President's Corner

By Steven Bible, N7HPR, President, TAPR

After a long winter, TAPR comes out of hibernation and embarks on a full schedule this spring and summer.

Hamvention

The month of May finds us making our annual appearance at the big show in Ohio: the Dayton Hamvention.

In a matter of days, the TAPR crew will be assembling our booth in the HARA Arena to display the latest in digital hardware and software, like a handheld SDR, iPad SDR software, and digital voice hard and software.

TAPR's Forum opens the Hamvention on Friday morning with a two-hour session featuring a variety speakers of digital interest. Friday evening is our annual Hamvention banquet with our friends from AMSAT dining and listening to the words of our after-dinner speaker, Tom Clark, K3IO nee W3IWI.

If that is not enough TAPR for you, the Board of Directors meets in person around 7 PM Thursday at the Hampton Inn & Suites Dayton-Vandalia. All TAPR members are invited to sit in and hear what we talk about!

More words concerning our Hamvention appearance are elsewhere in this issue of PSR, as well as on the website at http://www.tapr.org/dayton.html.

Sea-Pac

For the second year in a row, TAPR will have a booth at the "Northwest's largest ham convention," Sea-Pac <http://www.seapac.org/>, June 6-8 at the Seaside Convention Center in Seaside, Oregon. TAPR veep Jeremy McDermond, NH6Z, will be leading the charge for TAPR at Sea-Pac demonstrating his latest handiwork on the SDR front.

Centennial Convention

In July, TAPR will make an appearance at the ARRL Centennial Convention <http://www.arrl2014.org> at the Connecticut Convention Center (Booth 662) in Hartford, July 17-19. This convention will not occur again for another 100 years, so you won't want to miss it!

DCC in TX

TAPR wraps up the summer with its annual Digital Communications Conference (DCC). This year, the moveable digital feast is in Austin, Texas at the Austin Marriott South Hotel on September 5-7. You can read about the plans for the DCC in this issue of PSR as well as on the TAPR website. http://www.tapr.org/dcc.html. We are still working out the details for this year's DCC, so check the website for updates.

I hope you will see us at one or more of our venues this year!

73,

Steve Bible, N7HPR, President TAPR

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TAPR is a community that provides leadership and resources to radio amateurs for the purpose of advancing the radio art.

TADD-1 Available Again!

By John Ackermann, N8UR

The popular TADD-1 distribution amplifier, used by "time-nuts" to allow one frequency standard to drive up to six counters or other devices, was discontinued a couple of years ago when the Maxim MAX477 chip at its heart became unavailable. There has been continued interest in the TADD-1 and several people have suggested ways to replace the MAX477. It turns out that the Analog Devices AD8055 amplifier chip is a drop-in replacement, and it works just fine.

I built up a new unit using the AD8055 and compared it with an older TADD-1 that used the Maxim part. Performance turned out to be virtually identical. In fact, as the phase noise plot below shows, the AD8055 might actually be a couple of dB quieter than the MAX477, and it seems to draw a little less current from the power supply.

So, we're very happy to announce that the TADD-1 kit, now using the AD8055 chip, is once again available from TAPR and is shipping now. Check out http://www.tapr.org/kits_tadd-1.

The TADD-1 manual has been updated to reflect a bunch of corrections and additions that have accumulated over the last several years, as well as some new performance measurements. You can download it at http://www.tapr.org/~n8ur/TADD-1_Manual.pdf.

###

Phase Noise L(f) in dBc/Hz
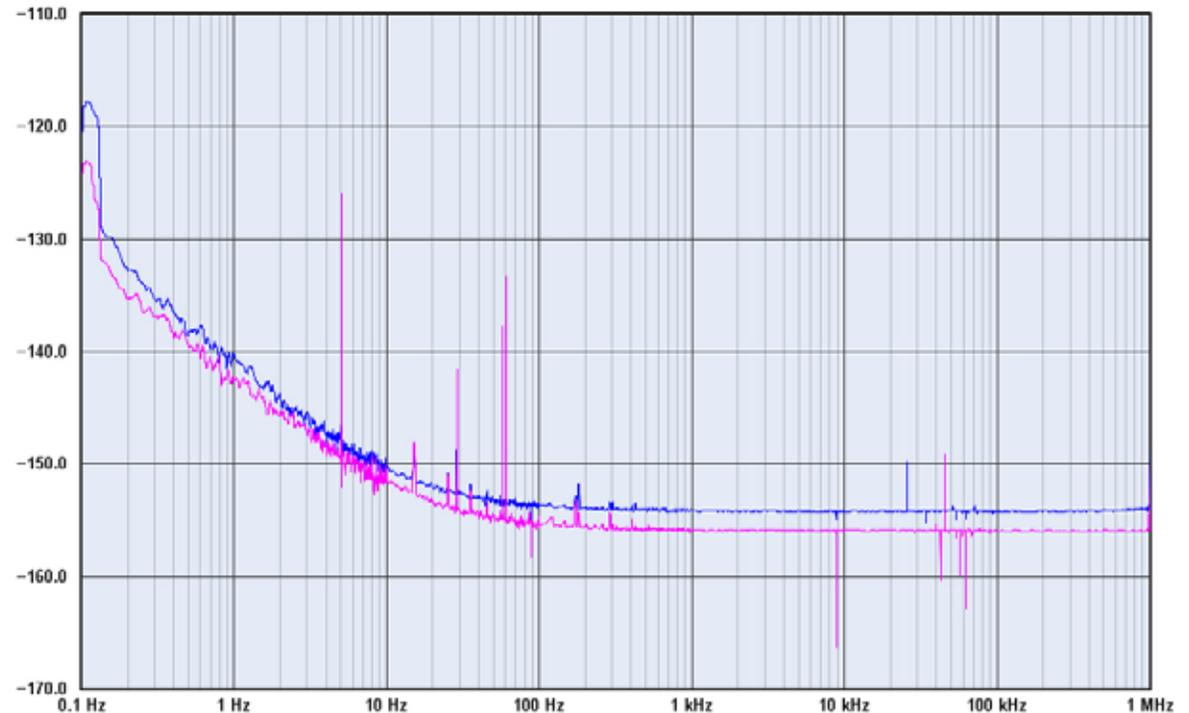
Trace	Input Freq	Input Amplitude	Ref Freq	Ref Amplitude	Instrument
TADD-1 MAX477	5 MHz	7 dBm	5 MHz	12 dBm	TSC 5120A
TADD-1 AD8055	5 MHz	7 dBm	5 MHz	12 dBm	TSC 5120A

TAPR Office Closed in May

During the month of May, the TAPR office will be closed for warehouse reorganization and inventory. As a result, online orders placed during May will not be processed until early June.

DigitalRadio2

DigitalRadio2 <http://tinyurl.com/mrv6vzl> is a new Yahoo Group for the discussion and exchange of information regarding all amateur radio digital modes. When the owner of the old DigitalRadio Yahoo Group decided to end that group last week, David Behar, K7DB, decided to start the new group to fill the gap.

According to Dave, "In my judgment there is benefit coming from the existence of a forum where digital radio enthusiasts can exchange information and help each other."

And there you have it!

Four Days In May
By Steve Fletcher, G4GXL

The QRP Amateur Radio Club International (QRPARCI) annual convention, Four Days in May (FDIM) runs in parallel with the Hamvention. Holiday Inn in Fairborn, Ohio is the host hotel for FDIM. For more information about the seminars and FDIM, visit http://qrparci.org/fdim.

On Thursday 15 May, there will be a day of seminars which includes one by TAPR member Chris Testa, KD2BMH. His presentation is titled "Battery powered software radios - having your cake and eating it too."

Other events include a Vendors Night on Thursday, a club night on Friday and a banquet on Saturday. (The Thursday and Friday evening events are free of charge.)

TAPR Calendar

May 15 – Board of Director In-Person Meeting, Dayton, OH

May 16-18 – Dayton Hamvention

May 16 – TAPR-AMSAT Annual Dinner, Dayton, OH

June 6-8 – Sea-Pac Ham Radio Convention, Seaside, OR

July 15 – *PSR* Summer issue deadline

July 17-19 – ARRL National Centennial Convention, Hartford, CT

August 15 – *PSR* Summer issue publication date

Sept. 4 – Board of Director In-Person Meeting, Austin, TX

Sept. 5-7 – TAPR-ARRL Digital Communications Conference, Austin, TX

Oct. 15 – *PSR* Autumn issue deadline

Nov. 15 – *PSR* Autumn issue publication date

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Hamvention with TAPR

By Stana Horzepa, WA1LOU

TAPR will be present at the 2014 installment of Hamvention (May 16 to May 18) in the same location as last year, that is, in the Ballarena section of HARA at booths 451 through 454 where we will be showing what we have been up to lately.

TAPR's booth and other inside exhibits will be accessible 9 AM to 6 PM on Friday and 9 AM to 5 PM on Saturday from 9 AM to 1 PM on Sunday.

Board Meeting

The Hamvention in-person TAPR Board of Directors meeting will be Thursday evening at Hampton Inn & Suites Dayton-Vandalia, 7043 Miller Lane, off I-75 north of downtown Dayton. All TAPR members are invited to attend the meeting and speak their piece. The meeting starts at approximately 7 PM.

TAPR Forum

The TAPR Forum will be in Room 1 of the HARA Arena starting at 9:15 AM on Friday. May 16 and running until 11:15 AM. Here is the schedule of this years' TAPR Forum speakers:

9:15 AM – "TAPR Update" by the TAPR Forum Moderator Steven Bible, N7HPR, TAPR President. What has TAPR been up to this past year and what we see on the horizon .

9:30 AM – "New Developments in the openHPSDR Software Defined Radio Project" by Scotty Cowling, WA2DFI. We will take a look at exciting new developments in the openHPSDR project. Topics include PureSignal predistortion to improve transmit linearity, the new UDP protocol definition, a new GPS frequency standard and an overview of new Gen2 hardware, among others.

9:55 AM – "HackRF and Your Digital World" by Michael Ossmann. Modern software defined radio platforms like HackRF give us an unprecedented ability to explore the radio spectrum around us. Meanwhile, our world is exploding with new digital radio systems both large and small. Never before has it been possible to interact with so many interesting wireless systems. Join me on a tour of the vast array of digital radio signals that are a part of your daily life and see how HackRF allows you to join in the fun.

10:20 AM – "Whitebox / HT of the Future" by Chris Testa, KD2BMH. Whitebox is a power-conserving handheld SDR transceiver with an Open Source / Open Hardware design. Chris will show a working Whitebox system, discuss his progress and the issues he confronted. Whitebox is a complete RF platform that plugs into a computer. HT of the Future, combining Whitebox and Android, gives us a handheld platform for soft-modems and applications with a full graphical user interface. It has all of the power of Hermes or FlexRadio, but for 54 to 1000 MHz and in your pocket. Chris will discuss what it will take to get Whitebox to experimenters this year and what will be necessary to realize it as an end-user platform next year.

10:45 AM – "AMBE Exposed!" by Bruce Perens, K6BP. AMBE has been reverse-engineered, leading to a D-STAR receive application that works without a DV-Dongle! The developers would like to remain unnamed for now due to intellectual property reasons, but Bruce has their number. Bruce will discuss the technology, the potential for a single unit that could talk with all of D-STAR, Yaesu System Fusion, a Codec2 based system, and what you can do with the software today. One of the largest concerns is when AMBE emulating software will become legal in the U.S. due to patent expiration; Bruce will give a short explanation of what we know about that.

"The Second Generation of FreeDV and Codec2" by Bruce Perens, K6BP, with contributions by David Rowe, VK5DGR. David has been working on a new generation FreeDV. The prototype (in simulation at this time) achieves a significant signal-to-noise improvement. Technologically, it's a startling departure from the first version. We'll go over the design, some early audio samples, and what we expect for the next year.

Breaking Bread with AMSAT

Friday night, TAPR again dines with AMSAT <http://www.amsat.org> at the annual TAPR-AMSAT or AMSAT-TAPR Banquet at Kohler Presidential Banquet Center, 4572 Presidential Way, Kettering, OH 45429.

Attendees will digest a delicious buffet dinner (menu below) while listening to Tom Clark, W3IWI, give an after-dinner speech titled "Sixty Years a Slave (To Amateur Radio)." Tom, known for his lifetime of contributions to TAPR and AMSAT and professionally to NASA, will lead us on a trek though his personal history, ties to his professional life, and some comments on Elmers he has known.

Doors open to a cash bar at 6:30 PM and dinner begins at 7 PM. Reservations are required and must be made by 6 PM on Tuesday, May 13. Purchase tickets for $30 online at the AMSAT store <http://tinyurl.com/p3q2nve>. Reserved tickets can be picked up at the AMSAT booth on Friday.

Here is the Dinner Menu:

Prime Rib of Beef

Chicken Piccata with Lemon Caper Sauce

Panko Herb Crusted Salmon Newburg

Fresh Mashed Potatoes

Wild Rice Pilaf with Pecans and Apricots

Fresh Garden Tossed Salad

Assorted Pies

Coffee and Ice Tea

The Crew

Most of the guys and gals behind the scenes at TAPR will be in attendance at the Hamvention, so you will have an opportunity to say "Hello" and have an eyeball QSO with the TAPR crew.

###

2014 TAPR/ARRL DCC
(Digital Communications Conference)

The DCC is returning to Texas this year.

When: Friday, September 5th - Sunday, September 7th
Where: Austin Marriott South in Austin, TX

The DCC has two days of Technical forums on Friday & Saturday and a concurrent Introductory forum on Saturday. On Saturday night, the banquet will feature an interesting speaker and the Sunday morning Seminar will be a deep-dive into a technical topic.

Those who submit Technical Papers for inclusion in the annual DCC Proceedings will receive preference for a forum, however, you can propose to present a forum without submitting a technical paper.

There will be free tables in the demo room to demonstrate projects and vendors to demonstrate products.

We encourage those interested in attending the DCC to make your hotel reservations early to get special TAPR hotel rate.

Updated DCC information will be available on TAPR's website at: http://www.tapr.org/dcc

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2014 ARRL/TAPR Digital Communications Conference

September 5-7 in Austin, Texas
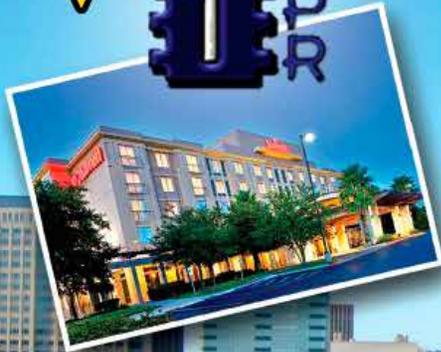
Make your reservations now for three days of learning and enjoyment at the Austin Marriott South hotel. The Digital Communication Conference schedule includes forums, demonstrations, a Saturday evening banquet and an in-depth Sunday seminar.

This conference is for everyone with an interest in digital communications—beginner to expert.

Call Tucson Amateur Packet Radio at: **972-671-8277**, or go online to **www.tapr.org/dcc**

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STL-SDR for TV-DX Meteor Scatter

By Mike Schaffer, KA3JAW

This is a follow-up to the article titled $20 Multimode Software Defined Radio, *which appeared in the previous issue of* PSR.

On October 26, 2013 at 22:47 UTC (6:47 PM EDT), a negative 4.00 stellar magnitude meteor (less than a category negative 4.50 magnitude fireball) from the Orionids meteor shower caused by small fragments of comic debris from Halley's Comet streaked between the boroughs of Mountain Top and Freeland, then over Kunkletown, reaching into the Lehigh Valley in Pennsylvania.

Seconds later, its light yellow flame was seen overhead in Nazareth, then the Delaware River and finally making its way to Marble Hill, New Jersey, while blazing at a velocity of 41 miles per second (67 km/sec).

It was determined the meteor tracked 3.7 miles north of Center Square in Easton, PA.

Closest approach was 3.0 miles to the northeast when it fragmented into smaller pieces while cruising at a 45 degree inclination during its 3.5-second flight journey through Earth's atmosphere.

The Orionids meteor shower was active from October 4 to November 14, 2013. Peak nights occurred on October 21-22. Meteor rates were expected to be 50 to 75 per hour.

At the time of event on October 26, I was home in south Easton with two NTSC analog television sets turned to channel 2 with the volume set at a comfortable listening level waiting for a chance of TV-DX via Sporadic E or F2 propagation. Unfortunately neither occurred.

Something very rare did occur at 6:15 PM EDT, exactly 32 minutes prior to the meteor event stated above overhead near Easton, while hoping to catch the Canadian network CTV, call sign CKCO in Wiarton, Ontario via meteor scatter (MS) on 55.240 MHz (minus offset) at a distance of 941 miles. Without warning the TV's audio steady background noise rapidly flared producing what sounds similar to a burst of high pressure air leaking through a cracked pipe. That effect instantly startled me for about three seconds.

Later, I realized that sound effect was not the result of a meteor forward scatter mode, but rather the ionized atmospheric gases (plasma) surrounding the meteor while leaving a vapor trail overhead. It seemed as if the meteor was exiting through the TV tube! After nine years of TV-DXing I never experienced this phenomenon!

It was this rare event that inspired me to take a more active roll in finding other techniques in meteor detection --- using the $20 STL-SDR dongle. After some experimentation, I can confirm that this inexpensive device has enough sensitivity to detect, spot and track meteors.

I would like to share snapshot images of what a meteor looks like on the SDR# (SDR Sharp) waterfall display.

The snapshot on the next page shows the STL-SDR device tuned (red dial line) to a frequency of 55.250 MHz. On both sides of this frequency (55.240 and 55.260 MHz) you can see two vertical meteor scatter traces starting at the date/time stamp displayed at the left margin. The first trace (on 55.240) is a moderate signal strength signal from CKCO in Wiarton, Ontario, over 421 air miles distance. The second trace is a weak signal strength signal on 55.260 from CIII in Bancroft, Ontario over 320 air miles distance. More sample images can be found here on Photobucket

To detect meteors via forward scatter propagation there has to be powerful (25 kW or more)radio frequency transmitter at one end
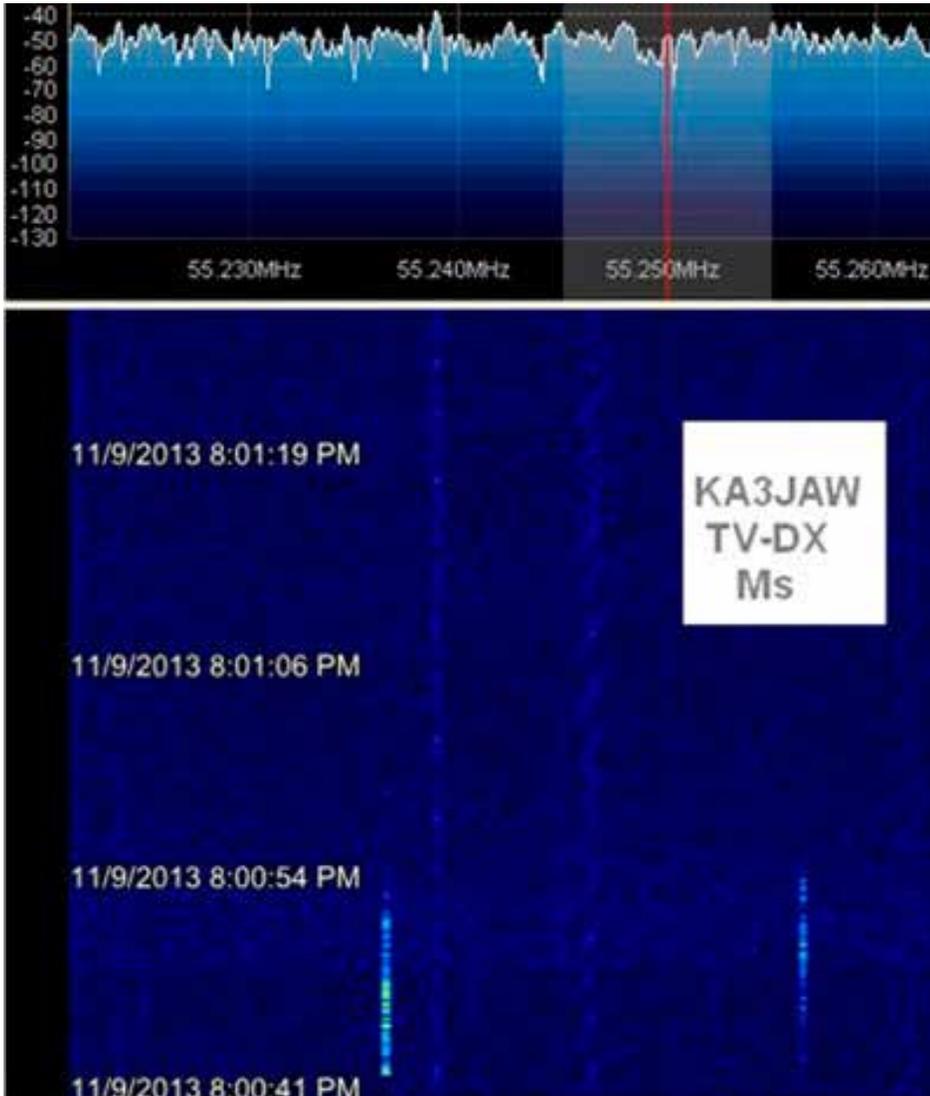
point that is on the air 24 hours a day, such as a full-power TV facility that radiates 100 kW on their video carrier with 10 kW audio. In my technique, I am not concerned with the audio portion of the signal.

The above statement would meet half of our requirements. The US TV broadcast conversion from analog to digital went into effect on June 12, 2009, per Congressional mandate. Unknown to many citizens, there are analog US TV signals on the air since the DTV transition (currently 72 low-powered analog TV stations are on the air in the US). These stations are Class-A , low-powered translators that run from 2 watts up to 3 kW on channel 2. Again, the power is not strong enough for MS detection.

By now you may be wondering how will we be able to find any full-power 100 kW broadcasters in which to do TV-DX via meteor scatter using the STL-SDR dongle. There is one other option to peruse. Our maple leaf friends up along the Canadian/US border have five analog TV-2 channels that remain active since their DTV analog-to-digital transition went into effect on August 31, 2011. This option has an extra advantage as there will be no US-based high-powered NTSC analog television stations to cause any radio frequency interference issues.

By the way, normal meteor scatter range is up to 1,400 miles.

Good DX!

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Missive from Misko
By Miroslav Skoric, ex-YT7MPB

It might be interesting for PSR readers and TAPR members to know that my newest book chapter on packet radio software was recently appeared in an academic publication:

Handbook of Research on Progressive Trends in Wireless Communications and Networking

ISBN: 9781466651708; 592 pages; February 2014

Published by IGI Global, USA

http://www.igi-global.com/book/wireless-communications-networking/90600

Edited by: M.A. Matin (Institut Teknologi Brunei, Brunei Darussalam)

The chapter has been written in the how-to manner, in order to help wireless practitioners, students and educators alike in experimenting with amateur radio programs and networks - even without any investment in real radio transmitting devices!

Secondly, there is a high probability that in September I will visit the area of Hyderabad, India, as a conference speaker in a tutorial related to Amateur Radio Communications and Computer Networks in Education, which will include practical experiments and demo, kindly provided by the radio amateurs of NIAR ham organization in Hyderabad. (WOCN2014 conference is organized by Koneru Lakshmaiah University, Vijayawada, Andhra Pradesh). In the same time, I would like to see some more international hams there, so we could organize a panel discussion on digital ham radio perspectives.

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Clearly an Analog Radio
By Stana Horzepa, WA1LOU

The New Yorker had an interesting article <http://tinyurl.com/mxe7xt4> about the radio of choice of prisoners in the USA: the Sony SRF-39FP AM-FM pocket radio.

This radio is made for sale only in prison commissaries; you will not find it for sale at Best Buy, but you may find it on eBay.

The case is clear plastic to prevent prisoners from hiding contraband inside the radio and it runs on a single AA battery, which is one reason why it is popular with prisoners who must budget their commissary purchases carefully.

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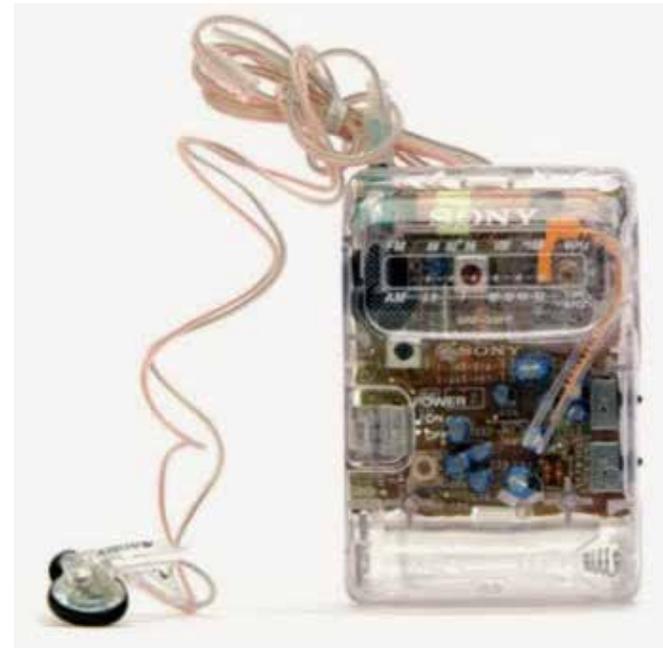
C.Crane CCRadio 2E Enhanced Reviewed

By Stana Horzepa, WA1LOU

For Christmas, my sister gifted me with the titanium version of the C.Crane CCRadio 2E Enhanced AM/FM/WX/2-Meter Ham Band Radio <http://tinyurl.com/nygvfeo>.

I was primarily interested in the AM and FM performance of the CCRadio 2E Enhanced. I have been using the CCRadio 2E Enhanced "barefoot," that is, using only its stock antennas, although it does have screw terminals for connecting an external AM antenna. The performance of the CCRadio 2E Enhanced on AM and FM was amazing when matched up against the two radios I used for comparison --- both using external AM antennas.

My comparison radios were the C.Crane CC SW Pocket AM/FM/SW Radio and the C.Crane CCRadio-SW AM/FM Shortwave Radio. I used the Terk AM Advantage Antenna with the former and the C.Crane Twin Coil Ferrite AM Antenna Signal Booster with the latter.

FM Reception

These days, my favorite FM radio station is WLNG, 55 miles southeast in Sag Harbor, Long Island, New York. To receive WLNG on my comparison radios, I must fully extend the telescoping whip antenna of each radio and carefully adjust the position of each antenna to receive WLNG with a solid signal.

With the CCRadio 2E Enhanced, I can receive a solid signal from WLNG without extending the telescoping whip antenna at all! No finicky antenna positioning is required; the antenna remains nested inside the case of the radio.

AM Reception

The CCRadio 2E Enhanced is very sensitive on AM. It is probably the most sensitive AM receiver I have ever used. It hears stations that the comparison radios don't hear or do not hear very well.

For example, when I logged WGGO is Western New York on 1590 kHz, the WGGO signal varied between S2 and S6 on the CCRadio 2E Enhanced. At the same time, WGGO was down in the mud (an S1 at best) on the CC SW Pocket and was imperceptible on the CCRadio-SW and note that both comparison radios were using external AM antennas, whereas the CCRadio 2E Enhanced was not!

Selectivity is also very good with the CCRadio 2E Enhanced. The only stations that cause any selectivity issues are a 1000-watt station less than two miles away (WPRX on 1120 kHz) and a 50,000-watt powerhouse 12

miles away (WTIC on 1080 kHz). WPRX splatter can be heard on 1110 and 1130 kHz and WTIC splatter can be heard on 1070 and 1090 kHz. I have logged other stations on 1090, 1110, and 1130 despite the splatter, but I have yet to log anything but WTIC splatter on 1070.

Period of Adjustment

When you change frequency, the radio fine tunes its antenna circuitry for the received signal on the new frequency. The Signal icon on the display flashes during this period of adjustment, which lasts 1 or 2 seconds.

This takes a little getting used to. When I first started using the radio and changed frequency, finding no signal on the new frequency, I often changed frequency again without allowing the antenna circuitry to complete its fine tuning. I soon realized that I might have been missing something, so now I wait for the fine tuning to be completed before abandoning a "dead" frequency.

Sound

The audio produced by the CCRadio 2E Enhanced is excellent. On the AM side, it is the best sound I have ever heard for an AM radio. It rivals the sound of FM radio. Even the weaker AM stations sound good!

Weather Band

I live 7 miles line-of-sight of the nearest NOAA weather radio station, so after my experience receiving WLNG, it was no surprise that I was able to receive weather station WXJ-42 (162.400 MHz) in Meriden, CT, on the CCRadio 2E Enhanced without extending the radio's telescoping whip antenna at all.

With the whip antenna fully extended, the radio also pulled in WWH-

33 on 162.500 MHz in Cornwall, CT (24 miles), WXJ-41 on 162.475 MHz in Somers, CT (36 miles), and WXL-93 on 162.550 MHz in Paxton, Mass (70 miles).

Ham Band

Although I am a ham, the ham band coverage (144-148 MHz FM) of the CCRadio 2E Enhanced was a nice feature, but it was not a "selling" point for me. I have a few ham radios that cover the 2-meter band and their scanning functions are better than that offered by the CCRadio 2E Enhanced.

With the CCRadio 2E Enhanced, you can scan the whole band or the channels stored in the five memories. After you start a scan, the radio stops at the first active channel and stays on that channel until the channel is no longer active. That is all.

The radio does provide a squelch function for the 2-meter band.

Dislikes

There are a few things about the CCRadio 2E Enhanced that I do not like.

Default Display

By far, my biggest complaint is the frequency display. When you tune the radio, the radio displays the frequency, but when you stop tuning, the frequency disappears after a few seconds and displays the time, if the clock has been programmed or nothing, if the clock has not been programmed. To display the frequency again, you must press the Freq button momentarily and again, the frequency disappears after a few seconds and displays the time or nothing!

When I am DXing, the frequency is much more important than the time of day, so I would prefer that the frequency was the default display, not the time. Or at least allow the user to select the default display.

I could find no way to make frequency the default display and when I asked C.Crane, their Customer Service rep Laurie G. wrote, "The CCradio line has undergone many changes throughout the years and we take suggestions from our customers when we design each new model. The CCradio and the CCRadio Plus both showed the frequency all the time when the radio was playing, but a button had to be pressed to show the clock, because of customer suggestions we changed the display to show the clock primarily and the frequency only when the button is pressed or station is changed."

My suggestion is instead of selecting a momentary display of the frequency, why can't that same button be programmed to toggle between continuous frequency or continuous time display? That would make everybody happy.

Anyway, I never program the clock in the radio because I often unplug the radio from AC to move it to another location (and thus lose the programmed time). So when I use this beautiful radio, it sits there looking dumb with nothing but three hyphens and a colon (-:--) on its front panel display.

Location of Memory Buttons

This can be considered carelessness or a just-getting-used-to-the-radio issue on my part, but on more than one occasion, when I reached across the top of the radio either to adjust the position of the radio or to pick it up by its handle, I inadvertently pressed a memory button and thereby changed the frequency I was monitoring to whatever frequency was stored in that memory.

Printed Manual

While I was experimenting with the radio trying to find a way to set the frequency as the default display, I held down the Freq button for a few seconds and the radio went bonkers (or so it seemed). The Weather Alert light started flashing and the radio started changing frequency all on its own, not doing a band scan, but jumping from 1710 kHz to 1600 kHz to 1500 kHz and onwards. I pushed various buttons, but nothing would stop it, so I reset the radio using the reset switch on the bottom of the radio and then everything returned to normal.

I consulted the manual, but nothing mentioned this feature, so I assumed that it was a quirk in the radio.

While I was writing this review, I downloaded the manual from the C.Crane website and noticed that the electronic version of the manual added a section that mentions this "quirk." Rather than being a quirk, pressing the Freq button for about 5 seconds initiates the radio's Antenna Alignment Procedure. So it is not a quirk, but the Procedure was missing from the printed manual and left me a little concerned until I downloaded the updated pdf of the manual. I assume future print copies of the manual will also include this information.

The Bottom Line

The C.Crane CCRadio 2E Enhanced is one of the best AM radios I have ever used and it is no slouch on FM either. The weather radio and 2-meter ham radio coverage is icing on the cake. However, I am very disappointed with its default time/nothing display and it might have been a deal breaker if I knew about this "feature" before asking my sister to gift the radio to me.

###

Write Here!

PSR is looking for a few good writers, particularly ham radio operators working on the digital side of our hobby, who would like to write about their activities and have them published here in PSR.

You don't have to be Hiram Percy Maxim to contribute to PSR and you don't have to use Microsoft Word to compose your thoughts.

The PSR editorial staff can handle just about any text and graphic format, so don't be afraid to submit whatever you have to wa1lou@tapr.org. The deadline for the next issue of PSR is August 15, so write early and write often.

If PSR publishes your contribution, you will receive an extension to your TAPR membership or if you are not a member, you will receive a TAPR membership.

###

On the Net

By Mark Thompson, WB9QZB

Facebook

As you may know, TAPR has a Facebook page, www.facebook.com/TAPRDigitalHam.

However, I also created a TAPR Facebook Group, www.facebook.com/groups/TAPRDigital/.

If you have a Facebook account, "Like" the TAPR Facebook page and join the TAPR Facebook Group.

If you join the group click on the Events link and indicate you're Going to the events.

On Twitter, Too

Access the TAPR Twitter account at

www.twitter.com/taprdigital.

Also on YouTube

TAPR now has its own channel on YouTube: the TAPR Digital Videos Channel:

www.youtube.com/user/TAPRDigitalVideo.

At this time, there are a slew of videos on our channel including many from the TAPR-ARRL Digital Communications Conference (DCC) that you may view at no cost, so have at it!

###

Submission Guidelines

TAPR is always interested in receiving information and articles for publication. If you have an idea for an article you would like to see, or you or someone you know is doing something that would interest TAPR, please contact the editor (wa1lou@tapr.org) so that your work can be shared with the Amateur Radio community. If you feel uncomfortable or otherwise unable to write an article yourself, please contact the editor for assistance. Preferred format for articles is plain ASCII text (OpenOffice or *Microsoft Word* is acceptable). Preferred graphic formats are PS/EPS/TIFF (diagrams, black and white photographs), or TIFF/JPEG/GIF (color photographs). Please submit graphics at a minimum of 300 DPI.

Production / Distribution

PSR is exported as Adobe Acrobat and distributed electronically at www.tapr.org

PSR Editor:

Stana Horzepa, WA1LOU

E-mail wa1lou@tapr.org

TAPR is a not–for–profit scientific research and development corporation [Section 501(c)(3) of the US tax code]. Contributions are deductible to the extent allowed by US tax laws. TAPR is chartered in the State of Arizona for the purpose of designing and developing new systems for digital radio communication in the Amateur Radio Service, and for disseminating information required, during, and obtained from such research.

TAPR is a community that provides leadership and resources to radio amateurs for the purpose of advancing the radio art.

Membership Application

TAPR

P. O. Box 852754, Richardson, TX 75085–2754

Phone 972-671-TAPR (8277), Monday–Friday, 9AM–5PM Central Time

E-mail taproffice@tapr.org   URL http://www.tapr.org

Join or renew online at https://secure.tapr.org/np/clients/tapr/login.jsp

TAPR office will be closed during the month of May.

Benefits of a TAPR Membership:
- *Subscription to the quarterly PSR*
- *10% off most TAPR kits and publications*
- *Access to the TAPR digital library*
- *Latest information on TAPR R&D projects*
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