Tri-Lakes Monument Radio Association

Just having fun messing around with radio!

WØTLM Radio Association

Newsletter

April 2025

In this issue:

A Word About the Newsletter

The Newsletter welcomes submissions of articles or other items of interest to WØTLM members. Contributions may be articles, commentary, photographs, notification of events, fun things, reports of interesting radio activities, and more!

It's YOUR newsletter. Let's hear from YOU!

Email Editor

From the Prez
Bob WØHTH

Let's Keep the Momentum Going!

I hope this month's newsletter finds you all well and enjoying the ever-changing world of amateur radio. As we head into the spring season, it's a great time to reflect on the exciting activities we've been involved in, as well as look forward to what's coming up in the next few months.

We just completed the Spring session of our Licensing Class. Another great success rate with newly minted and upgraded Hams. During our March meeting we had another great speaker, Patrick Bolan, KJ7ZSU, owner of Geochron. This was a great follow-up to February's presentation on the importance of accurate time keeping for amateur radio. Plus, he even offered us a discount coupon for purchasing his product. See you really need to attend meetings. Not only will your mind be expanding, but you'll save money as your wallet shrinks.

Another good way to keep up with our club is by joining in on the weekly Monday net, which continues to be a great success. Fred KCØGLF, served as a first-time net control and hit it out of the ballpark! At our meeting he confirmed that the Net Control script is easy to follow, and we are a friendly group. It's always wonderful to hear from so many of you, and we've had great discussions ranging from new equipment to recent travels. If you haven't participated in one yet, I highly encourage you to join us. The more voices, the better!

April 2025 QST cover featuring Elain KØAAR's article.
(Image courtesy ARRL.)

Congratulations to WØTLM Club Member Elaine Hambly, KØAAR, upon the publication of her article in the April issue of ARRL's QST Magazine. The cover page is a photo taken by her as well as the cover story of "Saving a 30 Foot Parabolic Dish" for use by the Deep Space Exploration Society, located in Haswell, CO. If you

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Hot Announcements

- ***April Monthly Meeting, VENUE CHANGE:*** Mon, 21 April, 6 - 9 PM, ***Woodmoor Barn***. Doors open for Connect Time from 6:00 PM to 7:00 PM. Come meet other members, socialize, & have fun! **Presentation topic:** Will Beals NØXGA - *Colorado Connection Repeater System*.

Zoom simulcast link for meetings: https://w0tlm.org/w0tlm-club-meeting You will be placed in a waiting room until the host activates your entry. Please display name & call sign.

- **WØTLM License Class GOTA Session:** Saturday April 5, 2025, 1:00 pm, Woodmoor Barn. Get On The Air with our new hams and upgraded General licensees! HT programming.

From the Prez, continued

are an ARRL member you can view the electronic issue now, or you can view the free article ARRL page linked above. More importantly for ARRL members, at the end of the article you will have an opportunity to VOTE for her article to receive the QST Cover Plaque Award. Simply click on the VOTE Box and select her article as your favorite article in the April issue! Oh, and by the way, the article does mention she is a member of WØTLM. Congratulations again and thanks to Elaine for adding value to amateur radio in Colorado.

Don't forget our upcoming communications support for the Greenland Endurance ride over the Greenland Open Space, Larkspur. The ride is May 17 & 18. This is a fun weekend with horses and riders. The organizers and participants greatly appreciate our communication support and always look forward to our participation. To sign up just email Tricia KØTRD, and be sure to read her descriptive article about the event later in this newsletter.

As we continue through 2025, let's keep the momentum going! I encourage everyone to stay engaged with the club and continue to learn. Every member of our club has talents and gifts. Think of ways you can add value to the club. Amateur radio is always evolving, and there's always something new to explore, whether it's a new mode, piece of equipment, or technique. I'm excited to see so many of you stepping up to help with club activities, and I look forward to seeing even more of you involved in the upcoming months. Remember we are looking for depth on our team. Especially for Audio Visual set up for our meetings. Assisting the Editorial Staff with this newsletter and a backup for our Treasurer.

And don't forget, this month's meeting on April 21 is a change of venue. We will meet at "The Barn" Community Center in Woodmoor. Our program will be presented by the Colorado Connection folks. That is the network of repeaters located throughout the state that allows VHF communications statewide. Remember, your feedback is always welcome. If you have ideas for new events, club projects, or improvements, please don't hesitate to reach out to me directly or through our club's communication channels. We're here to ensure that the club remains a valuable resource and fun community for all our members.

Thank you again for your continued support and enthusiasm. Together, we're making our club stronger, and I'm excited about the future. Let's make the most of this year by continuing to engage, learn, and grow. I look forward to seeing you all at our next event!

73
-- Bob WØHTH, President

Got feedback or suggestions for our WØTLM leadership?

Drop a note on our officers with your comments or recommendations for WØTLM.

It's YOUR club. Let's hear from YOU!

Email Leadership

Tech-Knowledgy
Stu WØSTU

Time Domain & Frequency Domain Signal Views

(Article first published at **HamRadioSchool.com**)

An old adage states that a picture is worth a thousand words. Visualization is often the key to understanding radio concepts. When it comes to visualizing signals, we use simplified visual models of signals that exhibit the important characteristics of signals, such as frequency, amplitude, and change over time. These visual models are not quite like real signals physically, but they provide us tools for thinking about signals in a simpler way.

Signals: Before we jump into our examination of signal graphical representations, let's consider what is meant by a signal. We need to understand the thing we want to represent with a visual model to ensure the visual model is not flawed in some fundamental way. One pertinent definition provided by Merriam-Webster for signal is: *a detectable physical quantity or impulse (such as a voltage, current, or magnetic field strength) by which messages or information can be transmitted.*

A signal may be a varying voltage or current within an electric circuit. The sounds of a radio operator's voice are converted by a microphone into AC voltages that represent moment-to-moment variation in voice frequencies and strengths. This band of dynamic audio frequencies is one type of *baseband* signal that is used to modulate a radio frequency carrier during the RF transmission process. These audio frequency signals are AC voltages, changing the direction of electrical force (voltage) in the microphone circuit from a few hundred to a few thousand times each second, creating commensurate surges of electrical current through the circuit that reverse direction at these same audio frequency rates. Physically, these signals are AC voltages and currents of a range of frequencies moving back-and-forth in the microphone circuit.

A radio transmitter merges the audio baseband signal with a radio frequency signal to place the audio information into radio frequency (RF) waveforms that can be efficiently transmitted through space as electromagnetic waves. While this *modulation* process is ongoing in the transmitter's circuits, the signals remain variations in electrical voltages and currents, although translated to much higher frequencies. These RF electrical signals energize an antenna, moving currents back and forth in the antenna's driven element. The result is the radiation of electromagnetic waves that mimic the frequency and strength variations of the electrical signals. The electrical signals that were voltage and current variations in a circuit are now electromagnetic (EM) wave signals traveling through space at the speed of light.

The upshot of this signal discussion is that signals may be generated at audio frequencies and at radio frequencies, and their physical form may be electrical or electromagnetic. A visual

Time Domain & Frequency Domain Signal Views, continued

model must represent signals of either physical form, and the model should be able to depict signal frequency, strength, and variations in these over time.

Time & Frequency Domain Integrated Model: The two most common visual models of signals are the *Time Domain View* and the *Frequency Domain View*. These two signal depictions are closely related, as illustrated in the integrated 3D image of Figure 1.

For this illustration, an audio band signal is depicted. The three axes of the Figure 1 illustration are:

1. *Frequency Axis* - (angled front-left to back-right.) Ranges from approximately 200 hertz to 3000 hertz in this illustration. Electrical signal oscillations are spread out across this continuous range. Only a subset of signal oscillations is depicted along this axis for simplification, but a continuous range of electrical oscillations may comprise a baseband audio signal such as a voice signal. The upward wave oscillations indicate voltage and current in an arbitrarily designated positive direction in a circuit, and the downward wave oscillations indicate voltage and current in the opposite "negative" direction.

2. *Time Axis* - (angled back-left to front-right.) Signal waveforms flow left-to-right along the time axis. The present instant of time is indicated by the intersection position of the three axes. Signal waveforms oscillate in positive-negative cycles as they flow along the time axis.

3. *Amplitude Axis* - (vertical axis.) The vertical extent of a signal waveform indicates the strength of the signal in terms of voltage or current. Signal oscillations in the positive (upward) direction and negative (downward) direction may vary over time, indicating changes in signal strength over time.

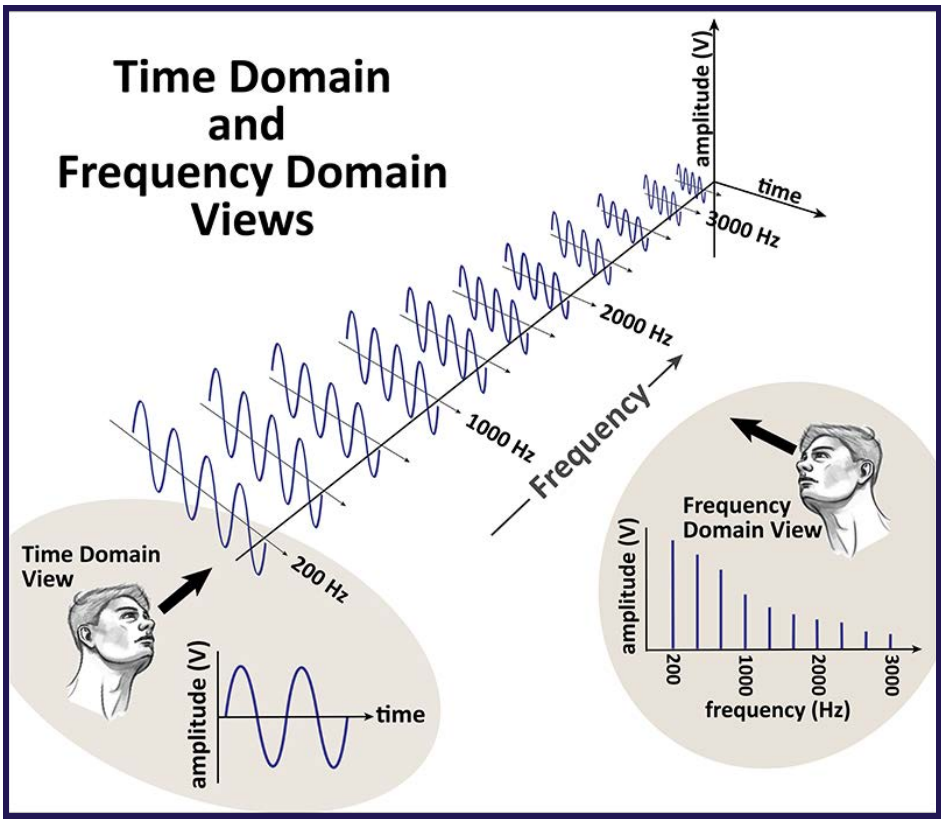

Figure 1: The relationship between Time Domain and Frequency Domain views.

Notice that the signal waveforms may represent the positive-negative directions of voltage and current flow in a circuit, or they may represent the positive-negative oscillations of an EM wave as it propagates through free space. Normally, a signal will be depicted by either a Time Domain View or a Frequency Domain View, but not as an integrated 3D illustration as in Figure 1.

Continued...

Time Domain & Frequency Domain Signal Views, continued

Time Domain View: The Time Domain View of a signal is captured from the perspective of the left-side observer of Figure 1 for which time becomes the horizontal axis. This observer views the model directly down the frequency axis to obtain a view as illustrated in the left-side inset graphic. Amplitude is depicted on the vertical axis. While more than one frequency can be overlaid onto a Time Domain View for comparisons, single frequency depictions in the time domain are more common. In this view, changes in frequency can be illustrated by compressed or expanded waveforms along the time axis. Amplitude changes over time can be depicted as variations in waveform height along the time axis.

Figure 2 depicts Time Domain Views of both AM and FM modulation by an audio baseband signal. Amplitude is depicted as voltage variations, and the AM changes in amplitude of the RF signal mirror the audio waveform amplitude variations. The FM modulation depicts no amplitude changes of the RF signal, but rather frequency deviations driven by the amplitude of the audio signal. (The audio signal is replicated within the RF signal for illustration of this effect.)

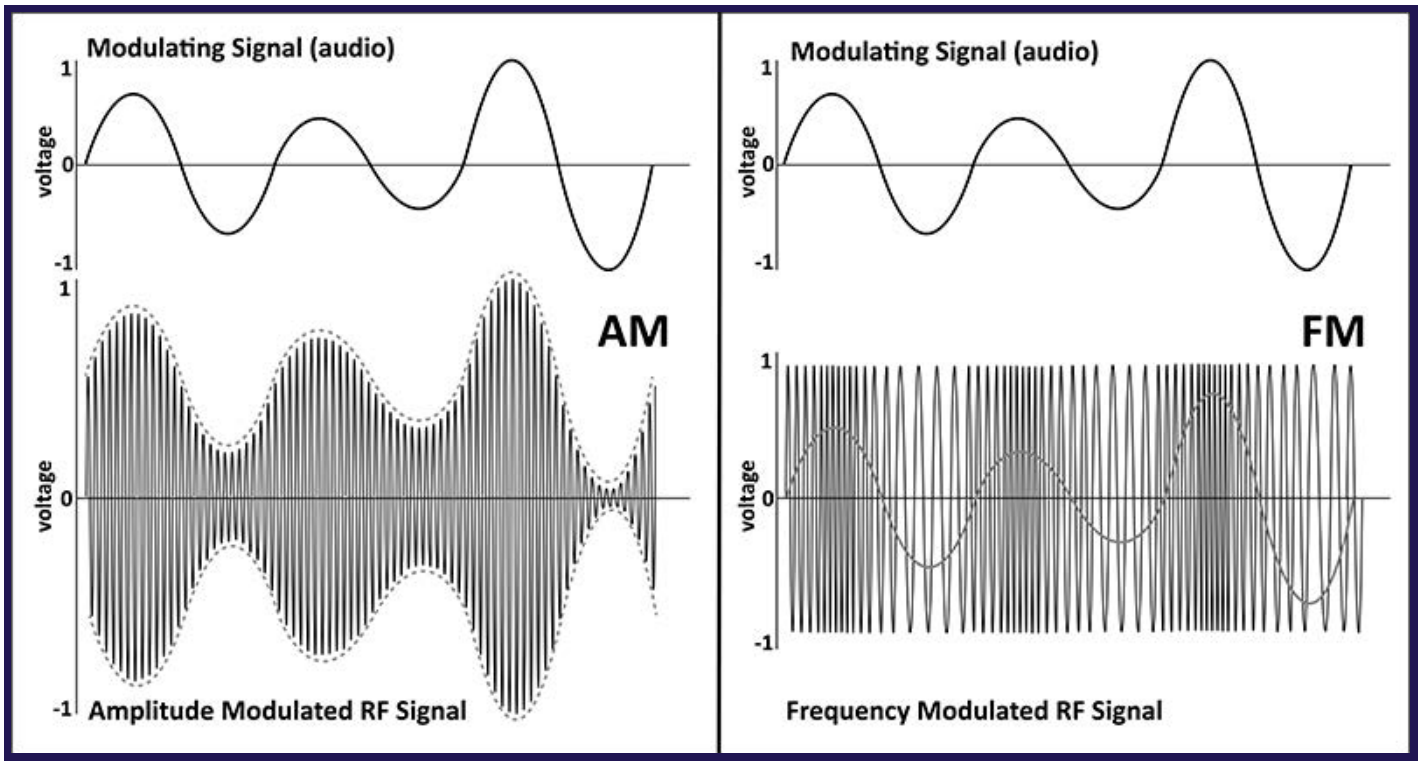

Figure 2. Time Domain Views of a baseband modulating audio signal and the modulation of RF signals using AM and FM modulation.

Frequency Domain View: The Frequency Domain View of a signal is captured from the perspective of the right-side observer of Figure 1 for which frequency becomes the horizontal axis. This observer views the model directly down the time axis to obtain a view as illustrated in the right-side inset graphic. Again, amplitude is depicted on the vertical axis, and the range of frequencies in a signal is spread horizontally across the frequency axis. If the frequency domain were dynamic in time, the observer would see the spectrum of frequencies varying in amplitude over time. However, most Frequency Domain Views are static and depict only a single instant in time. When a continuous range of frequencies is depicted, the Frequency Domain View may contain filled or solid

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ranges across segments of frequency with amplitude variations depicted across the spectrum of frequency, as in Figure 3.

Figure 3 depicts a range of RF in the 20-meter band, with amplitude normalized to a 0-1 scale of voltage. A narrow spectrum CW signal is depicted below 14.150 MHz (left), and an upper sideband signal ranges from roughly 14.155-14.158 MHz (center). The two mirrored sidebands of an AM signal are centered on an RF carrier at 14.165 MHz.

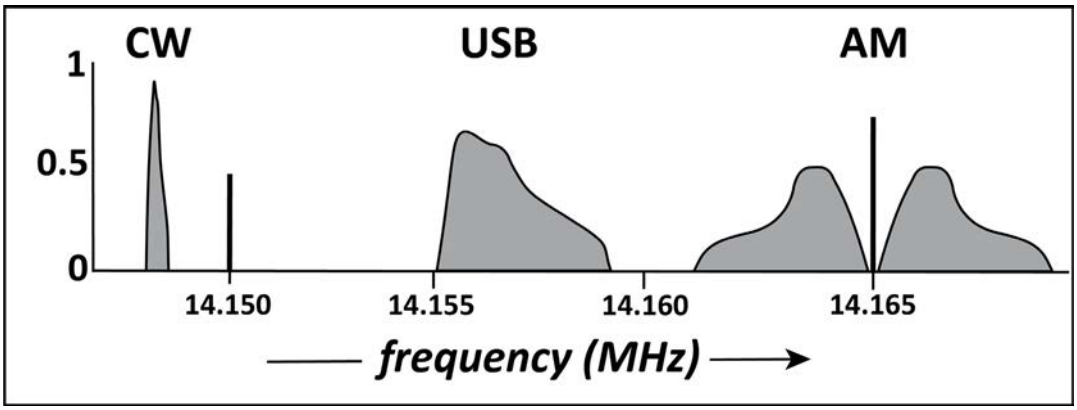

Figure 3: Notional Frequency Domain View of CW, USB, and AM signals.

Summary: Both Time Domain Views and Frequency Domain Views are used to represent signals of many types. The two views are linked, but usually depicted independently, depending on the purpose of the illustration. A Time Domain View depicts time on the horizontal axis, while a Frequency Domain View depicts frequency on the horizontal axis. Both of these types of signal model diagrams are commonly used to illustrate radio signal principles.

73
-- Stu WØSTU

Event Calendar
April-September 2025

WØTLM Upcoming Events

April 2025

• Apr 5	License Class GOTA	Woodmoor Barn
• Apr 21	Monthly Meeting	Woodmoor Barn (Note change of venue)

May 2025

• May 19	Monthly Meeting	Tri-Lakes Chamber of Commerce Building
• May 17-18	Endurance Ride Op	Greenland Open Space area - Volunteer!
• May 24	WØTLM VE Session	Monument Library (Registration required)

June 2025

• June 16	Monthly Meeting	Tri-Lakes Chamber of Commerce Building
• June 28-29	ARRL Field Day	Fox Run Park, Pavilions 4 & 5

July 2025

• July 4	July 4 Parade Op	Downtown Monument
• July 21	Monthly Meeting	Tri-Lakes Chamber of Commerce Building
• July 26	PPRAA Megafest	Lewis Palmer High School (Details)

August 2025

• Aug 18	Monthly Meeting	Tri-Lakes Chamber of Commerce Building

September 2025

• Sept 20	Annual Club Picnic	Fox Run Park, Pavilions 4 & 5

- (Note: No regular monthly meeting; picnic replaces monthly meeting.)

Got an Event for the Newsletter?

If you have a recommendation for an event to include in our newsletter, let us know. We'll add it to next months listing.

It's YOUR newsletter. Let's hear from YOU!

Email Editor

Photo of the Month
New & Upgraded Hams!

At the WØTLM VE session March 29th dedicated to our March license class enrollees, 10 students successfully passed the Technician exam and 5 students upgraded to General. One class student attended an earlier exam session, passing both Technician and General exams, each with perfect scores! Several students unable to attend will try a future exam session. Congratulations students on a job well done!

Nervous applicants line up for the ID check prior to starting their exams at Monument Library.

VE Dan NØOLD congratulates Miller on his pass and snags a signature on his application for license.

Chris, Elijah, Jacob, Mark, & Rus show off their CSCEs after passing. Elijah upgraded to General at 14!

David, Rob, Jim, and Brett are happy hams. Jim & Brett earned General.

Russell upgraded to General and Kevin earned Tech.

Kalla, LeRoy, and Tyson each made the grade.

Are you ready to upgrade to Amateur Extra license? Or, just want to understand more?
WØTLM has got you covered with our license class program.
Fall 2025 (October-November)
Stay tuned for more information coming soon!

Got an interesting photo for the Newsletter?

If you have a fun, historical, or just interesting image to include in our newsletter, let us know. Technology, people, situations, gear, just about anything.

It's YOUR newsletter. Let's hear from YOU!

Email Editor

Operating Tips
Shel KFØUR

FT-What? The FT-8 Digital Mode

I've been licensed for many decades (six of them) and have always enjoyed the many facets of our hobby/service. I started when the primary modes of operation were CW and SSB. But I also enjoy many of the new additions as they came along, including slow scan TV (SSTV), AX.25 packet radio, and MSK144 Meteor Scatter for example. And in July 2017, the new digital mode called FT-8 showed up on the scene. I had to try it, and got hooked. I'll tell you why in a moment, but first a word about digital modes.

Digital Modes: The primary thing to remember about Ham Radio digital modes is that they use audio to send data on an RF carrier to convey information. CW does it by turning a tone on and off (with timing of course). Radioteletype (RTTY), which started in 1922 uses two tones called a mark and a space. Slow Scan TV (mid-1950's) sends tones ranging from 1500-2300 Hz to represent pixel brightness or color. Plus a 1200 Hz sync tone. Phase Shift Keying (PSK) which started in the mid-1990's changes the phase of the tone. FT-8 also uses tones, but in a different manner.

What It Is and Does: FT-8 is a mode used for HF and VHF that provides 2-way communications using a PC, Mac, or other device running Windows, Apple, Linux and other operating systems. The communication is a fixed set of messages between two stations controlled by a software application and is not a chat system. The information exchanged in the QSO, besides your call, is your maidenhead grid and signal report.

The advantage of FT-8 is that is can hear very weak signals, much lower than our ears can hear. Good human hearing can hear down to about -15 dB. FT-8 hears down to -25 dB. That additional 10 dB is 10 times weaker! So, FT-8 can establish 2-way communications even when we humans can't hear it. That's quite valuable.

FT-8 was developed by Steve **F**ranke K9AN and Joe **T**aylor K1JT and others. That's where the "FT" is from. The "8" is from 8 tones being used. Dr. Joe Taylor, an astrophysicist and retired Princeton University professor, won a Nobel Prize in Physics for his discovery of a new type of pulsar. BTW, I have Joe in my log a number of times using SSB and FT-8. It's not often we get to QSO with a Nobel Laureate.

I first looked at FT-8 to see if there was an opportunity for my company, QRPworks, to develop a new product for users in the field (POTA, SOTA, Field Day, etc.) as we specialize in that type of product. I found the answer was "no" as the FT-8 software provided everything a user needed. But I soon got hooked as I found I could hear and work more of the world (DX). With 100 watts and a dipole, I have worked places using FT-8 I never or rarely heard before.

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FT8 Digital Mode, continued

Because it is so sensitive, FT-8 is very useful when you have low power, a limited/poor antenna (think HOA restrictions), or simply lousy band conditions. And then there are those who enjoy other aspects of Ham Radio besides free-form chatting. To some the technical aspects and using technology, new or old, to communicate across town or around the world floats their boat.

How It Works: First, you should know that FT-8 communications is controlled by software by written by Franke and Taylor and friends called WSJT-X. (**W**eak **S**ignal **J**oe **T**aylor). It's a free download from SourceForge. And there are some derivatives available as well.

FT-8 works in 15 second cycles. It transmits a message for 15 seconds and then listens for 15 seconds. When listening it's looking at 3 kHz of bandwidth. So if you're on 10m, the FT-8 start frequency is 28.074 mHz and listens up to 28.077 mHz. In that 15 seconds of listening, WSJT-X is decoding many signals all being sent at the same time, all within the 3 kHz bandwidth. Some on the same exact frequency. Each signal is 50 Hz wide. Pretty narrow and very efficient use of the band. Compare that to CW at 150 Hz and SSB at 3000 Hz.

Toward the end of the 15 seconds, WSJT-X displays every signal it heard. And they are color coded to show you someone calling CQ, calls that you never worked in FT-8, calls you worked using FT-8 on another band but not this one, calls from other countries, and calls that you've already worked on this band (a duplicate).

You can answer a station calling CQ by double-clicking on their call. Or you can also call CQ yourself. Your choice.

The content and sequence of messages back and forth is fixed and is automatically controlled by WSJT-X, although there is an option for you to manually select the next message to be sent.

When the QSO is completed, WSJT-X gives you the opportunity to log it in its file system. In my case, I use N3FJP's "AC Log" for all my contacts and the QSO automatically gets logged in it as well, which is

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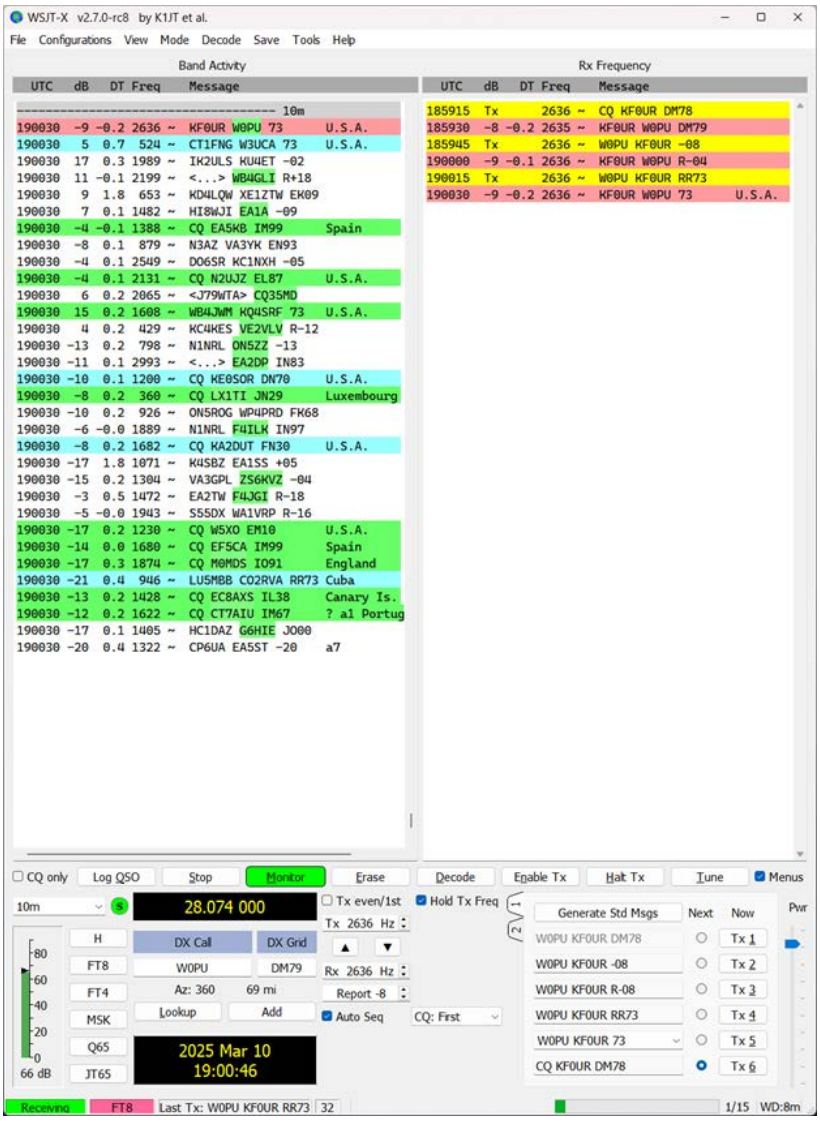


The FT-8 software display depicts received signal info, QSO exchange texts, radio control info, and more. See this article's continuance link for a more detailed description.

much more useful to me.

Does Anybody Really Know What Time It Is? Great song by Chicago (1969), but in the context of FT-8….all PCs using FT-8 around the world must have their clocks synchronized to within a second or so. Windows time sync is not adequate. Most users use another program to do this. I use a free program called Dimension4. It runs in the background and syncs the time to a hundred milliseconds or so every 30 minutes. Works great.

When out in the field and away from WiFi, I use an inexpensive GPS dongle that plugs into a USB port and some other software (NMEATime) to set the time just like Dimension4 does when I'm at home.

The Setup: There are two parts…hardware and software.

As mentioned earlier, digital modes like FT-8 uses audio between your rig and PC. (For simplicity, PC here means a number of computing devices.) So, you need to connect audio between the two. By the way, this audio setup is used for all of the digital modes mentioned above. Once set up, you can run PSK, RTTY and others just by using the appropriate software.

Newer rigs usually have a USB interface, which provides audio in both directions and CAT control (Computed Aided Transceiver) to the rig to change frequency, set the mode, and turn on transmitting. That's all you will need from a hardware perspective.

For other rigs without a USB interface, you will need to:

- Get the audio to and from the rig to the PC. You can use simple inexpensive audio cables for this.
- Turn on the rig to transmit. This can be done with voice-operated-control (VOX), or better, a signal from a USB port on the PC to a device that interfaces with your rig to turn it on. West Mountain Radio, for example, has a number of devices that accomplish this.

Once the free WSJT-X is downloaded and installed there's some setup to be done. There's lots of documentation and videos on the Internet regarding this so I won't go into all the details but will highlight the main points.

Continue reading Shel KFØUR's operating tips for FT-8, linked here.

Want to provide some operating tips for the Newsletter readers?

If you have some good operating tips for any type of operating, share them with your clubmates here! We can all learn from one another.

It's YOUR newsletter. Let's hear from YOU!

Email Editor

Guest Article
Tricia KØTRD

Try the Endurance Ride Op!

Picture this: a thrilling horse race unfolds along the grassy trails, with ham operators stationed at five key locations, each accessible by car or truck. These operators, working in teams of 2-3, are like the unsung heroes of the event. Their mission? To log the exact time each rider zooms past their station and send that crucial data to the Net Control station. Meanwhile, Net Control is the race's brain, compiling all the information to keep the officials in the loop and ensure every registered rider is accounted for. It's a dynamic and exciting setup, offering newly licensed hams a chance to dive into the world of informal nets, master tactical calls, and hone their information relay skills. Who knew ham radio could be so exhilarating?

The Greenland Endurance Ride takes place at the Greenland Open Space, a beautiful area south of Larkspur with tons of trails that are owned and taken care of by Douglas County. It's a competitive equestrian event that's approved by the American Endurance Ride Conference (AERC). There are three different ride lengths for the competitors. The beginners have 12 hours to finish 17 miles as a fun and non-competitive way to get into the sport. For the competitive rides, there are two options: 25 miles over 6 hours, or 50 miles over 12 hours. There are mandatory rest periods for the horses, which are all under the watchful eye of an on-site veterinary team. **This year's event will be held on May 17th & 18th.**

A group of Endurance Rider's and their horses take a water break on the Greenland Open Space trail.

WØTLM has been helping out with communications for this annual event since 2023. For our first year, we had 17 volunteers who were super excited about the one-day event. They had so much fun that they marked the date on their calendars and recruited more help, resulting in a total of 20 volunteers for the two-day event in 2024!

Because of the Colorado-style terrain, using simplex communication with handheld transceivers (HTs) isn't really possible. But don't worry, the club's portable repeater is here to save the day! It's set up right next to the Net Control station with an elevated vertical antenna. With improved HT antennas (no rubber duckies) and the 25-watt repeater, everyone can hear each other clearly and dependably. Plus, we have the Palmer Lake repeater (NØXLF) as a backup, which offers fantastic coverage for the area.

Continued...

Try the Endurance Ride Op!, continued

Our main duty is monitoring rider/horse teams. We are not timekeepers; we record times to ensure rider safety on the course. If a rider is overdue at a station, Net Control can send a race official to a specific trail section to find the missing rider. Operators also communicate details about injuries, medical needs, weather threats, or trail conditions to Net Control to enable quick action from race officials. Since no race officials are stationed along the trails, our role is crucial for the safety of riders and horses. Many riders go out of their way to express their gratitude for our efforts.

Tricia KØTRD, Pam KEØIED, Cathy NØCHL, and Scott KDØYBJ working hard at the Net Control Station, keeping track of riders and issues. (And having a little fun!)

In 2023, we were able to facilitate timely transport for an injured horse (turned out to be a minor cut) and one injured rider who took an unexpected tumble. We also provided peace of mind for a concerned husband when his wife was late to arrive at the finish line.

Recommended Gear:

- **HT radio (2m & 70cm bands)**
- **Backup battery**
- **Extended antenna**
- **Outdoor prep, water, hat, snack**
- **Rain gear**

Steve WGØAT and Pam KEØIED ready to relay information on passing riders.

Last year, Mother Nature had a surprise for us during the event - a thunderstorm! But we were prepared! We quickly disconnected the club's portable repeater from the antenna, and all the volunteers hopped in their cars for shelter. Then entire net then switched to the NØXLF repeater for the rest of the day! It was chaotic for a few minutes, but race officials and riders were impressed to know that even in the middle of the storm, our team could still provide reliable communication.

If this article has you buzzing with excitement and wondering how to dive into this year's event, give our club's Community Events Director a shout!

73
-- Tricia KØTRD

Endurance Ride 2025:

- **When: May 17-18, Sat-Sun**
- **Where: Greenland Open Space**
- **Volunteer: Email Tricia**

Want to write a piece for the Newsletter?

Share your knowledge or your story with your clubmates!
Write a guest article for the Newsletter.

It's YOUR newsletter. Let's hear from YOU!

Email Editor

Member Comments

KDØYBJ

The photo shows my Arrow Antenna GP 146/440, 2-meter 1/4 wave ground plane antenna mounted atop a fiberglass pole. The square antenna below it is just an over-the-air TV antenna along with two Cushcraft Yagi antennas mounted to the chimney. One Yagi points north to Mt. Herman and the other south. The antennas between 30-35 feet above ground.

The 2 meter antenna was the first one that I put up shortly after I received my Technical license in 2014 (thanks Bob and Stu). Doing research in those early days I found that an **RF choke** was recommended. It may be difficult to see, but it is just below the antenna.

My question: **Is the RF choke really necessary and do other club members regularly use them?** I'd appreciate your email responses! Click my name/call to email. Thanks!

-- Scott KDØYBJ

NØCHL

I have volunteered the last two years for the **Endurance Ride.** This event is a great event to spend with our area hams, improve my radio skills and work an event with beautiful horses and grateful riders. I'm looking forward to being a part of the team again this year.

-- Cathy NØCHL

KFØSKN

I was introduced to WØTLM by a friend who forwarded the fall **2024 Technician Licensing Class** information. The WØTLM information online, registering for the class, etc. was a pleasure, i.e., user friendly, easy, and responsive. Everything is well done; this made me enjoy the time and effort. The Technician instructional format was very compelling and very well put together - the course online learning content, reading material, videos, and the in person meetings, including the WØTLM Elmer check-ins and the support for answering my questions. Since Technician Class was such a joy, I signed up for the recent **General License Class.** The General Course layout and material maintained the same high standards. By adhering to the "Philosophy" in the course outline, I was in the best position possible for passing the exam on Saturday the 29th of March, and I upgraded to General. Thank you WØTLM club.

-- Jim KFØSKN

KAØELI

License Classes with WØTLM are amazing. You have the class directors who spend so much time to get you up to speed and help you understand radio, then there's the Elmers who can guide you through any question, big or small. I highly recommend anyone interested in a license to attend an upcoming class, be it a new license or an upgrade!

-- Elijah KAØELI

Continued...

Member Comments, continued

WØXLD

Supporting community events like marathons and bike rides provides amateur radio operators opportunities to stay familiar with their equipment, exercise operator skills, improve visibility of amateur radio in the community, and serve a useful purpose. The **Greenland Endurance Ride** is a unique and fun Colorado-flavored version of these events. Some skills and lessons we exercise in supporting the endurance ride include:

- Communicating locations and access routes using latitude and longitude, helping to guide riders on the trail they should take while they are en route.
- Configuring repeaters and backup frequencies for a solid communication plan. If the repeater goes offline for lightning safety or any other reason, the plan ensures communications continue uninterrupted.
- Our communications make the ride smoother for organizers and participants alike. How we log and report from the checkpoints has resulted in changes to how the riders are numbered, for example, to minimize confusion and tell who's supposed to be riding where.

My YL, an equestrian show rider in her youth, joined me in staffing a checkpoint last year. She enjoyed seeing the horses and chatting with the riders, and I believe it had an influence on her decision to become a new ham last fall. We hope to see more amateur radio friends and rider friends alike on the trails again at this year's event! Come join us!

-- LD WØXLD

AEØWO

Over the past couple years, I have found that the Ham radio support we provide for the **Endurance Ride** is a great opportunity for beginners and experts alike. It gives you a chance to make sure your gear is operating as expected and helps to make sure your operating skills stay fresh. It's also a great chance to get outdoors and enjoy nature, including beautiful scenery and horses. Just remember that sometimes nature likes to throw a curveball, as with last year - a quick rainstorm moved in at the end of the day and caught a few off guard. Come join in the fun this year - bring a lunch and a poncho!

-- Jonathan AEØWO

NGØI

I had a fun time last year at the **Endurance Ride**, got to practice programming and using one of my HTs, and got to meet all the participants and their horses. They were all very appreciative of our help. Plus the weather was decent, if not perfect, and we got to spend the day outside playing with radios! What could be better!

-- John NGØI

Got a comment for the Newsletter?

Share your thoughts with your clubmates about anything club, radio, or technology related! Drop your comments on the Newsletter.

It's YOUR newsletter. Let's hear from YOU!

Email Editor

Just for Fun

Radio Jumble!

Radio Jumble!

Unscramble each radio-related word, then use the circled letters to answer the riddle of the picture. Good luck!

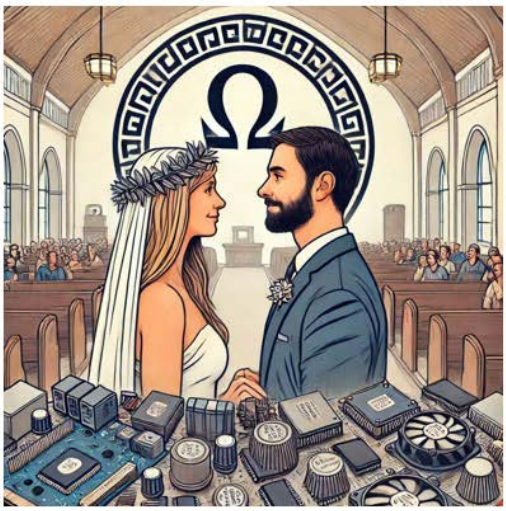
OTNARSTIRS

TRADEAI

NAATSNEN

RRRCAEI

ODONATLUIM



Why did Mr. Ohm marry Mrs. Ohm?

Because, he could __ _____.

Because, he could ○○○ ○○○○○○○

[View the solution here.](#) **Don't peek!**

Admin & Info
WØTLM Officers & Appointees, Etc.

President: Bob Fenkel WØHTH bobthebearguy@gmail.com
Vice President: Loren Andersen KEØHZ landerso2000@gmail.com
Secretary/Treasurer: Barb Evans KØBE k0be.bje@gmail.com

Leadership Committee:

- Bob Fenkel WØHTH bobthebearguy@gmail.com
- Loren Andersen KEØHZ landerso2000@gmail.com
- Barb Evans KØBE k0be.bje@gmail.com
- Larry Kral NØAMP lokral@att.net
- Hans Post-Uiterweer WØPU w0tlm@hansmail.org
- Stu Turner WØSTU stu.turner@comcast.net
- Stephen Moraco KZØQ stephen@moraco.us
- Tricia Olson tricia4wd@gmail.com

Education Program Cmte: Larry NØAMP & Hans WØPU
License Class Directors: Stu Turner WØSTU & Bob Witte KØNR
Newsletter Editor: Melissa KFØPLU - We need someone! Get info.
Community Events Director: Tricia Olson KØTRD

Repeaters:

WØTLM-R
447.725 MHz
-5.0 MHz offset
100.0 Hz CTCSS

NØXLF-R
147.075 MHz
+0.6 MHz offset
131.8 Hz CTCSS

Colorado Connection KBØVJJ
145.130 MHz
-0.6 MHz offset
88.5 CTCSS

Take Your License Exam!

Next WØTLM Volunteer Examiner Sessions:

May 24, 2025 10:30 am
Monument Library Meeting Room

All license level exams offered, Technician, General, & Extra.
Pre-registration is required.

Register for a Session

Net Control Officers:

Apr 7: Need NCO
Apr 14: Need NCO
Apr 28: Need NCO
May 5: Need NCO

Volunteer today to be the NCO for an upcoming net! It's easy!

Sign Me Up for NCO! ***Read the Easy NCO Script***

King Sooper Fundraising!
Earn easy $$$ for WØTLM!

Connect your King Soopers card to the Community Rewards Program and select our club as the nonprofit organization. The club will receive quarterly payments based on purchases. It costs you nothing and is a wonderful benefit for the club. Log into your account (tied to your King Soopers Card) or create an account if needed. Select *Community Rewards Program*, Type in *Tri-Lakes Monument Radio Association* (or use our account number, KM150). Press "Enroll" and you will receive a confirmation. It is that easy! Please sign up today to benefit WØTLM!

Admin & Info
Local Education Events & Resources

Digital Library of Amateur Radio & Communications (DLARC)

For anyone who is not familiar with DLARC... you really should check it out: Free Texts : Free Download, Borrow and Streaming : Internet Archive

DLARC is a library of materials and collections related to amateur radio and early communications. It is funded by a grant from Amateur Radio Digital Communications, a private foundation, to create a digital library that documents, preserves, and provides open access to the history of the amateur radio community.

This free resource combines archived digitized print materials, born-digital content, websites, oral histories, personal collections, and other related records and publications. The goals of DLARC are both to document the history of amateur radio and to provide freely available educational resources for researchers, students, and the general public. -- 73 Bill WT0DX

WØTLM Radio Gear Loans

Portable Station: Icom IC-7300 HF+6m and Kenwood TM-V71A VHF/UHF transceiver. Both mounted in Gator case. Coax, vertical antenna available for 10 - 80 meter bands. Optional large telescoping mast. Email WØSTU for queries.

Other small items and tools available. Contact Chip KØCHP for queries.

WØTLM Presentations

*Our WØTLM website features a tremendous array of **presentations on numerous subjects. If you find one** that you need more info on just contact the Elmering crew:* w0tlm-elmer@w0tlm.org

There are no stupid questions!

The WØTLM Elmer Team has the answers. Our volunteer Elmers will help you with anything ham radio related. If you have more than a question or two and would like to be paired with a friendly Elmer, please let us know and we'll connect you. Email us:
w0tlm-elmer@w0tlm.org

Solar Activity

Solar Flare Alerts: Sign up for Space Weather Alerts and get instant text notifications when solar flares are underway. There are numerous sites and ways to check and see where and what the chances are of that great contact. One to check is W5MMW solar site. Check it out. Also these sites provides solar data: NØNBH SpaceWeather.com

RM HAM University

Check out the offerings and sign up here.

04/26/2025 **Grounding and lightning protection**
Mike K7AIH

Visit the RM Ham U website for past presentations. They have an abundance of information shared amongst the ham community!

Upcoming Events & Hamfests

4/5/2025 LARCFEST. 8 am start time. Longmont, CO.

5/16-18/2025 Hamvention Xenia, OH, Greene Co. Fairgrounds
The largest ham radio convention in the world!

7/26/2025 PPRAA Megafest Lewis Palmer High School, 8:00 - 1:00. Door prizes! Sales! Register early.

10/23-26/2025 ARRL Rocky Mountain Division Convention.
HamCon Colorado 2025. Grand Junction, CO.
See the event flyer on the next page and sign up today!

Admin & Info
Local Education Events & Resources

Whether you're a seasoned ham operator, a curious newcomer, or a tech enthusiast, this is the event you won't want to miss.

Date: October 23-26, 2025
Location: Hilton DoubleTree - Grand Junction
Learn More: https://www.hamconcolorado.

Why Attend?

- **Inspiring Keynotes** – Hear from industry leaders and innovators in amateur radio.
- **Hands-On Workshops** – Learn new skills, build kits, and get on the air with expert guidance.
- **Exhibits and Vendors** – Explore the latest equipment, gadgets, and technologies from top brands.
- **Networking Opportunities** – Connect with fellow radio enthusiasts and clubs.
- **Special Events** – Participate in contests, prize drawings, and more!
- **DX University** – Learn some of the biggest "trade secrets" from the best DXers in the business.

Who Should Attend?

- Amateur radio operators (all levels)
- Emergency communication teams
- Electronics and tech hobbyists
- Families and anyone curious about amateur radio

Mark Your Calendar and Register Today! Early Registration is only $25!
Visit www.hamconcolorado.com for event updates, registration details, and hotel accommodations.
Don't miss out—HamCon Colorado 2025 is your gateway to the world of amateur radio!
Follow us on Facebook for the latest news and announcements.

Admin & Info
Local Education Events & Resources

Announcing the 2025 Young Ladies Radio League Scholarships

FOR IMMEDIATE RELEASE

Media Contact: Diane Ortiz
VicePresident@ylrl.net

February 13, 2025 — The **Young Ladies Radio League (YLRL)** has announced the Memorial Scholarship program for 2025. The scholarship program is aimed at women Amateur Radio Operators studying radio, communications, electronics or Amateur Radio related arts and sciences.

The Young Ladies Radio League (YLRL) is an international non-profit organization of women Amateur Radio enthusiasts. It was founded in 1939 and is the longest running YL club in the world. The YLRL is sponsoring three memorial scholarships for 2025:

The Ethel Smith K4LMB Memorial Scholarship—$2,500 award

The Mary Lou Brown NM7N Memorial Scholarship—$2,500 award

The Martha "Marte" Wessel K0EPE Memorial Scholarship—$1,500 award

The YLRL believes that education in the fields or radio, communications, electronics and Amateur Related arts and sciences will play an important role in shaping the world's future. Through these Memorial Scholarship, YLRL hopes to encourage female students to learn more about Amateur Radio.

"YLRL is committed to investing in women in Amateur Radio, and we believe that every act of volunteerism through Amateur Radio — even a small one — helps turn the world into a better place," said Vicki Zumwalt, President of YLRL. "We hope that our scholarships will not only encourage students to learn more about science, technology, engineering but also inspire them to take pride in being an Amateur Radio operator and to encourage others to do so as well."

To qualify, students must be female, have an Amateur Radio License, meet the requirements listed on the YLRL.net website and apply using the online application. Applications are due by April 30, 2025. Winners will be announced in July 2025.

Application link: https://YLRL.net/Scholarships

Classified Ads

Member Gear for Sale

LDG AT600 Proll Tuner
with ICOM cable, in original box
https://www.ldgelectronics.com/at-600-proii
$275.00
Contact Rex WDØAJG wd0ajg@gmail.com

ICOM AT180 Auto Tuner
with ICOM cable, in original box
https://www.icomjapan.com/lineup/options/AT-180/
$250.00
Contact Rex WDØAJG wd0ajg@gmail.com

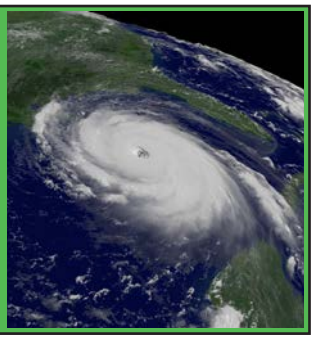
Dell Docking Station for XPS (Micro USB power)
WD19S180W, includes the power brick (not shown)
Dual monitor, USB3, network, etc.
Make Offer
Contact Rex WDØAJG wd0ajg@gmail.com

Samsung 24” monitor - 1920 x 1080, used, on stand
$35
Contact Rex WDØAJG wd0ajg@gmail.com

Are you a ham who also likes to read adventure fiction?

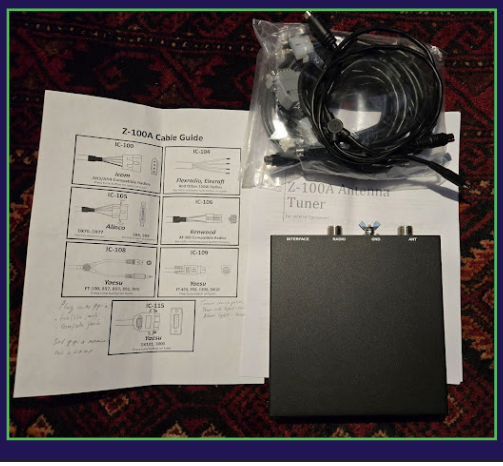
- ***Do you know anything about hams who also do CB?***
- ***Would you like to read a section of my upcoming novel about Hurricane Katrina to help fact-check?***
- ***If you have an hour to share in April, write to me and I’ll send you more details about this project to gauge your interest.***

Lisa KB8JLI ***LHatfield0786@msn.com***



Continued...

LDG Electronics Tuner Z-100A https://www.ldgelectronics.com/z-100-a
Local Pickup in Woodmoor. $125.00
Contact Hans WØPU w0tlm@hansmail.org



WØTLM Radio Association

Got an advertisement for the Newsletter?

Provide one or more photos of the item (.jpg or .png preferred).
Provide a complete description of the item.
Include a characterization of the condition of the item.
Include an asking price, indicate whether negotiable.
Ads expire monthly and will not be repeated without a resubmission.

It's YOUR newsletter. Let's hear from YOU!

Send Your Ad