K9YA Telegraph

Robert F. Heytow Memorial Radio Club

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Emtech ZM-2

QRP Antenna Tuner Kit

Philip Cala-Lazar, K9PL

Emtech's ZM-2 QRP antenna tuner kit has received rave reviews from a wide swath of QRP hamdom for a very long time. Indeed, the earliest eham.com review dates from 2000. The ZM-2 is rated for 15 watts and provides connectors for tuning coax- and balanced line-fed antennas as well as end-fed antennas. Visiting the ZM-2 page at the Emtech Web site provided the information I needed to order.

"rave reviews"

One week after ordering a padded envelope from Emtech containing the ZM-2 kit with requested BNC connectors was in my mailbox. Kits may also be ordered with UHF connectors.

The Faceplate

The secrets to applying the tuner's faceplate decal (actually a large paper label) can be viewed at the Emtech Web site or on You Tube.

Following Scott of Emtech's video advice I thoroughly cleaned the faceplate with isopropyl alcohol and let it dry. Then, taping the faceplate to a picture window, cum light table, the decal locations were registered with the faceplate's predrilled holes and the decal applied. Trimming was performed as suggested by drawing the faceplate/decal assembly across a sheet of sandpaper (I used 230-grit) placed flat on a tabletop. Pressure was evenly applied across the faceplate as it was dragged at a 45-degree angle. This technique produces very pleasing, clean edges including those of the faceplate's radiused corners. The ZM-2 construction manual suggests using several coats of lacquer to seal the paper decal. Alternatively, laminating film is recommended, that's what I chose; Avery brand by name. The film is trimmed the same way as the paper label, needing only an additional one or two pulls to remove the excess.

The Build

This is not a complex kit to build in either parts count or technique, however, before starting your build read the supplied, preprinted construction manual thoroughly. Pay especial attention to the pictorials on page 4 and the "ZM-2 CONSTRUCTION HINTS!" on page 6. The kit's two toroids are easy to wind, T1 due to its large core size and husky wire gauge and the smaller T2 with only one tap to form. On page 4 builders will find it helpful to highlight with a different color each lead originating from T2 to its termination and refer to the schematic on page 3. Both of my toroids are mounted, as the manual suggests, on foam supports; T2's support is hot-glued to the faceplate and T1's simply inserted between the coil and SW-2.

There's no printed circuit board or terminal strips provided, rather the tuner's components are fastened directly to each other and the faceplate's

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Dear Hiram

Dayton Hamvention® 2012

Bob Cashdollar, NR8U



Well, Hiram, another Dayton Hamvention® has come and gone. If you're keeping track, this was my 33rd one.

The weather was outstanding all weekend. A little warm all three days, but very nice compared to past Hamventions®. Ever since the hamfest was moved to May, I haven't been snowed on; endured wind chills in the 20s, or really pouring sleet and rain that drove everybody inside. I'll take a little sunburn any day.

Fritz Tender, WD8E, and I have been going to Dayton for about 20-plus years now. Once upon a time, (when we were much younger!) we drove back and forth to the hamfest as we live about two-plus hours away. We haven't done that since about 1993 or so! Now we stay on Friday and Saturday nights. (For the second year in a row, a major hotel chain, Hampton Inns, *lost* our reservations, but after Fritz calmed down he found another Hampton Inn in Huber Heights that had a room and it turned out to be a good place to stay.)

"Do we really need more 'stuff'?"

We arrived about 12:30 on Friday. We are jaded enough now to resist the Friday rush to the flea market. Our attitude is, "Do we really need more 'stuff'?" We did our usual separate and conquer plan of attack with me outside and Fritz inside and then comparing notes later in the day.

The Friday flea market was fairly full with both sellers and buyers. I bought my usual Dayton tee shirt and walked most of the flea market. What I missed I figured I'd catch the next day.

Fritz is an Ohio assistant section manager for your American Radio Relay League and was penciled in for a stint at the Ohio Section area of the ARRL's area on both Friday and Saturday afternoon. So I got to spend some time at the ARRL's area. Very nice and it was interesting to see the Radio Society of Great Britain, the German Amateur Society group, and amateurs from Qatar plus some other national societies.

On Friday night, we walked from hotel to a Texas Roadhouse steak house for a nice meal. Coming back outside the first thing we noticed was all the groups standing around in the parking lot. I remarked to Fritz it looked like the after-meeting groups of any ham radio club meeting we had ever attended.

Saturday again dawned sunny and later warmed up very nicely. Again, it was a divide and conquer day plus forums. I finished my flea market reconnaissance and went inside to check out some other sites.

Big crowds were around the new Kenwood radio at their booth on the main floor. When asked the price of the new rig, there was a bit of hemming and hawing from the Kenwood rep with a final quote of somewhere in the neighborhood of $5,000-$10,000. (Yikes! My first new car cost less than that, I know, I sound just like my father when he talked about the price of bread many years ago.)

The Flexradio people had them lined up about three to four deep around their booth. I didn't even try to get close to look.

Yaesu had them lined up to get a hat.



Luso Towers Exhibit

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Q & A with John Amodeo, NN6JA

Producer of Last Man Standing

Bob Cashdollar, NR8U

John Amodeo, NN6JA, was a forum speaker on Saturday morning at the 2012 Dayton Hamvention®. Amodeo's presentation was on how the media portrays amateur radio. His talk covered a wide range of topics related to how amateur radio is portrayed both on television and in the movies. The topic drew a standing room only crowd, which interacted with Amodeo as he spoke.

It was my intention to have a brief interview with Amodeo after his discussion, but as things often happen we missed connections. Amodeo offered to answer a few questions via email and here is the result:

John, you said at the forum that you have been a ham for 40 years. How did you get interested in amateur radio?

Growing up on Long Island, one of my closest friends was Kevin Croak. Kevin's father, John, was a ham (WA2CZM) and a multi EMMY winning television editor for ABC in NY. He introduced us all to ham radio.

I got my Tech in the early 1970s and my General later in the 70s after taking the 13 wpm test.

I even worked at a ham radio store (Harrison Radio) on Long Island; long since out of business. I installed antennas on the weekends as a side job.

> *"…accurate portrayals of amateur radio."*

Do you have a ham station at your home and if so which radio(s) and antenna(s) do you have?

Yes, I have a very compact station on my desk at home. It consists of an Icom IC-7000, a Yaesu FT-817ND, a LDG AT-1000 PRO II, and an Elecraft KPA500. My handheld is a Yaesu VX-8dr and I also have a DV dongle for D-STAR.

When you have the time, what is your favorite activity in amateur radio?

I live and work under a very tight schedule and normally have about a 70-hour workweek and often have some work-related obligations on the weekends.

Nevertheless, I try and find some time in the evenings to work the repeaters including D-STAR and on the weekend days to work 10, 15, and 20 meters to connect with friends and family on the east coast.

In your Dayton presentation you mentioned several movies, which you singled out as accurate portrayals of amateur radio. Is there one which you feel stands out as accurate portrayal of amateur radio?

In my forum I talked more about inaccurate and negative representation of amateur radio and mentioned The Simpsons, The Munsters, Super 8, Earth vs. the Flying Saucers, Frequency, Contact, *and* Phenomenon, *but there are many more examples.*

Having said that, I love the opening of Contact *for its portrayal of radio wave physics.* Frequency *gets it mostly right, except for transmitting through time using auroral propagation.*

Also, in your presentation you indicated that amateur radio suffers a sort of identity crisis in the public consciousness…

Ham radio is actually made up of very smart people using the latest sophisticated technology, which is pretty cool. However, like all subcultures, we have a certain look, which can be off-putting to prospective new hams, especially young people.

The ham radio population skews older and male. Adding that to fishing vests, matching windbreakers, hats covered with plastic nametags, pins, and patches does not make a winning combination in terms of attracting new participants.

Even our jargon can hurt us; that's why I prefer "Mentor" to "Elmer."

I am an Extra Class VE and VEs have told me they've seen young people come to take an exam, look around, pull out their iPhone, start texting and leave.

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John, NN6JA

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Conan Wyatt Burtram Barger, W3CVE

Part II

Scott B. Laughlin, N7NET



Boyhood Home of
Red Barger, W3CVE

At age nine we moved to Des Moines, Iowa. The QTH was 1314 26th Street. While at this location a couple of my schoolmates invited me to be a member of their wireless club. To join I had to draw a circuit of a crystal detector using a loose coupler and antenna. I had to be able to memorize the code and write each letter, A, B, etc. I studied hard, but failed the first examination by not being able to write the code correctly. I tried again in about three weeks and passed. Boy, was I a happy kid. Well, after about a year at this QTH my folks had another harmonic. For a Christmas present I was presented with a baby sister.

When I was the age of twelve we moved to a better location, 1340 45th Street. While Dad started another business college and was quite proud of his family, I joined the Boy Scouts and became very interested in the merit badge pertaining to wireless. My previous club experience helped me a great deal in earning the merit badge. My folks said I dotted and dashed so much they got irritated. One night I heard crashes in the form of dots and dashes.[1] So, the next day I got on my bike and went over to the next block and found where the crashes were coming from. I went the house and knocked on the door and a friendly fellow came and said, "Hello, young man. What can I do for you?" I told him I was a Boy Scout and that I had been hearing the dots and dashes for the past week. He invited me into his wireless room and said he was in QSO with his friend, Albert Tingly, 9DEM, on the other side of town. I sat there in amazement to think that this person was using the code to talk to his friend. I was thrilled beyond words and watched this operator carry on his QSO for about a half hour. After he finished he started to explain to me the workings of his sending set and crystal detector. My interest intensified to the bursting point. I will never forget this kind fellow whose name was Joe Dobyns and his call was 9OA.

"…roared like the very devil."

Our friendship lasted for several years and he encouraged me to get on the air and said that I could use a Ford spark coil on a Quaker oatmeal carton and use a bronze "cat whisker" for a receiver. He drew out a circuit for me to use and said I needed a pair of headphones and that Garver Hardware in town had the Murdock headphones.

Well, when I went home there was nothing else for me to do but get my wireless station on the air. That was 1919, the post-war year, so I had a clear shot to get on the air.[2] ■

Footnotes

1. Having no firsthand experience with spark gap, I queried Red about the dot and dash crashes. He replied:

When the spark gap days were roaring many fellows had an open spark gap with a Thorardson 1kW AC transformer and whenever they were on the air you could hear the spark crashes–dots and dashes–for quite a ways. Joe Dobyns, 9OA, had an open spark gap and it roared like the very devil. If an operator had an enclosed rotary gap–the gap was a sprocket with four or six fangs–the spark gap could not be heard. The enclosed gap had a glass opening so you could see the display of spark. Some had a rig where they could vary the speed of the motor on the rotary and by doing that the tone could be varied a bit. The slower the motor went the lower the pitch and the higher the pitch.

Scott's note: Lucky McCoy, W7LRB (SK), once told me that monitoring a group of rotary spark gaps with motors varying their speeds created a sound much like a frog pond on a summer evening.

2. The amateur frequencies and an estimated 3,500 to 4,000 operators provided communications for the U.S. during World War I. In 1919 the frequencies were reassigned to the amateurs, giving Red a "clear shot at getting on the air."

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K9YA Field Day 2012

Mike Dinelli, N9BOR

The clock ticks toward zero hour of Field Day 2012—a special year for our club—our tenth year and our tenth Field Day. "Gentlemen, start your engines." These are the famous words spoken each year at the start of the Indianapolis 500—the greatest spectacle in racing. No special words started our race—just a tick of a clock and we're off.

At Field Day 2000, Bob Heytow, who we memorialize with this club, was working 80m CW. It was the middle of the night and Bob worked the band hard until daylight; I was his second set of ears. The 40m, SSB station was a few feet away begging for contacts. It was embarrassing how well we were doing by comparison. My eyes were getting heavy, but Bob kept going like a big kid at his first Field Day. I've thought about that night at every Field Day since.

We begin our exercise on 20m, CW from a Boy Scout campground in northern Illinois. As with the start of any contest, the first hour or two is frenetic. The higher frequency bands had little activity, so we begin on a band thick with signals.

"Gentlemen, start your engines."

Field Day isn't only about making a lot of contacts. However, being an emergency preparedness exercise, we take it seriously. We explain to our visitors, we're sending and receiving simulated emergency traffic. It's our goal to relay as much traffic as we can in a 24-hour period. Our score is a measure of that success and it also helps us improve our station from year to year. This year we made 1,394 contacts, our best ever.

Our most interesting visitors were members of an engine company from the Woodstock Fire/Rescue District and later from a department shift commander. I explained what we were doing, why were doing it and how we were doing it. Then I would pass the headphones to each fire fighter, so they could hear live Morse code for the first time. It brought a lot of smiles and a lot of questions. I had the opportunity to learn about their communication systems, radio equipment, mutual aid and rural fire fighting. We were firing questions back and forth and soaking in the information.

Our station is simple and works well. We use a 20-year-old Kenwood TS-850SAT with cascaded Inrad filters. Our antenna is made with house wire from Home Depot using a single coax feedline. Our logging is done with a Dell legacy laptop using TR under DOS. We have backup gear, but never had to remove it from our vehicles.



Lt. Michael Hill
Woodstock Fire/Rescue

My teammates are Steve, N9WAT, and Art, WB9JKZ, who for the last ten years have made each Field Day memorable. They come prepared and ready to work. They're smart, personable and funny. Steve is an electrical engineer and has made many well-informed decisions for our station. He's also our cook and we ate like kings. Art has operated in the field more than any of us. He's also operated from ships and from several countries. He is our liaison with the Boy Scouts and has been a Scout volunteer for many years. He's an excellent teacher and takes pride in watching his Scouts turn into responsible young men. Ham radio and scouting is a valuable partnership for each of us.

It's tough to stay focused in the wee hours, but we take turns operating and sleeping. We used to bring a sleeping tent, but now we take naps in a folding chair. We like simple. Except for some raccoon and skunk activity, our overnight was uneventful.

I like to set goals to stay alert. Keeping with our auto-racing theme, I think of all the great American muscle car engine displacements and use them as my next short term QSO goal. I think Ford 260, 289, 302, 351, 390, 427, 428, 429 and 460. I might mix those with Chevy 283, 302, 327, 350, 400, 409, 427 and 454. If necessary, I can add Buick, Olds, Pontiac and Cadillac to keep my mind sharp. It's fun to use these short-term goals to keep me motivated.

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Like What You're Reading?

If so, you're in good company, as amateur radio operators in more than 100 countries agree with you. Know what else? Hams just like you write the *K9YA Telegraph*.

YOU + *K9YA Telegraph* = A Great Read.

But without your side of the equation, it just doesn't add up.

http://www.k9ya.org/write_for_us.htm

Ham Humor 1921 Style

Roaring 20's hilarity from the November 19, 1921 issue of the Eugene Radio Club's (Oregon) two-page typed newsletter, **-The Brush Discharge-**.

Rupert Bean: "How do you make a grid leak?"
Tom Hall: "Drive a nail into it."

The above jokesters were members of the Eugene Radio Club: Rupert Bean, 7SR, and Tom Hall, 7IL.

While experimenting the other night, Delmar Jeans, 7HN, lost control of his Electric fan and blew a condenser.

(Our thanks to Scott Laughlin, N7NET, for access to this example of amateur radio incunabula.)

Illustrious Cartoonist Seeks Ideas

K9YA Telegraph staff cartoonist, Dick Sylvan, W9CBT, is looking for a few good cartoon ideas. Those submitting selected ideas will be rewarded with a signed print of the cartoon.

Contact Dick at w9cbt@k9ya.org.

Ham Quips

DICK SYLVAN, W9CBT



JURASSIC PARK FIELD DAY

My Most Memorable Contact

By Bill Ross, K6MGO

I was tuning around on 40-meters, in the CW part of the band, when I heard a hesitant, "CQ." The code was not good, and the speed was moderately slow, and as I listened, and made sure I had the call correctly, I also looked him up on QRZ. So, having his name, I went back to his CQ, and called him by his first name.

He immediately said, "you must have looked me up on QRZ, I go by, and he gave me a nickname. So, I figured that I had hooked up with a "newbie" and would slow down my sending. He came back to me, with a story that touched me deeply. He told me he could copy faster than he could send, and that I should send faster, if I wanted to. He also told me that he had had an accident, and had brain damage, to the extent that he was blind, could not talk, and could not walk. He said he could only communicate with the world by Morse code; no other option was available to him.

He went on to tell me that his wife had to feed him and push him around in a wheel chair. Of course, he was copying my code in his head, and to my amazement, he remembered just about all I was telling him, from one transmission to the next.

Over the course of the next several months, I heard him on the 40-meter band, in the less crowded part, above 7.040 MHz, several times, and each time, I would go back to his "CQ." He would remember parts of our past QSOs and it would always amaze me.

During the cold winter we have been having, I haven't gone out to the garage, where I operate from, and so don't know if he is still on the air or not. I have his call and name on a Post-It® at my operating position, as my memory isn't exactly that great any more. I hope he is still on the air, and as the weather warms up, I'll be out there in the evenings, looking for him, as I tune through the band. He is sure one contact I will never forget.

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When Field Day ends, we're already discussing next year. The preparation, packing, sore muscles and sleep deprivation are forgotten. We remember the time spent together, Field Days past and how fortunate we are to share our hobby with both old and new friends. ■

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Continued - Dear Hiram from Page 2

Luso Towers has become a must-see at the Hamvention®. If you've never seen their monster tower you might want to search them out on the Internet. They are even identified on the inside exhibits map, like a "must visit" kind of thing.

Standing outside for a breather, I watched the charter buses pull up and people charge off into the flea market entrance. Inside, Saturday seemed to be more crowded than Friday. Not the "pinball" banging into everybody, but definitely a bit crowded.

In the morning I went to John Amodeo's, NN6JA, forum presentation that was standing room only and very interesting.

I picked up some XLR-M4 connectors and ear pads from Heil Sound because I couldn't find them anywhere else. All in all, it was a very nice day at the Hamvention®. Again, we had a nice dinner and afterwards again saw groups congregating in the parking lot. (Never thought of it, but maybe the Hamvention® kind of resembles one giant club meeting.)

Sunday morning was pack up and checkout day. Weather was again near perfect, but just a bit hotter than the first two days.

Fritz and I attended the Quarter Century Wireless Association forum in the morning, which was a bit sparsely attended. We got to meet the new president of QCWA.

When we first arrived at the site, I decided to make a quick swing around the flea market to kill some time before the QCWA forum. Wouldn't you know it, in a pile of stuff on a table I had probably passed at least twice in the last two days, I found my XLR connectors at half the Heil price. (Only at Dayton!)

After the QCWA forum, Fritz and I decided we would leave early and beat some of the traffic. Normally we stay for the drawing that ends the hamfest, but as we have never won anything in 30-plus years, we took our leave. (You don't have to be present to win the major prizes; they will call if you win. Nobody called either of us!)

Well Hiram, looking back on the weekend, amateur radio looks to still be going strong enough to pull in around 24,000 plus people from everywhere to the Hamvention®. By the way, Hiram, congratulations on the 100th anniversary of the American Radio Relay League. You should be really proud that you helped amateur radio get off the ground to a great start all those years ago. ■

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…that amateur radio may need a public relations idea, like the "Got Milk?" campaign to raise public awareness. Any ideas amateur radio might use?

The fact is that most people think we are all nerds and that it's all CB radio.

One idea I would pitch is for all the radio manufacturers to pool some money and create a common advertising fund. Use that pool to hire an ad agency and create a new image for ham radio.

However, my experience tells me the ham community is very conservative and change is slow.



As producer of *Last Man Standing*, how did you decide to make Tim Allen's character Mike Baxter an amateur and have his own amateur station?

It was Tim who mentioned that his character was self-reliant and had a bit of a survivalist trait.

He thought ham radio would be a good thing for Mike Baxter to have.

You have mentioned that a number of the crew on the show got their ham tickets, any more news on that front?

At the end of last season we had 12, but many things change from season to season on a television show. We'll have to see if the number goes up or down when we start up again in August.

Since the station on the set is real have any of the crew worked any DX?

I'm not sure if it really counts as DX, but we have worked stations outside the US through D-STAR and the Win system.

Next season we'll be putting our antennas on the stage roof, outside the building and about 75 feet in the air. We'll especially be trying for HF contacts.

With the announcement the show was renewed for next season and is moving to Friday at 8:30 any plot lines you can divulge?

Not really, we'll just concentrate on making funny, family friendly shows.

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components—resulting in midair solder joints. Note: when installing the paired 100-ohm, 2-watt resistors at the top of SW-3 take care the resistors clear the enclosure's screw post located very near that position.



The Tuning

After eyeballing the completed ZM-2 it was time to try it out. Patching a NorCal Power Meter between the PFR-3 and the newly completed tuner it was easy to achieve an indicated 1:1 SWR on all three of its bands: 40-, 30- and 20-meters while hooked to the station's 80-10 meter fan dipole antenna. Tuning was performed as described in the kit manual, i.e., select TUNE and alternate between the two tuning capacitors while peaking band noise or a signal. Then key the rig and touch up the two capacitors until the LED dims out–that's it. Now select OPERATE and you are good to go. After your first few experiences with the ZM-2 you will be very pleased how quickly it tunes compared to other manual tuners you may have used–I know I was.

Forty- and 20-meters weren't much of a challenge as the antenna already provides flat to nearly flat SWR without external assistance. However, 30-meters stumps the big rig in the shack's built-in automatic tuner and a Tucker (Vectronics) Model T-1000 manual tuner. The antenna may not be a great radiator on 30-meters, but it keeps the QRP rig's finals happy.

It was a chilly and windy day, a day not conducive to a "Backyards-On-The-Air" (BOTA) session, when I next challenged the ZM-2. A PAC-12™ antenna was stabbed into the soil just outside my living room window wedged between a large juniper and a brick wall. The mini-vertical's four counterpoises were arrayed in the limited space available and the RG-174/U feedline brought through the nearest window opening. With the PFR-3 running off its internal eight AA cell power supply and using PAC-12™ coils wound for the three bands under test, on 7.040 MHz the ZM-2 managed a 1.1:1 SWR at 4.9 watts, 10.110 MHz registered 1.1:1 SWR at 4.6 watts and on 14.040 MHz it was a 1.2:1 SWR at 4.7 watts, again measured by the NorCal Power Meter. On 40- and 20-meters the ZM-2's LED quickly and completely extinguished at these SWR readings, on 30-meters the LED did not completely extinguish, however, there was no doubt about it and the power meter was in concordance. On two previous attempts using the PFR-3's built-in tuner I was unable to accomplish this line flattening with the PAC-12™.

Tuning an end-fed 33' foot wire tossed up to a low branch and complemented by a 17' counterpoise achieved: 40-meters, 1.3:1, 30-meters, 1.2:1; and 20-meters, 1.3:1. In these instances the LED remained very dimly lit at the best match obtained.

Add Emtech's ZM-2 to those kits recently reviewed in these pages that offer trouble-free, enjoyable assembly; operate as described; are useful additions to many shacks, QRP and QRO; and all at affordable prices. ■

Continued - Q & A from Page 7

ABC has always done well with the TGIF concept. With pickup of the new Reba *show, the opportunities presented itself to air two shows back to back and make a comedy block.*

One last question: Was your visit to the Dayton Hamvention® your first time and what did you think of the experience?

This was my first time at Dayton and it was a lot of fun. I'm no stranger to trade shows like NAB, NAPTE, and SIA. Actually, by Las Vegas standards it's (Hamvention®) a small, but a unique experience. I would recommend all hams make the pilgrimage at least once.

There's really nothing else like it.

Thanks for your time and I'm sure amateurs will be looking forward to *Last Man Standing* on Friday nights at 8:30 pm next fall. ■

EXTRA...

Paul Ross, W3FIS, recommends the Johannes Kepler biography at: http://www.space.com/15787-johannes-kepler.html. Paul recently contributed two articles on amateur radio satellite communications.

Lee Cheever, W5IG, (The W5IG Air Key, May 2011, p. 4) recommends this video of his latest Cool Transmitter project. http://youtu.be/neHreW-PNtw

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