ATCO NEWSLETTER

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The ATCO newsletter is the official publication of a group of amateur television operators known as "AMATEUR TELEVISION IN CENTRAL OHIO Group Inc" and is published quarterly (January, April, July, and October)

ATCO SPOTLIGHT TOPIC

OK folks. Here's a classic! This is a picture taken at the Nelsonville hamfest on January 20. By the looks of it, Tom Taft, KA8ZNY, is sleeping and snoring loud enough to bother Roger, WB8DZW, who is working with a potential customer. I'm told business was rather slow that day and Roger was working very hard to tie the ribbons on this one. I have no word on the possible sale outcome.

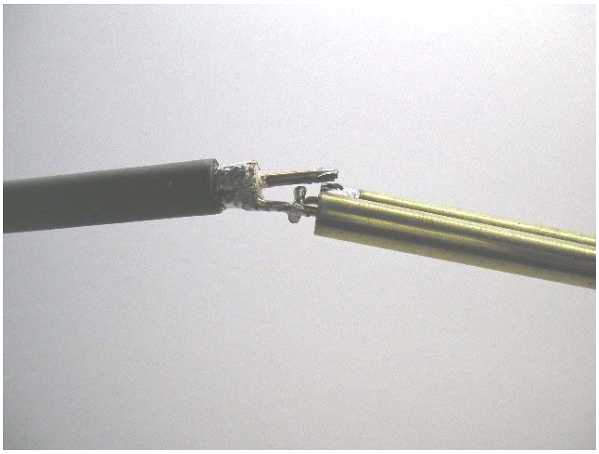
Also pictured is Jay, KB8YMQ, in the red shirt behind Tom. To the left of Tom is Jeff, K8TPY, and next to Jeff is Dianna K8FRB. Mark, N8COO is behind Dianna. Overall, the hamfest was good (because **I** got a great bargain). Not too many people attended but the conversation was great!

ACTIVITIES ... from my "workbench"

Well, another year has flown by and I've not finished my 07 goals yet. So be it! Let's see…what has happened in the last few months or so?

The repeater has been working pretty well but there have been a few things I've worked on. The 1250 MHz transmitter had a problem in the final amp as reported and fixed last time but I've noticed strange horizontal blurry transparent lines in the video. It's not really too bothersome but I'd like to rectify it if at all possible. I believe that it is phase noise from the Plessey SP5070 phase lock loop in the low level modulator. Possibly a better board layout will help as the basic circuit is from the Wyman 1200 transmitter on a PCB. I've built a similar circuit "dead bug style" on copper clad PCB material which is much better but the lines on the screen are faintly visible even on my design. I envision a different type of voltage controlled oscillator circuit but that takes research and corresponding time I don't have at the moment so I guess it'll just have to stay as it is for the time being. If any of you know of a possible design, let me know.

Next on the list is to repair the Diamond 1260 MHz digital transmitter antenna. It became intermittent shortly before Christmas. An inspection revealed that because of a loose fit at the antenna base into its mount, wind vibration caused the N connector to become loose. That seemed like a no brainer so I removed it, took it home, tightened the fitting and returned it to its place at the repeater convinced that the problem was solved. WRONG. When I returned home I found there was still no signal so I returned, recovered the antenna, took it home and THOROUGHLY inspected it. When I removed the elements from the fiberglass radome I found that the small foam pieces around the elements every 2 feet or so had become compressed by the constant wind whipping in the last couple of years. The internal element flexing caused a solder break at the termination point and caused an intermittent condition as shown in the picture at the right. The right portion is the solid tubing matching network and on the left is the alternate sections of coax connecting to it.

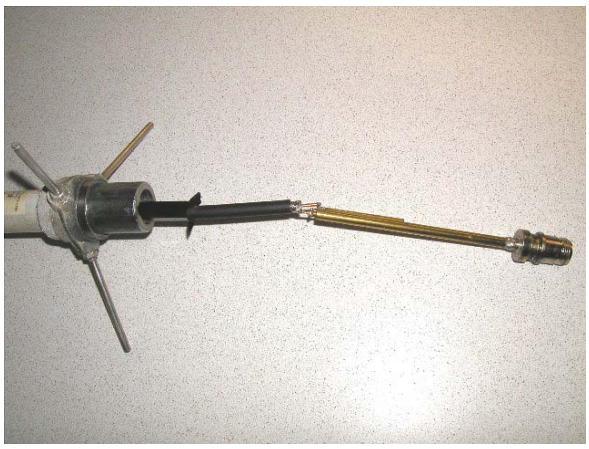


The picture under the close up illustration is what the N connector fastened to the matching section and the coax connection looks like when slid out of the radome. Notice the antenna radials on the left. When all was repaired (the second time) I tested it in my back yard first then returned it to the repeater. THIS TIME I BROUGHT MY BIRD WATTMETER to check for SWR as it always pays to plan for the worst case scenario instead of the best one. Besides, whoever heard of a repair working the first time anyway? What was I thinking? At least, now it's fixed and back in service. In the spring I will have to tighten the mount as repeated vibration will most certainly produce more problems in the future if not rectified. This cold weather is not conducive for <u>permanent</u> repairs.

No other problems have surfaced and it seems to be working good now.

That's about it for this time. I have some other things planned but will reserve discussion on those topics for later on when they become reality.

…WA8RMC



RILEY HOLLINGSWORTH RETIRES…or does he?

October 25, 2007. Riley Hollingsworth, K4ZDH, Special Counsel in the FCC's Enforcement Bureau, announced his retirement this week, effective Thursday, January 3, 2008. While his successor has not been named, Hollingsworth was quick to point out that the FCC's Amateur Radio enforcement program will continue.

Hollingsworth told the ARRL: "After about a year of thinking about the 'if not now, when?' question, I decided to retire January 3. I love working for the FCC and I've always had great jobs, but this one involving the Amateur Radio Service has been the most fun and I have enjoyed every day of it."

He continues, "For nine years I've worked with the best group of licensees on earth, enjoyed your support and tremendous FCC support and looked forward every day to coming to work. The Amateur Radio enforcement program will continue without missing a beat, and after retirement I look forward to being involved with Amateur Radio every way I can. I thank all of you for being so dedicated and conscientious, and for the encouragement you give us every day."

October 30, 2007. Riley Hollingsworth, K4ZDH, Special Counsel for the FCC's Enforcement Bureau, has decided not to retire. He had announced last week that he would leave the FCC in January 2008.

Riley states, "After spending the entire weekend thinking about the decision [to retire], it became more and more clear to me that it just isn't the right decision for me right now. There are several issues on the table that I want to continue to work through with the Amateur community."

The Enforcement Bureau is the primary organizational unit within the Federal Communications Commission that is responsible for enforcement of provisions of the Communications Act, the Commission's rules, Commission orders and terms and conditions of station authorizations, as well as enforcement of Amateur Radio rules (Part 97).
…ARRL Bulletin

2000 FOOT COMMERCIAL TOWER FALLS

A 2,000-foot television tower at Redfield that was used by two stations collapsed Friday afternoon while workers were restringing supporting guy wires, knocking both stations off the air.

The tower, which was the second-tallest structure in the world when it was built in the mid-1960s, beamed programming for both KATV Channel 7, an ABC affiliate, which owned the tower, and the analog signal of KETS, the Arkansas Educational Television Network (AETN) station in Central Arkansas.

KATV News Director Randy Dixon described the tower collapse as “a heck of a mess,” adding that the station was working to restore its signal to a portion of viewers that receives programming by satellite. The promotions director for AETN, Tiffany L. Verkler, said it could take several days to restore their broadcast signal. Verkler said the digital signal for KETS is broadcast from another tower and was not effected.

Chief Deputy Sheriff Stanley James, who responded to the collapse along with a number of other deputies, said one person who was working at the site received minor injuries when he was reportedly struck by a flying cable but he refused medical treatment.

“We’re really fortunate that there was no one seriously injured when that tower went down,” James said, adding that no one was on the tower when it collapsed, and fell in a southwesterly direction.

Along with sheriff’s deputies, officers from the Redfield Police Department and Arkansas State Police troopers went to the tower site, located just north of the Redfield city limits after the incident was reported at 12:43 p.m.

“When we got here it was pretty calm,” James said, explaining that investigators secured the scene of the accident until they could determine that there was no criminal activity involved.

One of those who was working at the tower Friday was Wesley Hogue, who told reporters he “took off running when the tower started to come down.” James said investigators will try to determine what caused the tower to collapse.

KATV’s Web site said the tower was constructed in 1965, and before that operated from a smaller tower located at Jefferson. It was second in height only to a 2,063-foot TV tower in North Dakota.

…Ray King/OF THE COMMERCIAL STAFF

DARA ATV REPEATER UPDATES

Here are the last two DARA ATV Newsletter bulletins. ED

The Nine O'clock News

VOLUME 1 NOV. 14, 2007 Number 5

Its Time to put It Back!!!

Things to Report. Dick (W8RVH) Met with The Planning committee Wed 11/14/07 And Ran our plan to put the repeater Up on the big Tower. THEY SAID YES! It looks like we have a new home. I will finalize the details with Glenn and Steve and get started PRONTO! I will be looking to all of you for help since the weather is closing in on us. We hope to get this done yet this year. I will try and report more as it happens. P.S. Don't forget about Ft Wayne This weekend 11 /17 & 18 73's Jess

REMEMBER NET NIGHT IS STILL 9:00 PM ON WEDNESDAY !!! D.A.R.A. membership is still only $10.00 a year !

The Nine O'clock News

VOLUME 1 December 16, 2007 Number 6

Coming Soon

We Will Be Starting on the building in the barn This Saturday!!!. It will be a 7' X 10' room under the shelf In the back left corner of the barn. They approved $1800 For this and The good news is that all of this won't come out of our budget. Our budget by the way was $4850 including $150.00 for electric for Jones Road. We have already spent $260.00 for elements for the Lindsay and should have About $4000 left for new antennas and Installation. Glenn Hochwalt has given a price of $3900 to install another section of tower on the big tower and to install the antennas and coax. This should make the tower 160'. Lets all work together to get The W8BI ATV REPEATER back up and on the air!!! 73's Jess P.S. I would Like to plan a luncheon Saturday, Dec. 22. To get as many of us together for Xmas. MERRY CHRISTMAS TO ALL!!!

REMEMBER NET NIGHT IS STILL 9:00 PM ON WEDNESDAY !!! D.A.R.A. membership is still only $10.00 a year !

FALL EVENT FUN

Once again the ATCO members and friends enjoy a good time at our annual Fall Event at the ABB cafeteria. We enjoyed a “mini flea market” before the proceedings then food and a business meeting where all present officers were re-elected for another year. We capped off the festivities with door prizes where, I believe, no one went home without one.

We can’t illustrate ALL of the fun here but I believe the pictures below speak for themselves. My count indicated that about 25 people were in attendance.

DRY SWITCHING RELAY CONTACT INFO

In the bad old days of electronics, before microamps defined our world, the front-panel switches (aka contact closures) that users pushed hard to handle tens and more of milliamps. Even if they did not directly control a load, but only signaled the system or drove an intermediate relay or function, these so-called dry switches still had to have real metallic contacts, and were also somewhat self-cleaning due to a "wiping" action between contacts. Those days are gone. In today's processor-controlled world, especially one where power consumption is critical, the front-panel switches are often a plastic-rubber composition with some conductivity added in via embedded metallic particles. It's cheap, small, thin, and suitable for multibutton, complex, compact form factors. As they say in those press releases, it's "ideal."

Oh yes, there's one more thing: it's not too reliable, either. In the past few months I have had several home devices fail or go intermittent, including two remote controls and a cordless phone. Fortunately, I was able to open the cases and find the problem in each case: there was gunk in the switch area, a combination of skin oil, ambient dirt, and what I believe was the debris of the deterioration of the switches themselves, probably accelerated by the skin oil. I cleaned it all carefully with contact cleaner and a lint-free cloth (conveniently picked up at a trade show), and all units were working, at least for now.

There are alternatives to these low-end contact closure switches for such dry-switching applications, such as capacitance sensing and electric field sensing, or better-quality resistive-style switches. Unfortunately, they are generally too costly or the contact area needed is too large for micro-sized handheld devices with many buttons, such as the basic TV remote control, so they can't always be used. You can never be too small, thin, or cheap!

What does this poor reliability say about us and our products? We design and assemble these marvels, yet their reliability is greatly diminished by the poor quality of the switches. It's as if we assume that the user will only have the product a year or two, and then it's a toss-out, as a sort of acceptance of planned obsolescence.

I don't like this at all. Every time we design and manufacture products that self-destruct after a few years of modest use, we say that engineers can't do a good job. The public doesn't know or care that the fault is that a low-end component with inherently limited life that we used, nor should they be expected to know this.

While many users don't care since they do intend to replace the unit anyway, a reasonable percentage of the users do care. Even for those that who had planned on replacing their present unit (the euphemism is "upgrade"), that still leaves a bad image of us in their minds. And we wonder why people don't think much of engineers any more?
…Bill Schweber Planet Analog Oct 21, URL: http://www.planetanalog.com/showArticle?articleID=202405362

MOBILE PHONE RADIATION WRECKS YOUR SLEEP

(Not ATV related but some basic science seems ok too from time to time. Ed.)
Radiation from mobile phones delays and reduces sleep, and causes headaches and confusion, according to a new study.

The research, sponsored by the mobile phone companies themselves, shows that using the handsets before bed causes people to take longer to reach the deeper stages of sleep and to spend less time in them, interfering with the body's ability to repair damage suffered during the day.

The findings are especially alarming for children and teenagers, most of whom – surveys suggest – use their phones late at night and who especially need sleep. Their failure to get enough can lead to mood and personality changes, ADHD-like symptoms, depression, lack of concentration and poor academic performance.

The study – carried out by scientists from the blue-chip Karolinska Institute and Uppsala University in Sweden and from Wayne State University in Michigan, USA – is thought to be the most comprehensive of its kind.

Published by the Massachusetts Institute of Technology's Progress in Electromagnetics Research Symposium and funded by the Mobile Manufacturers Forum, representing the main handset companies, it has caused serious concern among top sleep experts, one of whom said that there was now "more than sufficient evidence" to show that the radiation "affects deep sleep".

The scientists studied 35 men and 36 women aged between 18 and 45. Some were exposed to radiation that exactly mimicked what is received when using mobile phones; others were placed in precisely the same conditions, but given only "sham" exposure, receiving no radiation at all.

The people who had received the radiation took longer to enter the first of the deeper stages of sleep, and spent less time in the deepest one. The scientists concluded: "The study indicates that during laboratory exposure to 884 MHz wireless signals components of sleep believed to be important for recovery from daily wear and tear are adversely affected."

The embarrassed Mobile Manufacturers Forum played down the results, insisting – at apparent variance with this published conclusion – that its "results were inconclusive" and that "the researchers did not claim that exposure caused sleep disturbance".

But Professor Bengt Arnetz, who led the study, says: "We did find an effect from mobile phones from exposure scenarios that were realistic. This suggests that they have measurable effects on the brain."

He believes that the radiation may activate the brain's stress system, "making people more alert and more focused, and decreasing their ability to wind down and fall asleep".

About half of the people studied believed themselves to be "electrosensitive", reporting symptoms such as headaches and impaired cognitive function from mobile phone use. But they proved to be unable to tell if they had been exposed to the radiation in the test.

This strengthens the conclusion of the study, as it disposes of any suggestion that knowledge of exposure influenced sleeping patterns. Even more significantly, it throws into doubt the relevance of studies the industry relies on to maintain that the radiation has no measurable effects.

A series of them – most notably a recent highly publicised study at Essex University – have similarly found that people claiming to be electrosensitive could not distinguish when the radiation was turned on in laboratory conditions, suggesting that they were not affected.

Critics have attacked the studies' methodology, but the new findings deal them a serious blow. For they show that the radiation did have an effect, even though people could not tell when they were exposed.

It also complements other recent research. A massive study, following 1,656 Belgian teenagers for a year, found most of them used their phones after going to bed. It concluded that those who did this once a week were more than three times – and those who used them more often more than five times – as likely to be "very tired".

Dr Chris Idzikowski, the director of the Edinburgh Sleep Centre, says: "There is now more than sufficient evidence, from a large number of reputable investigators who are finding that mobile phone exposure an hour before sleep adversely affects deep sleep."

Dr William Kohler of the Florida Sleep Institute added: "Anything that disrupts the integrity of your sleep will potentially have adverse consequences in functioning during the day, such as grouchiness, difficulty concentrating, and in children hyperactivity and behaviour problems."

David Schick, the chief executive of Exradia, which manufactures protective devices against the radiation, called on ministers to conduct "a formal public inquiry" into the effects of mobile phones.
…Geoffrey Lean, Environment Editor 20 January 2008

FCC REPORT: 14% OF VIEWERS DEPEND ON OFF-AIR DTV

As of Thursday night the text of the Report had not been released. A news release revealed some of the findings in the report—for example, that the number of TV households increased slightly from June 2005 to June 2006, from 109.6 million to 110.2 million.

Also, the number of households using a multichannel video programming distributor (MVPD) increased to 95.9 million compared with 94.2 million in June 2005. Cable TV subscribers represented 68.2 percent of the MVPD subscribers.

Using data from the Nielsen Co., the report estimates that as of Jan. 2007, 15.5 million households (about 14 percent) rely solely on off-air TV broadcasts for video programming. The Report acknowledged that many households subscribing to an MVPD also relied on off-air signals for some of the television sets in those homes. It indicated that the number of commercial and noncommercial TV stations had increased slightly during the period from June 30, 2005 to June 30, 2006—from 1,747 to 1,753.

According to the report, there were approximately 1,600 DTV stations on the air as of Jan. 2007. The number of “wireless cable” subscribers stabilized at about 100,000 as of June 2006, a significant drop from the peak of 1.2 million subscribers in 1996.
…FCC Media Bureau web page.

TRENDS IN ATV VIDEO, AUDIO AND INTERCONNECT DESIGN

The television has undergone a remarkable transformation over the past decade. Driven by the ongoing digital revolution and well-defined HDTV (high-definition television) standards, TV performance has taken a giant leap forward. Until recently, TVs built to popular analog standards used the 480i format to deliver the 720H x 480V interlaced images that resulted in a conventional TV viewing experience. Today's TVs are rapidly moving to the 1080p standard, which defines a 1920H x 1080V image that delivers stunningly realistic HD video quality.

The audio "soundscape" also is changing rapidly. While existing home theater systems provide high-fidelity Dolby 5.1"channel Surround Sound, future systems will support 7.1-channel audio. And high-definition audio will deliver to users audio that, for the first time, can be bit-for-bit identical to studio masters. Such audio and video processing innovations are taxing the performance of today's multimedia interfaces that connect the components of a home entertainment system, whether in a single cabinet or distributed through the home. This is giving rise to new standards aimed at improving interface and cable quality to ensure HD sound and images are synchronized and that consumers can more easily configure their HD systems.

And further performance enhancements are on the horizon. The following examines recent trends in ATV video, audio and interconnect design; explores the impact those developments are having on consumers' entertainment experiences; and discusses how engineers at Analog Devices are addressing the challenges of next-generation ATV design.

Signal Processing Defines the ATV Experience

Ironically, the so-called "digital TV" revolution would not be possible without a concurrent revolution in analog signal processing. While today's HDTV systems are defined by their ability to deliver spectacular digital image and sound clarity, the quality of the multimedia experience consumers have come to expect depends directly on how well the analog signals are captured, processed digitally, and reproduced. In other words, delivering home theater-quality entertainment is based largely on a systems designer's skill at overcoming a number of imposing challenges in the analog and mixed-signal domains.

Analog Technology Defines Digital TV

As an established industry leader in analog and mixed-signal processing technology, Analog Devices has unmatched insight into the challenges facing advanced TV (ATV) designers. Through its **Advantiv advanced television solutions** portfolio, ADI offers the industry's broadest array of high-performance ICs to meet the analog and digital video processing, audio processing and connectivity challenges in digital TV and home entertainment systems.

Video Processing

The evolution of TV video quality and the rapid rise in video bandwidth requirements over the past few years has been nothing short of remarkable. While 480i analog systems required only a 6 MHz bandwidth, today's 1080p-compliant systems deliver a 1920H x 1080V image, which requires data delivered at 148.5 MegaPixels/second (MPPS). This has contributed to much more realistic images; progressive scanning (as opposed to interlaced) doubles the data rate, but results in much smoother motion with far fewer artifacts.

A similar evolution has occurred in color depth. Most currently available HDTVs offer 8-bit color (meaning 219 levels of brightness for each of the three colors making up a picture element, or pixel). Emerging new "deep color" standards for video increase this resolution to 3504 levels per color (using 12-bit color). Moving to a new color space, called xvYCC, raises this to a full 4096 levels per color and delivers the most realistic images consumers have ever seen. Of course, this also increases the amount of data that needs to be moved around the home by a factor of more than 18. The problem ATV designers must address is how to deliver these vivid high quality images at a price point the average consumer can afford.

To manage this explosion in data rates, the ATV industry has turned to **video compression technology**. While there is a growing variety of video compression COder DECoders (CODECs) available, they are generally based on the Discrete Cosine Transform (DCT) with inter-frame motion estimation to achieve very high levels of compression. These CODECs (such as MPEG-2, MPEG-4, H.264, AVC, and others) are very efficient, but they are extremely computation-intensive on the compression side. Efficiency comes at a cost. This cost is entirely appropriate for the distribution of television programming and films over the air, satellite, cable, or DVDs, where the available bandwidth is severely constrained and the application is "compress once, decompress many."

In the home entertainment system of the future, however, a different environment exists. With modern RF, coaxial, network, and powerline transports, far more bandwidth is available; signals exceeding 100 Mbps are commonly distributed. At the same time, there are numerous applications were it is necessary to compress an HD source in the home, in real time, at low cost. DCT-based inter-frame compression is ill-suited to this task.

Analog Devices has been a pioneer in an entirely new class of compression algorithms based on wavelet mathematics. ADI started work in 1993; this approach was standardized by the JPEG committee at the end of the decade and named JPEG2000. Now

internationally recognized, JPEG2000 technology applies two-dimensional filtering and sub-sampling in hierarchical and multi-step combinations. This offers a number of advantages, including scalability of the image when decompressed without further processing, robustness and immunity to transmission errors, very low compression and decompression latency, and low-cost compression hardware.

Analog Devices introduced its first wavelet-based video compression IC in 1996. Since then the company has been a leading developer of JPEG2000 compression components through its **Wavescale compression technology** and now supplies the digital compression technology used by Hollywood studios for the Digital Cinema Initiative (DCI), a move to distribute feature films worldwide electronically and eliminate the production and shipping of reels of film. Recently, Analog Devices began applying that same digital compression technology to HDMI (High-Definition Multimedia Interface) systems, enabling wireless transmission of HD quality video within the home. In the near future, ADI's Wavescale compression technology will allow users to enjoy the same HD image quality anywhere in their homes without the cost or complexity of running cables to every room.

A second challenge ATV designers face in the video realm is establishing compatibility across a wide variety of legacy signal types still supported in today's HD systems. Many consumers, for example, want to replay old movies, VHS tapes or use older DVD players with their new HDTVs. But many legacy standard-definition video sources are of marginal quality; what looked okay on a 27" standard definition display may look terrible on a 50" HDTV. High-performance analog signal processing based on high-resolution data conversion and advances in video filtering play a key role in bridging the gap between these technologies and letting users enjoy content from a variety of sources on an HDTV system while minimizing disturbing artifacts.

To address this problem, Analog Devices has developed an unmatched catalog of video components as part of its Advantiv solutions portfolio. The company offers an extensive line of **video encoder and decoder ICs** that automatically digitize and convert SDTV, EDTV, HDTV and PC-RGB signals for use in digital displays and meet all the standards for video transmission, re-distribution, editing and storage in professional and industrial applications. ADI's video CODECs offer designers both the performance and the flexibility to support the many analog formats that conform to international SDTV and HDTV standards.

Audio Processing
Designers building audio systems to match the quality and clarity of the HD picture face a multi-faceted challenge. Audio sources to the TV, via digital broadcast or HDMI connection to DVD players or latest generation HD players, now have the capability of providing multi-channel programming with high resolution and sample rates. Meanwhile the TV has remained, for the large part, a stereo audio device that requires some flexible audio post-processing to enable a "Surround Sound" experience through two speakers. This process of surround-sound virtualization, as well as the process of spatialization (spreading) of conventional stereo content, are increasingly used in HDTV systems to enhance the user listening experience.

At the same time, the shrinking outline of flat-panel HDTVs has created additional difficulties for TV designers. The thin cabinet form factor forces the use of small, thin loudspeakers that may not be as efficient at reproducing the lower (bass) frequencies increasingly being used in modern movie sound-effects and popular music. To overcome this deficiency, additional audio processing is required to dynamically enhance the bass frequencies. In modern flat-panel TVs, conventional linear amplifiers cannot be used because they require large heatsinks. Flat-panel TVs require higher efficiency amplifiers that need little or no heatsinking. This requirement for increased efficiency also supports the "green" trend in TVs towards lowering power consumption during operation and standby.

Analog Devices' **TV audio processors** can be optimized via software for different combinations of speakers and cabinets. These processors offer a comprehensive portfolio of audio enhancement algorithms, including those from well-known third party suppliers, to adapt TV audio playback to the multi-channel, high resolution audio sources now available. For the tight space constraints of flat panel HDTVs, Analog Devices' audio line includes **Class D amplifiers** that operate with small or no heat sinks.

Interconnect
To leapfrog the performance limitations of conventional analog A/V connectors, a number of leading electronics manufacturers joined together in 2002 to throw their support behind a new digital interconnect called HDMI. By eliminating compression and analog-to-digital conversion, HDMI allowed audio and video signals to remain in digital form from the output device to the display and, in the process, preserve the original quality of the source content. Moreover, the new connection standard dramatically reduced wiring complexity by replacing up to eight audio and five video cables with a single cable for HD video, multi-channel audio and intelligent format and command data.

The latest version of the interface standard, HDMI 1.3, takes this performance to the next step. It allows designers to build systems with higher levels of video accuracy by representing more shades of gray, supporting higher contrast ratios and smoothing tonal transitions by eliminating the on-screen banding between gradations of color. With the HDMI 1.3 standard, single-link bandwidth rises to 10.2 Gbps. It also optionally supports deep-color " 30-bit, 36-bit and 48-bit " as well as the new xvYCC color space. Audio performance dramatically improves as well with support of lossless compression formats such as Dolby TrueHD and DTS-HD, provided on many HD DVD and Blu-ray discs.

Still, designers using this increasingly powerful interface must address a number of obstacles. Product compatibility remains an issue, although compliance testing has begun to address the need for guaranteed interoperability. Support for longer cables also presents a problem as HDMI cable runs typically are limited to 10 or 20 meters. HDMI's support for High-bandwidth Digital Content Protection (HDCP) and Consumer Electronics Control (CEC) will play a major role in future home theater equipment designs. To ensure content protection, Hollywood studios are requiring all new high-definition DVDs be encrypted for use only with HDCP-enabled DVD players and HDTVs. CEC allows consumers to operate their HDTVs, DVD players, HD camcorders, and other compliant equipment through a single remote control, eliminating the clutter and confusion that comes from juggling multiple remotes and menus.

With a broad line of HDMI ICs, Analog Devices is helping designers address these issues. ADI's **HMDI 1.3-compatible multiplexers, receivers and transceivers** support the delivery of new levels of picture quality in applications ranging from 1080p HDTVs to digital video and still cameras, portable media players and cell phones. Included in the Advantiv product line are the industry's first buffered multiplexers to support 1080p deep color technology as defined in the HDMI 1.3 standard. The new multiplexers also add proprietary equalization technology that allows them to transmit signals over more than 20 meters of HDMI 1.3-compliant cable. More recently, Analog Devices has given users even more flexibility to position home theater equipment by using its own video compression technology to develop the first HDMI solutions for with wireless connectivity. Analog Devices has also introduced the industry's first HDMI transmitter to offer on-chip CEC support to help simplify the use of HDTV and home theater equipment.

Conclusion

The ATV era has just begun. Analyst firm DisplaySearch predicts that the HDTV market will grow by 65 percent over the next five years as prices for high performance ATVs decline. To drive that growth, ATV equipment designers must design high performance TVs and companion devices including digital video recorders (DVRs), audio/video recorders (AVRs), HD video camcorders and set-top boxes capable of delivering the vivid images and vibrant sounds consumers expect in next-generation home entertainment systems. With its unique position as a leading developer of analog signal processing technologies, its extensive experience with ATV equipment developers, and its broad portfolio of ATV products, solutions and design support, Analog Devices is providing the building blocks and systems expertise designers need to optimize their next-generation equipment for the ATV market.

Bill Bucklen *has been involved with high-speed data conversion for more than twenty years, and has held a variety of positions in IC design, product development, marketing, and management with TRW LSI Products and Raytheon Semiconductor. He is now Director of the Advanced Television Segment at Analog Devices, Inc. Mr. Bucklen received BSE and MSE degrees from UCLA and holds seven patents in the fields of high-speed data conversion and video signal processing. He can be reached at Bill.Bucklen@analog.com.*
…The Planet Analog Newsletter

WB8CJW CHECKS OUT NEW DIGITAL 1260MHz AMPLIFIER

I checked out the new amplifier for the digital transmitter. Initially I adjusted the output of the small amplifier (DEM 2303PA) for 2W out using the attenuator in the transmitter. Then after locating more cables and adapters (I need to work on the cable situation) placed the new DEM2330PATV in line. Starting off with the 1 x 30dB step attenuator, still at the exciter, adjusted down from 30dB. The following is the output power measured into the 23cm loop-Yagi antenna:

dB	Power (Watts)	
30	1	
25	1.5	-- this began "tickling" the repeater
22	4	-- Video held the repeater on but frequent break up in small chunks across the screen
20	7	-- Looking good
10	20-22	--Amplifier starting to saturate, gain increase not as great
6	25	
4-5		Saturated at approximately 28 to 30 Watts. Solid picture, no break-up or problems noticed.

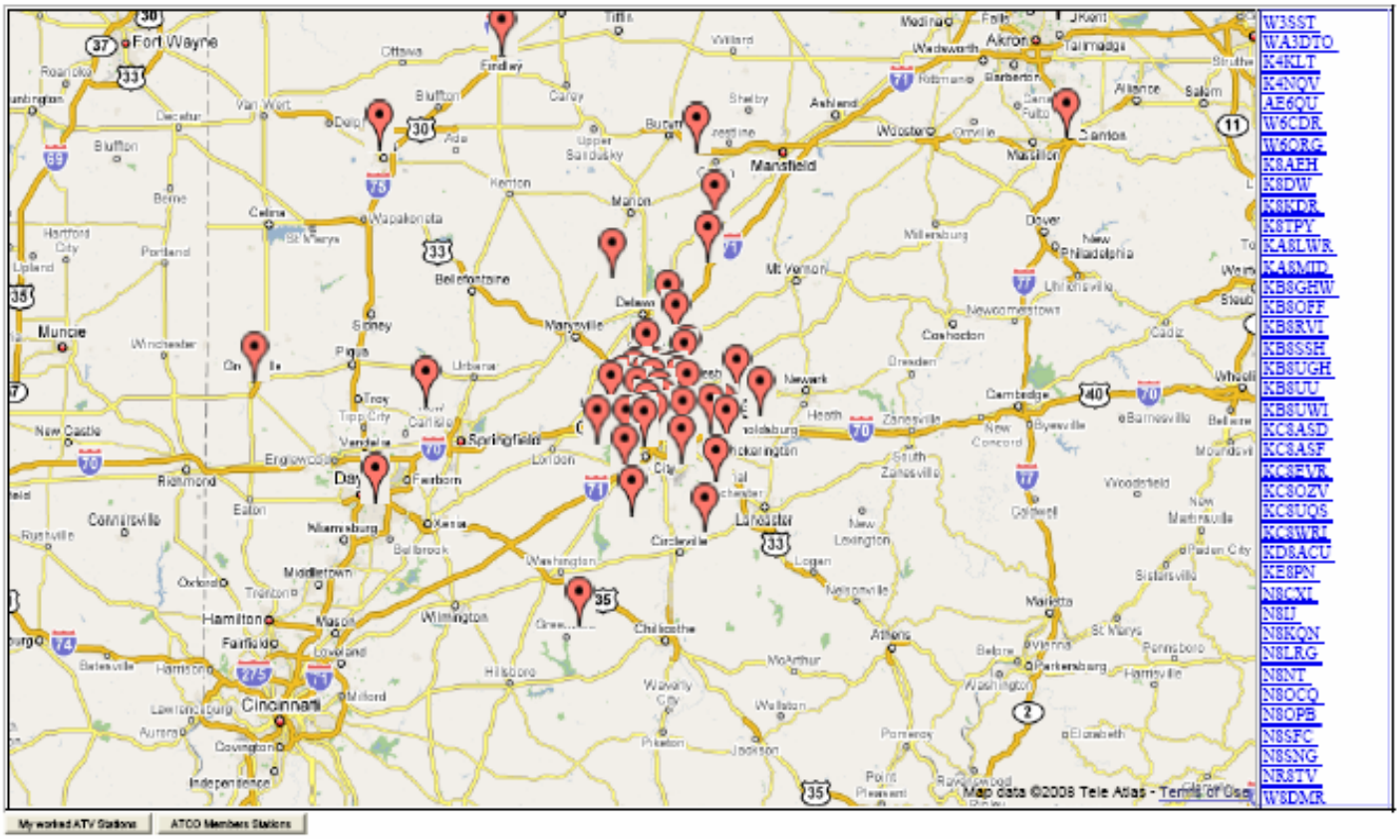
The reflected power on the antenna measured about 300mW at 25W out. One cable was giving me problems being intermittent from the exciter to the step attenuator while I was taking measurements. I wanted to go through measurements again but when I installed a different cable the power output was much lower for the amount of attenuation. Puzzled by that and was no longer getting into the digital receiver downtown. With 10 Watts out I thought what the heck is going on here - I was measuring 5 Watts before with a decent signal. Well, I guess the receiver at the repeater crapped out again! Time to make more 'N' connector jumper cables and get another Geosun receiver modified for replacement.

I was running the amplifier at 25W output for over an hour on and off for 10-15 minutes or so. I never saw any picture degradation coming back from the repeater and the case and heat-sink of the amp got just moderately hot. I was concerned about the cable supplied being only 16ga. (maybe 14ga. but I didn't measure it) and about 4 feet long but measuring the supply at 13.78V the voltage at the amp was 13.52V - not bad. The other concern is only one contact each was used at the connector for the supply voltage for +13.8V and ground. Hmm, not sure what their current rating might be but they don't look very beefy. The other two of the four contacts are for the power monitor and the PTT (L) input. Initial testing certainly looks good! I'll keep you informed.
…Dale, WB8CJW

WB8LGA CREATES HAM LOCATOR MAP

Charles has done it again! You must check out his Google type map overlay system that locates all ATCO members with a pinpoint on a Google map along with their location, elevation and direction from the ATCO repeater location in downtown Columbus. You can even click on the “pinpoint” to zoom in on that location right down to the actual house. I did that for my location which even allowed me to see the roll on coax on my patio roof! Click on his web home page for the program. A word of note though. You must be using Netscale Navigator to show the “teardrop” locations because that browser is the only one that supports that type of script file. (Too bad Microsoft!) View the map at http://home.columbus.rr.com/cbeener/GMap.html

At some future time we will put this map on the ATCO home page.



ATV NEWSLETTER

Below represents a portion of the ATV Newsletter published by Bryon Foster in California. He is not affiliated with the ATN Network in California but features much of their activity. Let's take a look at a great effort. ED.

January 22, 2008 Circulation 836 +Vol. 1, No. 24

World News this Week

International Space Station/DATV

While reading the most resent issue of CQ-TV my interest was peaked by this information.

The launch of Atlantis Space Shuttle STS-122 is targeted for February 7th and in it's cargo bay is the "European Columbus Laboratory" for the ISS.

Back in October the L-band uplink (1260-1270 MHz) and S-band downlink (2400-2450 MHz) antennas were installed on the module for the use of DATV on the ISS. ***(I am researching this and will have more information later. I will report on it in the next ATCO Newsletter… WA8RMC).***

And I noted this paragraph in CQ-TV: *"It is expected that there will be a number of educational outreach projects that will be made possible with the equipment"*

I have not heard a word about this project or planned participation in any way in my local area.

What I would like to know is if anyone is making plans to at least receive the ISS? Or if anyone is making plans on work the ISS via DATV in the future?

(I do know that there is a group involved with Digital ATV in the Columbus Ohio area and K6BEN in San Jose is making plans to switch it's repeater to DATV.)

Please send me a note and let me know what your plans are?

I am currently researching any funding that will be offered for educational purposes here in the U.S..

Let me know if your ATV Group is interested in some government funding.

DATV/Digital Amateur Television Primer

Darren, G7LWT sent me an email to subscribe to the newsletter. Along with his email address was a website address and to my surprise it was his DATV Primer. www.g7lwt.com I have listed it in the ATV Guide for future reference. Thank you Darren.

Grimsby, UK GB3GG

I checked into the Net again this week. And for the first part of the net I was able to hear audio and while I was watching their camstream they were watching and rebroadcasting the W6ATN camstream provided by AC6RB. So in effect we had a two way ATV contact with video and audio. Later on I found that the audio problem was on my end and nothing more than a dumb mistake.

G7KPM was working with the camstream and the audio loss and 2E0GYZ brought up "Ustream" as an alternative streaming video. I wasn't able to make it work on my end so I will have to educate myself and see if I can get it to operate. See you guys next week.

Additional Note on CQ-TV Magazine

CQ-TV Cyber Membership now for only 4 UKP (about $7.85 US).

Join now and receive a chance to win an Electronic Caption Generator in the "Caption Competition".

www.batc.org.uk Check it out!

ATV Newsletter Circulation

In the past I have asked my readers that pass along the newsletter to other Hams to drop me an email and let me know the number of

people you send it to. This is just to give me an idea of the total number of shacks that my newsletter is being read in.

If you have already responded to me before you don't need to respond now but the subscribers have grow since I last asked. Please take a moment and send me your number. And please don't stop passing along the newsletter. Thanks to all my readers!
atv-newsletter@hotmail.com

Buy-Sell-Trade

From N8UDK in Troy, MI:

Here is a list of equipment I am selling. Everything is in good condition, guaranteed to work, and marked 50% off the retail price. UPS shipping charges will be added. All equipment must be purchased by licensed amateur radio operators. The reason for sale is our repeater has had no activity in years and I am finishing our basement so I had to clean it out. Please email me at chris@icircuits.com if you have questions or would like to make a purchase.

Thanks!
-Chris (chris@icircuit.com)

ATV Equipment for Sale
1 P.C. Electronics ATV Repeater Receiver ATVR-4 (434.00 and 439.25) [$149.00]
1 P.C. Electronics ATV Repeater Receiver ATVR-4 (439.25 LSB) [$149.00]
1 P.C. Electronics ATV Repeater Transmitter RTX-23 (1253.25) [$164.00]
1 P.C. Electronics ATV Crystal Downconverter TVCX-23 N (1253.25) [$55.00]
1 P.C. Electronics ATV Crystal Downconverter TVCX-23 BNC (1253.25) [$55.00]
1 Down East Microwave 1.2 GHz 35 watt AMP 2340 PAHS [$make offer]
1 Down East Microwave 23cm weatherproof LNA 23LNA [$60.00]
1 Geko Labs Video Pattern Generator VG10 [$319.00]
2 Kenwood VC-H1 Visual Communicator [$make offer]
2 Elktronics boards [$make offer]
3 Pico video/audio modulator cable TV 655 to 131 CAM-35U/U [make offer]
2 Superscope digital quad splitter b/w rackmount VMS550mkll [$make offer]

Filters
2 International Crystal Manufacturing FL407 434.000 VSB Filter (tuned for 439.25 LSB) [$make offer]
1 Digital Communcations, Inc. 6 MHz Bandpass Filter (1255.00 MHz) 8 pole [$185.00]
2 Digital Communications, Inc. 440-450 MHz Bandpass Filter DCI-445-10C 4 pole [$95.00]
2 Digital Communications, Inc. 2 Meter Bandpass Filter DCI-146-4H 4 pole [$85.00]

Antennas
1 Comet GP-20 1.2 GHz 14.9 dbi omni antenna (new) [$make offer]
1 Diamond U-300 440/1200 8.6db/13.2 db omni antenna [$make offer]
1 Comet CYA-1216E 1.2 GHz 16.6 dbi beam antenna (new) [$80.00]

Radios
Kenwood TM-441A [$175.00]

Miscellaneous
MFJ TNC MFJ-1274 [$make offer]
Kantronics Packet Communications 9612 Plus [$make offer]
Mountain View Communications Technology GOES Weather Satellite Downconverter 1691-A [$make offer]
Hamtronics NOAA Weather Satellite Receiver [$make offer]
MulitFAX Weather Satellite PC card [$make offer]
Kansas City Tracker PC card [$make offer]

Anyone looking to buy, sell or trade ATV equipment are welcomed to send their ad(s) for publication to:
atv-newsletter@hotmail.com

WB6KJJ has a Question
WB6KJJ, Ed asked a question on the ATN net last week about his situation on 2.4 GHz. Ed has a amp that needs about a one watt to drive it. He is looking for an exciter or transmitter to drive his amp.. Ed isn't interested in going the way of P.C. Electronics. Can anyone help Ed out? His email address is edboykin@msn.com

W6WYN has a Question
Al, W6WYN has his 1200 receive antenna up and this is what he wrote:
Hi Bryon,Seems as though either conditions have been down about 3 db or I have to go higher or something I am right on the threshold between color and black and white. Has the 1.2 GHz signal from Santiago been normal. Thanks Al, W6WYN

Winter Meeting Questions
To answer your questions about the Winter ATN Meeting you should go to the website. www.atn-tv.org

And for those of you that wanted to know more about the club rules and the duities of the Treasuer, Pres., or Vice Pres. go to the same website and click on the "Contact US!" button. You will see "ATN-CA Constitution & Bylaws (2006)". This will give you the rules of the club.

Letters to the Editor
If you have an opinion or viewpoint that you would like to express to the readers, please submit your letters to: atv-newsletter@hotmail.com

See you on ATV,
N6IFU
Bryon Foster
Editor and Publisher of the "ATV Newsletter"
Please send this Newsletter to anyone you think will enjoy it.
If you wish to subscribe to the "ATV Newsletter", send me an email and I will add you to my mailing list. The newsletter is free. **atv-newsletter@hotmail.com**

WHO'S IN ON THE 700MHZ AUCTION?

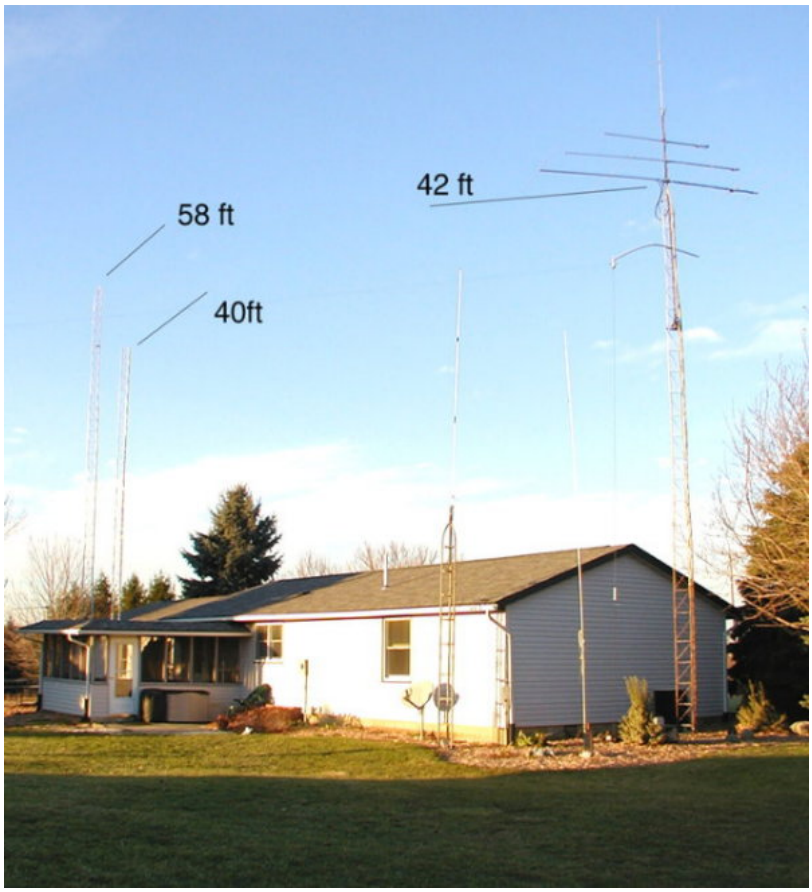
Feel free to shout it out in the comments, we know y'all are gunning for a piece. What's that? Don't quite have enough change in the couch to hit the $4.6 billion minimum bid on the 700MHz C block? How lame. Lucky for us, there are quite a few companies out there that do have that kind of cash earmarked for this and other highly desirable parts of the spectrum, which should make for some exciting bidding. Too bad FCC's auction process, which begins on January 24th, is totally blind, and with the exception of the few companies that have publicly stated their intentions to bid, we won't know much about how the auction went down until February or March. The following, however, are confirmed:

- AT&T; T-Mobile says it already has plenty.
- Cox Communications; Time Warner and Comcast aren't biting.
- Frontline; gunning for the D block.
- Google; might just do the minimum to ensure the C block is "open."
- Verizon; Sprint is busy with WiMAX.

Sounds like slim pickings, but there a bunch of wild cards out there, including satellite providers, smaller wireless carriers and even big box retailers.

KB8GHW SPEAKS OUT ABOUT NEW TOWER

Well I got the other tilt over aluminum tower up today at the other side of the house with a winch on loan to me from Sandy kb8wq. The NEW TOWERS HAVE NO antennas on them.



I hope I do not have to raise the Rohn 25g up to much. But I think I will have to. The 2 new towers are about 30 feet apart to help keep the feed lines short to the shack mostly on uhf & vhf.

I have problems getting into the atv repeater in the summer when the leaves are up on the trees. But now it is cool, the leaves are gone and I am getting great reports. I have to trim a bunch of my own trees, some I might have to go higher and even ax a couple of my own trees! (I am not a tree hugger and do not think they should cut so many down but they have to build stuff and I need a job!)

The antenna I am using now for ATV is about 48 ft. on the 42 foot tower so I think I am going to have to go higher with the Rohn 25g. I have about 8 or 9 sections left if needed. But if I go to 60 or 70 ft., I will have to have an other set of guys wires. I wish I just had another guyless tower. I got all of my tower for next to nothing, as far as real cost goes.

All the antennas on the tower you see with antennas will be moved. That tower will be used for HF. Long run of coax. The Rohn 25g tower will be uhf and vhf.

The other aluminum tower is just for a pair of stacked 5 element M^2 6 meter antennas.

And I must say I am truly lucky to have an xyl that I love and does not complain about my hobby (but does raise an eyebrow sometime!) And I have a lot of good ham friends to help me to make this happen. I would thank all of you but it would be too long of a list and I might leave a some folks out. Thanks to all! I would really like some recommendations on height limits.
That is where I need the most help!!!

…Mike KB8GHW

BROADCAST TV NEAR MEXICAN BORDER

December 20, 2007**WASHINGTON** -- U.S. Senator Kay Bailey Hutchison (R-TX), a member of the Senate Commerce, Science, and Transportation committee, has filed S. 2507, the Digital Television Border Fix Act, which addresses the concerns of South Texas and border residents regarding the digital television (DTV) transition that must be completed in early 2009. At midnight on February 17, 2009, federal law requires U.S. broadcasters to cease analog broadcasting and broadcast in digital format exclusively. The lack of analog broadcasting after this date poses special challenges for border communities. “This legislation will ensure that Texans living along the border will not lose access to public safety communication messages sent through television stations,” said Sen. Hutchison.

Sen. Hutchison’s legislation allows broadcasters along the border to continue analog broadcasts for five years, but maintains Federal Communications Commission (FCC) authority to deny stations in the affected area the ability to simulcast in both analog and digital if it does not serve the public interest. The legislation applies only to stations within 50 miles of the common border with Mexico. Specifically, Sen. Hutchison ensured that the legislation would affect the following Texas cities Laredo, McAllen, and El Paso. When the DTV transition occurs, customers who rely on rooftop antennas or “rabbit ears” to receive television broadcasts will have to subscribe to a “pay” television service, purchase a television with a digital tuner, or acquire a converter box for each analog television in their home to continue receiving American television. At the same time, “free” analog television signals originating in Mexico will remain available to border residents.

The lack of federal education on this issue and the expense of these preparations may discourage many households from participating in the transition. If this occurs, it could pose an unnecessary and avoidable public safety risk. Once the DTV transition is complete, customers who do not take part would no longer receive the Emergency Alert System (EAS) and AMBER Alert messages broadcast over domestic television stations.

This legislation was carefully drafted so it would not interfere with the transition, giving the FCC total flexibility to deny analog broadcasting privileges to any domestic station that causes interference with a full power digital broadcasting station after the transition. The limited number of stations covered by the legislation will prevent this action from interfering with the recovery and auction of the analog spectrum in which domestic television stations broadcast.

This bill is critically important to ensuring that residents in the border region will retain access to important public safety messages. Sen. Barbara Boxer (D-CA) is the chief co-sponsor of this legislation.

MOTOROLA TO ACQUIRE YAESU

Motorola issued a press release earlier this week stating that its subsidiary, Motorola USA, will "launch a tender offer to acquire a controlling interest in Vertex Standard Co., Ltd." Vertex Standard is the parent company of Yaesu. Upon successful completion of the tender offer and subsequent restructuring process, Motorola will own 80 percent of Vertex Standard; Tokogiken, a privately held Japanese company, controlled by current President and CEO of Vertex Standard Jun Hasegawa, will retain 20 percent, forming a joint venture. The total purchase price for 80 percent of the outstanding shares on a fully diluted basis will be approximately 12.3 billion yen (approximately US $108 million). The bid will start November 6 and end on December 26. If the bid succeeds, shares of Vertex would be delisted from the Jasdaq Securities Exchange in Japan. According to Dennis Motschenbacher, K7BV, Yaesu's Executive Vice President for Amateur Radio Sales in North America, "I thought that the happiest and proudest day of my 45-plus years in Amateur Radio was when I was offered the opportunity to lead the Yaesu North American sales effort; however, being able to now announce this news to my fellow Amateur Radio operators takes over as the top life thrill for me! I am certain the good fortune that put me in this leadership chair at Yaesu now promises opportunities for me to do more for the technological future of Amateur Radio than I ever dreamed possible. I do not pretend to know the full extent of the positive impact this Motorola/Vertex Standard business arrangement will have on Amateur Radio -- I just know it is going to be terrific for all of us who love Amateur Radio for its public service and entertainment value, as well as its potential for us to make lifelong friendships in our neighborhoods and around the world."
…From the ARRL Letter

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 listed in order in the ATCO homepage under "Newsletters". Once you locate the Newsletter section, the displayed list can be re-sorted as needed by clicking on the "date" in the header.

Newsletter 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 1260 MHz 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 Antenna
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 Element Loop Yagi for 439.25 MHz
Vol 11 II	4,5,6	439 MHz 48 Ele Colinear 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 video 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 19 IIII	4	Pwr Supply for 28 Volt Ant Relay
Vol 20 III	9, 10	Video Sampler
Vol 21 II	4	RF Pwr Amp for 900/1200 MHZ
Vol 21 II	14	10-14 Volt Doubler for 28 Volt Ant Relays

…Bob N8OCQ

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. …WA8RMC.

3 Feb 2008+ Northern Ohio Amateur Radio Society http://www.noars.net Talk-In: 146.70- (open repeater) Contact: John Schaaf, K8JWS PO Box 35 Avon Lake, OH 44012 Phone: 216-696-5709 Email: winterhamfest2008@noars.net Lorain, OH Gargus Hall 1965 North Ridge Road

10 Feb 2008+ Mansfield Mid-Winter Hamfest Intercity Amateur Radio Club http://www.iarc.ws Talk-In: 146.94 (PL l71.9) Contact: Dean Wrasse, KB8MG 1094 Beal Road Mansfield, OH 44904 Phone: 419-589-2415 Fax: 419-884-6177 Email: Metal07man@yahoo.com Mansfield, OH Richland County Fairgrounds750 North Home Road

16 Mar 2008+Hamfest and Computer Fair Toledo Mobile Radio Association http://www.tmrahamradio.org Talk-In: 146.27+ (will be in net mode - no tone needed) Contact: Brian Harrington, WD8MXR 4463 Holly Hill Drive Toledo, OH 43614 Phone: 419-385-5624 Email: bharrington@meduohio.edu Maumee, OH Lucas County Recreation Center 2901 Key Street

12 Apr 2008+Hamfest, Radio, Electronics & Computer Show Jackson County Amateur Radio Club http://www.arrlohiodistrict8.org/jackson.html Talk-In: 146.790/-600 Contact: Jim Dennett, W8ZUA 4597 Riegel Ridge Rd Jackson, OH 45640 Phone: 740-286-5454 Email: w8zua@copper.net Coalton, OH James A. Rhodes Community Center State Route 93

20 Apr 2008+ 54th Annual Hamfest, Electronics, and Computer Show Cuyahoga Falls Amateur Radio Club http://www.cfarc.org/hamfest2008.htm Talk-In: 147.27 Contact: Ted Sarah, W8TTS 239 Bermont Avenue Munroe Falls, OH 44262 Phone: 330-688-2013 Email: w8tts@w8tts.com Cuyahoga Falls, OH Emidio & Sons Party Center 48 East Bath Road

27 Apr 2008+ Athens County Amateur Radio Association http://www.ac-ara.org Talk-In: 145.15 Contact: Drew McDaniel, W8MHV 61 Briarwood Drive Athens, OH 45701 Phone: 740-592-2106 Fax: 740-593-1837 Email: mcdanied@ohio.edu Athens, OH Athens Community Center 701 East State Street

11 May 2008x 1st Annual Bucyrus Hamfest & Computer Show Talk-In: 147.165 (PL 88.5) Contact: Kenneth Cook, W8DZN 5726 Timpson Road Caledonia, OH 43314 Phone: 419-834-0887 Email: w8dzn@arrl.net Bucyrus, OH Crawford County Fairgrounds Youth Building

16-18 May 2008 Dayton Hamvention Dayton Amateur Radio Association http://www.hamvention.org Contact: PO Box 964 Dayton, OH 45401 Phone: 937-276-6930 Dayton, OH Hara Arena

20 Jul 2008+ Van Wert Amateur Radio Club http://www.w8fy.org/ Talk-In: 146.250 / 146.850 Contact: Louie Thomas, WD8LLO 208 North Chestnut Street Van Wert, OH 45891 Phone: 419-238-2812 Email: skouts@bright.net Van Wert, OH Van Wert County Fairgrounds US Route 127 South

24 Aug 2008+Hamfest and Computer Show Cambridge Amateur Radio Association http://w8vp.org Talk-In: 146.850 (PL 91.5) Contact: Russ Ellis, N8MWK 5855 Sherrard Road Cambridge, OH 43725 Phone: 740-439-6610 Email: n8mwk@arrl.net Cambridge, OH Pritchard Laughlin Civic Center 7033 Glenn Highway Road

28 Sep 2008+ Cleveland Hamfest and Computer Show Hamfest Association of Cleveland, Inc. http://www.hac.org Talk-In: 146.73 (PL 110.9) Contact: William Beckman, N8LXY c/o Hamfest Association of Cleveland, Inc. PO Box 81252 Cleveland, OH 44181-0252 Phone: 800-CLE-FEST Email: on Web site click email Berea, OH Cuyahoga County Fairgrounds 164 Eastland Road

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 him or her with information. New members are our group's lifeblood. It's important that we actively recruit new faces aggressively.

Jim Gilbert, WA2CZD, Wilder, Kentucky
Mike Doty, W0MNE, Circleville, Ohio

…WA8RMC

LOCAL HAM CLUB LISTING

Club/Organization	Web Site	In Person Meetings See the Club's Web Site for Location	Nets	ARRL Affliated ?
ARC OF OHIO STATE UNIVERSITY	http://arc.org.ohio-state.edu/	2nd Mon of the month at 18:00		Y
ATCO-AMATEUR TELEVISION IN CENTRAL OHIO	http://www.atco.tv/homepage/index.htm	Last Sun in October First Sun in May	Tue's at 21:00 on 147.450 with Repeat Audio on 446.350	
BUCKEYE BELLES-OHIO LADIES AMATEUR RADIO CLUB	http://geocities.com/kc4iyd		Mon's at 09:00 on 3.945 Mon's at 21:00 on 147.060 Tue's at 20:00 on 3.972 Tue's at 20:30 on 7.236	
CCRA-CAPITAL CITY REPEATER ASSN	http://www.qsl.net/ccra/	2nd Sat of the month at 19:30	Mon's at 20:30, the Swap'n'shop Net on 147.24; followed by a Discussion Net	
CENTRAL OHIO SLOW SCAN TV	http://www.qsl.net/n8tut/sstv/		1st Sun at 19:00 on 145.490	
COARES-CENTRAL OHIO ARES	http://www.coares.org/	3rd Wed of the month at 20:00	Wed's at 20:00 on 147.060 except the 3rd Wed of the month.	Y
COLUMBUS FOX HUNTERS	http://www.qsl.net/cfh/			
COOKEN-CENTRAL OHIO OPERATORS KLUB EXTRA TO NOVICE	http://www.cooken.org/	2nd Sat of the month at 12:00	Wed's at 20:30. See web site for details on freqs.	Y
CORC-CENTRAL OHIO RADIO CLUB	http://www.corc.us/	Check web site		
COSHOCTON COUNTY AMATEUR RADIO ASSOC.	http://www.w8cca.org/	1st Tue of the month at 19:00	Sun's at 21:00 on 147.045	
COSWN-CENTRAL OH SEVERE WEATHER NET	http://www.severe-weather.org/		Tue's at 19:30 on 146.76 PL of 123.0hz Spring & Summer; 3rd Tue's Fall & Winter	Y
COTN-CENTRAL OHIO TRAFFIC NET	http://www.technology-corner.com/cotn/		Daily at 19:15 on 147.240	
CQRP-COLUMBUS QRP CLUB	http://www.qsl.net/cqrp/	1st Sat of the month at 10:30		
CRES-ARC	http://www.qsl.net/w8zpf	Check web site	Sun's at 21:00 on 146.070	Y
DELARA-DELAWARE AMATEUR RADIO ASSOCIATION	http://www.k8es.org/Home.html	3rd Wed of the month at 19:30	Mon's at 20:00 on 145.17	Y
LANCASTER & FAIRFIELD CTY ARC	http://www.k8qik.org/	1st Thu of the month at 19:30	Mon's at 21:00 on 147.030 Thu's at 18:30 on 147.030 is Radio Night.	Y
LICKING COUNTY ARES	http://www.licking-ares.org/		1st & 3rd Wed of the month at 21:00 on 146.88	
MOUNT VERNON ARC	http://mvarc.net/	2nd Mon of the month at 19:00		Y
NARA-NEWARK AMATEUR RADIO ASSOCIATION	http://nara.eqth.org/	2nd Sat of the month at 19:00	Tue's at 21:00 on 146.88	Y
OHIO NAVY-MARINE CORPS MARS	http://www.ohionavymars.org/			N/A
QCWA MID-OHIO CHAPTER	http://www.qcwa.org/qcwa212/	Check web site	Thu's at 20:30 on 146.76	
RUSTY ZIPPER HF & DX CONTEST CLUB	http://www.qsl.net/na8kd/			
SOUTH WEST COLUMBUS HAM RADIO CLUB	http://swchrc.com/		Fri's at 20:00 on 145.230 or 53.550	Y
VOICE OF ALADDIN ARC	http://www.qsl.net/w8fez/			Y
ZARC-ZANESVILLE AMATEUR RADIO CLUB	http://zarc.eqth.org/	1st Tue of the month at 19:00	Wed's at 21:00 on 146.610	Y

INTERNET ATV HOME PAGES (list verified 01/20/08)

Domestic homepages

http://www.atco.tv	Ohio, Columbus, homepage (ATCO)
http://www.w8bi.org/atv/atvresources.html	Ohio, Dayton ATV group (DARA)
http://www.citynight.com/atv	California, San Francisco ATV
http://www.qsl.net/atn	California, Amateur Television Network in Central / Southern
http://members.tripod.com/silatvg	Illinois, Southern, Amateur Television group
http://www.ussc.com/~uarc/utah_atv/id_atv1.html	Idaho ATV
www.bratsatv.org.	Maryland, Baltimore Radio Amateur Television Soc. (BRATS)
http://www.dxzone.com/cgi-bin/dir/jump2.cgi?ID=10991	Michigan, Detroit Amateur Television System (DATS)
http://www.qsl.net/kd2bd/atv.html	New Jersey, Brookdale ARC in Lincroft
http://www.ipass.net/~teara/menu3.html	North Carolina, Triangle Radio Club (TEARA)
http://www.oregonatv.org	Oregon, Portland OATVA Oregon Amateur TV Association
http://www.nettekservices.com/ATV/	Pennsylvania, Pittsburg Amateur Television
http://members.bellatlantic.net/~theojkat/	Pennsylvania, Phila. Area ATV
http://www.hats.stevens.com	Texas, Houston ATV (HATS)
http://www.hotarc.org/atv.html	Texas, WACO Amateur TV Society (WATS)
http://www.ussc.com/~uarc/utah_atv/utah_atv.html	Utah ATV
http://www.qsl.net/w7twu	Washington, Western Washington Television Soc. (WWATS)
http://www.shopstop.net/bats/	Wisconsin, Badgerland Amateur Television Society (BATS)
http://mysite.verizon.net/vzev3ql6/id9.html	Chesapeake Amateur Television Society (CATS)

Foreign homepages

http://atv.hamradio.si	Slovenia ATV **(BEST OF FOREIGN ATV HOMEPAGES)**
http://www.batc.org.uk/index.htm	British ATV club (BATC)
http://www.cq-tv.com	British ATV Club and CQ-TV Magazine
http://oh3tr.ele.tut.fi/english/atvindex.html	Finland ATV, OH3TR repeater.
http://www.darc.de/distrikte/g/T_ATV/atv.htm	German ATV

Misc other ATV related sites

http://www.atv-tv.org	The Amateur Television Directory
http://www.atn-tv.org	Amateur Television Network
http://www.hampubs.com	Amateur Television Quarterly Magazine
http://gb3lo.camstreams.com	"GB3LO" Repeater Camstream westoft, UK
http://www.ham-radio.com/sbms	"SBMS" San Bernardino Microwave Society
http://www.qsl.net/kc6ccc/	“METS" Microwave Experimenters Television System

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. Then a second round follows with periodic checks for late check-ins. We rarely chat for more than an hour so please join us if you can.

ATCO TREASURER'S REPORT - de N8NT

OPENING BALANCE (10/25/07)……$ 1205.35
RECEIPTS(dues)…… $
Pizza Party expenses……$ ( )
Paypal charges……$ ( )
CLOSING BALANCE (01/20.08)……$ About $1200.

NOTE:A full treasurer report will be available next Newsletter.

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 average street level (1460 feet above sea level)
Transmitters: 427.25 MHz AM modulation, 1250 MHz FM modulation, 1260 MHz QPSK digital, 2433 MHz FM modulation and 10.350 GHz FM modulation

Interdigital filters in output line of 427.25, 1250 & 2433 transmitters
Output Power - 427.25 MHz :40 watts average 80 watts sync tip
1250 MHz: 50 watts continuous (Analog ATV)
1260 MHz 2 watts continuous (DVB-S digital ATV - 2 channels)
2433 MHz: 15 watts continuous
10.350 GHz 1 watt continuous
Link transmitter - 446.350 MHz 5 watts NBFM 5 kHz audio

Identification: 427, 1250, 1260, 2433, 10.35 GHz xmitters video identify every 30 min. with ATCO & WR8ATV on 4 different screens
1260 MHz - Continuous transmission of ATCO & WR8ATV with no input signal present

Transmit antennas: 427.25 MHz - Dual slot horizontally polarized "omni" 7 dBd gain major lobe east/west, 5dBd gain north/south
1250 MHz - Diamond vertically polarized 12 dBd gain omni (Analog ATV)
1260 MHz - Diamond vertically polarized 12 dBd gain omni (Digital DVB-S ATV)
2433 MHz - Comet Model GP24 vertically polarized 12 dBd gain omni
10.350 GHz - Commercial 40 slot waveguide horizontally polarized 16 dBd gain omni

Receivers: 147.45 MHz - F1 audio input with touch tone control
439.25 MHz - A5 video input with FM subcarrier audio (**lower sideband**)
449.350 MHz - F1 audio input aux touchtone control
1280 MHz - F5 video input or DVB-S digital (digital input fed direct to 1260 MHz digital output channel 2)
2398 MHz - F5 video input
10.350 GHz - F5 video input (future – not installed yet)

Receive antennas: 147.45 MHz - Vert. polar. Hi Gain 12 dBd dual band (also used for 446.350 MHz output)
439.25 MHz - Horiz. polar. dual slot 7 dBd gain major lobe west
915 MHz - Diamond vertically polarized 12 dBd gain omni (spare ant – not in use at this time)
1280 MHz - Diamond vertically polarized 13 dBd gain omni
2398 MHz - Comet Model GP24 vertically polarized 12 dBd gain omni
10.450 GHz - Commercial 40 slot waveguide horizontally polarized 16 dBd gain omni (not installed yet)

Input control:

Touch Tone	Result (if third digit is * function turns ON, if it is # function turns OFF)
00#	turn transmitters **off** (exit manual mode and return to auto scan mode)
00*	turn transmitters **on** (enter manual mode-keeps xmitters on till 00# sequence is pressed)
264	Select Channel 4 Doppler radar. (Stays up for 5 minutes) Select # to shut down before timeout.
697	Select Time Warner radar. (Stays up till turned off). Select # to shut down.

Manual mode functions:

00* then 1 Ch. 1	Select 439.25 receiver - manual mode (hit 00* then 1 to view 439.25 signal only)
00* then 2 Ch. 2	Unused at this time
00* then 3 Ch. 3	Select 1280 receiver - manual mode
00* then 4 Ch. 4	Select 2411 receiver - manual mode
00* then 5 Ch. 5	Select video ID - manual mode (the 4 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 2 915 MHz scan enable (not in use at this time)
03* or 03#	Channel 3 1280 MHz scan enable
04* or 04#	Channel 4 2398 MHz & camera video scan enable
A1* or A1#	Manual mode select of 439.25 receiver audio
A2* or A2#	Unused channel at this time
A3* or A3#	Manual mode select of 1280 receiver audio
A4* or A4#	Manual mode select of 2398 receiver audio
C0* or C0#	Beacon mode – transmit ID for twenty seconds every ten minutes
C1* or C1#	449.350MHz link receiver enable / disable
C2* or C2#	2433 transmitter for on/off. (C2* enables transmitter and C2# disables it)

Auto scan mode functions:

001	2398 receiver (normal mode - returns to auto scan)
002	Roof camera (select 001 when finished viewing camera so repeater will shut down)
003	Equipment. room camera (select 001 when finished so repeater will shut down**)**

ATCO MEMBERS AS OF JANUARY 20, 2008

Call	Name	Address	City	St	Zip	Phone	URL
KD8ACU	Robert Vieth	3180 North Star Rd	Upper Arlington	OH	43221	614-457-9511	rfvieth@yahoo.com
K8AEH	Wilbur Wollerman	1672 Rosehill Road	Reynoldsburg	OH	43068	614-866-1399	wilburapilot@yahoo.com
N4AK	Glen Farr	10 Autumn View Ridge	Travelers Rest	SC	29690-8024		
KC8ASD	Bud Nichols	3200 Walker Rd	Hilliard	OH	43026	614-876-6135	kc8asd2@netzero.com
KC8ASF	Tom Pallone	3437 Dresden St.	Columbus	OH	43224	614-268-4873	
W6CDR	Wynn Rollert	1141 Pursell Ave	Dayton	OH	45420	937-256-1772	w6cdr@hotmail.com
WB8CJW	Dale & Sharon Elshoff	8904 Winoak Pl	Powell	OH	43065	614-210-0551	delshoff@columbus.rr.com
N8COO	C Mark Cring	3941 Three Rivers Lane	Groveport	OH	43125	614-836-2521	n8coo@yahoo.com
N8CXI	Garry Cotter	2367 Northglen Drive	Columbus	OH	43224		gjcotter@aol.com
WB8CXO	Mike Young	289 Gaylord Drive	Munroe Falls	OH	44682		
WA2CZD	Jim Gilbert	1204 Aspen Pines Drive	Wilder	KY	41071-0404		jgilbert@fox19.com
N3DC	William Thompson	6327 Kilmer St	Cheverly	MD	20785		
WA8DNI	John Busic	2700 Bixby Road	Groveport	OH	43125	614-491-8198	jabusic@yahoo.com
W8DMR	Bill Parker	2738 Florbunda Dr	Columbus	OH	43209		w8dmratv@copper.net
K8DW	Dave Wagner	2045 Maginnis Rd	Oregon	OH	42616	419-691-1625	
WA3DTO	Rick White	2771Keystone Dr.	Painsville	Oh	44077-8830		wa3dto@aol.com
WB8DZW	Roger McEldowney	5420 Madison St	Hilliard	OH	43026	614-876-6033	MHZ52525@aol.com
KC8EVR	Lester Broadie	108 N Burgess	Columbus	OH	43204		
KB8FLY	Rod Shaner	16012 London Rd.	Orient	OH	43146	740-279-3614	wa8fly@copper.net
W8FZ	Fred Stutske	8737 Ashford Lane	Pickerington	OH	43147		w8fz@arrl.net
KB8GHW	Mike Amirault	11354 Reussner Dr SW	Pataskala	OH	43062	740-927-5005	kb8ghw@ee.net
W8GUC	Reuben Meeks	1345 Helke Rd	Vandalia	OH	45377	937-454-0968	rcmeeks2@hughes.net
WA8HFK,KC8HIP	Frank, Pat Amore	3630 Dayspring Dr	Hilliard	OH	43026	614-777-4621	famore@wowway.com
W4HTB	Henry Cantrell	905 Wrenwood Dr.	Bowling Green	KY	42103	270-781-9624	w4htb@insightbb.com
WG8I	Chris Vojsak Sr,	3536 W Henderson Rd	Columbus	OH	43220-2232		
WB2IIR	Michael Anthony	370 Georgia Drive	Brick	NJ	08723		
N8IJ	Dick Knowles	1440 Northbrook Dr	Lima	OH	45805		rgrant2001@yahoo.com
K8KDR,KC8NKB	Matt & Nancy Gilbert	5167 Drumcliff Ct.	Columbus	OH	43221-5207	614-771-7259	k8kdr@arrl.net
W8KHW	Kevin Walsh	2396 Anson St	Columbus	OH	43220	614-442-7748	kwalsh@datrix.com
N8KQN (sk)	Flo Post	1267 Richter Rd	Columbus	OH	43223	614-276-1820	n8kqn@copper.net
WA8KQQ	Dale Waymire	225 Riffle Ave	Greenville	OH	45331	937-548-2492	walkingcross@bright.net
N8LRG	Phillip Humphries	3226 Deerpath Drive	Grove City	OH	43123	614-871-0751	phumphries@columbus.rr.com
WB8LGA	Charles Beener	2540 State Route 61	Marengo	OH	43334		cbeener@columbus.rr.com
KA8LWR	Mel Alberty	1645 Olentangy Road	Bucyrus	OH	44820	419-468-2971	malberty@columbus.rr.com
W8MA	Phil Morrison	154 Llewellyn Ave	Westerville	OH	43081		
KA8MID	Bill Dean	2630 Green Ridge Rd	Peebles	OH	45660		ka8mid@qsl.net
W0MNE	Mike Doty	4300 Winchester Southern R	Circleville	OH	43113	740-420-9060	mcubed2@hughes.net
N8NT	Bob Tournoux	3569 Oarlock Ct	Hilliard	OH	43026	614-876-2127	n8nt@atco.tv
WD8OBT	Tom Camm	63 Goings Lane	Reynoldsburg	OH	43068	740-964-6881	firefoxtom11@netzero.com
WU8O	Tom Walter	15704 St Rt 161 West	Plain City	OH	43064	614-733-0722	wu8o@emec.us
N8OCQ	Bob Hodge Sr.	3750 Dort Place	Columbus	OH	43227-2022		hodgerob@yahoo.com
KB8OFF	Jess Nicely	742 Carlisle Ave	Dayton	OH	45410		kb8off@sbcglobal.net
W6ORG,WB6YSS	Tom & Maryann O'Hara	2522 Paxson Lane	Arcadia	CA	91007-8537	626-447-4565	tom6ORG@hamtv.com
KC8OZV	George Biundo	3675 Inverary Drive	Columbus	OH	43228	614-274-7261	kilowatt@biundo.org
K2PMS	Paul Schmitter	57 East Main Street	Springville	NY	14141		pschmitter@roadrunner.com
KE8PN	James Easley	1507 Michigan Ave	Columbus	OH	43201	614-421-1492	jeasley11@hotmail.com
WB8PJZ	Dave Morris	12025 Wapak-Buckland Rd	Wapakoneta	OH	45895		
AE6QU	Ron Phillips	10858 W. Kaibab Dr.	Sun City	AZ	85373	602-369-4242	sunsettelcom@juno.com
WA8RMC	Art Towslee	180 Fairdale Ave	Westerville	OH	43081	614-891-9273	towslee1@ee.net
W8RRF	Paul Zangmeister	10365 Salem Church Rd	Canal Wincheste	OH	43110		w8rrf@copper.net
W8RRJ	John Hull	580 E. Walnut St.	Westerville	OH	43081	614-882-6527	jhull@wcmi.org
W8RUT,N8KCB	Ken & Chris Morris	3181 Gerbert Rd	Columbus	OH	43224	614-261-8583	w8rut@aol.com
W8RVH	Richard Goode	9391 Ballentine Rd	New Carlisle	OH	45334	937-964-1185	w8rvh@glasscity.net
W8RQI	Ray Zeh	2263 Heysler Rd	Toledo	OH	43617		zehrw@glasscity.net
KB8RVI	David Jenkins	1941 Red Forest Lane	Galloway	OH	43119	614-878-0575	kb8rvi@hotmail.com
W8RWR	Bob Rector	135 S. Algonquin Ave	Columbus	OH	43204-1904	614-276-1689	w8rwr@sbcglobal.net
W8RXX,KA8IWB	John & Laura Perone	3477 Africa Road	Galena	OH	43021	740-548-7707	jper@insight.rr.com
W8SJV, KA8LTG	John & Linda Beal	5001 State Rt. 37 East	Delaware	OH	43015	740-369-5856	w8sjv@nexgenaccess.com
KB8SSH	Mike Cotts	3424 Homecroft Dr	Columbus	OH	43224	614-268-8497	mcotts@wideopenwest.com
W3SST	John Shaffer	1635 Haft Dr.	Reynoldsburg	OH	43068	614-751-0029	w3sst@juno.com
K8TPY, K8FRB	Jeff & Dianna Patton	3886 Agler Road	Columbus	OH	43219		cqcqk8tpy@yahoo.com
NR8TV	Dave Kibler	243 Dwyer Rd	Greenfield	OH	45123	937-981-1392	s.crew@in-touch.net
KB8UGH	Steve Caruso	6463 Blacks Rd. SW	Pataskala	OH	43062-7756		dae14@copper.net
WB8UGV	Bruce Jaquish	22375 Montanna Drive	Lawrenceburg	IN	47025-7447	812-637-3805	brucewb8ugv@comcast.net
W8URI	William Heiden	5898 Township Rd #103	Mount Gilead	OH	43338	419-947-1121	wb8uri@earthlink.net
KB8UWI	Milton McFarland	115 N. Walnut St.	New Castle	PA	16101		kb8uwi@yahoo.com
WA8UZP	James R. Reed	818 Northwest Blvd	Columbus	OH	43212	614-297-1328	wa8uzp@yahoo.com
KB8WBK	David Hunter	45 Sheppard Dr	Pataskala	OH	43062	740-927-3883	hiramhunter@aol.com
KC8WRI	Tom Bloomer	PO Box 595	Grove City	OH	43123		ohiomec@aol.com
AA8XA	Stan Diggs	2825 Southridge Dr	Columbus	OH	43224-3011		sdiggs4590@aol.com
N8XYJ	Dan Baughman	4269 Hanging Rock Ct.	Gahanna	OH	43230		danohio@wowway.com

Call	Name	Address	City	St	Zip	Phone	URL
KB8YMQ	Jay Caldwell	4740 Timmons Dr	Plain City	OH	43064		kb8ymq@aol.com
KC8YPD	Joe Ebright	3497 Ontario St	Columbus	OH	43224		----------
N8YZ	DaveTkach	2063 Torchwood Loop S	Columbus	OH	43229	614-882-0771	
AB5ZJ	Tom Phillips	6712 Hickory Pl. Ct.	No. Richland Hills	TX	76180		
KA8ZNY,N8OOY	Tom & Cheryl Taft	386 Cherry Street	Groveport	OH	43125	614-202-9042	ttaft@columbus.rr.com

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 $10.00 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.

The membership period is from January 1ST to December 31ST. New Members 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. As an option for those joining after mid July, they can elect to receive a complementary October issue with the membership commencing the following year Your support of ATCO is welcomed and encouraged.

ATCO CLUB OFFICERS

President: Art Towslee WA8RMC
V. President: Ken Morris W8RUT
Treasurer: Bob Tournoux N8NT
Secretary: Frank Amore WA8HFK
Corporate trustees: Same as officers

Repeater trustees: Art Towslee WA8RMC
Ken Morris W8RUT
Dale Elshoff WB8CJW
Statutory agent: Frank Amore WA8HFK
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/paydues** and fill out the form. 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
180 Fairdale Ave
Westerville, Ohio 43081

FIRST CLASS MAIL

REMEMBER...CLUB DUES ARE NEEDED.
CHECK THE RIGHT CORNER OF THE MAILING LABEL
OR
MEMBERS PAGE OF ATCO WEBSITE FOR THE EXPIRATION DATE.
SEND N8NT A CHECK IF EXPIRED.