



# Saturday, January 13, 2024 8:00 AM to 12:00 Noon

Thunderbird Amateur Radio Club is a 501(c)(3) non-profit organization.

This event is ARRL Sanctioned and ARCA Co-Sponsored.

This Event will occur Cold, Rain, Wind or Shine.

Come prepared

**Haven Church**  
**5902 W. Cactus Road**  
**Glendale, AZ 85304**



## General Admission Tickets

\$5 per person

One door prize ticket with  
each general admission

## Tailgater Admissions

\$10 per parking spot used or Blocked

Vendors get 2 General Admission tickets

Door Prize Entries not included

## Raffle Ticket Block Discounts

\$5 for 1 Raffle Tickets

\$20 for 5 Raffle Tickets

\$40 for 10 Raffle Tickets

\$80 for 20 Raffle Tickets

\$150 for 40 Raffle Tickets

## Additional Door Prize Tickets

Additional Door Prize tickets are \$2

## Commercial Vendor Information

**Commercial Vendors** may setup on

Friday January 12th after 5:00 PM and/or Saturday, January 13th after 6:00 AM

Vendors must supply their own tables

## Club Information

Club tables in the Club Area must be reserved in advance and are at no charge.

Club tables may only be used to offer information about the club and may only sell club based (logo) merchandise (No radios or equipment)

**Club Tables** get a total of 2 admission tickets which do not include Door Prize Tickets.

General Admission fee will be charged for more than 2 people in the vehicle.

Clubs must provide their own tables

Clubs may setup on Saturday after 7:00 AM

[www.tbirdfest.org](http://www.tbirdfest.org)

# Thunderbird Hamfest 2024 Raffle & Door Prizes

## Raffle Ticket Block Discounts

- \$5 for 1 Raffle Tickets
- \$20 for 5 Raffle Tickets
- \$40 for 10 Raffle Tickets
- \$80 for 20 Raffle Tickets
- \$150 for 40 Raffle Tickets

## Grand Prize 1



### Yaesu FT-710 AESS

### HF/50MHz 100W SDR Transceiver Includes External Speaker

The new FT-710 AESS is packaged in a sleek new compact design while providing 100W output. It also utilizes the advanced digital RF technology introduced in the FTDX101 and FTDX10 series.

## Grand Prize 2

### RigExpert AA-55 ZOOM Antenna Analyzer .06 - 55MHz



The analyzer is designed for measuring SWR (standing wave ratio), return loss, cable loss, as well as other parameters of cable and antenna systems in the range of 60 kHz to 55 MHz. Bluetooth no longer included.

A built-in ZOOM capability makes graphical measurements especially effective.

## Grand Prize 3

### Raspberry Pi 4 Computer Model B 4GB



Raspberry Pi 4 Model B is the latest product in the popular Raspberry Pi range of computers. It offers ground-breaking increases in processor speed, multimedia performance, memory, and connectivity compared to the prior-generation Raspberry Pi 3 Model B+ while retaining backward compatibility and similar power consumption. .

## Door Prizes

- Yaesu FT-70DR
- LP Coax Crimp Kit
- ARRL Gift certificates (3)



**HAM RADIO Operator RV'ers/Tenters...**



# QUARTZFEST\*

## 2024

**What?** Quartzfest® is an annual HAM Radio RV and tenters Boondocking event which is held in late January every year with dates coinciding with the Quartzsite Arizona "RV Show".

**When?** January 21st thru 27th of 2024 (make sure you add these important dates to your 2024 calendar)

**Where?** 7 miles south of Quartzsite Arizona - on US 95 at La Paz Valley Road

**Who Can Attend?** ANYONE! If you don't have your Amateur Radio Operators License yet, you'll be able to take your Amateur Radio Operators License Exams at Quartzfest®

**Cost?** FREE!!!!

Our Annual Amateur Radio "get together" is called "Quartzfest®" and is open to ALL to attend. Quartzfest® is not a club, no officers, no budget and no dues..and is absolutely FREE!! During the week of Quartzfest®, RV's are everywhere across the desert, as far as you can see..every make and model you can imagine!

There are hundreds of groups that meet in Quartzsite every year in different parts of the desert who share like interests. Our group, Quartzfest®, started out in 1997 as just a few HAM RV'ers getting together, camping in their RV's in the middle of the desert..no power, no running water. Solar Panels and Generators are in use everywhere (Porta-Potties are available for our tent campers and day visitors).

Quartzfest® is similar to a Hamfest but lasts an entire week and is packed full of scheduled Seminars and Activities. Talks range in topics from Genealogy and Crafts for Non-HAM's to Solar Power and Battery Information, Technical information for the seasoned HAM, and introductory information for the new HAM. Also included in the week's activities are VE Amateur Radio License Testing, Antenna Walkabout (touring other HAM's RV Antenna installations), Solar Walkabout, 4x4 Off Road Trip in the Desert, Prospecting, Campfires (some with musical entertainment), Pot Luck dinner, Hootenanny and lot's more!

We Camp on BLM (Bureau of Land Management) land which is FREE, but you can only camp there for 14 days at a time.

*For more information, drop a note to our  
Quartzfest\* Organizer*

*Kris - KR1SS*

*[kristynweed@gmail.com](mailto:kristynweed@gmail.com)*

*or visit us on the web*

*[quartzfest.org](http://quartzfest.org)*



2<sup>nd</sup> Annual  
**West Valley Amateur Radio Club's  
Ham Radio  
Swapfest-Tailgate**

**FREE  
COFFEE**



**WHERE**

*February  
17th*

**7 AM to 1 PM**

**Shepherd of the Desert Lutheran Church  
(South Parking Lot)  
11025 N. 111<sup>th</sup> Avenue  
Sun City AZ 85351**

**No charge for Buyers & Lookers  
Only \$10.00 per Space for Sellers  
\$15/Space for Vendors**

**All items sold "As Is".  
Items must be Amateur Radio, Computer or  
Electronics related.**

**We invite local Amateur Radio Club members to  
join us. All information & registration forms will  
be posted to our website in January.**

**Only Leashed Pets are Permitted. No Guns,  
Drugs, Alcohol or Fireworks.**

**Talk in on  
147.300+  
PL 162.2**



**CONTACT**

*Our Website will be updated soon: [westvalleyarc.com](http://westvalleyarc.com)*

*For Further information:*

Rolf, KG0KM, at 715-828-8860 or  
email: [bignorsk@hotmail.com](mailto:bignorsk@hotmail.com)



**6am  
SETUP**

**GATES OPEN  
AT 7am**

**FREE  
ADMISSION**

**REFRESHMENTS**

**TALK IN FREQ.  
146.550**

**HANDICAP  
ACCESS**



**TAILGATING**



# HAMFEST

At Valley Presbyterian Church 2800 S. Camino Del Sol,  
Green Valley, AZ. February 24th, 2024 from 7am til noon.



**\$5 table setup with fee going to the  
Valley Presbyterian Church.**

**Bring your own table, chairs & canopy.**

**[www.gvarc.us](http://www.gvarc.us)**

**Camino Del  
Sol**

**Valley  
Presbyterian**

**Continental Rd**

**2.9  
Miles**



# 2024 Prescott Hamfest

## April 20, 2024

The DX Store



R&L Electronics

## Granville Elementary School

5250 Stover Drive, Prescott Valley, AZ 86314

### Saturday April 20 Schedule

- 0800 Hamfest opens.
- 0900 to 1100 Hourly Prize Drawings
- 1130 Grand Prize Drawings (You do not need to be present.)
- 1200 Hamfest ends.

**YOU ARE ENCOURAGED TO PRE-REGISTER FOR SWAPFEST SPACES AT**  
<https://prescotthamfest.com/tailgating/>  
**DUE TO LIMITED SPACE - RVs, CAMPERS, AND TRAILERS WILL NOT BE PERMITTED.**

### Featuring:

- ✓ Tail Gate Swapfest
- ✓ Consignment Sales
- ✓ Youth Products Table
- ✓ Grand Prize / Hourly Prize Drawings
- ✓ Coffee and Donuts

**General Admission \$5.00 per person**

**Swapfest - Mostly Covered Parking Lot Spaces \$10.00 each - max 3 spaces**

**Full-Time Students FREE with Student ID / 16 Years and Younger FREE**

**ARCA co-sponsored Event**

### Grand Prizes

**YAESU FTDX10 HF/6M Hybrid SDR CW/SSB/DATA**  
**Comet CAA-500 Mark II Antenna Analyzer – 500 MHz**  
**Donated by: The DX Store & Comet Antennas**  
**YAESU FTM300DR C4FM Digital Dual Band Mobile**



**Tickets \$1 each or 6 for \$5 – No need to be present to win Grand Prizes**

Check for updates and additional details: [www.prescotthamfest.org](http://www.prescotthamfest.org)

**Contact: Hamfest Chairperson – Byron Wilkinson KK7BFL ([hamfest@w7yrc.org](mailto:hamfest@w7yrc.org))**

**NO GUNS, DRUGS, ALCOHOL, SMOKING, VAPING, OR FIREWORKS**  
**ONLY LEASHED ANIMALS ARE PERMITTED**



**Northern Arizona DX Association**  
Presents the

**Second Annual**

**FLAGSTAFF HAMFEST**

**July 2024**

**Grand Prizes, Hourly Prize Drawings,  
Tailgating, Lunch On-Site, Presentations,  
Inside Vendors, VE Exams, 2 Meter Talk-in**

# MCC Electronics

## High Tech. Hands On.



### Want to *really* learn RF ? Become an Amateur Extra ?

MCC Can help! We are proud to announce that the lab course in Analog RF Communications, **ELE261 – Communication Systems** now focuses on the amateur radio community. The class is taught by amateur extra Mike Childers K7URK, so you know it will be fun and “hands on” -- not like the old boring lecture-only college courses you may remember.



We will have access to MCC’s new Ham Shack for use during the course. And feel free to take advantage of this station outside of class with our club. Serious DX-ing awaits!

This lab class includes lecture instruction and hands-on lab bench experiments. During the semester, you will build a working AM/FM radio and use our lab instrumentation and test equipment to troubleshoot and align

each stage during construction. We will cover the theory of operation of each stage as we proceed with construction. You’ll need a basic knowledge of:

- ✓ Common components, including op-amps & bipolar transistors
- ✓ Basic familiarity with digital multi-meters and oscilloscopes
- ✓ Ability to read/draw basic schematic diagrams & block diagrams
- ✓ Basic thru-hole PC Board soldering skills
- ✓ Basic math skills in high-school level algebra



If you haven’t had any coursework in the above topics, you can still take the class with equivalent skills and experience. Here’s the general class outline (coverage can vary based on the needs of the group):

<p><b>I. Introductory Topics</b></p> <p>A. Noise</p> <p>B. Noise measurement</p> <p>C. Information &amp; BW</p> <p><b>II. AM-Transmission</b></p> <p>A. Amplitude modulation</p> <p>B. AM analysis</p> <p>C. AM generation circuits</p> <p>D. AM transmitter systems</p> <p><b>III. AM-Reception</b></p> <p>A. Receiver characteristics</p>	<p>B. AM detection</p> <p>C. Superhet receivers</p> <p>D. Automatic gain control</p> <p>E. AM receiver systems</p> <p><b>IV. FM-Transmission</b></p> <p>A. Angle modulation</p> <p>B. FM Analysis</p> <p>C. Noise suppression</p> <p>D. Direct and indirect FM</p> <p>E. PLL FM transmitter</p> <p>F. Stereo FM</p>	<p>G. FM transmissions</p> <p><b>V. FM-Reception</b></p> <p>A. Block diagram</p> <p>B. RF amplifiers</p> <p>C. Limiters</p> <p>D. Discriminators</p> <p>E. PLL receivers</p> <p>F. Stereo demodulation</p> <p>G. FM receivers</p> <p><b>VI. Digital Comm.</b></p> <p>A. Coding</p>	<p>B. Pulse modulation</p> <p>C. Pulse-code modulation</p> <p>D. Radio telemetry</p> <p><b>VII. Transmission Lines</b></p> <p>A. Types</p> <p>B. Propagation down a line</p> <p>C. Non-resonant / resonant</p> <p>D. Standing wave ratio</p> <p>E. Applications</p>
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The course meets two nights each week, Mondays and Wednesdays, at 6:30 pm on the MCC campus. Sign up here:

<https://www.mesacc.edu/enroll>



**MESA  
COMMUNITY COLLEGE**

A MARICOPA COMMUNITY COLLEGE

The Maricopa County Community College District (MCCCD) is an EEO/AA institution and an equal opportunity employer of protected veterans and individuals with disabilities. All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity,



**MARICOPA  
COMMUNITY COLLEGES**

age, or national origin. A lack of English language skills will not be a barrier to admission and participation in the career and technical education programs of the District. MCCCD does not discriminate on the basis of race, color, national origin, sex, disability or age in its programs or activities. For Title IX/504 concerns, call the following number to reach the appointed coordinator: (480) 731-8499. For additional information, as well as a listing of all coordinators within the Maricopa College system, visit <http://www.maricopa.edu/non-discrimination>.



# Amateur Radio Promote & Support



Examples



**Promote** the Amateur Radio hobby. Show YOUR amateur radio callsign on your Arizona Vehicle License Plate.

**Support** the Amateur Radio hobby. \$17 of the additional annual yearly \$25 cost for an Arizona Amateur Radio Vehicle License Plate goes to fund the following Arizona Amateur Radio activities:

College Scholarships, Youth Programs & Emergency Communications

For more Information go to: <http://www.az-arrrl.org/web/AzPlate.htm>

## The Morse Code Characters

(● means a short beep, & — is a longer beep)

A: ●—	S: ●●●
B: —●●●	T: —
C: —●—●	U: ●●—
D: —●●	V: ●●●—
E: ●	W: ●— —
F: ●●—●	X: —●●—
G: — —●	Y: —● — —
H: ●●●●	Z: — —●●
I: ●●	1: ● — — — —
J: ● — — —	2: ●● — — —
K: —● —	3: ●●● — —
L: ●—●●	4: ●●●● —
M: — —	5: ●●●●●
N: —●	6: —●●●●
O: — — —	7: — —●●●
P: ● — —●	8: — — —●●
Q: — —● —	9: — — — —●
R: ● —●	0: — — — — —

### Punctuation and Procedural Signs

/ (slash): —●●—●
, (comma): — —●● — —
. (period): ● —● —● —
? (question mark): ●● — —●●
BT (pause): —●●● —
AR (end of message): ● —● —●●
SK (end of contact): ●●● —● —

### Do I Need To Know Morse Code?

You do not need to know Morse Code for any ham license. The three classes of licenses are Technician, General, & Extra. You must pass a multiple choice exam in order to gain your license. The higher the class of license, the more operating privileges you gain. Many people stop at the first license, and that's okay, too. People of all ages have passed the test, from 8 years old on up.

## What Is Explorer Post 599?

Exploring is a division of the Boy Scouts of America serving teen boys and girls between the ages of 14 and 21 years old. Each Explorer Post centers its activities around a specialty, usually a career oriented program.

Explorer Post 599 is the Phoenix-area's Ham Radio specialty post. All of our activities center around Ham Radio or high technology education. We meet weekly in a workshop-type meeting, working on projects or learning about an aspect of radio communications. We hold monthly business meetings with a program of interest to the members.

Post 599 has a dedicated group of adults who serve as mentors to the youth members. The adults really enjoy working with the youth, and believe that young people really need Ham Radio. The adults include radio engineers, computer engineers, technicians, and non-technical people, all licensed Ham operators.

Although Exploring is for 14 to 20-year-olds, youth younger than 14 years old are welcomed as associate members and can participate in all activities.

In addition to the weekly meetings, the Post holds at least monthly regular activities, including camping, tours, special training classes, demonstrations of Ham Radio, and providing communications for public service events. All youth and adult members are encouraged to participate in all events.

Explorer Post 599 will form subgroups in various areas of the Phoenix metro area if interest is present. We'll do what it takes to bring Ham Radio to Arizona's youth.

### For More Information

Contact American Radio Relay League  
The National Organization of Amateur Radio  
[www.arrl.org](http://www.arrl.org)

### Contact Explorer Post 599

Advisor: Tom Sharp WA9OXY (602) 569-6512  
Assoc. Advisor: Scott Cowling WA2DFI (480) 929-9529  
Committee Chair: Steve Kafka WB7QGJ (480) 895-6201

### Look for us:

On-the-air on these Phoenix Repeaters: Just Call "W7BSA"  
147.02+(162.2) 146.66-(162.2) 448.80-(100)  
[www.post599.org](http://www.post599.org)

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# Ham Radio

*A hobby for everyone*  
*A hobby for life*  
*A hobby that serves*

## Contents:

*What Is Amateur Radio?*  
*Amateur Radio Privileges*  
*A Special Language:*  
*Q-Signals*  
*Phonetics*  
*Signal Reports*  
*The Morse Code*  
*What is Explorer Post 599?*



**EXPLORER POST 599**

**AMATEUR RADIO CLUB**

The Ham Radio Club For Teens

EXPLORER POST 599

## What Is Amateur Radio?

Amateur Radio is a radio service authorized by the US Federal Communications Commission (FCC) and other similar agencies in other countries. Amateur Radio is also known as Ham Radio.

To operate a Ham Radio, you have to be licensed by the FCC. To get your first license, you must pass a 35 question test (getting 26 right). This test has multiple choice answers and all allowable questions are published so you can study them. There are excellent study books available that teach you every thing you need to know, plus internet-based practice tests to build your proficiency. Many Ham Radio clubs have classes or study groups to help you pass.

Ham Radio is used to talk with other Hams across the nation and around the world. But it is so much more than just talking. Here are just a few of the many aspects of Ham Radio:

- Experimentation with electronics
- Connect computer together with radio
- Talk to astronauts in the Space Station
- Send and Receive Television Video and Pictures
- Track each other using GPS Receivers
- Communicate using morse code
- Make local telephone calls using radio
- Provide disaster communications
- Send weather balloons into the upper atmosphere
- Use ham radio satellites
- Use mobile, hand-held, and base station radios
- Talk with your friends who are hams
- Keep track of your ham family members
- Meet new friends on-the-air
- Field day operations
- Plenty of contests
- Call for help almost anywhere
- Build radios, antennas, and accessories
- See how many different people you can talk to

Ham Radio is more than a telephone, a CB, or FRS radio. It is fun, getting involved in any aspect that interests you. You can use Ham Radio anywhere, while traveling, camping, driving around town, anytime, any place. Ham Radio builds skills, not only in electronics, but also talking with others, helping others, learning geography, science, math, or whatever direction you take it in. For many, becoming Hams at a young age influenced them to become engineers and scientists.

## Amateur Radio Privileges

When you pass your Ham Radio test and receive your license, the FCC gives you the authority to operate radios in certain frequency bands. Shortwave bands allow you to talk around the world. VHF/UHF bands allow line of sight range, which is extended to statewide/region-wide/worldwide through repeaters linked together by radio and the Internet. Hams are experimenting with Microwave bands, seeing how these new frequencies act, how far can contacts be made, and what types of uses can be made of them, such as computer linking, spread-spectrum, and satellite communications.

## The Ham Radio Frequencies

### Shortwave Bands

160 Meters	1.8-2.0 MHz
80 Meters	3.5-4.0 MHz
40 Meters	7.0-7.3 MHz
30 Meters	10.1-10.15 MHz
20 Meters	14.0-14.35 MHz
17 Meters	18.068-18.168 MHz
15 Meters	21.0-21.45 MHz
12 Meters	24.89-24.99 MHz
10 Meters	28-29.7 MHz

### VHF Bands

6 Meters	50-54 MHz
2 Meters	144-148 MHz
1.25 Meters	222-225 MHz

### UHF Bands

70 Centimeters	420-450 MHz
33 Centimeters	902-928 MHz

### Microwave Bands

23 Centimeters	1240-1300 MHz
	2300-2310 MHz
	2390-2450 MHz
	3300-3500 MHz
	5650-5925 MHz
	10.00-10.50 GHz
	24.0-24.25 GHz
	47.0-47.2 GHz
	75.5-81.0 GHz
	119.98-120.02 GHz
	142.0-149.0 GHz
	241.0-250.0 GHz
	All above 300 GHz

Look at all those frequencies! Compare it with the 40 channels at 27-MHz in Citizens Band (CB), or the 14 channels in the 460-MHz Family Radio Service (FRS) band

## A Special Language

As in any specialty, Hams have their own special lingo. These abbreviations are especially useful in Morse Code to reduce the number of letters that need to be sent.

### Q-Signals

<b>QRM</b>	Man made interference
<b>QRN</b>	Natural interference (Static)
<b>QRP</b>	Low power
<b>QRZ</b>	Who is calling me?
<b>QSB</b>	Your signals are fading.
<b>QSL</b>	Acknowledge receipt, "Okay", or a contact card
<b>QTH</b>	Location
<b>73</b>	Best wishes
<b>88</b>	Hugs and kisses (just for fun)
<b>YL</b>	Young Lady (any female operator)
<b>OM</b>	Old Man (any male operator)

## Amateur Radio Phonetics

Phonetics allow spelling a word or a callsign with words starting in the letter. It prevents confusion when letters sound similar, like "F," "S," and "X." For example: "My name is Bill, spelled **Bravo India Lima Lima**"

<b>A</b> LPHA	<b>J</b> ULIETT	<b>S</b> IERRA
<b>B</b> RAVO	<b>K</b> ILO	<b>T</b> ANGO
<b>C</b> HARLIE	<b>L</b> IMA	<b>U</b> NIFORM
<b>D</b> ELTA	<b>M</b> IKE	<b>V</b> ICTOR
<b>E</b> CHO	<b>N</b> OVEMBER	<b>W</b> HISKEY
<b>F</b> OXTROT	<b>O</b> SCAR	<b>X</b> -RAY
<b>G</b> OLF	<b>P</b> APA	<b>Y</b> ANKEE
<b>H</b> OTEL	<b>Q</b> UEBEC	<b>Z</b> ULU
<b>I</b> NDLA	<b>R</b> OMEO	

R-R-T Characteristics	Readability R	Strength S	Tone T (Hz)
1	Unreadable	Faint signals, barely perceptible	Distorted or irregular, very rough and broad
2	Barely readable, occasional words distinguishable	Very weak signals	Very rough, irregular, very faint and broad
3	Readable with considerable difficulty	Weak signals	Rough or irregular, filtered but not filtered
4	Readable with difficulty, no errors	Fair signals	Rough only, some trace of filtering
5	Partly readable	Fairly good signals	Filtered, regular, but still strongly irregular
6	N/A	Good signals	Filtered tone, definite trace of ripple modulation
7	N/A	Moderately strong signals	Mostly pure tone, trace of ripple modulation
8	N/A	Strong signals	Near perfect tone, slight trace of modulation
9	N/A	Extremely strong signals	Perfect tone, no trace of ripple or modulation of any kind