

WX4CAR



Newsletter

December 2023 - Issue 4

*Merry Christmas
& Happy New Year!*





Message

from the President



The best way to start the December newsletter is by wishing you all a Merry Christmas and a Happy New Year 2024! What a year it has been. The membership has remained stable and we are getting new members all the

time. The monthly testing program has really helped with finding new members, as well as referrals from all of you. Thanks to **Mark Schulze (KO4IFY)** who helps us to maintain our membership data and records. We are striving to be the best club in the metro area and can only do that with your help. So, thank you for being a vital part of this club.

The foundation of the club is built on three main pillars: 1) education of our members on ham radio topics, 2) FCC testing, and 3) public service. If we stay true to these, we will continue to be a great club.

I wrote an article for QST magazine that was published in November 2022. The reason for this article was to share our successes with other clubs across the country. In that article, I expressed the need for clubs to develop activities outside the normal club meetings with people with “like interests”. I called these **Special Interest Groups (SIGs)** for short). As we move into 2024, I encourage you to get involved in a SIG, or start one if it does not exist. On the groups.io we have 6 subgroups that are sharing information among themselves and planning activities. Our groups are:

- **Builders-Makers** – for those interested in DIY electronics and building projects of all sorts
- **Contesting** – share information on contests as well as skills and results
- **POTA/SOTA** – share about POTA and SOTA activations
- **Satellites** – Share information on working satellite contacts

- **Winter Field Day** – information on Winter Field Day as well as results
- **ARISS** – anything related to amateur radio in the ISS

We also have a focus on having educational content at all of our meetings as well as Field Day. This past year we had some great presentations on a variety of topics. I would like to thank all the presenters for their hard work and dedication to making and presenting great material. I challenge other members to participate in this in 2024. Do you have some expertise that can be shared with the club? Let us know so we can help you with building a presentation.

Each year we have the members complete a Club Survey. This is our primary vehicle for getting your feedback about the club, activities, and things you would like to see in 2024. It is important to let your voice be heard. Please fill it in when you receive the link to the survey.

This past year we participated in supporting two great public service events, namely, the Georgia Death Race and the Georgia Jewel. These were both very well done and helped to ensure the safety of the runners participating in these races. Both of these events were supported by our ARES members under the direction of **Rob Bruderer (W1JKU)** Emergency Coordinator for Cherokee County. The opportunity to be involved in these will be in March and September 2024.

Our premier event each year is the **ARRL Field Day**, always held the last full weekend in June. **Chad Cone (KY4KP)** our Field Day Chairman, did an outstanding job of organizing and leading Field Day. This past year we had a spectacular event with about 75 people participating. This was also the first year that we had a sponsor, which allowed us to do a few more things like have a great radio for a raffle prize. Thanks goes to **Dr. Athavale of ENT of Georgia North** for his generous contribution.



At Field Day we had 22 people participate in a soldering workshop. The goal was to learn proper techniques for soldering both surface mount and leaded components to a printed circuit board(PCB) and getting it to function. A huge thanks goes to **Tom Perry (KN4LSE)** for his organization of, and delivery of this workshop. It was a big success.

Results for Field Day are published in the December '23 issue of QST magazine. Our score increased by 30% year over year. The overall score for all entries in all categories we placed 404 out of 4445 entries. Top 10% isn't too bad. In our 6A category we placed 13 of 36. With propagation issues and a heavy reliance on ft8, we did rather well. Additionally, there were only 15 other entries with higher attendance than CARS. Out of 4000 plus entries, CARS was at the top of the pack with participation. Just goes to show the strength and quality of the club. Thank you for being the best part of CARS. Planning and preparations are already underway for 2024. Our goal is to double our score. Are you up to the challenge? Thank you to everyone who made another great Field Day 2023 possible.



We capped off the year with our annual club picnic. This was held at Red Top Mountain State Park and was well attended. As always, **James James (KE4HMS)** kept us well-fed while working the grill. We took the

opportunity to have a couple of stations set up for people to participate in POTA. If you did not get a chance to attend, be sure to keep it in mind for 2024. All total the POTA team had 201 contacts! Great effort.

We owe thanks to James James for keeping the books and managing the financial data for the club. He is a key person for us in managing the relationship with Woodstock Parks & Rec and maintaining our access to the WG Long Senior Center by making sure it is ready for the monthly meetings. Thanks James!

As we look forward to 2024 ask yourself what you can do for the club. There are so many opportunities to get involved. We will begin forming the teams early in the year for Field Day. Maybe you want to be a bigger part of that or other events. Get involved, it is how you learn. See you in the New Year!

73,

Marty
KB4MG



Tech Talk

What You Need to Know About DMR

Digital Mobile Radio (DMR) is a digital radio communication standard widely used by amateur radio operators, businesses, and public safety organizations. It offers several advantages over traditional analog systems, including improved audio quality, increased capacity, and enhanced features. Let's explore some key aspects of DMR:

Digital Voice and Audio Quality: DMR utilizes digital modulation techniques to convert voice signals into digital data for transmission. This results in superior audio quality compared to analog systems, with clearer and more intelligible communication. DMR radios often incorporate advanced audio processing algorithms that reduce background noise and improve voice clarity even in challenging environments.

Interoperability and Roaming: DMR is an open standard, ensuring interoperability between different manufacturers' radios that comply with the DMR protocol. This means users can communicate across different brands and models of DMR radios, providing flexibility and choice. Additionally, DMR networks can support roaming, allowing users to seamlessly switch between different coverage areas without interruption.

Data and Text Messaging: DMR supports the transmission of data and text messages alongside voice communication. Users can send short text messages, status updates, and predefined messages using their DMR radios. This feature is particularly useful for quick and discreet communication, sending location information, or conveying non-urgent messages.

Private and Group Calls: DMR enables both private and group calls. Private calls allow direct one-to-one communication between two DMR radios, similar to a traditional phone call. Group calls, on the other hand, enable communication within predefined talk groups, which can consist of multiple users. This flexibility allows for efficient communication across different teams or departments within an organization.

Enhanced Features: DMR radios often incorporate additional features, such as GPS support, allowing users to transmit and receive location information.

DMR Tier System: DMR is categorized into three tiers: Tier I, Tier II, and Tier III. Tier I is a low-power, short-range system primarily used for personal and recreational purposes. Tier II is the most common and widely used tier, offering higher power output and extended coverage. Tier III supports trunking capabilities, allowing efficient allocation of voice and data channels for large-scale systems.

DMR has gained popularity due to its efficient use of spectrum, improved audio quality, and advanced features. It has found applications in various sectors, including amateur radio, commercial radio systems, public safety, and business communications. As technology continues to evolve, DMR remains a reliable and versatile digital radio communication solution for many organizations and individuals.



DMR Demonstration Notes and Links

Basic requirements to get started on DMR

1. Technician class license or higher \$35.00 FCC fee + applicable test fee
2. DMR mobile or handheld radio. The TYT MD-UV380 \$100.00 is a great choice. (OPEND77 firmware is highly recommended)
 - OPEND77 firmware was created by American & Aussie HAMS and has many features found on the more expensive \$300.00 HT's and it's free to download.
 - Easy to operate
 - Can hold over 1 million radio ID contacts (Caller ID)
 - OPEND77 Firmware has a built-in spectrum analyzer
 - Has the ability to manually enter talkgroups and Private calls from the keypad
 - Can be programmed with minimal effort
3. Raspberry Pi Zero W, Pi-Star hot spot with a Multi-Mode Digital Voice MODEM (MMDVM) top hat modem \$39.00 and a 8GB Micro-SD card minimum recommended with the W0CHP-Pi-Star-Dash Operation System <https://w0chp.net/>
4. Power supply requirements 5VDC @ 2.5Amps
5. Home Wi-Fi plan with at least 100MB download speed, 2.4Ghz is the only Wi-Fi frequency compatible with a Raspberry-Pi Hot Spot
6. DMR ID Free account RadioID.net
7. Brandmeister (BM) Free account <https://brandmeister.network/?page=login&tokenfail=1>
8. BM Hot Spot security password through BM selfcare portion of the BM website
9. ARRL has made notice that DMR users should avoid VHF-145.8-146.0 and 435-438MHz as these are Amateur Satellite Operating frequencies.

\$39.00 Raspberry-Pi on E-Bay MODEM & Case only — https://www.ebay.com/itm/175499921301?mkcid=16&mkevt=1&mkrid=711-127632-2357-0&ssspo=ikkwi-jxtl6&sssrc=4429486&ssuid=txunEHTaS9K&var=&widge_t_ver=artemis&media=SMS

Raspberry-PI Zero W Motherboard — https://www.amazon.com/dp/B07W3GJTM1?ref_=cm_sw_r_apin_dp_CVXD8AD0D9G27MR2FZTE

How to assemble your Hot Spot Video

<https://www.youtube.com/watch?v=URPbf4AbS9g&t=616s>

\$100.00 TYT MD-UV380 on amazon — <https://www.amazon.com>

To monitor the DMR network for Active Talk Groups — <https://hose.brandmeister.network/>

The Brandmeister TG List has 1648 TG's currently — https://www.pistar.uk/dmr_bm_talkgroups.php

DMR Weekly nets schedule — <https://qsl.net/n/ne2w//dmr/w0wc/>

OPEND77 CPS is here, create a free account to download CPS — <https://www.opengd77.com/viewtopic.php?f=12&t=3119>

OPEND77 User guide can be found here free account required. — https://github.com/LibreDMR/OpenGD77_UserGuide/blob/master/OpenGD77_UserGuide.md#download-links-and-other-resources

Jamie Whitehead

KQ1USA





Contesting

Contest Corner

December 2023

ARRL 160m Contest , CW

2200Z Dec 1st to 1600Z Dec 3rd

ARRL 10m Contest, CW and SSB

0000Z Dec 9th to 2400Z Dec 10th

ARRL Rookie Roundup, CW

1800Z-2359Z Dec 17th

80,40,20,15,10m

DXpedition News

December 2023

VK0AW Davis Base Antarctica



5R8VE Nosy Faly Island



T32TT Kiritimati Island



Resources



WX4CAR Resource Links

Website - <https://www.wx4car.org>

Contact Us - <https://www.wx4car.org/contact-us.html>

Membership - <https://www.wx4car.org/membership-form.html>

CARS Club Technical Programs - <https://www.wx4car.org/technical-monthly-programs.html>

Club Activities - <https://www.wx4car.org/club-activities.html>

POTA Corner - <https://www.wx4car.org/pota-corner.html>

ARRL FIELD DAY - <https://www.wx4car.org/field-day.html>

Ham Fests - <https://www.wx4car.org/amateur-radio-events.html>

CARS Groups.io - <https://groups.io/groups>

ARRL Testing Info - <https://www.wx4car.org/testing2023.html>

New Ham Kit - https://www.wx4car.org/uploads/8/3/7/7/83773582/wx4cars_intro_to_new_hams-7apr2021.pdf

Ham License Upgrading - <https://www.wx4car.org/obtaining-a-license.html>

Technician Ham Cram Study Guide - https://www.wx4car.org/uploads/8/3/7/7/83773582/2022-2026_technician_pool_study_guide.pdf

Club Apparel - <https://www.hamthreads.com>

CARS Club Badges - <https://www.thesignman.com/clubs/carsga.html>

POTA Supplies - <https://www.clubgearonline.com>

Contesting Links

ARRL Contest Calendar - <http://www.arrl.org/contest-calendar>

Contesting Calendar - <http://www.contesting.com/>

CQ Contest Calendar - http://cq-amateur-radio.com/cq_contests/cq_annual_contest_calendar/cq_annual_contest_calendar.html

SolarHam Site - <http://www.solarham.net/index.htm>

Space Weather - <http://www.spaceweatherwoman.com/>

Contest Calendar - <https://www.contestcalendar.com>

Other Links

ARRL - <http://www.arrl.org>

Sky Warn - <http://skywarn.org>

QSO Today - <http://qsotoday.com>

Cherokee EMA - <http://cherokeega-ema.org>

Georgia ARES - <https://www.gaares.org>

Ham Radio Work Bench - <http://hamradioworkbench.com>

On All Bands - <https://www.onallbands.com>



WX4CAR

CARS Officers for 2023:

President:

Martin Buehring – KB4MG

Vice President:

Chad Cone – KY4KP

Secretary:

Mark Schulze – KO4IFY

Treasurer:

James James – KE4HMS

Cherokee County

Emergency Coordinator:

Rob Bruderer – W1JKU

Email–club.wx4car@gmail.com

Time & Location of Meetings:

Meetings are the second Saturday of each month at 10:00 am Eastern Time.

William G. Long Senior Center

223 Arnold Mill Road

Woodstock, Georgia 30188

Our meetings are open to all visitors. You do not need to be a member or have a license to attend. Come for the fellowship and technical programs.

We also have a combined ARES meeting at the same time. ARRL FCC Testing is at 1:00PM following the meeting.

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Mission Statement

The mission of the Cherokee Amateur Radio Society is to promote the hobby of amateur radio to the Cherokee County residents and surrounding communities. It primarily serves to provide education, FCC testing, public service, and fellowship to people with the common interest of amateur radio.

Cherokee Amateur Radio Society is an organization of FCC licensed amateur radio operators (also called Hams) that meet and share the hobby, educate people about amateur radio, as well as support our local community in times of disaster. We are located in Cherokee County, Georgia and have club call sign **WX4CAR**. We are an ARRL Affiliated Club.

The club also participates with ARES, and the Cherokee County EOC when severe weather gets close to the area, and we help with local public service projects. The members of the club also dedicate some of their time to promote and help new hams to develop their skills and knowledge on Amateur communications modes and to be better operators. We are a very active club and participate in ARRL Field Day every year. If you are located in Cherokee County or the surrounding area, we would like to invite you to participate.