Isle hams enjoy annual radioactive pilgrimage to Waimea swap meet

BIARC took its January gathering on the road, since the annual hamfest (postponed from Nov. 4) was held on the same day as our regular monthly meeting: Saturday, Jan. 13.

The Big Island of Hawaii International Swap Meet/Hamfest is sponsored by the Kohala Hamakua Radio Club (Website: http://www.hamradioandmore.com /khrc.htm) at the Waimea Community Center.

In addition to browsing through tables of assorted amateur radio gear and related flotsam and jetsam, hamfest participants enjoyed networking, guest speakers and catching up on the latest projects of our farflung isle ham population.

At the Jan. 13 Big Island of Hawaii International Swap Meet/Hamfest, amateur radio devotees from across the Big Island convene at the multifaceted annual event at the Waimea Community Center.

-- Photos by Linda Quarberg

All invited to BIARC luncheon Fridays at Nani Mau Gardens

The BIARC luncheon is held every Friday at Nani Mau Gardens on Makalika Street off of Railroad Avenue, or Route 11. Members arrive anywhere from 11 a.m. to 11:15 a.m.

It is a buffet luncheon at a cost of $15, paid in the gift shop. This cost includes walking in the garden also.

We have one table in use at the present time, but can always add another if attendance increases. Hope to see some of you there.

73,

Barbara Darling, NH7FY

Everyone invited to HPP Radio Day on April 28

Everyone is invited to HPP Radio Day from 9 a.m. to 4 p.m. April 28 at the Hawaiian Paradise Park community center at 17th and Makuu.

"We want to let everyone know that the event is open to all hams, especially the newest ham operators," said coordinator Mike Stratton, KH6PAC.

"Our plan is to have several different radios set up," said Mike. There will be lots of activities and demonstrations.

Among the participants thus far: the HPP Community Emergency Response Team (CERT), the HPP Emergency Radio Team, folks from ARES, the Amateur Radio Emergency Service, and the Puna Emergency Radio Club, and various others.

"K0BAD has stated he will do a digital radio setup, KH6SF will do packet, WH6LU will do DX," said Mike. "We will also have a 2-meter set up, and are hoping to have someone doing CW and HF."

Set-up will start at 8 a.m., with tear-down scheduled around 4 p.m. All are welcome. For more details, email Mike at jefffan@hotmail.com.

Don't forget to sign up for the QTH.NET Email Listserve

The Big Island Amateur Radio Club continues to build and streamline its email listserve.

"The main advantage of using such a listserve is that you do not have to individually maintain a list of club-member email addresses in order to enter into important conversations related to club operations," explains coordinator Les Hittner.

"The listserve can be set up to maintain two independent lists; a general one and an administrative one. The advantages follow:

• Members do not have to maintain their own list of BIARC email addresses.

• Messages sent via the listserve can be archived. This is particularly important for the administrative listserve where club business might be discussed.

• The listserve provides a secure means of sending club email.

• Listserve emails are easily identified by their unique Subject Line headings.

• Access to the Listserve can be placed on the club's website.

Additional information can be found at:
http://mailman.qth.net/

In order to become a member of the BIARC Listserve, simply send me an email:
lhittner@hbci.com
and let me know that you want to be placed on the listserve. I will enroll you and then send you an information email about its use.

Mahalo,
Leslie Hittner, K0BAD

~~ Free classified ads ~~

BIARC friends on the Kona side have two of these 2-meter radios for sale. They can transport them to the East Hawaii side. Both radios are reported to be very clean. They come equipped with the stock power cord, too, which is not in the picture. The mounts are on the radios. Each of the Kenwood TM-271 A units is selling for $90. If interested, please contact
Gary Eberle at gjehawaii@yahoo.com.

To submit a ham-related ad, please email it to lcritchlow@mac.com by the 20th of the month for publication in the following month's newsletter. Mahalo.

New series of Technician License prep classes to be offered around the island

Free Tech Classes

Hilo - Aupuni Conference Room:
February 15, 2018
February 22, 2018
March 1, 2018
March 8, 2018
March 15, 2018
March 22, 2018 (Exam)

Kona – West Hawaii Civic Center:

March 22, 2018
March 29, 2018
April 5, 2018
April 12, 2018
April 19, 2018
April 26, 2018 (Exam)

Ocean View – Hove Community Center

May 3, 2018
May 10, 2018
May 17, 2018
May 24, 2018
May 31, 2018
June 7, 2018 (Exam)

Kea'au – Kea'au Community Center

November 1, 2018
November 8, 2018
November 15, 2018
November 29, 2018
December 6, 2018
December 13, 2018 (Exam)

Contact Doug Wilson (KH7DQ) at douscelle@aol.com or Ph. 985-9362

Note: Test fee of $15 (in exact cash) due at time of each exam.

A magnetic loop antenna, on duty on a bedroom windowsill.

President's message

Wake up call!
It jars us to consciousness.

Wouldn't it be better to just smell the coffee and slowly open our eyes? But sometimes we don't get to choose. Saturday, January 13, 2018 was a punch to the gut. We are still here. It was a false alarm. But: I'm awake!

For many of us, our assumptions of safety and continuity have been severely challenged. I'm old enough to have suffered a flashback to my elementary school days of the Cuban Missile Crisis. I had hoped that we would never suffer that kind of fear and terror again.

So, now that we are awake, what does it mean for us hams? We learned that our goal of preparedness has new questions posed that we should address. We are challenged by the short time frame (20 - 30 minutes, or less) inherent in the alert we received, as well as the immediate and aftermath implications of a nuclear attack. Many of us on that Saturday were on the road, away from our shacks and our families. What to do? How to attend to our own safety, as well as how to obtain the information we so badly need - quickly? How to contact our family and loved ones?

Continued on next page

WA7ZK to discuss receiving loop antennas at meeting

President Pascal Nelson has invited Mark Richardson WA7ZK from Kona to come and help us with our presentation about receiving loop antennas at our February meeting. Mark will give a small presentation on the Broad Band Receiving Loops that he has built.

"It is my hope to test and prove out a design that could be reproduced at a modest cost for those that want to build their own," said Mark. "Possibly this could evolve into a club project or how-to-do paper."

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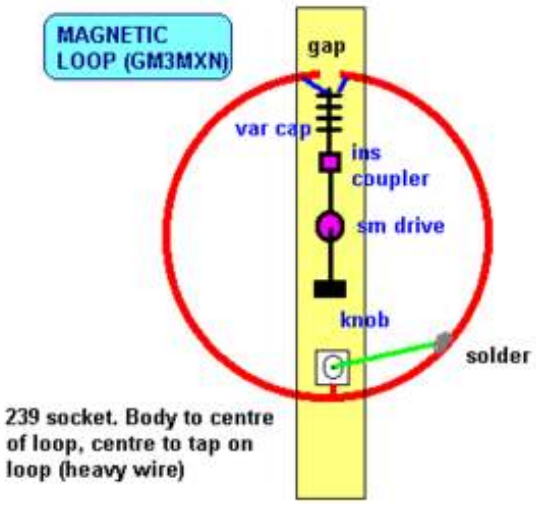

One example of a magnetic loop.

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These are human questions - not just ham questions. For those of us who have a commitment to using our ham radio skills and equipment to serve our communities in times of need it wakes us up to the need to rethink our capabilities, our competencies, and our preparations.

What do you think? We should certainly talk about this as we go forward.

At a much more mundane - but still important - level, we hams are confronted with other obstacles and difficulties. If you are a HF operator, you certainly know that we are in the depths of a propagation depression. The sun is not giving us much to work with these days. Worldwide contacts are still possible, but the bands are looking mighty dead these days. One of the unexpected revelations of this reality has been the emergence, perhaps explosion is a better word, of the digital modes such as first JT65/JT9 and now FT8. Many days the bands seem completely empty, and even unresponsive to repeated CQ using the traditional modes (CW, SSB). However, a tune across the band shows a forest of signals in the FT8 segments. In addition, conversational digital modes such as Olivia, Thor, FSQ, and others are allowing us to

Continued on next page

Donations still welcomed for World Wide Radio Operators Foundation KP4 Generator Project to aid residents of Puerto Rico

As great segments of Puerto Rico remain without electricity, the World Wide Radio Operators Foundation (WWROF) continues to welcome donations to the KP4 Generator Project, which is raising funds to purchase Honda eu2000i generators for the radio amateurs of Puerto Rico.

Contester Angel Vazquez, WP3R, will distribute the generators for emergency-related communication and other applications.

The WWROF will match the first $5,000 in donations to the generator project.

WWROF is an IRS 501(c)(3) organization.

Puerto Rico suffered extreme damage from hurricanes Irma and Maria, and while recovery efforts are proceeding, a lot of work remains to be done that will take significant time, said WWROF Chairman John Dorr, K1AR.

"Amateur Radio has filled a vital need for communications, since the storm destroyed most of the island's wired and wireless infrastructure," Dorr noted. "Many of our fellow Amateur Radio operators and contesters are among the people who suffered significant damage."

The WWROF said generators remain in high demand and very short supply.

Donate to the KP4 Generator Project via PayPal (to donations@WWROF.org), via credit card on the WWROF website (click on the DONATE button), or by check to WWROF, P.O. Box 529, Fredericksburg, TX 78624-0529.

~~ 2018 BIARC Leadership ~~

BIARC 2018 Leadership:
President Pascal Nelson, ac7n@arrl.net;
Vice President Peggy Gentle, radiopeg@gmail.com;
Secretary Les Hittner, lhittner@hbci.com;
Treasurer Paul Ducasse, ducasse@hawaii.rr.com;

Directors: Gary Schwiter, wh6eps@gmx.com;
Cory Allen, KN6ZU@yahoo.com;
Barbara Darling, nh7fy@yahoo.com;
Kim Fendt, wh6kim@gmail.com;
Bill Hanson, whanson@co.hawaii.hi.us;
John Bush, amsjbush@gmail.com,
and Bob Schneider, ah6j@arrl.org.

Program Committee co-chairs are John Bush and Les Hittner.

Another example of a magnetic loop.

Continued from previous page

make contacts to places and regions that we otherwise have little to no opportunity to work by traditional modes. Many of us “more seasoned” hams are learning new tricks and having a lot of fun. It’s also great for newcomers. The HF digital modes are making it possible to continue hamming where otherwise we would only be experiencing frustration, and perhaps loss of interest.

Another galling issue for many of us (all of us?) is the continual rise in the RF noise background. You can’t work ‘em if you can’t hear ‘em. When you have RF hash pushing your S-meter to S9 and beyond, it becomes difficult if not impossible to QSO, even with normally loud stations. Many times we can identify and mitigate noise due to factors within our own property boundaries. But what about those beyond? Your neighbor’s solar inverters, for example.

RF noise has always been a problem for hams, especially in urban locations. But, it has accelerated in spread and intensity to where most of us are affected by it. There are several mitigation strategies which can be employed to deal with this. One promising approach is the use of separate receive antennas which can be optimized for noise rejection. There are BoG antennas, snake antennas, and magnetic loop antennas. Several of us have been experimenting with and having a great deal of success with using broad-band receive-only magnetic loop antennas. This is something that we are going to be talking about in our BIARC meetings, and certainly can discuss on the BIARC listserve (you have signed up, haven’t you?).

Oh: One more thing. The Kulani Cone repeater 146.76(-)(pl 100) has been much improved lately. Participation in the morning nets, and even spontaneous QSOs, seem to be much increased over recent months due to the improved performance. We still have an antenna problem there, which will be addressed very soon. So, it’s going to get even better. We’ll talk about this some more at the February BIARC meeting.

Life is about the journey. Let’s have fun traveling along the road together with our ham friends.

Aloha,

Pascal AC7N

On top of a volcano in the middle of the Pacific Ocean

Humanitarian award goes to ham ohana of Puerto Rico, Virgin Isles

The ARRL Board of Directors has conferred the 2018 International Humanitarian Award jointly on the Amateur Radio population of Puerto Rico -- served by ARRL Section Manager Oscar Resto, KP4RF -- and the radio amateurs of the US Virgin Islands, served by ARRL Section Manager Fred Kleber, K9VV.

The island hams aided in the relief and recovery after a punishing hurricane season in the Caribbean.

The Board noted that radio amateurs in Puerto Rico and on the US Virgin Islands were "pressed into immediate service before and during the devastating storms" during the 2017 hurricane season.

"The efforts of the local amateur communities continue to support the relief and recovery efforts even now," the Board said, "and the ARRL leadership in each section continues to do extraordinary service to their communities."

ARRL established the International Humanitarian Award to recognize "truly outstanding Amateur Radio operators in areas of international humanitarianism and the furtherance of peace."

ARRL The national association for AMATEUR RADIO™

The ARRL Letter

Florida ham radio club aids homeless during recent uncharacteristic cold snap

Uncharacteristically cold weather in central Florida in early January prompted members of the North Brevard Amateur Radio Club (K4NBR) to assist the area's homeless population. The New Year began with a bitter cold front descending upon central Florida, bringing below-freezing temperatures, especially concerning for those lacking regular shelter from the elements.

NBARC members Ricky Deluco, K4JTT; Robert Ortiz, KJ4VEH; William Klosowski, K4SVT, and Michael Ellixson, KE4MWZ, set out in their own vehicles, searching the city of Titusville for homeless residents. For the next two evenings, and using Amateur Radio as communications, the group worked in the cold, wet weather for more than 12 hours, logging some 120 miles on the roads around Titusville.

The Disabled American Veteran Center in Titusville had opened its doors as a cold weather shelter and offered a warm place to sleep and eat. The ham radio group alerted local law enforcement, so they were aware of the effort and in the hope that on-duty officers might also reach out. The group was able to locate five homeless individuals on its first evening tour of the town and provide them with transportation out of the cold. Local police also contacted the team to help and to provide transportation for other homeless individuals located by on-duty officers.

One additional homeless person located late on the first night had a need for immediate medical attention and was transported to a local hospital.

-- Thanks to Ricky Deluco, K4JTT

2nd-annual AM Rally Feb. 2-4 stars the original phone mode

The second-annual AM Rally is inviting operators to explore the original phone mode over the February 2-4 weekend. Co-sponsor Clark Burgard, N1BCG, said the event "is intended to be both fun and educational." It encourages all radio amateurs to get on AM, possibly for the first time.

"Because of resurgent interest in AM, the event is also an opportunity for amateurs new to AM to learn about proper settings and get the most performance out of their station, whether it's modern, vintage, tube, transistor, software-defined, military, boat anchor, broadcast, home brewed, or commercially made," Burgard said.

The AM Rally website includes tips and suggestions for various transmitter types as well as links to additional information. Certificates will be awarded for most states contacted and most contacts overall made by stations in five power-

Continued on next page

output classes. Some "special recognitions" will be made on an ad hoc basis, Burgard said.

The AM Rally gets under way at 0000 UTC on Saturday, February 3, and concludes at 0700 UTC on Monday, February 5. Band include 160, 80, 40, 20, 15, 10, and 6 meters.

The 2017 AM Rally, which was held in April, was deemed a huge success, with nearly 1,500 contacts reported on the 72 logs submitted.

Katie Thompsen, KI7HCX.
[Todd Thompsen, W7TAO, photo]

Thousands are getting their grids on for Chase 2018!

And they're off!

New Year's Day marked the opening day for the ARRL International Grid Chase 2018 (IGC). Among those hitting their grids running was newly minted General-class operator Katie Thompsen, KI7HCX, of Mt. Vernon, Washington, who used the occasion to embark on the Chase and to get on HF for the first time using her own call sign.

The 11-year-old comes from a ham radio family.

Her dad, Todd, is W7TAO, while her older brothers are Mason, K7MWT, 15 -- who upgraded to Amateur Extra at the examination session where his sister upgraded to General -- and Tanner, K7TMT, 13.

"She called CQ Grid Square Chase on 20 meters and very quickly made 44 contacts," her dad told ARRL.

"She was very excited to work her first pileup and even had two Japanese stations QSO with her. She's anxious to continue participating in the grid square chase." Todd Thompsen said all three young radio amateurs are looking forward to participating in Rookie Roundup in April.

The IGC is off to a rousing start, with some 6,400 participants from around the globe already showing up on the Leader Board as of the morning of January 4. Point totals for the International Grid Chase are shown for confirmed contacts only, and, while the leader boards are not based on real-time data, they are updated several times a day. All contacts on all bands except 60 meters are valid for Grid Chase credit, provided both stations upload their logs to Logbook of The World (LoTW) and get a match. The objective of the year-long event is to work stations in as many different Maidenhead grid squares as possible, and then upload your logs to LoTW.

Each new grid square contact confirmed through LoTW will count toward your monthly total. Stations do not have to exchange grid squares for a valid contact, although it's anticipated that many operators will do so.

Some rare grid squares will be in demand. How about yours? Get on the air, and get behind your grid! If you can, get out there, and activate the scarce ones.

Alabama Governor Kay Ivey makes ham radio debut with state's bicentennial call sign

Alabama Governor Kay Ivey made her Amateur Radio debut on December 14 -- the state's 198th birthday -- at the same time becoming the first person to use the state's bicentennial call sign, AL2C. Alabama will celebrate its 200th anniversary in 2019, and AL2C will be on the air for 2 years as part of the statewide celebration.

"I'm very excited to see the hard work that has been in the works for some time now to promote Amateur Radio in concert with the Alabama Bicentennial celebration," said ARRL Alabama Section Manager JVann Martin, W4JVM, who was at the State Capitol for the event.

"It was great to activate the brand-new call sign AL2C on Alabama's 198th birthday, and we look forward to many more activities to come as we build up to Alabama's 200th birthday."

ARRL Life Member Receives Patent for "Cloaking" Technology

Nathan "Chip" Cohen, W1YW, of Belmont, Massachusetts -- the founder of Fractal Antenna Systems Inc and inventor of the fractal antenna -- has been granted a patent for deflective electromagnetic shielding -- essentially "cloaking" technology to defend against detection by radar and similar technologies. "Ham radio experimentation can lead to some pretty cool innovations!" Cohen said in response to a recent QRZ forum post about the patent. "Let's keep that spirit alive in 2018."

The patent covers electromagnetic cloaking/deflection of, among other things, satellites, rockets, towers, antennas, vehicles, body coverings, ships, spacecraft, and even people.

"Much time and effort has been devoted to the quest for so-called invisibility machines," the patent's background information states. "Beyond science fiction, however, there has been little, if any, real progress toward this goal."

According to the detailed description, the technology "provides one or more surfaces that act or function as shielding and/or cloaking surfaces for which at least a portion of the surface includes or is composed of 'fractal cells' (small fractal shapes, functioning as antennas or resonators) placed sufficiently close to one another, so that current present in one fractal cell is replicated or reproduced to an extent in an adjacent fractal cell. Without being limited by any theoretical explanation, surface plasmonic waves are believed to cause such replication in conjunction with evanescent waves." The resulting surface would deflect around an object.

In terms of backscatter, upon which radar systems depend, Cohen has explained it this way: "The incoming wave reflects off a boundary condition at the object. Its reflection is out of phase and phase-cancels with the incoming wave. Bye-bye, backscatter."

Chip Cohen, W1YW, makes use of a Sputnik 1 satellite model during a demonstration.

Fractal Antenna Systems first publicly demonstrated "person invisibility" in 2012 for a Radio Club of America audience. He also has demonstrated invisibility cloaks at Hamvention® and at the ARRL New England Division Convention. According to the company's BusinessWire release, "Uses of the newly patented technology extend to commercial needs such as towers, antennas, people, and shielding, but it may also be used in defense and intelligence arenas."

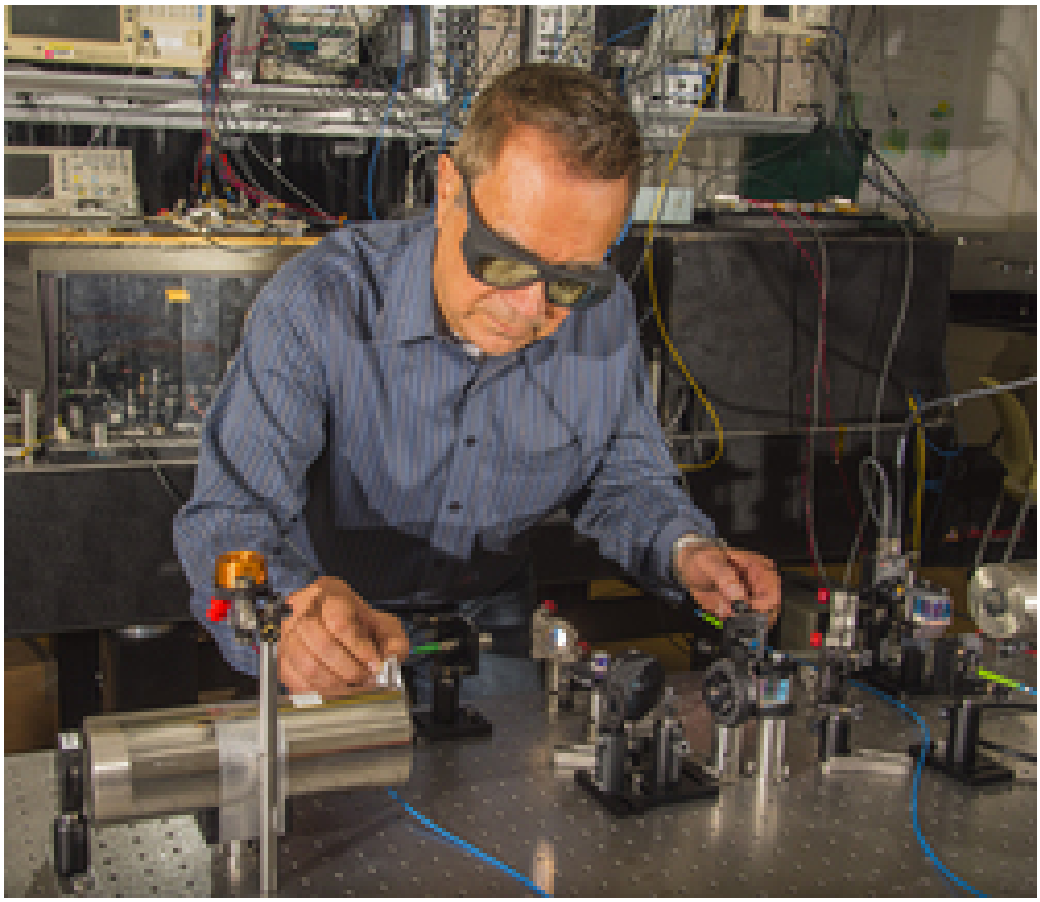
The BusinessWire release said the technology "produces the desired effects without any requirements on special orientation, composition, or shape of the object.

The cloak/deflector can be very thin, and the effect can happen over a wide bandwidth."

The company noted that cloaking applications concentrate on microwave and infrared wavelengths, but the technology and patents also apply to visible light. "Cloaking at visible light has limited needs," Cohen has said.

"Camouflage and projection methods are easier and cheaper at making something disappear to the eye. But at radio and heat wavelengths, the cloaking technology is an important enabler."

Cohen, 62, applied for the patent in 2012. An ARRL Life Member and active DXer, he has been a radio amateur for more than 50 years.



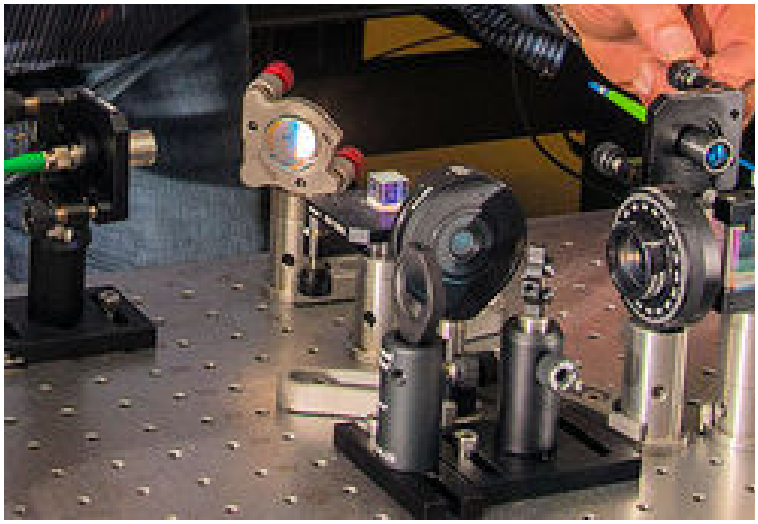
Physicist Dave Howe, AD0MR, aligns a laser beam to pass through a tiny glass cell of rubidium atoms inside the cylindrical magnetic shield. The atoms are the heart of an atomic magnetometer demonstrated as a receiver for digitally modulated magnetic VLF signals. [NIST photos]

"Quantum Radio" may offer new twist on communicating in problematic environments

Researchers at the National Institute of Standards and Technology (NIST) have demonstrated that quantum physics might enable communication and mapping in locations where GPS, cell phones, and radio are not reliable or don't work at all, such as indoors, in urban canyons, underwater, and underground. NIST announced the technology advance on January 2.

The technology may have marine, military, and surveying applications. The NIST team is experimenting with very-low-frequency (VLF) digitally modulated magnetic signals, which propagate farther through buildings, water, and soil than conventional electromagnetic signals at higher frequencies.

"The big issues with very-low-frequency communications, including magnetic radio, are poor receiver sensitivity and extremely limited bandwidth of existing transmitters and



receivers. This means the data rate is zilch," said NIST project leader Dave Howe, AD0MR.

"The best magnetic field sensitivity is obtained using quantum sensors. The increased sensitivity leads in principle to better range. The quantum approach also offers the possibility to get high-bandwidth communications like a cellphone has. We need

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bandwidth to communicate with audio underwater and in other forbidding environments," he said.

NIST researchers have demonstrated detection of digitally modulated magnetic signals by a magnetic-field sensor that relies on the quantum properties of rubidium atoms. The NIST technique varies magnetic fields to modulate or control the frequency -- specifically, the horizontal and vertical positions of the signal's waveform -- produced by the atoms.

NIST developed a direct current magnetometer that uses polarized light as a detector to measure the "spin" of rubidium atoms in a tiny glass cell induced by magnetic fields. Changes in the atoms' spin rate correspond to an oscillation in the dc magnetic fields, creating alternating current voltages at the light detector that are more useful for communications.

"Atoms offer very fast response plus very high sensitivity," Howe said. "Classical communications involves a tradeoff between bandwidth and sensitivity. We can now get both with quantum sensors," Howe speculated on an Amateur Radio application.

"The quantum radio is great fun, far better sensitivity than any other receiver, at room temperature, anyway," Howe told ARRL. "The atoms in the gas cell replace the 'antenna' and detection in the classical sense. It would be nice to try modulation in the 2200-meter band using the quantum receiver for detection."

In the future, the NIST team plans to develop improved transmitters.

In the NIST tests, the sensor detected digitally modulated magnetic field signals with strengths of 1 picotesla -- one millionth of Earth's magnetic field strength -- and at frequencies below 1 kHz.

The researchers hope to extend the range of low-frequency magnetic field signals by boosting the sensor sensitivity, suppressing noise more effectively, and increasing and efficiently using the sensor's bandwidth.

The NIST strategy requires inventing an entirely new field, which combines quantum physics and low-frequency magnetic radio, said Howe, who told ARRL that ham radio enhanced his interest in communications when he was in ninth grade in New Mexico. "So, it's what guided my interest into applied quantum physics in college. Ham radio was the bigger influence in all ways." Howe retired from NIST last September. He now is a research advisor for NIST and Colorado University.

Spyware

Secretive "Numbers Stations" Persist on HF

For many years, unidentified radio broadcasts have been transmitting coded messages, using numbers, such as "6-7-9-2-6 or 5-6-9-9-0." Even today, tuning across the HF spectrum typically will yield a "numbers station," a mechanical-sounding voice (male or female) methodically announcing groups of single-digit numbers for minutes on end. According to Radio World, you may have tuned into a spy agency's numbers station transmitting coded instructions to their minions worldwide.

Numbers station transmissions typically consist of a voice "reading out strings of seemingly random numbers," explained Lewis Bush, author of Shadows of the State, a new history of numbers stations. "These are sometimes accompanied by music, tones or other sound effects," he said. The Radio World article quotes Paul Beaumont, an associate editor of Eye Spy Intelligence Magazine, a publication dedicated to espionage and intelligence, "Voice (numbers) stations are known to be spy messages."

The article said that one of the best-known numbers stations was "The Lincolnshire Poacher," so called due to its use of "The Lincolnshire Poacher" folk song played on a pipe organ as an identifier. Radio amateurs used direction-finding equipment to pin down the station's eventual location to an RAF base on Cyprus, the article said.

ARRL member Chris Hays, AB6QK, on the west coast, said this week that he frequently hears a CW station on 7.163 MHz sending random alphanumeric characters, each group terminated by one or more question marks.

Ten Ten International

You have to make contacts to get results!

Irene Kubica, NH7PE, is an avid participant in 10-meter activity and encourages hams at all levels to join in the fun.

Upcoming events

Sat Feb 03, 2018 00:00 - Sun Feb 04, 2018 23:59
Winter Phone QSO Party

Sat Feb 03, 2018 00:00 - Sun Feb 04, 2018 23:59
Winter Phone QSO Party

Sat Apr 28, 2018 00:00 - Sun Apr 29, 2018 23:59
Spring Digital QSO Party

Sat May 05, 2018 00:00 - Sun May 06, 2018 23:59
Spring CW QSO Party

Sat May 05, 2018 00:00 - Sun May 06, 2018 23:59
Spring CW QSO Party

Sat Jun 02, 2018 00:00 - Sun Jun 03, 2018 23:59
Open Season QSO Party

The 10-10 Connection

with NH7PE,

10-10 Aloha Chapter

Have a hankering for rag-chewing?

Check into the daily (except Sunday) SSB nets at 8 a.m. HST on 28.380 and 28.800mHz. They are called from Illinois, California, Arizona, Florida, North Carolina and Michigan. Try them out.

Remember: You have to make contacts to get results!

Be sure to check www.ten-ten.org for details

Ten-Ten International QSO Parties

For those who join in the Ten-Ten QSO Parties, remember: You can assign your score to the Aloha Chapter. Logs must be postmarked no later than 15 days after the respective QSO Party.

To see what's open on 10 meters, listen to the beacons from 28.175-28.300 so you will know where DX is coming from.

The Ten-Ten International News has reprinted several antenna articles by L.B. Cebik (SK), W4RNL #41159.

Ten-Ten International pins are available for purchase at $2 each. See www.ten-ten.org for details.

CW news: FISTS Get Your Feet Wet Activity Day! Every third Sunday from 0001 to 2400 UTC on 80 and 40 meters (3.558-7.110 MHz): exchange name, QTH, FIST #, RST.

Revised ham bands

US Amateur Radio Bands

US AMATEUR POWER LIMITS — FCC 97.313 An amateur station must use the minimum transmitter power necessary to carry out the desired communications. (b) No station may transmit with a transmitter power exceeding 1.5 kW PEP.

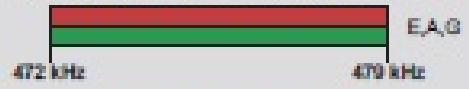
ARRL The national association for AMATEUR RADIO®

Amateurs wishing to operate on either 2,200 or 630 meters must first register with the Utilities Technology Council online at https://utc.org/plc-database-amateur-notification-process/. You need only register once for each band.

2,200 Meters (135 kHz)

630 Meters (472 kHz)

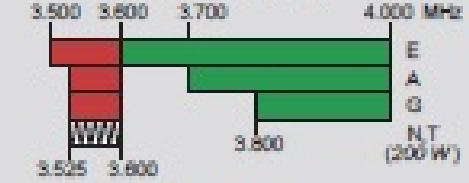
5 W EIRP maximum, except in Alaska within 496 miles of Russia where the power limit is 1 W EIRP.



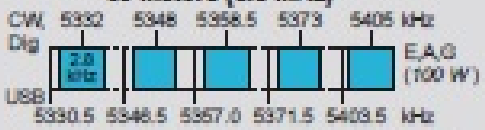
160 Meters (1.8 MHz)

Avoid interference to radiolocation operations from 1.900 to 2.000 MHz.

80 Meters (3.5 MHz)

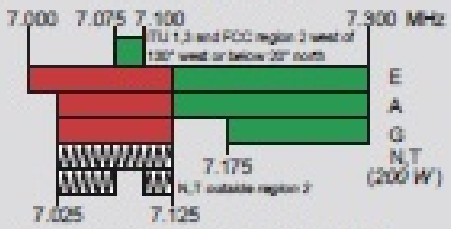


60 Meters (5.3 MHz)



General, Advanced, and Amateur Extra licensees may operate on these five channels on a secondary basis with a maximum effective radiated power (ERP) of 100 W PEP relative to a half-wave dipole. Permitted operating modes include upper sideband voice (USB), CW, RTTY, PSK31 and other digital modes such as PACTOR III. Only one signal at a time is permitted on any channel.

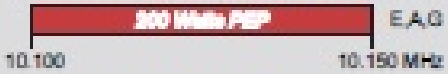
40 Meters (7 MHz)



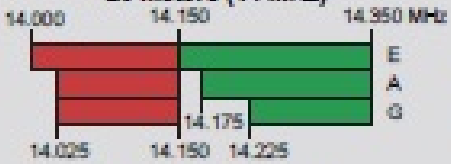
See Sections 97.305(c), 97.307(f)(11) and 97.501(a). These exemptions do not apply to stations in the continental US.

30 Meters (10.1 MHz)

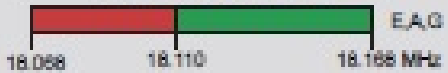
Avoid interference to fixed services outside the US.



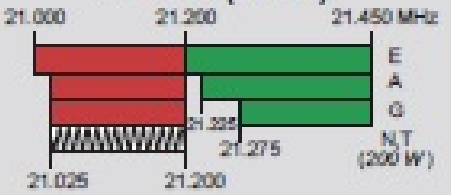
20 Meters (14 MHz)



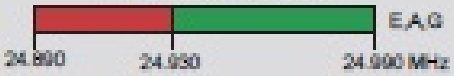
17 Meters (18 MHz)



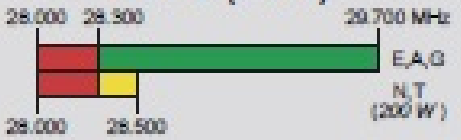
15 Meters (21 MHz)



12 Meters (24 MHz)

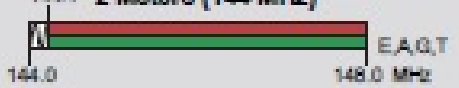


10 Meters (28 MHz)



6 Meters (50 MHz)

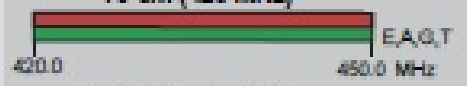
2 Meters (144 MHz)



1.25 Meters (222 MHz)

*Geographical and power restrictions may apply to all bands above 420 MHz. See *The ARRL Operating Manual* for information about your area.

70 cm (420 MHz)*



33 cm (902 MHz)*

23 cm (1240 MHz)*

All licensees except Novices are authorized all modes on the following frequencies:

2300-2310 MHz	10.0-10.5 GHz ‡	122.25-123.0 GHz
2390-2450 MHz	24.0-24.25 GHz	134-141 GHz
3300-3500 MHz	47.0-47.2 GHz	241-250 GHz
5650-5925 MHz	76.0-81.0 GHz	All above 275 GHz

‡ No pulse emissions

KEY

Note:
CW operation is permitted throughout all amateur bands.

MCW is authorized above 50.1 MHz, except for 144.0-144.1 and 219-220 MHz.

Test transmissions are authorized above 51 MHz, except for 219-220 MHz.

- = RTTY and data
- = phone and image
- = CW only
- = SSB phone
- = USB phone, CW, RTTY, and data
- = Fixed digital message forwarding systems only

E = Amateur Extra
A = Advanced
G = General
T = Technician
N = Novice

See *ARRLWeb* at www.arrl.org for detailed band plans.

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 rev. 8/23/2017