



# DMR Radio From Start to Finish

Dennis Sobers KC3FOV

John LaMartina K3NXU <https://www.miklor.com/>

## What we will cover:

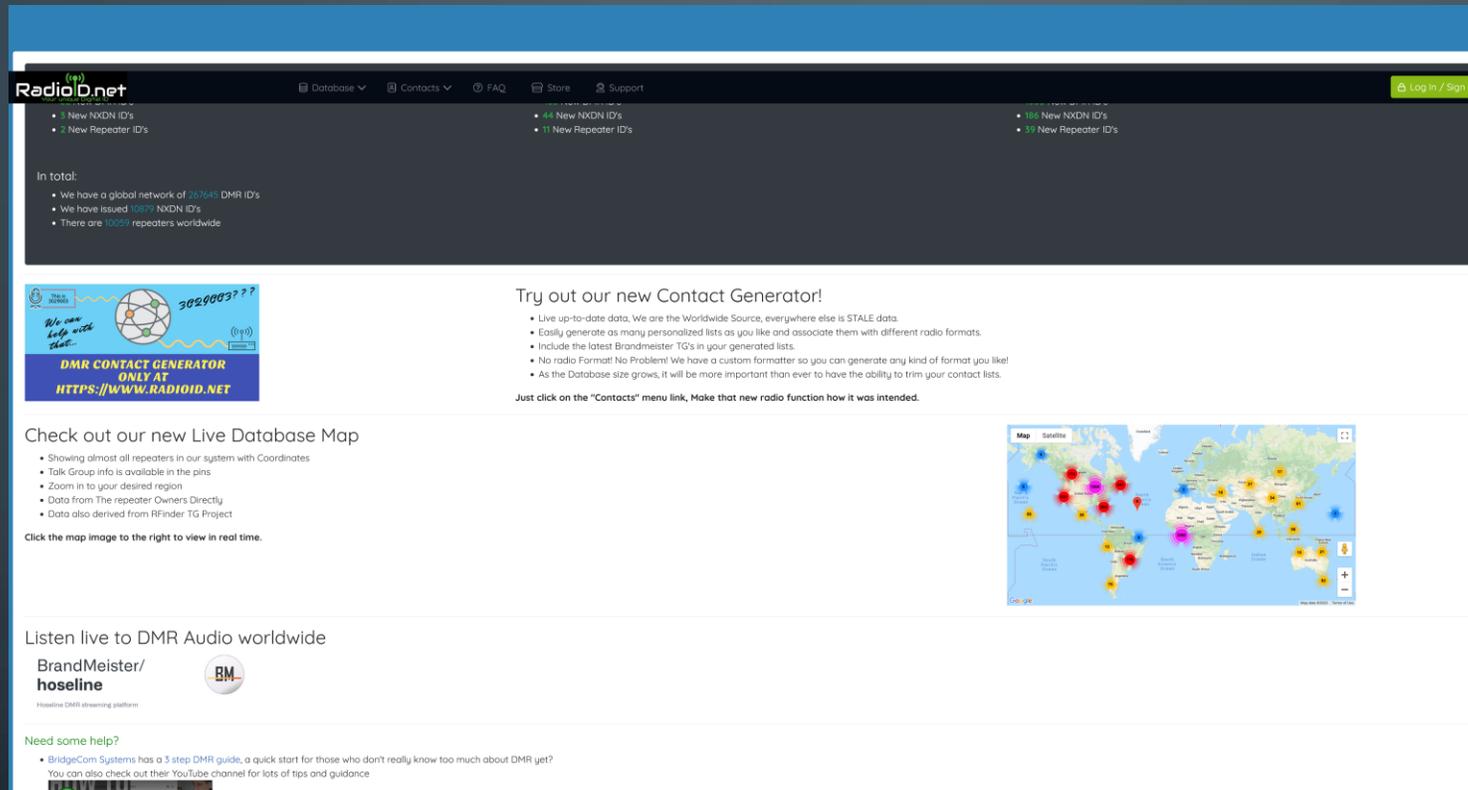
- Selecting a DMR radio.
- Getting a DMR ID.
- Finding a local DMR repeater. This presentation will be with reference to the Shrewsbury K3AE DMR repeater but will apply to other DMR repeaters also.
- Gathering information needed to program the radio. Frequencies, CC (color code), TG (talk group) and DMR Network information.
- Programming the radio.
- Getting on the air and DMR radio etiquette.

## Selecting a Handheld (HT) DMR Radio:

- Most DMR radios can do both DMR and Analog (FM) in the VHF (2 meter) and UHF (70cm) bands. The Shrewsbury repeater along with many others use the UHF band for DMR.
- Radio cost can range from \$100 to \$300 and up.
- For a first radio to see if you like DMR while keeping cost low, I suggest visiting <https://www.miklor.com/> for reviews. The Aliunce HD-1 looks like a good starter at under \$150 and covers both DMR and Analog.
- With the higher cost radios you will get more features like GPS, APRS and Bluetooth capability.

## Getting a DMR ID:

- First, register at <https://www.radioid.net>.



**Radioid.net** Database Contacts FAQ Store Support [Log in / Sign Up](#)

- 2 New NXDN ID's
- 2 New Repeater ID's
- 44 New NXDN ID's
- 11 New Repeater ID's
- 186 New NXDN ID's
- 31 New Repeater ID's

In total:

- We have a global network of 267645 DMR ID's
- We have issued 10679 NXDN ID's
- There are 10059 repeaters worldwide

**DMR CONTACT GENERATOR ONLY AT [HTTPS://WWW.RADIOID.NET](https://www.radioid.net)**

**Try out our new Contact Generator!**

- Live up-to-date data, We are the Worldwide Source, everywhere else is STALE data.
- Easily generate as many personalized lists as you like and associate them with different radio formats.
- Include the latest Brandmeister TG's in your generated lists.
- No radio Format! No Problem! We have a custom formatter so you can generate any kind of format you like!
- As the Database size grows, it will be more important than ever to have the ability to trim your contact lists.

Just click on the "Contacts" menu link, Make that new radio function how it was intended.

**Check out our new Live Database Map**

- Showing almost all repeaters in our system with Coordinates
- Talk Group info is available in the pins
- Zoom in to your desired region
- Data from The repeater Owners Directly
- Data also derived from RFinder TG Project

Click the map image to the right to view in real time.

**Listen live to DMR Audio worldwide**

**BrandMeister/hoseline**

Need some help?

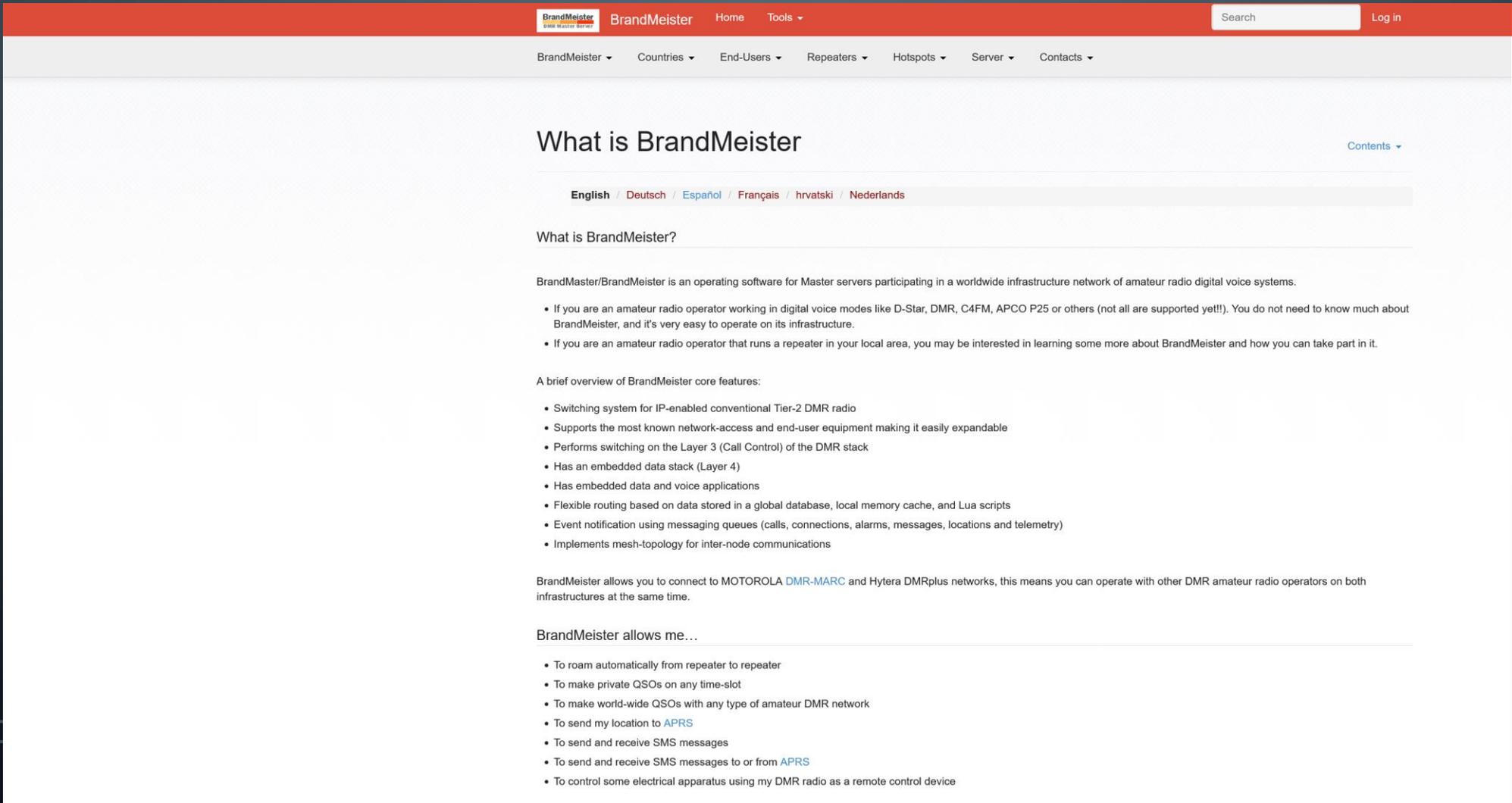
- BridgeCom Systems has a 3 step DMR guide, a quick start for those who don't really know too much about DMR yet?
- You can also check out their YouTube channel for lots of tips and guidance

← Sign Up here

- Fill out the information including your callsign.
- After completing the registration, you will receive an email within a few days with your new ID. Do not lose this email. The ID will need to be programmed into the radio.
- It is also highly recommended to also register this ID with the BrandMeister network. Doing so will allow you take advantage of the many features the BrandMeister network has to offer, like callsign and text message routing.

## What is BrandMeister ?:

- [https://wiki.brandmeister.network/index.php/What\\_is\\_BrandMeister](https://wiki.brandmeister.network/index.php/What_is_BrandMeister)
- BrandMeister handles the servers and Talk Groups used for communicating on DMR.



The screenshot shows the BrandMeister website interface. At the top, there is a red navigation bar with the BrandMeister logo, a search box, and a 'Log in' button. Below this is a secondary navigation bar with dropdown menus for 'BrandMeister', 'Countries', 'End-Users', 'Repeaters', 'Hotspots', 'Server', and 'Contacts'. The main content area features the title 'What is BrandMeister' with a 'Contents' dropdown. A language selection bar is visible, with 'English' selected. The text explains that BrandMeister is operating software for Master servers in a worldwide DMR network. It lists two main user scenarios: for amateur radio operators in digital voice modes (D-Star, DMR, C4FM, APCO P25) and for those running repeaters. A list of core features follows, including IP-enabled switching, network expansion, Layer 3/4 control, embedded data, flexible routing, and mesh-topology. It also notes compatibility with MOTOROLA DMR-MARC and Hytera DMRplus networks. Finally, it lists capabilities such as automatic roaming, private QSOs, world-wide QSOs, APRS location sharing, SMS messaging, and remote control of electrical apparatus.

BrandMeister

Home Tools

Search Log in

BrandMeister Countries End-Users Repeaters Hotspots Server Contacts

## What is BrandMeister

Contents

English / Deutsch / Español / Français / hrvatski / Nederlands

### What is BrandMeister?

BrandMaster/BrandMeister is an operating software for Master servers participating in a worldwide infrastructure network of amateur radio digital voice systems.

- If you are an amateur radio operator working in digital voice modes like D-Star, DMR, C4FM, APCO P25 or others (not all are supported yet!!). You do not need to know much about BrandMeister, and it's very easy to operate on its infrastructure.
- If you are an amateur radio operator that runs a repeater in your local area, you may be interested in learning some more about BrandMeister and how you can take part in it.

A brief overview of BrandMeister core features:

- Switching system for IP-enabled conventional Tier-2 DMR radio
- Supports the most known network-access and end-user equipment making it easily expandable
- Performs switching on the Layer 3 (Call Control) of the DMR stack
- Has an embedded data stack (Layer 4)
- Has embedded data and voice applications
- Flexible routing based on data stored in a global database, local memory cache, and Lua scripts
- Event notification using messaging queues (calls, connections, alarms, messages, locations and telemetry)
- Implements mesh-topology for inter-node communications

BrandMeister allows you to connect to MOTOROLA [DMR-MARC](#) and Hytera DMRplus networks, this means you can operate with other DMR amateur radio operators on both infrastructures at the same time.

### BrandMeister allows me...

- To roam automatically from repeater to repeater
- To make private QSOs on any time-slot
- To make world-wide QSOs with any type of amateur DMR network
- To send my location to [APRS](#)
- To send and receive SMS messages
- To send and receive SMS messages to or from [APRS](#)
- To control some electrical apparatus using my DMR radio as a remote control device

# BrandMeister Registration:

- <https://brandmeister.network/?page=register>
- Fill out required information to register.
- There is more to explore on BrandMeister and you can do that at your own convenience.

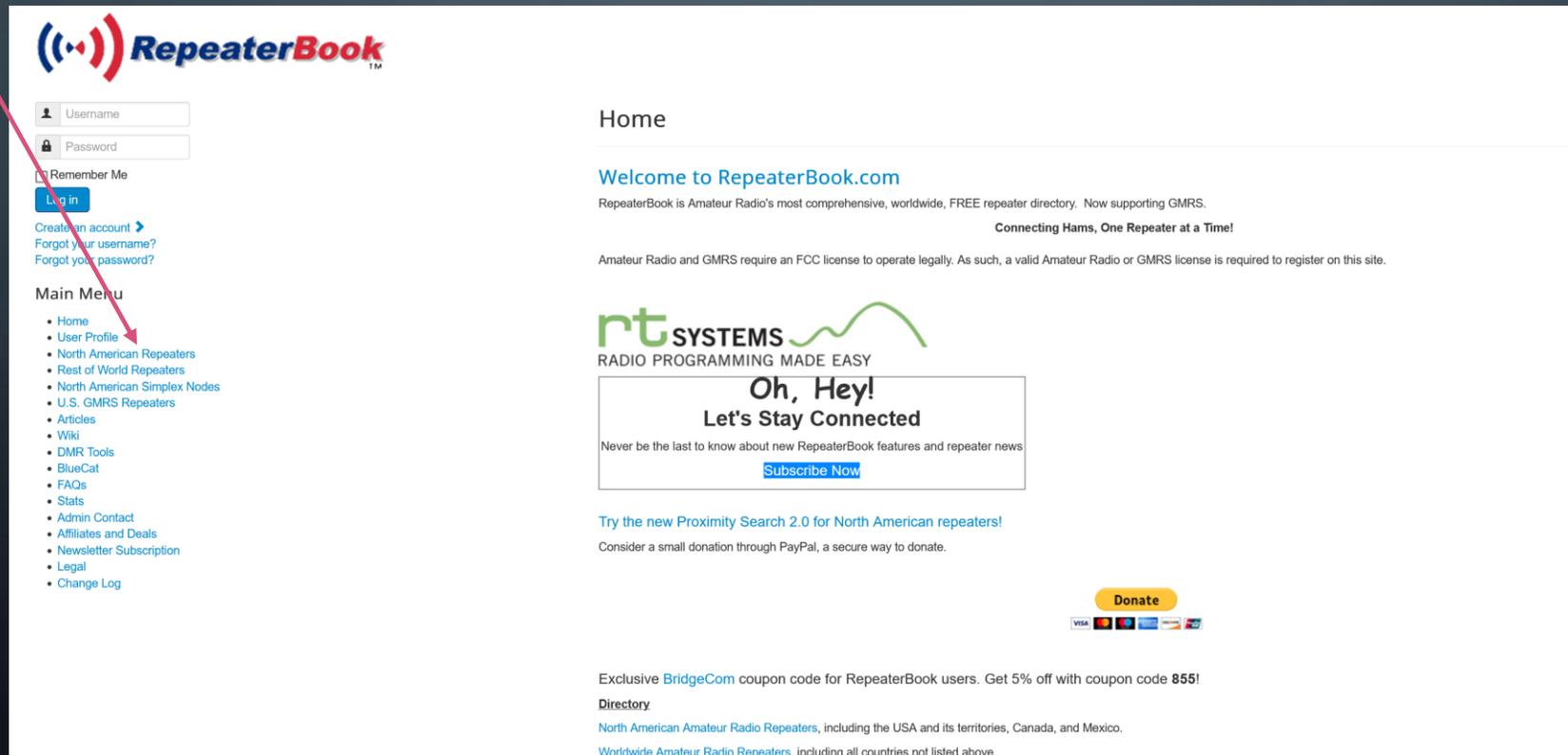
The screenshot shows the BrandMeister registration page. The top navigation bar is red with the BrandMeister logo on the left and links for Register, Login, EN, and Settings on the right. A dark sidebar on the left contains navigation items: User Dashboard, Last Heard, Repeaters (5749), Hotspots (19645), Masters (47), Alerts, SelfCare, and Information. The main content area is titled "Registration" and contains the following sections:

- General Account Details**
  - Callsign**: A text input field.
  - Email Address**: A text input field with a warning: "Using the same email as your RadiolD account will accelerate the validation process".
  - Confirm Email Address**: A text input field.
  - DMR ID**: A dropdown menu with the prompt "Enter one of your DMR IDs to validate your account".
- Security**
  - Password**: A text input field.
  - Confirm Password**: A text input field.
- Anti Spam**
  - A dropdown menu with the prompt "What is the wavelength of the UHF band in centimeters?" and the instruction "Answer with a number".
  - A reCAPTCHA widget with the text "I'm not a robot" and a "reCAPTCHA Privacy - Terms" link.

A blue "Register!" button is located at the bottom of the registration form.

Congratulations!!! Now that you have a DMR ID and registered with BrandMeister we can move onto what is required to program the radio or making a Code Plug.

- Let's find a DMR repeater. Go to Repeater Book.  
<https://www.repeaterbook.com/index.php/en-us/>
- No account is necessary for this.
- Click on “North American Repeaters”.



**RepeaterBook**

Username

Password

Remember Me

[Log in](#)

[Create an account](#)

[Forgot your username?](#)

[Forgot your password?](#)

**Main Menu**

- Home
- User Profile
- North American Repeaters
- Rest of World Repeaters
- North American Simplex Nodes
- U.S. GMRS Repeaters
- Articles
- Wiki
- DMR Tools
- BlueCat
- FAQs
- Stats
- Admin Contact
- Affiliates and Deals
- Newsletter Subscription
- Legal
- Change Log

**Home**

Welcome to RepeaterBook.com

RepeaterBook is Amateur Radio's most comprehensive, worldwide, FREE repeater directory. Now supporting GMRS.

**Connecting Hams, One Repeater at a Time!**

Amateur Radio and GMRS require an FCC license to operate legally. As such, a valid Amateur Radio or GMRS license is required to register on this site.

**rt SYSTEMS**  
RADIO PROGRAMMING MADE EASY

**Oh, Hey!**  
**Let's Stay Connected**

Never be the last to know about new RepeaterBook features and repeater news

[Subscribe Now](#)

Try the new Proximity Search 2.0 for North American repeaters!

Consider a small donation through PayPal, a secure way to donate.

**Donate**

VISA M/C A/E Discover

Exclusive [BridgeCom](#) coupon code for RepeaterBook users. Get 5% off with coupon code **855!**

**Directory**

[North American Amateur Radio Repeaters](#), including the USA and its territories, Canada, and Mexico.

[Worldwide Amateur Radio Repeaters](#), including all countries not listed above.

You should be here. Now click on the state of Pennsylvania.



- HOME
- QUICK
- PROXIMITY
- ADVANCED
- NATIONWIDE
- KEYWORD
- TRAVEL
- SPECIAL MODES
- VACANCY

Welcome to RepeaterBook.com     

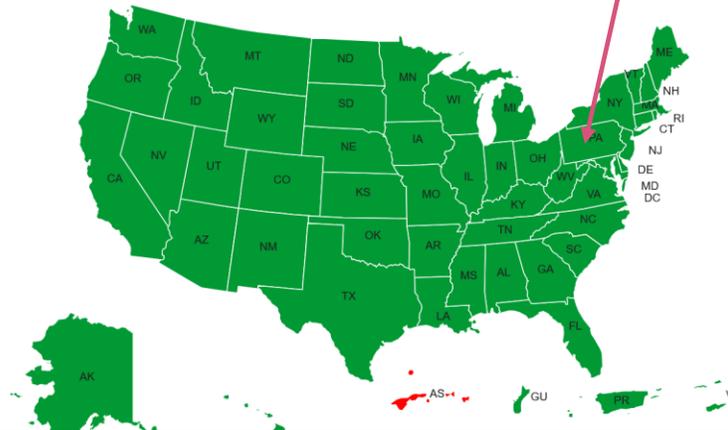
This is a comprehensive repeater database compiled by the amateur radio community. Search the site and find repeaters in your area. Update them, comment on them, and recommend them.



### Repeaterbook Database (United States)

Choose Country:  →

Please Click on Your State Below:



You should now have this screen. There is more shown below but this is all we need for now. Click on "DMR".

**RepeaterBook**  
Help keep us "on-the-air"

PayPal Donate Now

HOME QUICK PROXIMITY ADVANCED NATIONWIDE KEYWORD TRAVEL SPECIAL MODES VACANCY

### Pennsylvania Amateur Radio Repeaters - Quick Search

There are 646 Pennsylvania repeaters in the database. [Add a Repeater](#) [Subscribe to Updates](#)

Band

All	10 m	6 m	2 m	1 1/4 m	70 cm	33 cm	23 cm
-----	------	-----	-----	---------	-------	-------	-------

Feature

AllStar	ATV	<b>DMR</b>	D-Star	EchoLink	IRLP
M17	NXDN	P-25	YSF	Wide Area Coverage	WIRES

Linked Systems

Cambria County PA ACS DMR Cluster System	Interstate Repeater System	K3NQT Bedford County Repeater Network System	K3PSP Repeater System	KB3AWQ System
KC2IRV Simulcast System	Lancaster, PA Hub System	N3FYI - 446.475 - Simulcast System	N3KZ Repeater System	N3XXH Repeater System System
NJ-NY MOTOTRBO NETWORK System	Penn-Mar System	SVARC (DMR TG 314242) System	W3NTT System	W3OK System
W3TWA System	WA3REC Wayne Co. System	Western Pennsylvania Local (TS2 TG2) System	Wide Area Network Repeater System	

Emergency Service Repeaters

ARES	RACES	SKYWARN	CANWARN	Weather Nets	Emergency Power
------	-------	---------	---------	--------------	-----------------

Repeaters recommended for use by nearby highway

## Finding a DMR repeater continued:

- You should now have this screen. The repeaters are listed in order by frequency. To find the Shrewsbury repeater which is located in York county click on "County". One click will give you A-Z order and two clicks will give you Z-A order.

**RepeaterBook** logo and navigation menu: + ADD REPEATER, MAP RESULTS, EXPORT, SEARCH, SPECIAL MODES, REPORT ISSUE

rt SYSTEMS RADIO PROGRAMMING MADE EASY

92 DMR REPEATERS FOUND IN PENNSYLVANIA

Legend: ● = On-Air, ● = Off-Air, ● = Testing/Reduced, □ = Unknown

Click on the frequency for additional details.  
Click on a header to sort. **Note:** Sorting does not carry through to exports!

~	Offset	Access	Location	County	Call	Use	Modes	DMR IPSC	↑↓
29.6600	-0.1 MHz	CC0 173.8 /	Williamsport, Armstrong -Bald Eagle Mountain	Lycoming	KB3AWQ	OPEN	FM AllStar DMR EchoLink	TGIF	+
29.6600	-0.1 MHz	CC0 173.8 /	Williamsport, Bald Eagle Mountain	Lycoming	KB3AWQ	OPEN	FM AllStar DMR EchoLink	TGIF	+
53.0500	-1 MHz	CC0 131.8 /	Williamsport, Armstrong -Bald Eagle Mountain	Lycoming	KB3AWQ	OPEN	FM AllStar DMR EchoLink	TGIF	+
53.0500	-1 MHz	CC0 131.8 /	Williamsport, Bald Eagle Mountain	Lycoming	KB3AWQ	OPEN	FM AllStar DMR EchoLink	TGIF	+
145.1500	-0.6 MHz	CC0 NAC RAN 131.8 /	Derry, Bear Cave	Westmoreland	W3CRC	OPEN	FM DMR DSTAR NXDN P-25 YSF		□
145.1500	-0.6 MHz	CC1	Warren, Stone Hill	Warren	W3KCC	OPEN	DMR	Interstate 1 Network	+
145.2100	-0.6 MHz	CC1 123.0 /	Johnstown, Richland Twp	Cambria	N3YFO	OPEN	FM DMR	BrandMeister US	+
145.2500	-0.6 MHz	CC1	Chambersburg	Franklin	KB3UAG	OPEN	DMR	Interstate 2 Network	+
145.2700	-0.6 MHz	CC2	Philadelphia	Philadelphia	W3PVI	OPEN	DMR	BrandMeister US	+
145.3900	-0.6 MHz	CC1 123.0 /	New Germany	Cambria	N3YFO	OPEN	FM DMR	BrandMeister US	+
145.4400	-0.6 MHz	CC1	Greensburg	Westmoreland	WC3PS	OPEN	DMR DSTAR YSF	BrandMeister US	□

## Finding a DMR repeater continued:

- After two clicks on “County” you should have the screen below.
- Shrewsbury repeater K3AE happens to be at the top.
- Click on the frequency of the repeater for more information.

**RepeaterBook** rtSYSTEMS  
RADIO PROGRAMMING MADE EASY

+ ADD REPEATER   MAP RESULTS   EXPORT   SEARCH   SPECIAL MODES   REPORT ISSUE

92 DMR REPEATERS FOUND IN PENNSYLVANIA

● = On-Air   
 ● = Off-Air   
 ● = Testing/Reduced   
 ○ = Unknown

Click on the frequency for additional details.  
Click on a header to sort. **Note:** Sorting does not carry through to exports!

Frequency	Offset	Access	Location	County	Call	Use	Modes	DMR IPSC	Status
449.7250	-5 MHz	CC1	Shrewsbury	York	K3AE	OPEN	DMR	Interstate 1 Network	●
447.7250	-5 MHz	CC1 NAC 267	Gatchellville	York	N3CNJ	OPEN	DMR P-25 YSF	TGIF	●
445.23125	-5 MHz	CC1	Hanover, Pigeon Hills	York	KB3VVB	OPEN	DMR	Interstate 2 Network	●
444.4000	+5 MHz	CC1 NAC 293	New Cumberland, Reeser's Summit	York	N2JEH	OPEN	DMR P-25	BrandMeister US	●
444.05625	+5 MHz	CC1	New Cumberland, Reesers Summit/Bunches	York	N2JEH	OPEN	DMR	Interstate 1 Network	●
441.1500	+5 MHz	CC1	York, Hallam	York	WR3IRS	OPEN	DMR	Interstate 1 Network	●
146.7900	-0.6 MHz	CC1	New Cumberland, Reesers Summit	York	KB3TWW	OPEN	DMR	Interstate 1 Network	●
440.1000	+5 MHz	CC1	Forkston	Wyoming	WR3IRS	OPEN	DMR	Interstate 1 Network	●
442.2750	+5 MHz	CC0 NAC RAN 131.8 /	Derry, Bear Cave Lookout	Westmoreland	KE3PO	OPEN	FM DMR DSTAR NXDN P-25		○
442.1500	+5 MHz	CC1 NAC	Greensburg,	Westmoreland	WC3PS	OPEN	FM DMR DSTAR	BrandMeister US	●

## DMR Information for Programming:

- You should now have a screen like the one below.

Shrewsbury, PA

K3AE  
Repeater ID: 42-345

 **DMR**

Downlink: 449.72500  
Uplink: 444.72500  
Offset: -5.000 MHz

**DMR Enabled**

Color Code: 1  
DMR ID: [314238](#)  
IPSC Network: K4USD - Color Code: 1 - TS Linked: TS1 TS2 - Trustee: [W6ORZ](#)

\*Information courtesy of [radioid.net](#). Repeater trustees can directly update this data through their website.

IPSC: [Interstate 1 Network](#)  
County: York  
Grid: FM19ps  
Call: [K3AE](#)  
Use: **OPEN**  
Op Status: **+** On-Air  
Coverage: I-83 from York to Parkton.  
Sponsor: So Pa Comm Group W6ORZ  
Features: E-power equipped.  
Nets: PA Statewide net on 3142 at 20:00 on Tue. Central PA net on Local 2 at 21:00 Sun. Mid-Atlantic net on 3124 at 20:00 Thu.  
Web links: <http://www.interstatedmr.com>  
Web links: Talk Groups: [Interstate DMR Network](#).  
Coordination: [ARCC](#)

Last updated: 2024-07-29  
Last reviewed: 2024-08-16

- The Downlink, Uplink and Offset are programmed the same as an analog channel.
- The Color Code for this repeater is "1".
- The Time Slots "TS Linked" are TS1 and TS2. TS1 and TS2 are important since Talkgroups are associated with each Time Slot. You'll see more about this later.
- Links to the DMR Network where we will get the Talk Groups and Time Slots for this repeater.

# Talkgroups and Time Slots for the Shrewsbury K3AE Repeater:

## Shrewsbury, PA

K3AE

Repeater ID: 42-345



Downlink: 449.72500

Uplink: 444.72500

Offset: -5.000 MHz

**DMR Enabled**

Color Code: 1

DMR ID: [314238](#)

IPSC Network: K4USD - Color Code: 1 - TS Linked: TS1 TS2 - Trustee: [W6ORZ](#)

\*Information courtesy of [radioid.net](#). Repeater trustees can directly update this data through their website.

IPSC: [Interstate 1 Network](#)

County: York

Grid: FM19ps

Call: [K3AE](#)

Use: [OPEN](#)

Op Status: [On-Air](#)

Coverage: I-83 from York to Parkton.

Sponsor: So Pa Comm Group W6ORZ

Features: E-power equipped.

Nets: PA Statewide net on 3142 at 20:00 on Tue. Central PA net on Local 2 at 21:00 Sun. Mid-Atlantic net on 3124 at 20:00 Thu.

Web links: <http://www.interstatedmr.com>

Web links: Talk Groups: [Interstate DMR Network](#).

Coordination: [ARCC](#)

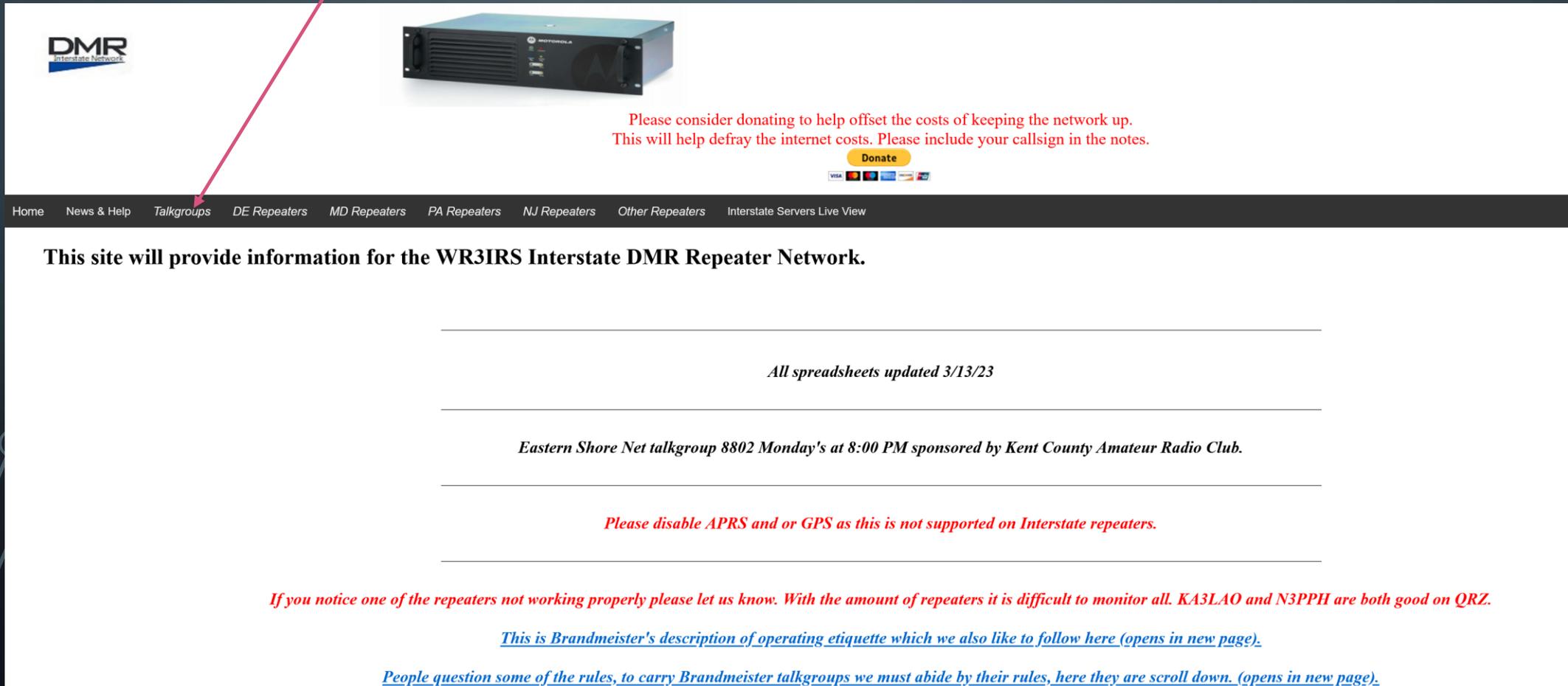
Last updated: 2024-07-29

Last reviewed: 2024-08-16

Click on this link and it will take you to the DMR Network we need for programming information.

## Time Slot and Talkgroup Information:

- You should now be here: <https://www.delmarvadmr.com/>
- Click on “Talkgroups”.



**DMR**  
Interstate Network



Please consider donating to help offset the costs of keeping the network up.  
This will help defray the internet costs. Please include your callsign in the notes.

Donate

VISA MASTERCARD AMERICAN EXPRESS DISCOVER

Home News & Help **Talkgroups** DE Repeaters MD Repeaters PA Repeaters NJ Repeaters Other Repeaters Interstate Servers Live View

**This site will provide information for the WR3IRS Interstate DMR Repeater Network.**

---

*All spreadsheets updated 3/13/23*

---

*Eastern Shore Net talkgroup 8802 Monday's at 8:00 PM sponsored by Kent County Amateur Radio Club.*

---

*Please disable APRS and or GPS as this is not supported on Interstate repeaters.*

---

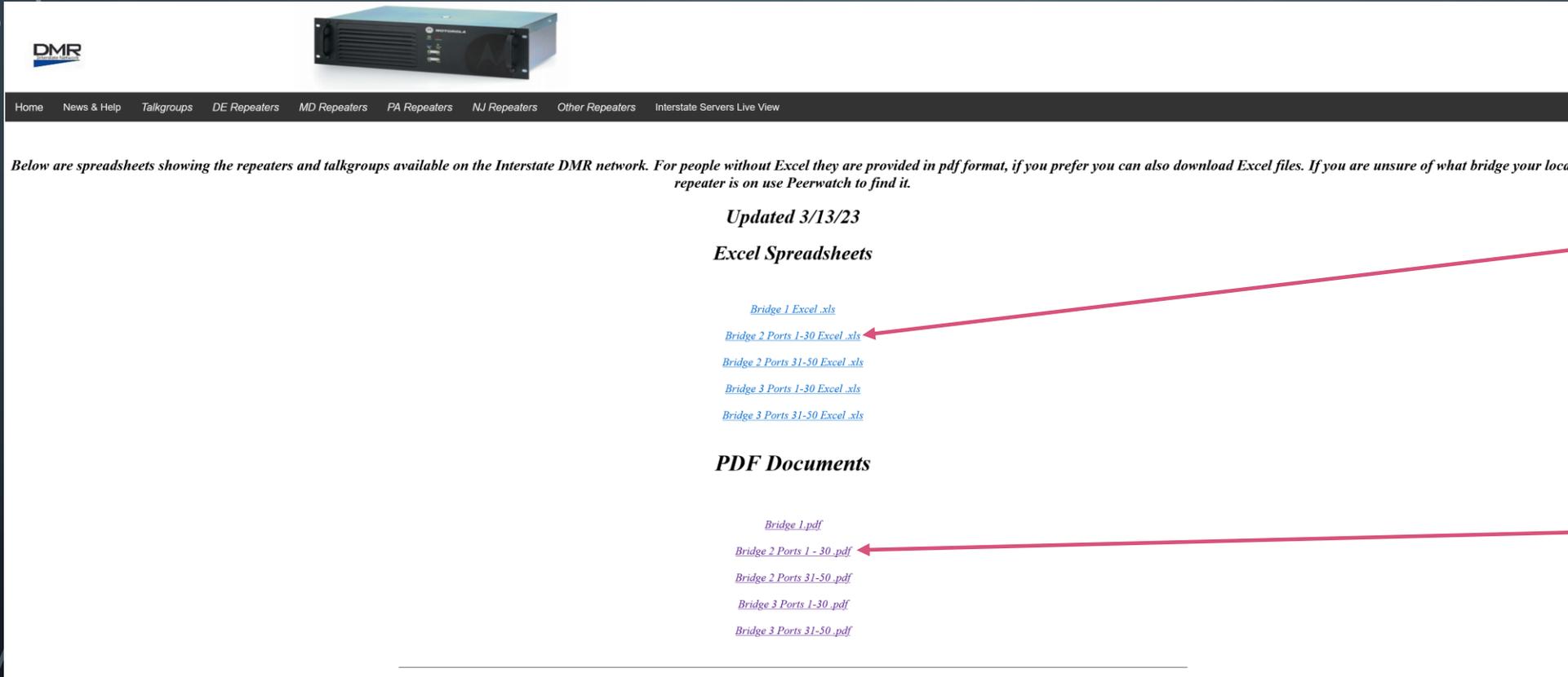
*If you notice one of the repeaters not working properly please let us know. With the amount of repeaters it is difficult to monitor all. KA3LAO and N3PPH are both good on QRZ.*

[This is Brandmeister's description of operating etiquette which we also like to follow here \(opens in new page\).](#)

[People question some of the rules, to carry Brandmeister talkgroups we must abide by their rules, here they are scroll down. \(opens in new page\).](#)

## Time Slot and Talkgroup Information:

- You should have the screen below. K3AE is on Bridge 2 Ports 1-30.



The screenshot shows the DMR website interface. At the top left is the DMR logo. To its right is an image of a black and blue radio repeater. Below the logo and image is a navigation menu with links: Home, News & Help, Talkgroups, DE Repeaters, MD Repeaters, PA Repeaters, NJ Repeaters, Other Repeaters, and Interstate Servers Live View. Below the menu is a paragraph of text: "Below are spreadsheets showing the repeaters and talkgroups available on the Interstate DMR network. For people without Excel they are provided in pdf format, if you prefer you can also download Excel files. If you are unsure of what bridge your local repeater is on use Peerwatch to find it." Below this text are two sections: "Updated 3/13/23" and "Excel Spreadsheets". Under "Excel Spreadsheets" are five blue links: "Bridge 1 Excel.xls", "Bridge 2 Ports 1-30 Excel.xls", "Bridge 2 Ports 31-50 Excel.xls", "Bridge 3 Ports 1-30 Excel.xls", and "Bridge 3 Ports 31-50 Excel.xls". Below these is a section titled "PDF Documents" with five blue links: "Bridge 1.pdf", "Bridge 2 Ports 1 - 30 .pdf", "Bridge 2 Ports 31-50 .pdf", "Bridge 3 Ports 1-30 .pdf", and "Bridge 3 Ports 31-50 .pdf".

Home News & Help Talkgroups DE Repeaters MD Repeaters PA Repeaters NJ Repeaters Other Repeaters Interstate Servers Live View

Below are spreadsheets showing the repeaters and talkgroups available on the Interstate DMR network. For people without Excel they are provided in pdf format, if you prefer you can also download Excel files. If you are unsure of what bridge your local repeater is on use Peerwatch to find it.

**Updated 3/13/23**

**Excel Spreadsheets**

- [Bridge 1 Excel.xls](#)
- [Bridge 2 Ports 1-30 Excel.xls](#)
- [Bridge 2 Ports 31-50 Excel.xls](#)
- [Bridge 3 Ports 1-30 Excel.xls](#)
- [Bridge 3 Ports 31-50 Excel.xls](#)

**PDF Documents**

- [Bridge 1.pdf](#)
- [Bridge 2 Ports 1 - 30 .pdf](#)
- [Bridge 2 Ports 31-50 .pdf](#)
- [Bridge 3 Ports 1-30 .pdf](#)
- [Bridge 3 Ports 31-50 .pdf](#)

Click here for an Excel spreadsheet version.

Or

Click here for a pdf version.

# Time Slot and Talkgroup Information:

- I clicked on the pdf version and have the screen below.

Here is the Time Slot we will use.

These are the Talkgroups in Timeslot 1.

Here is the Shrewsbury Repeater.

- The yellow blocks indicate a Talkgroup that can only be heard after pressing the PTT button.
- The green blocks indicate a Talkgroup that is always on (Full Time).
- The red blocks indicate a Talkgroup that is not available (na) or only used on Time Slot 2.

		Green Square Denotes the Talkgroup is Always On - (Full Time)													Yellow Square Denotes PTT Timer in Minutes - Keyup to Enable Talkgroup (PTT)																					
		TS1	Type	TS2	BM Worldwide 1 (91) *	Worldwide 1 (1)	Worldwide English 1 (13)	North America 1 (3)	Local 9-1 (9)	Southern MD 1 (311618) *	MD TAC 1 (31242) *	PA TAC 1 (31421) *	DelVal 1 (8801)	Tri-State 1 (2) *	Bridge 1 (3100) *	UA English 1 (113)	Delaware 1 (3110)	Delaware TAC 1 (31100) *	Wash DC 1 (3111) *	Florida 1 (3112) *	Maryland 1 (3124) *	New Jersey 1 (3134) *	Pennsylvania 1 (3142) *	Virginia 1 (3151) *	West Virginia 1 (3154) *	FL TAC 1 (31120)	NJ TAC 1 (31343) *	VA TAC 1 (31510) *	Virginia 1 C-Bridge (13151)	F-DARN TAC 1 (8810)	F-DARN TAC 1 Local 2 (8800)	DC Regional 1 (315120) *	WV TAC 1 (31540) *			
Port	TS1	Type	TS2	na	5	5	5	15	on	TS2	na	na	na	na	5	5	TS2	na	TS2	TS2	on	TS2	on	TS2	TS2	TS2	TS2	TS2	15	na	na	na	on	15	15	na
1	1	M/SLRS	2	na	5	5	5	15	on	TS2	na	na	na	na	5	5	TS2	na	TS2	TS2	on	TS2	on	TS2	TS2	TS2	TS2	TS2	15	na	na	na	on	15	15	na
2	3		4	na	5	5	5	15	on	TS2	na	na	na	na	5	5	TS2	na	TS2	TS2	on	TS2	on	TS2	TS2	TS2	TS2	TS2	15	na	na	na	on	15	15	na
3	5	P/83	6	na	5	5	5	15	on	TS2	na	na	na	na	5	5	TS2	na	TS2	TS2	on	TS2	on	TS2	TS2	TS2	TS2	TS2	15	na	na	na	on	15	15	na
4	7	P/84	8	na	5	5	5	15	on	TS2	15	15	na	na	5	5	TS2	na	TS2	TS2	on	TS2	on	TS2	TS2	TS2	TS2	TS2	15	na	na	na	on	15	15	na
5	9	P/84	10	na	5	5	5	15	on	na	na	15	on	na	5	5	TS2	na	TS2	TS2	on	TS2	on	TS2	TS2	TS2	TS2	15	na	na	na	on	15	15	na	
6	11	P/83	12	na	5	5	5	15	on	TS2	15	na	na	15	5	5	TS2	na	TS2	TS2	on	TS2	on	TS2	TS2	TS2	TS2	15	na	na	na	on	15	15	na	
7	13	P/83	14	na	5	5	5	15	on	TS2	na	15	na	na	5	5	TS2	na	TS2	TS2	on	TS2	on	TS2	TS2	TS2	TS2	15	na	na	na	on	15	15	na	
8	15	P/83	16	na	5	5	5	15	on	TS2	na	15	on	TS2	5	5	TS2	na	TS2	TS2	on	TS2	on	TS2	TS2	TS2	TS2	15	na	na	na	on	15	15	na	
9	17	N/A	18	na	5	5	5	15	on	on	15	na	na	na	5	5	TS2	na	TS2	TS2	on	TS2	on	TS2	TS2	TS2	TS2	15	na	na	na	on	15	15	na	
10	19	P/84	20	na	5	5	5	15	on	TS2	15	na	na	15	5	5	TS2	na	TS2	TS2	on	TS2	on	TS2	TS2	TS2	TS2	15	na	na	na	on	15	15	na	
11	21	P/83	22	na	5	5	5	15	on	TS2	na	15	na	na	5	5	TS2	na	TS2	TS2	on	TS2	on	TS2	TS2	TS2	TS2	15	na	na	na	on	15	15	na	
12	23	P/84	24	na	5	5	5	15	on	TS2	na	na	na	15	5	5	on	15	TS2	TS2	TS2	on	TS2	on	TS2	TS2	TS2	15	na	na	na	on	15	15	na	
13	25	P/83	26	na	5	5	5	15	on	TS2	na	15	na	na	5	5	TS2	na	TS2	TS2	on	TS2	on	TS2	TS2	TS2	TS2	15	na	na	na	on	15	15	na	
14	27	P/83	28	na	5	5	5	15	on	TS2	na	15	na	na	5	5	TS2	na	TS2	TS2	on	TS2	on	TS2	TS2	TS2	TS2	15	na	na	na	on	15	15	na	
15	29	P/83	30	na	5	5	5	15	on	TS2	15	15	na	na	5	5	TS2	na	TS2	TS2	on	TS2	on	TS2	TS2	TS2	TS2	15	na	na	na	on	15	15	na	
16	31	M/83	32	na	5	5	5	15	on	TS2	na	na	na	on	TS2	5	5	TS2	na	TS2	TS2	on	TS2	on	TS2	TS2	TS2	15	na	na	na	on	15	15	na	
17	33		34	na	5	5	5	15	on	TS2	15	na	na	na	5	5	TS2	na	TS2	TS2	on	TS2	on	TS2	TS2	TS2	TS2	15	na	na	na	on	15	15	na	
18	35	P/83	36	na	5	5	5	15	on	TS2	15	na	na	15	5	5	TS2	na	TS2	TS2	on	TS2	on	TS2	TS2	TS2	TS2	15	na	na	na	on	15	15	na	
19	37	P/83	38	na	5	5	5	15	on	TS2	15	na	na	na	5	5	on	15	TS2	TS2	on	TS2	on	TS2	TS2	TS2	TS2	15	na	na	na	on	15	15	na	
20	39	P/SLRS	40	na	5	5	5	15	on	TS2	15	na	na	na	5	5	TS2	na	TS2	TS2	on	TS2	on	TS2	TS2	TS2	TS2	15	na	na	na	on	15	15	na	
21	41	P/84	42	na	5	5	5	15	on	TS2	15	na	na	15	5	5	on	15	TS2	TS2	on	TS2	on	TS2	TS2	TS2	TS2	15	na	na	na	on	15	15	na	
22	43		44	na	5	5	5	15	on	TS2	na	na	na	15	5	5	TS2	na	TS2	TS2	on	TS2	on	TS2	TS2	TS2	TS2	15	na	na	na	on	15	15	na	
23	45	P/84	46	na	5	5	5	15	on	TS2	na	na	na	15	5	5	on	15	TS2	TS2	on	TS2	on	TS2	TS2	TS2	TS2	15	na	na	na	on	15	15	na	
24	47	P/84	48	na	5	5	5	15	on	TS2	15	na	na	na	5	5	TS2	na	TS2	TS2	on	TS2	on	TS2	TS2	TS2	TS2	15	na	na	na	on	15	15	na	
25	49	P/84	50	na	5	5	5	15	on	TS2	15	na	na	15	5	5	on	15	TS2	TS2	on	TS2	on	TS2	TS2	TS2	TS2	15	na	na	na	on	15	15	na	
26	51	P/SLRS	52	na	5	5	5	15	on	TS2	na	15	on	TS2	5	5	TS2	na	TS2	TS2	on	TS2	on	TS2	TS2	TS2	TS2	15	na	na	na	on	15	15	na	
27	53	N/A	54	na	5	5	5	15	on	TS2	na	15	on	TS2	5	5	TS2	na	TS2	TS2	on	TS2	on	TS2	TS2	TS2	TS2	15	na	na	na	on	15	15	na	
28	55	N/A	56	na	5	5	5	15	on	TS2	na	15	na	na	5	5	TS2	na	TS2	TS2	on	TS2	on	TS2	TS2	TS2	TS2	15	na	na	na	on	15	15	na	
29	57	N/A	58	na	5	5	5	15	on	TS2	na	15	na	na	5	5	TS2	na	TS2	TS2	on	TS2	on	TS2	TS2	TS2	TS2	15	na	na	na	on	15	15	na	
30	59	N/A	60	na	5	5	5	15	on	TS2	na	15	na	na	5	5	TS2	na	TS2	TS2	on	TS2	on	TS2	TS2	TS2	TS2	15	na	na	na	on	15	15	na	

Talkgroup	Source
Interstate c-Bridge	PADMR
ChicagoLand	K4USD
Crossroads	MotoDMR
Brandmeister	NJ-TRBO
Western States DMR	DMR-MARC
Upstate NY	DMR-SE
NEW-ENG TRBO	DMR-NET
	F-DARN
	AWS VA

c-Bridge/Repeater Info	
BM Worldwide 1 (91) *	
Worldwide 1 (1)	
Worldwide English 1 (13)	
North America 1 (3)	
Local 9-1 (9)	
Southern MD 1 (311618) *	
MD TAC 1 (31242) *	
PA TAC 1 (31421) *	
DelVal 1 (8801)	
Tri-State 1 (2) *	
Bridge 1 (3100) *	
UA English 1 (113)	
Delaware 1 (3110)	
Delaware TAC 1 (31100) *	
Wash DC 1 (3111) *	
Florida 1 (3112) *	
Maryland 1 (3124) *	
New Jersey 1 (3134) *	
Pennsylvania 1 (3142) *	
Virginia 1 (3151) *	
West Virginia 1 (3154) *	
FL TAC 1 (31120)	
NJ TAC 1 (31343) *	
VA TAC 1 (31510) *	
Virginia 1 C-Bridge (13151)	
F-DARN TAC 1 (8810)	
F-DARN TAC 1 Local 2 (8800)	
DC Regional 1 (315120) *	
WV TAC 1 (31540) *	

MCT = Master Control Talkgroup

Upon activation of an "off" MCT talkgroup ID, that will remove the talkgroups assigned to the associated timeslot so an unwanted talkgroup does not takeover another talkgroup for timed period. After using the MCT, then PTT the talkgroup you want to use to re-activate it. Remember to re-activate the timeslot by using the "on" MCT talkgroup ID when you are finished if your QSO was less than 15 minutes. All MCT's TX on TS1, even if they control TS2. The MCT only controls the talkgroups on the timeslot, on the repeater you are using.

The Interstate c-Bridge Talkgroups that are cross connected to the Brandmeister Network are noted with a \*

- Open the programming software for your radio.
- First step is to put in your DMR ID and call sign. Your screen may be different.

The screenshot shows a software window titled "DJ\_MD5[DI-MDS:JHF[400 - 480 MHz] VHF[133 - 174 MHz]] [C:\Users\dennis\Documents\Ham Radio\Alinco\Alinco Programming\Alinco\_DI-MDS\_7\_4\_23YORK\_NORTHAMPTON.rdt] Ver:1.13 e". The interface includes a menu bar (File, Model, Set, Program, Tool, View, Help) and a toolbar. On the left, a tree view shows various settings categories: Public (Channel, Zone, Scan List, FM, Auto Repeater Offset, Basic information, Optional Setting, Alarm Setting, Local Information, Hot Key), Digital (Radio ID List, Talk Groups, Prefabricated SMS, Receive Group Call List, Encryption Code, Digital Contact List, Friends List, Digital APRS Informati), and Analog (Analog Address Book, 5Tone Setting, 2Tone Setting, DTMF Setting). The main area is a table with three columns: "No.", "Radio ID", and "Name". The first row is populated with "1", "3142541", and "KC3FOV DMR". Red arrows point from the text above to the "Radio ID" and "Name" columns. The Windows taskbar at the bottom shows the date and time as 10/4/2024, 6:17 AM, and the weather as 62°F Cloudy.

No.	Radio ID	Name
1	3142541	KC3FOV DMR
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		
37		
38		
39		
40		
41		
42		
43		
44		
45		
46		
47		
48		
49		
50		
51		
52		
53		
54		
55		
56		
57		
58		
59		
60		
61		
62		
63		
64		
65		
66		

- Let's program a few Talk Groups and start with a few that are local and Always On (Full Time in green).
- Follow the Shrewsbury, PA (UHF) row. All are Call Alert (None), Call Type (Group Call).
- Local 9-1 (9), Maryland 1 (3124) and Pennsylvania 1 (3142). TG/DMR ID is in parenthesis ( )

**Timeslot #1  
Interstate Network  
c-Bridge - #2  
Ports 1-30**

Port	TSS1	Type	TSS2	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Seven Springs, PA (VHF)	1	1	MSLR5	2	S	S	S	S	15	on	152	na																					
Clermont, FL (UHF)	3	5	P103	6	S	S	S	S	15	on	152	na																					
St. Thomas, PA (VHF)	4	7	P104	8	S	S	S	S	15	on	152	na																					
Charlestown, PA (UHF)	5	9	P104	10	S	S	S	S	15	on	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
Tyaskin, MD (VHF)	6	11	P103	12	S	S	S	S	15	on	152	na																					
Pottsville, PA (UHF)	7	13	P103	14	S	S	S	S	15	on	152	na																					
Hilltown, PA (UHF)	8	15	P103	16	S	S	S	S	15	on	152	na																					
Princess Anne, MD (UHF)	9	17	NA	18	S	S	S	S	15	on	on	15	na																				
Frederica, DE (UHF)	10	19	P104	20	S	S	S	S	15	on	152	na																					
Reesers Summit, PA (UHF)	11	21	P103	22	S	S	S	S	15	on	152	na																					
Tphrata, PA (UHF)	14	27	P103	28	S	S	S	S	15	on	152	na																					
Shrewsbury, PA (UHF)	15	29	P103	30	S	S	S	S	15	on	152	na																					
Corbin City, NJ (UHF)	16	31	M03	32	S	S	S	S	15	on	152	na																					
Crisfield MD (VHF)	18	35	P103	36	S	S	S	S	15	on	152	na																					
Federalburg, MD (UHF)	19	37	P103	38	S	S	S	S	15	on	152	na																					
Owings Mills, MD (UHF)	20	39	P1SLR5	40	S	S	S	S	15	on	152	na																					
Harlettsville, DE (UHF)	21	41	P104	42	S	S	S	S	15	on	152	na																					
Trenton, NJ (UHF)	22	43	NA	44	S	S	S	S	15	on	152	na																					
Seaford, DE (UHF)	23	45	P104	46	S	S	S	S	15	on	152	na																					
Bluemont, VA (UHF)	24	47	P104	48	S	S	S	S	15	on	152	na																					
Dagshoro, DE (UHF)	25	49	P104	50	S	S	S	S	15	on	152	na																					
Eagle, PA (UHF)	26	51	P1SLR5	52	S	S	S	S	15	on	152	na																					
Dayton Portable / Test	27	53	NA	54	na	na	na	na	na	on	152	na																					
Remote TG Interface	28	55	NA	56	na	na	na	na	na	on	15	na																					
Remote TG Interface	29	57	NA	58	na	na	na	na	na	on	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
Reserved for BIDAC/Test	30	59	NA	60	na	na	na	na	na	on	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	

DJ\_MD5 [DJ\_MD5[UHF(400 - 480 MHz) VHF(136 - 174 MHz)] [C:\Users\dennis\Documents\Ham Radio\Alinco\Alinco Programming\Alinco\_DJ-MD5\_7\_4\_23YORK\_NORTH

File Model Set Program Tool View Help

Channel	No.	TG/DMR ID	Call Alert	Name	Call Type
Public					
Channel	1	9998	None	Parrot	Private Call
Zone	2	9	None	Local 9-1	Group Call
Scan List	3	3173	None	MID ATLANTIC 1	Group Call
FM	4	31242	None	MD TAC1	Group Call
Auto Repeater Offset F	5	2	None	SCPA LOCAL 2	Group Call
Basic information	6	3124	None	MD WIDE 1	Group Call
Optional Setting	7	8	None	PENN-MAR 2	Group Call
Alarm Setting	8	3172	None	NE Region 1	Group Call
Local Information	9	1	None	WORLDWIDE 1	Group Call
Hot Key	10	310	None	TAC 310 2	Group Call
Digital					
Radio ID List	11	31420	None	PENNA/ACS	Group Call
Talk Groups	12	91	None	BM WORLDWIDE 1	Group Call
Prefabricated SMS	13	3142	None	PA WIDE 1	Group Call
Receive Group Call Lis	14	31421	None	PA TAC 1	Group Call
Encryption Code	15	311	None	TAC 311 2	Group Call
Digital Contact List					
1---20000	16	312	None	TAC 312 2	Group Call
20001---40000	17	313	None	TAC 313 2	Group Call
40001---60000	18	314	None	TAC 314 2	Group Call
60001---80000	19	315	None	TAC 315 2	Group Call
80001---100000	20	316	None	TAC 316 2	Group Call
100001---120000	21	317	None	TAC 317 2	Group Call
120001---140000	22	318	None	TAC 318 2	Group Call
140001---160000	23	319	None	TAC 319 2	Group Call
160001---180000	24				
180001---200000	25				
Friends List	26				
Digital APRS Informati	27				
Analog					
Analog Address Book	29				
5Tone Setting	30				
2Tone Setting	31				
DTMF Setting	32				
	33				
	34				

- Channels – This is where you program the repeater Frequency, Color Code (CC) and Time Slot (TS).
- Color Code is 1 for all DMR Channels. Time Slot is 1 or 2 depending on the channel being programmed. Channel Type is Digital for DMR. Band Width is 12.5K.
- The above steps are done for every Talk Group. Be mindful of the Time Slot used for each Talk Group.

Shrewsbury, PA

K3AE  
Repeater ID: 42-345

**DMR**

Downlink: 449.72500  
Uplink: 444.72500  
Offset: -5.000 MHz

Color Code: 1  
DMR ID: 314238  
IPSC Network: K4USD - Color Code: 1 - TS Linked: TS1 TS2 - Trustee: W6ORZ

\*Information courtesy of radioid.net. Repeater trustees can directly update this data through their website.

IPSC: Interstate 1 Network  
County: York  
Grid: FM19ps  
Call: K3AE  
Use: OPEN  
Op Status: On-Air  
Coverage: I-83 from York to Parkton.  
Sponsor: So Pa Comm Group W6ORZ  
Features: E-power equipped.  
Nets: PA Statewide net on 3142 at 20:00 on Tue. Central PA net on Local 2 at 21:00 Sun. Mid-Atlantic net on 3124 at 20:00 Thu.  
Web links: <http://www.interstatedmr.com>  
Web links: Talk Groups: Interstate DMR Network.  
Coordination: ARCC

Last updated: 2024-07-29  
Last reviewed: 2024-08-16

DJ MD5 [DJ-MD5:UHF(400 - 480 MHz) VHF(136 - 174 MHz)] [C:\Users\dennis\Documents\Ham Radio\Alinco\Alinco Programming\Alinco\_DJ-MD5\_7\_4\_23YORV

File Model Set Program Tool View Help

DJ-MD5

Public

Channel

Zone

Scan List

FM

Auto Repeater Offset

Basic information

Optional Setting

Alarm Setting

Local information

Hot Key

Digital

Radio ID List

Talk Groups

Prefabricated SMS

Receive Group Call Lis

Encryption Code

Digital Contact List

1---20000

20001---40000

40001---60000

60001---80000

80001---100000

100001---120000

120001---140000

140001---160000

160001---180000

180001---200000

Friends List

Digital APRS Informati

Analog

Analog Address Book

5Tone Setting

2Tone Setting

DTMF Setting

DJ Channel Information Edit---16

Channel Name: 3142-PA WIDE

Receive Frequency: 449.72500  
Transmit Frequency: 444.72500

Channel Type: D-Digital  
Transmit Power: High  
Band Width: 12.5K  
TX Permit: Always  
Scan List: None  
APRS Report: Off  
APRS Report Channel: 1

Digital

Contact: PA WIDE 1  
Radio ID: KC3FOV DMR  
Color Code: 1  
Slot: Slot1  
Receive Group List: None  
Digital Encryption: Off  
Encryption Type: Normal Encryption

Analog

CTCSS/DCS Decode: Off  
CTCSS/DCS Encode: Off  
Squelch Mode: Carrier  
Optional Signal: Off  
DTMF ID: Off  
2Tone ID: 1  
5Tone ID: 1  
PTT ID: Off

Simplex TDMA  
Call Confirmation  
TDMA Adaptive  
Ranging

Reverse

2TONE Decode: 1  
Custom CTCSS: 251.1

OK Cancel Previous Next

31	449.72500	444.72500	D-Digital	High	12.5K	Off	Off		
32	449.72500	444.72500	D-Digital	High	12.5K	Off	Off		
33	449.72500	444.72500	D-Digital	High	12.5K	Off	Off		



- Zones – This is where you can place channels. In this instance I have a Zone for the York and Shrewsbury repeaters, All DIGI is all DMR channels and Northampton County. Zones are set to your preference.

DJ\_MD5[DJ-MD5:UHF(400 - 480 MHz) VHF(136 - 174 MHz)][C:\Users\dennis\Documents\Ham Radio\Alinco\Alinco Programming\Alinco\_DJ-MD5\_7\_4\_23YORK\_NORT

File Model Set Program Tool View Help

No.	Name	Zone Channels	A Channel	B Channel
1	YORK	11	YORK 146.97	441DMR
2	WEATHER	1	WEATHER	WEATHER
3	SHRBRY	25	3142-PA WIDE	31421-PA TAC
4	All DIGI	14	441DMR	447DMRTS1
5	NORTHAMPTON	8	NAZ 145.110	EAST 145.270
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				
32				
33				
34				
35				
36				

- This is an example of the Shrewsbury Zone on my radio. When you start a new zone the Available Channel side will be filled and the Zone Channel Member side will be blank. Name your Zone. Click on the channel you want to move to the Zone Channel Member side and click the double arrows. All the channels I want for SHRBY are in the Zone Channel Member side.

The screenshot displays the Alinco DJ-MD5 software interface. The main window shows a table with columns: No., Name, Zone Channels, A Channel, and B Channel. The rows are:

No.	Name	Zone Channels	A Channel	B Channel
1	YORK	11	YORK 146.97	441DMR
2	WEATHER	1	WEATHER	WEATHER
3	SHRBRY	25	3142-PA WIDE	31421-PA TAC

The 'DJ Zone Edit' dialog box is open, showing the following details:

- Zone Name: SHRBRY
- A Channel: 3142-PA WIDE
- B Channel: 31421-PA TAC
- Available Channel list (1-27):
  - 1 YORK 146.97
  - 2 441DMR
  - 3 442.25
  - 4 447DMRTS1
  - 5 447DMRTS2
  - 6 YK3142-PA WIDE
  - 7 YK31421-PA TAC
  - 8 VHF SIMPL
  - 9 447PEMA31420
  - 10 WEATHER
  - 11 RED LION 146.865
  - 12 NAZ 145.110
  - 13 38 EAST 145.270
  - 14 39 EAST 146.655
  - 15 40 NAZ 146.70
  - 16 41 BANG 147.045
  - 17 42 BETH 445.175
  - 18 43 NAZ 444.900
  - 19 44 WND GP 443.7
- Zone Channel Member list (12-34):
  - 12 SHBRY 146.70
  - 16 3142-PA WIDE
  - 17 31421-PA TAC
  - 15 3124-MD WIDE
  - 14 31242 MD TAC
  - 13 SHBRY LOCAL 9-1
  - 18 NE REGION 1
  - 26 MID ATALN REG 1
  - 22 PENN MAR 2
  - 21 SCPA LOCAL 2
  - 19 31420-PEMA
  - 23 BM WORLDWIDE 1
  - 24 WORLDWIDE 1
  - 25 NE REGION US
  - 27 TAC 310 2
  - 29 TAC 312 2
  - 28 TAC 311 2
  - 30 TAC 313 2
  - 31 TAC 314 2
  - 32 TAC 315 2
  - 33 TAC 316 2
  - 34 TAC 317 2

- That should be enough to get you started. If you are interested in scanning channels just select Scan List in your programming software and set it up the same as Zones. Save your changes and upload to your radio.
- DMR Etiquette:
  - BrandMeister Network has a page on etiquette which can be found here:
    - <https://help.brandmeister.us/operating/operating-etiquette>
  - The Interstate DMR Repeater Network has a page on etiquette here:
    - <https://www.delmarvadmr.com/>
  - Please follow the their rules for use.
  - A note on kerchunking. Kerchunking is the act of pushing the PTT button momentarily to open a Talk Group like those in yellow on the Talk Group list. Repeated kerchunking is not tolerated to keep a Talk Group open.
  - When preparing to talk, push the PTT button and wait ~2seconds before speaking. Time is needed for the network to engage or else the start of your talking will not be heard.

- DMR Net – There is a DMR Net on Talk Group 3142 Pennsylvania State Wide every Tuesday at 8:00PM.
- Additional Resources:
  - DMR Tutorial at Miklor: <https://www.miklor.com/DMR/ppt/DMR-BasicTutorial.pdf>
  - More DMR Information: [https://www.miklor.com/#DMR\\_Section](https://www.miklor.com/#DMR_Section)

Good Luck and Enjoy DMR Radio!!!