

I Have a DMR Radio Now What?

May 1, 2023

Len Rust, W2LJR



**Gloucester County
Amateur Radio Club
W2MMD**

Celebrating 63 Years Of Service To Our Community & Amateur Radio

Established In 1959



Today's Session – DMR, Now What?

- What can I do with my DMR radio?
- Simplex
- Hotspots
- Repeaters

What can I do with my DMR radio?

What can I do with my DMR radio?

- Everything you can do with any other HT
 - 2 Meter Analog FM
 - 70 Centimeter Analog FM
 - Analog Simplex
 - Analog Repeaters
 - APRS

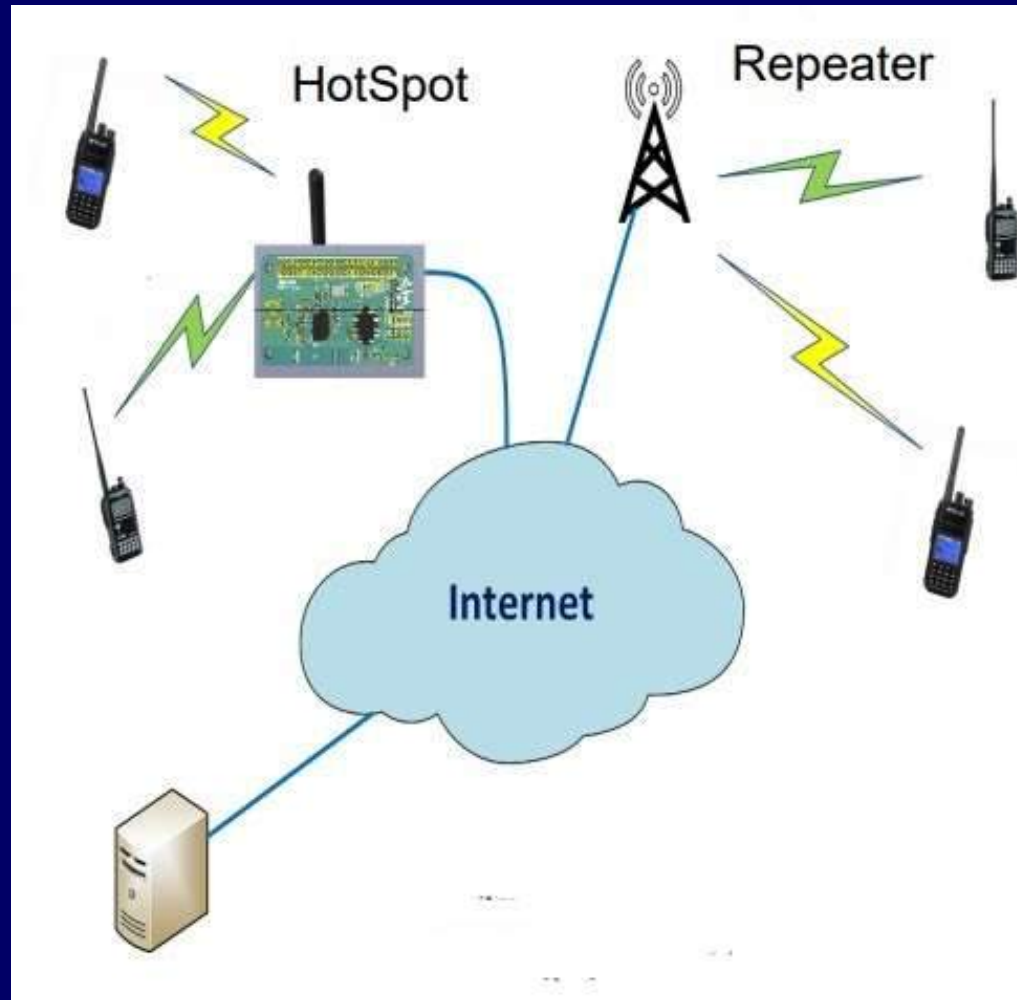
Simplex

Simplex

- What you need
 - DMR ID
 - <https://www.radioid.net/>
 - Frequency
 - Time Slot
 - Color Code
 - Talk Group
- Why
 - Better Audio Quality
 - Better Range
 - Longer Battery Life

Hotspots

Hotspots



Hotspots



openSPOT 4
\$320.00



Bridgecom SkyBridge
\$425.00

Hotspots



Raspberry Pi Zero W



Raspberry Pi 3

Hotspots

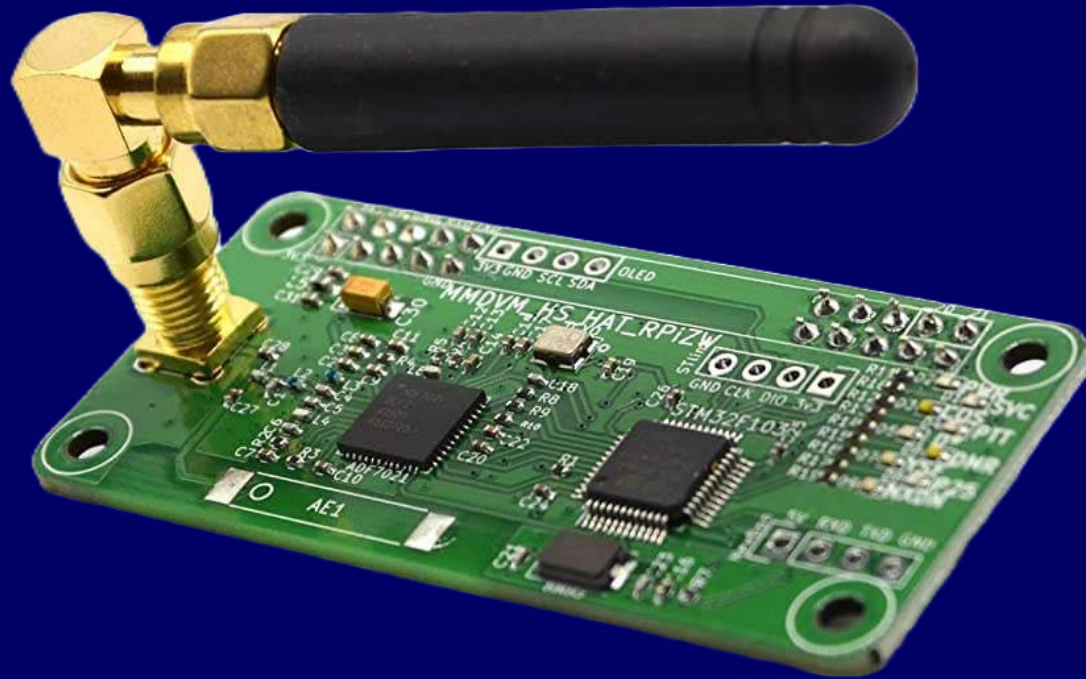


Raspberry Pi 3



Raspberry Pi Zero W

Hotspots



MMDVM Hat

Hotspots

- **Build it Yourself**

- **Raspberry Pi (Computer)**

- Pi Zero W \$50.00

- Pi 3 B \$75.00

- MMDVM (Radio) \$55.00 w/ Pi Zero Case

- Pi-Star (Software) Free

- **Pi Zero Pre-Assembled \$185**

Pi-Star Digital Voice Dashboard for W2LJR

Dashboard | Admin | Configuration

Modes Enabled	
D-Star	DMR
YSF	P25
YSF XMode	NXDN
DMR XMode	POCSAG

Network Status	
D-Star Net	DMR Net
YSF Net	P25 Net
YSF2DMR	NXDN Net
YSF2NXDN	YSF2P25
DMR2NXDN	DMR2YSF

Radio Info	
Trx	Listening
Tx	446.525000 MHz
Rx	446.525000 MHz
FW	HS_Hat:v1.4.17
TCXO	14.7456 MHz

DMR Repeater	
DMR ID	3186225
DMR CC	1
TS1	disabled
TS2	enabled
DMR Master	
BM 3104 United St..	

Gateway Activity									
Time (EST)	Mode	Callsign	Target	Src	Dur(s)	Loss	BER		
12:08:52 Dec 23rd	DMR TS2	W2LJR (GPS)	TG 319	RF	4.7	0%	0.3%		
12:08:37 Dec 23rd	DMR TS2	K2LJR (GPS)	TG 319	RF	4.0	0%	0.2%		
11:16:57 Dec 23rd	DMR TS2	NE7B0 (GPS)	TG 318	Net	2.6	2%	0.0%		
09:42:02 Dec 23rd	DMR TS2	ER1CW (GPS)	TG 91	Net	1.2	0%	0.0%		
09:41:45 Dec 23rd	DMR TS2	HJ5ZQM (GPS)	TG 91	Net	3.0	8%	0.4%		
09:41:25 Dec 23rd	DMR TS2	PS8AJR (GPS)	TG 91	Net	0.8	0%	0.0%		
09:41:21 Dec 23rd	DMR TS2	HB3YPG (GPS)	TG 91	Net	0.5	0%	0.0%		
09:40:56 Dec 23rd	DMR TS2	PD4BLM (GPS)	TG 91	Net	0.8	0%	0.0%		
09:40:28 Dec 23rd	DMR TS2	YD3CII (GPS)	TG 91	Net	0.8	0%	0.0%		
09:39:24 Dec 23rd	DMR TS2	N0BPM (GPS)	TG 91	Net	0.5	0%	0.0%		
09:38:45 Dec 23rd	DMR TS2	F0FPZ (GPS)	TG 91	Net	2.6	0%	12.2%		
09:38:33 Dec 23rd	DMR TS2	TA2NOR (GPS)	TG 91	Net	2.3	0%	0.0%		
09:37:36 Dec 23rd	DMR TS2	BG0DLR (GPS)	TG 91	Net	2.0	54%	3.6%		
09:37:27 Dec 23rd	DMR TS2	KB5BUN (GPS)	TG 91	Net	0.8	0%	0.7%		
09:36:07 Dec 23rd	DMR TS2	DL6FK (GPS)	TG 91	Net	0.5	0%	0.0%		
09:35:45 Dec 23rd	DMR TS2	N6PC (GPS)	TG 91	Net	0.5	0%	0.0%		
09:34:19 Dec 23rd	DMR TS2	YD6VXO (GPS)	TG 91	Net	13.1	4%	0.1%		
09:33:44 Dec 23rd	DMR TS2	YD5NPC (GPS)	TG 91	Net	0.5	0%	5.3%		
09:33:33 Dec 23rd	DMR TS2	DS5KZB (GPS)	TG 91	Net	0.5	0%	0.0%		
09:33:25 Dec 23rd	DMR TS2	KK7GUR (GPS)	TG 91	Net	0.5	0%	0.0%		

Local RF Activity								
Time (EST)	Mode	Callsign	Target	Src	Dur(s)	BER	RSSI	
12:08:52 Dec 23rd	DMR TS2	W2LJR (GPS)	TG 319	RF	4.7	0.3%	S9+46dB (-47 dBm)	
12:08:37 Dec 23rd	DMR TS2	K2LJR (GPS)	TG 319	RF	4.0	0.2%	S9+46dB (-47 dBm)	

General Configuration

Setting	Value
Hostname:	pi-star <small>Do not add suffixes such as .local</small>
Node Callsign:	W2LJR
CCS7/DMR ID:	3186225
Radio Frequency:	446.525.000 MHz
Latitude:	39.7292 <small>degrees (positive value for North, negative for South)</small>
Longitude:	-75.0688 <small>degrees (positive value for East, negative for West)</small>
Town:	Sewell, NJ
Country:	USA
URL:	https://www.qrz.com/db/W2LJR <input checked="" type="radio"/> Auto <input 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
DMR Access List:	3186225,3196243
APRS Host Enable:	<input type="checkbox"/>
APRS Host:	noam.aprs2.net ▾
System Time Zone:	America/New_York ▾
Dashboard Language:	english_us ▾

Apply Changes

DMR Configuration

Setting	Value
DMR Master:	BM_3104_United_States ▾
Hotspot Security:	*****
BrandMeister Network:	Device Information Edit Device (BrandMeister Selfcare)
DMR ESSID:	3186225 None ▾
DMR Color Code:	1 ▾
DMR EmbeddedLCOnly:	<input type="checkbox"/>
DMR DumpTADData:	<input checked="" type="checkbox"/>

Apply Changes

Hotspots - Continued

- **Networks**
 - **Brandmeister**
 - **Hose Line**
 - **TGIF**
 - **NJ TRBO**
 - **DMR - MARC**

Hotspots - Brandmeister

- <https://brandmeister.network/>
- **1636 Talk Groups**
 - World Wide = 91
 - World Wide TAC = 910 to 919
 - USA = 3100
 - USA TAC = 310 to 319
 - Northeast = 3172
 - New Jersey = 3134
 - GCARC = 3198604
 - Bridge
 - AmericaLink (YSF) = 31656
 - NJ-TRBO TriState = 31360

Hotspots - Brandmeister

- Hose Line
- <https://hose.brandmeister.network/>

The screenshot displays the Brandmeister Hotspots interface. At the top left, there is a 'Show' dropdown menu set to 'Everything' and a 'RegEx mode' toggle switch. The main area is a grid of hotspots, each with a country flag, a count, a location, and a time ago. The hotspots are:

Count	Location	Time Ago
91	World-wide	00:24 ago
93	North America	00:34 ago
206	Belgium	02:43 ago
222	Italia	00:05 ago
260	Poland	00:54 ago
262	Deutsch	
263	MultiMode DL	02:12 ago
284	Bulgaria	01:51 ago
293	Slovenia	00:28 ago
334	XE	02:47 ago
712	Costa Rica	02:22 ago
748	Uruguay	
1211		00:06 ago
2029	Περιοχή 9 Εθνικ...	00:45 ago
2232		01:18 ago
2242		00:12 ago
2350	United Kingdom	02:32 ago
2504	*RUSSIA	

On the right side, there is a 'PLAYER' list showing a search bar with '3198604' and a list of active players: 3186225, 3198604, and W2LJR Leonard.

Hotspots - TGIF

- <https://tgif.network/>
- **1346 Talk Groups**
 - World Wide = **114**
 - North America = **110**
 - NA TAC = **101 to 109**

Hotspots - TGIF

TGIF Network

Monitoring ▾

Help ▾

Registration

Show 10 entries

None

Search:

Callsign	Name	DMR ID (Repeater ID)	Talkgroup	Timestamp	RSSI
WB4ZUT	Walter	3194520 (316184615)	31188 Indiana-W9ILS ILS - DMR Link XLXILS	10:40:43	
GW8SZL	Dave	2353431 (235343131)	50556 ANZEL Network	10:40:42	
DX1CC	Cavcom	5151330 (515133021)	4107 CavCom Amateur Radio Group CARER Inc	10:40:39	
M0XFN	Extended	2351372 (235137210)	51526 Freedom Filipino Network	10:40:39	
4F0X	Rollydel	5152066 (515206655)	51598 Freedom	10:40:39	
K04VTW	Dodropin	3188207 (318820701)	326 DoDropIn	10:40:38	
KN6SF	Kapihan	3180660 (318066033)	51547 KAPIHAN Network KN6SF	10:40:38	
KN6SF	Kapihan	3180660 (318066077)	30277 R.A.T.S. Digital Network Group	10:40:38	
N4DEA	Rupert	1137687 (113768702)	31000 PARROT	10:40:37	📶 S0 -4294967181 dBm

Repeaters

Repeaters – Interstate Repeater System

- <http://wr3irs.com/>
- Networks
 - NJ-TRBO
 - DMR-MARC
 - Brandmeister
- Repeaters
 - Charlestown, PA 440.200
 - Corbin City, NJ 440.400
 - Roxborough, PA 440.650
 - Eagle, PA 441.300
 - Waterford Works, NJ 443.300
 - Warren, NJ 440.2875
 - Wilmington, DE 448.425
 - Harve de Grace, MD 443.650
 - Towson, MD 441.400

Repeaters – IRS Talk Groups

- Time Slot 1
 - Full Time
 - 8801 - Delaware Valley
 - 8804 - Pack Rats
 - 3142 - PA Statewide
 - 3172 - Northeast US
 - PTT (10-minute Timeout)
 - 1 - Worldwide Calling
 - 3 - North America Calling
 - 13 - Worldwide English Calling
- Time Slot 2
 - Full Time
 - 2 - NJ TRBO TriState (31360 on BM)
 - 8 - PA / MD
 - 9 - Local Repeat Only

Repeaters – IRS Talk Groups

- Time Slot 2 (Continued)
 - PTT (10-minute Timeout)
 - 3169 - Midwest US Regional
 - 3172 - Northeast US Regional
 - 3173 - Mid-Atlantic US Regional
 - 3174 - Southeast
 - 3175 - South Plains
 - 3176 - Southwest
 - 3177 - Mountain
 - 3111 - Washington DC Regional
 - 3124 - MD Statewide
 - 3142 - PA Statewide
 - 3151 - VA Statewide
 - 31121 - First Coast (NE FL)
 - 310 to 319 - TAC 310 to TAC 319
 - 9998 - DMRX “Parrot” Echo Test
 - 9999 - NorCal Audio Meter

31xx = Brandmeister

Questions?

73 de Len W2LJR

w2ljr@arrl.net