

The *Microvolt*

March 2023



Prologue

Publication: *The Microvolt* (USPS 075-430) is the official publication of the Utah Amateur Radio Club, Incorporated, 3815 S 1915 E, Salt Lake City, UT 84106. It is published monthly except August. Subscription is included with club membership at \$20 per year. Single copy price is \$1.50. Periodicals postage paid at Salt Lake City, Utah. Postmaster: send address corrections to *The Microvolt*, c/o James Bennet, 4960 W 5400 S Kearns UT 84118.

Deadline for submissions is the 24th of each month prior to publication. Reprints are allowed with proper credits to *The Microvolt*, UARC, and authors. Changes in mailing address should be communicated to the Club Secretary: James Bennet, 4960 W 5400 S Kearns UT 84118.

Club: The Utah Amateur Radio Club was organized under its present name in 1927, although its beginnings may date back as early as 1909. In 1928, it became affiliated with the American Radio Relay League (club #1602) and is a non-profit organization under the laws of Utah. It holds a club station license with the call W7SP, a memorial call for Leonard (Zim) Zimmerman, an amateur radio pioneer in the Salt Lake City area.

Meetings: 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, generally in room 1230 or 2230, sometimes in 2250 or 105.

Membership: Club membership is open to anyone interested in amateur radio; a current license is not required. Dues are \$20 per year, including a *Microvolt* subscription. *The Microvolt* and membership cannot be separated. Those living at the same address as a member who has paid \$20 may obtain a membership without a *Microvolt* subscription for \$12. Send dues to the Club Secretary: James Bennet, KK7AVS, 4960 W 5400 S Kearns UT 84118. Let the Secretary know if you prefer the electronic edition of *The Microvolt* instead of the printed version.

Contributions: Monetary contributions are gladly accepted. Send directly to the Club Treasurer: Chuck Johnson, 1612 W. 4915 S. Taylorsville, UT 84123-4244. For in-kind contributions, please contact any board member to make appropriate arrangements.

Repeaters: UARC maintains the 146.62- and 146.76- repeaters. The repeaters are administered by the UARC Repeater Committee. Comments and questions may be directed to any Committee member.

Ham Hot-Line: The Utah Amateur Radio Club (UARC) has a Ham Hotline, 583-3002. Information regarding Amateur Radio can be obtained, including club, testing, meeting, and membership information. If no one answers leave your name, telephone number and a short message on the answering machine, and your call will be returned.

UARC 2023 Board

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Late Breaking News

For late breaking news listen to the UARC Information Net Sundays at 21:00 on 146.62 or set your browser to:
<http://user.xmission.com/~uarc/announce.html>

Writing for Microvolt

Submission of original pictures, articles, book reviews, nuggets of humor and responses to editorials are encouraged. Photographs in the highest resolution are best. Plain text without embedded pictures but labeled to correspond to pictures. E-mail to the editor: martij@xmission.com.

We are grateful to the management of XMission, our Internet Service Provider (ISP), for the donation of this Web-Page service.



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<http://www.xmission.com/> Or call 801 539-0852

Latest News

UARC meetings

UARC meetings are held on the second Thursday of each month except for July (annual steak-fry) and August (vacation). Meetings are held in the “Warnock Engineering Building” on the campus of the University of Utah. Watch the UARC website for the room and topics.

We encourage attendance of the live meeting, but we will also do our best to stream the meeting live on UARC’s YouTube page:

<https://www.youtube.com/c/UtahAmateurRadioClub>.

From there, look for the feature that is marked “live.” The meeting should commence at 7:30. There should be some chatter on the channel by about 7 P.M. and you can connect in that period to make sure everything is working.

March’s meeting features Gary Crum KK7DV on High-Altitude Research Balloon flights and Linda Reeder N7HVF on Echolink.

Our Cover

Drone’s eye view, balloon launch at QuartzFest in Arizona and February meeting.

License Classes

Utah County:

In-person license classes will be offered at the City of Orem during 2023. Each course will cost \$10. Register at: <http://psclass.orem.org/>. These are “homework” courses; You’ll be expected to complete an assignment (and email me the results) by the start of every class period, even the first one. No course textbooks are required. Then again, these courses will be casual, hands-on, and fun for those who remain awake.

Please contact Noji (nojiratz@hotmail.com or 801-368-1865) with any questions about the courses.

Technician, General: KK7AVS 147.16 mHz, positive offset, tone 127.3, Technician every Monday from 6:30 PM every Monday, General every Tuesday 7 PM – 9 PM.

Extra: In person, contact Ron Speirs K7RLS@comcast.net.

Silent Key

Mickey Applebaum KE7NZA became a silent key on February 22. I think most of us knew Mickey and if not I’m fairly certain you knew of him. He was the driving force behind Utah SAG and known among other things for organizing communications for bike races, foot races, parades, emergencies and more. He will be missed leaving a huge hole in Utah SAG.

Local Beacons, SDR

K7JL: 10 watts, 28.2493 mHz CW, Sandy.

KK7AVS: SDR 33, 70 cm, 1.25M 2M 6M 10M 20M 40M, Kearns.

Photo Credits

QuartzFest Chuck Johnson WA7JOS, Ron Speirs, February meeting.

Lt. Kije of the Airwaves

There’s much in the news about Chat GPT (Generative Pre-training Transformer), an artificial intelligence program capable of generating readable text on most any topic. And now Google is releasing its own program, Bard, doing the same

sort of things. Supposedly Chat GPT has been able to pass numerous professional tests including the medical boards. People have hooked it up to voice recognition and synthesis and plugged it into their radios for QSO's. Should we worry about computer programs having hobbies?

I've been involved with Artificial Intelligence since the middle 70's first with programming languages, then with symbolic algebra, natural language processing, complex adaptive simulation systems, and finally with real-time image understanding. Over these years many programming fads have come and gone – early demo's, lots of funding, fall flat on their face – AI winter. Start all over again and call it something else. The current fad is Deep Learning and Neural Nets.

Like young animals, these AI systems are trained by some agent (parent, programming team) to achieve some result (survival, continued funding). In the case of Chat GPT and the like, these are simulated neurons: various stimuli and training parameters to create a desired behavior. For Chat GPT the input is a very large library of text. In other cases, this could be months of boring surveillance video, or terabytes of young people dancing and singing, or weeks and weeks of whales singing. The AI program accepts a task and parameters for its neurons and generates some text. This is judged against some expected result which might be a human annotated video, the labels associated with people dancing, or prerecorded animal sounds. The neural parameters are twiddled and the process repeats itself until time or funding runs out. Similar optimization methods are used by the algorithms behind the concentrators used to determine what you see on social media.

What matters most is the training set. The current system has a fixed text library. While this is fairly large, it is not the exabytes of the internet. If the system can't find anything useful, it makes stuff up. I asked about myself and after some initial

hesitation, I learned I'm a member of the Utah State Bar, got a Bachelor's degree from USU, a law degree from the University of Utah and served as a clerk for Utah State District Court – a total fabrication. Others report similar results summarized as "Useless but interesting drivel". This is very worrisome. Here are "alternative facts", made up, on command, for free, in proper English, and well organized.

Where's the money? AI operations burn through money like rocket fuel. They are man power intensive, require special hardware, and a way to monetize the results. The funding organizations expect a large return for their billions. They sell advertising.

Most amateur radio conversations are fairly stilted: who are you, where are you, what's my signal like. We might even branch out into the weather. Are you communicating with a real person or a computer? It matters if we can't separate the drivel from truth or if the other side is adept at telling you what you want to hear.

Lt. Kije was a fictional soldier in the Tsar's army, a hero on paper that did not exist but immortalized by the composer Sergei Prokofiev. The clerks that began the deception created the hero the Tsar wanted to believe in. There may be our own Lt. Kijes out there telling us what we want to hear.

KI7NNP

QuartzFest 2023

Chuck Johnson WA7JOS

Tom, WA7ZRG and Laird WB7TGP talked Arlene (KD7IZC) and I (WA7JOS) into trying winter camping at QuartzFest. We were going to go in 2022, but COVID and other factors squashed that trip. We looked forward to going all last year.



Unfortunately, Tom and Laird both had things pop up at the last minute that prevented them from going, but we went anyway. QuartzFest is a week long "boon docking" event held on BLM land just south of Quartzsite Arizona on the last weekend in January. This has been going on for 15-20 years. There is no charge for camping and no fee for the "fest" although donations are encouraged. Attendance was just under 600 with RV's sprawled across 70 acres.



The town of Quartzite has a population of ~2400 on Interstate 10 twenty five miles east of what's left of the Colorado river. There's been successful (and unsuccessful) gold mining in the area for years, movies filmed and novels written. It is usually about 60 degrees and sunny. But this year, we were in the 40's Sunday through Thursday with 40 MPH winds out of the north but finally warmed



up on Friday and Saturday. Everyone was bundled up in winter gear.

It is a laid-back event with a few seminars each day. Topics included tropospheric ducting, StarLink, metal detecting, pico balloons, bicycle repair, RV maintenance, digital Amateur TV, generator maintenance and troubleshooting, and LED's. The classes are in the open - bring your own chair! But they did have a good PA system. We had a seminar about balloons, but winds were too strong to launch.



There were some contests on the radio, a dutch oven cooking demonstration, gold panning, crocheting, weaving and VE exams. Evening programs included SSTV from ARISS, a pet parade, singing around the campfire, and the natural history of the Sonoran Desert - geology, flora and fauna. There was a walk-around for solar installations, and another for mobile antenna installations. For those with ATV's or 4X4's, there was a half-day off-road trip.



a few old UARC friends: Pat, AD7V; Kelly, KV7V; Ron, K7RJ; and Mike, WA7ARK.

It was a long drive - 650 miles each way. Pulling the trailer, that was 2 days each way. We also had to be flexible to travel between storms.

Each afternoon, there was a "happy hour" with reports of the day's activities, announcements of the following day's activities, and drawings for prizes. There was a swap meet on Friday and Saturday mornings. I bought a \$10 tool and came home with the rest of my money. There was also a high altitude balloon launch Saturday morning. It carried a cross-band repeater and APRS. It went to somewhere around 100,000 feet, burst, and was recovered that afternoon.



On Saturday, there was a grand prize drawing for an Icom IC-7300. I didn't win that. Arlene won an MRE (Meals Ready to Eat - three for the price of one). I won a QuartzFest T-shirt (size SMALL!) and a bag of Anderson Power Pole connectors.

Clint, KA7OEI also attended, and we met up with

Product Review: Daniu ADS5012h Oscilloscope

We've seen many low-cost test instruments debut over the last few years. The nano-VNA, the tiny Spectrum analyzer, and Seesii signal generator are all in the \$100 range for those that need them. The Daniu ADS5012h is a hand-held, single channel, 100 MHz digital oscilloscope for sale by a number of distributors. There are many cheaper ones, but typically they're limited to 200 kHz bandwidth – not all that useful. I have an Agilent 100 MHz two channel digital scope but it takes up quite a bit of

space on my crowded lab bench and was about 10 times as expensive. With some trepidation I ordered one and am pleasantly surprised.

Specifics:

- 100 mHz , sample rate 500 ms/s
- 50mv – 800v
- Single channel
- 2.4” color TFT display
- Battery, USB charged, 10 hours.



It works, a bit clumsy until you get used to its foibles. What's it good for in the shack? Audio monitoring, debugging home brew projects, HF signal monitoring, and power supply issues come to mind.

Is it accurate? I set my signal generator to 5 mHz and that's what it read. I set it to 100 mHz and it looks about the same and it registers 100 mHz. For fun, I set it to 120 mHz, a little less amplitude, but that's what the scope says. Of course this is for precision sine wave – 100 mHz square wave might not look so nice.

GOOD

Small, easy to read screen, can store multiple captured wave-forms, frequency reasonably accurate, rise time acceptable, 1x, 10x probe, bright yellow soft case, cheap!

BAD

Single channel, limited resolution, instructions have automatic translation humor, some instructions don't match the buttons (there's no OK), BNC must fit through the yellow case with tight tolerance. You can't download the saved wave-forms to your computer. Your laptop may not provide enough power to recharge the battery. The case generates a lot of static and picks up hair that you might not want to see.

If you're desperate, \$19.79 for a DIY 2.4” kit, with unspecified frequency response, assembled versions run from \$40 to \$60. Lab bench models in the 100 mHz range run from \$500 and up depending upon the number of channels.

VHF Society Swap Meet

Saturday, February 25th was the final swap meet at the current location. Antiques were on offer, colorful antennas, books, radios, and Yaesu door prizes.



Member of the Month Scott Rosenbush



This month we are featuring new amateur operator Scott Rosenbush, K7HSR. Scott obtained his General class license last June two weeks before field day. Scott attended Morris Farmer AD7SR's General class and studied using hamstudy.org. He passed both the Technician and General class licenses the same day. The main reason Scott got into amateur radio was emergency preparedness to be of service when the big day comes.

Two weeks after he passed his test Scott went to Payson Lakes for field day and helped set up. The club encouraged Scott to get on the air. Despite being nervous he loved it.

Scott has a Yaesu FT-400 in his car and a Kenwood TMV71a in his shack. Scott is impressed by, and grateful for, multiple Elmers who have assisted him.

Scott started on UHF and VHF with a passed down J-Pole antenna from Jeri WJ3RI, and help from Craig Bledsoe KL7H and Chip Andrews KL7CA.

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Scott is now on the air on HF as well. Another ham friend introduced Scott to digital modes and FT-8 and has already worked all states. He has made contacts around the world including South Korea, South Africa and New Zealand. He has recently seen stations from North Korea (!) on the air on FT-8 but has not made contact.

Scott is looking forward to spring time. He is excited to get started with the Parks On The Air program.

Scott is originally from New Jersey. He worked in sales for 40 years. In the second half of his career Scott sold herbs to nutritional supplement companies. In anticipation of retirement Scott and his wife Cindy moved to Salt Lake City eight years ago. Scott and Cindy have two cocker spaniels.

Scott is a member of UARC, ARRL, the Salt Lake City Crossroads Radio Club and the Salt Lake City Rotary Club and involved in a Rotary International Fellowship of ham radio operators.

Scott is an avid student wants to learn all he can about the different aspects of amateur radio. He has plans to pursue FEMA and ARES training and has already taken CERT.

Scott and his wife Cindy love to ski. Scott is also involved in politics.

Scott we wish you the best in all of your endeavors.

73 N7HVF Linda Reeder