



YELM AMATEUR RADIO GROUP

PO Box 40
YELM, WA 98597

TEL: 360-747-7238

DECEMBER 2024

EMAIL: YELMRADIO@GMAIL.COM

WEBPAGE: [HTTPS://YELMAMATEURRADIOGROUP.ORG/](https://YELMAMATEURRADIOGROUP.ORG/)

K7YLM REPEATER: 440.200 (+5) PL: 100 Hz.

CLUB NET: MONDAY @ 1930 (LOCAL) ON THE K7YLM REPEATER

FUTURE NET: MONDAY @ 2000 (LOCAL) 147.470 MHZ (SIMPLEX)

ARES NET: SATURDAY @ 1900 (LOCAL) 146.550 MHZ (SIMPLEX)



IN PERSON MEETINGS

FIRST AND THIRD SATURDAY OF EVERY MONTH AT 9:30 AM

EMANUEL LUTHERAN CHURCH,
206 3RD ST SE, YELM, WA 98597.

VISITORS ARE ALWAYS WELCOME.



Wishing all members of the Yelm Amateur Radio Group, our friends, and families a very Merry Christmas, Happy Holiday, and all the Best for a Happy New Year.

YARG ANNUAL POTLUCK

YARG will have our annual potluck on 7 December 2024 (Beginning at 11:00 AM) at the Emmanuel Lutheran Church (Friends & Families Welcome).

Please bring a dish and join us as we close out 2024.

* Please remember there will be no YARG meeting on 21 December 2024. We look forward to seeing everyone at our regular meeting on 4 January 2025.

CONGRATULATIONS TO OUR NEWLY ELECTED OFFICERS!!!

President

Jim - KK7IHG

Vice President

Mick - KD7KLA

Treasurer

Justin - W9JWR

Secretary

Tom - KK7QNX

Board Position 1

Gary - WA7SH

YARG Membership Dues for 2025

General Member \$40

Senior (65+) \$30

Family Member \$20



Amateur Radio Class with the Boy Scouts



On 9 & 10 November 2024, YARG presented an amateur radio technician license class to the Boy Scouts at the Lions Club in Yelm. Following the class, on 12 November 2024, YARG held a licensing exam, allowing the Scouts, and others, the opportunity to earn their amateur radio licenses.

Above, we see YARG President, Jim KK7IHG, presenting a portion of the class.

Congratulations to Our Newly Licensed Amateur Radio Operators



As you embark on this exciting journey, you join a community of millions of amateur radio enthusiasts worldwide. Amateur radio operators, also known as “hams,” come from diverse backgrounds and share a passion for communication, electronics, and international goodwill. As you explore this vibrant community, you’ll find that ham radio is evolving with new technologies and innovations. Software-defined radio and affordable hardware are making it easier for people to get involved.

The future of ham radio lies in enthusiastic operators like YOU.

16 November 2024 YARG Meeting & Class

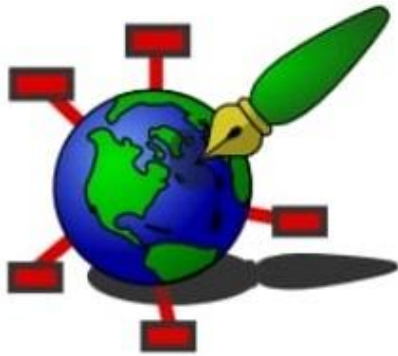


On 16 November 2024, at our regular YARG meeting, we had a class on programming radios with CHIRP (<https://chirpmyradio.com/projects/chirp/wiki/Home>). CHIRP is a free, open-source tool for programming your radio. It supports a large number of manufacturers and models, as well as provides a way to interface with multiple data sources and formats.

In addition, individuals brought in their radios and were given assistance in getting them programmed with local repeater and net frequencies.

If you need assistance programming a radio and getting on-the-air, bring your radio to YARG and we will do our best to assist you.

Build Your Own Off-Grid Internet



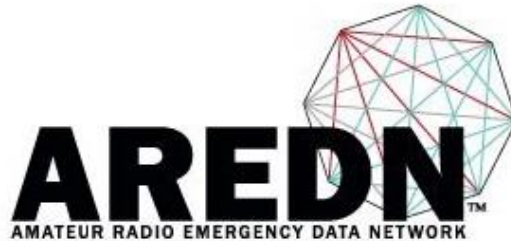
Zim



WIKIPEDIA



KIWIX



Three billion people have no or little access to internet. This can be because of costs, lack of infrastructure, or outright censorship. Major disasters, extended power outages, and failure of the grid can deny whole communities access to the Internet.

Kiwix (<https://kiwix.org/en/>) allows you to download key websites (such as Wikipedia, MedlinePlus, Project Gutenberg, and TED Talks) and access them even when the Internet is down.

Download Kiwix, and if you currently have a fast Internet connection you can download as many files from the Kiwix library as you want. Or, you can purchase various Kiwix packages and receive them on a SD Card through the mail. For example, the Kiwix "Preppers Package" (<https://kiwix.org/en/wifi-hotspot/>), available for \$25, contains: dozens of resources on homesteading, water treatment, military and emergency medicine, etc. WikiHow, iFixit, and other repair resources, and the entire Wikipedia, along with "TrailSense" and other survival apps for Android. This all fits on a 256 GB microSD card.

LibriVox (<https://librivox.org/>) provides free public domain audio books. Use Zim (<https://zim-wiki.org/>) to build your own desktop Wiki. Download clean PDF copies publications from sites like The Internet Archive (<https://archive.org/>) and Anna's Archive (<https://annas-archive.org/>). You can also download YouTube videos (<https://www.pcmag.com/how-to/how-to-download-youtube-videos>) for off-line (and

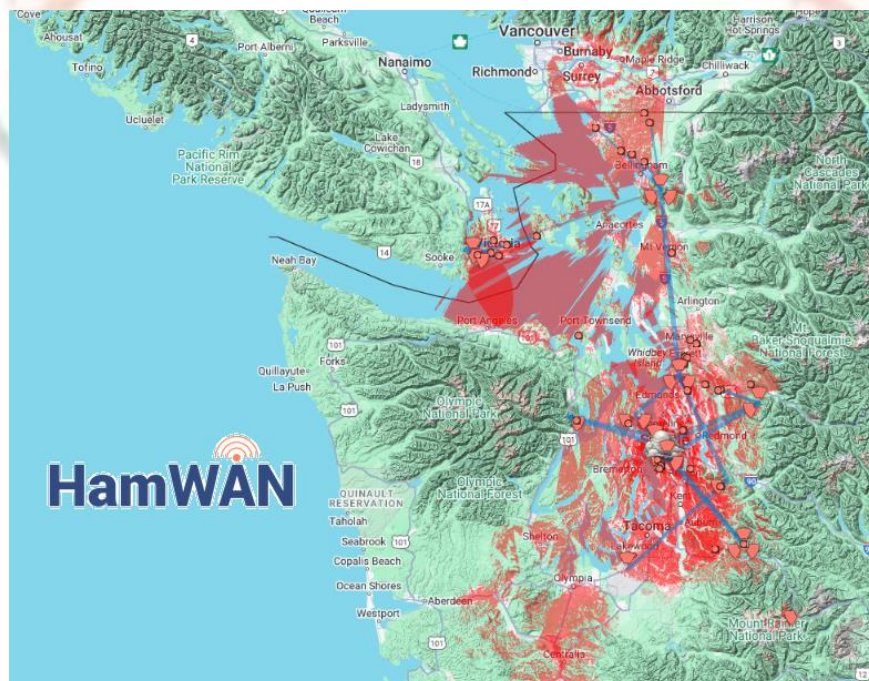
Ad Free) use. (Please be aware of copyright issues and collect only public domain / 'Fair Use' content.)

The GridBase company (<https://www.gridbase.net/>) will assemble a package for you, or sell you DIY components to help you build your project. The off-grid CyberDeck is shown in this YouTube video (<https://www.youtube.com/watch?v=pYNI-ibq7aM>), with a CyberDeck Update video here

(<https://www.youtube.com/watch?app=desktop&v=VgqxieHGNsU>). The GridBase projects are excellent, but have one major drawback - once the image is built you can't add any further data to it. This is due to the way the compression algorithms work to store large amounts of data while still making it accessible on small devices.

If you build your own 'Off-Grid Internet' and store the data on WiFi accessible drive, anyone that you grant access to your WiFi network (such as your home network) can have access to this data without needing to connect via the Internet or through the cellular networks.

If you are an amateur (ham) radio operator, you can expand your network using modes like NPR-70 (The New Packet Radio) (<https://hackaday.io/project/164092-npr-new-packet-radio>). NPR (New Packet Radio) is a custom radio protocol, designed to transport bidirectional IP traffic over 430MHz radio links (ham radio frequencies 420-450MHz). This protocol is optimized for "point to multipoint" topology, with the help of managed-TDMA. Bitrate is 50 to 500kbps (net, effective bitrate), depending on the RF bandwidth chosen. Projects like AREDN (<https://www.arednmesh.org/>) and here in the Pacific Northwest, HamWAN (<https://www.hamwan.org/>) allow wide-area exchange of data over radio.



Julian / OH8STN suggested a project for "Decentralized OTA Micro Blogging" (<https://oh8stn.org/blog/2023/01/13/decentralized-ota-micro-blogging/>). And projects like GhostNet (<https://www.youtube.com/watch?v=Qk7Jlln16EU>) allow for the exchange of news and information over radio networks using JS8Call (<http://js8call.com/>).

The Internet Society (<https://www.internetsociety.org/>) provides additional guidance on "How to Build Your Own Internet" (https://www.internetsociety.org/wp-content/uploads/2021/09/Manual_Africa_ISA_How-to-build-your-own-internet-Part-1-draft-8-min.pdf). File Sharing and Communication During an Internet Shutdown (<https://blog.witness.org/2020/02/file-sharing-communication-internet-shutdown/>) may also be a concern in some countries. You will certainly want to "Get Internet Access When Your Government Shuts It Down" (https://www.pcworld.com/article/494423/get_internet_access_when_your_government_shuts_it_down.html). And have a plan for staying online if the internet or social media gets blocked in your country (<https://qz.com/africa/878823/a-guide-to-staying-online-if-the-internet-or-social-media-has-been-blocked-in-your-country>).

The bottom line is that we can (and perhaps should) build our own off-grid, decentralized communications and information networks. This builds resiliency into local communities, provides resources to remote villages, and supports groups of like-minded people in sharing information of interest to the group.





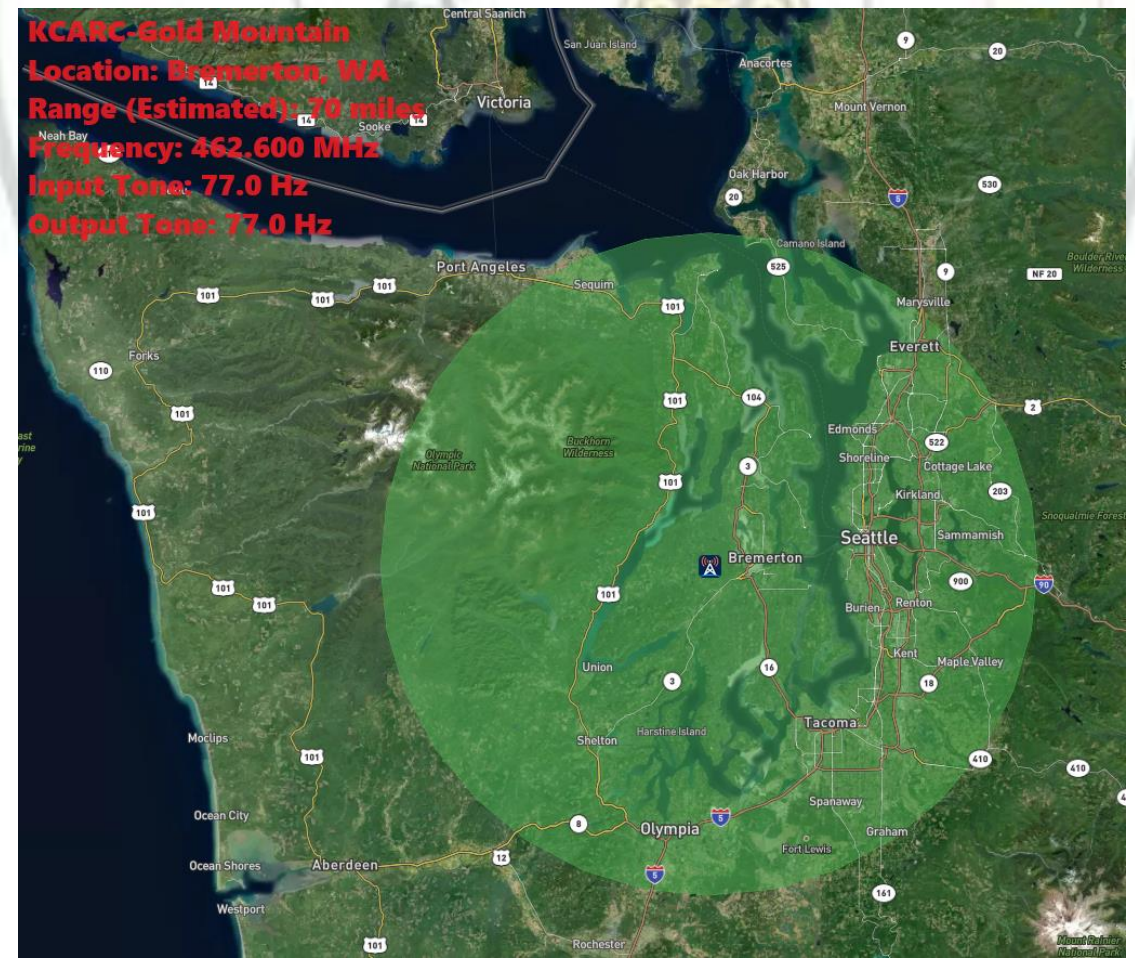
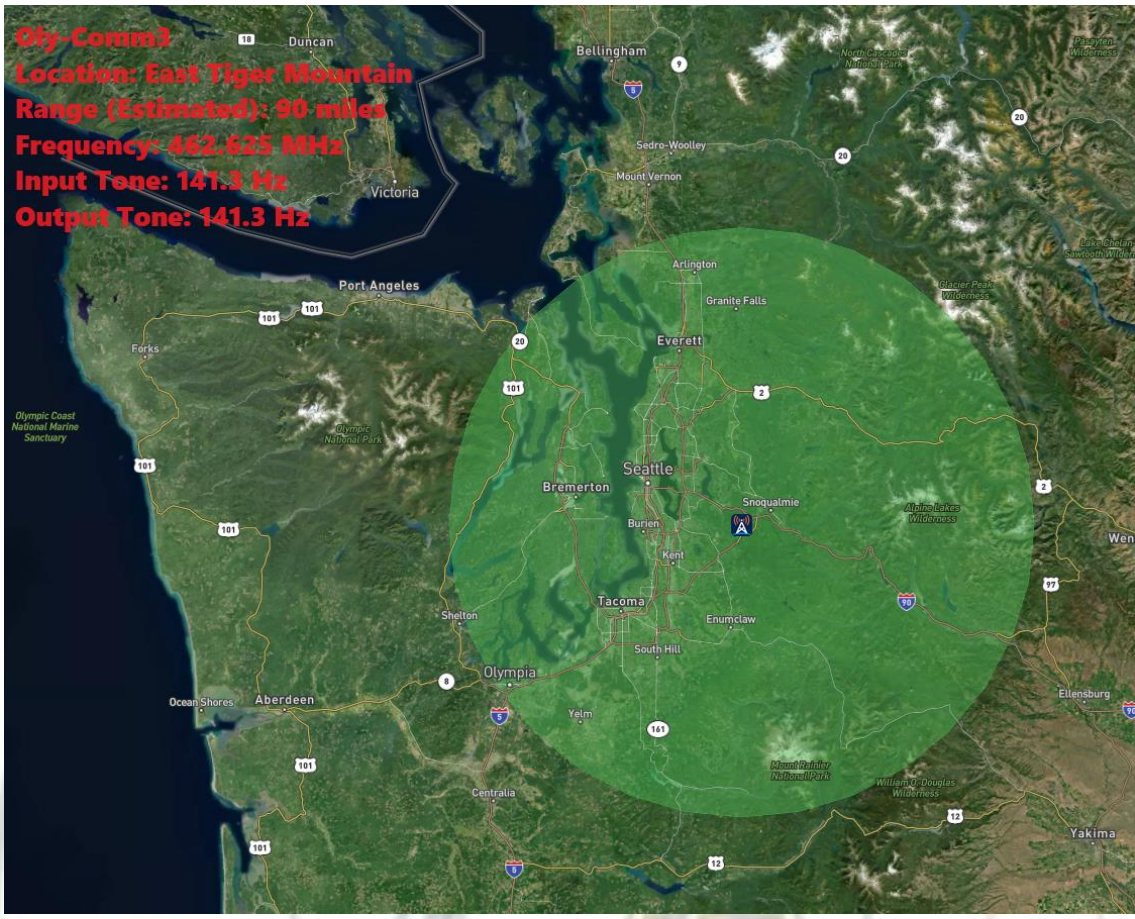
Zello (<https://zello.com/>) is a live voice push-to-talk communication platform that turns any smart device into a digital two-way radio that works over Wi-Fi and cellular networks anywhere in the world. Zello requires an Internet connection. This can be cellular mobile data or WiFi. Zello cannot work without internet access, but if both you and your contact are within one network, the voice will be transferred using the shortest way - through the WiFi network, for example. Internet will be used only to log into the Zello network and do some service data exchange, it will be less than 1 kiB per second. Purpose-built to connect frontline teams and communities, the push-to-talk walkie-talkie app offers instant voice communication with one or many in unlimited secure, private channels, as well as message replay, emergency alerts, location tracking, dispatch capabilities, and Bluetooth device support. Channel communications are encrypted in transit, and direct messages are encrypted end-to-end, with 1024-bit RSA for identity, 256-bit AES for content, and TLS for traffic management. For personal use, download the free Zello app here: (<https://zello.com/downloads/>)

GMRS – General Mobile Radio Service

Many members of YARG are dual-licensed, holding both an amateur radio license and a GMRS license. Like the Amateur Radio Service, GMRS requires a license, but there is no exam required – just pay the \$35 FCC licensing fee and you will be issued a license that is valid for 10 years. And, unlike your amateur radio license, your GMRS license covers your whole family. GMRS is a great way to get all of your family members on-the-air, as well as being a handy way to learn about radio while you are studying for your amateur radio license.

It is important to note that Amateur Radio and GMRS are separate radio services, and thus you will need both licenses if you want to make full use of the available radio spectrum. Your amateur radio license doesn't authorize you to operate on GMRS channels, and a GMRS license doesn't give you privileges on the amateur radio bands.

Like amateur radio, GMRS has repeaters that expand your radio communications range. There are a couple wide-area coverage GMRS repeater that cover our area.



Once you have your GMRS license, you (and your family) can use these GMRS repeaters, and several other repeaters with smaller coverage throughout the area.

To Apply for Your GMRS License

- Go to the FCC website: <https://wireless2.fcc.gov/UlsEntry/licManager/login.jsp>
- Log in with your FRN and password
- Click "Apply for a New License" in the left hand column
- Select "ZA - General Mobile Radio (GMRS)" from the drop down list — it's all the way at the bottom!
- Answer three "Yes/No" questions
- Fill out your Licensee name and address
- Answer one "Yes/No" question
- Confirm your information and press "Continue to Certify"
- Sign your certification and press "Submit Application"
- Continue for payment options

Pay the \$35 FCC Fee

- Log into your FCC account with your FRN and password
- Press "Make Payment" and choose from the given payment options: pay from bank account, pay by credit or debit card, pay by wire transfer, or pay by check/money order

CONGRATULATIONS! - You have completed your application and your payment is being processed. Once your GMRS license is granted (typically within 1-5 days), the FCC will send you an email and you'll be on-the-air with GMRS.





GhostNet

GhostNet Manual Version 1.5 Has Been Published.

GhostNet is the overarching term for a collection of communications networks set up to allow users around the world to exchange information without relying on pre-established infrastructure. Far from being just an emergency plan, GhostNet is intended to ease the transition of radio technology into everyday life. Though radio networks cannot truly replace the internet, we hope that we can replace a substantial portion of a person's daily information requirements, and promote a culture of off-grid information sharing. (<https://github.com/s2underground/GhostNet>)



Winter Field Day <https://winterfieldday.org/>

Winter Field Day

January 25th & 26th, 2025

The Winter Field Day (<https://winterfieldday.org/>) event aims to help participants improve their preparedness for disasters and enhance their operational abilities in adverse conditions. Amateur radio operators have the freedom to use frequencies on the HF, VHF, or UHF bands while employing voice, CW, and digital transmissions. The event designates specific objectives to encourage a diverse range of activities, including the use of non-commercial power sources, the deployment of multiple antennas, establishing satellite contacts, and more.