

# "THE REPEATER"

Sunday August 17th

Vol 7 2025

## SIGNAL REPORTER APP

By Kris Golden K9CAN

In the mind of every repeater owner, one question lingers—'How well does my repeater work in the areas surrounding the site?' The honest answer is: it depends, because signal propagation varies with multiple environmental factors." The first big driver is geometry. VHF/UHF repeaters are largely line-of-sight, so antenna height above average terrain (HAAT), local topography, and Fresnel zone clearance dominate coverage. Ridges, cut-banks, buildings, and even dense tree canopies can block or diffract energy, while valleys can shadow entire neighborhoods. Ground conductivity matters at lower frequencies, and urban canyons introduce multipath that can help (by filling shadows) or hurt (by causing fades). Good site placement, adequate tower height, and directional antennas can dramatically reshape the footprint without changing transmitter power.

The next tier is system engineering. Frequency influences how well signals bend, penetrate, and diffract; lower bands (e.g., 2 m) generally carry farther through clutter than higher ones (e.g., 70 cm) at equal ERP. Antenna gain and pattern, polarization alignment, feedline and connector losses, and the repeater's effective radiated power (ERP) all determine what leaves the site. On the receiving side, users' antenna quality, installation (rooftop vs. handheld at hip), radio sensitivity, noise figure, and even squelch/CTCSS settings set the "usable" threshold. Just as critical is the noise floor: industrial EMI, switching power supplies, and broadband RF from

Richard Cornwell K9RCP has developed a web based Signal Reporter App you can use to help administrators understand the coverage area of individual repeater in S.A.R.G's network! Follow the below link to utilize this tool and help us help you!  
<https://wa7abu.com/reports/>

### EVENTS and DATES

#### JANKFEST 2025

YTBD/ End of September  
Come join in the fun as we test the jankiest built antennas in the Central Valley of Oregon. 2 Meter build only. Everyone welcome to enter for free!

#### Oregon State Fair

August 22-Sept 1st

There will be a booth at the fair representing Amateur radio, operated by the ARRL

#### Hawaii QSO Party

August 23rd-25th  
160,80, 40, 20, 15, 10  
2pts per SSB QSO  
3 pts per CW/digital

#### ARRL September VHF Contest

September 13th-Sept 15<sup>th</sup>

Join in the fun, check link below  
[Contest Info Link](#)

#### WORLD RADIO

##### LEAUGE

Best Logging  
App on iPhone,  
Android, and  
Web App



electronics can erase otherwise strong signals; a quiet site routinely "covers" more with less. Finally, the atmosphere—and time—are wildcards. Weather (humidity, rain, foliage wetness), temperature inversions, and tropospheric ducting can extend or shrink range hour-to-hour on VHF/UHF. Seasonal leaf-on vs. leaf-off, snow cover, and mobile conditions (vehicle body attenuation, speed) also swing reports. That's why a crowdsourced signal reporter is so powerful: it captures the reality users experience across locations, times, radios, and antennas.

Richard K9RCP has developed a great Web Based Application that will help the S.A.R.G network of repeaters by collecting signal reports from users like yourself. The resulting data will help Dan WA7ABU to better understand how the repeaters are performing and how to configure each site so it performs optimally. When submitting your signal report, it is suggested to use a 50 watt mobile radio from your automobile, using a ¼ wave antenna or something comparable to that. **HT's will do, but are less optimal.** The more reports from you the better!

# AREDN is not just for **EMERGENCIES**



## Whats new in AREDN News !

- New production release: 3.25.8.0 (Aug 13, 2025). It's the second major build that ships with both OLSR and Babel; the long-term plan is to retire OLSR once most nodes have upgraded. Highlights include OpenWrt 24.10.2 under the hood, Ubiquiti NanoStation AC Loco support, fixes for port-forwarding, M9 channel handling, memory-leak/CPU jitter issues, and several stability/UX improvements.
- Nightly tracks: AREDN now maintains two nightly streams—a standard nightly (OLSR + Babel) and a Babel-only nightly for testing the future routing stack. Some features—like HaLow/802.11ah device support—are Babel-nightly only right now; don't deploy those images where you can't easily access the node.
- Recent status notes: A July 23 post flagged a release-candidate nightly ahead of this week's GA, and an earlier May note documented a rare Babel boot-timing bug (seen as a Babel Metric = -1) addressed by 3.25.5.1 or by restarting Babel

It is suggested that you update your nodes as soon as possible to the newest release. The AREDN network is only as good as the sum of its parts. This means your node, if not operating to its greatest functionality, will reduce the effectiveness of the network as a whole. If you have any difficulty, you can reach out to Brett KG7GDB and he can help clear up any issue.



900 MHz	Channel	4	5	6	7														
	Ctr Freq	907	912	917	922														
	Status	Shared with US unlicensed																	
2.4 GHz	Channel	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8*					
	Ctr Freq	2.387	2.392	2.397	2.402	2.407	2.412	2.417	2.422	2.427	2.432	2.437	2.442	2.447					
	Status	non-US only		Unshared		Cannot Use	Shared with US unlicensed												
* Only 5 MHz channel width is available on channel 8																			
3.4 GHz	Channel	76	77	78	79	80	81	82	83	84	85	86	87	88	89				
	Ctr Freq	3.380	3.385	3.390	3.395	3.400	3.405	3.410	3.415	3.420	3.425	3.430	3.435	3.440	3.445				
	Status	US Amateur operations remain on a secondary basis but are subject to removal at any time by FCC notice*																	
5.8 GHz	Channel	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148
	Ctr Freq	5.655	5.660	5.665	5.670	5.675	5.680	5.685	5.690	5.695	5.700	5.705	5.710	5.715	5.720	5.725	5.730	5.735	5.740
	Status	Shared with US unlicensed indoor/outdoor DFS & Radar Avoidance																	
	Channel	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166
	Ctr Freq	5.745	5.750	5.755	5.760	5.765	5.770	5.775	5.780	5.785	5.790	5.795	5.800	5.805	5.810	5.815	5.820	5.825	5.830
	Status	Shared with US unlicensed indoor/outdoor																	
	Channel	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184
	Ctr Freq	5.835	5.840	5.845	5.850	5.855	5.860	5.865	5.870	5.875	5.880	5.885	5.890	5.895	5.900	5.905	5.910	5.915	5.920
	Status	...Shared with Unlicensed		Shared with US unlicensed mainly indoor										Shared with Intelligent Transportation System					

You are responsible for using frequencies, channels, bandwidths, and power levels that comply with your country's amateur radio license requirements.



### Questions related to AREDN

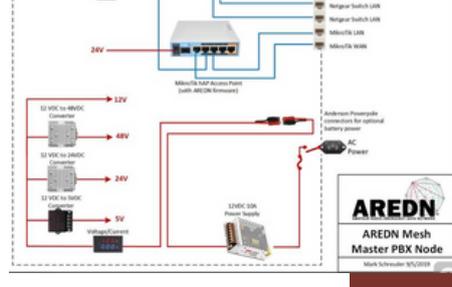
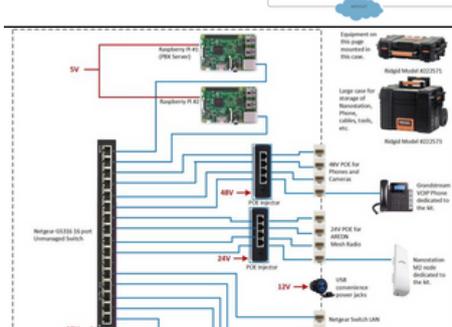
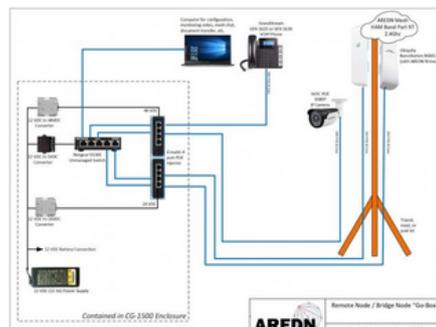
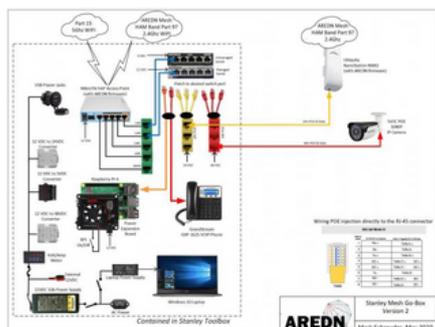
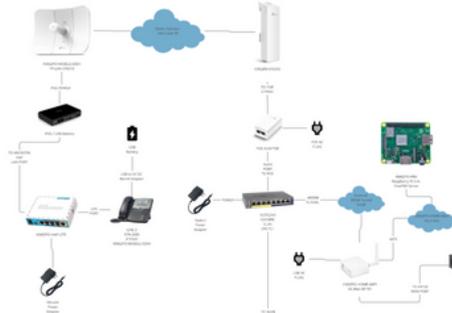
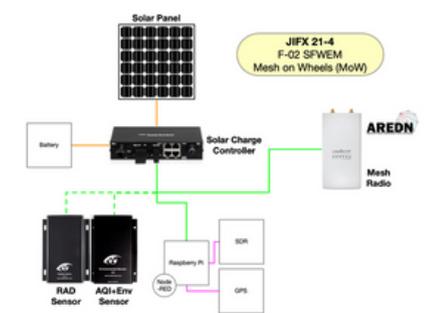
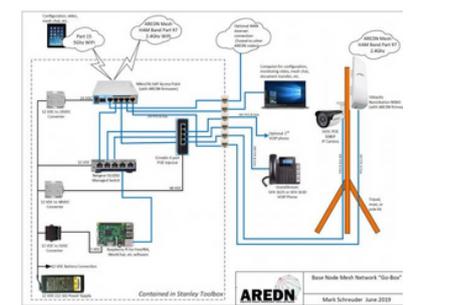
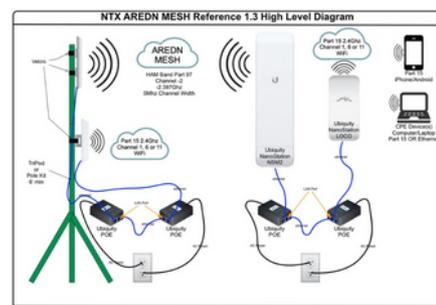
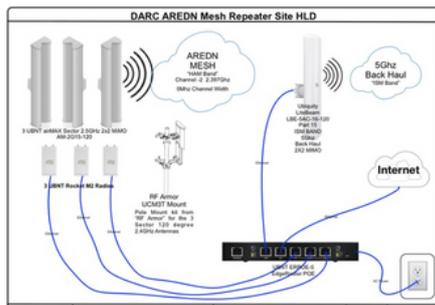
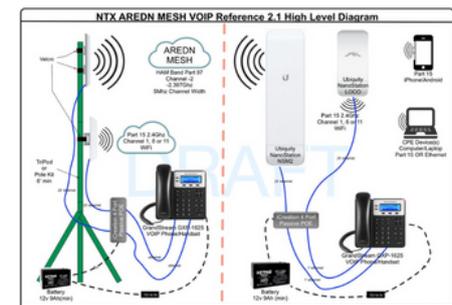
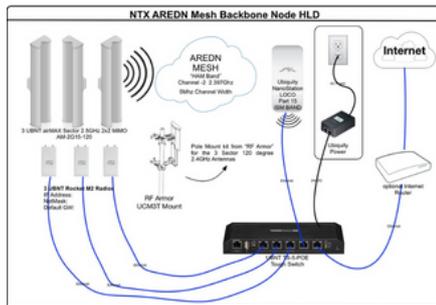
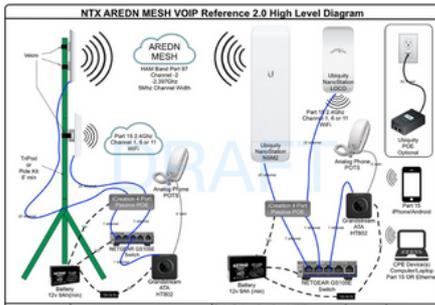
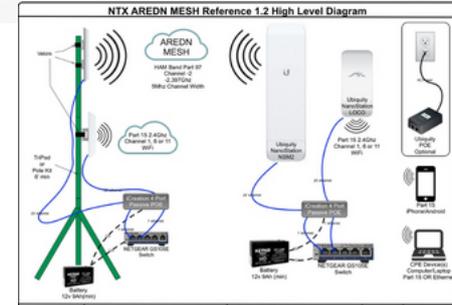
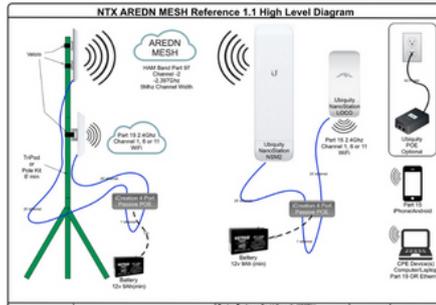
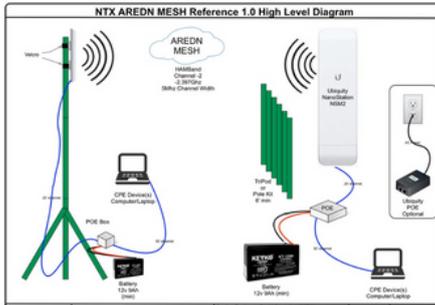
Maybe you're on the fence about joining in on the Mesh experience. I would suggest discussing your options with one of our specialists. Below is a list of individuals that can help with any questions.

Brett-KG7GDB  
 John-AI7BQ  
 Richard-K9RCP  
 John-KE7GBK

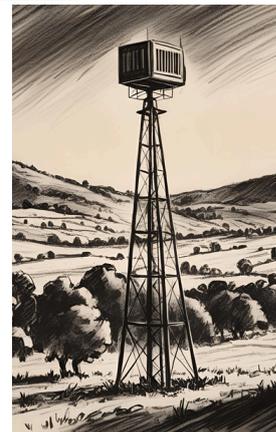


# AREDN is not just for EMERGENCIES

## AREDN SETUPS



# WA7ABU 145.290 Repeater Net Schedule



## Monday

Technical Discussion Net: 1000-1100, Dan WA7ABU

Lunch Bunch: 1200-1230, Kirk K1RKS

Technical Discussion Net: 1900-2000, TBD

Learning Linux : 20:30 NOTIF Mike & K9CAN Kris

## Tuesday

Technical Discussion Net: 1000-1100, Scott KF7GGN

Lunch Bunch: 1200-1230, Phil KK7NZG

\*\*Project Net: 1900-2000, Brett KG7GDB

\*\*Homesteading Net : 19:00-20:00 KK7NZG Phil & K9CAN Kris

## Wednesday

Technical Discussion Net: 1000-1100, Brett KG7GDB

Lunch Bunch: 1200-1230, Russell KE7QXR

Slow Scan TV Net: 1900-2000, Dan WA7ABU (picture swapping using SSTV mode).

## Thursday

Technical Discussion Net: 1000-1100, Gary K7VBY

Lunch Bunch: 1200-1230, Tim KI7KPF

Mesh Network Discussion Net: 1900-2000, Brett KG7GDB

## Friday

Technical Discussion Net: 1000-1100, Joe KC7ZZX / Daniel K7CGO

Lunch Bunch: 1200-1230, Kris K9CAN

Space Net/Above Ground Net: 1900-2000, Kris K9CAN

## Saturday

Ham Shopping Club Swap Net: 1900-2000, Dan WA7ABU

## Sunday

LDS Emergency Net, Lebanon: 1800-1830, Rotating Net Control

\*\* The Tuesday Net at 19:00 alternates every week its topic as seen to the right and Above

# S.A.R.G REPEATERS

- 145.290 MHz FM ~ 930 feet -AllStar & Echolink 54326 - Silverton Hills
- 145.190 w/100 Hz tone - WA7ABU Repeater Site ~4000' near Gates
- 444.950 MHz Yaesu Fusion , Wires-X, & FM w/ 100 Hz tone - Newburg
- 444.600 MHz Yaesu Fusion & FM w/ 100 Hz tone - McCully Mtn, Lyons (no I-5 or Portland coverage) (Active & Under Development)
- 147.060 MHz FM -1720 Feet - Mc Cully Mtn, Lyons (Active & Under Development)

## Other Repeaters in our area worth mentioning

- 441.100 FM w/100Hz tone - Yaesu Fusion c4FM -480 feet - Shaw K7GIB
- 440.725 MHz FM no tone - Yaesu Fusion FM -700 Feet- Salem KB7PPM
- 440.225 MHz FM 100Hz Tone - Junction City - 350ft K9CAN

## DID YOU KNOW?

### SIGNAL REPORTER APP

You can now contribute to the S.A.R.G network of repeaters by completing signal reports for each repeater in the system. We want to know how your signal is based on your location. We suggest when you make your reports, it is based on signals from a 50 watt mobile transiever. HT's are not preferable but if that all you have, that is OK.

<https://wa7abu.com/reports/>

Amateur radio, or ham radio, enthusiasts know that clear communication is key to successful operations, especially on the High Frequency (HF) bands (3-30 MHz). These bands allow for long-distance contacts, but they're often plagued by interference from other signals, noise, and unwanted tones. Enter the notch filter—a powerful tool built into many modern HF transceivers. In this article, we'll explore what a notch filter is, how it works, its role in amateur radio, and tips for using it effectively. Whether you're a seasoned ham or a newcomer, understanding this feature can significantly enhance your on-air experience.

### What is a Notch Filter?

At its core, a notch filter is a type of electronic filter designed to attenuate (reduce) a very narrow range of frequencies while allowing others to pass through unaffected. It's essentially the opposite of a bandpass filter, which lets through a specific band and blocks the rest. Instead, a notch filter "notches out" or suppresses unwanted signals in that narrow band, hence the name.

In the context of audio and radio frequency (RF) applications, notch filters are used to eliminate specific interfering tones without distorting the overall signal. Think of it like surgically removing a single annoying sound from a symphony—the music continues, but the distraction is gone. Notch filters can be implemented in hardware (analog circuits) or software (digital signal processing, or DSP), and they're tunable, meaning you can adjust the frequency they target.

### The Role of Notch Filters in HF Amateur Radio

HF bands are a hotbed for amateur radio activity, supporting modes like Single Sideband (SSB), Continuous Wave (CW or Morse code), and digital modes such as FT8. However, these bands are shared with other users, including commercial broadcasters, military signals, and even natural phenomena like atmospheric noise. Interference often manifests as heterodynes—whistling tones caused by carrier signals beating against your receiver's local oscillator—or continuous wave interference from nearby transmitters.

Without mitigation, these interferences can make it impossible to copy weak signals or enjoy a QSO (conversation). This is where the notch filter shines. In HF transceivers like those from Icom, Yaesu, Kenwood, or Elecraft, the notch filter is typically integrated into the receiver's intermediate frequency (IF) or audio stages. It helps operators:

- **Suppress Heterodynes:** A common issue in crowded bands, where a strong carrier from another station creates a beat note in your audio.
- **Eliminate Tones from Digital Modes:** In contests or pile-ups, unwanted digital signals can bleed into your frequency.
- **Reduce Noise from Appliances or Power Lines:** Some notch filters can target repetitive noise patterns.
- **Improve Signal Clarity:** By removing distractions, it enhances the intelligibility of voice or CW signals.

Modern DSP-based transceivers often include auto-notch features that automatically detect and suppress multiple interfering tones, making them invaluable for hands-free operation.

### How Does a Notch Filter Work?

To understand the mechanics, let's break it down without diving too deep into electrical engineering.

#### Basic Principle

A notch filter is a band-stop filter with a high  $Q$ -factor (quality factor), meaning it has a sharp, narrow rejection band. The center frequency (the "notch") is where attenuation is maximum—often 40-60 dB or more in radio applications. Frequencies outside this narrow band pass with minimal loss.

## **NOTCH FILTER CONTINUED.....**

In analog designs, this is achieved using components like capacitors, inductors, and resistors in circuits such as twin-T or bridged-T networks. For example:

- The filter creates a phase shift or resonance that cancels out the target frequency.
- Tunability comes from variable components, like a potentiometer to adjust the notch frequency.

In digital systems (common in today's HF radios), DSP algorithms process the signal in real-time:

- The incoming audio or IF signal is digitized.
- Fast Fourier Transform (FFT) analyzes the frequency spectrum.
- The algorithm identifies peaks (interfering tones) and applies a digital filter to attenuate them.
- This can handle multiple notches simultaneously, unlike manual analog versions.

### **Implementation in HF Radios**

In a typical HF transceiver:

1. The RF signal is received and down-converted to an IF (e.g., 9 MHz or 455 kHz).
2. The notch filter acts on the IF or demodulated audio.
3. For manual notches, you tune a knob to center the filter on the offending tone (usually audible as a whistle between 300 Hz and 3 kHz in the audio passband).
4. Auto-notch uses adaptive algorithms to track and suppress tones dynamically, even if they drift.

The effectiveness depends on the radio's design. High-end models like the Icom IC-7610 or Yaesu FTdx101D offer deep notches with minimal impact on adjacent signals, while entry-level rigs might have simpler implementations.

### **Types of Notch Filters in Amateur Radio**

Notch filters aren't one-size-fits-all. Here's a rundown of common types found in HF transceivers:

- **Manual Notch Filter:** Requires operator adjustment. Great for precise control, like notching out a steady CW carrier. It's common in older analog radios but still present in modern ones for fine-tuning.
- **Auto-Notch Filter (ANF):** Automatically detects and attenuates interfering tones. Ideal for SSB voice modes where heterodynes pop up unpredictably. It can handle multiple tones but might occasionally "notch" part of the desired signal if not configured properly.
- **DSP-Based Notch:** Leverages digital processing for superior performance. Features like variable width (narrow for CW, wider for broader interference) and depth control allow customization.
- **IF Notch vs. Audio Notch:** IF notches work at the intermediate frequency stage for better rejection of strong signals before they overload the audio chain. Audio notches are post-demodulation and simpler but less effective against very strong interferers.

Some radios combine these, offering both manual and auto modes for versatility.

### **Practical Applications and Tips for Use**

Notch filters are most useful in contested bands like 20 meters (14 MHz) during solar peaks, where interference is rampant. Here's how to make the most of them:

- **In SSB Mode:** If you hear a heterodyne whistle during a QSO, engage the auto-notch. If it's manual, tune until the tone disappears—listen for the "null" point.
- **In CW Mode:** Narrowband interference from nearby stations can be notched out without affecting the desired signal. Use a narrow filter bandwidth (e.g., 250 Hz) alongside the notch for best results.

# NOTCH FILTER CONTINUED.....

## • Tips:

- Start with auto-notch for quick relief, then switch to manual for precision.
- Avoid over-reliance; notches can introduce artifacts if the interference is too close to your signal.
- In DSP radios, experiment with settings like notch width—narrow for tones, wider for broader noise.
- Test on known interferers: Tune to a busy band and practice notching out signals.
- Remember, notches don't fix all interference; combine with noise blankers, passband tuning (PBT), or attenuators for comprehensive noise reduction.

If your radio lacks a built-in notch, external DSP units (e.g., from Timewave or MFJ) can add this capability.

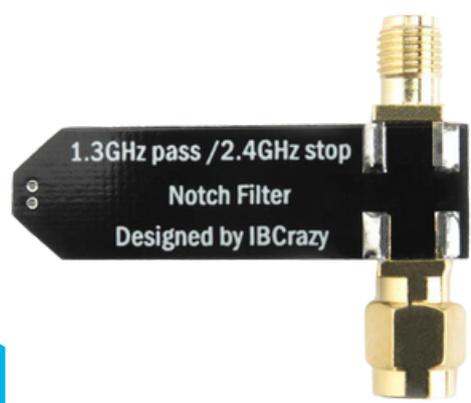
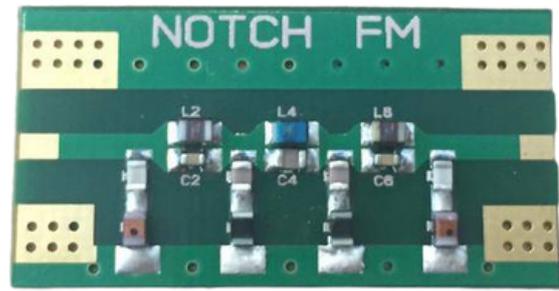
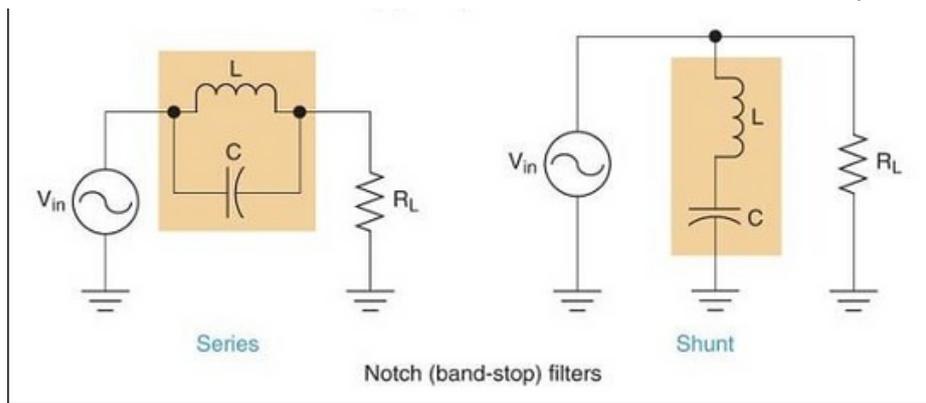
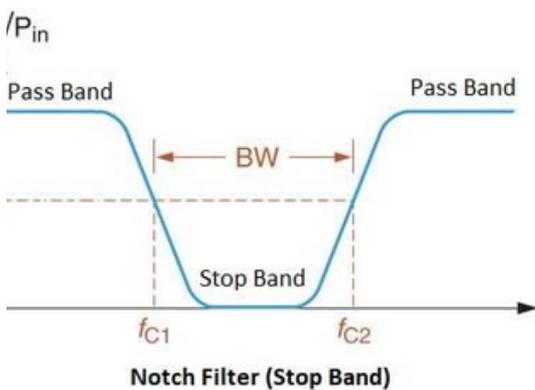
## Conclusion

The notch filter is a testament to how technology enhances amateur radio, turning chaotic HF bands into manageable playgrounds for global communication. By precisely eliminating unwanted tones, it preserves the integrity of your signals, making weak DX (distant) contacts possible even in noisy conditions. As HF transceivers evolve with better DSP, notch filters will only get smarter and more effective.

If you're new to ham radio, experiment with your rig's notch feature during your next operating session— it might just save that elusive contact. For veterans, it's a reminder of why investing in quality equipment pays off. Happy DXing, and remember: in the world of amateur radio, clarity is king!

## IF ANY READER FEELS LIKE THERE ARE MISTAKES IN THE ABOVE TEXT PLEASE REPLY TO

goldenhamshack@gmail.com. Please understand, I am new to this hobby, I'm still learning, and I do make mistakes.



# THE INFAMOUS DIPOLE

## Dipole Antennas: Versatile Workhorses for HF, VHF, and UHF Amateur Radio

By Kris Golden, Amateur Radio Enthusiast

In the world of amateur radio, few designs are as fundamental and reliable as the dipole antenna. Often called the "reference antenna" due to its simplicity and effectiveness, a dipole consists of two conductive elements (or "legs") extending from a central feed point, typically fed with coaxial cable. It's a balanced antenna that can be tuned for various frequency bands, making it ideal for High Frequency (HF, 3-30 MHz), Very High Frequency (VHF, 30-300 MHz), and Ultra High Frequency (UHF, 300-3000 MHz) operations. Whether you're chasing distant DX contacts on HF or chatting locally on VHF/UHF, dipoles offer an affordable entry point for hams. This article explores their design, applications across bands, and tips for building your own.



## The Basics and History of Dipole Antennas

The dipole's origins trace back to Heinrich Hertz's experiments in the 1880s, proving electromagnetic waves. It became a staple in amateur radio during the early 20th century, thanks to pioneers like Guglielmo Marconi. A standard half-wave dipole is cut to half the wavelength of the target frequency (e.g., about 20 meters long for the 40-meter HF band at 7 MHz). The formula is simple: Length (in feet) = 468 / Frequency (in MHz), split equally on each side.

Dipoles work by converting electrical signals into radio waves and vice versa. They're omnidirectional in the horizontal plane when mounted horizontally, radiating equally in all directions perpendicular to the wire. Vertical dipoles, meanwhile, offer low-angle radiation for longer-range contacts. Their impedance is around 73 ohms, matching well with 50- or 75-ohm coax via a balun (balanced-to-unbalanced transformer) to minimize losses.

What makes dipoles so appealing? They're cheap to build—often from wire, PVC pipe, and household items—and perform well without complex tuning. However, they're band-specific; a multiband dipole might use traps or fan designs to cover multiple frequencies.

### Dipoles for HF: Long-Range Powerhouses

On HF bands (like 80m, 40m, or 20m), dipoles excel at skywave propagation, bouncing signals off the ionosphere for global reach. A full-size 80-meter dipole (about 130 feet long) might require tall supports, but it's unbeatable for low-band DXing during solar minima. Inverted-V configurations, where the ends droop down, save space and add some directivity.

Advantages include high efficiency (up to 90% with good matching) and low noise pickup. Drawbacks? They need height (ideally  $\lambda/2$  above ground) to avoid losses, and they're susceptible to nearby metal objects causing detuning. Hams often use them for contests or emergency comms, like during the ARRL Field Day, where a simple wire dipole can log hundreds of contacts.

VHF and UHF Adaptations: Compact and Local

### VHF/UHF

For VHF (e.g., 2-meter band at 144-148 MHz) and UHF (e.g., 70cm at 430-440 MHz), dipoles shrink dramatically—a 2-meter dipole is just 3 feet long! These are often built as "J-poles" (a vertical dipole variant) or folded dipoles for better bandwidth. VHF/UHF signals are line-of-sight, so elevation is key; mount them on rooftops or masts for ranges up to 50+ miles via repeaters.

In VHF, a dipole's simplicity shines for FM voice or APRS tracking. For UHF, where wavelengths are even shorter (about 1.5 feet for 70cm), they're used in handheld setups or as elements in Yagi arrays for directionality. Challenges include higher losses from obstacles, but dipoles here are more forgiving of imperfect setups. They're popular for satellite work, like contacting the ISS, or in mobile rigs for events.

# DIPOLE CONTINUED...

Multiband VHF/UHF dipoles, like dual-band models for 2m/70cm, use loading coils to resonate on both. Efficiency drops slightly compared to HF, but with 5-10 watts of power, they're effective for local nets.

## Building and Optimizing Your Dipole

Ready to DIY? Start with copper wire (14-18 gauge) for the elements, insulators at the ends, and RG-8 coax for the feedline. For HF, string it horizontally between trees or poles at 30-50 feet high. Tune with an SWR meter or antenna analyzer—trim the ends slightly for resonance. VHF/UHF versions can be vertical PVC tubes with wire inside, costing under \$20.

Safety first: Use non-conductive supports, ground for lightning protection, and comply with local regs. Software like EZNEC helps simulate performance. Common pitfalls? Poor grounding leads to RFI (radio frequency interference) in your home.

## Advantages, Limitations, and Modern Twists

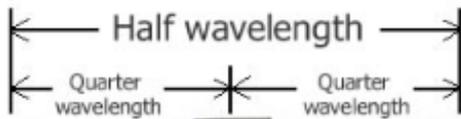
Dipoles are efficient, low-cost, and easy to conceal—perfect for HOA-restricted areas. They outperform many commercial antennas in gain-to-cost ratio. Limitations include single-band tuning (unless modified) and vulnerability to wind/ice. Modern innovations include OCF (off-center fed) dipoles for multiband use without tuners, or active dipoles with amplifiers for weak signals.

In amateur radio, dipoles bridge beginners and experts. They're used in emergency ops (e.g., ARES drills) and experiments like NVIS (near-vertical incidence skywave) for regional HF coverage.

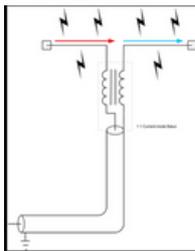
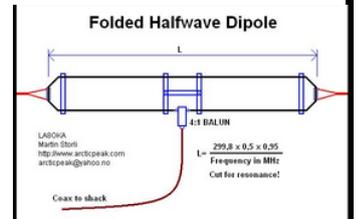
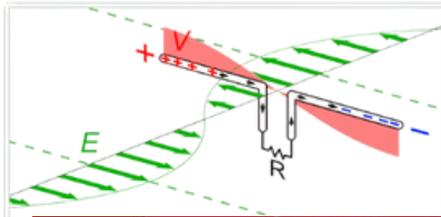
## Why Choose a Dipole? A Timeless Choice

Dipole antennas embody the spirit of ham radio: innovation through simplicity. From HF's worldwide adventures to VHF/UHF's local reliability, they empower operators to connect without fancy gear. If you're starting out, build one—it's a rite of passage that teaches RF fundamentals.

Tune in, experiment, and join the airwaves. Your first dipole might just spark a lifelong passion!

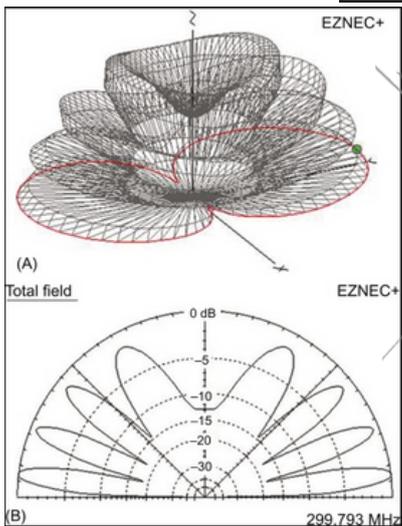


Half-wave tuned dipole antenna showing quarter wavelength element with respect to a wavelength



Dipole Lengths and Target Heights					
Band	Target Frequency	Total Length	Each Side	Target Height	100 KHz Inches Trim*
160	1.900	246.32	123.16	311	82.11
80	3.800	123.16	61.58	155	19.97
60	5.365	87.23	43.62	110	9.94
40	7.150	65.45	32.73	83	5.57
30	10.300	45.44	22.72	57	2.67
20	14.175	33.02	16.51	42	1.41
17	18.118	25.83	12.92	33	0.86
15	21.225	22.05	11.02	28	0.63
12	24.940	18.77	9.38	24	0.45
10	28.500	16.42	8.21	21	0.35
6	52.000	9.00	4.50	11	0.10

\* Inches to trim EACH side. Add length to lower frequency.



# Event News

## JankFest 2025 is just around the corner!

Originally planned for August 22–24, we're now shifting the event into September-October to accommodate a better reservation window. Unfortunately, Champoege State Park, our top-choice location, is fully booked for the original weekend—but we're actively working to secure multiple tent campsites to ensure we have plenty of room to spread out and enjoy the event.

JankFest is growing—not just in size, but in what it offers. We're excited to announce the addition of an antenna-building workshop, which has already sparked a lot of interest. More details will be shared soon, but know this: by the end of the weekend, you could leave with a fully operational long wire HF antenna that you built yourself.

To help you prepare, we've compiled a list of recommended antenna parts you can purchase ahead of time and bring with you to the workshop. You'll find the list and link below—stay tuned for more updates!

[Build your own antenna...Antenna Parts List](#)

### Antenna wire-135 foot in total

[-Super Antenna MS135 SuperWire Stealth Bulk 135 feet Wire #18 Stranded ham Radio](#)

### Balun

[-Shortwave Radio Balun Antenna 1:1 Dipole Antenna Voltage 1-50MHz 500Watt](#)

[-HF End Fed Antenna, 4 Band 8 Band 1MHz to 30MHz 100W Power End Fed](#)

### Antenna Analyzers by Rig Expert

[-RigExpert Stick Pro Antenna Analyzer](#)

[-RigExpert MATCH Upgradable Antenna and Cable Analyzer, 0.1-70MHz](#)



## Resonant Half-Wave Dipole Lengths by Band

Band (Meters)	Frequency (MHz)	Total Length (Feet)	Each Leg (Feet)	Total Length (Meters)	Each Leg (Meters)
160m	1.83	256.5 ft	128.3 ft	78.2 m	39.1 m
80m	3.75	124.8 ft	62.4 ft	38.0 m	19.0 m
60m	5.3	88.3 ft	44.2 ft	26.9 m	13.5 m
40m	7.15	65.5 ft	32.8 ft	20.0 m	10.0 m
30m	10.1	46.3 ft	23.1 ft	14.1 m	7.0 m
20m	14.2	32.9 ft	16.4 ft	10.0 m	5.0 m
17m	18.1	25.8 ft	12.9 ft	7.9 m	3.95 m
15m	21.2	22.0 ft	11.0 ft	6.7 m	3.35 m
12m	24.9	18.7 ft	9.35 ft	5.7 m	2.85 m
10m	28.5	16.4 ft	8.2 ft	5.0 m	2.5 m
6m	50.1	9.3 ft	4.65 ft	2.8 m	1.4 m



# BUDDIPOLE

PORTABLE, VERSATILE, AND EFFICIENT



### Introduction to the Buddipole Antenna

The Buddipole is a portable, multi-band HF antenna system designed primarily for amateur radio enthusiasts who prioritize mobility and ease of setup. Manufactured by Buddipole, Inc., it's essentially a collapsible dipole antenna with adjustable arms that allow operation on bands from 40 meters down to 6 meters, and even VHF with optional accessories. Weighing in at around 7 pounds and packing down to the size of a small duffel bag, it's a favorite among hams involved in portable activities like Summits on the Air (SOTA), Parks on the Air (POTA), or field day operations. Priced starting at about \$200 for the basic kit, it appeals to those seeking a balance between performance and convenience, though it's not without competition from cheaper homemade alternatives or other commercial options like the Chameleon or Wolf River Coil antennas.

### Build Quality and Portability

One of the standout features of the Buddipole is its robust construction, using high-quality aluminum tubing, stainless steel hardware, and durable shock-corded sections that make assembly a breeze. The components feel premium and are built to withstand outdoor use, with weather-resistant coatings that hold up in rain or wind—great for camping trips or for that trip to the top of summit. Portability is where it truly shines; the entire system fits into a compact carrying case, making it ideal for backpackers or travelers who can't lug around full-sized antennas. Setup typically takes 10-15 minutes, involving extending the arms, attaching coils for band-specific tuning, and mounting it on a tripod or mast. This modularity allows for quick reconfiguration, which is a huge plus for operators who switch bands frequently during a session.

### Performance and Versatility

In terms of performance, the Buddipole delivers solid results for a portable antenna, especially in QRP (low-power) scenarios where efficiency matters. On bands like 20 and 40 meters, it provides good SWR (standing wave ratio) with minimal tuning, often achieving contacts across continents when conditions are favorable. The adjustable loading coils and whip extensions enable fine-tuning for resonance, and accessories like the vertical configuration kit expand its use to NVIS (near-vertical incidence skywave) for shorter-range communications. However, efficiency drops on lower bands like 80 meters due to its compact size, and it performs best when elevated properly—compared to a full-wavelength dipole, it has some compromise in gain.

### Conclusion and Recommendation

Overall, the Buddipole earns high marks as a reliable portable antenna that bridges the gap between convenience and capability in the amateur radio world. It's particularly recommended for hams who enjoy outdoor activations or travel frequently, offering a user-friendly alternative to cumbersome wire antennas. If you're new to portable ops, the learning curve is gentle, and the company's excellent customer support and online resources make it even more accessible. For the price, it provides great value, especially if you invest in the full deluxe kit. I'd give it a solid 4.5 out of 5 stars—for portability and fun factor, it's hard to beat. If portable HF is your game, get the Buddipole

# Thoughts from the “Back Deck”

With Phil Webb QTH-Back Deck

## “Floating on the Digital River”

We’re a household with a grab bag of hobbies—some shared, some solo, some mutual but for wildly different reasons. Take kayaking. We’re not “Serious”kayakers, mind you. We’re more “Hey, let’s get off the couch and do something” kayakers. But sometimes hobbies overlap, and that’s where we found ourselves a few weeks back. The Wife has taken up rock polishing. Turns out, when you learn a bit about rocks and where to look, there’s a whole world of interesting specimens out there. Kayaks help us reach spots others can’t, giving the novice rockhound a shot at something truly cool. So, after a stretch of sweltering days, we hit the water. We launched just north of the Wallace Marine Park boat ramp in West Salem and paddled south.

The ramp was chaos—kids shrieking, parents corralling, boaters loading and unloading everything from paddle-boards to jet skis. We skirted the mayhem and continued downstream, occasionally joined by other watercraft that zipped past us like we were standing still. During a lull, we crossed to the east bank and began scanning the shoreline for red jasper or, if luck smiled, the elusive agate. Then they came. First, a large boat with a hefty outboard motor roared upriver. Not fast, but loud, and its wake had us bobbing like apples in a barrel. Next came a flock of jet skis, wake-hopping and yelling, stirring up chaos before vanishing upriver. Peace returned—briefly.

Then came The Boat. Its owner was clearly proud. He tore up and down the river, music blaring loud enough to be heard from three hundred yards away. His wake turned our tranquil paddle into a cork-in-a-maelstrom situation. I got aggravated. “Can’t this jerk see what he’s doing?” “Who does he think he is?” “Thinks he’s the cat’s pajamas and owns the river, doesn’t he?” Eventually, he thundered off, and the waves subsided. I began to think. He has just as much right to the river as I do. If I had his boat, I’d probably want to wring it out too.

In that moment, I realized I often do the same sort of thing on the radio. I am not personally terribly interested in digital modes, but I know a ton of people who are. Do I begrudge them their sense of accomplishment for making contacts in 100 countries just because their hobby doesn’t look identical to my hobby?

I occasionally hear mention of a “Supernode” or something like that, and apparently, it’s a pretty big deal around here, or maybe not just “Around here”. It’s not something that catches my fancy, but a lot of folks have apparently put in a lot of work to make that happen. Do I find myself diminishing their accomplishment and, even more, their enjoyment, simply because I prefer a different aspect of the hobby? Sadly, and shamefully, yeah, sometimes I do. Thankfully, most folks are pretty patient with me and are willing to allow me to enjoy simply ragchewing, bantering back and forth, and carrying on conversations of no great importance; and thank them for that.

### **THE TAKEAWAY “FROM THE BACK DECK”**

I guess the long and the short of it is, it’s easy for a guy in a kayak to shake his fist at a guy in a speedboat, but the guy in the kayak needs to remember that he can be just as big an annoyance to the speedboater. We all share the water!



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# BUDDIPOLE

PORTABLE, VERSATILE, AND EFFICIENT

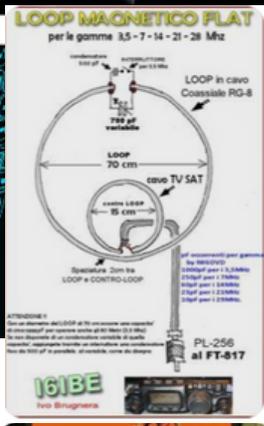
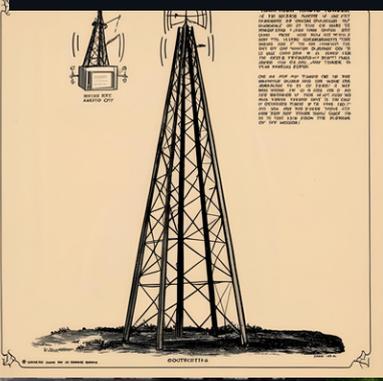


### Q-CODES

QRM	Interference
QRN	Noise
QRP	Low Power
QRT	Off and Clear
QRV	Ready to operate
QRX	Stand by (wait)
QRZ	Who is calling?
QSY	Change Frequency
QSB	Fading
QSL	All received
QSO	Contact
QTH	Location



The Cycloid Dipole Antenna  
Resource detail of The Cycloid Dipole Antenna, WA7X



### CONTRIBUTORS

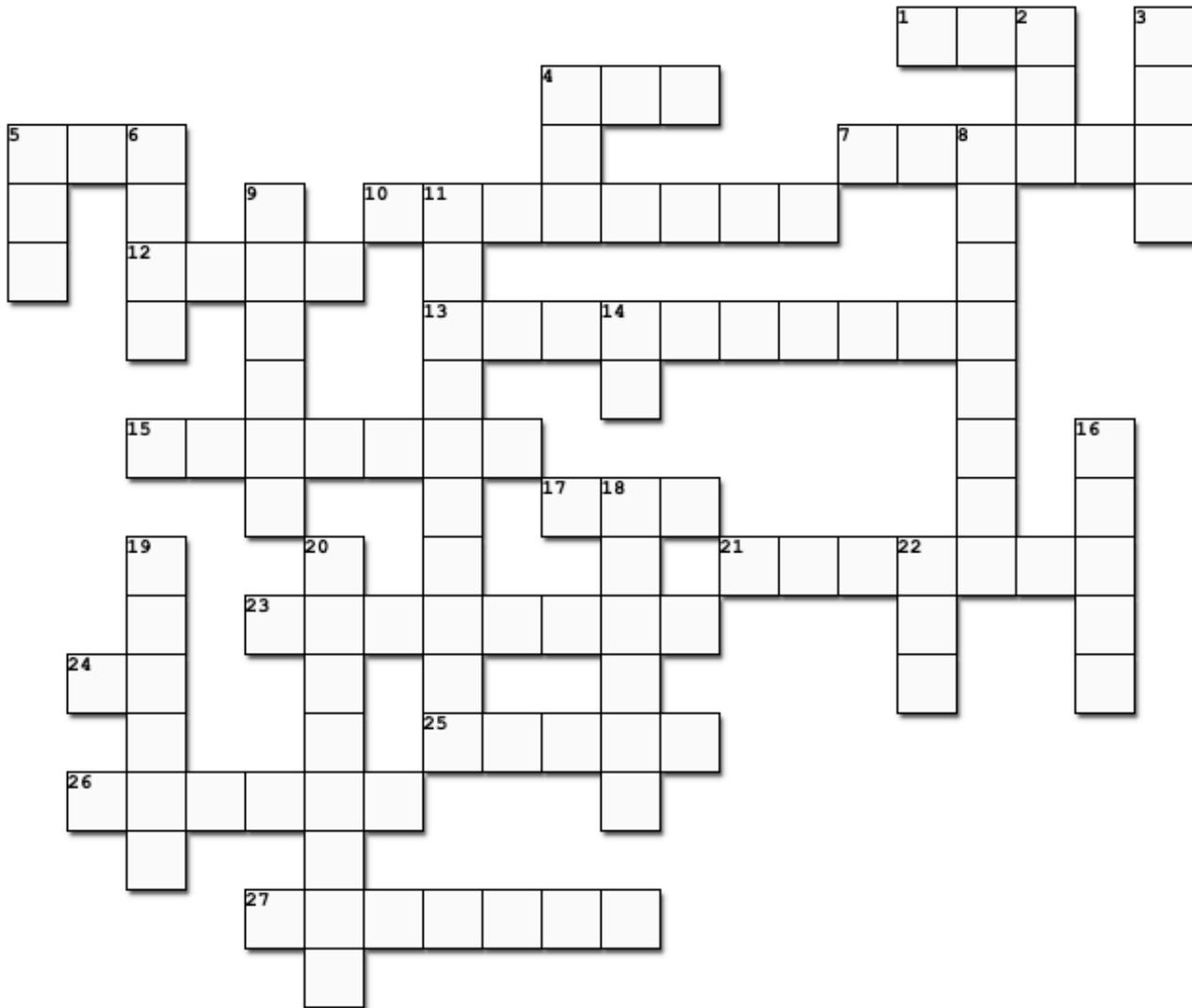
DAN BATHURST-WA7ABU  
MARY BATHURST-W7FIF  
KRIS GOLDEN-K9CAN



**"529" Hall of the Greats**  
Richard Thomas WOEDF  
Bruce Currier W7CCM

# History of Amateur Radio

Complete the crossword puzzle below



Created using the Crossword Maker on [TheTeachersCorner.net](http://TheTeachersCorner.net)

## Across

1. Low-power operating, often 5 W or less.
4. A contact—brief exchange or ragchew.
5. Amateur radio operator's license
7. AX.25 data; the heritage under APRS.
10. A popular ham radio contest held annually
12. Callsigns, position beacons, and messages over packet.
13. The coordinator who keeps a directed net moving.
15. Radiosport weekend that fills the bands with "CQ."
17. The term for two-way radio communication
21. Keep this zone clear for strong microwave links.
23. A device used to convert radio signals into audio
24. Frequency modulation abbreviation
25. Mentor who helps new ops.
26. Simple ½-wave wire workhorse.
27. Where the magic starts; converts RF to electromagnetic waves (and back).

## Down

2. An acronym for a popular digital mode in ham radio
3. International phonetic alphabet used in radio communication
4. Confirmation of a contact; paper or electronic.
5. Ultra-popular weak-signal mode from K1JT.
6. Most common feedline in the shack.
8. Your on-air identity under Part 97.
9. Safety, lightning, and RF reference—done right, it's quiet.
11. HF's mirror; where F-layer magic happens.
14. Continuous wave; the original digital mode.
16. Balances/unbalances to tame common-mode currents on feedlines.
18. A measure of radio signal strength
19. Open library that lets software speak rig/rotor CAT.
20. The RF highway from rig to antenna.
22. Common ham radio mode for voice communication