

DAARN HAMS
JUNE 2021

SPECIAL
POINTS OF IN-
TEREST:

- **Arkansas Statewide DMR Net, Every Thursday 9 PM Central Daylight Time**
- [DAARN Hams Web Site](#)
- [DAARN Hams Facebook Site](#)
- [Arkansas Repeater Council](#)
- [Digital Café](#)
- [Brandmeister Networks](#)

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DMR Arkansas Amateur Radio Net

Those DAARN Hams!



Thursdays 9:00pm Central time

Talk Group Brandmeister 3105

OUR FRIEND HAS COME BACK HOME

For the ones of us that have been on the Brandmeister Network for a while will remember our Friend, HOSELINE! Then there are some DMR Users that have met or heard of Hoseline, but were unaware of his capabilities, function or features.

Well let me introduce or maybe re-introduce you to our Old Friend Hoseline. He now has a brand new look with many new skills he learned at BU.

Our Friend Hoseline now lives at <https://hose.brandmeister.network>

Now when you bring up Mr. Hoseline you will see a series of blocks just like Zoom or the Brady Bunch, except no video. Each block represents a Talk Group. And in that box you will see either the current or last transmission. If you wish to listen to the traffic on this Talk Group just click inside the box.

The first question out of everyone's mouth is that they do not

see their favorite Talk Group. The default is all Talk Groups between 90 and 9999. To listen to Talk Groups not listed, simply click on the player icon in the upper right hand corner and enter your favorite Talk Group ID. Using this Player Mode you can listen to multiple Talk Groups at the same time.

But if multiple Talk Groups all have traffic at the same time, you just click on the desired Talk Group Bubble in the Player Window and all other Talk Groups will be muted except the one you are wishing to hear.

As you click on each Talk Group Box you will be unregistered from your current Talk Group and re-registered into the new Talk Group. This allows an easy way to listen from one Talk Group to another and not have a lot of Talk Groups left active.

Once you select a Talk Group to monitor you will quickly see Our

Friend has very distinct and clear audio. Not like before, each station is crystal clear. But the audio improvement does not stop here, all of the DMR Stations now have audio at the same level. Stations with very low audio and ones that tear your speaker cone are all gone. All Stations using DMR are at the same Audio Level and easy to understand.

I saved the best features for last. Remember during storms you would have 10 or so emergency Talk Groups all selected and the Internet would glitch. You had to start over again, not anymore. Remember when Windows decided to reboot for a critical update and you lost all your Talk Group Selections. No More. Our New Friend remembers all Talk Group Assignments and will Auto-Connect to them as soon as the connection is restored.

Welcome Back Hoseline, we missed you.

DAARN Net — Information

The DAARN Net meets every Thursday Evening at 9PM or 2100 Hours Local Time. Our DAARN Net is conducted on the Brandmeister Network, using the Arkansas Talk Group 3105,

While the DAARN Net is not a Traffic Net, we do accept any traffic coming into Arkansas or going out of Arkansas. This is why we stand by for any Emergency or Priority Traffic at the

beginning of each net.

The DAARN Net is not specific to any repeater. We have folks from all over the world check in via their local DMR Repeaters or HotSpots.

DEMYSTIFYING CODE PLUGS

The Frequency Information section of the Radio's Code Plug contains all the information needed to access Repeaters, Simplex Channels and specific Talk Groups.

This Month we will discuss the Channel Information section of a Code Plug. The Channel Information Section contains all the information about each channel in your DMR Radio.

The first option in your Channel Information Entry Screen is the Channel Mode. Your selections are either Analog or Digital. Since this is DMR, we will be only discussing Digital Parameters. Next select 12.5 KHz for the Bandwidth and usually setting the Squelch to Normal is adequate.

Under the Scan List Option you can enter the name of existing Scan Lists, As your First Code Plug entering None will get you up and going.

The TOT stands for Time Out Timer. This is the number of seconds you can transmit before the transmitter times out. If you are long winded, set this to 120 seconds which is 2 minutes. The default power for this channel is in the Power Option usually HI, MED or LO.

Next is the Channel Name. Please pick a name that is meaningful to you. The Repeater Callsign and Talk Group Abbreviation is always a good start such as "WB5XXX-AR3105". Now you enter in your Transmitter and Receiver Frequencies. Your TX is the Repeater's RX. And your RX is the Repeater's TX. Nearly every problem associated with a Code Plug is because of invalid Frequency Information. Pay special attention to the values with respect to Transmit and Receive.

The Access Criteria should be set to the Repeater's Color code. If your radio has "Emergency System" features you may set the option to None.

The Contact Name will match one of your entries in the Contacts List discussed last month. From the Drop Down you can select the Talk Group you wish assigned to this channel.

If you are not part of a Group you may enter None.

The Color Code is the number assigned to your repeater, the values range from 1 to 15. Next is the Time Slot, this allows you to select either Time Slot 1 or 2. Some repeater owners have specific rules with respect to which Talk Groups are to be used on a given Time Slot. If in doubt, please ask the Repeater SysOp.

Since Amateur Radio Transmissions are required to be in the clear, we are not allowed to use any encryption or privacy options available in the DMR Protocol. These options should be set to None.

For most operating conditions setting the In Call Option to Always is sufficient.

Press Save and you are done!

This is a very brief overview of the information required to make a DMR Channel Entry into your Code Plug.

God gave us our little toes so we can tell where the furniture is in the dark.

Amateur Radio In Action—Field Day Exercise

June 26th—27th, 2021 was the biggest On-The-Air Event in Amateur Radio. Stations from all over the United States and Canada participated their annual Emergency Communications Exercise.

Since 1933 Field Day has always been held the last full weekend in June. Some people consider this an all out

contest, while others consider this an opportunity demonstrate their emergency communications skills.

Safety is the most important part of a Field Day Event.

Points are awarded for each contact you successfully complete in the 24 hour period. Bonus points are awarded for

Battery or Emergency Power during the events. Providing an information booth for the general public. Performing training and educational events during the event.

This is Amateur Radio's Open House, so we all must strive to put our best foot forward and make the best impression we can on the General Public.

Personal Achievement

Back in May 2021 Daniel, N5DDW, asked a couple of us to come over to his new “Ham Shack” and check things out. Well we all knew that he had been talking about putting up some new antennas such as Dipoles, EFHWs, Windoms and etc... But had not gotten around to it.

I for one was going to make a house visit and leave without Daniel having up some sort of antenna. That just seems like a Sin.

We all arrived and enjoyed the tour of the shack, that was nice. But I

was not about to leave unless he was on the air.

So given the limited time and resources we had available we decided on a simple Variation on the Windom Antenna. We cut the elements for the Dipole for 80 Meters. The feedline was 300 OHM Twinlead. The feedline was attached to the remote Antenna Tuner and Coax was ran across the front yard.

Inside the Shack, the Coax was connected to the Rig and the Antenna Tuner did its job of present-

ing a 50 OHM load to the transceiver. SWR was now acceptable on all bands 80 Meters through 6 Meters.

We left Daniel with the new antenna and went our separate ways.

In a short 10 days later, Daniel had completed his WAS (Worked All States) Award with all QSOs Confirmed.

Daniel had a few countries confirmed from years ago. So to finish out the month, Daniel polished off his DXCC (DX Century Club)



DMR STATION IDENTIFICATION

One myth or falsehood about DMR is that you are not required to identify your station. Many Individuals are told that your radio IDs for you every time you transmit. All the other stations listening see your Name and Call Sign.

Once again, this is bogus and incorrect information being spread on a daily basis.

When you transmit on your DRM Radio ONLY your DMR ID is transmitted with your digital voice

information. Your Call Sign and Name are not transmitted when you key your transmitter.

Why does my name and Call Sign show up in Brandmeister and on my friend's radio if it is not broadcast from my radio.

This is a great question. When you registered to obtain your DMR ID you provided your Name Call Sign and maybe a copy of your license. All of this information is associated with the DMR ID that

was issued to you.

Most DMR Users download a Contacts Database either manually or automatically from a Nationwide Database of everyone's information tied to their DMR ID.

When your little radio sees your DMR ID in your transmitted DataStream he translates your DMR ID into your Name and Callsign. This information from your Contacts Code Plug is what you see displayed.

Your Call Sign and Name that is displayed on other's DMR radios comes directly from their Contacts Information in their Code Plug.

Power Supplies— What size for me?

In the May 2021 Edition of the DAARN Newsletter we discussed the differences between Switching and Linear Power Supplies. This month we are discussing what size Power Supply is best for you.

The most common mistake made when purchasing a Power Supply is choosing one that has insufficient current capacity.

Most Amateur Radio Operators consider themselves smarter than the average bear. They simply apply OHMs Law to their power supply needs. The radio runs 100 Watts out. So $P/V=I$ or $100 \text{ Watts}/13.8\text{Volts} = 7.2\text{A}$. Then pick a 7A to 10A Power Supply and smile at their decision. This is wrong, very wrong.

Most of today's transmitters are only about 50% efficient. Plus you have the overhead of other circuits in the radio. Read the specifications in the manual. You will quickly see most 100 Watt Radios require 23A to 25A on Transmit.

Therefore a nice 30A or 35A Power Supply will give you the correct size without going overboard.

Power Supply Size

- Manufacturers Specifications
- Will you run more than one radio
- Will you run other Shack Accessories
- Continuous Duty vs Intermittent Communications Service
- Forced Air Cooling vs Heat Sinks
- Fixed vs Adjustable outputs.

Let's Talk DMR Networks—Feature Article

The DMR Communications system is composed of many different Networks. Many Amateur Radio Operators are only familiar with the network their local repeater is connected. This month we are going to discuss some of the more popular DMR Networks used across the United States and the world.

In 2005 the ETSI (European Telecommunications Standard Institute) ratified the Digital Mobile Radio Protocol. This was the beginning of the MotoTrbo Protocol that we dearly love, now referred to as DMR.

Four years after the new protocol was ratified the first Amateur Radio UHF TRBO repeater was put on the air in Hollywood Hills, CA in standalone mode. This repeater came from Motorola. One year later the Mount Pleasant, IA, Culver City, CA and Costa Mesa, CA repeaters were successfully linked together. These repeaters were demonstration models that local dealers had sitting on their shelves collecting dust.

At this point the first DMR Network was born. A DMR Network is now defined as a Wide area network with multiple node controllers which can control several hundred sites.

This first network was called DMR-MARC. MARC was the Motorola Amateur Radio Club. Their goal was to allow only Motorola Equipment on their network in order to eliminate any problems or issues with non standard Equipment or Protocols.

Next at the Dayton Hamvention in 2009, Jim, W5EBQ, and Paul, W5PCA, met with the DMR-MARC organization and set up the first C-Bridge in Texas. This new network was named Lonestar.

Then six years later in 2015 the Brandmeister network was started. Since these humble beginnings the number of DMR Networks has increased.

Now that we know what a DMR Network is and how DMR Networks got started, it is time to discuss some of the more popular DMR Networks.

DMR-MARC operates a network that is 100% digital equipment. There are over 500 DMR-MARC Repeaters in 83 different countries. The number of DMR-MARC Registered users is currently over 145,000. Their membership is made up of Amateur Radio Operators, with many that are Motorola Solutions Employees, Motorola Service Station Employees, Dealers, System Installers and Generally Motorola Equipment Aficionados. <https://dmr-marc.net/>

Brandmeister is an Operating Software for Master Servers all across the world. These servers support a worldwide infrastructure network of Amateur Radio Digital Voice Systems. Nearly all the DMR Repeaters in Arkansas are connected to the Brandmeister Network. Currently there are over 4,700 Repeaters worldwide connected to the Brandmeister Network. There are nearly 15,000 HotSpots connected to the Brandmeister Network through 48 Master Servers across the globe. Unlike some networks, Brandmeister encourages different types and technologies of Repeaters, OpenSpots, and Digital Voice Systems.

K4USD Network is operated by the US Digital Amateur Repeater Club. This network uses multiple C-Bridges to interconnect multiple Motorola MotoTrbo Repeaters together with other DMR Bridge providers. These other networks

include DMR-MARC, DMRX, Brandmeister, DMR+, TGIF, QuadNET and 27 other DMR Networks. Their Nerve Center is located near Dayton Ohio with repeaters in 17 States including Washington D.C.. The K4USD DMR Network supports many different Talk Groups from the other Networks via their unique bridging system. <https://www.k4usd.org/>

Rocky Mountain Ham Network is a dedicated network that is not part of any other DMR Networking System. All of the repeaters in the Rocky Mountain Ham Network are linked together. This means anytime you bring up a particular talk group or repeater you bring up all the over 40 repeaters on their Network. The Rocky Mountain Ham Radio Net is unique in application of Talk Groups. Talk Group 700 is common across the whole wide area. Each area has its own Talk Group. This systematic approach to their managed DMR Network allows for common Code Plugs for their whole area. The three states in the Rocky Mountain Area are all connected by Microwave links. When visiting this area be sure to review their Talk Groups and area covered by each repeater. <https://www.rmham.org>

Crossroads Network takes a little different approach from most other DMR Networks. Their Network is designed to serve the state of Indiana. They have a very clean and well organized network. Each Repeater in their network has a nice complement of both local, statewide and worldwide Talk Groups. Crossroads has individual Web Pages for each Repeater in their network covering all the details about every Repeater. What sets Crossroads apart from most other networks is their management of Code Plugs.

“If you have an OpenSpot or DMR Hot Spot, you can access any other DMR Network you wish.”

Let's Talk DMR Networks — Feature Article (Cont'd)

The crossroads management team recognizes there are many different makes and models of DMR radios on the market. So they have provided a Matrix on their Web Site with everything you need to make your own Custom Code Plug for their Network. No more looking at multiple sources to find all the little details of a Code Plug, Crossroads has all the information in a single place that is easy to cut and paste into your Code Plug Editor. <https://www.idhr.info/index.php/home/>

LonestarNet Network is specific to the state of Texas. Like many other DMR Networks, LonestarNet is laid out very clean and well organized. Some Repeaters on their Network have high profile Talk Groups set up as Static Talk Groups, meaning they are active 24/7. Some of their repeaters do not allow dynamic Talk Groups to be established. Of all the Networks, LonestarNet has the most extensive offering of Code Plugs. They cover nearly every DMR Radio that has been made or is in current production. Not only do they have Code Plugs for LonestarNet, they also have Code Plugs for Nationwide access as well as Worldwide access. And yes, most of their local Talk Groups are linked to their corresponding counterparts on other Networks via C-Bridge Connections. <https://dmrtexas.net/>

Bronx-TRBO Network is probably the most sophisticated system using the DMR Technology. They have repeaters all along the East coast, from New York to Florida. They have their own Dashboard for monitoring their extensive Network of repeaters, Talk Groups and C-Bridge Links. Some of their

repeater sites have live video feeds. They also provide complete Code Plugs available for download from their Web Site. If traveling to FL or NY this Network is a must have in your DMR Communications Toolbox. <http://www.k2hr.com/Metro%20DMR.html>

The DMR Networks highlighted here are just a random sample of the many different DMR Networks available for your use and enjoyment.

Most Amateur Radio Operators starting out with DMR will join the Brandmeister Network. Brandmeister is the most common with the most Repeaters and Open Spots. Brandmeister allows nearly any DMR device access to their system, while other networks have standards of the types of devices, the manufacturers of the devices and even the level of the firmware in the devices.

One of the most common mistakes Amateur Radio Operators new to DMR make is they will plan on taking their new DMR radio with them on a little road trip. They will go online and look to find a DMR Repeater in an area where they will be staying. They will add that single repeater to their existing Brandmeister specific Code Plug and have dismal or poor results when trying to make local contacts or friends back home on their favorite Talk Groups.

This is because they only loaded the frequencies and basic information for that single repeater. None of the Network specific Contacts, Talk Group IDs or Zone Information was added to their existing Code Plug. This is why Nearly every other Network provides you with a Code Plug specific to their

System. Once you download and install the Code Plug for the Network where you will be visiting, all the unknowns will be tied together. You will have the proper information. In many networks they have Talk Groups that will key up every Repeater in their system when activated, other Talk Groups are for local traffic only, while some Talk Groups are for wide area or worldwide access. This information is available from the Web Site of the organization that supports the Network.

When accessing Repeater Systems outside of your own area, always thank the owners and managers for providing the service. All Repeater Systems cost money to establish and maintain, especially the modern Digital Networks that require computers for monitoring and High Speed Internet Connections. There is an unwritten rule that if you do not already belong to a club, you are expected to either join or make a donation to the organization in the area you are visiting. If you already belong to a club in your home area, let the owners and operators know that.

And finally follow the instructions and guidelines for Network Access when visiting an area. Some repeaters in other Networks are only for Metro Traffic in larger cities. They have a limited number of Talk Groups available and they are usually not linked to Talk Groups outside of their Network. Do not try to activate Dynamic Talk Groups on these Repeaters. This is a poor practice. If in doubt, ask questions, others will be happy to show you the ropes on their system. Have fun and explore some different and exciting Networks.

“There are many other Networks available to you other than Brandmeister get on the air and explore.”



Organization

DAARN Hams June 2021

How to Contact us
On the Web:

[DAARN Hams](#)



Facebook:

[DAARN Hams 3105](#)



E-Mail

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DMR Arkansas Amateur Radio Net

DAARN is not affiliated with any clubs and is a worldwide group of Amateur Radio Operators that check into the net held on Brandmeister Talk Group 3105 from anywhere on or in proximity to our planet. The DAARN net is not specific to any repeater or dependent on any club assets and can be heard on ANY repeater or hotspot that has access to Brandmeister and allows Talk Group 3105.

The main focus of DAARN is to spread all the information we can about DMR Communications. We do this by helping others, making presentations and producing educational materials about DMR.

DAARN Membership Information

The **BASIC DAARN MEMBERSHIP** is totally **FREE** to anyone interested in DMR Communications and spreading the word to the General Public about Digital Communications. Again, **DAARN Membership is totally Free**. The only requirement is to have an interest in DMR Communications and willingness to help others.

We do offer two levels of paid memberships. They are the SuperStation and the BigGun categories. These paid memberships usually belong to commercial accounts.

BigGun Member dues are \$100 per month. If you pay in advance you will receive two months for free. After you pay the \$1,000 in annual dues you will receive a Hand Held

DMR Radio, also with a Custom Code Plug written to your specifications.

SuperStation Member dues are \$1,000 per month. By paying in advance you get two months for free. Also after paying the \$10,000 annual dues, you will receive a Mobile DMR Radio and mobile antenna, along with a Custom Code Plug programmed to your specifications.

Again, the BASIC HAMSHACK MEMBERSHIP IS FREE. You have all the same rights and access as the Paid Membership Subscriptions.

All DAARN Members will have access to any training material or presentations produced by DAARN Hams.

And of course all levels of DAARN Membership will receive the DAARN Hams Newsletter, DAARN Hams Net Reminders and breaking news concerning Amateur Radio and DMR Communications.

