

# FEEDBACK



**VOLUME 59 ISSUE 12**

**DECEMBER 2014**

## MASSILLON AMATEUR RADIO CLUB OFFICERS

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**MRN NET Sundays 8:00 PM**  
**3.599.5 MHz**

**WEST STARK INFO NET**  
**Fridays 8:00 PM**  
**147.18MHz**  
**(except 1st Fri of month)**

## CONTENTS

Secretary Report	2
N8ATZ Report	3 & 4
N8CD Article	5, 6, 7, 8
KB6NU Column	9
News	10
Calendar by K8INN	11
MARC Back Page	12

## DECEMBER MEETING

The meeting for the month of December will be held on **December 5th, 2014** at the Massillon Senior Center. The doors will open at 7:00 PM and the meeting will start at 8:00 PM.

This is an all important meeting. Not only will we elect the new officers for 2015, we will have to present and approve a new budget for 2015. Officers and Trustees have met and “hammered” out a new budget and will present it to the membership for approval.

December is the month in which we elect our Officers for the coming year. At the November meeting we had nominations for the various Offices. Nominated was Ralph Bugg, K8HSQ for President, Terry Russ, N8ATZ for Vice President, Fred Reed KD8SMO for Secretary, and Gary Kline WC8W for Treasurer. We had one “volunteer” for Trustee and that was Jim Farriss, WA8GXM. Ralph and Terry have already served for one year and would very much like to be replaced, but will serve if no one is eligible to take over. Fred, has been filling in for Robert, AC8GE, who resigned in October, because of work and family commitments, Fred will take office in January if voted in. Gary, likewise will take office for another year in January. ALL officers can be re-elected if they so desire and will take Office in January. (Except Trustees who are elected to a term of 3 (three) years). More nominations will be taken at the December meeting and a final vote will take place to determine the winner. See you at the meeting!

## JANUARY BANQUET

We are announcing the Banquet that will be held on **January 10th 2015**. The doors will open at 4:30 PM to allow paper work to be done before the meal begins at 6:00 PM.

**Reservations are required. Please have your reservation in by January 1, 2015.**

We will of course NOT have a regular business meeting in January.



Shirley has outdone herself on this year’s menu. She will have : Roast Beef, Sticky Chicken ( a new item on the menu! ), mashed potatoes/ with gravy, Sweet & Sour meatballs, noodles, and old fashioned dressing, toss salad with Italian dressing, cranberry relish, water, punch and of course coffee. Also dinner roles with butter. YUM YUM !!!

Like last year members are asked to bring a dessert of their choice to share with everyone. This worked out very well as everyone had a wide variety of choice in desserts !

Because of increases in food prices we are forced to raise our Banquet price this year to \$ 15.00 per person. Children under 5 will be free and children under 12 will be half price. Shirley says if there is any overage it will be donated back to the club for general use.

## MARC Minutes November, 2014

President RalphK8HSQ called the meeting to order at 8:00 PM, November 7, 2014. After the Pledge of Allegiance a round of introductions was conducted, with approximately 33 members present.

### **Motion to accept last month's minutes:**

Ralph asked if there were any corrections or additions to the October Secretary's report that was sent to all members via e-mail.

None being presented, Ralph asked for a motion to accept the report.

Motion by Bud, WA8KWD - Second by Lee KD8UEA

Motion passed

### **Treasurers Report:**

Gary WC8W presented information about the current balances in the checking accounts, CD's and petty cash accounts. He also presented the costs and receipts that were associated with the Hamfest. Approximately 313 tickets were sold. The profit from the Hamfest still has to be calculated after the charges for tables, flyers, printing and other expenses are paid. Gary did remark that the club made a good profit from the Swiss festival, which was met with a round of applause.

Ralph asked for a motion to accept the treasurer's report as given.

Motion by Bud, WA8KWD - Second by Gene, W8KXR

Motion passed.

### **VP Report by Terry, N8ATZ**

Terry reminded everyone that there are several flyers from various clubs available at the table to read. Terry noted that the ARRL Centennial (W1AW/x) program is almost finished, with only American Samoa, Virgin Islands, Washington and Kansas remaining. Be ready for epic pile-ups if you want to try making a QSO! Also, the ARRL November sweepstakes have finished the CW portion, with fone starting next week. Terry also noted the passing of former Ohio OOC Rick Swain KK8O. The 60th Annual Massillon Holiday Parade is scheduled for November 22, 2014. A sign up sheet was passed around for volunteers to help. Contact Perry W8AU for more information or to sign up. We need all the help we can get.

### **Committee Reports:**

Wade, WD8MIU discussed the activities planned for the "Elmer Program" which is designed to help others learn the basics of electronics, radio, soldering and kit construction. The meeting planned for Jan. 1, 2015 will be moved to Jan17. At the 1/17 meeting James KD8VT will present grounding techniques for the shack and car. At the 2/7 meeting, John N8CD will build an antenna attenuator kit that would be useful for fox hunts etc. Those wanting to buy a kit for themselves should contact Wade soon, so they can be ordered. The cost is roughly \$26. The meetings will be held at the Senior Center between 9:00 and 11:00 AM. Anyone having ideas for programs at the Mar. 7<sup>th</sup> and April 4<sup>th</sup> are encouraged to contact Wade.

### **Old Business:**

Terry N8ATZ...The hamfest went well, but as usual, it would be nice to have more attendance. The Ohio Section leader was there, and was impressed by the way the 'fest was organized and ran. Also, the Boy's and Girl's Club commended us on the good cleanup. It was noted that the club will no longer be available on the weekend of the Massillon-McKinley game due to logistic problems. We may have to either find another location or pick a different date for upcoming hamfests. Rex NX8G reported that 1 person upgraded from tech to general, and 3 people took both the tech and general test at the VE session, and all passed. Congratulations to 3 new hams!

### **New Business:**

Ralph talked about the new Yaesu DR-1 repeater that is now active. Many people commented that it is working far better than the old one, and has dual analog and digital capability. A lot of discussion followed about how the repeater was acquired. It was discovered that Yaesu was offering a limited-time promotion where clubs could buy what would normally be a \$1700 unit for only \$500. Thinking that there would not be enough time to present the idea to the club, the forms were filled out and sent in. Surprise, the new repeater was sent to Jim WA8GXM in less than two weeks. Jim paid for the unit out of his own pocket. A lot of discussion followed about how the unit was acquired out of the normal process of having a motion approved by the club at a meeting. After a lot of discussion, it was the overwhelming opinion of all present that due to the terrific deal and limited time for the offer from Yaesu, that it was the proper thing to do (An "executive decision") and the club should reimburse Jim for the cost. There were also private donations made that reduced the cost to only \$250.

A motion to reimburse was made by Lee KD8UEA and seconded by Gene W8KXR.

The motion passed.

More discussion followed about buying a transceiver for the shack that matches the new repeater's digital capability, and the fact that HRO is offering a \$100 rebate on the Yaesu FTM-400DR transceiver. A motion to purchase one was made by Ted K8TWA and seconded by Gene W8KXR. Before that motion was voted on, another motion to table was made by Joe WD8BGW and seconded by Ken KF9WB because some of the members felt that more discussion should be held before making the decision to buy. The motion to table was voted and failed. The motion to buy the transceiver was then held, and it passed.

**Nominations for 2015 officers:**

After the break, nominations were taken for new officers. There were very few names submitted. Terry N8ATZ made a strong case that people must step up and take responsibility for operating the club, or its very existence will be threatened. It is hoped that members will respond, and step forward.

**50:50 Raffle:**

The 50-50 of \$28 was won by Mike, KB8OTK

**Many thanks to Shirley and others who helped in the kitchen with the coffee, soda and tasty cake!**

Ralph closed the meeting at approximately 9:40PM.

**Submitted by Fred KD8SMO**

**... FIELD DAY RESULTS ...**

The ARRL has officially released the scores from this years Field Day exercise and as submitted the clubs final score was 3,724 points on 9385 QSO's placing us 91st in the US in Class 2A. A hearty congratulations to everyone involved in helping us achieve another great operating event. While our score slightly lower from the year before (by nearly 200 points), it was still a successful event and I know everyone had a great time. The Canton club again scored very well garnering 9,424 points on 2,240 QSO's. This placed them 9th in the US. Well done guy's.

Class 2A is a tough category to compete in. It always has the most entries with 392 this year. The Ohio Section also has the most participation with 150 scores submitted this year. We are in good company and we placed very well considering we are in the toughest category in the US !. It won't be long before we will begin planning for next years event, lets work together to make it another great club event !.

**... HAMFEST REPORT ...**

Our annual hamfest is over for another year and I'm happy to report that we had another successful club event. Table rentals were solid, attendance was strong and everyone I talked to continued to say what a nice hamfest we continue to sponsor each year. According to Gary, WC8W we might have even seen a slightly higher attendance this year, another good sign. Table vendors reported decent sales which was good to hear. We even had some new parts vendors attend this year and they reported decent sales. I hope to invite them back next year.

Thanks to all the club volunteers, YL's and XYL's who also helped to make this year's event another success.

**... SKYWARN RECOGNITION DAY ...**

SKYWARNTM Recognition Day (SRD) was developed in 1999 by the National Weather Service and the American Radio Relay League. It celebrates the contributions that volunteer SKYWARNTM radio operators make to the National Weather Service. During the day SKYWARNTM operators visit NWS offices and contact other radio operators across the world. This year SRD will take place on Saturday, December 6th from 0000z to 2400z.

You can find out additional details on this event by going to their site at: <http://www.wrh.noaa.gov/mtr/hamradio>.

... WEBSITE STATS ...

Again this year the club's website was a popular place with over 2,500 visits during the year, an increase of over 2 percent. This equals about 15 visits a day to the site which tells us that it continues to be a good source of information to the club and beyond. Maintaining the site continues to be an ongoing challenge with several hours devoted each week adding new material, removing old and archiving material and general maintenance. Our hosting service has continued to perform well with no site downtime reported this year as well as providing us with nearly unlimited storage space and bandwidth. Currently the site is about 350 MB in size including the many graphics, pictures and archive of newsletters that stretch back to 2000. This is the largest our site has ever been since it went on-line back in 2002.

Don't forget the club's Facebook page is always available where everyone, member or not can post items if interest or comment on club activities. Let us know how well you liked a recent program or event. We continue to see some activity on the club's Twitter feed as well. Social Media continues to be a positive impact on club popularity.

As I put the finishing touches on my last column for 2014, I would like to take this opportunity to wish you all a very Happy Holiday season. Also a thank you to the club officers for their solid leadership this year and to the membership for their continued support of our great organization. We enjoyed fun meetings and many great programs again this year and I look forward to 2015 !

Very soon I will once again activate the Holiday Page on the club website. Again this year I found some fun new items to post including more holiday music, video's, gift ideas, great holiday food recipes and some neat Christmas gifts that any ham would like to see under the tree.

The Holiday Page is our gift to you, the members of the club and the many friends and visitors who regularly visit each holiday season.

Happy Holiday's to you and yours and I hope to see many of you at our January banquet !

73's  
Terry - N8ATZ

Sign up for the February 7th Mentoring session - Deadline December 19th,  
2014

For the February 7th Mentoring session, we'll be building a Variable Offset Attenuator, which you can use for close-in work when fox hunting. The session will be on February 7th, 2015, from 9:00 AM to 11:00 AM at the Massillon Senior Center. We'll be building this from a small kit available from Marvin, KE6HTS. In the process we will learn a little about soldering, get some practice at it, learn the theory on how this kit works, and have a generally all around good time. Here's a URL you can visit to see what we will build:

<http://www.west.net/~marvin/k0ov.htm> . I still have a few details to work out, but in order to have the right number of kits on hand for the event I need people to pre-register for the session. You're welcome to attend even if you don't register before the deadline, but I won't be able to guarantee we'll have a kit for you to build. I'm expecting we'll have over a dozen attendees, so the cost of the kit, connectors, battery, and other supplies should be about \$26. Payment will be due at the event on February 7th. When we get closer to the event, I'll have a firm cost for each unit. If you're interested in attending, please email me at [john@n8cd.com](mailto:john@n8cd.com) , or Wade at [wd8miu@gmail.com](mailto:wd8miu@gmail.com) . Thanks, and

I look forward to seeing you there! 73 de John, N8CD

## Cross Band Repeating

By John Wagner, N8CD, November 2014

**Cross band repeating** is a technique that allows you to use your dual band mobile radio to act as a short range repeater. This can be used to extend the range of a handheld (HT) radio to reach a distant repeater, and can also be used in place of a "real" repeater in remote or emergency situations. This capability is built into many dual band mobile radios, such as the Yaesu FT-8800/8900, Kenwood TM-V71A/D710, and Icom ID-5100 & ID-2820 models, as well as many others. There are even some base radios like the Kenwood TS-2000 and a few handheld radios that also can act as cross band repeaters. Note that most Kenwood radios are among the few on the market that include a CW ID'er that allows legal operation in "Full (two way)" mode (more on that later).

This article is intended to explain the basics, the things to do and not to do when cross band repeating, and how the FCC rules apply to this practice. How to make your capable dual band mobile into a cross band repeater is covered in your owner's manual.

### FCC Rules that apply

For the types of cross band repeating discussed in this article, below is a summary of the primary sections of the Part 97 rules that apply:

#### 97.3 Definitions.

(40) Repeater. An amateur station that simultaneously retransmits the transmission of another amateur station on a different channel or channels

#### 97.105 Control operator duties.

(a) The control operator must ensure the immediate proper operation of the station, regardless of the type of control.

#### 97.119 Station identification.

(a) Each amateur station, except a space station or telecommand station, must transmit its assigned call sign on its transmitting channel at the end of each communication, and at least every 10 minutes during a communication, for the purpose of clearly making the source of the transmissions from the station known to those receiving the transmissions. No station may transmit unidentified communications or signals, or transmit as the station call sign, any call sign not authorized to the

station.

#### 97.205 Repeater operation

(b) A repeater may receive and retransmit only on the 10 m and shorter wavelength frequency bands except the 28.0-29.5 MHz, 50.0-51.0 MHz, 144.0-144.5 MHz, 145.5-146.0 MHz, 222.00-222.15 MHz, 431.0-433.0 MHz, and 435.0-438.0 MHz segments.

There are three main types of cross band repeating: Full (two way), Half (one way), and Temporary Repeater. Each of these modes have use cases, advantages, and disadvantages. There are also a few things to keep in mind that are common to all three operating modes.

### Common to all cross band repeating

1) Choose your frequencies wisely. You want to be sure you will not interfere with other simplex or repeater users, even distant ones. Typically a UHF frequency is used for the HT side of the cross band repeater. The UHF 440MHz band seems to have lots of open space, but things are not always as they seem. 442.0-444.975 MHz are used for repeater outputs, and 447.0-449.975 MHz are used for repeater inputs. 440.0-442.0 MHz and 446.1-447.0 MHz are sometimes used for site-to-site links between repeaters. Links on these frequencies are not published, and are typically directional. However, it is possible for your cross band repeater to interfere with these links and you would not even be aware of it. I checked with Ken Bird, W8SMK, who is the current chairman and long time OARC repeater frequency coordinator for our area of Ohio. In our discussions, we came up with these two frequencies that would be

good choices for the UHF side of your cross band repeater, provided they aren't in use by simplex or other users at the time: **446.0125 MHz and 446.1125 MHz**. These may or may not be good choices outside of northeast Ohio, but should be a good start with some monitoring in our area.

2) ALWAYS ALWAYS ALWAYS use CTCSS decode, or preferably DCS decode on the HT side of your mobile cross band repeater. Do NOT leave the HT side of your mobile radio in squelch-only mode. Remember that your cross band repeater will likely be transmitting into a remote repeater that has other users. If local noise from power lines, computers, cell

### Do's and Don'ts of Cross Band Repeating

#### Do's

- Carefully choose your frequencies
- ALWAYS use CTCSS DECODE, or better yet, DCS on the HT side of your mobile
- Use the lowest power setting possible on your mobile (to meet FCC requirement 97.313(a), minimize the chance you'll interfere, and to protect your mobile radio's transmitter) and your car's battery
- Ensure your mobile acting as the cross band repeater identifies properly (only a few do) OR run your repeater in "Half (one way)" or "Temporary repeater" mode to ensure you are meeting identification requirements

#### Don'ts

- Leave your cross band repeater unmonitored
- Run your car battery dead
- Do anything that interferes with other amateurs or the repeaters

phones, atmospheric conditions, or other amateurs breaks the squelch on the HT side of your mobile cross band repeater, that noise will be retransmitted by your mobile into the remote repeater.

This will:

- a) make you unpopular
- b) potentially burn up your radio's transmitter
- c) violate FCC rules around causing harmful interference.

Using CTCSS or DCS decode greatly reduces the chances of something being repeated through your mobile cross band radio that wasn't intended to be repeated.

Every year or two, I hear a repeater in the area being tied up by someone who has not followed this advice. The situation usually resolves when either their mobile radio burns up from extended transmitting, or the local foxhunt team tracks down the offending signal (much to the embarrassment of the offender). Please don't be "that guy".

3) Read the rules. FCC Part 97 rules aren't very long or complicated. As government documents go, they are surprisingly readable. Even if you've been in amateur radio for decades, it's a good idea to read through the rules. You might be surprised what has changed since the last time you read them. Here's a link to one source for the text of part 97.

<http://www.arrl.org/part-97-amateur-radio>

With the common things out of the way, here are some details on the three types of cross band repeating.

### Full (two way) mode

"Full (two way)", is where the mobile radio is between your HT and the remote repeater going both directions. This type of cross band repeating should only be done if your mobile radio is capable and configured to identify itself per FCC requirements. Most newer Kenwood mobiles have this ability, but Yaesu, Icom, and Alinco units do not. Unless you buy or build an external ID'er and connect it to your mobile radio, you should not use this mode. The problem is that without some form of identification on the cross band radio, the transmission from the remote repeater that is retransmitted through your mobile isn't reliably identified with your call sign.

In full (two way) mode, your mobile radio repeats both directions. Your HT is repeated by the mobile into the remote repeater, and the remote repeater is retransmitted by the mobile back to your HT. In cases where the remote repeater's signal is very

weak to your HT, this mode is a good choice (provided your mobile radio can meet identification requirements).



Full (two way) Crossbanding to reach a distant repeater  
Mobile must have built-in ID'er to meet FCC rules when using this mode

Figure 1: Full (two way) cross band repeat

Other than the ID requirements, there are other drawbacks to operating in this mode. One is that your mobile is only capable of transmitting on one frequency at a time. When the remote repeater is transmitting, your mobile will be locked in transmit mode repeating the remote repeater to your HT. Your mobile radio will not be able to hear your HT until the remote repeater signal drops completely and the mobile can return to receive mode. Timing is a problem here, as you must wait to transmit from your HT until after the remote repeater fully drops. On repeaters with long hang times, this can be tricky. Some repeaters only transmit their CTCSS tone when they are repeating a remote user, which can help mitigate this problem, but those repeaters seem to be the exception.

Another problem with full two way cross band repeating is that if the remote repeater is busy, your mobile radio will be doing a lot of transmitting. Depending on what power output your mobile radio is set to, you could overheat the mobile radio. Your car battery will also have more load in this mode of operation.

For full (two way) mode, one side of your mobile radio will be used to go to the HT, and the other will go to the remote repeater. In Figure 2, the left side of the radio is configured to go to the HT, and the right side is configured to go to the remote repeater. **Note that on the HT side of the mobile, you should ALWAYS configure either CTCSS decode, or preferably DCS decode.** This will prevent other amateurs who may not be aware you are running a



Figure 2: Mobile config for full (two way) mode

cross band repeater on the frequency from inadvertently going through your mobile to interfere with the remote repeater. It will also prevent random noise sources near your mobile from being retransmitted through your mobile and tying up the remote repeater.

To configure your HT to use the mobile in Full (two way) cross band repeat mode, you will only need to setup one band as shown in Figure 3. Note that a dual band HT is not required for this configuration. Be sure to configure CTCSS or DCS to match the left side of your mobile radio.



Figure 3: HT config for full (two way) mode

If you want to do full (two way) cross band repeat but your mobile radio doesn't support proper identification, you can build an add-on ID'er using an Arduino board by adapting a project like this one:  
<http://buildthings.wordpress.com/ham-radio-automatic-cw-ider-at-tiny-arduino-based/>

### Half (one way) mode

“Half (one way)”, also known as “mobile extender” mode is where the mobile radio only relays your HT to the remote repeater. You receive the remote repeater directly on your HT.



This mode requires a basic dual band HT, but meets FCC requirements for identification with almost any brand of mobile radio, and is also easier on both your mobile radio and your car's battery. For these reasons, this is the mode I recommend you use whenever you need to cross band repeat. Since the

remote repeater typically has a transmit signal many times more powerful than your HT's signal, it is usually possible to hear the remote repeater directly on your HT even if you cannot transmit back directly without the help of a cross band repeater.



Half (one way) Crossbanding to reach a distant repeater

Figure 4: Half (one way) cross band repeating

In the half (one way) cross band repeat mode, your mobile radio is setup to repeat your HT to the remote repeater, but not the other direction. You listen to the remote repeater directly on your HT. Note that if another repeater user is close to your mobile cross band radio, they may be repeated through your mobile back to your HT as well as being repeated by the remote repeater.

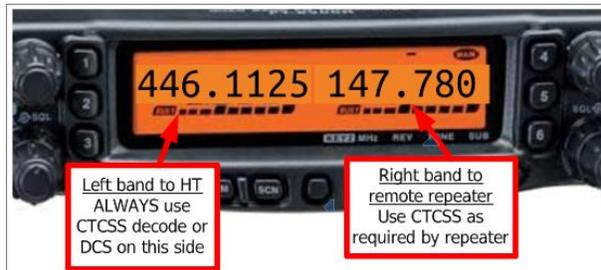


Figure 5: Mobile config for half (one way) mode



Figure 6: HT config for half (one way) mode

## Temporary repeater mode

“Temporary repeater”, is where the mobile acts like a “real” repeater, and is between two or more HTs, with no other remote repeater involved. In this case, all of the users transmit on one frequency, and are retransmitted by the mobile onto the other band.



Figure 7: Temporary Repeater Mode

The result is your mobile acts just like a “real” repeater, except that it receives and transmits on separate bands. This can be extremely useful in a remote or emergency situation where a traditional repeater isn't available.

Keep in mind the identification requirements. If your mobile rig doesn't have a built-in ID'er, make sure you (as the control operator) give your call sign through the cross band repeater at least every 10 minutes while it is in use, and when you are shutting it down.

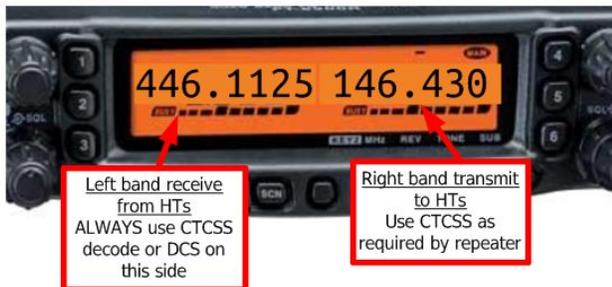


Figure 8: Mobile config for temporary repeater mode



Figure 9: HT config for temporary repeater mode

## Testing and Documenting

If you're new at cross band repeating, or trying it for the first time on a new radio, It's always a good idea to test your setup. Ideally, you should connect your cross band repeat radio to a dummy load and test with a friend or a second HT. This will give you a chance to see that everything works as you expect before going on the air. In addition to testing what should work, it's also a good idea to test what should NOT work. For example, try transmitting from your HT without the proper CTCSS or DCS tone set, and make sure your mobile does not retransmit the signal.

I've found that I don't use this feature often enough to remember all the tricks to setting it up on a particular radio. Once you've ironed out the configuration, you might find it useful to jot some notes about how to put your mobile into cross band repeat mode and how to configure your HT to use it, and keep that note in your car's glove box in case you need it later.

References:

<http://www.arrl.org/auxiliary-station-faq>  
<http://www.arrl.org/files/file/Technology/tis/info/pdf/9804093.pdf>

## Free Stuff!

By **Dan Romanchik, KB6NU**

I'm a sucker for free stuff. Below, you'll find links to a free transistor amplifier design program, a free printed circuit board design program, and a free tutorial on antennas. All of these look to be worth a look.

### Transistor Amp 1.1

This is free software for designing bipolar transistor amplifiers. I found the link to this software (<http://en.transistoramp.de/>) on the AMRAD mailing list. Phil, M1GWZ, who posted the link, says, "A transistor circuit that I'm developing needed a 5x voltage gain stage. I could have thrown in a single op amp with split power rails and all that DIL8 real estate, but a single transistor stage would suffice. Trouble is, I'm an EE by inclination, not training, and all those calculations - working out those capacitor reactance values - well, I don't do them often enough for them to be easy. And I want voltage gain, not current. And then I found Transistor Amp 1.1."

"It's a nice piece of software," says Phil, "It installs easily and did the job for me quickly and easily. Oh, and when I built the circuit for real - voltage gain of 5x!"

[[ NOTE: A screen shot of the software that you can use for the article can be found at <http://www.kb6nu.com/wp-content/uploads/2014/11/specify-common-base-circuit.png>.....Dan]]

### Altium CircuitMaker

CircuitMaker (<http://www.circuitmaker.com>) is a free printed circuit board design tool for hobbyists, people like you and me. Maxfield Parrish of EETimes says, "one key aspect of CircuitMaker is its intuitive and easy-to-use interface -- all of the important "stuff" is presented in an easily accessible manner in a ribbon at the top of the display. Another major consideration is that Altium has decided to make CircuitMaker all about "Community," so users can easily share ideas and designs, comment on designs and offer suggestions for improvement, and generally help each other

along the way."

### Free antenna tutorial

For a limited time, Rohde & Schwartz and the IEEE Communications Society are offering a free tutorial on Antenna Basics (<http://www.comsoc.org/form/tutorial-registration-antenna-basics>). This tutorial explains the basic functionality of an antenna, starting with Hertz's antenna model. It also includes a short introduction to the fundamentals of wave propagation, the important general characteristics of an antenna and parameters, such as antenna gain, radiation pattern, bandwidth or VSWR. A more detailed explanation of the functionality of some selected antenna types (e.g. dipole or monopole) is also given.

Maik Reckeweg, Product Manager Antennas, Rohde & Schwarz GmbH, Munich, Germany, who is responsible for all the company's monitoring, measurement and communications antennas is the tutorial's.

The video is kind of dry, but I think Reckeweg does a pretty good job of discussing antenna basics. The video is also accompanied by a white paper that delves into these topics a little more completely. Overall, there's a bit more math than in most amateur radio discussions of antennas, but this makes the discussion a little more comprehensive.

When not scouring the Internet for free stuff, you'll find KB6NU working on updates to his "No Nonsense" study guides, working CW on 40m, or blogging about amateur radio at [www.kb6nu.com](http://www.kb6nu.com).



DX Engineering is welcoming Martin F. Jue K5FLU and his MFJ family of companies to our headquarters near Akron, Ohio. We're calling it "MFJ Day at DX Engineering," and I'm extending an invitation to you and your club members. It will be held on Saturday, January 10th from 9a.m. to 2 p.m., at our showroom inside the Summit Racing Retail Super Store at 1200 Southeast Ave. in Tallmadge, Ohio.

Shake off the Winter doldrums and make some eyeball QSOs. We'll also open up our warehouse, so you'll be able to get super deals on open-box gear. Plus, all MFJ brands – Ameritron, Cushcraft, Hy-Gain, Mirage, MFJ, and Vectronics – will be on sale.

Watch for more details at [DXEngineering.com](http://DXEngineering.com) and on our Facebook page. In the meantime, add the date to your calendar of events and spread the word to your club members and friends. I hope to see you here!

Have a great holiday,

Tim Duffy, K3LR

Chief Marketing Officer and General Manager

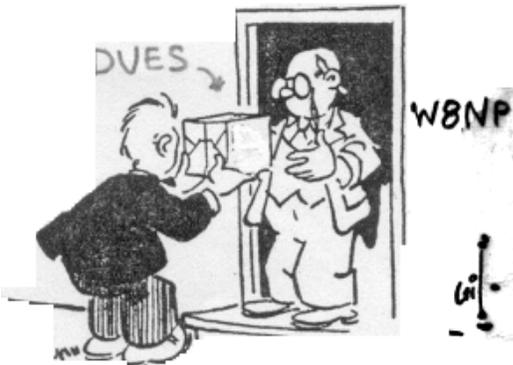
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1200 Southeast Ave.

Tattmadge, OH 44278 USA

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## DUES ARE NOW DUE

With the new year beginning in January this means our fiscal year begins. That means dues for the club are now due. Cost for each member is \$ 15.00. Cost for the XYL is just \$ 7.50 and each licensed child who wishes to be a member of the club. We will begin collecting them at the December meeting, but don't worry , you will have until the March meeting to pay. So be sure to see the Treasurer at the meeting to renew year membership ! Remember " we don't want to loose a single member "!

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# December 2014

## W8NP Monthly Planner

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday																																																																																																																			
<b>Upcoming Events:</b> 1/10 - MARC ANNUAL BANQUET!  1/18 - SCARF Hamfest, Nelsonville, OH  1/31 - Lockport ARA's Hamfest, Lockport, NY	1	2	3	4	5	6																																																																																																																			
		Stark County ARES Net on 147.12 at 7:00 PM		BD KD8BCA	Massillon Amateur Radio Club Meeting, Senior Center, Massillon, 2000	Fulton County ARC Winterfest, Delta, OH  Silvercreek ARA, 0930, Ctc: Barry 330-925-1706, Rittman Public Library  VE Test Session, Portage County ARS, 1000, Ctc.: Robert 330-607-3833, PCARS, Ravenna																																																																																																																			
7	8	9	10	11	12	13																																																																																																																			
L'anse Creuse Amateur Radio Club Swap / Hamfest, Harrison Township, MI  Massillon Radio Net - 3599.5 kHz, 1930	BD K8FUN	BD KB8FFC  Stark County ARES Net on 147.12 at 7:00 PM		BD W8KXR	BD KC8ZEJ  West Stark Info Net - 147.180 at 2000																																																																																																																				
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28	29	30	31	<table style="margin: auto; border: 1px solid black;"> <tr> <th colspan="7">Nov 2014</th> <th colspan="7">Jan 2015</th> </tr> <tr> <th>S</th><th>M</th><th>T</th><th>W</th><th>T</th><th>F</th><th>S</th> <th>S</th><th>M</th><th>T</th><th>W</th><th>T</th><th>F</th><th>S</th> </tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td style="text-align: center;">1</td> <td></td><td></td><td></td><td></td><td></td><td style="text-align: center;">1</td><td style="text-align: center;">2</td><td style="text-align: center;">3</td> </tr> <tr> <td style="text-align: center;">2</td><td style="text-align: center;">3</td><td style="text-align: center;">4</td><td style="text-align: center;">5</td><td style="text-align: center;">6</td><td style="text-align: center;">7</td><td style="text-align: center;">8</td> <td style="text-align: center;">4</td><td style="text-align: center;">5</td><td style="text-align: center;">6</td><td style="text-align: center;">7</td><td style="text-align: center;">8</td><td style="text-align: center;">9</td><td style="text-align: center;">10</td> </tr> <tr> <td style="text-align: center;">9</td><td style="text-align: center;">10</td><td style="text-align: center;">11</td><td style="text-align: center;">12</td><td style="text-align: center;">13</td><td style="text-align: center;">14</td><td style="text-align: center;">15</td> <td style="text-align: center;">11</td><td style="text-align: center;">12</td><td style="text-align: center;">13</td><td style="text-align: center;">14</td><td style="text-align: center;">15</td><td style="text-align: center;">16</td><td style="text-align: center;">17</td> </tr> <tr> <td style="text-align: center;">16</td><td style="text-align: center;">17</td><td style="text-align: center;">18</td><td style="text-align: center;">19</td><td style="text-align: center;">20</td><td style="text-align: center;">21</td><td style="text-align: center;">22</td> <td style="text-align: center;">18</td><td style="text-align: center;">19</td><td style="text-align: center;">20</td><td style="text-align: center;">21</td><td style="text-align: center;">22</td><td style="text-align: center;">23</td><td style="text-align: center;">24</td> </tr> <tr> <td style="text-align: center;">23</td><td style="text-align: center;">24</td><td style="text-align: center;">25</td><td style="text-align: center;">26</td><td style="text-align: center;">27</td><td style="text-align: center;">28</td><td style="text-align: center;">29</td> <td style="text-align: center;">25</td><td style="text-align: center;">26</td><td style="text-align: center;">27</td><td style="text-align: center;">28</td><td style="text-align: center;">29</td><td style="text-align: center;">30</td><td style="text-align: center;">31</td> </tr> <tr> <td style="text-align: center;">30</td><td></td><td></td><td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>			Nov 2014							Jan 2015							S	M	T	W	T	F	S	S	M	T	W	T	F	S							1						1	2	3	2	3	4	5	6	7	8	4	5	6	7	8	9	10	9	10	11	12	13	14	15	11	12	13	14	15	16	17	16	17	18	19	20	21	22	18	19	20	21	22	23	24	23	24	25	26	27	28	29	25	26	27	28	29	30	31	30															
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Please contact K8INN for updates, changes, or additions.

**MASSILLON AMATEUR RADIO CLUB**  
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