

OMIK TECH-TALK

MARCH 2017



<http://www.omikradio.org>

***An International Educational and
Scientific Organization
Founded in August of 1952***

OMIK Tech-Talk is a monthly distribution of news and technical articles reviewed and chosen by our technical staff to provide you with timely ham radio-related topics collected from different sources on the Internet.

KØMIK

**OMIK Amateur Radio Association –
Net Schedule**

(NOTE: during Daylight Savings Time net times move back 1 hour)

	OMIK Nets meet on Sundays
20 Meter Phone	14.295 MHz from 16:00 - 18:00 UTC
40 Meter Phone	7.185 MHz from 12:30 to 14:00 UTC
75 Meter Phone	3.920 MHz from 12:00 - 13:00 UTC

OMIK is now using Dstar reflector REF074C on Sunday mornings to assist the net controllers with check-ins. If you can't hear the net because of band conditions and you have the resources to communicate on Dstar try checking in on REF074C. You can view the reflector dashboard by typing the link below in your web browser.

<http://REF074.dstargateway.org>. If you need assistance reaching the reflector contact Frank K6fed@yahoo.com.

Amateur Radio News

****Special Notice ***

[Announcing D-STAR Live! Your D-STAR Questions Answered](#)

D-STAR Live will present some of the experts in D-STAR for a panel discussion on various aspects of the D-STAR ecosystem. We will be accepting questions from the audience, both in-person and from the Internet

A few of the areas that we plan to have discussions about are:

- Setting up a brand-new radio
- Updating / Programming your radio

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- Kenwood TH-D74 D-STAR Radio
- New features of ID-51Plus2 and ID-4100
- Icom G3 Software
- D-STAR Comparison
- D-STAR Devices
- Questions from the You!

When: **11 March 2017 1200-1600 EST**
(UTC-5) 0900-1300 PST

FYI US DST starts the evening after the event

Where: **Live Online and**
Live in person at Georgia Gwinnett
College, Lawrenceville GA

Who:

- Ed Woodrick WA4YIH (DSTARInfo.com)
- John Davis WB4QDX (Georgia D-STAR)
- Ray Novak N9JA (Icom America)
- Robin Cutshaw AA4RE (Internet Labs)

The event is **FREE**, we would appreciate it if you register at www.DSTARInfo.com.

For those attending in person, Icom has provided an ID-5100A as a door prize! You must be present to win.

We'll post more information and the links to access the presentation at:

<http://www.DSTARInfo.com>

More Countries Authorize 5 MHz Bands; Comments Due on ARRL 5 MHz Petition by March 20

Source: ARRL

Uruguay and Hong Kong are among the latest countries to establish new bands in the vicinity of 5 MHz. The *Final Acts* of World Radiocommunication Conference 2015 (WRC-15) provided for a secondary international allocation of 5,351.5 to 5,366.5 kHz to the Amateur Service.

In Uruguay, new Amateur Radio regulations that came into force on February 24 provide for a 5,351.5-5,366.5 kHz 60-meter band as well as for allocations on 472-479 kHz, 47-47.2 GHz, and 77.5-78 GHz. In addition, radio amateurs in Uruguay now have extended allocations on 80 meters, 3,500-4,000 kHz, and on 160 meters, 1,800-2,000 kHz. The new bands and sub-bands were adopted according to the recently updated International Amateur Radio Union Region 2 (IARU-R2) band plan.

Holders of the General license in Uruguay may operate with 15 W EIRP, while *Superior* licensees may operate with 25 W EIRP.

Uruguay also has established a Beginner (*Inicial*) class license and a training program for new radio amateurs with mandatory operating practice on 80, 40, 10, and 2 meters. Uruguay has established procedures for non-citizens to apply for and

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renew Amateur Radio licenses, and reciprocal permits for non-residents will be available.

In Hong Kong, the local telecommunication authority OFCA **has allocated** 5,351.5-5,366.5 kHz to the Amateur Radio Service on a secondary basis. The maximum power permitted is 15 W EIRP. All 60 meter allocations are on a secondary basis.

While US radio amateurs have access to five discrete 60-meter channels, they do not yet have access to a contiguous band in that part of the spectrum. Comments are due on March 20 on the ARRL's January 12 ***Petition for Rule Making*** to allocate a new, secondary amateur band at 5 MHz, while keeping four of the current five 60-meter channels — one would be within the new band — as well as the current operating rules, including the 100 W PEP effective radiated power (ERP) limit. The federal government is the primary user of the 5 MHz spectrum in the US.

The FCC has designated the League's *Petition* as RM-11785 and has put it on public notice. Interested parties may comment on the League's petition via the FCC Electronic Comment Filing System

Two Amateur Radio CubeSats Carrying Transponders Set for Future NASA Launches

Source: ARRL

Two satellites with Amateur Radio transponder payloads have been selected for future NASA launches.

AMSAT reports that the *TJREVERB* CubeSat, developed by students at Thomas Jefferson High School for Science and Technology in Alexandria, Virginia, will carry a 435/145 MHz FM transponder. The University of Washington-Seattle's *HuskySat-1* has a 145/435 MHz SSB/CW transponder and was developed by students at the University of Washington in Seattle. The satellite will demonstrate plasma propulsion and high-gain telemetry, in advance of a larger CubeSat lunar mission.

The launches are expected to take place in the 2018-2020 timeframe. The two CubeSat missions were **selected** as part of the 8th round of NASA's CubeSat Launch Initiative (CSLI). Both are eligible for placement on a launch manifest after final negotiations, depending on the availability of a flight opportunity.

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Homer V. Thompson, W4CWV, and Annette P. Thompson, W4LKM, Memorial Scholarship Endowed

Source: ARRL

A new scholarship has been endowed, honoring the memory of Homer V. Thompson, W4CWV, and Annette P. Thompson, W4LKM, the ARRL Foundation has announced. The scholarship will be funded through an initial \$50,000 gift from an anonymous donor.

The Thompsons, who married in 1939, were both from eastern Polk County, Florida. Homer Thompson's family was among the pioneers of the citrus industry in the Haines City area, while Annette Thompson's grandfather, Ephriam Baynard, was a notable early real estate developer in Auburndale. A graduate of the University of Florida, Homer Thompson saw service during World War II and the Korean Conflict. Upon retiring from military service as a lieutenant colonel, Thompson was awarded the Legion of Merit for his service with the Army Security Agency. He was employed by the FCC for 30 years. The Thompsons also oversaw citrus grove properties they owned jointly.

Both Thompsons were avid radio amateurs. They spent their retirement years in Winter Haven, Florida. At the time Annette

Thompson died in 2010, the couple had been married for 70 years; Homer Thompson died in 2013.

Applicants for this scholarship must be US citizens and Amateur Radio licensees, enrolled at an accredited 2- or 4-year college or university, and performing at a high academic level, pursuing a degree in an agriculture, business, science, math, engineering, or technology-related field.

Preference will be given to Florida residents. If no qualified Florida applicant is identified, the scholarship may be awarded to an applicant from the ARRL Southeastern Division (Alabama, Florida, Georgia, Puerto Rico, and US Virgin Islands).

The scholarship award will be \$1,500 annually, with the first scholarship expected to be awarded in 2018. One scholarship will be awarded each year. The ARRL Foundation shall determine award recipients.

FCC Invites Comments on ARRL Petition to Allocate New 5 MHz Band

Source: ARRL

The FCC has invited comments on the ARRL's January 12 *Petition for Rule Making* to allocate a new, contiguous secondary band at 5 MHz to the Amateur

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Service. The League also asked the Commission to keep four of the current five 60-meter channels — one would be within the new band — as well as the current operating rules, including the 100 W PEP effective radiated power (ERP) limit. The federal government is the primary user of the 5 MHz spectrum. The FCC has designated the League's *Petition* as RM-11785 and put it on public notice.

Comments are due Monday, March 20. ARRL plans to file comments in support of its petition.

The proposed ARRL action would implement a portion of the *Final Acts* of World Radiocommunication Conference 2015 (WRC-15) that provided for a secondary international allocation of 5,351.5 to 5,366.5 kHz to the Amateur Service; that band includes 5,358.5 kHz, one of the existing 5 MHz channels in the US. The FCC has not yet acted to implement other portions of the WRC-15 *Final Acts*.

“Such implementation will allow radio amateurs engaged in emergency and disaster relief communications, and especially those between the United States and the Caribbean basin, to more reliably, more flexibly and more capably conduct those communications [and preparedness exercises], before the next hurricane season in the summer of 2017,” ARRL said in its petition.

The League said that 14 years of Amateur Radio experience using the five discrete 5-MHz channels have shown that hams can get along well with primary users at 5 MHz, while complying with the regulations established for their use. “Neither ARRL, nor, apparently, NTIA is aware of a single reported instance of interference to a federal user by a radio amateur operating at 5 MHz to date,” ARRL said in its petition. NTIA — the National Telecommunications and Information Administration, which regulates federal spectrum — initially proposed the five channels for Amateur Radio use. In recent years, Amateur Radio has cooperated with federal users such as FEMA in conducting communication interoperability exercises.

The League said in its petition that while the Amateur Radio community is grateful to the FCC and NTIA for providing *some* access to the 5-MHz band, “the five channels are, simply stated, completely inadequate to accommodate the emergency preparedness needs of the Amateur Service in this HF frequency range,” ARRL said. Access even to the tiny 15-kHz wide band adopted at WRC-15 would “radically improve the current, very limited capacity of the Amateur Service in the United States to address emergencies and disaster relief,” ARRL said.

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The WRC-15 *Final Acts* stipulated a power limit of 15 W effective isotropic radiated power (EIRP), which the League said “completely defeats the entire premise for the allocation in the first place.” ARRL said the FCC should permit a power level of 100 W PEP ERP, assuming use of a 0 dBd gain antenna, in the contiguous 60-meter band. “To impose the power limit adopted at WRC-15 for the contiguous band would render the band unsuitable for emergency and public service communications,” the League said.

The ITU *Radio Regulations* permit assignments at variance with the *International Table of Allocations*, provided a non-interference condition is attached.

Interested parties may comment on RM-11785 using the FCC's Electronic Comment Filing System



Classes & VEC Testing

None scheduled

Ham Radio License Exam Practice

The ARRL has an online resource that allows users to take randomly generated practice

exams using questions from the actual examination question pool. **ARRL Exam Review for Ham Radio™** is *free*, and users do *not* need to be ARRL members. The only requirement is that users must first set up a site login (this is a different and separate login from your ARRL website user registration).

<http://arrlexamreview.appspot.com>

Free Amateur Radio Practice Testing is available on the Web

Practice exams are for those people who would like to study for a new US amateur radio license class. The questions contained within are provided by the Federal Communications Commission and are selected from the same sub-elements that would be used for an official license examination.

<http://www.qrz.com/hamtest/>

<http://www.eham.net/exams/>

<http://arrlexamreview.appspot.com>

Find and Exam in Your Area:

You can find an Amateur License Exam In your area at ARRL.ORG

<http://www.arrl.org/find-an-amateur-radio-license-exam-session/>

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*You can find an Amateur License Exam In your area at **ARRL.ORG***

http://www.arrl.org/exam_sessions/search

Electronics Refresher

Electrical terms for the home and their meaning

In order to for electricity to travel to wiring, it has to be under pressure much same way water is under pressure in your plumbing system. This electrical pressure is measured in **volts** or **voltage**. Modern homes receive 240 volts of electrical power. The power enters the home through an electrical service entrance and passes through a meter where the amount the household uses is measured and distributed throughout the house. Most ham equipment operates on 120-volt current: some heavy-duty equipment such as power supply's and amplifiers may require 240-volts.

The amount of electricity that can be delivered to an appliance or group of appliance is limited by the diameter of the wire that it must flow through. The term for this measurement is **amperes**. Just as a larger diameter pipe can deliver more water, a larger wire is required to conduct a greater amount of electricity. If a wire is too small for the amount of electrical current that it must carry, it will overheat and blow a fuse.

The wiring that travels through the walls and ceilings of a house is divided into **circuits**. Each circuit connects to with a series of wall outlets and switches. Each heavy-duty appliance should have its own separate circuit. Every household circuit is protected by a **fuse** or **circuit breaker**. These devices are designed to break when a circuit is overloaded.

The number of electrical circuits in a house determines how many electrical appliances you can use conveniently and safely.

Safety

How to avoid danger

Working with electricity is not hazardous as long as you obey strict rules:

1. Always shut off or disconnect power before handling wires.
2. If you are working on electrical circuits do not stand on a wet or damp floor.
3. Protect your self by wearing rubber gloves and rubbers.
4. Stand on a rubber mat or a piece of dry wood.
5. Above all, if you are in any doubt about how to do any particular job, call a licensed electrician.

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Radio and Software Tech Talk

ICOM 4100A



Icom is introducing a new ID-4100A Digital 2m/440 dual band 50 watt mobile radio. The full Dot-Matrix Display has easy-to-read characters and icons. There is a built-in GPS. The DR (D-STAR® Repeater) function is supported with the latest Icom user-interface. The exciting *Terminal & Access Point Mode* extends D-STAR coverage with the Internet (optional data cable and free-download application required). Hands-free Bluetooth® operation is possible with optional Bluetooth® unit and headset. Optional enhanced remote control apps will be available (will require Bluetooth® options). The ID-4100A has a compact, detachable head-controller for flexible installation.

FTM-100DR C4FM FDMA / FM144/430 MHz DUAL BAND TRANSCEIVER



Introducing the *FTM-100DR VHF/UHF Dual Band Transceiver*, an exciting new way to enter into Yaesu's revolutionary world of System Fusion C4FM Digital Communications. The FTM-100DR's single receiver design provides 50 solid Watts of RF power on both the 144 and 430 MHz amateur radio bands, while still being host to a feature packed suite of both C4FM Digital and FM Analog communications capabilities that fit every amateur radio operators needs.

Designed with simplicity and convenience in mind, the FTM-100DR's highly visible and compact 160 x 40 pixel graphical dot-matrix display can be detached from the body of the radio and remotely mounted providing even more installation options.

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This vibrant white LED backlit display provides a clear and crisp view of the radios current operating status, not limited to GPS Information, SD Card status, and Operating band name/memory channel tags (Alphanumeric).

The FTM-100DR operates in three (3) Digital modes and an (1) Analog mode to suit your needs. This feature packed radio is our first Digital Mobile equipped with our new Automatic Mode Select (AMS) function that instantly detects the received signal mode. The AMS function enables stress-free operation and eliminates the need to manually switch between communication modes.

·V/D Mode (Voice/Data simultaneous communication mode)

The digital voice signal is transmitted in one half of the band width. Simultaneously the other half of the 12.5 kHz band width channel is used for error correction of the voice signal and other data. By incorporating powerful error correction technology developed for professional communication devices, effective error correction codes provide the advantage of fewer interruptions to conversations. The Clear Voice technology developed for the C4FM FDMA Digital mode provides the ideal balance of error correction and sound quality.

·Voice FR mode (Voice Full Rate Mode)

This mode uses the full 12.5 kHz bandwidth to transmit digital voice data. The increased amount of voice data permits high quality voice communication, providing superb sound quality for a “rag chew” with friends.

·Data FR mode (High Speed Data Communication Mode)

This high-speed data communication mode uses the full 12.5 kHz bandwidth for data communication. The transceiver automatically switches to Data FR mode when transmitting snapshot pictures, and can be used to transmit large quantities of data at high speed.

·Analog FM mode

Analog FM is effective when weak signal strength causes audio drop out in the digital mode, and enables communication up to the borderline of the noise level. Also the use of established Yaesu low power circuit designs provides greater efficiency than the digital modes. This is the typical FM mode used by most typical non-digital handhelds and VHF/UHF mobiles.

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Koss SB49 Headset



Whether alone or online, the Koss SB49 full size communication headsets bring the action in your video games to life. Like Koss' other communication headsets (the SB40 and SB45 models), these communication headsets deliver high noise sensitivity and reduced sound distortion for a premium sound at all volume levels, ideal for gamers who prefer deep, sound bass.

Incorporating a frequency response of 18-20,000 Hz, the SB49s are so efficient you'll hear your opponents before they even know you're there. Large, closed ear cups surround the ear for maximum isolation, while soft, leatherette ear cushions deliver comfort that lets you game for hours on end. What's more, Koss' Clear Voice Technology (CVT) noise-reduction electret condenser microphone eliminates excessive

background noise for clear communication.

For Sale or SWAP

This space is reserved for anything amateur related you want to sale, swap trade, buy or get rid of. Send your list to K6FED@yahoo.com. Items are listed for one month. Additional time can be requested by email.

Items for sale by:
Fred KD6DKH
951-756-1868

ICOM ID 51A with soft case, two batteries, RTsystems programming software, rapid charger and speaker mike.

Yaesu ATAS-25 Portable antenna

MFJ-259B SWR/Antenna analyzer with case

Diamond SX-600 SWR and Power Meter 2-440 and HF

MFJ-941 Antenna Tuner

MFJ-931 Artificial Ground

Two Kenwood MC- 60 Mic one with cord for Kenwood TS 2000