



GeorgiaDMR.net Codeplugs

Frequently Asked Questions

Hello Friends of GeorgiaDMR.net!

We would like to thank you for your interest in GeorgiaDMR.net and for downloading one of our codeplugs!

The intent in the creation and ongoing maintenance of these codeplugs is to provide a stable foundation for you to get started.

NOTE: Commonly used abbreviations and terminology are specified at the end of this document.

Disclaimer & Warning

NOTE: These codeplugs are not officially supported. GeorgiaDMR.net, nor its members, cannot be held responsible for any issues that may arise from the installation and/or use of the codeplugs you download from GeorgiaDMR.net.

RTFM

Please read this document in its entirety! In order to ensure you are successful with the installation and ongoing maintenance of GeorgiaDMR.net codeplugs, ensuring you understand all of the information specified below is of the utmost importance.

If you ask a question that's already answered below, our response is "RTFM"!

Redistribution

These codeplugs can be redistributed provided they include a copy of this guide.

Standard Codeplugs

Our codeplugs are not intended to be everything to everyone! Please set and manage your expectations accordingly.

We selected several of the more popular talkgroups used by amateur radio operators in the State of Georgia.

You are free to modify these codeplugs to make them your own and we encourage you to do so! If you don't like the assortment we selected, then make it your own codeplug!

We will provide two different codeplugs for each of the DMR radios we support:

Hotspot Only

You will notice two sets of channels in this codeplug:

- HS1 = Hotspot 1 - these channels are intended for use with a simplex hotspot - the receive and transmit frequencies are the same (default 441.15000 MHz)
 - There are two zones - each contains roughly half of the total number of channels for Hotspot 1
 - HS1A
 - HS1B
 - Simplex hotspots only support one timeslot (default is TS2)
- HS2 = Hotspot 2 - these channels are intended for use with a duplex hotspot - the transmit and receive frequencies assume a standard UHF offset of +5.00 MHz (default: RX 440.60000 MHz and TX 445.60000 MHz)
 - There are 4 zones
 - HS2A TS1 - first half of HS2 channels for Timeslot 1
 - HS2B TS1 - second half of HS2 channels for Timeslot 1
 - HS2A TS2 - first half of HS2 channels for Timeslot 2
 - HS2B TS2 - second half of HS2 channels for Timeslot 2

- Duplex hotspots offer DMR users with two timeslots as one would find on a DMR repeater. There are duplicate channels specified - one on TS1 and one on TS2. This is designed to provide you with flexibility in terms of which talkgroup to use on each timeslot (i.e. HS2TS1 Georgia and HS2TS2 Georgia)
- If you own two simplex hotspots, simply update the receive and transmit frequencies to ensure they are the same and that all channels use TS2. You can safely delete the duplicate channel.
- *NOTE: Ensure that you update the frequencies in the channels to reflect that of your hotspot(s)*
- *The frequencies selected for the hotspot channels are based on the Southeastern Repeater Association UHF/440 band plan. It is strongly recommended that you select frequencies from the SERA band plan which can be found via the link below:*

SERA Band Plan for 420-450 MHz

<https://sera.org/wp-content/uploads/2016/11/sera-fup-440.pdf>

Georgia DMR Repeaters and Hotspots

- This codeplug includes all channels found in the Hotspot Only (see above for details)
- Plus an assortment of DMR repeaters throughout the State of Georgia

For both codeplugs, double-check to ensure that the channel assignments correspond to the respective zones. Due to the underlying database structure found in any codeplug, it is very easy to make changes to the number of channels that have a direct effect on their assignments within the specified zones.

Mandatory Update - DMR ID Number

The *very first change* you should make to any codeplug you download from GeorgiaDMR.net (or any other site for that matter) is to update your DMR ID and name. If you do not, you may transmit across the DMR network using someone else's DMR ID number or not be able to transmit at all due to the use of a fictitious DMR ID number.

All GeorgiaDMR.net codeplugs include the name MYCALL and DMR ID 1234567

If you do not have a DMR ID number, please visit Radioid.net to create an account and request an ID:

Radio Settings

Each radio manufacturer has their own approach to how they maintain settings in their radios. The GeorgiaDMR.net codeplugs only incorporate the basic settings needed to ensure basic interoperability with repeaters and hotspots. Wherever possible, we will configure recommended values however we leave it up to the operator to customize the settings in their radios.

Mic Gain

One of the most common complaints in DMR is the tremendous variance in audio levels from one user to the other. There is a very simple explanation for this. The operator doesn't spend ample time ensuring their mic gain is set appropriately.

Some of the commercial radios offer Automatic Gain Control (AGC). Motorola provides customers with a separately licensed option called Dynamic Audio Leveling that automatically adjusts the volume of the radio to compensate for these variances.

At the end of the day, this falls on the operator. Do your due diligence to ensure you test your radio to ensure your audio levels are optimized for the best possible experience.

Ensure you use one of the Parrot channels to test your audio levels FIRST! Do not use open talkgroups to test your audio levels.

"Can you hear me now" is something we hear from lids on TAC310. Be a good ham citizen and have respect for others. We're here to help - but we aren't always around to help you test your radio.

Hotspot Frequencies

When selecting frequencies to use with your hotspot, it is imperative that you follow the FCC band allocation plan!

Do not use the default out-of-the-box frequency that came with your hotspot! Do your part as a licensed amateur radio operator to ensure that you do not interfere with other neighboring hotspots.

Additionally, as many MMDVM hotspots are capable of using frequencies in use by amateur radio satellites, most developers have hard-coded their firmware to prevent them from initializing to ensure you use frequencies that are outside of this range.

From AMSAT Vice President-Operations Drew Glasbrenner, KO4MA:

"Recently there has been a DMR signal QRM'ing the AO-92 uplink on 435.350 or close by. Hotspots, repeaters, terrestrial simplex (anything not satellite) should not be in 145.8-146.0 or 435-438 by international bandplan. Please QSY these radios ASAP. Please share to DMR, D-star, Fusion, P25 groups and similar, thank you!"

Additionally, in the United States, repeater stations are prohibited from operating in the 2 meter or 70 cm satellite allocations per 47 CFR §97.205(b).

For more information, please read this article:

Digital Mobile Radio Hotspots May Be Interfering with Satellite Uplinks, AMSAT Reports 9/5/2018

<http://www.arrl.org/news/digital-mobile-radio-hotspots-may-be-interfering-with-satellite-uplinks-amsat-reports>

Southeastern Repeater Association Band Plan for 420-450 MHz

<https://sera.org/wp-content/uploads/2016/11/sera-fup-440.pdf>

Personalization

We encourage you to customize these codeplugs to make them your own.

It is strongly recommended that you keep an unmodified backup copy of the codeplug(s) in a safe location that you can restore should the need arise.

Supported Bands

The vast majority of DMR repeaters operate in the UHF band. As such, many of the commercial DMR radios are UHF only (Motorola and Hytera).

There are several DMR radios on the market that are dual-band and support both VHF and UHF (Alinco, AnyTone, Connect Systems, TYT, and others).

AnyTone recently released the AT-D578UV mobile radio which is available in either dual-band (FCC Part 90 - UHF and VHF - 2m/70cm) or tri-band options (FCC Part 97 - UHF & VHF 2m/1.25m/70cm).

Any codeplugs provided for Motorola or Hytera radios will only contain UHF frequencies.

Any codeplugs provided for other radios will contain UHF frequencies and provide a best-effort to contain VHF frequencies (2m only). If you happen to own an AnyTone AT-D578UV tri-band model and would like to incorporate any of the VHF (1.25m) frequencies, you are free to add them on your own. GeorgiaDMR.net will never include them in our codeplugs.

DMR Contact Databases

None of the codeplugs provided will include the contact database. The contact database is changing on a daily basis. If we were to include the database in a codeplug, not only would it significantly increase the file size, it would be out of date within 24 hours of it being posted.

We encourage you to learn to update and maintain the contact database on your radios on your own. There are a variety of places where you can obtain the DMR contact database formatted for your radio.

The following is a list of the GeorgiaDMR.net recommended resources:

- GitHub: DMR-Database/database-beta

This database is updated every 30 minutes - for AnyTone and Tytera/TYT (MD-380, MD-390, and MD-2017)

<https://dmr-database.github.io/database-beta/>

<https://github.com/DMR-Database/database-beta>

- GitHub: DMR-Database/database

This database is updated up to three times weekly - for AnyTone and Tytera/TYT (MD-380, MD-390, and MD-2017)

<https://github.com/DMR-Database/database>

- N0GSG DMR Contact Manager

Windows utility for downloading/importing the DMR user database (and much more!)

<http://n0gsg.com/contact-manager/>

Revisions and Additions

If you find any inaccuracies in these codeplugs, or if you use a repeater that is not in this codeplug and would like us to add it in a future revision, please use the Contact Us form on the GeorgiaDMR.net website:

<https://www.georgiadmr.net/contact.html>

We cannot guarantee that all suggestions will be incorporated but will review your recommendations as time permits.

Version Control and Backups

Time permitting, we intend to provide updates to these codeplugs over time. Updates will not be posted at any regular intervals.

Save Early - Save Often!

Any newer revisions to the codeplugs will assume you are installing it on your radio for the first time. As such, any customizations you've made to the preceding version(s) of the codeplug will be lost!

Ensure that you maintain accurate documentation of the changes and create a backup of your customized codeplug before applying the new version. We cannot be held liable for lack of due diligence on your part and will not provide support to help merge your changes into the newer versions of the codeplug.

References

Naming Convention - Georgia DMR Repeaters

<u>Abbreviation</u>	<u>Repeater</u>	<u>Callsign</u>	<u>Location</u>	<u>Network</u>
ARC	Atlanta Radio Club	W4DOC	Atlanta, GA	K4USD

BSM	Big Sweat Mountain	KD4Z	Marietta, GA	K4USD
BTW	Between	N4TAW	Between, GA	K4USD
LSMU	Little Sweat Mountain (UHF)	W4KIP	Marietta, GA	Brandmeister
LSMV	Little Sweat Mountain (VHF)	W4KIP	Marietta, GA	Brandmeister
PLM	Pine Log Mountain	W4KIP	Waleska, GA	Brandmeister
SAW	Sawnee Mountain	W4CBA	Cumming, GA	K4USD
SDY	Sandy Springs	KE4OKD	Sandy Springs, GA	Georgia DMR
STM	Stone Mountain	W4BOC	Stone Mountain, GA	K4USD

Commonly Used Terminology and Abbreviations

<u>Abbreviation</u>	<u>Definition</u>
TS	Timeslot
TS1	Timeslot 1
TS2	Timeslot 2
TG or TGID	Talkgroup (Group Call)
FT	Full Time (Static or Always On)
PTT	Part-Time Talkgroup (a.k.a. Push-to-Talk)
Private	Private Contact (Private Call)
CC	Color Code

DMR Simplex

Both sets of codeplugs include the commonly accepted DMR Simplex Frequencies

<u>Frequency</u>	<u>Band</u>	<u>TGID</u>	<u>Timeslot</u>	<u>Color Code</u>	<u>Admit Criteria</u>
145.510000	VHF	99	1	1	Always

145.790000	VHF	99	1	1	Always
441.000000	UHF	99	1	1	Always
443.450000	UHF	99	1	1	Always
446.075000	UHF	99	1	1	Always
446.500000	UHF	99	1	1	Always

Georgia DMR Repeater Database

GeorgiaDMR.net is in the process of reviewing multiple sources providing lists of DMR repeaters throughout the State of Georgia.

If you know of any DMR repeaters that you personally can confirm are in operation, please use the Contact Us form on the GeorgiaDMR.net website:

<https://www.georgiadmr.net/contact.html>

When providing an update, please include the following information:

- Repeater Name
- Repeater Callsign
- Repeater Location
- Repeater Trustee (if known)
- Frequencies (TX and RX)
- Offset
- Network

Conclusion

Your help will go a long way to help amateur radio operators residing in or passing through the State of Georgia be successful in adopting DMR!

Thank you for your cooperation and support of GeorgiaDMR.net!

73,

Jeff Hochberg - W4JEW
 Bill Perkins - KB4KFT