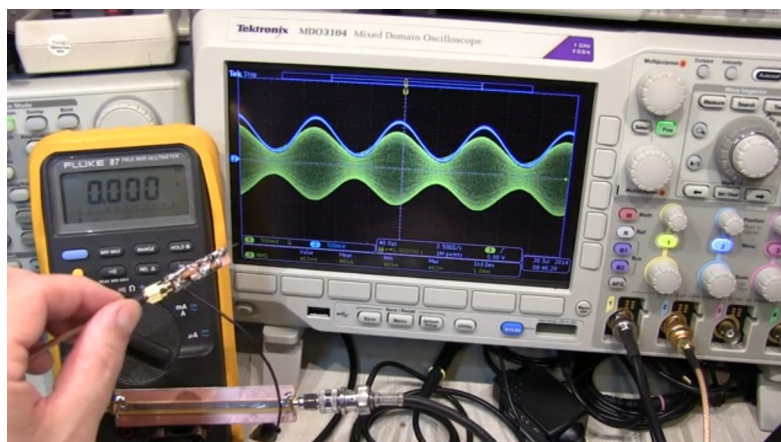


Microvolt

Monthly newsletter of the Utah Amateur Radio Club

April 2026



RF (radio frequency)



While many tend to think of *RF* only as a radiation type that travels through the air, RF actually refers to *radio frequency* signals of all types. The two that most directly relate to amateur radio are electrical RF (high-frequency electricity) in wires, also known as *AC* (alternating current), and electromagnetic RF in space, also known as *radio waves*. Let's lump the rest into the generalization of radio. Whether in the air or connected by wires, RF behaves unlike the more familiar DC (direct current) we're used to. Time to explore the relevance of the RF world.

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Cover – RF (radio frequency)

The study discipline involving RF can be categorized as *radio engineering*, but actually involves many discrete fields, no pun intended. Their common understanding is the application of electrical and electromagnetic signals at radio frequencies. The spread of frequencies regarded as RF are not officially set, yet are generally agreed upon by industry and usage. Typically, the range for most RF references is 3 kHz through 300 GHz, although other conventions are common.

Electrical RF

In electronic circuitry, RF demands specialized knowledge of alternating current using frequencies that behave according to rules beyond those of direct current electricity. For example, AC circuits must be developed with not only resistance in mind, but *impedance*, which includes both resistance and *reactance*.

When designing PCBs (printed circuit boards) and other electronic circuitry for RF purposes, care must often be taken to prevent unwanted interconnections between components. At radio frequencies a pair of wires can become an unintentional inductor, even a transformer. Because of the material between the wires, they can also turn into an unintentional capacitor. And if they become both (quite common), they can create unwanted oscillations. Finally, the oscillations can make the PCB an effective antenna, emitting unwanted radio signals where they don't belong.

Another property that's unique to the RF world is the intersection between electrical RF and radio waves, one of which is known as *coupling*, which both blesses and plagues engineers world-wide. In fact, coupling is what enables an ordinary wire to "capture" a radio signal and transform it into AC that is then processed by a radio receiver. An example of the undesirable behavior of coupling is *crossover*, which has plagued computer designers for decades, due to the GHz frequencies of their CPUs and other ICs (integrated circuits).

Electromagnetic RF

Radio waves are *electromagnetic radiation* of frequencies within the RF spectrum. They're a perpendicular set of oscillating fields that propagate close to the speed of light, depending on the medium. Speaking of which, radio waves are unique in that



they require no medium through which to travel or propagate because *they are* their own medium.

Electromagnetic RF is invisible and can penetrate most non-conductive things, depending on the frequency and densities of the materials through which it's attempting to pass. It can reflect off conductive surfaces and refract off the charged particles way up in the sky. While the atmosphere is largely transparent to visible light, also a type of electromagnetic radiation, its ionosphere can refract (bend) radio waves back to Earth. Finally, it can both interfere with itself and enhance itself.

Would you stand next to your sandwich in the same microwave oven? This photo was taken in 1933 at the Chicago World's Fair by Westinghouse to demonstrate both the effectiveness and safety of heating by radio waves. Yikes.



Besides amateur radio, an example of a useful RF application is the *microwave oven*. Indeed, most of these household devices use *magnetrons* that emit a kilowatt or more of radio waves at 2.45 GHz (12 cm band, same as that for Wi-Fi). That particular frequency was selected because it was demonstrated experimentally to be a "sweet-spot" balance for exciting the molecules of water, most fats, and many common sugars. Today, 2.45 GHz is "allocated" to microwave ovens by the *ISM (Industry, Scientific, and Medical)* band plan.

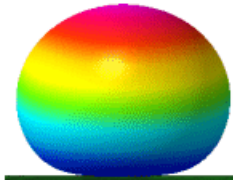
Microvolt editorial staff

Editorial – Antenna pattern importance



Say your antenna is emitting a signal at a particular frequency and power level. On a three-dimensional paper, place a dot to represent your antenna seen from a distance. Now, draw a line from there to any point on your 3-D paper, the length of the line representing the field strength of the signal in that chosen direction. Draw another line from the dot anywhere else, using the same method. Then another, and another, and repeat a thousand times. Finally, erase all the line segments except their end points.

80-10m EFHW @ 80m
(40 ft. above Ground)

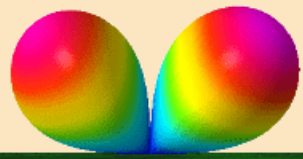


Elevation Pattern

Azimuth Pattern

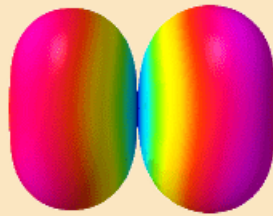


80-10m EFHW @ 40m
(40 ft. above Ground)

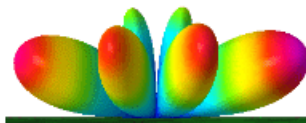


Elevation Pattern

Azimuth Pattern

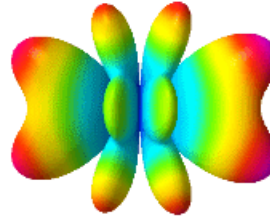


80-10m EFHW @ 20m
(40 ft. above Ground)

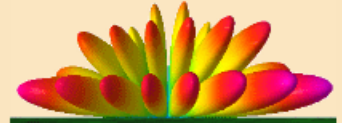


Elevation Pattern

Azimuth Pattern

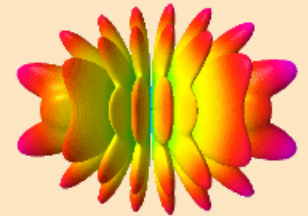


80-10m EFHW @ 10m
(40 ft. above Ground)



Elevation Pattern

Azimuth Pattern



Elevation and Azimuth Radiation patterns of a 80-10m multiband EFHW Antenna is depicted for 80m, 40m, 20m and 10m bands. The height of EFHW (horizontal configuration) is kept at 40 ft. (~12m) AGL. There are deep broadside nulls on 40m and higher. NOTE: 20m and higher bands produce several deep nulls around the azimuth resulting in numerous area coverage gaps.

Computed and Compiled by Basu VU2NSB - <https://vu2nsb.com/>

The result is a three-dimensional dotted picture of what we call your **antenna radiation pattern**, or **antenna pattern** for short. This graphic offers a visual insight on how your particular antenna is performing at its particular location, and is something that should be understood by all HF operators about their antennas. By the way, this diagram isn't burdened by concerns of how the pattern appears due to one part of the antenna versus another, because the entire antenna is being viewed like a dot from a distance. We refer to this kind of *don't-care-about-nuances-at-the-antenna* viewpoint as the **far-field radiation** perspective. This is relevant to you because you typically don't care near as much how your signal behaves right near your antenna as you do with how it behaves after reaching much farther away.

Texas vs. Georgia

One reason some amateur operators are puzzled by their poor antenna performance is their misunderstanding, or even complete lack of knowledge, of their antenna patterns. For example, using an end-fed antenna on 20 meters, an operator in Texas reports your signal as **5 over 9**, clear as a bell, assuming bells are clear. You then hear an operator who's booming in from Georgia, but try as you might, the guy in Georgia can't hear you at all. You bring up the **WebSDR**, announce your call sign, and your signal shows up on the online waterfall with a bright 3 kHz line and you can hear yourself really well. Does the Georgia operator have a sub-standard receiver, or is he simply ignoring you?

Editorial – Antenna pattern, cont'd

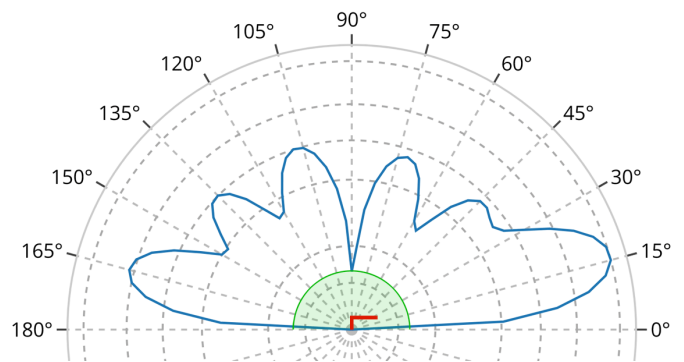
Assuming the graphic above was drawn for your particular antenna, if you examine it for 20 meters, you can see a bunch of butterfly “blimps” originating from your QTH (transmitting location). It's very possible that a line drawn from your QTH to the ionospheric F2 Layer, then back down to Texas goes right through one of those blimps (representing a strong signal), while another line drawn between you, the F2 Layer, then back down to Georgia goes right between two of the blimps (weak signal), a zone called a *null*.

But wait, as you recall, if you can hear the operator, he should be able to hear you, right? Not necessarily. The adage is *If you can't hear 'em, you can't work 'em*. But if you can hear him, there's no guarantee that he'll hear you, so the Georgia ham still needs to hear you, for you to make that contact.

As you can see, the antenna radiation patterns per band are three-dimensional directions of signal strength determined by antenna type, antenna shape, antenna height, antenna mounting style, frequency, terrain, and a few other factors. When displayed graphically, the zones of relatively strong signals appear as blimps, or lobes, as in *brain lobes*.

So, to solve the problem with the Georgia operator, either raise your antenna a couple of feet, lower your antenna a couple of feet, or if either is not very convenient, forget the Georgia contact and go after the one in Delaware. (Another way to skin this cat, if you really need his contact, look up the Georgia operator on [QRZ](#), email him, and ask him to change bands, since your pattern might improve to Georgia on a different band.)

Examining your own antenna pattern also gives you some idea of the direction(s) of your strongest signals. Looking at the above diagram for an end-fed antenna mounted 40 feet up, 40 meters looks pretty ideal for making cross-country contacts, and maybe even DX contacts. On the other hand, at 40 feet up, working 80 meters looks closer to NVIS ([near-vertical incidence skywave](#)) propagation, meaning the greater portion of your signal is going straight up, to bounce back to Earth within a couple of hundred miles of your antenna. However, the pattern shows that *some of the signal* reaches out at DX elevations, allowing for limited distant communication.



Two-dimensional patterns

All antenna patterns are three-dimensional; that is, they exhibit some amount of signal emission in all directions. However, due to a few assumptions we can often make about symmetry and redundant or repeating polarizations, a two-dimensional view of the same diagram can often prove more useful. While the 3-D diagram offers *completeness*, a 2-D picture can offer *clarity* by displaying only relevant information for the task at hand. The 2-D diagram above, for example, displays the same pattern for the end-fed antenna on 20 meters, and helps us understand its radiation angles and nulls as well as the corresponding 3-D image, but without the extraneous lobe display.

Both 2-D and 3-D displays can present the pattern by looking at its side, known as an *elevation* view because it allows you to see its radiation angles of elevation headed skyward. Alternatively, they can present the pattern looking straight down onto it, known as an *azimuthal* view, because it allows you to see its radiation angles with respect to its azimuth, or compass directions.

Anything to add? Email editor@utaharc.org

Letters to the editor

Dear Editor:

Please help me understand something that has baffled both me and my neighbor who are fairly new to ham radio. I installed an end-fed antenna, and my Xiegu G90 tunes up the antenna so well that it's showing near-perfect SWR on 10 meters. But when I call out to people I can hear, why can't they hear me?

Robert in Bountiful

Dear Robert:

If your tuner can provide a good match between your antenna and feed line, that's a great beginning. But not knowing everything about your antenna system (like [its pattern](#)) leaves me with a few questions. So, here's a short checklist of things you can examine on your own, to help your signal get heard by others:

- Ensure your [coax is not too long](#) for the frequencies you're transmitting
- Make sure your end-fed antenna is high enough off the ground for the distances you're trying to reach, or your transmissions might be limited to NVIS (within a few hundred miles)
- Check whether the [WebSDR](#) registers your signal; if it can, that indicates your signal is making it to the WebSDR, and therefore possibly to a target contact
- Check the [band conditions](#), to be sure they're in your favor for your frequency, location, and time-of-day

Dear Editor:

I get a fair amount of snow where I live, and I'm concerned about how it will affect my signal. I mounted a J-pole on my roof, and so far it has survived a couple of large wind storms. But now is the snow something I should be worried about?

Chris in Timber Lakes

Dear Chris:

Snow can affect your VHF signal *a little* while it's falling, and even less while it's motionlessly stacking on the roof, depending on its density. The signal attenuation will be much more noticeable if the snowpack is heavy and moist, than when it's light and powdery. To me, the larger concern is moisture intrusion when the snow melts into your connectors, enclosures, and balun. Another is how the snow can affect your



antenna structure. You mentioned that you have a J-pole, and the snow will have little effect on its ability to maintain its structural integrity, but I would be more concerned if you had a dipole, beam, end-fed, or other horizontally oriented antenna. For those, I recommend taking measures to ensure it could withstand the potential stress of the snow load.

Dear Editor:

My analyzer shows that my antenna has an SWR of about 2.7 on 40 meters, so I'm guessing my antenna's not perfectly built or something. But my tuner tunes it really well, and brings the SWR down to 1.1. Yet, some of my more respected ham friends tell me that my tuner is only fooling my radio. What do they mean by that, and does it matter, as long as my SWR is down?

Jeff in South Jordan

Dear Jeff:

Does your power supply "fool" your transceiver into believing that your wall outlet is presenting 13.8 volts DC? Your power supply is performing a *transformation*, and is not attempting to change anybody's beliefs. Likewise, your tuner is transforming your antenna system impedance to as close to 50 ohms as it can. As for affecting performance, the transformation match doesn't matter much, so long as you're using low-loss coax (measured by the [coax model and length](#)) for 40 meters, and not attempting to push more power through your tuner than for what it's rated. Just like with a dummy load, a low SWR does not guarantee that you'll have a good or even reasonable [antenna pattern](#).

Send your questions to editor@utaharc.org

Club news

The March 2026 “meeting” of the Utah Amateur Radio Club was yet another successful and worry-free get-together at a potluck dinner. Once again, we congregated at the Salt Lake County Facilities Management Cafeteria on State Street, and had a great time with some of the regulars, plus a few of the new members. Say Hi to a few of them.



Photos in this issue, starting page 12.

BTW, you can view past many club meeting presentations on [our YouTube channel](#).

2026 Utah VHF Society Swap Meet

This *Microvolt* issue just might make it to press before the date, but the 2026 [Utah VHF Society Swap Meet](#) will be held **Saturday 28 March 2026** at the [Western Sports Park](#) (formerly the Legacy Events Center), 25 N Sports Park Way (1100 W) in Farmington. Utah VHF Society members can enter free-of-charge.

2026 Utah Portable Day

The Utah Area ERC (Emergency Response Communications) team is holding a two-hour “Field Day” of sorts, in order to pique interest in emergency and portable work. On **Saturday 09 May 2026** from 10 am to noon, numerous people around Utah will be setting up their HF, VHF, and UHF stations and getting on the air to call out for contacts.

2026 Summer Field Day

Believe it or not, Field Day is approaching! Once again, we plan to descend on our usual place near Payson Lakes and get on the air from **noon Saturday 27 June through noon Sunday 28 June 2026**, and invite you to join us. Details on how to get to our site are on [the club website](#).

2026 UARC Steak Fry

The annual UARC Steak Fry will take place this year **Saturday 18 July 2026** at [Murray Park, Pavilion #1](#), 420 E 5300 S. We can start setting up as early as 4:00 pm, but **dinner is served at 5:30 pm**. We bid a fond farewell to the dilapidated picnic tables, broken trip-hazard pathways, and scary restrooms of the Spruces, which have served us for so many years. Cost is \$15 per person.

For your information

Field Day 2026

The annual 2026 Field Day will take place from noon Saturday 27 June through noon Sunday 28 June 2026 at a yet-to-be disclosed location! We've traditionally held our summer Field Days at Payson Lakes, but this year we're thinking of changing things up, and bring our Field Day a little closer to home. Nothing's set in stone, so stay tuned!

UARC 2026 Steak Fry

The annual **UARC Steak Fry** will be held this year 5:30 pm on Saturday 18 July at [Murray Park, Pavilion #1](#), 420 E 5300 S. Those helping with setup can arrive starting 4:00 pm.

License courses

Salt Lake:

Technician : Tuesdays

General : Tuesdays 7:00 pm to 9:00 pm
147.160+ MHz (127.3 Hz tone)

Provo:

Technician : Saturday, 8:00 am to 1:00 pm
21 Mar, 18 Apr, 16 May

Visit [HamStudy.org/sessions](#) to register (free)

Provo Fire Station #2, 2737 N Canyon Rd
Email nv7vham@gmail.com for info

Orem:

General : 4 Tuesdays, 6:00 to 8:30 pm
17 Mar, 24 Mar, 31 Mar, 07 Apr

Visit [psclass.orem.org](#) to register (\$10)

Orem City EOC, 56 N State St, 2nd Floor
HamStudy.org account required

Email nojiratz@hotmail.com for info

Eagle Mountain:

Technician : 5 Thursdays, 7 to 9 pm
14 May, 21 May, 28 May, 11 Jun, 18 Jun

Email ki6oss6365@gmail.com to register (free)

Eagle Mountain City Hall, 1650 Stagecoach Run

Exam sessions

Salt Lake County:

- Email Garth Wiscombe W7PS w7ps@arrl.net
30 Mar, 27 Apr, 18 May, 29 Jun, 27 Jul



Weber County:

- Email Rick Morrison W7RIK w7rik@arrl.net
04 Feb, 6:00 pm
Utah Military Academy
5120 S 1050 W, Riverdale

Utah County:

- Sat 20 Jun 10:00 am : **Eagle Mtn** : [signup](#)
- Wed 16 Apr 7:00 pm : **Provo** : [signup](#)
- Sat 19 Apr 7:00 pm : **Provo** : [signup](#)

Club repeaters

Farnsworth Peak : 146.620– MHz (no tone)

Scott Hill : 146.620– MHz (no tone)

Lake Mountain : 146.760– MHz (no tone)

SDRs and beacons

Northern Utah WebSDR : [sdrutah.org](#)

KK7AVS SDR : [k7xrd.club](#)

N7RIX SDR : [sdr.n7rix.com](#)

K7JL beacon 28.2493 MHz

HF remote and club transceiver stations

If you'd like to learn how to get started using the remote stations, visit the [HF Remotes link](#) on [the club website](#):

<https://user.xmission.com/~uarc/HFRemote.html>

How you can help!

Email uarc@xmission.com to reach the club leadership. Email editor@utaharc.org to add content.

Spotlight – Matthew Barnes KL7KUY

Matthew had his first introduction to amateur radio as a scout. His scout leader was a licensed ham, and had shown his troop some ham radio equipment and how it worked. Later, Matthew discovered the value of FRS and GMRS radio among family and friends. Eventually, he re-discovered amateur through a co-worker, Jon Eicher KE7DCL, while talking with others about ham radio.

Matthew started on his amateur radio path being interested in learning how far HF can reach, and the science of how these signals originate. Matthew had some good exposure to electronics in high school, and later in college while pursuing a computer science degree. Originally, he thought about building radios, but today he only has time for antennas.

I've been a year into it now, and I'm currently learning (Morse) code, FT8, and I enjoy building stuff. I've enjoyed working POTA (Parks on the Air) with Dakota Bishop KK7POC out at Camp Floyd State Park and Timp Cave National Monument. Going forward, I want to get into LoRa, DMR, and EmComm (emergency communication). Once I get me Extra, I'd like to get my dad into ham radio too.

Matthew changed his major while in college, and graduated in IT, and now works in IT Security. His involvement with IT has only heightened his love for electronics, tinkering, and helping others do the same.

My equipment includes:

Yaesu FT-710 HF transceiver

QRP Labs QMX HF transceiver

AnyTone AT-778UV dual-band mobile transceiver

Xiegu G90 portable HF transceiver

Pockrus VHF/UHF J-pole antenna

Diamond BB7V telescoping HF antenna



Matthew's currently working towards his levels of certification in UCARES (Utah County Amateur Radio Emergency Service) and part of American Fork CERT (Community Emergency Response Team). He's a member of UARC, UVARC, the 76ers, and the Utah VHF Society.

– 73, Matthew

Tech Corner – RV pass-through

I've heard numerous people ask how to set up a ham radio station in an RV, and more specifically how to install an antenna and how to connect the coax to it. For a quick and temporary solution, I used a window pass-through like the [Comet CTC-50M](#), which worked great. Eventually, however, I wanted something that was more permanent, more plug-and-play, and a little more durable. I have no problem with drilling a hole in a new vehicle, so I decided to go that route for our RV.



We have a small Jayco Jay Flight SLX 174BHA pull-behind travel trailer, just right for my wife (Lisa KR5LYS) and me to set up at a family camping overnighter, primitive remote location, or even at Field Day. As for the antenna, I wanted to enjoy the flexibility of setting up any kind of antenna I wanted, and a dozen or more feet away from my RV, to separate my station from the RFI (radio frequency interference) that I'm transmitting. This meant not installing an antenna directly on my RV, but providing a way for its feed line to get into the vehicle instead. This also gave me the freedom to try out various antenna ideas instead of being restricted to only what's attached to my vehicle.



The construction

Locating a spot on your RV to drill pass-through holes is not as trivial as it might sound. What I had to find was a place that was out-of-plain-sight inside the vehicle while remaining inconspicuous yet easily accessible on the outside. For me, it turned out that a convenient exit point was inside the bottom storage compartment that's under the master bed. I carefully drilled two 5/8" holes about two inches apart for a pair of [4" bulkhead barrel connectors](#), then installed the connectors. Under the fire extinguisher and the master bed I drilled a 1" hole that goes from the bottom storage compartment to the RV interior.

Noji (left), Lisa (bending), and Gary KG7FXG at Field Day



I unscrewed the threshold from the doorway to route my coax. I routed two [20-foot sections of RG-8X](#) through the 1" hole, then installed them onto the bulkhead barrel connectors. I laid the coax comfortably on the floor just inside the RV door and re-installed the threshold over the pair. Finally, I coiled up the remainder of the coax and hung them on a pair of [Command hooks](#) that I adhered to the cabinetry.

RV pass-through, cont'd



The test

Testing the two pass-through holes meant testing the feed line connections using the coax I installed, an external antenna, and test equipment, which in this case were a continuity tester, an analyzer, and my trusty rig. The transceiver is a Yaesu FT-857D, which is a 100-watt *shack-in-the-box*, meaning I could conveniently connect both coax cables to the same rig, which I did. If you look closely at the photo on the right, you can see my “continuity tester” attached to the end of one cable, and it’s nothing more than an SO-239 connector with a 100-ohm resistor across it. Once both cables tested for continuity, I connected an end-fed HF POTA antenna and a vertical mobile VHF whip outside, and my analyzer showed that I had not messed up my installation too badly. More importantly, people that heard me on VHF reported full-quieting, while HF contacts in Oklahoma, Georgia, and Ohio said I sounded like I was in their backyards.



Summary

You can install a permanent pass-through system for your feed lines into your RV by drilling holes from the inside to the outdoors at strategic locations, then installing bulkhead barrel connectors. Two of the most important considerations for the holes and cabling are keeping them out-of-sight, if possible, and making sure they are water-tight. Don't forget the three rules at the conclusion: **test** (continuity), **test** (analyze), and **test** (make contacts)!

Noji Ratzlaff KNØJI

Strays – Emissions exposure limits



On 04 December 2019 the FCC published a [proposed set of updated rules](#) for declaring RF (radio frequency) exposure compliance by each broadcast and amateur radio station. The rules went into effect on 03 May 2021 and asked all broadcast and amateur stations to provide proof of compliance by 03 May 2023. To be clear, the allowable RF exposure limits hadn't change, but **the need to prove that your station meets those limits had**. Previously, specific types of typical amateur radio setups were exempt from the need to demonstrate compliance with the exposure rules, but now the exemptions are made based on your ability to show that your station doesn't need an evaluation. Fortunately, the evaluation for the non-exempted stations is simple for most installations.

Step 1 : Determine whether your station is exempt on one band

Assuming the worst-case (no feed line or instrumentation loss) power output, start with the **maximum power level your radio can output** on the band of choice. If that amount is less than the amounts listed in this table for the selected band, then your station is exempt from further evaluation, and you simply need to fill out [Worksheet A*](#) of the FCC form **for each band on which you plan to operate** that station, then **repeat this for each radio**. File away these worksheets, as proof of your exemptions.

Band	Max (W)	Band	Max (W)	Band	Max (W)
160 meters	500	20 meters	225	10 meters	50
80 meters	500	17 meters	125	VHF	50
40 meters	500	15 meters	100	70 cm	70
30 meters	425	12 meters	75	33 cm	150

Step 2 : Perform the evaluation for your station on one band

First, divide the power level from Step 1 by 4, to calculate your reasonable worst-case **average power** on the band of choice. Next, research the **gain of your station antenna**, which might not always be easy. Then, use the [VP9KF calculator](#) (there are others as well) to enter the average power, the antenna gain, and the highest operating frequency in MHz of the band in consideration. Using the online calculator you can also specify the distance of your antenna to humans, and immediately learn whether your station is in compliance, by a simple "Yes" or "No" in the results.

Fill out [Worksheet B*](#) of the FCC form **for each band on which you plan to operate** that station. For Step (G) use 50%, for Step (H) use $3/6 = 50\%$, and for Step (I) use $15/30 = 50\%$. If you find that your station is not in compliance, you can re-run the evaluation by inserting more realistic values. File away the worksheets, as proof of your compliance evaluations.

** You might have noticed that the ARRL booklet that includes the worksheets is outdated. The worksheets themselves, however, are still valid as of this newsletter publication.*

2026 Spring Potluck Dinner



2026 Spring Potluck Dinner



UARC 2026 Board

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For-late breaking news listen to the UARC Information Net, Sundays at 8:30 pm on 146.620– or visit the [announcement page](#).

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We encourage you to submit original pictures (highest resolution), articles, software and hardware descriptions, appropriate humor, and responses to editorials. Email the content, pictures attached, to the editor at editor@utaharc.org

The **Utah Amateur Radio Club** was organized under its present name in 1927, with its beginnings dating back as early as 1909, then becoming affiliated with the [American Radio Relay League](#) in 1928. UARC is a 501(c)(3) non-profit organization and holds a club station license with the call sign **W7SP**, a memorial to Leonard “Zim” Zimmerman, amateur radio pioneer in the Salt Lake City area.

The club meets each month except July and August. The meetings are usually held on the second Thursday of the month at 7:30 PM in the University of Utah's [Warnock Engineering Building](#), room 2230.

Club membership is open to anybody interested in amateur radio; a current license is not required. Dues are \$20 per year. Send dues to club secretary James Bennett, 4960 W 5400 S, Kearns, Utah 84118. Send address changes to kk7avs@gmail.com

Tax-deductible monetary contributions are gladly accepted. Send directly to club treasurer Shawn Evans, 1338 S Foothill Dr, #265, Salt Lake City, Utah 84108-2321. For in-kind contributions, please contact uarc@xmission.com to make arrangements.

UARC maintains the 146.620– and 146.760– repeaters, which are administered by the [UARC Repeater Committee](#). Direct comments and questions to any committee member. The 146.760– repeater is on IRLP node 3352.

Call the **UARC Ham Hotline** at 801-583-3002 for amateur radio information, including club, testing, meeting, and membership information. Leave a message, and we'll make an effort to return your call.

