

# THE SIGNAL

Newsletter of the  
Bella Vista Radio Club

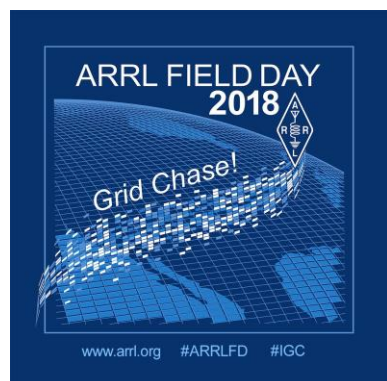


Vol. 1, No. 2 – May 2018

Weekly Nets: 3820 KHz Roundtable, Sundays @ 4 p.m. • 147.255 Repeater Net, Wednesdays @ 8 p.m.

Monthly Meetings: 1<sup>st</sup> Thursdays @ 7 p.m., Highland Christian Church, 1500 Forest Hills Blvd, Bella Vista

Club Call: N5BVA • Repeater: 147.255 +offset, pl 162.2 • Website: [www.bellavistaradioclub.org](http://www.bellavistaradioclub.org)



**ARRL FIELD DAY**  
**coming up**  
**June 23-24!**

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# ANOTHER GREAT TURNOUT FOR BVRC APRIL 2018 PROGRAM!

BVRC experienced another exceptional turnout from our valued members on Thursday evening, April 5. Their efforts to attend were rewarded with a stellar program provided to us this month by Steve Vandiver – AF5YM from Newton County, AR. Steve has tenured a career with the U.S. government, and is more than well-versed in the program topic he presented on EMP – Electro Magnetic Pulse, which has taken him to many interesting places around the globe.



To summarize the great program he bestowed upon us, Steve shared that an EMP can come from various sources, which can result in devastating effects on infrastructure and computers: street lights become inoperative, microprocessors are disabled, transformers are paralyzed, and the death or serious wounding of computers, printers, cellphones, and – radios.



However, there are countermeasures that can be taken to protect devices from an EMP: Unhook the antenna from the radio and unplug it, use Iridium satellite foam, construct a Faraday Chamber using Jet Lube, Kraftex copper tape, and aluminum (not conventional) duct tape. Thanks for coming, Steve. We appreciate you!



**BVRC President Glenn-WB5L presents Steve Vandiver-AF5YM with Certificate of Appreciation**

Fred -K5QBX gave a Field Day preparation report: Preps are going well, but needing volunteers to help raise antennas, and needing operators. Anyone interested, please contact Fred or Steve – K5SAW.

Meeting minutes can be viewed at [www.bellavistaradioclub.org](http://www.bellavistaradioclub.org).

Two new club officers were also announced: Wayne Patton – K5UNX has assumed the position of BVRC Secretary, and Jen Kessler – KG5WOC is the new BVRC Social Media Director. Congratulations to both of you, and best wishes on your endeavors!!!





## Member's Corner

B  
V  
R  
C

K5QBX – Fred continues to enjoy his QRP gear, has another QRP kit to assemble, and is planning more portable operations from the field.

KG5SZQ – Chris is continuing to enjoy his new HF privileges using his Kenwood TS-520 transceiver.

KC7DQY – Paul is using a new 200' long EFHW (End-Fed Half Wave) HF antenna at a height of 30 feet, which enables him to participate in the Club's 3820 Roundtable on Sunday afternoons.

WBØAUQ – Bob has generously donated several items, including an ICOM IC-28H 2 Meter mobile/base radio, an Astron 10 amp Astron 10 amp p.s., and a Uniden scanner, to be given away as Door Prizes during upcoming club meetings.

K5DB – Don has replaced his laptop computer, refreshed his N3FJP 'AC Log' program, and is busily readying his HF mobile station in preparation for operating mobile from south central to northwest Arkansas, during the upcoming Arkansas QSO Party on May 12<sup>th</sup>.

K5XK – Ron is looking for an interesting portable location in which to operate during the Arkansas QSO Party.

KF5ZIM – Gregg is anxiously awaiting warmer temps to finish up his nice tower and antenna project.

K5SAW – Steve now has two "Foxes" with directional antennas for 2 Meter "Fox Hunts," and is hoping they will be of interest to youths.

KG5ANT – Frank is reporting improved performance from his HF Hexbeam with the addition of a new balun.

K9IED – Bob Heil, a friend of BVRC, is reporting his XYL Sarah's health is improving after discovering Multiple Myeloma last fall.

## BVRC VE REPORT

**Since test session inception July 2017:**

### **CONGRATULATIONS!!! :**

Dominic Lannuti, KG5UDU – New Tech, General, & Extra  
John Benningfield, KEØOHC – New Technician & General  
Christopher Diebler, KG5SZQ – New General  
Donald Welch, NØELS – New General  
Jennifer Kessler, KG5WOC – New Technician  
Stephen Rockwell, KEØPWA – New Technician  
Alan Katz, KEØQFO – New Technician  
Jessie Costulis, KG5YJV – New Technician  
Jeffrey Newberry, KG5YJW – New Technician  
Stanley Elmore, Jr. – New Technician  
Jessie Costulis, KG5YJV – New General  
Dana Dixon, NØYJB – New General



**Test sessions are each 2<sup>nd</sup> Saturday of the month, 2 pm, Highland Christian Church**

# A (Mostly) Solid Signal

by Ron – K5XK

One of the best wide-area coverage repeaters to our south is the 442.300 UHF Repeater at Brentwood, south of Fayetteville. It is part of the N5KWL Linked System of seven repeaters in Benton, Carroll, and Washington counties, owned and maintained by Tem Moore, N5KWL. John-N5SU in Elkins, and I, often use Tem's link for local rag chews, since John can't reach most of the Benton County repeaters from his QTH. John conveyed the following outage report from Tem:

*"The site was hit so hard that it blew the fuse on the power pole. I worked all day Thursday repairing the damage. The tech with AT&T was also repairing massive damage in their building. He is awaiting more parts to complete his repairs. The service breaker was tripped, the breaker in the box was tripped, and the Triplite surge protector was blown to bits. I had to replace the microwave radio on the tower, the switch, the cat 5 surge arrestor, and the Triplite surge arrestor. I didn't take the service monitor."*

*I assumed all was well with the digital as well as the analog RF systems since they worked using my HT. Only when I left the site I discovered that the digital system was partially deaf. Later I discovered the same for the analog. I need to return with a spare digital radio and I suspect the preamp we replaced has been blown."*

On our trip to the recent Russellville hamfest, Tem commented that he "would rather work on a repeater than talk on one." We asked BVRC Repeater Trustee Fred-K5QBX about the vulnerability of BVRC's 147.255 Repeater at Jane. Here's Fred's reply:

*"Our repeater isn't totally protected from lightning strikes, but the good news is that the antenna is below several cellular antennas. They provide some degree of protection, plus we have a PolyPhaser lightning arrester in line (thanks to Mike Smith). The likelihood of us taking a lightning strike is also reduced by the fact we are not at the top of the tower."*



Tem Moore, N5KWL, at work on the 444.30 Brentwood repeater site, south of Fayetteville.  
(Photos courtesy John – N5SU)



## From the Desk of the President

We had a great success at the April meeting! Steve Vandiver, AF5YM gave us an enlightening presentation on EMP technology and ways to counter an EMP. A big THANK YOU goes out to Ron Evans K5XK for continuing to perform as the club program committee chairman. We have some great programs lined up for May and June. Don Banta-K5DB will present a program on "Ambitious Radio Operating" in May, and Fred Lemley-K5QBX will talk about Field Day as the program in June. If you have an interesting presentation to pass along, please let us know.

We have some great upcoming events with the Pea Ridge Tailgate on May 5<sup>th</sup>, The Arkansas QSO Party on May 12-13, and of course Mother's Day on May 13<sup>th</sup>. Amateur Radio Operators are "balanced", you know! It is not *always* about ham radio! I hope you enjoy the spring weather and spend some time with your family and friends. Weather nets are starting to pop up this time of year, so let's be prepared and keep an eye on the sky.

Membership Renewal has been going very well, last count we have 60+ on the roll. Some will drop off before this newsletter is published, but I believe there are only a few members who have not paid their dues as yet. We continue to grow, and I believe it's YOU that is keeping the club going strong. Our strength is not in numbers, but in fellowship and the true Amateur Spirit. Please let us know what you are doing, and how we can help. Please stop by one of our HF or VHF nets, and say hello. We LOVE to hear from you!

It is my distinct pleasure to serve as President of the Bella Vista Radio Club. I continue to be humbled with all your support. Thank you for making the club one of the best in the region!

*Glenn Kilpatrick – WB5L*

### **NEXT BVRC MONTHLY MEETING!!!**

**Thursday, May 3, 2018 – 7:00 pm**

**Highland Christian Church**

**1500 Forest Hills Blvd.**

**Bella Vista, Arkansas**

### **May Program: *A Newcomers Guide to Ambitious Radio Operation***

Don – K5DB will conduct our May program, and is looking forward to sharing the many varied aspects of this topic. He has a bang-up PowerPoint presentation for all attending to behold. If you're new to amateur radio, this will be very informative and beneficial for you, but veteran ops will enjoy also.

See [www.BellaVistaRadioClub.org](http://www.BellaVistaRadioClub.org)  
for the location, a Google Map, and more.





# ARKANSAS QSO PARTY RIGHT AROUND THE CORNER - MAY 12!!!!

The singular event that showcases our great State of Arkansas in the amateur radio world is on the horizon.

The 2018 Arkansas QSO Party (ARQP) will take place on Saturday, May 12 from 9am-9pm Central time (this is 1400Z, May 12 – 0200Z, May 13).

Amateur operators from all over the U.S., Canada, and the world will be tuning up and down the HF bands listening for, and trying to contact, any station in Arkansas that they hear.

They will be hoping to work an Arkansas station, for example, on a particular band or mode for their Worked-All-States or 5-Band-Worked-All-States award(s). They might be badly needing a particular Arkansas county. Or they may be operating in the ARQP for the fun of it.

**We hope that anyone reading this article that operates HF modes SSB, PSK, and/or CW, from ANY county in Arkansas will join us and participate in this annual event.**

Yes, technically, the Arkansas QSO Party is a contest. And whenever the word “contest” is mentioned, it turns many hams *off*. Usually they are more interested in DXing, traffic handling, rag chewing, etc.

However, the Arkansas QSO Party, like most of the other state QSO parties, is a *very informal* atmosphere when considering that even though it is a contest of sorts, you can make it whatever you want. You can exert an extra amount of sweat and effort in working other stations as fast as you can, or you can take the casual approach and operate at your own pace and leisure. Either way, you can meet a lot of great folks the world over and have fun doing it. Many amateurs do not participate in contests, but they do participate in their state QSO parties. Perhaps you might consider doing the same?

To be honest and frank, Arkansas is generally *not* a ham radio contesting state. Most of the hams in our state are not that interested in contests – which is fine. As with any other hobby, individuality always plays a part in the particular aspects of the hobby that one enjoys and devotes their time to. Don't misunderstand, Arkansas is home to many contest enthusiasts...and good ones. But the fact that Arkansas isn't as avid about contesting as

some other states, causes Arkansas to be a RARE find on the ham bands. As you operate in the ARQP, you could very well here someone say to you (possibly several times), “You're my first Arkansas! Could I swap QSL cards with you, please?” “Thanks for Arkansas!”

In 2000, after a 25-year absence from the air, the ARQP was resurrected and for the past 17 years we have seen a steady increase in participation and excitement from our Arkansas amateurs, as well as fantastic mobile, portable, and rover station activity, of which we are hugely grateful.

This year the co-bonus stations for the ARQP will be W5AHS and WR5P. We have mobile stations that will be traveling to many counties, along with portable and rover stations, ***but it is our home stations that are critical to the success of the Arkansas QSO party.*** And, it doesn't matter about the number of stations operating from any given county – the more the merrier!

When Saturday, May 12 arrives, thousands of hams the world over will be tuning the SSB, PSK, and CW bands for Arkansas stations. *We need our Arkansas hams to be on the air and CQ-ing to give those operators outside of our state someone to contact.*

If you are interested in having some fun and participating in this year's Arkansas QSO Party, all the information you need for viewing, downloading, and/or printing – Operating Tips, Rules, and many other aids – are available on the ARQP website: [www.arkqp.com](http://www.arkqp.com).

If you have any questions about the Arkansas QSO Party, just e-mail the ARQP Chairman, Don – K5DB, at [arkqp@cox.net](mailto:arkqp@cox.net), and he will be happy to answer any of them.

***IF YOU'VE NEVER OPERATED IN THIS EVENT, OR PLAN TO OPERATE AGAIN, WE WOULD LIKE TO CORDIALLY INVITE YOU TO JOIN US! GIVE IT A TRY! YOU JUST MIGHT ENJOY IT, AND (NO MATTER WHERE YOU ARE OR WHAT COUNTY YOU RESIDE IN) YOU'LL MAKE SOMEONE, SOMEWHERE VERY HAPPY IN WORKING THE STATE OF ARKANSAS.***



**FROM OUR NEW SOCIAL**

**MEDIA DIRECTOR**

**Jen – KG5WOC**



**Please consider subscribing to our Facebook and Twitter feeds for reminders of our twice weekly nets, club meetings, hamfests, and other planned activities and events. Social media can be a great benefit to the Amateur Radio Service as it has the capability of reaching out to a broad audience by helping to close the gap on communicating club information and messages to those who are not consistently 'on the radio'. The reality of it is, we live in an age that is saturated by social media, so we must find a way to incorporate this trend into our own way of communicating. The beauty of this is that our club will become stronger in numbers and in turn can lead to even greater fellowship!**

*73! Jen – KG5WOC*



# WELCOME NEW BVRC MEMBERS!

John Henley  
KG5TTZ

Paul Aue  
KF5ONV

Larry Bilderback  
KD6IRI

Doris Bilderback  
KD6WQB

Chuck Healy  
W0CEH

Lorrie Healy  
N1RNI

Joe Hott  
WD9AEN

Steff Leffler

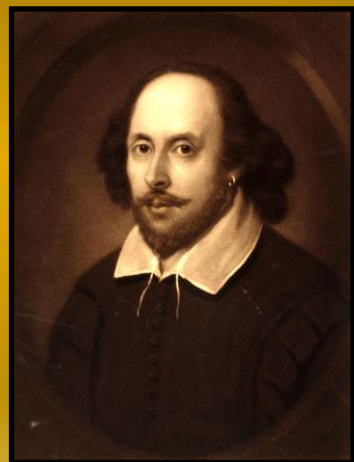
Randy Moll

Mark Schneiderhan  
KD8NLM

Steve Vandiver  
AF5YM

Dana Dixon  
N0YJB

You don't have to write like William "Bill" Shakespeare in order to write an article for The Signal. --- In fact, we prefer articles without the words "thy", "whilst", "'tis" and "oft".



Working on a new kit or homebrew project? Have you recently received a rare or interesting QSL card to share?

Received a new radio award? Or just have a cool photo (ham radio related) or some comments to share with other club members? Maybe you have acquired a new piece of equipment, or constructed a new antenna? Taken a trip focused around ham radio to share an amateur radio related experience? Why not write an article for The Signal? The article can be short or long, simple or elaborate. Please include pictures! We're always looking for material for the BVRC newsletter and feedback from our readers goes a long way toward keeping the newsletter interesting. So why not give it try? Write an article and send it to the newsletter editor, and we'll get it in there! It's fun, and at the same time your contribution helps support BVRC and our hobby! Articles can be submitted electronically or on paper, whichever way you feel most comfortable with. Send pictures, too! As The Signal editor, I *particularly* look forward to putting a new issue together when I have material submitted by our club members. Hope to hear from you soon & 73! (Send it in!)

*Submit your material to:*

Via e-mail: [arsk5db@gmail.com](mailto:arsk5db@gmail.com)

Via regular mail: Don Banta, K5DB

3407 Diana St.

Springdale, AR 72764





## **Volunteers Are Needed To Assist In The Following Areas**

- Room Setup - before and after club meetings; assist with audio & video, moving tables & chairs, etc.
- Refreshments - bring tasty treats & make coffee prior to, and during, meetings.
- Greeters - wear Name Tags/Badges & greet arriving members and guests, ask to sign-in & get a name tag, show refreshments & restrooms.
- Technician Licensing Class Organizers / Facilitators.
- Ham 101 Facilitators - to organize and facilitate a follow-up class with 'What now?' guidance for new licensees.
- Elmers - experienced hams who will mentor newly licensed hams.
- Social Coordinator – plan periodic socials, potlucks, and other activities occasionally outside of club meetings that are family friendly.

Don't see anything you're interested in? Let any of the officers know! There's a place for you.



Keep these hams in your thoughts and prayers

✱ Jeffers & Sonndra Dodge, KK6LNC - intestinal surgery

✱ Bob & Carol Wilson, KA6SUD & KD6UOM - Bob, a former BV alderman & BVRC member, suffered a stroke in 8/15 and continues to struggle with heart issues and a brain injury.

✱ Bob Heil, K9EID's XYL Sarah - as many of you know, Bob presented our September program to a packed house last year. His XYL Sarah (who ran Heil Sound) has had months of chemo for treatment of Multiple Myeloma, and is much improved. Bob asked us to convey that he misses his radio friends.

## **New Department Starting Next Month**

As this is just the second issue of "The Signal", we of course are still in the infancy stages of developing a top-notch newsletter for BVRC members. On that note and beginning with the June issue, we will be featuring a Member Spotlight segment on a BVRC member each month. Be watching.....



# High School Radio Clubs – Past & Present

By Ron – K5XK

While enjoying an 'Eyeball QSO' with new member Paul Dixon – KK5ll in his Springdale hamshack recently, I spotted an interesting QSL card in his collection. It was K5TQC the callsign for the Fayetteville High School Amateur Radio Club during the 1960s. Paul remembered that he and Mark Whatley, K5XH, are alumni of the school club, although they were in different graduating classes. I recently spoke with Mark, who had some interesting recollections...



*"The club station was on the second floor in a converted janitor's closet. As I recall, there was an E-W dipole strung between the two N-S wings of the building. I think it was an 80 or 40 meter wire. The rig was a Heathkit Apache transmitter, a Hammarlund HQ-110 receiver, some kind of B & W electronic TR switch, and a Heath SB-10 SSB adapter. I don't think the SB-10 was ever used. Nobody knew what SSB was good for back then!*

*I was associated with the club for almost all three years while I attended FHS (1963-1965). I got my Novice license during the summer of '63 which I guess was after my first year. I was allowed to spend my "study hall" period in the radio shack instead of in the regular big room with all the other students. I was in heaven! I would sit in the shack and talk on the radio (before I had even a novice ticket) while under the supervision of one of the licensed students. The only one I remember was K5KRA, Jerry Rosa (Silent Key). When it came my time to transmit he would reach over and touch me and then I would flip the "big switch" on the front of the Apache to engage the transmitter, thereby keeping things legal! I learned many years later that Jerry became a nuclear engineer and became involved in cleaning up waste sites. He apparently paid the price, because he died of cancer.*

*Oh! A bit of history trivia – I was sitting in the shack a little before noon on November 22, 1963 when I heard the first reports about shots being fired in Dallas. I was in Buell Woods math class a short time later when they announced over the PA that President Kennedy was dead.*

*About halfway through my senior year (1965) someone trashed the shack. I don't remember any real damage being done – just QSLs torn off the walls and papers scattered around. Mr. Benton saw it and that was the end of K5TQC, to my knowledge. I don't know if the station was ever active again.*

*That year I had TWO study hall periods. So, I was really fond of the time I had in the shack. A lot of the time I was in there all by myself, as by this time most of the other guys had graduated. So shutting down the station was really tough on me 'cause I got thrown in with the riff-raff in the normal study hall rooms for the rest of the year!*



**Mark-K5XH with Terry-AB5K (on right) at Mark's QTH in Fayetteville**

Gravitating to the present, Don – K5DB has been assisting his cousins, John-W5OX and Shelly-KE5DX, in the Boone County area with the new Alpena High School Radio Club – callsign W5AHS. The club is really doing well with a lot of enthusiasm from the students. Since its inception about 15 months ago, they have already participated in last year's Arkansas QSO Party, Field Day, and Sweepstakes. Of the 8 members, 2 of them are Amateur Extras with the remainder holding Technician licenses (and already studying for their General!).



# The Invention of Smith Charts

*by Steve Werner – K5SAW  
BVRC Technical Officer*

A large part of amateur radio involves the matching of some generator (transmitter) to some load (antenna). A Smith Chart is a wonderful tool to simplify the design of radio frequency systems, but most ham radio operators are not familiar with a Smith Chart beyond the questions asked on the license exam, such as:

## Group E9G – The Smith chart

Which of the following can be calculated using a Smith chart?

- A. Impedance along transmission lines
- B. Radiation resistance
- C. Antenna radiation pattern
- D. Radio Propagation

What type of coordinate system is used in a Smith chart?

- A. Voltage circles and current arcs
- B. Resistance circles and reactance arcs
- C. Voltage lines and current chords
- D. Resistance lines and reactance chords

Which of the following is often determined using a Smith chart?

- A. Beam headings and radiation patterns
- B. Satellite azimuth and elevation bearings
- C. Impedance and SWR values in transmission lines
- D. Trigonometric functions

What are the two families of circles and arcs that make up a Smith chart?

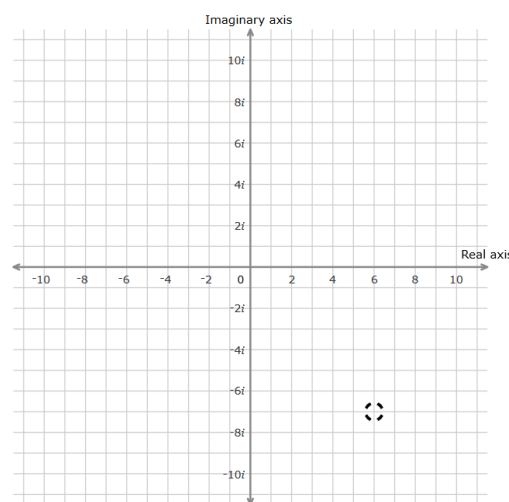
- A. Resistance and voltage
- B. Reactance and voltage
- C. Resistance and reactance
- D. Voltage and impedance

The best transfer of energy from the generator to the load occurs when the output impedance of the generator equals the input impedance of the load. Often, transmitter output impedance (usually 50 Ohms) will not match the impedance of the antenna system for the broad range of frequencies used in amateur radio today. The antenna can certainly be adjusted to provide a better impedance match for some frequencies, but an antenna impedance matching circuit (tuner) is the most common solution for broad band radio operation. The advanced mathematics required to design these matching circuits provided the incentive to develop a simple, intuitive antenna and transmission line matching tool. It is typical to plot the complex numbers involved in the matching calculations on a complex plane (Figure 1) where the resistive part of the impedance is plotted on the horizontal axis (real axis), and the reactive impedance from inductors and capacitors is plotted on the vertical axis (imaginary axis). However, this graphical approach did not provide a good intuitive feel for the antenna matching problem. While working at Bell Labs in 1937, Phillip Smith – W1ANB (SK 1987) proposed a radical new graphical approach that we now call a Smith Chart to help visualize the antenna matching parameters.

The first thing Mr. Smith did with the complex plane was discard everything left of the imaginary axis since he did not need negative resistance values in our antenna matching network design.

The next Smith Chart transformation was to grab hold of the top and bottom of the vertical axis and bend all the vertical lines from 0 to infinity into circles. These are the real axis resistance values from the complex plane with the origin (0 Ohms) at the left edge of the outer circle

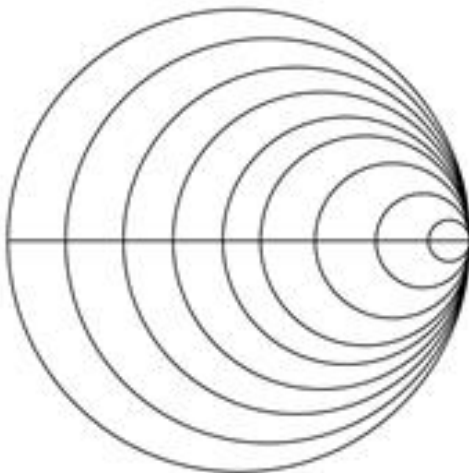
Figure 1. Complex Plane





and positive infinity on the right edge of the outer circle in Figure 2. Each circle represents a constant resistance value.

Figure 2. Constant Resistance Circles

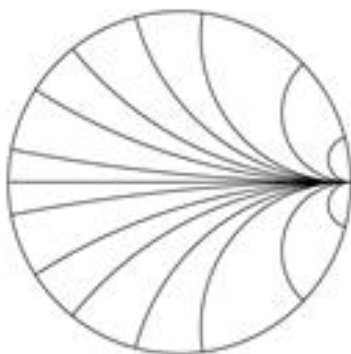


Phillip H. Smith



Because of folding the positive and negative (infinite) ends of the imaginary (vertical) axis into a circle, the horizontal lines from the complex plane are bent into arcs. These arcs as shown in Figure 3 represent the constant reactance values from the complex plane.

Figure 3. Constant Reactance Arcs

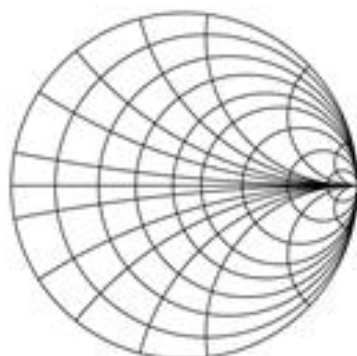


The overlay of constant resistance circles and constant reactance arcs creates the Smith chart as seen in Figure 4.

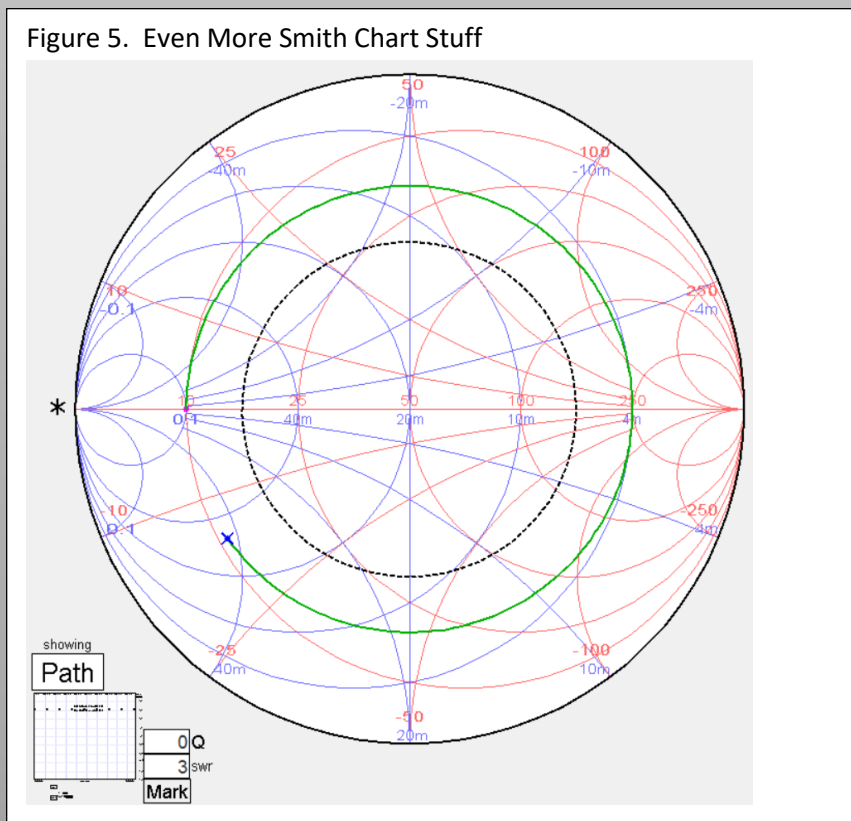
To recap transformation from the complex plane to the Smith Chart

- The vertical axis turned into the circumference of the circle, and it is called the reactance axis.
- The horizontal axis turned into the straight-line diameter of the circle, and it is called the resistance axis. This is the only straight line in the Smith Chart.
- The origin (0 Ohms) is on the left edge of the chart and the infinite ends of the positive vertical axis, negative vertical axis, and positive horizontal axis all come to a point on the right edge of the chart.
- The vertical resistance values turned into nested circles, and these are called constant resistance circles.
- The horizontal reactance values turned into arcs, and these are called constant reactance arcs.
- The center point of the circle called prime center, and this is the point where the impedance matches 1 to 1 in the matching circuit design. The prime center can be any numerical value, but it is often normalized to 1 so you can use the chart with any transmission line impedance by the appropriate multiplier. (i.e. multiply by 50 for a 50 Ohm transmission line.)

Figure 4. The Smith Chart.



I think this covers all the Smith chart questions on the extra class exam. However, there are a couple of other things to point out (see Figure 5).



The dotted black circle in the interior of the Smith Chart is called the line of constant SWR, and the size of this circle can be set to any SWR value. Anything inside this circle will have an SWR less than the designated value with the 1:1 match being at the very center of the chart. The blue arcs and circles in this diagram are for constant admittance and constant susceptance values, and these will come in very handy when you are working with parallel circuits. Since the Smith Chart includes all the resistance values from 0 to infinity and all the reactance values from negative infinity to positive infinity, this small circular chart greatly reduces the paper size when compared to the complex plane chart.

I hope this article helps you pass the amateur extra exam, and I hope to convert some of you into SimSmith / Smith Chart fans.





# IN THE NEWS

## ***Amateur Radio in the News:***

[This ham radio operator could save your life one day](#)

[Ham radio helps Wendell man find his voice](#)

[Connect with the Global Community of Amateur Radio Enthusiasts](#)

[Yakima County volunteer radio operators critical to emergency response](#)



**WHERE DID THE TERM  
"73" IN HAM RADIO  
TERMINOLOGY COME FROM?**

Another radio amateur researched this a long time ago, and this was the best answer he found:

It was the "Wild West". The days of Samuel F.B. Morse and the telegraph. Winchester had developed a new weapon, which was probably one of the greatest inventions of the times: the Model 1873 repeating rifle. It was a grand invention, and news of it spread like wildfire across the nation. Everyone wanted one. It was the talk of the town and of the West. Telegraph operators in wishing each other "have a good day", "best wishes and regards", or "good luck", began wishing each other "73".....and it stuck.

# VANITY CALLSIGNS

by Don – K5DB

If you're a new ham, you may have already asked yourself, "How do I get a vanity callsign like some of the other hams I've become acquainted with?"

Although the process is probably more tedious than it needs to be, it is certainly something that any ham can do. If you're thinking along those lines, let's take a look at how you go about getting your special callsign:

First, the cost – to change to a vanity call, it's free. As of September 2015, the FCC no longer charges a fee for vanity call signs. (Some organizations will handle the application process for you, like the W5YI organization. However, they will charge you a fee for that service. Personally, I wouldn't go that route. Do it yourself for free like I have many times.)

The basic steps to getting your special call sign are:

- Choose one or more call signs that you'd like.
- Find your FCC Registration Number (FRN)
- Log onto the FCC Universal Licensing System (ULS)
- Apply using "Request Vanity Call Sign"
- Monitor

## 1. Choose A Call Sign

The first step is probably the most fun - choosing what call sign you'd like to have. This will be restricted as to the class operator license you hold.

You must hold an Amateur Extra class license to request a 1X2, 2X1 (Example: K5AA, WG5B, NØRM, KDØD etc.), or an Alpha-2X2 callsign (AA5XR, AEØDY, etc). To get a K, N, or W 2X2 callsign (KX5AA, WGØBI, NNØCF, etc.) you must hold a current Advanced Class license or a current Amateur Extra class, and the callsign must, of course, be available.

The other callsigns, which are available, can be acquired by Technician Class license holders or above, such as the 1X3s (NØABC, W5XYZ), or 2X3s (WF5GLX, NRØWFD, etc).

*There is one exception to all these callsigns: Any call beginning with AH, NH, KH, or WH is restricted to Hawaii amateurs only, and any call beginning with AL, NL, KL, or WL is restricted to Alaska amateurs only.*

Now for the callsign itself. – What kind of pattern do you want it to follow?

You might want to get a 1X3 call in which the last three letters are your initials. In my case, that would preferably be K5RDB, N5RDB, or W5RDB, since I live in the FCC 5<sup>th</sup> call district. If those weren't available, I might check the other call districts to see what was available if I wanted such a callsign bad enough – K1RDB, N7RDB, W4RDB etc.)

Or you could choose an available callsign that would denote a special meaning, such as the ham radio club in Clarksville, AR: WU5PIG (Woo Pig), or our own Bella Vista Radio Club, N5BVA (Bella Vista Arkansas). Some hams prefer repeating letters: KØYYY, W5AAA, NNØEE, WBØWWW (those can be harder to get, but some are available from time to time). The choice is of course up to you.

I bet you're now asking, "How do I find out which callsigns are available and which are not?"

An excellent website to research this is here: <http://www.radioqth.net/vanity/available> You can look up any callsign prefix/suffix combination that you want:

(See screenshot of this website on next page.....)



- home
- call lookup
- vanity calls
- available calls
- applications
- practice exams
- qsl cards
- help/links
- cw call weight
- contact us

## AVAILABLE CALL SIGNS

Last updated Wednesday, March 28, 2018 9:14:00 AM (Arizona)  
Wednesday, March 28, 2018 4:14:00 PM (UTC)

Select the desired search criteria with the fields below to search for an available callsign. You can search for specific callsign suffix characters by typing them in the field labeled "Suffix" and then clicking on the "Search" button.

It should be noted that there are valid callsigns that will not show up here simply because they have never been held by anyone since the FCC began keeping track of callsigns online. This site pulls from the current FCC data and will not be able to show these callsigns. So if the call you are interested in is a valid callsign and doesn't show up here, use the "call lookup" link to the left to search for the call. If no data is found for the call and it is a valid callsign then go ahead and apply for the call and you will likely be granted it.

\* Applications with a red asterisk next to the call are region specific and in order to be granted the call the applicant must reside in the required geographic location as indicated [here](#).

NOTE: Applications should not be filed prior to the Available Date shown unless you are filing the application as a former holder of the callsign or as a close family member.

NOTE: It is a common misconception that call signs are granted to the first person to apply on any given day. The truth is that everyone who applies for a call on a particular day is thrown into a hat and a winner is randomly selected.

Display Options			
Format	1x2	Prefix	K
District	7	Suffix	
			Search

Click on the "Search" button to initiate a search.

You should probably choose a few call signs that you'd be happy with and submit them in order of preference. Your first choice may not be available for a number of reasons, such as someone else may have just applied for it. **However.....if you want to ensure you get the callsign you want, choose one that the website indicates is *immediately available*.** If you choose a callsign(s) that other hams are also wanting, you will enter a competition with them, in which case is basically a lottery. The FCC computer will randomly choose the winner and assign the callsign to that person. However you wish to perform this part of your quest for a vanity callsign is up to you, of course.

When you have your list compiled, you're ready to apply!

## 2. Find Your FCC Registration Number (FRN)

If you have an FCC radio license, you have an FRN. It's right there on your license, under your address in the top section. Think of this as your *user name* for the ULS (Universal Licensing System) website. Besides your FRN you'll need a Password and to do that, you'll need to register with the FCC. You can do that here: <https://apps.fcc.gov/coresWeb/publicHome.do>

The screenshot shows the FCC Registration System (CORES) website. The page has a blue header with the FCC logo and navigation links. Below the header, there's a yellow banner for 'FCC Registration'. The main content area is white and contains a section titled 'FCC Registration' with a sub-header 'FCC Registration'. Below this, there's a paragraph explaining the registration process. At the bottom, there's a section titled 'Select one of the following:' with three columns. The first column is 'REGISTER' with a sub-header 'Register and receive your FRN' and a button labeled 'REGISTER'. A red arrow points to this button. The second column is 'UPDATE' with a sub-header 'Update your registration information' and a button labeled 'UPDATE'. The third column is 'SEARCH' with a sub-header 'Search for public FRN information' and a button labeled 'SEARCH'.

In a few days the FCC will send you an e-mail giving you your FCC generated password, at which time you can change it over to whatever password you want.

## 3. Log onto the FCC ULS

Next, you need to log into the ULS, in which you'll need your FRN and your password for the site. Here's the website page: <https://wireless2.fcc.gov/ULsEntry/licManager/login.jsp>.

#### 4. Request a Vanity Call Sign

Once you get into the ULS, click on your call sign and then select **Request Vanity Call Sign**. Follow the instructions and fill in all the required fields which will include the **Primary Station Preference List**. This is where you to enter your list of requested call signs in order of preference. Then submit your request. (In my personal opinion, if you chose a callsign from the RadioQTH website that noted the callsign is "Immediately Available" and that's the call you really want, that is the only callsign I would list in the Primary Station Preference List.)

**5. And now the fun part (not) – WAIT and monitor.** After your vanity application hits the FCC computer, it usually takes 3-4 weeks before the FCC robot takes action on your request. *Be patient!!!!!!*

After midnight of the date you submit your application, and any other time after that, you can monitor its progress. The best website to use for this is: <http://ae7q.com/query/>. The AE7Q website is directly tied-in to the FCC's vanity callsign section of their computer. It updates every 24 hours at midnight, Eastern time.

On AE7Q's home page, enter your callsign(s) in this box.....let's say you're checking on the callsign K5WTH. You enter that call, and click the LOOKUP tab.

Site navigation:

- Application notes
- Explanatory notes
- Other tools main page
- Query tools main page
- Message board
- Silent Key callsign harvesting
- Web site news (2017-06-21)

Amateur  
Extra  
7  
Query tools  
Query tools main page

Powered by  
APACHE  
ULS  
amazon  
web services  
phpbb  
PostgreSQL  
Powered

AE7Q database server #1 status as of Wed 2018-03-28 @ 15:16:25 CDT

DB server: db.G.micra	FCC weekly file Sun 2018-03-25 @ 00:39:33 CDT	FCC daily file Wed 2018-03-28 @ 07:05:17 CDT	Latest ULS query Wed 2018-03-28 @ 14:31:15 CDT	Next ULS query Wed 2018-03-28 @ 16:10:00 CDT	Last action date Wed 2018-03-28	Latest ULS Tue 2018-03-27
License DB history						Vanity grant
Application DB history	Sat 2018-03-24 @ 04:59:56 CDT	Wed 2018-03-28 @ 09:53:07 CDT	Wed 2018-03-28 @ 10:58:03 CDT	Wed 2018-03-28 @ 17:25:00 CDT	Wed 2018-03-28	Payment (Not required)

1x2 & 2x1 callsign availability summary, by callsign region

Callsign region	Currently available	Pending application	Expired < 2 yr	Canceled < 2 yr	Active		Total
					Normal	Vanity	
1	0	6	139	41	1585	2311	4082
2	1	7	224	39	1646	2165	4082
3	0	4	213	42	1565	2258	4082
4	1	4	187	39	1430	2421	4082
5	0	4	199	32	1504	2343	4082
6	0	12	233	48	1394	2395	4082
7	1	3	227	47	1401	2403	4082
8	4	2	256	44	1563	2213	4082
9	1	2	193	45	1571	2270	4082
10	1	8	211	37	1622	2203	4082
11	793	1	14	5	157	130	1040
12	2	0	16	2	118	96	234
13	85	1	13	5	222	190	516
Totals	829	54	2125	426	15778	23398	42610

Site information:  
This site provides simplified web pages that support handheld computers, PDAs, and web-enabled phones. From your handheld device, go to [ae7q.com/pda](http://ae7q.com/pda)

Show license, trustee, & application history, (callsign):

Show vanity applications received from (date or date reference): yesterday

Show vanity application & license processing on (date or date reference): today

Show application processing calendar for: March 2018

Show manual cancellations in the last 30 days

Show licensees with 7 or more license records

☒ Show individuals ☐ Show clubs



You'll then see a page that shows you 3 sections:

The first section shows who the last holder of the license was:

**Amateur  
Extra  
7  
Query tools**

**Retrieving license, trustee, & application history for**

**K5WTH**

**K5WTH** is restricted to Technician class operators or higher.

**K5WTH** is expired and is [available](#).

tion Number.

- Click on a column heading hyperlink
- Applicant types of callsigns assigned
- Pre-ULS callsign records are shown
- Each list is ordered by active callsign

Entity Name	Applicant Type	Operator Class	Region / State	License Status	Grant Date	Effective Date	Cancel Date	Expire Date
<a href="#">Harris, William T</a>	Individual	General	5 / AR	Expired	2005-03-02	2005-03-02	2017-03-03	2015-03-02

The next section shows the history of who has applied for the license. If you see your application and it is at "Pending Level 2", Pending Level 2 is a fancy name for "on hold". It has reached the FCC computer and it will remain in this status until around 3-4 weeks from the date you applied, at which time the FCC robot will take action on your application within that time frame.

**Retrieving applications for**

**K5WTH**

**K5WTH** is restricted to Technician class operators or higher.

**K5WTH** is expired and is [available](#).

month old have a **Gray** background.

- Click on a column heading hyperlink for an expl
- When two receipt dates & purposes are shown for receipt date & purpose of the last change; the sec
- The FCC application database does not indicate f callsigns). Thus, an [application status](#) of Granted
- Examine the callsign license history if necessary.
- Applicant callsigns assigned as vanity callsigns a
- The list is ordered by [Receipt Date](#), then [ULS Fi](#)

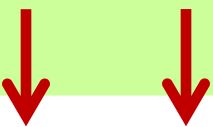
Receipt Date	Applicant Callsign	Region / State	Entity Name	ULS File Number	Application Purpose	Payment Date	Last Action Date	Application Status
Mon 2018-03-12 / Mon 2018-03-05	KGSBLO	5 / TX	CUNNINGHAM, WILLIAM C	0008121300 (Online)	Amendment /Modification	(none)	2018-03-13	Pending Level 2
Tue 2018-03-06 / Mon 2018-03-05	"	"	"	0008121300 (Online)	Amendment /Modification	(none)	2018-03-07	Inactive
Mon 2018-03-05	"	"	"	0008121300 (Online)	Modification	(none)	2018-03-06	Inactive
Fri 2017-08-25	KSTNY	5 / AR	Sage, Todd A	0007904574 (Online)	Modification	(none)	2017-09-12	Granted
Fri 2017-03-31	KGSOKI	5 / TX	Brooks, Ronald D	0007722080 (Online)	Modification	(none)	2017-04-18	Granted
Mon 2017-02-06	KFSYMK	5 / NM	CARROLL, DUANE	0007649444 (Online)	Modification	(none)	2017-02-24	Granted
Wed 2005-02-09	KDSRON	5 / AR	Harris, William T	0002040089 (Online)	Modification	2005-02-10	2005-03-02	Granted

The last section shows AE7Q's prediction for the application. It shows the date your vanity call application was received at FCC, the date the FCC robot will process the app, and the predicted application outcome. If you see "Assignment" in the right-hand column, more than likely the call will be assigned to you, and is going to be yours. Shortly after your application is processed on the process date, you'll receive an e-mail from the FCC with a link you can click for 30 days to view and/or print your new license.


(If you chose a callsign from the RadioQTH website that noted the callsign is "immediately available" this will more than likely be the outcome. You will not have to enter any competition for a callsign with other persons, unless it is one you *really* want and attempt to get, which you could opt for also, of course.)

***Retrieving pending application predictions for***

***K5WTH***



- Click on a column heading hyperlink
- Applicant callsigns assigned as vanity
- The list is ordered by [Receipt Date](#), th



<a href="#">Receipt Date</a>	<a href="#">Process Date</a>	<a href="#">Applicant Callsign</a>	<a href="#">Operator Class</a>	<a href="#">Region / State</a>	<a href="#">ULS File Number</a>	<a href="#">Vanity Type</a>	<a href="#">Seq #</a>	<a href="#">Prediction</a>
<a href="#">Mon 2018-03-12</a>	<a href="#">Fri 2018-03-30</a>	<a href="#">KG5BLO</a>	Technician	<a href="#">5 / TX</a>	<a href="#">0008121300</a>	<a href="#">By List</a>	<a href="#">1/1</a>	<a href="#">Assignment</a>

This is the basic way of checking on the status of your vanity application. There are many other avenues and options that you can use on the AE7Q website. Play around with it, and you'll learn some other navigation techniques around that website.

Good luck on your vanity callsign pursuit!

**See you at the next BVRC meeting - May 3!!!**

## BVRC Officers:

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