WJ4V

The screenshot shows two panels side-by-side. The left panel, titled 'Filter by Radio Service', has a dropdown menu set to 'Show all'. Below it is a section titled 'My Authorizations' containing a list with one entry: 'HV - WJ4V'. At the bottom of this list is a 'SELECT ALL' button. The right panel, titled 'Authorizations to Download', contains a list with one entry: 'HV - WJ4V'. At the bottom of this list is a 'SELECT ALL' button. Between the two panels are two buttons: 'ADD >' and '< REMOVE'.

TP = A component(s) of this call sign is in termination pending status for failure to meet the
* denotes licenses that have an international address

Upload will take time to verify 1-2 days

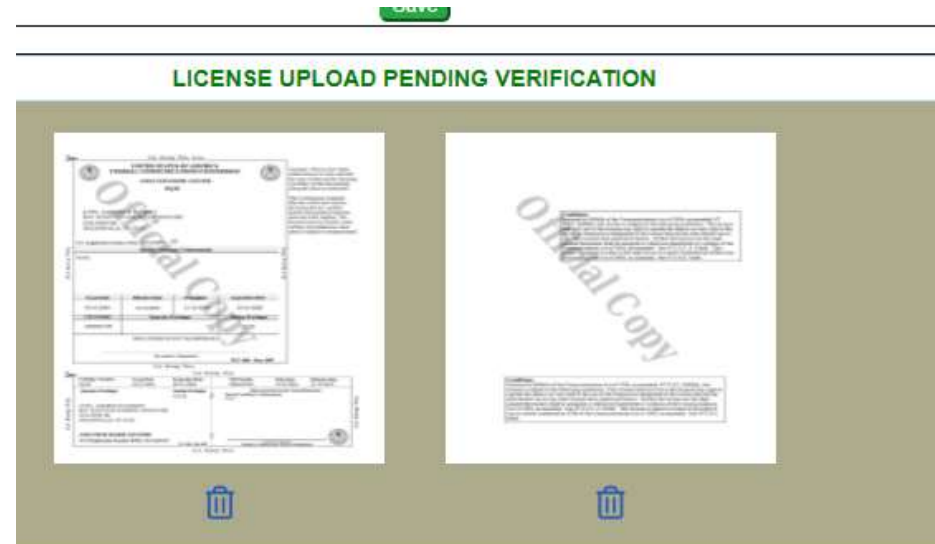
- Make sure you upload the one that says official copy, not reference copy
- You'll receive a confirmation email with your ID

WJ4V 

Andrew Gossett
Nolensville, Tennessee
United States

* - Any extra data for EU has been retrieved from QRZ API in real time

| WJ4V Digital ID's | | | |
|-------------------|----------|---------|------|
| Radio ID | Callsign | Remarks | Type |
| 3176780 | WJ4V | DMR | DMR |



Radioid.net
Your unique DMR ID

Hello Andrew,

Your account at Radioid.net is now approved, Welcome to the Digital Radio Explosion!

Here is a link to a 'CARD' that you can use to view all your information and share with others...

<https://database.radioid.net/database/view?callsign=WJ4V> <--- Click this link to view your ID's

Multiple radios / hotspots, multiple ids?

- No
 - You do not need more than one ID.
 - You can use the same ID on multiple radios and multiple hotspots at the same time.
- Do I need a repeater ID for a hotspot
 - No
 - Only actual repeaters in high profile locations need repeater IDs
- It used to be easier to get additional IDs, but since you don't need multiple, this ability has been restricted

Register for Brandmeister

- Other DMR networks are available, WCARES is using Brandmeister
- <https://brandmeister.network/>
- Register (top right on the screen), Confirm the registration email
- Wait for your account to be verified

BrandMeister Dashboard <noreply@brandmeister.network>
to me ↵

Hello Andrew

Your account on the BrandMeister Dashboard has been activated

You can now login on [the dashboard](#) using these credentials:

Your username: WJ4V

Your password: the password you entered in the registration form

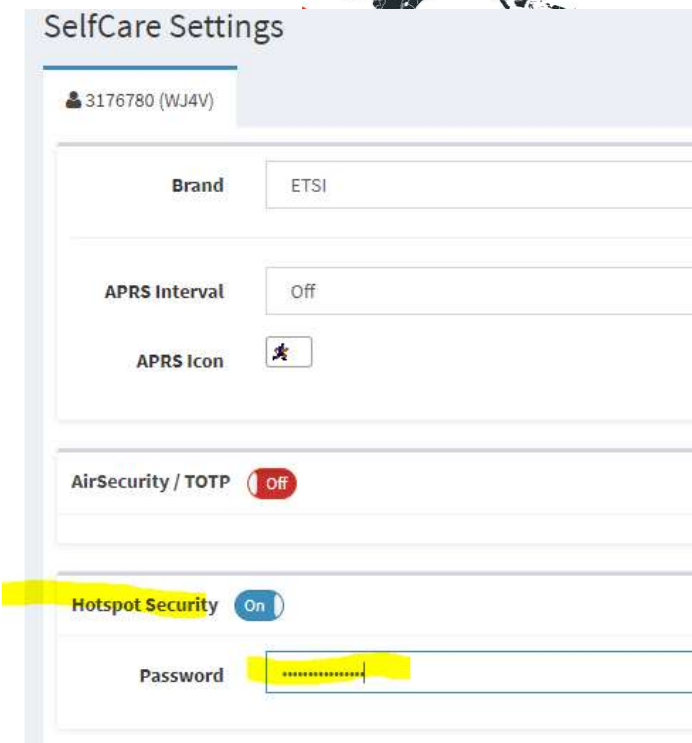
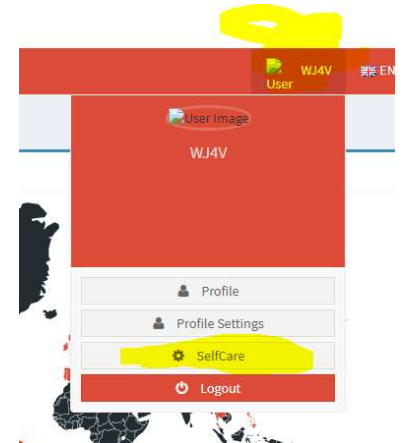
Best 73'

The BrandMeister Dashboard Team

Note: replies to this email address will not be monitored

Set Hotspot Security

- Log in to Brandmesiter
- Click your call in upper right menu
- Select SelfCare
- Turn on Hotspot Security
 - Set a password
 - Save
 - Use only basic special characters !#*



Set up Hotspot (not required if using repeater)

- Pi-star is most common, openspot etc also available
- If you don't see settings in the screenshot, apply the changes you can see, and the others will appear

| Setting | Value |
|--|---|
| Controller Software: | <input type="radio"/> DStarRepeater <input checked="" type="radio"/> MMDVMHost (DV-Mega Minimum Firmware 3.07 Required) |
| Controller Mode: | <input checked="" type="radio"/> Simplex Node <input type="radio"/> Duplex Repeater (or Half-Duplex on Hotspots) |
| <input type="button" value="Apply Changes"/> | |
| General Configuration | |
| Setting | Value |
| Hostname: | WJ4V-DMR <input type="button" value="A"/> Do not add suffixes such as .local |
| Node Callsign: | WJ4V |
| Radio Frequency: | 438.800.000 MHz |
| Latitude: | 50.00 degrees (positive value for North, negative for South) |
| Longitude: | -3.00 degrees (positive value for East, negative for West) |
| Town: | Nolensville, TN |
| Country: | United States |
| URL: | http://www.wcares.org <input type="radio"/> Auto <input checked="" type="radio"/> Manual |
| Node Type: | <input type="radio"/> Private <input checked="" type="radio"/> Public |
| APRS Host: | euro.aprs2.net |
| System Time Zone: | Europe/London |

MMDVMHost Configuration

| Setting | Value | |
|---------------------|---|--|
| DMR Mode: | <input checked="" type="radio"/> | RF Hangtime: 20 Net Hangtime: 20 |
| D-Star Mode: | <input type="radio"/> | RF Hangtime: 20 Net Hangtime: 20 |
| YSF Mode: | <input type="radio"/> | RF Hangtime: 20 Net Hangtime: 20 |
| P25 Mode: | <input type="radio"/> | RF Hangtime: 20 Net Hangtime: 20 |
| NXDN Mode: | <input type="radio"/> | RF Hangtime: 20 Net Hangtime: 20 |
| YSF2DMR: | <input type="radio"/> | |
| YSF2NXDN: | <input type="radio"/> | |
| YSF2P25: | <input type="radio"/> | |
| DMR2YSF: | <input type="radio"/> Uses 7 prefix on DMRGateway | |
| DMR2NXDN: | <input type="radio"/> Uses 7 prefix on DMRGateway | |
| POCSAG: | <input type="radio"/> POCSAG Paging Features | |
| MMDVM Display Type: | None | Port: /dev/ttyAMA0 Nextion Layout: G4KLX |

Apply Changes

| Setting | Value | |
|---------------------|---|--|
| Hostname: | wj4v-dmr | Do not add suffixes such as .local |
| Node Callsign: | WJ4V | |
| CCS7/DMR ID: | 3176780 | |
| Radio Frequency: | 438.800.000 | MHz |
| Latitude: | 35.976980 | degrees (positive value for North, negative for South) |
| Longitude: | -86.66140 | degrees (positive value for East, negative for West) |
| Town: | Nolensville, TN | |
| Country: | United States | |
| URL: | http://www.wcares.org | <input type="radio"/> Auto <input checked="" type="radio"/> Manual |
| Radio/Modem Type: | STM32-DVM / MMDVM_HS - Raspberry Pi Hat (GPIO) | |
| Node Type: | <input type="radio"/> Private <input checked="" type="radio"/> Public | |
| APRS Host: | euro.aprs2.net | |
| System Time Zone: | Europe/London | |
| Dashboard Language: | english_uk | |

DMR Configuration

| Setting | Value |
|-----------------------|--|
| DMR Master: | BM_United_States_3102 |
| Hotspot Security: | |
| BrandMeister Network: | Repeater Information Edit Repeater (BrandMeister Selfcare) |
| DMR ESSID: | 3176780 01 |
| DMR Colour Code: | 1 |
| DMR EmbeddedLCOOnly: | <input type="checkbox"/> |
| DMR DumpTADData: | <input checked="" type="checkbox"/> |

Apply Changes

Wireless Configuration

Refresh Reset WiFi Adapter Configure WiFi

Wireless Information and Statistics

| Interface Information | Wireless Information |
|---|----------------------|
| Interface Name : wlan0 | Connected To : |
| Interface Status : Interface is down | AP Mac Address : |
| IP Address : | Bitrate : |
| Subnet Mask : | Signal Level : |
| Mac Address : b8:27:eb:17:45:fa | |

| Interface Statistics | |
|-----------------------|--|
| Received Packets : | |
| Received Bytes : | |
| Transferred Packets : | |
| Transferred Bytes : | |

WiFi Country : JP

Information provided by ifconfig and iwconfig

Wifi isn't great, use wired if you can

Amazon sells USB Ethernet adapters that work well if you don't have a full sized pi

Finish up Brandmeister

- Check on the left menu under hotspots that yours appears with a green plug. The 01 at the end is the ESSID you selected in pi-star.
- Click the hotspot number
- Enter your preferred static talk groups, and the right hand arrow to add them



Radios

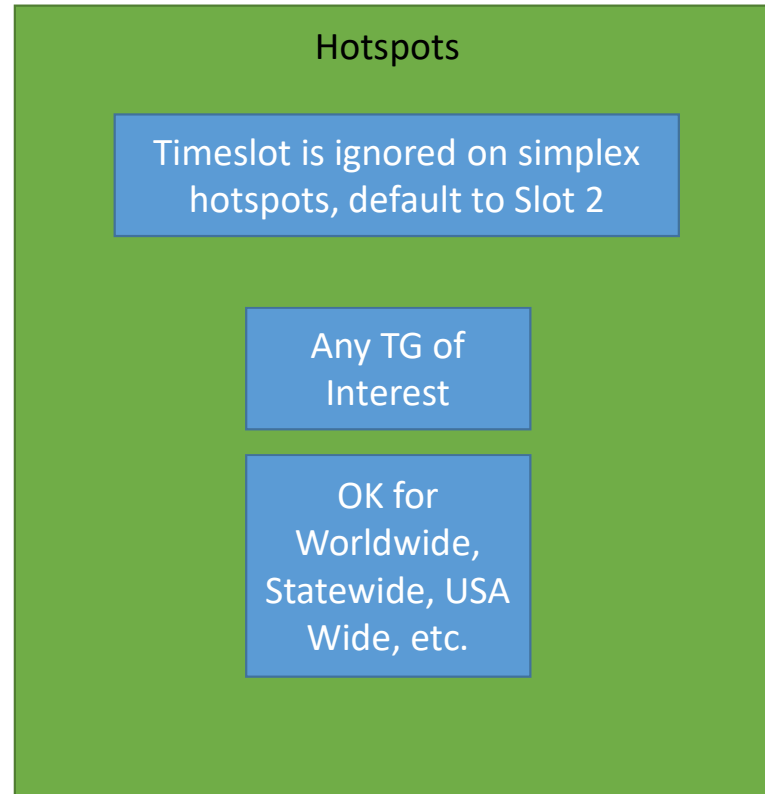
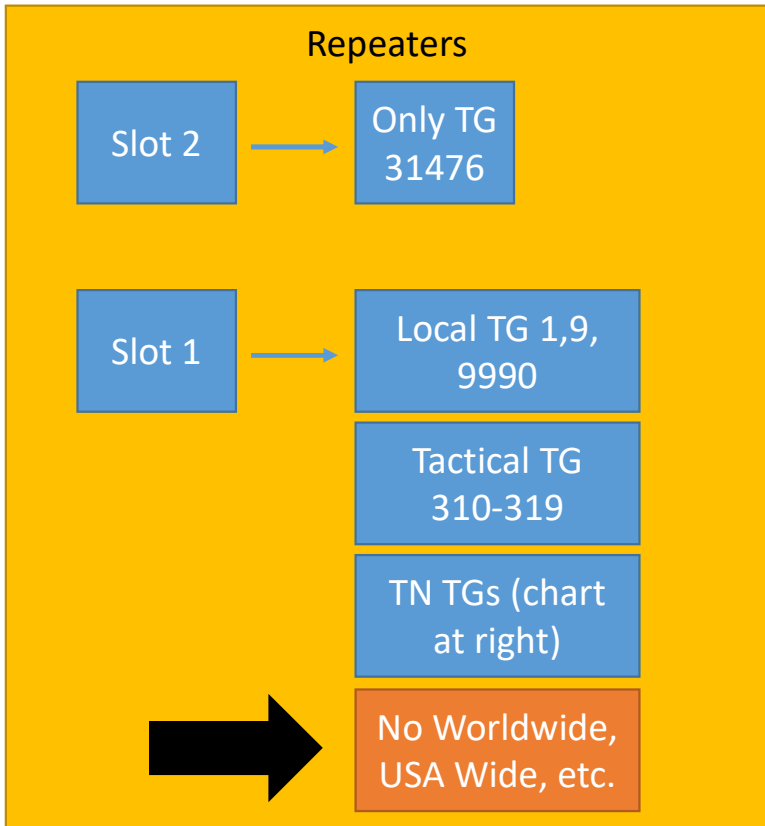
- Anytone 878 HT recommended, Mobile CS800D or Anytone 578
 - On the WC repeaters we're sorting out an audio level issue that causes some commercial (included CS800D radios) to have connection issues
- An HT is more than enough to work at least one county repeater
- TN Auxcomm Facebook group can be used to request access to our slack channel. You can find code plugs there in the DMR channel, or make your own.

Programming

| Repeater | Color Code | Slot | Frequency | Talk Group |
|---------------|------------|------|-------------|------------|
| Nolensville | 1 | 2 | 440.6875 +5 | 31476 |
| Century Court | 1 | 2 | 440.5875 +5 | 31476 |

- Start with these, you can expand to others later
- If you don't want to manually dial the TG, you can set one zone per repeater, and multiple channels (same frequency different talk group)
- Trying to add everything all at once becomes confusing and overwhelming
- Don't forget you can add analog repeaters too!
- If you aren't in Williamson County, check the code plug in the slack channel for the one nearest you
- Have a CS800d or professional radio? Try the TEMA, Fairview, Short Mountain or other repeaters while we fix the audio issues in WC

Talk Groups for WC - Rules



| | |
|-------|-------------------|
| 31470 | TN Statewide TACO |
| 31471 | NWS Memphis |
| 31472 | TN Skywarn MTEARS |
| 31473 | Knox-Metro area |
| 31474 | Fusion-Link |
| 31475 | Tennessee TAC |
| 31476 | Williamson CO |
| 31477 | TN EMCOMM |
| 31478 | TEMA |
| 31479 | Tennessee TAC2 |

- Use repeaters to talk to people close by
- Use hotspots to talk to people far away

*31478 is the TEMA Calling channel monitored in the State EOC, do not rag chew on this TG

*9990 is the Parrot Test (the call is not entirely private so beware)

Did I get it all correct?

- Select Talk Group 9990, and perform an echo test to see if you can hear your transmission.
- Next try a QSO (it is the same as FM Analog in format)
- Check in on a net – Weekdays 10:00 and 14:00 on 31478 slot 1, wait until all TEMA, and COMU have been called, then check in under general Auxcomm
- Join the TN AuxComm Facebook group and the slack channel to get help

OK, I did all of that, but what did I do? What is DMR?

- DMR has two time slots (two simultaneous talk paths)
- Slot 1 is open for dynamic talk groups
- Slot 2 is defined by the repeater owner as a static talk group
- DMR is internet based, if you can't connect to the master, you can't complete the talk path (excluding local RF for some repeater brands which will remain available)
- We are using one of many DMR networks, you can even build your own if you like.
- To identify each user, you are assigned an ID, your ID controls your access as well as serves as your identity.
- YouTube does a better job explaining the technical details depending on your interest level, find out more.