ATCO NEWSLETTER

VOLUME 32 NUMBER 2 **April 2015**

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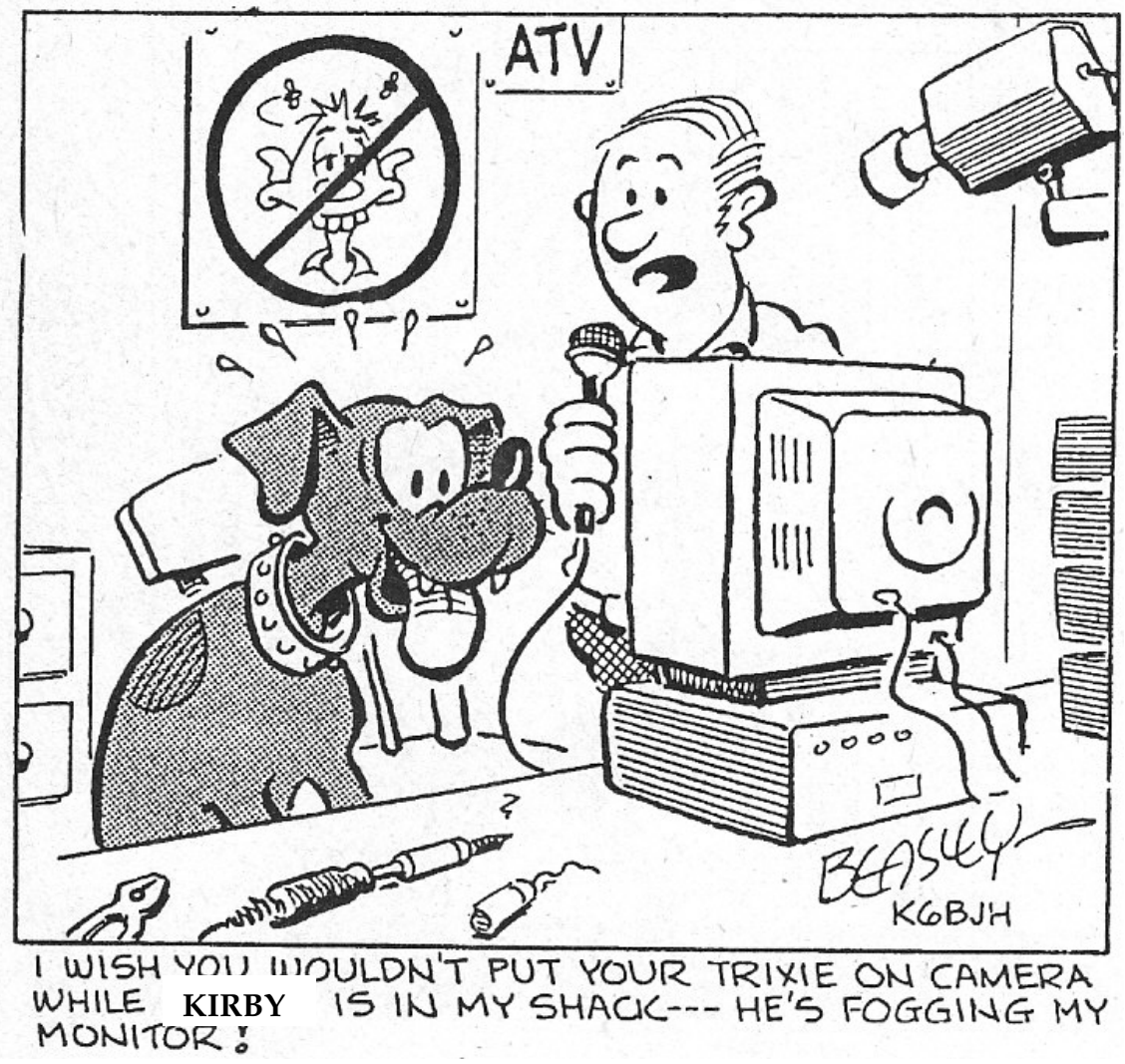
ATCO SPOTLIGHT TOPIC

Thanks to Beasley, K6BJH (SK) and ATVQ Magazine for allowing us to share his cartoons. For the complete book on "The Best of Beasley" go to the ATVQ Magazine web site (http://atvquarterly.com/) available for purchase.



ACTIVITIES ... from my Workbench

Well, it's another harsh winter in our rear view mirror. Thank goodness!!!

Now to work with ATV construction activity. To be quite honest, I've not accomplished much at all this last winter. It's nobody's fault but mine. It seems that I get all wrapped up in starting something important at the time but lose interest in short order so I start something else only to lose interest in that project too. And so it goes, sound familiar? If I would take the time to analyze it, I'll find I always run into something I don't know which takes research to determine the correct direction. That's where I tend to lose interest. It's the **research** that takes all of the time. So, if I knew the correct answer to everything from the get-go, I'd finish everything I started but no such luck. Oh, well!

I am working on some interesting power amplifier projects which evolved into an article later in this Newsletter but you have no idea how much elapsed time that took. Along the way, I found things that didn't work as planned so progress got dropped till I thought about it more. So now winter's gone and I finally finished something. Hooray for my side!

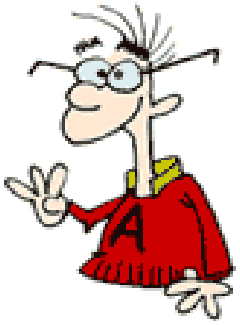
Along that line I'm working on another high power DATV amplifier that should output a few hundred watts. Right now, I'm waiting for a 32volt 50 amp power supply for it. So now it sits idle while I probe into something else.

By the way, I haven't heard or seen anyone else building anything. Is our hobby dead? The only other construction project I've seen is Bob, W8RWR's J- pole antenna. I was so excited I just had to show it in this Newsletter. Come on guys, there HAS to be someone else building something Ham related. I'm starting to get discouraged with our ATV hobby as I stare into the future. I know it's our modern society saying, "We want everything, we want it now and we don't want to have to work for it. Just buy it, plug it in and talk to the world for a short time because my I-pad is calling too". There are too many things to multiplex and not enough time to do that.

But wait, the BBHN Mesh Net activity is starting to raise eyebrows. I sure hope this thing takes off because it holds promise for invigorating the people who are tired of the same old thing. It contains just the ingredients to spark interest in today's society. It isn't expensive, it can be utilized with ready built equipment and it serves ATV and Emergency minded people alike. Neat, Huh? I'll leave the details to an article later in this Newsletter so read on!

It's Spring Event time again. I'll be raffling off a handheld talkie again and, get this, I have a complete Yaesu HF rig to give away. I haven't tested it and think it needs work but for the price, it could be super for someone. In addition, there will be more free door prizes. So, reserve time enough to participate in this one. Attendance has been dropping lately, I don't know exactly why, down to about 15 people at the Fall Event so I'd love to see some of the people we haven't heard from lately. Tell us how to grow. Oh, last but not least, we have a winner for the caption contest. **You aren't going to believe who won the $100 prize.** Come to the Spring Event to find out.

That's all for now guys.
….73, WA8RMC



Fred Yost- K8JGY SK.

Yost Fred Yost was a lot of things: an aviator; a builder; a caver; a ham radio operator; and most importantly, a loving father and grandfather. Fred died in his Blacklick home on Monday, March 2, 2015 at the age of 76. Born in Huntington, West Virginia to Enid and Albert Yost, Fred grew up with a curiosity and intellect that led him to experiences and creations few can match. Confined to a wheel chair for part of his childhood, Fred, with the help of his father, still learned to fly an airplane before he was even old enough to drive. A lifelong tinkerer, Fred would grow up to build and fly two ultra-light airplanes of his own. He built them in his two car garage. Fred, or K8JGY as he was known on the airwaves, was also a passionate ham radio operator. When others would be in a basement waiting for a tornado to pass, Fred could be found on the roof giving information to local weather trackers about where the twirler was headed. Long before internet video was ever heard of, the Navy veteran used his backyard amateur radio tower to transmit Slow Scan TV shows that were watched by other ham radio operators around the world. His unique home - with the garage that doubled as an airplane hangar and a basement that served as a TV studio - caught the attention of NBC 4 News in Columbus. After profiling Fred and his various pursuits, the station - enamored by Fred's charm and sense of humor - offered him a job as a movie critic. His "Just a Guy" movie review segments ran for about 4 years. When Fred died, his daughter, Teresa (Terry) Allton of Blacklick, and his son, Chip Yost of Los Angeles, were both by his side. Both are grateful for the unique childhood he provided them, and hope they pass on his sense of humor and unique outlook on life to his five grandchildren, Sean Patrick, Jr, Michelina, Tanner, Kaden and Karis. A memorial service for Fred will be held at 5 p.m. Thursday, March 5, 2015 at the SCHOEDINGER NORTHEAST CHAPEL, 1051 E. Johnstown Rd. (at Beecher Rd.), Gahanna, where the family will receive friends from 4 p.m. until the time of the service. In lieu of flowers, the family requests donations to National Church Residences Hospice, 2245 North Bank Dr., Columbus, OH 43220. Please visit www.schoedinger.com to share a favorite memory or send a condolence. Published in The Columbus Dispatch on Mar. 4, 2015

Thanks John for passing this on. I am very sorry to hear of his passing. I remember holding one of our very early ATCO meetings at his house and he had an impact on our charter and direction. I think he was ATCO's first treasurer. He often was the first to respond to a request for a test signal to help align antennas, etc, and would do so for hours on end. Fred will be missed.
Ken, W8RUT

I also remember Fred well. Yes, he indeed was our first ATCO treasurer. Also, I believe he was instrumental in helping to form ATCO back in the early 80's. We had a meeting to that extent in a local restaurant in Gahanna at the time. Fred also liked ultralight airplanes and enjoyed showing me his progress building one in his garage.

I helped him remove his antennas and tower in preparation for his move to one of the southern states, I believe South Carolina. He lived there on many acres of land until his house had a fire about 5 years ago. He then moved back to Columbus and resided in the Blacklick area. He Emailed me one day to help him program his handi talkie. I responded to say that I'd be happy to help but then lost the Email address. I was not able to contact him after that.
Art, WA8RMC

Amateur Radio Television Pioneer Don Miller, W9NTP, SK

From the ARRL letter 4/2/15

Amateur Radio television pioneer and past ARRL Central Division Director Don C. Miller, W9NTP, of Waldron, Indiana, died March 22. He was 91. An ARRL Life Member, he was licensed in 1943. In the 1960s, Miller was instrumental in developing slow-scan TV (SSTV) for ham radio, working with Cop MacDonald, VY2CM, and others. Miller wrote several articles on SSTV for *QST*. In 1972, Dayton Hamvention® honored Miller as Amateur of the Year. Miller served as the Central Division Director from 1977 until 1980.

During World War II, Miller served in the US Army Signal Corps before being recruited to work at the Trinity atomic weapons test site in New Mexico as part of the Manhattan Project.

"I went to work one day and finally figured out that we were building a nuclear bomb. But that's all I knew about it," Miller told *The Rushville Republican* newspaper in 2007. Miller said he worked with J. Robert Oppenheimer, who oversaw the Manhattan Project.

Miller also was a collector of Native American and other historical artifacts, and in 2014, FBI agents raided his Indiana home and confiscated objects alleged to have been collected in violation of federal and state laws and of several treaties. Miller's collection included artifacts from all over the world. He told investigators that he had began collecting as a youngster.

In 1984, Miller and his wife, Sue, W9YL (SK), founded Wyman Research Inc, which developed and marketed Amateur Radio SSTV and ATV equipment. Wyman Research engineered the SSTV gear used onboard the Russian *Mir* space station. *-- Thanks to* The Shelbyville News; The Daily DX

CAPTION CONTEST UPDATE

I said before,
"Email me your caption by March 1st to towslee1@ee.net and I'll send out a return Email by March 15 to all members to vote for the best caption. Return your vote by April 1st and I'll publish all suggestions along with the winner in the Next Newsletter due out about April 15th. All ATCO members will have one vote. **The winner will receive a $100 check from ATCO. Second place will get free ATCO dues for a year".**

Well, I was surprised on this one! I thought it was a good idea to do something that ALL ATCO members could participate in instead of just the ones who capitalize on the free lunch and door prizes at the Spring/Fall events. Well, there were 46 submitted ideas from only15 people. Only 5 people voted on the captions, so it's clear to me that not many people really care one way or the other but since we have 2 votes for the same caption, I'm happy to announce we have a winner! That person is#######. (Find out at the Spring Event). However, now I have a dilemma. There are 3 other entries with one vote each. I said we'd give the runner up free dues for one year so I declare it a 3 way tie for second and give free 1 year dues to W8RXX (#46), AH2AR (#31) , and KB8YMQ (#2). I'll present the winner with a check for $100 at the Spring Event.

The entries are below:
1. "Although amateur inventor Jim Carlson achieved a gain of over 10 dB with his covert listening device, the design needed a bit more tweaking before he could submit it to the patent office."
2. Here's ..... testing his hearing aids that he received from the Veterans Administration.
3. I hear that!
4. ATV? Tell me about it, I am all ears!...
5. I can afford feed line next, then some day a RIG!
6. I am still waiting to see that DVB-T signal...
7. This is my solution to avoid problems with my rig and feed line!
8. And they laugh but I've already worked 5 states!
9. I am one that likes to listen to the distant drummer...
10. I can not afford to go to the outdoor concert, but I can hear it just fine from here...
11. My wife makes me wear this as she says I never listen to her...!
12. Like it? Kind of matches my jacket doesn't it?
13. No one said getting on DATV was going to be easy!
14. With this invention, I hope the ATCO group lets me join!
15. If you think this picture is good, you should see my selfie!
16. This is my remote Facebook access rig...
18. I don't know why I'm not a hit on the dating sites...
19. I'm auditioning to be in a 'Dilbert' (who is a Ham) cartoon strip...
20. You're 59 in South Texas...QRZ contest...
21. Don't laugh, my SWR is 1.2 : 1 from 2.4 to 24 GHz!
22. And I still can't get any cell service out here!
23. Not that I can hear so much, but my front to back is wonderful - I can tune out anything!
24. This hobby is dumb! I think I'll get a puppy instead!
25. This is a file photo of Art when he first became a Ham.
26. New hearing aides wife found for me
27. This is my punishment for Ignoring the wife
28. I got my FREE hearing aides
29. I heard of boxing someone's ears BUT this is (#$@%)
30. Sorry Cap'n Kirk - I canna hear you----------
31. Although not for the fashion conscious, Jim's revolutionary hearing aid design does not require the use of batteries.
32. QSL
33. CAN YOU HEAR ME NOW?
34. WHAT?
35."I'm all ears sweetheart…. could you repeat that?"
36. 10-4 Good Buddy...I've got my ears on
37. Red neck hearing aid
38. Hill billy hearing aid
39. Red Neck stethoscope
40. M-I-C-K-E-Y M-O-U....Hey Art, your signal's a bit Snowy but readable on my new set of EARS.
41. Oh look, my Elephantiasis didn't drop!
42. DX hearing aids
43. I think I can hear Russia from here!
44.) Yes Dear...
45) Grandpa, what big ears you have...
46.) Listening to congress carefully they are still full of S&%#!
…WA8RMC

INTERNATIONAL DATV QSO PARTY PREVIEW

Here's a "heads up" for the upcoming DATV QSO party this August, date to be announced. Last year was a great success but I thought the USA Hams could have been better prepared, me included. It would go much smoother if we all prepare in advance a short, 2-3 minute recorded video of what you are up to including a pan around the shack. When it is your turn to show the video, you can do that yourself or send it to a friend here to show it from their QTH in case you don't have recording facilities. As an alternate, you can send it to me and I'll feed it out on the internet at the appropriate time. Just a thought as it's early yet.

Following is a note from Peter Cossins, VK3BFG from Melbourne, Australia who will be in the USA at this time…WA8RMC

Hi Guys ..

I hope the winter has not been too bad although according to the news northern USA is under a lot of snow and Britain has not been a lot better. I will be in the US in late March/April but unfortunately a long way from either Art or Don. I have hired a Cessna 182 in Dallas and intend to fly myself around the bottom parts of the US for a couple of weeks.

Looking forward to that and it probably will be a 'Bucket List' in terms of my personal flying. I intend to see if yet another DATV QSO Party may be viable. I have purchased a Pinnacle Dazzle which is a beefed up USB Dongle that I am told will work with the newer versions of Skype.

All attempts to keep an old version on my PC have been aborted and I have not been able to succeed in a work around. If I get support for another event , then an idea would be to get participants to prepare a very short video showing their location, antennas and a bit of the shack or ATV transmitter ie a bit of show and tell. It could be live if they like.

Of course all would be welcome irrespective, but I would like to get away from just a call sign and some audio … timing would be again around the end of August. Noel … would like to expand the UK connection if possible.
Your thoughts would be appreciated.

Regards,
Peter Cossins, VK3BFG

HAMVENTION SATURDAY ATV FORUM DETAILS

ATV Forum:
Saturday starting at 12:15 in room 2. Our Moderator this year will be Art Towslee WA8RMC. The forum will consist of several presenters giving short talks about the ATV mode, equipment, practices and the latest state of the art in ATV. A five minute Q&A time slot follows each presentation.

12:15-12:20 "Introductions" by our Moderator.
12:25-12:35 "Life after the PC, Analog TX/RX" by Gordon West WB6NOA.
12:40-1:00 "Getting started in Digital Amateur Television" by Mel Whitten K0PFX.
1:05-1:30 "VSWR: Why it does not mean as much as you think (for ATVers)" by Dr. Al Torres KP4AQI.
1:35-1:50 "Linked ATV Repeaters in the Southwest" by Mike Collis WA6SVT.
1:55-2PM "Forum Wrap up" by our Moderator ArtTowslee WA8RMC.

SSTV Balloon Launch
Will take place Friday afternoon following the BolloonSat Forum. SSTV will be transmitted on 2 meters. More details at the BalloonSat Forum.

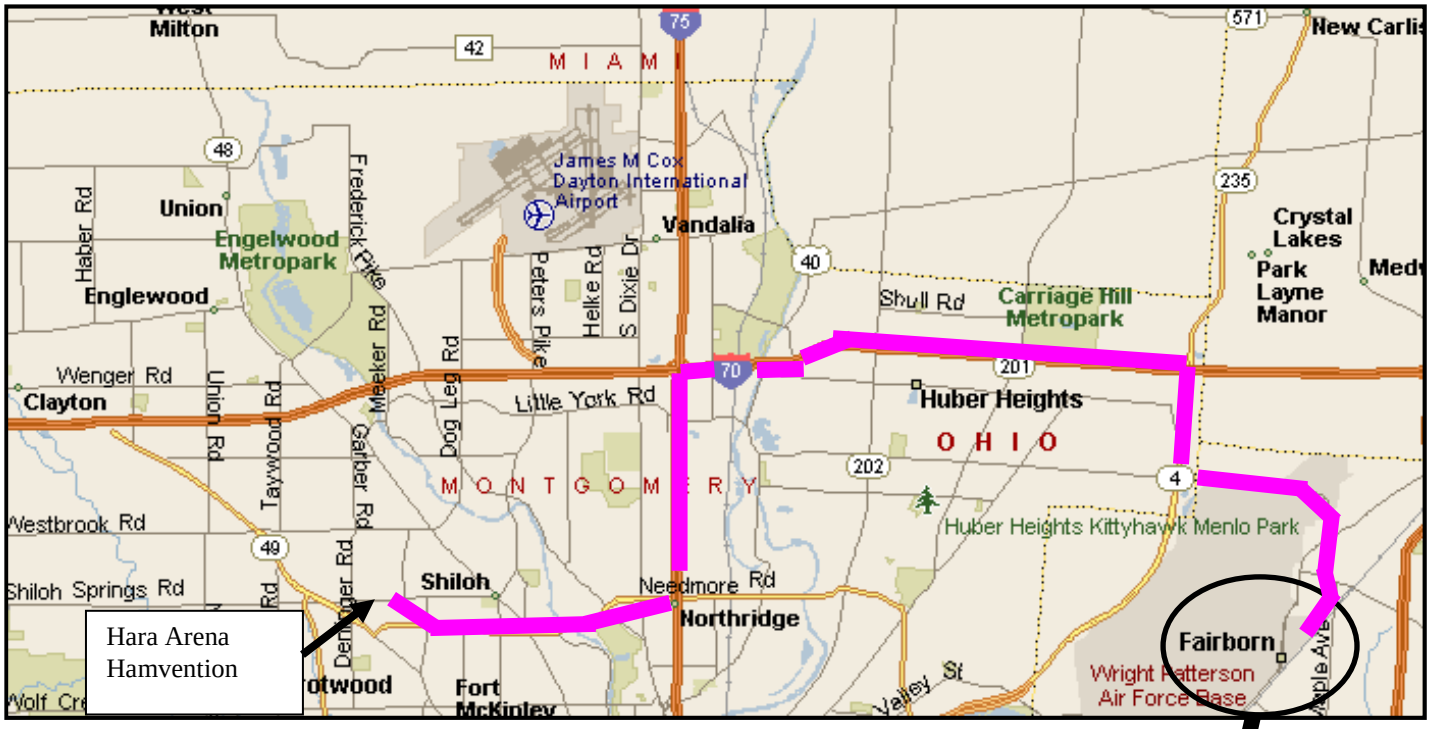
ATN Booth
This year Amateur Television Network will have a club booth. A great place to find out the latest in ATV and ATV events at the Hamvention. Many of us meet at the booth Friday late afternoon then caravan over to the ATV dinner. ATV handouts including sample ATVQ issues. We will have a Dayton special for new and renewing subscribers.We are planning an ATV demo of DVB-T equipment in operation. Please stop by and see us, We would like to get your input about ATVQ and anything about ATV.

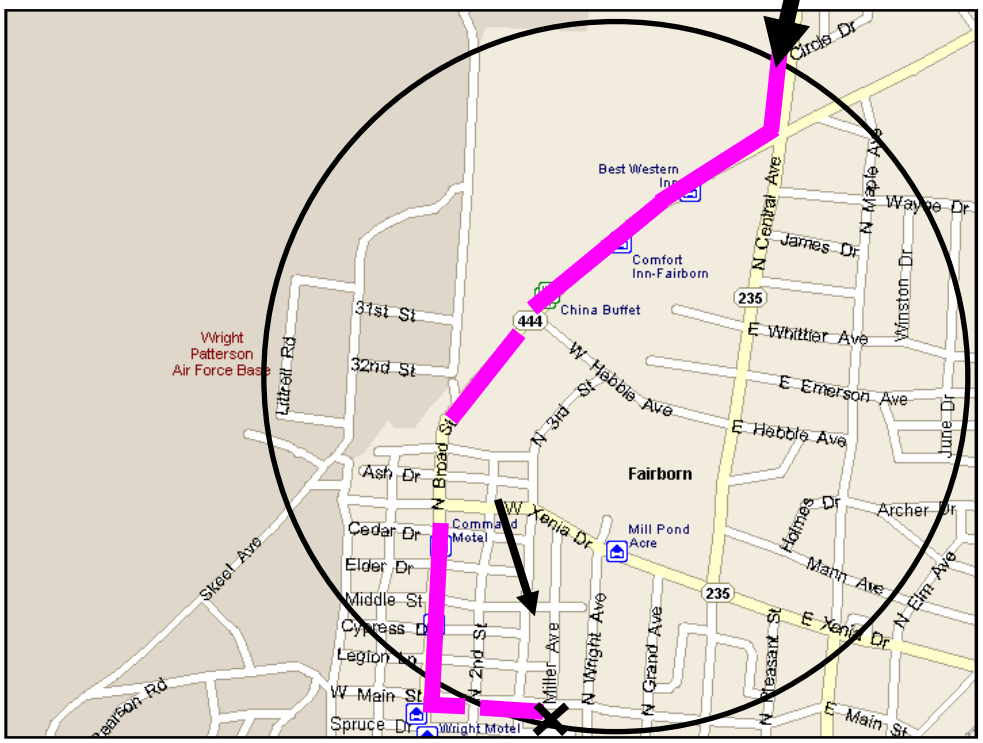
HAMVENTION FRIDAY NIGHT DINNER

The ATV Friday night dinner and discussion will be held on Hamvention Friday from 6 till 10PM at Roush's Restaurant 305 W Main St. in Fairborn, OH 45324 (at the north end of Wright Patterson airfield runway). The dinner menu is varied, moderately priced and ordered separately. We will enjoy a sit down dinner then have speakers talk about various ATV topics. We will also include door prizes for those present. The meeting terminates at about 10PM.

Directions: Take I-75 north then I-70 east. Exit SR 235/ SR4 south (Fairborn exit). South on 235 about 1 mile then left on Chambersburg Road (east & still SR235 past airport runway). Right on N. Broad Street for about 10 blocks. Turn left on W. Main Street for 3 blocks to Miller Ave. Roush's is on corner of W. Main and Miller. Parking in rear. **1-937-878-3611**

GPS (39-49-19-N) X (84-01-30-W)



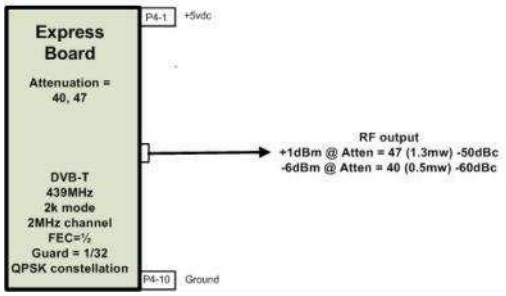


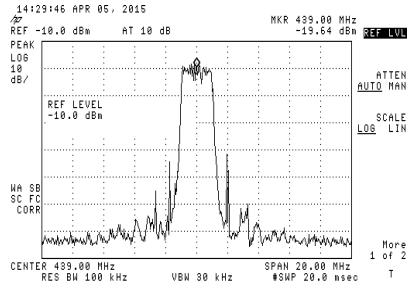
Roush's Restaurant.
305 W. Main street
Fairborn, Ohio
1-937-878-3611

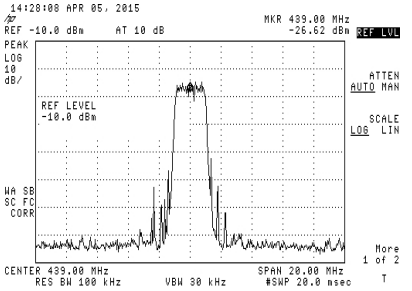
DATV-EXPRESS DVB-T POWER AMPLIFIERS

The DATV-Express board is capable of generating a +10dBm DVB-S +1dBm DVB-T signal. (See www.DATV-Express.com for details). Either of these signals is not much good without amplification. So, what follows are details for a few DVB-T post amplifiers to boost it to a more manageable level. This goes for all other DATV transmitters on the market also, not just DATV-Express. However, the Express board has a cleaner signal, the output is higher and covers a 70 to 2450MHz frequency range. The cleaner signal is the most important parameter because as you add amplifiers, the signal gets degraded thereby limiting the number and types of post amplifiers. In general, signal distortion (spectral re-growth) can be tolerated until it rises to about 20dB below the top of the haystack. For comparison, broadcast industry limits re-growth to greater than 40 dB below top of the haystack (-40dBc) prior to the final amplifier.

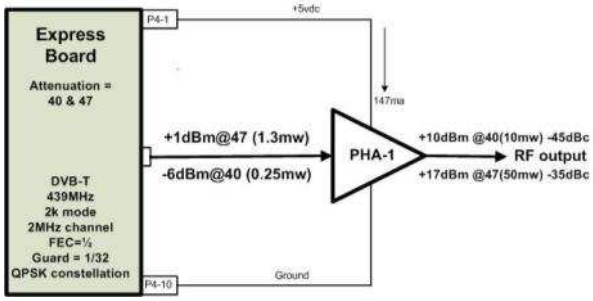
First, let's start by looking at the Express board output at minimum attenuation (setting 47 left graph) and then again with 7dB of electronic attenuation inserted (setting 40 in right graph). Note a slight amount of distortion re-growth on either side of the main carrier on the left. This is due to a slight amount of non-linearity introduced in the Express internal MMIC amplifier at that signal level. It's down about 50 dB from peak carrier which is good but later we'll see what that does to the signal as amplifier stages are added. (The signal peaks to the left and right of the signal are a result of limited software oversampling in the program and can't be avoided here).

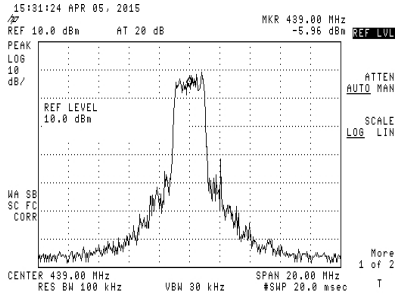


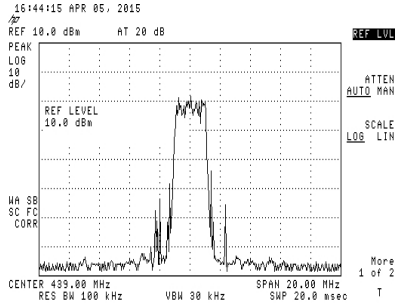




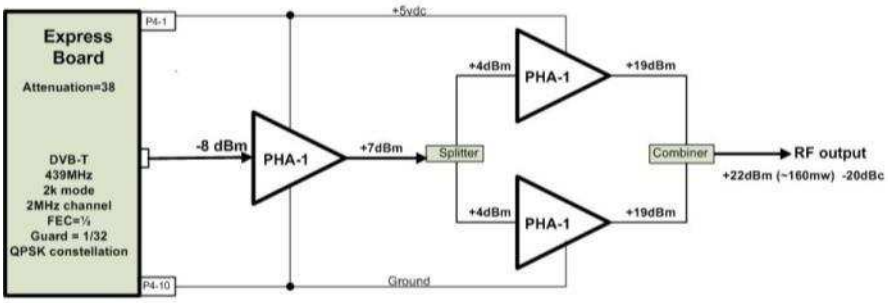
Now, let's look at a 439MHz application using a simple amplifier addition to see how much output power can be achieved. A good selection is a Minicircuits type PHA-1 wide band MMIC. It operates from 50MHz to 6GHz on +5VDC, has about 15dB of gain (I measured 16) and is relatively cheap at around $3.00 in small quantities. It's powered directly from Express with only a small modification.* Express is first set for its maximum DVB-T attenuator setting 47 for +1dBm (1.3mw). The single PHA-1 amplifier output in the left graph is about +17dBm (~50mw). That's good for a simple addition to Express but generally not high enough for most practical applications. Also the re-growth increased noticeably. If this is the final output, it's OK (re-growth at -35dBc) but in order to add another amplifier stage, the output must be reduced to minimize re-growth here and prevent the next amplifier input stage overload.

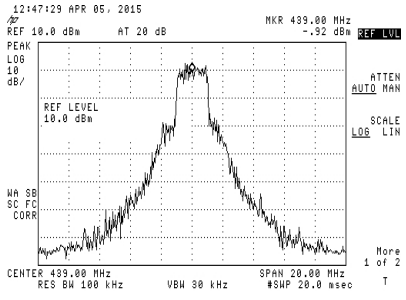




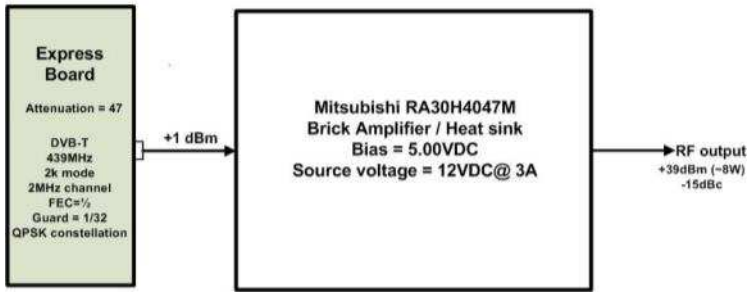


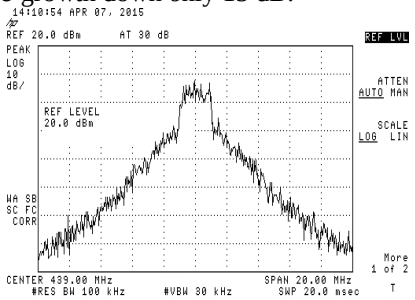
To increase the output it gets a bit more complicated but not that difficult, so stay with me! Since the single PHA-1 can only tolerate a +6dBm maximum input signal without distortion, an added single amplifier after the first one at Express full output is not practical. Instead, parallel two PHA-1's with a signal splitter on the input and a combiner on the output. That way the pair can be fed with twice the signal a single device could accept and maintain the same gain. (The signal is reduced by 3dB at each input but increased by 3dB at the combined output). The Express output must then be reduced to about -8dBm so the first amp outputs +7dBm (15dB gain) and then split into two +4dBm signals to feed the parallel combination. Then the two +19dBm outputs (4dBm+ 15dB) re-combine to produce one +22dBm (~160mw) signal. This output signal has enough re-growth distortion to put it about 20dB down from the top of the haystack signal. 160mw is now high enough for short range over-the-air communications. If a cleaner signal with lower re-growth distortion is desired, it will be necessary to lower the Express signal feeding the amplifiers for a corresponding reduction in signal output. There is NO FREE LUNCH HERE! The single and parallel combination can still operate from the Express board internal +5VDC source.*



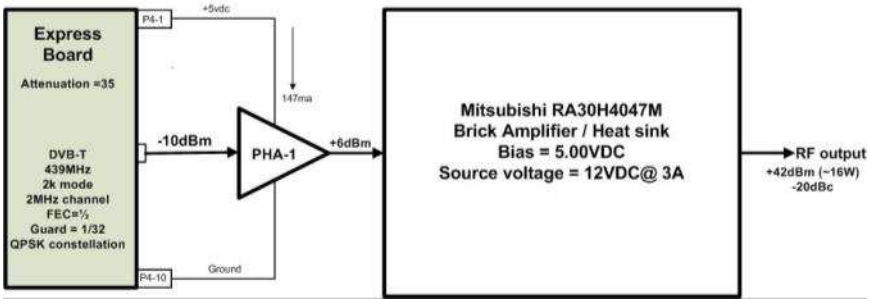


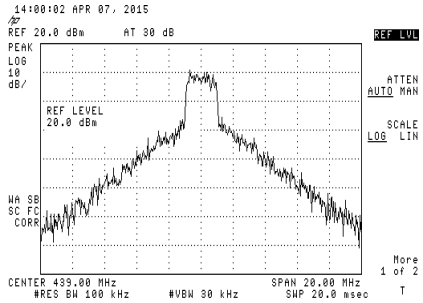
OK, so much for the simple PHA-1 amplifiers. To output still **more** power I'll first try to discard both PHA-1 amplifiers and use a high power "brick" amplifier instead. The Mitsubishi RA30H4047M amplifier will accept the signal from Express and output about 8 watts without any intermediate amplifier. However, it costs about $40, it must be sourced from a separate +12VDC 3 amp supply, it must be installed on an appropriate heat sink / cooling fan and the best output signal obtained is inferior to the PHA-1 amplifier arrangements. However it ***could*** be adequate for DATV applications if a band pass filter is used to eliminate the distortion spectral re-growth sidebands. The best compromise I got with the below arrangement was 8 watts out with re-growth down only 15 dB.





A reason the above combination does not look good is because the Express output is set at maximum to get enough signal through the brick amp. At that level, as I said before, there is a slight amount of re-growth in the Express output at the 47 attenuation level. It is not noticeable there but when it's passed through a ~50db brick amplifier and added to some inherit brick amp non-linearity, it becomes almost unmanageable as seen in the graph. A solution is to lower the Express output and add a single PHA-1 intermediate amplifier between it and the brick amp. As a result, re-growth is lowered and maximum output is raised, a worthwhile achievement.





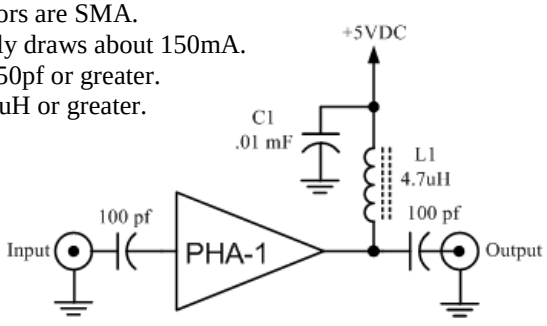
So, after all the effort, what is learned here? DATV DVB-T amplifiers are possible but it's not easy to obtain "broadcast quality" signals. Small distortion signal components can make a huge difference in the end result. Remember also, the re-growth sidebands in the power output envelope do not contribute toward a better signal. Just because the "Bird" wattmeter shows an increase in output may not mean the signal is stronger or better!!! About 16 watts true power is achievable with sidebands 20dB below haystack top.

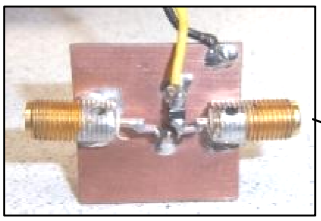
** The Express board was designed to supply power for an external low current SWR amplifier to feed forward and reverse DC signals back to the Express board for processing. Therefore the +5VDC output at P4-1won't source enough current for the PHA-1 amplifier power needs. R31 (49.9Ω) in series with the DC supply must be removed or shorted out to provide enough power to drive the PHA-1 amps.(DO NOT SHORT CIRCUIT THIS LINE WITH R31 BYPASSED) No other modification is required.*

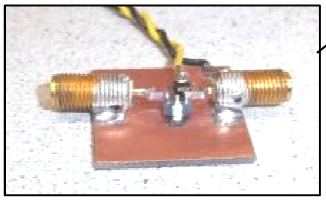
OK, how about DVB-S applications. DVB-S operation is mostly, if not all, on the 23cm 1240-1300MHz band due to the availability of inexpensive DVB-S satellite receivers designed for 940-2150 MHz without modification. Since the maximum Express DVB-S output is about +10dBm (10mw), a single PHA-1 amplifier can't be used because it's limited to about +6dBm at its input. So, if more output from a DVB-S signal is needed, start with the dual PHA-1 amplifier that will handle +10dBm at the input. However, that's subject matter for another article tailored just to DVB-S so stay tuned.

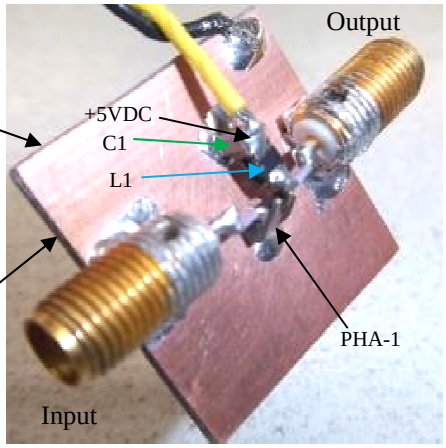
Single PHA-1 amplifier construction details:

This amp is good for 439-1280 without change. It'll handle up to about +6dBm at the input and will give about 15-16dB gain @ 439 and about 11-12dB @ 1280. I assembled it on a piece of G10 circuit board 1" square. Connectors are SMA.
5V supply draws about 150mA.
Caps = 50pf or greater.
L1= 4.7uH or greater.



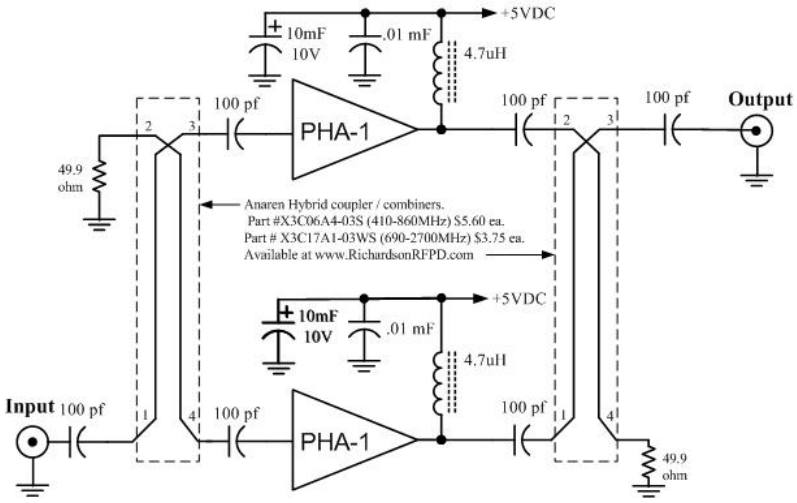


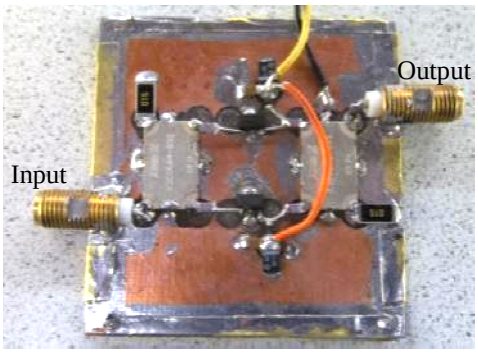


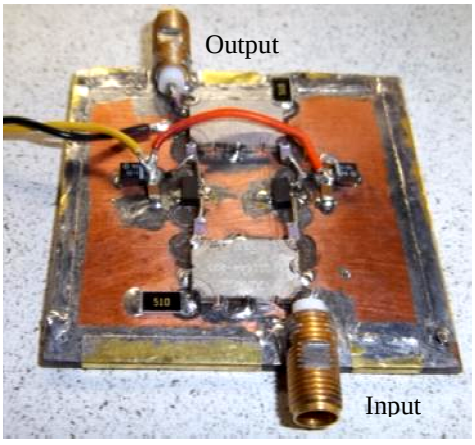


Dual PHA-1 amplifier details:

This amp is good for 439 and 900MHz operation using the Anarzen X3C06A4-03S splitter/combiner ($5.60) and 1200- 2400MHz with the Anarzen X3C17A1-03WS ($3.75) available in the USA at Richardson Electronics (RichardsonRFPD.com). The dual arrangement allows twice as much input signal with the same gain as a single unit. It draws about 290ma.I used a piece of 2" x 2" blank G10 circuit board and used a "pad cutter" to create small isolated circuit pads. I then laid the surface mount parts on the pads as shown in the pictures above. (See how to make a pad cutter at https://www.youtube.com/watch?v=uFLdDTT5-wk. The video shows how to create your own tool for it. (I apologize for the crude look of my prototype. I didn't clean it up for the picture). Some pads were removed to clear space for components.

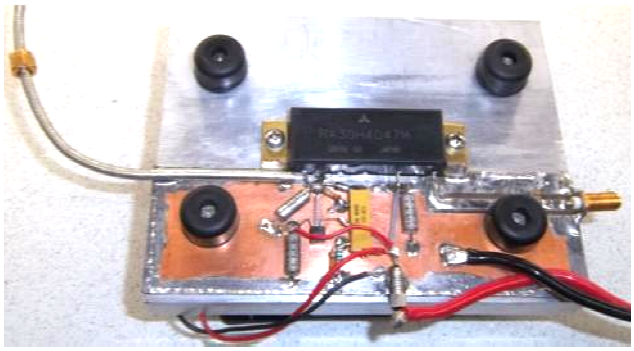


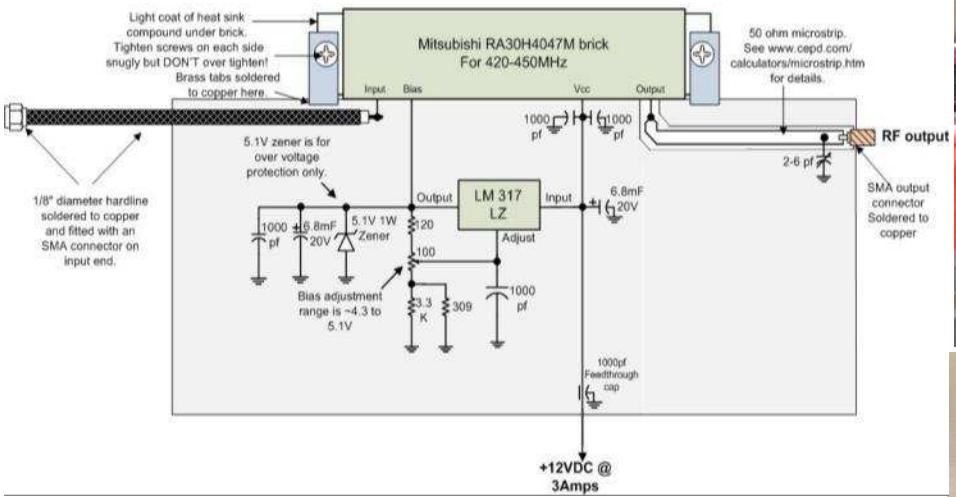


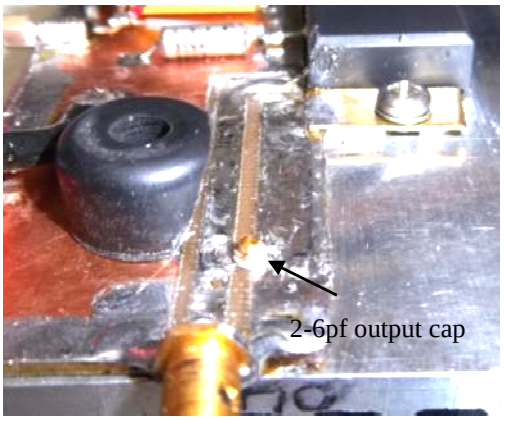


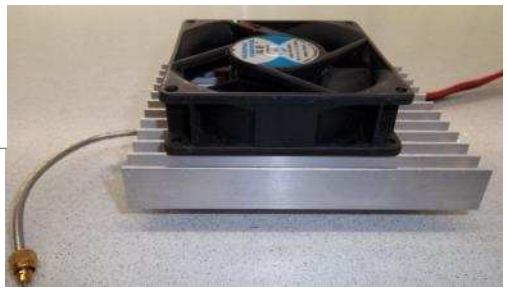
BRICK Amplifier details

This amp works as shown for 420-450MHz operation. I assembled the circuitry on a piece of 1.5" x 5.5" blank G10 double sided circuit board. Note that I folded pieces of thin brass shim stock around all edges so the bottom copper totally connects with top copper breaking it only at the brick output wire. Here again, I used a pad cutter to fabricate isolated pads to connect SM components. The output trace is a strip line 0.120" wide. (See www.cepd.com/calculators/microstrip.htm for calculation details). Note the 2-6pf cap on the output line. It may not be needed but improved the match enough to make it worthwhile. Placement is not critical. I made the bias voltage adjustable but it may as well be fixed at 5.00V. Just be careful to test the line for correct voltage **BEFORE** connecting it to the brick. The 5.1V zener is there just in case.… Maximum brick voltage is 5.25V and is NOT forgiving of mistakes. I used 6.8mF 20V tantalum filter caps but good electrolytics over 1mF are ok too. Final points: I used brass tabs soldered to the board and placed over the brick mounting screws as shown. These are very important to prevent oscillation. Also, use a THIN coat of heat sink compound and brick mounting screws with lock washers. Tighten snugly but **DO NOT** over tighten. If too snug, the brick will warp and crack the internal ceramic substrate. That would NOT be good!









OK, that's just about it guys. I will treat the DVB-S subject in more depth in another article. …WA8RMC

REPEATER ADDITION TO CALIFORNIA MOUNTAIN PEAK

OK, so you think it's a big deal to install antennas around here! Take as look at what the guys in Southern California have to do to get a good location! Mountain peaks are great till you have to get there!!!!...WA8RMC

The California Chapter is moving out of Blueridge near Wrightwood, California which was both a repeater and a link site between Mt. Potosi near Las Vegas, Nevada and Jobs Peak. near Crestline, California. Jobs Peak was an in-between link site connecting Blueridge to the Santiago Peak repeater hub. In the new configuration, the repeater will now be at Jobs Peak that covers most of the same coverage area. A new site at Ord Mountain will be the-in between relay site to connect Mt. Potosi to Jobs Peak. The site is 41 miles from Jobs Peak and 115 miles from Mt. Potosi, this new path is about 60 miles shorter than the old path between Blueridge and Mt. Potosi. Mike WA6SVT is the new site lessee, located on BLM land. The site was just a slab, the shed had deteriorated and telephone pole antenna support taken down years ago.

Gary Heston W6KVC checking out new site

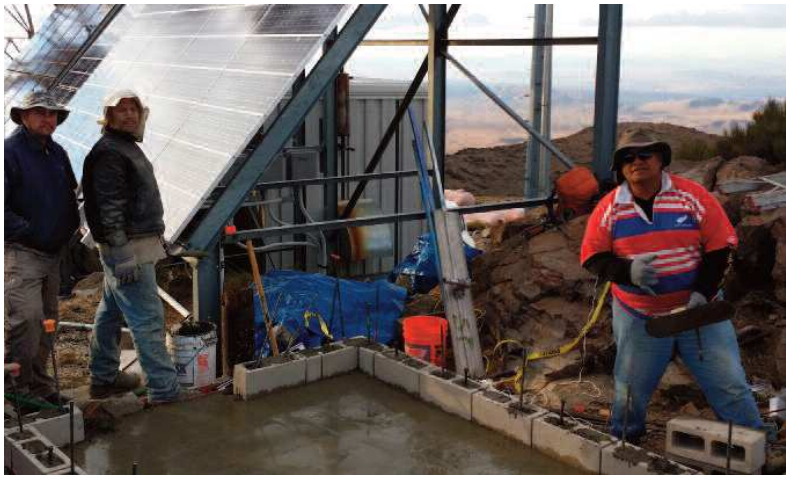
A foundation was dug with the help of a few members for the new T-36 tower just to the right of the slab along with a proper foundation for the building. An over pour of concrete was laid on top of the slab to make a monolithic foundation. Digging was no easy job and took four trips to the mountain to complete. The ground was almost as hard as concrete mixed with rocks. A short tower base was assembled and set onto bedrock in the bottom of the excavation. Rock bolting was used to secure it to the surrounding boulders.

Earl KJ6DQR and Nathan AG6AV Haltman from ATN and Craig Holmes KF6ZAF and Jared Case KD6YPD from the S.C.I.R.A. H.R.C., each group helped on alternate trips to Ord Mountain to finish the digging. The old steel reinforced slab was pinned with rebar and all connections to the slab and rocks epoxied. Earl and Nathan installed the rebar and epoxy. Footings and building design provided with thanks to Tyler Smithson PE.

At this point with all the steel, #9, and #5 rebar in place, just call a ready mix company? Nope, no one wanted to deliver concrete because the road is 4x4 only. We had to haul over 5 yards of bagged concrete, then walk them from the parking area about 200 ft to the site uphill! Thanks to Gary Heston W6KVC, he and I took 2/3 of a yard of bagged concrete mix in Gary's truck the Tuesday before the pour. I took one 55 gallon barrel of water up each trip during the excavation process to stage for the pour. With the help of the excavation team including some of their sons, Craig's brother Erik KJ6RUL and Seleti Fevaleaki with his sons Paula and Seleti jr. from Craig's church. We stopped by Home Depot to pick up the first load in the larger 4x4 trucks then headed up to the mountain. Three barrels of water were unloaded then we drove down to meet the big rig delivery from Home Depot at the bottom of the mountain for the balance of our concrete and supplies. We had split the up the team between mixing and pouring concrete crew and shuttle crew for trips to the delivery truck at the base of the mountain to transport the bagged cement up to the mixing crew. We were blessed to have so much help.

Jared KD6YPD, Nathan AG6AV, and Seleti Sr.

Below is Paula, Johnathan, and Seleti jr.



With concrete finished, we're tired, then another hour for cleanup and trip down the mountain. Without the large hard working crew we had that cold, windy day, we would not have been able to finish. Many thanks to all!

Tower Erection

Mark Fischer W6MAF donated a 40 ft T-36 tower and base that had been stored for years in his yard. Gary, W6KVC, Norm Hill KD6OMV and I loaded the tower and drove to the mountain. The road is not easy to travel hauling a trailer.

Our site is above and to the right of those tall boulders. We unloaded and tried to walk carrying the 20 ft. long tower legs around the other radio site on the mountain but we fell a couple of times tripping over the rocks. After a lunch break, we started erecting the tower one leg and brace at a time.

The Erection crew at work
By the end of the day the first 20 feet was up!
2 weeks later, the final 20 ft was installed

The building needs to be completed. Battery bank, wind and solar power generation equipment installed before we are ready for the link equipment. This project has been the biggest one since building my home eight years ago and was only possible with the help of many of our ATN members and many of the S.C.I.R.A. members, thank you all so much!. The project should be completed by April.

Utah Group Puts Broadband-Hamnet to Work for Food Project

From ARRL Newsletter 4/2/15

A small band of Amateur Radio volunteers in Utah's Salt Lake Valley successfully used a broadband Wi-Fi network set up on the 2.4 GHz amateur band to help coordinate the Boy Scouts of America's (BSA) "Scouting for Food" project on March 21. Scouting for Food is the Boy Scouts' annual community service event, in which Scouts collect items for donation to a food bank. Local radio amateurs provide both voice and digital mode communication.

Brendan Bauman, KG7RWO, at his BBHN node, monitors the progress of the food collection project, just outside BSA Headquarters.

This year for the first time they used a Broadband-Hamnet™ (BBHN) system that coupled modified wireless router gear operating on amateur frequencies to create a peer-to-peer Wi-Fi network to share audio and video over a generous patch of real estate. BBHN is a descendent of the former ARRL High Speed Multimedia (HSMM) Working Group efforts, earlier known as the "Hinternet" and pioneered by John Champa, K8OCL (SK), and others in the early 2000s.

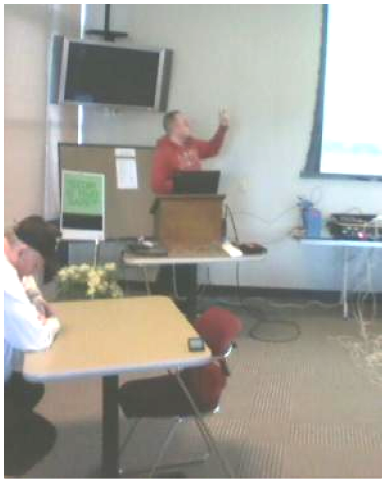
"We would call it Wi-Fi on steroids!" said David Bauman, KF7MCF. The Utah hams linked 13 nodes across the valley to form a network "that is like a mini private Internet," Bauman explained. They then used this network to send live video and audio back to the BSA Headquarters, showing them what was happening at food drop-off sites and at the [truck dispatch] headquarters. Bauman called it "a huge step forward in technology from the old days of Morse code." Retired clergyman Robert Jelf, KG7OHV, of Magna, headed up the team.

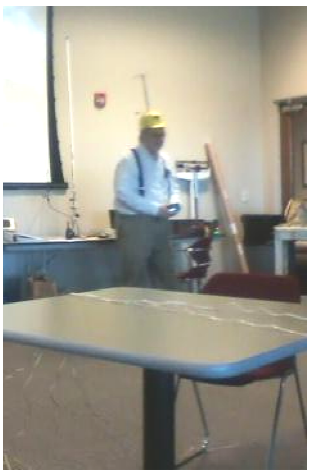
Just outside BSA Headquarters near the University of Utah, Brandon Bauman, KG7RWO, was able to watch via his laptop as volunteers miles away dropped off canned food items and as YRC freight dispatched trucks to pickup sites around the valley. Brandon was part of an Amateur Radio group that assists the Boy Scouts in the Scouting for Food Project each year by providing communications. This marked the first time BBHN technology was used to support the project in the Salt Lake Valley. Their Wi-Fi network, known as a wireless mesh network, was able to cover a large portion of the valley.

"The farthest point from our hub site was 8.5 miles across the city through a narrow path lined with lots of manmade objects for signals to bounce off," Jelf said. "While the mesh group was used to show video of the dispatch of trucks and of truck trailers at collection points within the hub site path, collection took place throughout the Wasatch Front area and elsewhere in Utah." Read more.

LOCAL BBHN Meshnet CONFERENCE SUMMARY

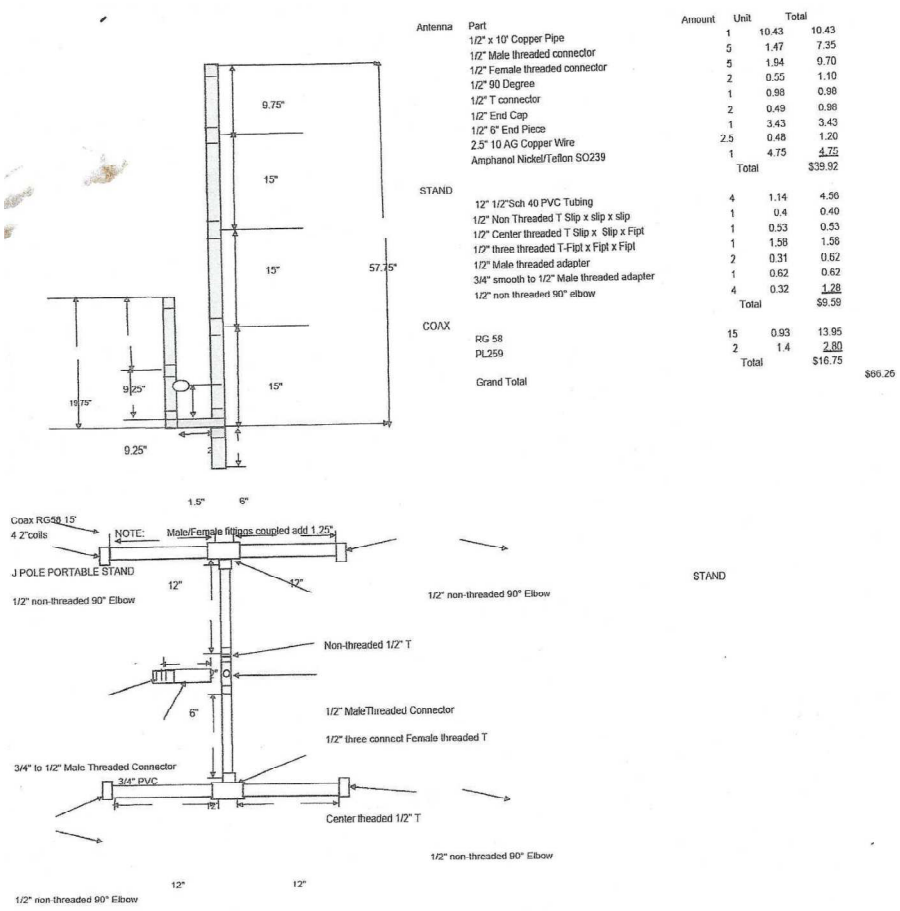
We had our first HBBN Meshnet conference at the ABB Cafeteria (Same place as our Spring/Fall Events) on 3/22/15. We had 12 participants which seemed small, but I was told a number of people planning to attend, couldn't because of conflicts. We had a good discussion with demonstrations. Bob Dixon, W8ERD, showed us how a working phone network can be constructed using the HBBN components. Also, Eli Cochran, KD8RBH demonstrated a number of HBBN devices including a video to Meshnet converter module. We all agreed we need to meet again in the near future for updates. Mid June was suggested. Some pictures of the activity follows:






W8RWR BUILDS A J-POLE ANTENNA

Well, Bob, W8RWR, is at it again. He seems to like J-Pole antennas as I believe this is his 2nd or 3rd one. He has no more details so if you want to build one, you'll have to contact Bob.
…WRA8RMC

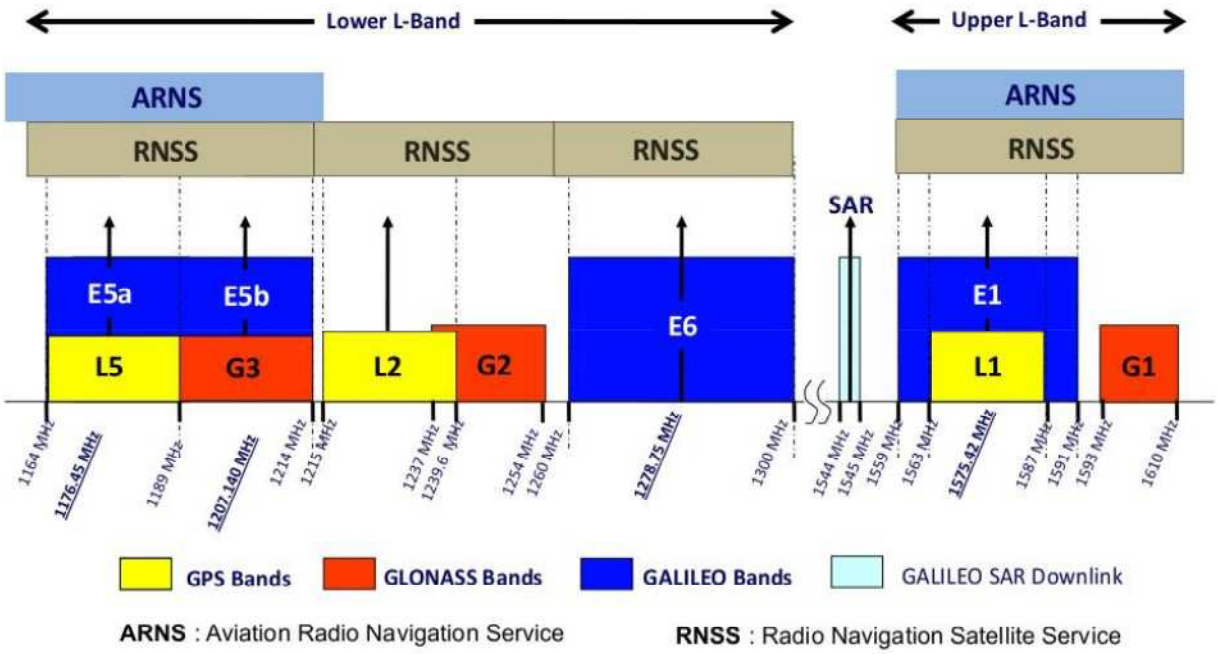


Antenna	Part	Amount	Unit	Total
	1/2" x 10' Copper Pipe	1	10.43	10.43
	1/2" Male threaded connector	5	1.47	7.35
	1/2" Female threaded connector	5	1.94	9.70
	1/2" 90 Degree	2	0.55	1.10
	1/2" T connector	1	0.98	0.98
	1/2" End Cap	2	0.49	0.98
	1/2" 6" End Piece	1	3.43	3.43
	2.5" 10 AG Copper Wire	2.5	0.48	1.20
	Amphanol Nickel/Teflon SO239	1	4.75	4.75
			Total	$39.92
STAND				
	12" 1/2"Sch 40 PVC Tubing	4	1.14	4.56
	1/2" Non Threaded T Slip x slip x slip	1	0.4	0.40
	1/2" Center threaded T Slip x Slip x Fipt	1	0.53	0.53
	1/2" three threaded T-Fipt x Fipt x Fipt	1	1.58	1.58
	1/2" Male threaded adapter	2	0.31	0.62
	3/4" smooth to 1/2" Male threaded adapter	1	0.62	0.62
	1/2" non threaded 90° elbow	4	0.32	1.28
			Total	$9.59
COAX				
	RG 58	15	0.93	13.95
	PL259	2	1.4	2.80
			Total	$16.75
	Grand Total			$66.26

Potential Conflict with our 1296 MHz Band

From Newsletter: ***The Midwest VHF/UHF Society March 2015***

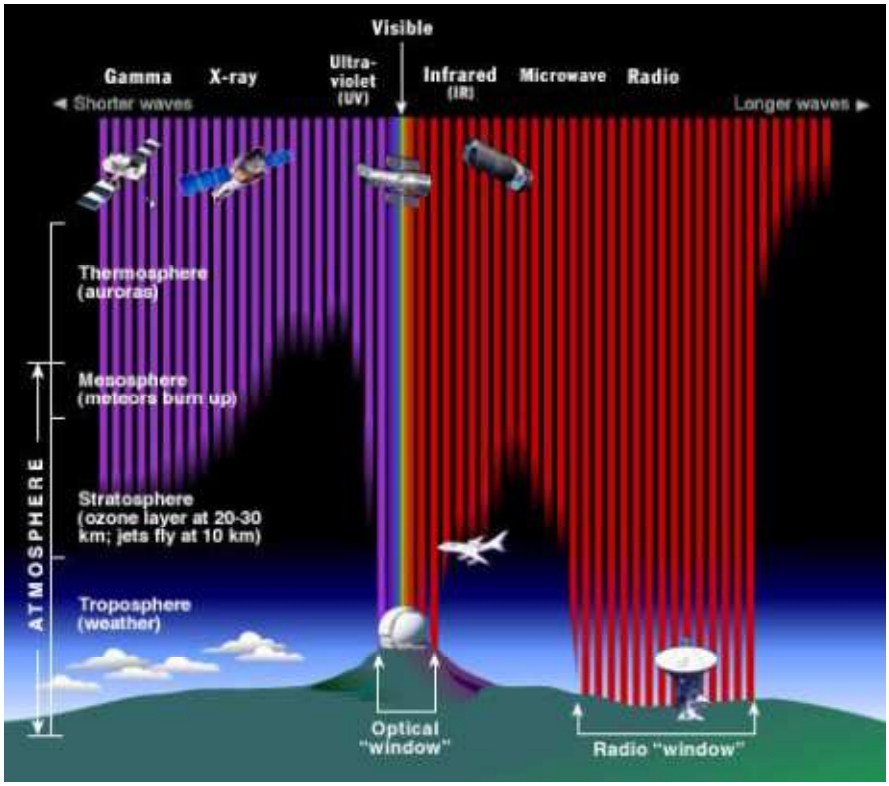
Our 1296 MHz band is allocated as a secondary service in the 1215.6 – 1350 MHz band allocated to Radio Location Services and Radio Navigation satellite Systems (RNSS) on a primary basis. Until recently the primary navigation service in the RNSS allocation was GPS and Glonass. Our Amateur allocation runs from 1240 to 1300 MHz. The Glonass System has their G2 allocation running from1239..6 to 1254 MHz. Other than that the range is open up to 1300 MHz. That is about to change. There is a new kid on the block. The Gallileo navigation service is launching several new satellites this year. Gallileo is occupying a large portion of our 1296 allocation: 1260 -1300 MHz. Since RNSS is primary we could find our worldwide Amateur Radio allocation in jeopardy as our operation would interfere with the Gallileo system.



Radiation from the Sun hitting the Ground.

This graph (from the web) nicely shows how the solar spectrum is modified before it reaches our ground. Ultra violet and shorter wavelengths do their work high up and not much reaches the ground, however enough to give you a sun burn. Infrared and light warmes the ground. “Radio waves” (including microwaves) make it to the ground!

Reported by Mike Suhar, W8RKO



Hams &Vehicular Radars Can Play Nicely Together on 77-81 GHz

Here goes our 76GHz Ham band guys! Let's get to work and build something. But…we wouldn't want to interfere with the new automotive guidance systems now, would we. WA8RMC

ARRL Bulletin 15 ARLB015>From ARRL Headquarters Newington CT April 7, 2015
In comments filed on April 6 in response to a February FCC Notice of Proposed Rulemaking and Reconsideration Order (NPRM&RO) in ET Docket 15-26, the ARRL has told the Commission that it should make no change in the Amateur Radio allocation at 76-81 GHz and impose no additional regulatory constraints on Amateur or Amateur-Satellite uses of the band. The League said the FCC should proceed with authorizing short-range radar (SRR) systems for automotive applications in the band under Part 15 rules, and that such applications are compatible with amateur operations in the band. The NPRM&RO can be found on the web in PDF format at, https://apps.fcc.gov/edocs_public/attachmatch/FCC-15-16A1.pdf

In its NPRM&RO, the FCC solicited comment on issues involving expanded use of various radar applications in the 76-81 GHz band, which Amateur Radio shares with other services. The band 77.5-78 GHz is allocated to the Amateur and Amateur Satellite services on a primary basis, and to the Radio Astronomy and Space Research services on a secondary basis. The NPRM&RO was in response to a 2012 Petition for Rulemaking (RM-11666) by Robert Bosch LLC and to two petitions for reconsideration of a 2012 Report and Order (R&O) addressing vehicular radar systems in the 76-77 GHz band. ET 15-26 incorporated earlier proceedings. The R&O can be found on the web at, http://www.fcc.gov/document/toyotaera-76-77-ghz-band .

In its comments, the ARRL suggested that the FCC overreached in proposing unjustifiable changes at 77-81 GHz on its own initiative. "There is not, anywhere in the four corners of the Bosch Petition for Rule Making or in any comments that have been filed thus far in response to RM-11666, any suggestion that there is any incompatibility between Amateur Radio operation and automotive radars," the ARRL said. "Quite the contrary." The League said a credible, current ITU study has "definitively established" compatibility between short-range automotive radars and Amateur Radio.

The ARRL said Bosch's filing of its Petition followed "extensive discussions and technical evaluations between ARRL and Bosch" that making spectrum at 77-81 GHz available for automotive radars "would have no significant impact on the Amateur Radio Service." Bosch, the League pointed out, "did not propose a domestic spectrum allocation for vehicular radar devices and systems," just modification of the FCC Part 15 rules to permit vehicular radars at 78-81 GHz on the same basis that these radars now operate in the US at 76-77 GHz – on a non-allocated, non-interference basis.

The ARRL said that no changes are necessary in the Amateur Radio domestic primary allocation at 77.5-78 GHz or in the secondary amateur allocation at 77-77.5 GHz or 78-81 GHz to accommodate automotive radar systems at 77-81 GHz. "Nor are any additional Part 97 rules necessary to accommodate compatible sharing of that band between radio amateurs and automotive radar systems," the League added. "Indeed, that is the position of the United States in anticipation of consideration of WRC-15 agenda item 1.18 later this year." The League characterized as "both premature and poor spectrum management" the FCC's proposal to unilaterally permit unspecified fixed radar systems throughout the 76-81 GHz band "without the benefit of any completed, definitive studies relative to the incompatibility of fixed radar systems with automotive radar, radio astronomy and/or Amateur Radio in this band."

Any consideration of fixed radars at 77-81 GHz, the League said, "should await the completion of conclusive, refereed compatibility studies that credibly establish compatibility with incumbent services."

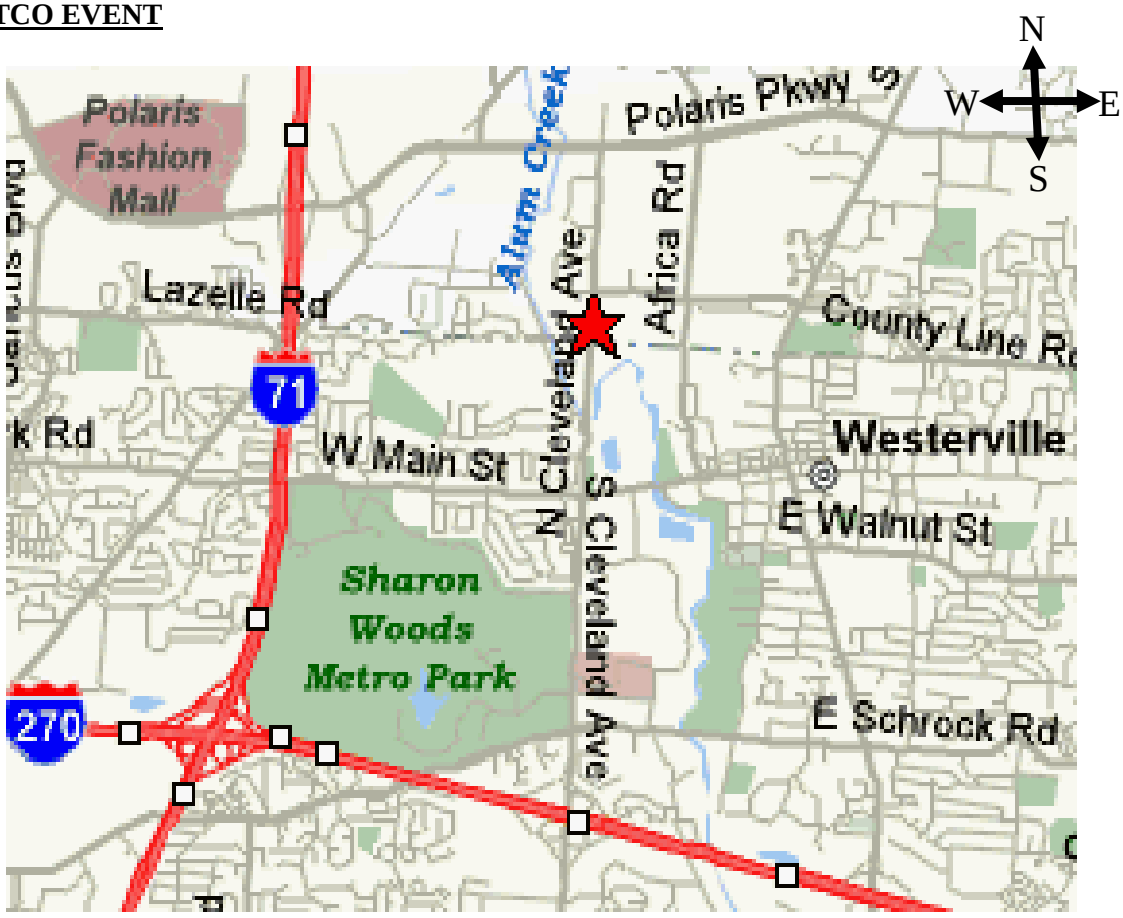
The ARRL said should there be any "unjustified displacement" of the Amateur or Amateur-Satellite services from any portion of the 76-81 GHz band, the FCC should allocate "equivalent spectrum" for those services. As possibilities, the League suggested the bands 75.5-76 GHz and 81-81.5 GHz.

The deadline for reply comments - ie, comments on filed comments - in this proceeding is April 20. The ARRL plans to file reply comments.

A T C O
2015 SPRING EVENT

12 Noon – SUNDAY (For hamfest)
(Lunch starts about 12:30 PM)
May 3, 2015
ABB PROCESS AUTOMATION CAFETERIA
579 EXECUTIVE CAMPUS DRIVE, WESTERVILLE
FOR MORE DETAILS, CONTACT
ART – WA8RMC - 891-9273
FREE LUNCH PROVIDED – DOOR PRIZES
BRING A FRIEND AND SEE OLD BUDDIES
MINI HAMFEST – SHOW AND TELL

DIRECTIONS TO THE ATCO EVENT



From I-70 WEST Bound:
Take I-270 Northbound around and turning to the west to Cleveland Ave. Exit north onto Cleveland Ave and travel north about 2 miles to Executive Campus drive. (It's the next street past Westar Crossing Street). Turn left (west) to the ABB building at the end of the street.

From I-70 EAST Bound:
Take I-270 Northbound around and turning to the east past SR 315 and past I-71. Get off on the Cleveland Ave second exit and travel north (to Westerville). Continue north on Cleveland past Schrock road and then past Main Street. Continue north about ½ mile past Main Street to Executive Campus Drive. (It's the next street past Westar Crossing Street) Turn left (west) to the ABB building at the end of the street

From I-71 NORTH bound toward Columbus:
Drive through Columbus on I-71 to I-270 on the north side. Take I-270 east to the first exit, Cleveland Ave. Get off the Cleveland Ave second exit and travel north (to Westerville). Continue north past Schrock road and then past Main street. Continue north about ½ mile past Main Street to Executive Campus Drive. (It's the next street past Westar Crossing Street) Turn left (west) to the ABB building at the end of the street.

From I-71 traveling SOUTH bound toward Columbus (North of I-270):
Exit the Polaris Ave exit and travel East about 1 mile to Cleveland Ave. Turn right on Cleveland Ave to Executive Campus Drive. Turn right again on Executive Campus Drive. ABB is on the right side of the street about half way around the semi-circle.

Digital Amateur TeleVision
Exciter/Transmitter

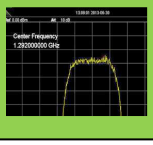
available from

DATV-Express

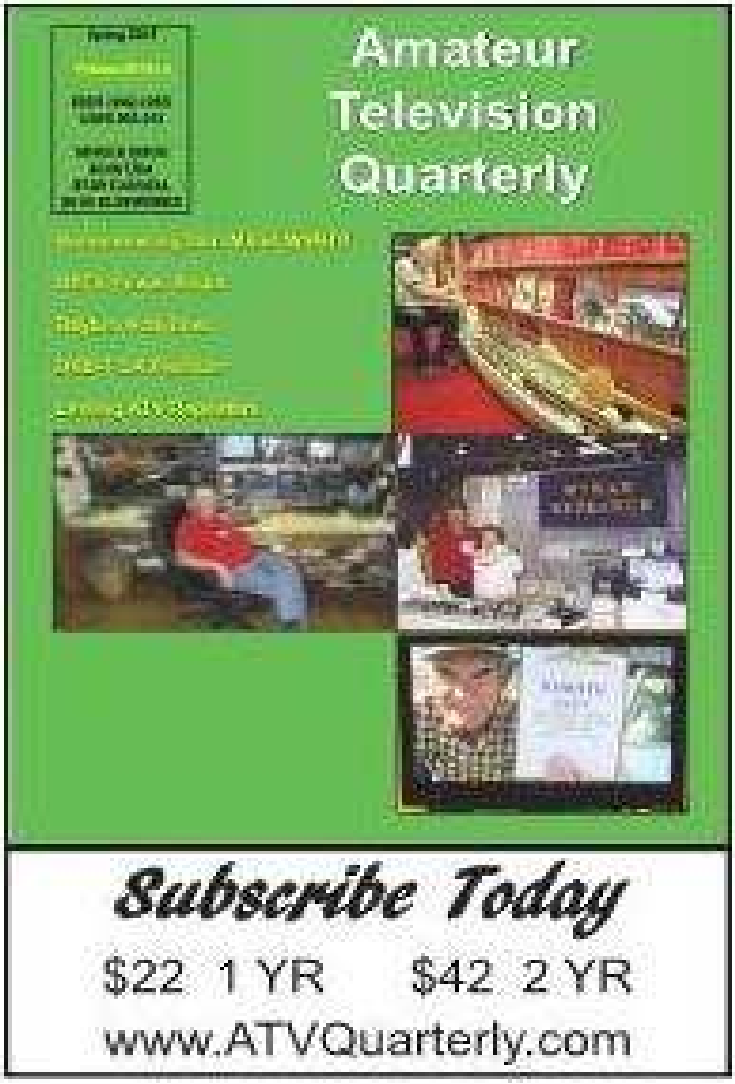
- A more affordable DATV exciter can now be ordered
- Fully assembled and tested PCBA
- DVB-S protocol for DATV (using QPSK modulation)
- Can operate all ham bands from 70 MHz-to-2450 MHz
- RF output level up to 10 dBm (min) all bands (DVB-S)
- Software Defined Radio (SDR) architecture allows many variations of IQ modulations
- "Software-Defined" allows new features to be added over the next few years, without changing the hardware board
- As extra bonus, the team has been able to get the board to transmit DVB-T 2K mode, however we cannot guarantee the performance of that protocol. Caveat Emptor!
- Requires PC running Ubuntu linux (see User Guide)
- Price is US$300 + shipping – order using PayPal

For more details and ordering

www.DATV-Express.com



register on the web site
to be able to see
the PURCHASE page



CONSTRUCTION ARTICLE INDEX

The following list is an index of all construction related material that has appeared in the ATCO Newsletter since its inception in the early '80's. This is a handy reference for that particular construction article that you knew existed but didn't want to wade through each issue to find it. All Newsletters below are also listed in order in the ATCO homepage under "Newsletters".CTRL Click on www.atco.tv. Once you locate the Newsletter section, the displayed list can then be re-sorted as needed by clicking on the "date" in the header.
…Bob N8OCQ

Issue	Page(s)	Article
Vol 1 II	5	439 Beam
Vol 2 I	4	439 Beam
Vol 2 II	8,9	439 Parabolic Ant
Vol 2 II	9	Video Modulator
Vol 2 III	7	1296 Ant 45 Ele loop yagi
Vol 2 III	10	RF Power Indicator (in-line) for 1296 MHZ
Vol 2 SE	2,3	Diode Multiplier for 23 CM
Vol 2 SE	4,5	1296 MHZ 10 Watt Solid State Linear Amp
Vol 4 I	3	RF/Video Line Sampler
Vol 4 II	3	P-Unit Meter
Vol 4 II	7,10,11	UHF Gated Noise Source
Vol 4 II	12	420 – 450 Broom Handle Rhombic Ant
Vol 4 III	4,8	25 Element 1.26 Loop Yagi
Vol 4 IIII	6	Video Modulator (Tube Type)
Vol 5 I	3	Video Modulator One Transistor
Vol 5 II	4,7	900 MHZ Yagi Ant
Vol 5 II	6	Video Modulator for 2C39 Final
Vol 5 III	3	440 MHZ Hidden Transmitter Finder
Vol 6 I	3	Video Line Amp
Vol 6 I	8	25 Ele 910 MHz Loop Yagi
Vol 6 II	4,6,7	Microwave Oven ATV Xmiter
Vol 6 II	5	Matching a Quad Driven Ele
Vol 6 II	8	Power Divider for 33CM
Vol 9 IIII	5,7	16 Ele Loop Yagi for 439.25 MHz
Vol 10		No Articles
Vol 11 II	4,5,6	439 48 Ele Collinear Ant
Vol 11 IIII	7	1280 MHZ Cavity Filter
Vol 12 I	6,7,8	439 & 1200 Horz Polarized Mobile Ant
Vol 12 II	5,6,7	ATV Line Sampler
Vol 12 II	10	439 & 1280 Interdigital Filter(s)
Vol 12 III	6,7,8	439 Cheap Attic Ant
Vol 13 I	9, 10	High Level Modulator for ATV
Vol 13 II	5	VGA to NTSC Converter for Computer
Vol 13 III	9, 10	AM Video Modulator
Vol 13 IIII	4	1200 MHZ Transistor Linear Amp
Vol 13 IIII	6	900 & 1200 MHz Loop Yagis
Vol 14 IIII	8	439 31 EleYagi
Vol 14 IIII	12, 13	1250 MHZ FM ATV 3 Watt Xmiter
Vol 15 I	16	427.25 Horz J-Pole Ant
Vol 15 II	14	2400 MHZ Loop Yagi
Vol 15 III	8	Wavecom Modification
Vol 15 III	12,13,14	2.4 Gig Antenna's
Vol 16 II	20	2.4 Gig Helix Ant
Vol 16 IIII	4	1280 MHZ Loop Yagi
Vol 17 I	14, 15	Video Amp (Multi Output)
Vol 18		No Articles
Vol 19 IIII	4	Pwr Supply for 28 Volt Ant Relay
Vol 20 III	9, 10	Video Sampler
Vol 21 I	4	RF Pwr Amp for 900/1200 MHZ
Vol 21 II	14	10-14 Volt Doubler for 28 Volt Ant Relays
Vol 21 III	5	S-Video To Composite Adaptor
Vol 21 IIII	3,4	Video Noise Rejection Amp
Vol 21 IIII	14,15,16 ,17	"S" Meter For Comtech Boards
Vol 22 I		No Articles
Vol 22 II	10	1260 MHZ Cavity Filter
Vol 22 III		No Articles
Vol 22 IIII		No Articles
Vol 23 I		No Articles
Vol 23 II	5,6	Linear 60 Watt For 70CM
Vol 23 II	8,9	Video Modulator Update
Vol 23 III		No Articles
Vol 23 IIII		No Articles
Vol 24 I	13	RF Sniffer For 2.4 GIG
Vol 24 II		No Articles
Vol 24 III	3	Quantum 1500 Rec Tuner Mod
Vol 24 IIII	9	Battery Recharge Ckt
Vol 25 I		No Articles
Vol 25 II	6,7	Comtech TX Module Improvement
Vol 25 III	11	Comtech TX Module Improvement Correction
Vol 26 I	6	Isolator (Circulator) Mod. 850 To 1260 MHz
Vol 26 II	5,6	Comtech 1200 MHz rec. module improvements
Vol 26 III		No Articles
Vol 26 IIII	9	Remote Touch Tone Decoder For Your Shack
Vol 27 I	10	ATV Low Pass Filter (427 Mhz)
Vol 27 II	15	PictureTel Camera Data Cable Wiring
Vol 27 II	10	ATV Low Pass Filter (427 Mhz)
Vol 27 II	15	PictureTel Camera Data Cable Wiring
Vol 27 III		No articles
Vol 27 IIII		No articles
Vol 28 I	11	Super 1280 MHz amplifier
Vol 28 II		No articles
Vol 28 III		No articles
Vol 28 IIII		WB8LGA Antenna switching system
Vol 29 I		No articles
Vol 29 II		1280 MHz Hi Gain Panel Antenna
Vol 29 III		No articles
Vol 29 IIII		No articles
Vol 30 I		No articles
Vol 30 II		No articles
Vol 30 III		No articles
Vol 30 IIII		No articles

This is the complete list for construction articles shown in past ATCO newsletters. The page numbers listed may not match the actual page in the Newsletter. They are the numbers shown in the PDF file. Some early issues are missing. Art did not have a copy of every year. This list is complete through Volume 30 IIII.
…Bob N8OCQ

…WA8RMC

LOCAL HAMFEST SCHEDULE

This section is reserved for upcoming Hamfests. They are limited to Ohio and vicinity easily accessible in one day. Anyone aware of an event incorrectly or not listed here; notify me so it can be corrected. This list will be amended, as further information becomes available. To

see additional details for each Hamfest, Control Click on the blue title and the magic of the Internet will give you the details complete with a map! To search the ARRL Hamfest database for more details, CTL click ARRLWeb: Hamfest and Convention Calendar .
…WA8RMC.

04/25/2015 | Jackson County ARC Hamfest
Location: Jackson, OH
Type: ARRL Hamfest
Sponsor: Jackson County Amateur Radio Club
Website: http://jacksoncountyarc.org/page3.htm

04/26/2015 | Athens Hamfest
Location: Athens, OH
Type: ARRL Hamfest
Sponsor: Athens County Amateur Radio Association
Website: http://ac-ara.org/

05/15/2015 | Dayton Hamvention
Location: Trotwood, OH
Type: ARRL Hamfest
Sponsor: Dayton Amateur Radio Association
Website: http://www.hamvention.org

06/06/2015 | Fulton County ARC Hamfest
Location: Tedrow, OH
Type: ARRL Hamfest
Sponsor: Fulton County Amateur Radio Club
Website: http://k8bxq.org

06/20/2015 | MILFORD HAMFEST
Location: Milford, OH
Type: ARRL Hamfest
Sponsor: Milford Amateur Radio Club
Website: http://www.w8mrc.com

07/11/2015 | 20/9 Hamfest and Tailgate 2015
Location: Austintown, OH
Type: ARRL Hamfest
Sponsor: 20/9 Radio Club
Website: http://20over9.org

07/18/2015 | 2015 NOARSfest - Hamfest and Computer Show
Location: Elyria, OH
Type: ARRL Hamfest
Sponsor: Northern Ohio Amateur Radio Society
Website: http://www.noars.net

07/19/2015 | Van Wert Amateur Radio Hamfest
Location: Van Wert, OH
Type: ARRL Hamfest
Sponsor: Van Wert Amateur Radio Club
Website: http://W8FY.org

07/19/2015 | Van Wert Amateur Radio Hamfest
Location: Van Wert, OH
Type: ARRL Hamfest
Sponsor: Van Wert Amateur Radio Club
Website: http://W8FY.org

07/26/2015 | Portage Hamfair '15
Location: Randolph, OH
Type: ARRL Hamfest
Sponsor: Portage Amateur Radio Club
Website: http://hamfair.com

08/01/2015 | Great Lakes Divison Convention (Columbus Hamfest)
Location: Columbus, OH
Type: ARRL Convention
Sponsor: Voice of Aladdin ARC

09/13/2015 | Findlay Hamfest
Location: **Findlay, OH**
Type: **ARRL Hamfest**
Sponsor: **Findlay Radio Club**
Website: http://www.findlayradioclub.or

09/27/2015 | Cleveland Hamfest and Computer Show
Location: Berea, OH
Type: ARRL Hamfest
Sponsor: Hamfest Association of Cleveland
Website: http://www.hac.org

TUESDAY NITE NET ON 147.48 MHz SIMPLEX

Every Tuesday night @ 9:00PM WA8RMC hosts a net for the purpose of ATV topic discussion. There is no need to belong to the club to participate, only a genuine interest in ATV. All are invited. For those who check in, the general rules are as follows: Out-of-town and video check-ins have priority. A list of available check-ins is taken first then a roundtable discussion is hosted by WA8RMC. After all participants have been heard, WA8RMC will give status and news if any followed by late check-in requests or comments. We usually chat for about ½ hour so please join us locally or via internet at www.BATC.tv then ATV repeaters thenWR8ATV.

ATCO TREASURER'S REPORT - de N8NT

OPENING BALANCE (1/15/15)….	$ 1886.85
RECEIPTS(dues)….	$ 140.00
PayPal fees……	$ (4.72)
CLOSING BALANCE (4/16/15)……	$ 2022.13

NEW MEMBER(S)

Let's welcome the new members to our group! If any of you know anyone who might be interested, let one of us know so we can flood them with information. New members are our group's lifeblood so it's important we aggressively recruit new faces.

K8KDR Mat Gilbert – Columbus, Ohio (Welcome back. Matt was member back in 2008)
KC8QJR Adam Burley- Mount Vernon, Ohio (Welcome back. Adam was member back in 2009)

ATCO REPEATER TECHNICAL DATA SUMMARY

Location: Downtown Columbus, Ohio
Coordinates: 82 degrees 59 minutes 53 seconds (longitude) 39 degrees 57 minutes 45 seconds (latitude)
Elevation: 630 feet above the average street level (1460 feet above sea level)

TV Transmitters: 423.00 MHz DVB-T, 10 W cont, FEC=7/8, Guard=1/32, Const=QPSK, FFT=2K, BW=4MHz, PMT=4095, PCR=256, Video=256, audio=257
427.25 MHz Analog VSB AM, 50 watts average 100 watts sync tip (Analog TV on cable channel 58)
1258 MHz 40 watts FM analog
1268 MHz DVB-S QPSK 20W continuous. SR=3.125MS, FEC=3/4, PMT=32,Video=162,Teletext=304,PCR=133,Audio=88,Service =5004)
10.350 GHz: 1 watt continuous analog FM
Link transmitter: 446.350 MHz: 5 watts NBFM 5 kHz audio This input is used for control signals.

Identification: 423, 427, 1258, 1268 MHz, 10.350Ghz transmitters video identify every 10 min. with active video and information bulletin board every 30 minutes.
423 MHz digital, 1268 MHz digital & 10.350 GHz analog - Continuous transmission of ATCO & WR8ATV with no input signal present.

Transmit antennas: 423.00 MHz – 8 element Lindsay horizontally polarized 6dBd gain "omni"
427.25 MHz - Dual slot horizontally polarized 7 dBd gain "omni" major lobe east/west, 5dBd gain north/south
1258 MHz - Diamond vertically polarized 12 dBd gain omni
1268 MHz - Diamond vertically polarized 12 dBd gain omni
2433 MHz - Comet Model GP24 vertically polarized 12 dBd gain omni
10.350 GHz - Commercial 40 slot waveguide slot horizontally polarized 16 dBd gain omni

Receivers: 147.480 MHz - F1 audio input with touch tone control. (Input here = output on 446.350)
438.000 MHz - DVB-T QPSK, 2K BW. Receiver will auto configure for FEC's and PID's. (Input here = output on all TV transmitters)
439.250 MHz - A5 NTSC video with FM subcarrier audio, **lower sideband**. (Input here = output on all TV transmitters)
449.975 MHz - F1 audio input aux touch tone control. 131.8 Hz PL tone. (Input here = output on 446.350).
1288.00 MHz - F5 video analog NTSC. (Input here = output on all TV transmitters)
1288.00 MHz - DVB-S QPSK digital SR=4.167Msps, FEC=7/8. PIDs: PMT=133, PCR=33, Video=33, Audio=49 (Input here feeds all TV transmitters and also goes directly to 1268 MHz DVB-S digital output channel 2.)
2398.00 MHz - F5 video analog NTSC. (Input here = output on all TV transmitters)
10.450 GHz - F5 video analog NTSC. (Input here = output on all TV transmitters)

Receive antennas: 147.480 MHz - Vert. polar. Diamond 6dBd dual band (Shared with 446.350 MHz link output transmitter)
438.00/439.250 MHz - Horizontally polarized dual slot 7 dBd gain major lobe west (Shared with 438 & 439 receivers)
1288.00 MHz - Diamond vertically polarized 12 dBd gain omni (shared with analog and DVB-S receivers)
2398.00 MHz - Comet Model GP24 vertically polarized 12 dBd gain omni
10.450 GHz - Commercial 40 slot waveguide horizontally polarized 16 dBd gain omni

Auto mode Input control:	Touch Tone	Result (if third digit is * function turns ON, if it is # function turns OFF)
	00*	turn transmitters **on** (enter manual mode-keeps transmitters on till 00# sequence is pressed)
	00#	turn transmitters **off** (exit manual mode and return to auto scan mode)
	264	Select Channel 4 Doppler radar. (Stays on for 5 minutes) Select # to shut down before timeout.
	004	Select 10.450 GHz receiver. **(Always exit by selecting 001)**
	003	Select room camera **(Always exit by selecting 001)**
	002	Select roof camera. Select room cam first then 002 for roof cam. (**Always exit by selecting 001**)
	001	Select 2398 MHz receiver then 00# for auto scan to continue

Manual mode Functions:		
	00* then 1 for Ch. 1	Select 439.25analog /438digital receiver (if video present on digital, it is selected. Otherwise analog)
	00* then 2 for Ch. 2	Select 1280 digital receiver
	00* then 3 for Ch. 3	Select 1280 analog receiver
	00* then 4 for Ch. 4	Select 2398 receiver
	00* then 5 for Ch. 5	Select video ID (17 identification screens)
	01* or 01#	Channel 1 439.25 MHz scan enable (hit 01* to scan this channel & 01# to disable it)
	02* or 02#	Channel 2 1288 MHz digital receiver scan enable
	03* or 03#	Channel 3 1288 MHz analog receiver scan enable
	04* or 04#	Channel 4 2398 MHz scan enable
	A1* or A1#	Manual mode select for 439.25 receiver audio
	A2* or A2#	Manual mode select for 1288 digital receiver audio
	A3* or A3#	Manual mode select for 1288 analog receiver audio
	A4* or A4#	Manual mode select for 2398 receiver audio
	C0* or C0#	Beacon mode – transmit ID for twenty seconds every ten minutes
	C1* or C1#	C1* to turn off 438 MHz DVB-T Tx, C1# to enable it (Must be in manual mode to enable this function).
	C2* or C2#	C2* to turn off 423 MHz DVB-T Rx, C2# to enable it (Must be in manual mode to enable this function).

Note: The DVB-T Tx and Rx units can lock up when they lose video or see bad video. When this happens, power must be cycled. To do this select C1* or C2* to turn off power. A few seconds later select C1# or C2# whichever appropriate to restore power to selected unit. Wait about 15 to 30 seconds to see restored operation. (Example: To reset the DVB-T receiver enter C2*,wait a few seconds then C2#)

ATCO MEMBERS as of April 2015

Call	Name	Address	City	St	Zip	Phone
KD8ACU	Robert Vieth	3180 North Star Rd	Upper Arlington	OH	43221	614-457-9511
KC3AM	Dave Stepnowski	735 W Birchtree Ln	Claymont	DE	19703	
AH2AR	Dave Pelaez	1348 Leaf Tree Lane	Vandalia	OH	45377	937-264-9812
W8ARE	Larry Meredith III	6070 Langton Circle	Westerville	OH	43082-8964	
N8ASB	Daun Yeagley	1353 Gurneyville Road	Willmington	OH	45177	
NN8B	Don Kemp	6384 Camp Blvd.	Hanoverton	OH	44423	
K9BIF	Charlie Short	PO Box 554	Goshen	IN	46527-0554	
WB8CJW	Dale Elshoff	8904 Winoak Pl	Powell	OH	43065	614-210-0551
N8COO	C Mark Cring	2844 Sussex Place Dr.	Grove City	OH	43123	614-836-2521
N1CTF	John Chartkoff	2288 Notingham Road	Upper Arlington	OH	43221	
N3DC	William Thompson	6327 Kilmer St	Cheverly	MD	20785	301-772-7382
WA8DNI	John Busic	2700 Bixby Road	Groveport	OH	43125	614-491-8198
K8DMR	Ron Fredricks	8900 Stonepoint Ct	Jennison	MI	49428-8641	
K8DW	Dave Wagner	2045 Maginnis Rd	Oregon	OH	42616	419-691-1625
WB8DZW	Roger McEldowney	5420 Madison St	Hilliard	OH	43026	614-405-1710
KC8EVR	Lester Broadie	108 N Burgess	Columbus	OH	43204	
N8FRT	Tom Flanagan	6156 Jolliff St.	Galloway	OH	43119	
W8FTX	George Biundo	3675 Inverary Drive	Columbus	OH	43228	614-274-7261
W8FZ	Fred Stutske	8737 Ashford Lane	Pickerington	OH	43147	
WA8HFK,KC8HIP	Frank & Pat Amore	P.O. Box 2252	Helendale	CA	92342	614-777-4621
W6HHC	Ken Konechy	340 S. Craig Dr.	Orange	CA	92869	
WA8HNS	Mike Gray	5029 St Rt 41 NW	Washington Ct Hs	OH	43160-8740	740-335-5133
N8HRC	John Hempstead	1190 County Road 9	Brellefontaine	OH	43311	
W4HTB	Henry Cantrell	905 Wrenwood Dr.	Bowling Green	KY	42103	270-781-9624
WB2IIR	Michael Anthony	370 Georgia Drive	Brick	NJ	08723	
K8KDR,KC8NKB	Matt & Nancy Gilbert	5167 Drumcliff Ct.	Columbus	OH	43221-5207	614-771-7259
W8KHP	Allan Vinegar	2043 Treetop Lane	Hebron	Ky	41048	
WA8KQQ	Dale Waymire	225 Riffle Ave	Greenville	OH	45331	937-548-2492
N8LRG	Phillip Humphries	30856 Coshocton Road	Walhonding	OH	43843	614-3543744
WB8LGA	Charles Beener	2540 State Route 61	Marengo	OH	43334	
W8MA	Phil Morrison	154 Llewellyn Ave	Westerville	OH	43081	
KA8MFD	Ross McCoy	227 S Boundary St PO Box 9	Edison	OH	43320	
KA8MID	Bill Dean	2630 Green Ridge Rd	Peebles	OH	45660	
N8NT	Bob Tournoux	3569 Oarlock Ct	Hilliard	OH	43026	614-876-2127
W8NX, KA8LTG	John & Linda Beal	5001 State Rt. 37 East	Delaware	OH	43015	740-369-5856
N0OBG	Jim Conley	33 Meadowbrook C C Est	Ballwin	MO	63011	
W6ORG,WB6YSS	Tom, Maryann O'Hara	2522 Paxson Lane	Arcadia	CA	91007-8537	626-447-4565
N8OCQ	Bob Hodge Sr.	3750 Dort Place	Columbus	OH	43227-2022	
KC8QJR	Adam Burley	931 West High Street	Mount Vernon	OH	43050	
KE8PN	James Easley	1507 Michigan Ave	Columbus	OH	43201	614-421-1492
WA8RMC	Art Towslee	438 Maplebrooke Dr W	Westerville	OH	43082	614-891-9273
W8RRJ,W8WTB	John Hull	580 E. Walnut St.	Westerville	OH	43081	614-882-6527
W8RUT,N8KCB	Ken & Chris Morris	2895 Sunbury Rd	Galina	OH	43021	
W8RVH	Richard Goode	9 Master Street Apt A	Springfield	OH	45504	937-478-6488
KB8RVI	David Jenkins	1941 Red Forest Lane	Galloway	OH	43119	614-853-0679
W8RWR	Bob Rector	135 S. Algonquin Ave	Columbus	OH	43204-1904	614-276-1689
W8RXX,KA8IWB	John & Laura Perone	3477 Africa Road	Galena	OH	43021	614-579-0522
WA6RZW	Ed Mersich	34401 Columbine Trl West	Elizabeth	CO	80107	
KB8SSH	Mike Cotts	3424 Homecroft Dr	Columbus	OH	43224	614-371-7380
WA6SVT	Mike Collis	PO Box 1594	Crestline	CA	92325	
W8TIP	Gene Hawkins	1720 Liberty Street	Toledo	OH	43605	
KD8TIZ	Bob Holden	5161 Goose Lane Rd	Alexandria	OH	43001-9730	614-562-8441
K8TPY, K8FRB	Jeff & Dianna Patton	3886 Agler Road	Columbus	OH	43219	
NR8TV	Dave Kibler	243 Dwyer Rd	Greenfield	OH	45123	937-981-1392
W8URI	William Heiden	5898 Township Rd #103	Mount Gilead	OH	43338	419-947-1121
KB8UWI	Milton McFarland	115 N. Walnut St.	New Castle	PA	16101	
WA8UZP	James R. Reed	818 Northwest Blvd	Columbus	OH	43212	614-297-1328
KC8WRI	Tom Bloomer	PO Box 595	Grove City	OH	43123	
AA8XA	Stan Diggs	2825 Southridge Dr	Columbus	OH	43224-3011	
KB8YMQ	Jay Caldwell	4740 Timmons Dr	Plain City	OH	43064	
KC8YPD	Joe Ebright	3497 Ontario St	Columbus	OH	43224	
N8YZ	DaveTkach	2063 Torchwood Loop S	Columbus	OH	43229	614-882-0771
W8ZCF	Ferrel Winder	6686 Hitching Post Ln.	Cincinnati	OH	45230	
N8ZM	Tom Holmes	1055 Wilderness Bluff	Tipp City	OH	45371	

ATCO MEMBERSHIP INFORMATION

Membership in ATCO (Amateur Television in Central Ohio) is open to any licensed radio amateur who has an interest in amateur television. The annual dues are $10 per person payable on January 1 of each year. Additional members within an immediate family and at the same address are included at no extra cost.

ATCO publishes this Newsletter quarterly in January, April, July, and October. It is sent to each member without additional cost. All Newsletters are sent via Email unless the member does not have an internet connection.

The membership period is from January 1ST to December 31ST. New members joining before August will receive all ATCO Newsletters published during the current year prior to the date they join ATCO. For example, a new member joining in June will receive the January and April issues in addition to the July and October issues. For those joining after August 1ST, they can elect to receive a complementary October issue with the membership commencing the following year or get the previous (3) Newsletters. Your support of ATCO is welcomed and encouraged.

Membership expiration notices will be sent out in January in lieu of Newsletters for those with an expired membership.

NOTE: Dues records on your individual portion of the ATCO website are listed as the date money is received and shows due one year from that date. The actual expiration is on January of the following year so we can keep the dues clock consistent with the beginning of each year.

ATCO CLUB OFFICERS

President:	Art Towslee WA8RMC	Repeater trustees:	Art Towslee WA8RMC
V. President:	Ken Morris W8RUT		Ken Morris W8RUT
Treasurer:	Bob Tournoux N8NT		Dale Elshoff WB8CJW
Secretary:	Mark Cring N8COO	Statutory agent:	Tom Bloomer KC8WRI
Corporate trustees:	Same as officers	Newsletter editor:	Art Towslee WA8RMC

ATCO MEMBERSHIP APPLICATION

RENEWAL ○ NEW MEMBER ○ DATE _____
CALL _____
OK TO PUBLISH PHONE # IN NEWSLETTER YES ○ NO ○
HOME PHONE _____
NAME_____
INTERNET Email ADDRESS_____
ADDRESS _____
CITY _____ STATE _____ ZIP _____-_____
FCC LICENSED OPERATORS IN THE IMMEDIATE FAMILY
_____
COMMENTS_____
_____
_____
ANNUAL DUES PAYMENT OF $10.00 ENCLOSED CHECK ○ MONEY ORDER ○

Make check payable to ATCO or Bob Tournoux & mail to: Bob Tournoux N8NT 3569 Oarlock CT Hilliard, Ohio 43026. Or, if you prefer, pay dues via the Internet with your credit card. Go to www.atco.tv and fill out the “pay ATCO dues” section. Alternately, you can use the ATCO web site www.atco.tv/PayDues.aspx directly. Credit card payment is made through "PayPal" but you DO NOT need to join PayPal to send your dues. Simply DO NOT fill out the password details and there will be no “PayPal” involvement.

ATCO Newsletter
c/o Art Towslee -WA8RMC
438 Maplebrooke Dr. W
Westerville, Ohio 43082

FIRST CLASS MAIL

REMEMBER...CLUB DUES ARE NEEDED.
CHECK THE
MEMBERS PAGE OF ATCO WEBSITE FOR THE EXPIRATION DATE.
SEND N8NT A CHECK OR USE PAYPAL IF EXPIRED.