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 HAM IN THE SPOTLIGHT

This time we visit with Dan Baughman, N8XYJ. Dan is one of our newer members but carries with him a wealth of electronic knowledge that I hope will be shared. Dan is in the process of installing a new 60 foot tower so look out guys as he has hinted about an antenna party offering in the near future.

Dan has checked into our net on a regular basis when he has not been traveling and has become favorably impressed with the personalities here, so get ready for a great ATV signal from him in the near future.

ACTIVITIES ... from my "workbench"

Well, here we go again. So much work…so little time, but that's not new around here. Actually that's not totally true. After all, I'm getting older and the priveledges of being a "senior citizen" include attitude "If I just don't want to do something, I can let it slide until later". That's also not totally true according to my wife. She reminds me there are things that DO need to get done and they don't always fall into a Ham Radio category.

I started out thinking I wasn't going to have much to talk about this time but as the Newsletter deadline crept nearer and nearer, many magical tasks popped up.

Repeater repair activity has been low with one enhancement exception. For some time now I have had an alternate UHF voice input to the repeater. The frequency of 449.350 was selected to be exactly 3 MHz above our link transmit frequency of 446.350 MHz. Its primary purpose was to be able to control the repeater functions without interrupting operation on 147.45 MHz. When we had the roof camera in place, controlling it on 147.45 was potentially disruptive so it seemed like a good idea at the time. When I re-built the link function, I included this 449.350MHz input but from the start it has had some co-channel interference. My attempts to identify the source failed so it was disabled until recently. I figured out that if we use the 427MHz high power/ low power command that we don't need now, we could use that command to disable the 449.350MHz input if it became disruptive. So, I enabled it about a month ago and have had no problems so, at this time, it remains enabled. The input is so sensitive that I can talk into it from my basement in Westerville with my 5W handi talkie. Try it out! Although it acts like a 446.35 / 449.35 repeater, it is not. However, any input on 449.35 is output on 446.35 including the audio channel of all the repeater ATV transmitters. Its function can be disabled by entering C1* and re-enabled with C1#. Enjoy!

The next project occupying most of my "idle" time is my workroom relocation. This may seem trivial to you but if you'd see my workroom and what I'm doing to it, you'd understand that this is no overnight project. I'll not go into the gory details so suffice it say that I'm swapping my wife's laundry space with my existing workroom. That requires moving all items to a staging area, adding gas, water, drain and dryer vent lines to the new laundry location before my workroom stuff can be moved. The new laundry room has to be completed first. Now that it's complete, I have begun relocating my electronic stuff as well as my machine shop equipment to the vacated laundry room and rest of the basement. It will probably take at least the rest of the summer to get back to semi-normal but it will be worth it. I will have a video tour when there is something good to see instead of a big pile of stuff.

Next I'm happy to report that the Jones Road ATCO / DARA video link is back up and running. Things need to be ironed out yet but at least it's working. The first modification already is to disable its operation on Tuesday nights from 9 to 10 PM for obvious reasons. Until the audio link is operational on both sides, an ATVer on either side could hold the link up not knowing a net is in progress. The link being up and running hopefully will be exercised during the Dayton Hamvention demonstrating its capabilities. At least, that's the plan. We'll see how it works out.

While I'm on the subject of Dayton, they've just been given notice that they will have to vacate their ATV repeater tower soon because the land was just sold to developers. They need to be out by June or July. That sounds bad but at this time they have an opportuntiy to possibly get the use of a 350 foot tower in the north east part of Dayton. That will put them about 25 miles closer and about 200 feet higher to us than they are now. Let's keep our fingers crossed that it will happen. It's not a "done deal" yet but looks promising because the tower owners want to donate it to Amateur radio. If it DOES happen sometime in June, the ATVers in Dayton will ask for help from us on move day. I will arrange a "work" party if anyone is interested.

Last but not least is the fact that a commercial parking lot camera in downtown Columbus has been holding the 2.4g repeater input open. As a result, we have the input disabled except when needed. Someday soon we should make them a formal visit to see if they can remove it or assign it to another frequency. My work load has prevented me from doing this myself so if anyone wants to start the action, I support it. More later.

That's about all for now. Don't forget our Spring Event on May 6th and then the Hamvention on May 18,19 and 20. Try to make the Friday night Dinner if at all possible. It is always fun and a great way to relax after a busy day walking the flea market. Oh, one last thing. The top notch Hamvention workers have not yet acknowledged my request for our regular Flea market spaces but am told they are working on it. I requested only 2 of the 3 spaces we had last year which are 3037 and 3038 or 3038 and 3039 but cannot confirm them at this time. I will let you know by Email, bulletin board or Spring event as soon as I hear.

73 for now,
…WA8RMC

INTERNET TO REVOLUTIONIZE TV IN 5 YEARS

Sat Jan 27, 2007.

The Internet is set to revolutionize television within five years, due to an explosion of online video content and the merging of PCs and TV sets, according to Microsoft chairman Bill Gates.

"I'm stunned how people aren't seeing that with TV, in five years from now, people will laugh at what we've had," he told business leaders and politicians at the World Economic Forum.

The rise of high-speed Internet and the popularity of video sites like Google Inc.'s YouTube has already led to a worldwide decline in the number hours spent by young people in front of a TV set.

In the years ahead, more and more viewers will hanker after the flexibility offered by online video and abandon conventional broadcast television, with its fixed program slots and advertisements that interrupt shows, Gates said.

"Certain things like elections or the Olympics really point out how TV is terrible. You have to wait for the guy to talk about the thing you care about or you miss the event and want to go back and see it," he said.

"Internet presentation of these things is vastly superior."

At the moment, watching video clips on a computer is a separate experience from watching sitcoms or documentaries on television.

But convergence is coming, posing new challenges for TV companies and advertisers.

"Because TV is moving into being delivered over the Internet -- and some of the big phone companies are building up the infrastructure for that -- you're going to have that experience all together," Gates said.

YouTube co-founder Chad Hurley said the impact on advertising would be profound, with the future promising far more targeted ads tailored to each viewer's profile.

"In the coming months we're going to do experiments to see how people interact with these ads to build an effective model that works for advertisers and works for users," he said.

Advertisers are already racing to adapt their strategies to the growing power of the Web, and more and more promotional cash is tipped to migrate from television to Web sites in future.

1926: BAIRD DEMONSTRATES TV

On January 27, 1926, John Logie Baird, a Scottish inventor, gives the first public demonstration of a true television system in London, launching a revolution in communication and entertainment. Baird's invention, a pictorial-transmission machine he called a "televisor," used mechanical rotating disks to scan moving images into electronic impulses. This information was then transmitted by cable to a screen where it showed up as a low-resolution pattern of light and dark. Baird's first television program showed the heads of two ventriloquist dummies, which he operated in front of the camera apparatus out of view of the audience.

Baird based his television on the work of Paul Nipkow, a German scientist who patented his ideas for a complete television system in 1884. Nipkow likewise used a rotating disk with holes in it to scan images, but he never achieved more than the rudest of shadowy pictures. Various inventors worked to develop this idea, and Baird was the first to achieve easily discernible images. In 1928, Baird made the first overseas broadcast from London to NewYork over phone lines and in the same year demonstrated the first color television.

The first home television receiver was demonstrated in Schenectady, New York, in January 1928, and by May a station began occasional broadcasts to the handful of homes in the area that were given the General Electric-built machines. In 1932, the Radio Corporation of America demonstrated an all-electronic television using a cathode-ray tube in the receiver and the "iconoscope" camera tube developed by Russian-born physicist Vladimir Zworykin. These two inventions greatly improved picture quality.

The British Broadcasting Corporation (BBC) inaugurated regular high-definition public broadcasts in London in 1936. In delivering the broadcasts, Baird's television system was in competition with one promoted by Marconi Electric and Musical Industries. Marconi's television, which produced a 405-line picture--compared with Baird's 240 lines--was clearly better, and in early 1937 the BBC adopted the Marconi system exclusively. Regular television broadcasts began in the United States in 1939, and permanent color broadcasts began in 1954.

HAM TESTIMONIAL ABOUT SUPERCIRCUITS

The story about the 'cheap' color ATV cam (in the Jan 2007 ATCO Newsletter) caught my attention. Super Circuits (www.supercircuits.com) carries a very wide variety of cameras and accessories, including replacement lenses for those mini board cams, at good prices and they offer a 30 day money back guarantee on almost everything. I have been dealing with them for 15 years with no problems.
Just an FYI. So you don't really have to go c-mount.
…73s K2PMS

PENNSYLVANIA ATV REPORTS

FEBRUARY 2007 ATVers from Philadelphia, Harrisburg, York, Baltimore, and Washington.

The 3480 MHz ATV transmitter is operational at Tabco Towers, Towson, Md. It currently is retransmitting ting NASA TV from the Dish Network. A building about a block away is four stories higher than the 3480 MHz antenna at an azimuth of approx 195 degrees. Reception in the area from West Laurel to the Bowie Race Track is marginal due to this obstruction. This is 3 GHz transmitter # 3 with an output power of 25 watts. Thirty-five feet of ½" hardline feed an 11 dBd omni antenna on top of a 22 story building. A receiver and antenna are ready to receive 439.25 MHz from the BRATS repeater. The controller is being wired and tested. Meanwhile the ATV receive stations are installing their two foot dishes, weather permitting. Twenty-six miles to the North at WB3EAF, Bob Storm's QTH a receive test was made the day the Towson transmitter was turned on. We had a picture with the dish on the ground. The signal levels were extremely strong. Field testing 35 miles South along the Bay by Grady Ball, WB3JUV, were also very strong at ground level. A simple aluminum mount was designed by Grady Ball, WB3JUV, to attach the LNBF to the rectangular feedhorn support on the dish. All the components to receive are available in quantity at an inexpensive price. Another transmitter may be placed at the Old Soldiers Home in Washington, D.C. This may provide more signal back to the Laurel area.

January 11, 2007 a meeting was held at the W3HZU club house in York. The meeting was well attended. The recent progress of the Baltimore group was discussed. Increasing activity and linking were set as goals at the end of the meeting. A linking committee held a meeting on January 30, 2007. The hub design was reviewed and a transitional system with White Rock as the Hub was considered. The next meeting for all ATVers is scheduled for February 27, 2007 at a restaurant south of York to encourage more Baltimore ATVers to attend.

MARCH 2007

The Tabco Towers (Towson) 3 GHz repeater in Baltimore is on 24/7. The controller was recently enabled allowing video from the BRATS repeater to be automatically repeated over the 3 GHz transmitter. The list of hams receiving 3 GHz is steadily growing.

Dave Stepnowski, KC3AM, is planning to mount a 3 GHz receive dish at the 150 ft level of the 400 ft tower at Rising Sun to receive Tabco. From Rising Sun to Wilmington a link will be made on 915 MHz FM using the existing antenna if possible. Another problem is the new 800 MHz radio equipment near the receive site in Wilmington, De. The construction of this link will be the end of April. He is also working on another repeater project midway between Wilmington and Philadelphia.

The York group has their split site ATV repeater operational. The 426.25 MHz receiver is located near Dover, Pa. The signal is then transmitted on 1280 MHz into an omni antenna. The signal is received by two repeaters. The White Rock 3 GHz repeater has the highest priority receiver input on 1280 MHz. The 439.25 MHz transmitter at the W3HZU Club site North of York, Pa has their primary input on 1280 MHz.

Final testing of the 10 GHz ATV transmitter for the link between Bob Storm, WB3EAF, and Tabco, will be completed in April. Construction of that link will probably occur in May.
Linking multiple ATV repeaters in Central Pennsylvania has become quite complex. A simpler less expensive approach is being considered. Receiving the output of all the repeaters at one location is desirable. York happens to be in the middle. The W3HZU Club House is an ideal location. Emergency power is available for all circuits. A paved road exists to the equipment shelter. Adequate tower space is available and there are no additional site fees.

A two ft dish is side mounted on the tower above the trees towards White Rock, WITF, and Bob Storm, WB3EAF. The signals from White Rock and WITF are on 3 GHz. The signal from Bob Storm, WB3EAF is on 10.4 GHz. The video and audio signals from each location are connected to an Intuitive Circuits, ATVC-4 Plus ATV Repeater Controller.
http://www.icircuits.com/prod_atvc4plus.html
A PL (Private Line) decoder is present in each in coming audio line. If a PL tone is detected the respective video circuit is opened and prevented from reaching the controller. A NASA receiver on the Dish Network is connected to the controller with the lowest priority input. A PL tone is added to the audio coming out of the controller. The audio and video out of the controller connects with a 40 watt ATV FM transmitter on 3400 MHz. The signal travels up 100 ft of 7/8 " coax to a 10 dB gain omni antenna that is horizontally polarized. This signal may be received in the local York area and White Rock, WITF, and Bob Storm, WB3EAF. The

controllers at White Rock and WITF assign the signal on 3400 MHz a priority just above their own NASA receiver. A closed loop is prevented by the PL tone on the audio output of the controller at York. When this tone is received on the audio coming back from White Rock and WITF, the video is prevented from reaching the controller. However if a signal is received at White Rock on 1280 MHz it is retransmitted on 3480 MHz. 3480 MHz is received at York. No PL tone is present on the audio. The video is allowed to go to the controller. The White Rock video has a higher priority than the local NASA receiver. The White Rock video is sent to the 3400 MHz transmitter. A PL tone is added to the audio. The 3400 MHz receiver at White Rock has a lower priority than the local 1280 MHz receiver. No closed loop. The 3400 MHz signal is received at WITF and transmitted on 3480 MHz. The signal from WITF is received at York. The PL tone on the audio prevents the video from reaching the controller. No closed loop. The same can be said for Tabco with a 10.4 GHz relay transmitter in the middle in both directions. A repeater in Franklin County could be added using this same technique. Philadelphia via Reading could be added through WITF. Additional PL decoders and encoder would be needed. If someone transmits on 1280 in Carlisle, the signal will be seen on all repeaters at the same time. If someone transmits into the Tabco repeater, all repeaters will see the signal. No control tones or manual switching are needed. I hope you were able to follow this. Please email me if you have any questions. Wa3cpo@arrl.net The first question will be "How much does this cost?" We are working on that.

FEB 2007 QRM NEWSLETTER TIDBITS

TV AND RADIO CONTINUE TO DOMINATE OITR LIVES

According to the U- S. Census Bureau, people will spend the equivalent of 65 days in from of the TV, 41 days listening to the radio and a little over a week on the Internet, in 2007. Adults will spend a little over a week reading a daily newspaper and teens and adults will spend another week listening to recorded music.

UPDATE ON MORSE TESTING

The section of the **FCC** rules regarding Morse code testing for amateur radio licenses has been published in the Federal Register on January *24*, 2007, which means this portion of future V E testing should no longer be necessary after February 23, 2007. Such rule changes become effective 30 days following publication.

NEW TWO-METER INTERFERENCE

A new kind of interference may be coming to the two-meter band. Recent investigations by ACMA, in Queensland, Australia, has detected a non-approved computer device emitting a signal on 144,600 MHz. The device is a cheap, Chinese made, active USB hub. The noise is similar to a handful of peanuts being shaken in a metal container. It is unknown if any of these devices have entered the United States or ever will. The range is several blocks. If you detect an unusual signal on this frequency, a walk around the neighborhood with a hand held radio might prove worthwhile.

CABLE TV RATES CLIMB 93% IN 10 YEARS

In a recently released cable rate survey, the **FCC** indicates that cable **TV** rates nearly doubled in the decade between 1995 and 2005 The FCC also announced the elimination of its review of rates on a per-channel basis, because cable operators do not permit the a la carte purchase of channels.

NEW DX RECORD FOR 300+ GHZ

A new DX record has been claimed for 300+ **GHz** "transitional RF" operation. Microwave enthusiasts Brian Justin (WA1ZMS) and Pete Lascell (W4WNQ), in Virginia, are claiming the record. On December 10, 2006, a QSO on 322 GHz spanned 3.7 km (4.5 miles) and was accomplished using slow speed FSK CW and Spectran software, This latest QSO exceeds our former DX of 1.4 km (0.87 mile) as well as making a claim for best DX on any amateur frequency above 300 Ghz, except for visible light," said Justin, Other bands above 47 GHz are also ripe for the picking when it comes to DX and other firsts.

USEREPEATERS.COM

Userepeaters.com is a new Website built by James Glass (AB91F) to assist hams traveling throughout the United States to find active repeater systems. All United States band plans are included and information is updated daily. The site is www userepeaters.com

NEW DXPORTAL SEARCH ENGINE

Alex Savenok (4Z5LZ) is announcing a new search engine designed specifically for Amateur Radio called DXPORTAL, The system was built using Google core search technology. In this case. Web information **is** without the non topical results that general search engines tend to return. **Try** it for yourself The **URL** is http: //beta.dxportal.com

FCC TO DROP MORSE CODE TESTING FOR AMATEUR LICENSING

The FCC has acted to drop The Morse code requirement fro all amateur radio license classes. This action too place on December 15, 2006. Not released was the Report and Order in WT Docket 05-235, the "Morse code" proceeding. Also, this date, the FCC adopted an Order of Reconsideration in WT Docket 04- 140, the "omnibus" proceeding, modifying Amateur Radio rules in response to an ARRL request to accommodate automatically controlled narrowband digital stations on 80 meters, in the wake of rule changes, effective December 15. The Commission will designate the 3.525 to 3.6MHz frequency segment for such operations; although it will remain available for CW/RTTY and data, as it has been effective dates for these Ewo orders remain uncertain.

NEW REPORT SAYS MOST CITIES DO NOT HAVE E-COMM GEAR

Emergency responders in most U S. cities do not have the equipment and skills needed to communicate with commanders during a crisis, according to a release from the Department of Homeland Security. Only 6 of the 75 major metropolitan areas have systems that permit their community response agencies to communicate with one another during a disaster Interoperability is a term that loosely means to have the ability to interconnect the networks of all first response services so they can communicate without the need for other people lo relay traffic. The report included large and small cities, their suburbs and U.S. territories The 75 areas

surveyed have policies in place, but regular testing and exercises are needed to effectively link their diverse systems. While cooperation among emergency workers is high, formalized leadership and activity has lacked. The bottom line: Five years following attacks which destroyed the World Trade Center and damaged the Pentagon, very few first cities have invested in communications equipment permitting all first responders to talk to one another it also means Amateur Radio continues to be the only truly interoperable first response radio service to be found in any region of the United States.

NEW RECORD FOR SOLAR POWER

A new world record has been achieved in solar cell technology, by Boeing Spectrolab, of 40.7 percent conversion efficiency, a new milestone in sunlight to electricity performance. Additional information at www. energy, gov/news/4503. ht m (Science Online)

NEW HAM SATS GIVEN OSCAR DESIGNATIONS

AMSAT OSCAR coordinator Bill Tynan (W3XO), has renamed the RAFT-1 as NAV-OSCAR-60 or N0-60 and the ANDE satellite asNAV-OSCAR-61orNO-6L Midshipmen at the United States Naval Academy's Satellite Laboratory, designed and built both spacecraft under the watchful eye of Bob Bruninga (WB4APR). **RAFT-1** and ANDE have digipeaters for 1200 BPS packet on 145.825MHz. In addition, RAFT-1 has a PSK-31 uplink from 28.117 to 28.120 **MHz,** with a downlink of 145.825 MHz. More information is found at www ew usna.gov/bruningaandepraft-qps.html

NEW CHIPS IMPROVE MOBILE RECEPTION

STMicroelectronics announced a new digital AM/FM radio receiver chipset for use in automotive applications. The sophisticated digital signal processing techniques allow them to provide excellent signal reception quality while reducing interference in the presence of challenging conditions. Jointly developed by ST and Bosch subsidiary, Blaupunkt, this advanced digital receiver chipset integrates audio signal processing and Radio Data Systems decoding.

ULTRA-WIDEBAND (UWB) COMES TO AN AUTOMOBILE

UWB technology holds the potential to cause widespread interference to the electromagnetic spectrum, so it is somewhat surprising to find Daimler/Chrysler demonstrating a Mercedes Benz R500 enabled with the ability to wirelessly stream high definition live via UWB. FCC permission to use UWB was not discussed, so the entire subject deserves some careful research.

VERIZON WIRELESS SET TO LAUNCH MOBILE TV SERVICE

Verrzon Wireless is expected to debut its long awaited live mobile Television service at **the** Consumer Electronics Show, In Las Vegas. Verizon is using Qualcomm's MediaFLO video distribution system. 'The video and resolution look incredible," according to one media executive who has seen the system.

LATEST AMATEUR RADIO LICENSE FIGURES

Total active individual licenses as of January 1, 2007: Novice - 23,610 Technician/+ - 322,966 General - 131,160 Advanced " 69,S91 Extra -108,205

DTV TUNERS NOW INCLUDED IN ALL TV SETS

As of Thursday, March 1, 2007 all TV products shipped with analog tuners will also include DTV tuners--the latest benchmark leading to the final transition to all digital broadcasting by February 2009. The notice this week includes sets smaller than 25 inches; all new sets now come under the DTV tuner mandate.

While the Consumer Electronics Association points out that consumers are not required to purchase new sets in order to continue receiving programming after the transition, it adds, "In order to enjoy the full benefits of DTV--particularly high-definition television with its eye-popping pictures and digital surround sound--the consumer would want to purchase an HDTV."

Last year, the CEA's Video Division Board adopted voluntary language for manufacturers and retailers to alert consumers who purchase analog-only sets that digital converter boxes will be required for over-the-air reception starting in February 2009.

In a letter this month to more than 600 retailers, CEA President Gary Shapiro encouraged retailers to include the analog labeling language in product displays as an additional measure to ensure consumers are informed. Recent surveys have found that large segments of the public still are unaware of the analog cut-off looming less than 24 months from now.

K4PRS, FORMER ATCO MEMBER, NOW IN VIRGIN ISLANDS

Pete writes,
"Hello Art,
I wanted to drop you a quick e-mail and say HI. This is Peter K4PRS/now KP2US. I spent five years in Tampa and just moved to the US Virgin Islands thanks to a transfer with work. I just finished reading the last two years of the ATCO newsletters. ATV in Columbus was the most exciting thing I have done in Amateur Radio. I was very disappointed with the ATV activity in the Tampa area. There were high hopes, some start-up attempts, but it just crashed and burned. No hope in seeing ATV here on the Islands. We have only about 30 hams on the three islands and we're lucky if someone actually gets on the 2 meter repeater. I did bring down with me an all in one four channel 2.4 Ghz video receiver from Sharper Image and scanned the area for video signals. I was very surprised to see so much is out there.

Ham activity for me is limited to 2 meters. Although, that should change soon since I am involved in hurricane preparedness at work and convinced the boss to buy an HF station. I'm also getting about 20 of our employees licensed. Army MARS nationwide has taken the lead and entered into a partnership with TSA to provide emergency back-up HF communications. As soon as we can get some of our people licensed then we will get a few of them MARS qualified. I hope you all would consider linking the 147.450 net onto Echolink so we out-of-towners can listen. Also, I was saddened to read about Ted being an SK. Only good memories from Columbus!

I just started to spread the word about volunteers needed to study for the Amateur Radio license and the response has been overwhelming. I think that between the two islands, St. Thomas and St. Croix I can get 30 new hams. That is doubling the ham population of the Islands.

Of all places this is the most precarious place to be during a hurricane. Just a Cat 1 will close the island for weeks. A Cat 5 or even only a 4 will bring us into 1800s frontier living for months. Outside of a few sat phones, Amateur Radio will be the only communication for weeks. It's exciting to make a difference.

Thanks for the response and will keep in touch".
…73s Peter Sinkowski KP2US St. Thomas, USVI

$10 WOK REPLACES $20,000 SATELLITE DISH

Transmission techniques run the gamut from connecting tin cans with string to bouncing signals off the moon. But when it comes to saving money, it's likely no one can outdo the software programmer who substituted a $10 Chinese cooking wok for a $20,000 satellite dish on behalf of his New Zealand television station.

The *New Zealand Herald* this week reported the ingenious work of Ken Jones, who volunteered to help TV station 45 South transmit its signal from its studios to a distance spot that was 20 km (12.5 miles) away. A commercial satellite dish capable of doing the job would cost $20,000, according to the report.

Jones and a friend, Murray Bobbette, did mathematical calculations and proved "the curved metal face of a wok would have the same effect as a small satellite dish," according to the report.

"The $20,000 for a commercial link was just money we didn't have, so we bought several woks," said Jones. "We have spent a lot of time getting it right -- the first time we installed one we had it up a pole with the handle still on the end of the wok."

After tinkering with the approach, the system operated well over a 20-km range. The wok was reported to do the transmission job well and Jones said only a single wok is needed.

For a few years now, clever hobbyists have cobbled together woks and other parabolic kitchen utensils like strainers and vegetable steamers for wireless transmission, often for Wi-Fi enhancement.
…Courtesy of InformationWeek (02/28/2007

NAB/MSTV COMMENTS CITE DANGER OF UNLICENSED DEVICES

If you view off-air TV, are a TV broadcaster, or are a user of wireless microphones, you should devote an hour or two of your time to reading the Joint Reply Comments of the Association for Maximum Service Television Inc. and the National Association of Broadcasters in ET Dockets 04-186 and 02-380 regarding unlicensed operation in the TV broadcast bands. The Joint Reply Comments make a strong case for allowing NO unlicensed personal/portable devices in the TV broadcast spectrum. They provide an easy to understand technical argument showing that both strict limits on out-of-band emissions and protection of co-channel, adjacent channel and taboo channel frequencies are needed within a TV station's DTV service contour to protect reception. And, as cable headends sometimes receive TV signals beyond a station's service contour, additional protection may also be needed.

The main argument against personal/portable unlicensed operation in the TV bands is based on the fact, as carefully outlined in the Joint Reply Comments, that signal sensing technology is not adequate to protect TV reception. NAB and MSTV show that with a wide range of devices operating at powers of 100 mW on TV channels, the proposed sensing receiver sensitivity is insufficient, after considering the low gain and low elevation of the sensing antenna compared to an outdoor TV antenna. Only geolocation will ensure that devices operating in the TV band will not cause interference to reception, and even that will depend on the database of operating TV stations being kept up to date.

The Joint Comments indicate that if geolocation technology is used, required interference protection ratios are correct, devices are licensed, and installed by professionals, they may be able to operate in the TV bands without causing interference. Several of the arguments in the Joint Reply Comments cite the University of Kansas study that was conducted for New America Foundation, a supporter of opening TV "white spaces" for unlicensed operation. NAB and MSTV are pushing for stricter limits on out-of-channel emissions and use of the correct interference ratios, based on that report's findings.

NAB and MSTV point out that many of the proponents of operating unlicensed personal/portable devices in the TV bands without harm do not provide any technical analysis to support their position. Yet comments from both proponents of fixed broadband wireless systems operating in the band and broadcasters arguing for stricter interference protection do provide such data.

A new concern raised is that new mobile/portable DTV receivers utilizing more robust transmission methods, such as the A-VSB system and the system recently announced by Harris Corp., will allow reception at levels below the theoretical ATSC 15 dB signal to noise ratio. This means that devices operating inside a TV station's service contour can't count on interference-free operation if the interference analysis does not include the potential for new DTV services which could be received at signals at levels lower than those described in the FCC planning factors.

There is far too much information in the Joint Reply Comments of the Association for Maximum Service Television Inc. and the National Association of Broadcasters to cover in this newsletter. I've only hit a few of the concerns expressed by NAB and MSTV.

Use the FCC's search for filed comments Web page to see the other comments filed in this proceeding. Enter "04-186" in box one. In the results of the search, you will see comments from Shure on the problems transmitters on unoccupied TV channels will cause for the large number of users of wireless microphones. You will also see the comments of numerous broadband service providers as well as comments from potential manufacturers of devices for use on the TV band. Of course, in addition to the Joint Reply Comments from NAB and MSTV, many other broadcasters filed comments voicing their concerns.
…From TV Technology Email Newsletters Doug Lung's RF Report 3/9/07

INTERFACE SPECS ENABLE OFF-AIR DTV RECEPTION

The cable television industry's technology consortium, CableLabs, made a surprising announcement last week--they are working on cable interface specifications that will allow reception of off-air DTV broadcast signals!

CableLabs provides no technical details on the initiative. They only say that interface specifications would allow devices to receive digital off-air television signals and that these signals could be delivered seamlessly through a cable set-top box. The new concept would pair off-air digital television with cable-delivered programming. CableLabs said, "This technology would allow consumers to receive broadcast television signals as integrated viewing experience."

While RF Report focuses primarily on RF technology, I can't help but wonder why would cable operators want to provide a way for viewers to watch non-cable programming? If you've read my recent RF Technology columns you know that the fifth generation ATSC tuners allow reception of most stations in many areas with even a small indoor antenna. If cable TV companies can provide broadcasters' secondary multicast channels over-the-air without giving up bandwidth on their cable system, it's a win for them. Since the programming would come through the cable set-top box many viewers would think they were getting it from the cable co.

A more ominous reason, at least for broadcasters, is that this would provide an "out" for cable operators that don't want to agree to broadcasters' demands for retransmission consent fees for their HDTV channels. I know that in Hawaii, ABC is the only broadcaster whose HDTV signal is available on digital cable. In several markets, broadcasters and cable operators have not been able to agree on HDTV retransmission consent costs. With this new set-top box, if the signals are received off-air, then the cable companies can "provide" the HDTV signal without paying any extra fees to broadcasters.

Of course, the risk to cable companies would be if subscribers realize they could get these programs without paying for cable. However, unless the popular cable channels like CNN, MSNBC, Fox News and HBO become available off-air, I doubt cable companies have much to worry about.
… Doug Lung's RF Report TV Technology Email Newsletters March 9, 2007

RESISTANCE, CAPACITANCE, INDUCTANCE AND ANTENNA INFO

Charles, WB8LGA, found an interesting site for calculating resistances, capacitances, inductances as well as a handy yagi antenna calculator. It looks great for those of us that tend to be a little lax in the math department if you know what I mean! The resistance calculator is shown below for a sample of what is found on their site. The "calculator" part of the program is operational on their site. It is shown here only as a reference.

Visit http://www.k7mem.150m.com/Electronic_Notebook/antennas/yagi_vhf_quick.html for more details.
…WB8LGA Charles

Introduction

Resistors are marked with colored bands to indicate their value. Translating these color bands to numbers is easy, as long as you orient the resistor and read it in the proper order. Generally, there are ***four*** bands. Orient the resistor such that the side with the color bands closest to the edge, are on the left. The first ***two*** color bands convert to a two digit number, the ***third*** color band converts to a multiplier and the ***fourth*** color band indicates the ***tolerance***. The ***tolerance*** is a measure of the accuracy of the marked resistance value. For example, a **1,000 Ohm, 10%** ***tolerance***, resistor can have an actual resistence that is anywhere between **900 Ohms** and **1,100 Ohms**. If that same resistor was **5%** ***tolerance*** the actual resistance would be limited to between **950 Ohms** and **1,050 Ohms**.

The most common resistors are of the **5%** and **10%** ***tolerance*** variety. For them, the simplest method for decoding their value is to, first, locate the **Gold**, **5%**, or **Silver**, **10%**, ***tolerance*** band and place it facing to the ***Right***. Then, reading from ***Left to Right***, you should have ***four*** bands of color. The first ***three*** determine the value and the ***fourth*** is the ***tolerance***.

Note that some resistors may have a **Red**, **2%**, ***tolerance*** band or no ***fourth*** band at all. In these cases look for the band that is closest to an edge. This will be the left-most, or ***first***, color band.

Color Chart Decoding

With the resistor oriented properly, and starting from the left side of the resistor, write down the number from the **Value** column, in the table below, that corresponds to the ***first*** color band. Next to it write down the number from the **Value** column, in the table below, that corresponds to the ***second*** color band.

For the ***third*** color band, take the number from the **Multiplier** column, in the table below, that corresponds to the color and multiply the previous two digit number by it.

The ***fourth*** band is the ***tolerance***. Normally this band will be either **Gold (5%)** or **Silver (10%)** but can be **Red (2%)** or **Clear (20%)**.

Color	Value	Multiplier	Tolerance
Black	0	1	-
Brown	1	10	-
Red	2	100	2%
Orange	3	1,000	-
Yellow	4	10,000	-
Green	5	100,000	-

As an example, suppose you had a resistor with colors bands that read, from Left to Right, as **Red**, **Violet**, **Yellow**, and **Gold**. The first ***two*** color bands yield the number **27** and the ***third*** color band yields a multiplier of **10,000**. This would decode to a value of **27 x 10,000 = 270,000 Ohms**. The ***fourth*** color band indicates that this resistor has a **5%** ***tolerance***.

	Blue	**6**	**1,000,000**	**-**
	Violet	**7**	**10,000,000**	**-**
	Gray	**8**	**100,000,000**	**-**
	White	**9**	**1,000,000,000**	**-**
	Gold	**-**	**0.1**	**5%**
	Silver	**-**	**0.01**	**10%**

Resistor Decoder

To the right is a handy little calculator that will allow you to easily decode a resistor's color code without writing anything down. Just select the colors for the bands and read the resistance value below.

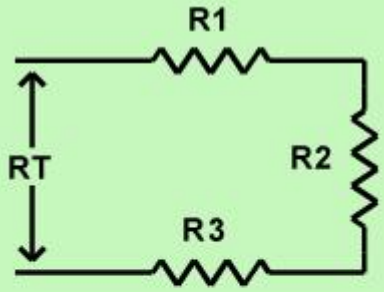
Note: Not all resistor color combinations represent valid or *'standard'* resistor values.

Band 1	Band 2	Multiplier	Tolerance
Red	Violet	Orange	Gold

Resistors in Series are pretty straight. The total resistance is equal to the sum of the resistances.

Enter your resistors values in the spaces below and then click outside the box to find **`R Total`** for the resistors in **`Series`**.

R1 = 1000	**R2 =** 2000
R3 = 3000	**RT =**



Two or More Resistors

RT = R1 + R2 + R3 + R...

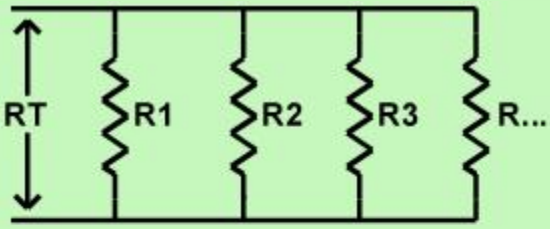
Resistors in Series

Resistors in Parallel

There are two equations that cover resistors in parallel. A simplified one when you are only dealing with two resistors, and a more complex one when there are more than 2 resistors. In the case of only 2 resistors in **`Parallel`**, the equation is relatively simple.

Enter your resistors values in the spaces below and then click outside the box to find **`R Total`** for the resistors in **`Parallel`**. If you only wish to calculate the resultant value of two resistors in parallel, leave one of the boxes ***empty*** or enter **`0`**.

R1 = 1000	**R2** = 2000
R3 =	**RT** =



Two Resistors

$$RT = \frac{R1 \times R2}{R1 + R2}$$

Three or More Resistors

$$RT = \frac{1}{\frac{1}{R1} + \frac{1}{R2} + \frac{1}{R3} + \frac{1}{R...}}$$

You may not even have to deal with the equations listed above, under certain circumstances. Listed below are some quick things to remember about resistors in parallel that will give you a better insight into the usage.

- The resultant value, of two or more resistors in parallel, is always ***less*** than the lowest resistor.
- If the resistors are of ***equal*** value, the resultant value is equal to the value of ***one*** of the resistors, ***divided*** by the number of resistors. For example, if there are three **`100 Ohm`** resistors in parallel the resultant value will be **`100/3 = 33.333 Ohms`**.
- If a very ***large*** resistor and a very ***small*** resistor are in parallel, the resultant value will only be a ***little bit less*** then the smaller resistor. For example, if there are a **`10K Ohm`** resistor in parallel with a **`100 Ohm`** resistor the resultant value will be **`99 Ohms`**. Just **`1 Ohm`** less than the lower value resistor.

U.S. UNVEILS DTV CONVERTER BOX PLAN

U.S. households will be eligible to request two $40 coupons beginning Jan. 1, 2008, for the purchase of digital TV converter boxes, according to a DTV transition plan announced by the Bush administration on Monday (March 12).

The coupon plan for purchasing digital-to-anlog converters is part of final rules for a $1.5 billion subsidy program issued by the Commerce Department's National Telecommunications and Information Administration (NTIA). Congress initially appropriated $990 million for the program. If initial funding runs out, another $510 million could be made available if NTIA certifies to Congress that coupon requests exceeded the initial amount.

The program is designed to ensure that households that do not receive broadcast signals from cable or satellite services will be able to continue receiving over-the-air broadcasts after the February 2009 transition to all-digital programming.

NTIA said consumers requesting coupons must "self-certify" to the agency that they do not already subscribe to a cable or satellite provider.

Retailers will sell the converter boxes. NTIA said the coupons will be distributed in a form similar to gift cards so that each converter box purchase can be verified at a retailer's sales terminal.

The agency said it would identify eligible converter boxes that can be sold by retailers. Those boxes must comply with technical specifications included in the final rule. Manufacturers will be required to submit production boxes and test results to the Federal Communications Commission for certification, NTIA said.

"With the coupon program and a successful analog-to-digital transition involving the public, industry and government, the switch from analog to digital television will be completed as planned," John Kneuer, assistant secretary of commerce for communication and information, said in a statement.

Some lawmakers complained that NTIA had been slow to issue the new rules governing the converter box subsidy program.
…George Leopold 03/12/2007

PRICE DROPS BOOST LCD-TV SALES

Rapid price drops have boosted sales of large-sized LCD-TVs, prompting market researcher iSuppli to increase its forecast for panel shipments this year.

iSuppli on Tuesday raised its forecast by 3% to 75.2 million LCD-TVs, which is 42.7% higher than the 52.7 million units sold last year. The research firm in the fourth quarter of last year had predicted shipments of 72.9 million units for 2007.

While the growth is impressive, it marks a slowdown compared to 2006, when shipments soared 95.8 % from 2005. Nevertheless, iSuppli expects shipments of LCD-TVs to exceed 100 million units in 2008, and reach 171.6 million unites by 2011.

"By that time, LCD-TVs will dominate the market accounting for 65 percent of all television unit shipments worldwide," Sweta Dash, director of LCD and projection research at iSuppli, said in a statement.

Driving the growth this year are declining prices for large-sized LCD panels, iSuppli said. For example, the price of a 32-inch LCD-TV is expected to drop 17 percent in the first half of the year, compared to the fourth quarter of last year.

In addition to price drops, consumers may also be motivated by a U.S. mandate to phase out analog televisions in favor of digital technologies by the year 2009.
…Antone Gonsalves InformationWeek 03/13/2007

RABBIT-EAR TVS ABOUT TO REACH END OF THE ROAD

Consumers who depend on old-fashioned antennas to watch television won't miss the 2009 Super Bowl, but their analog sets will stop working soon afterward.

Analog TVs will no longer receive a signal come Feb. 19, 2009, unless users update their hardware to receive a digital signal. Federal officials announced details Monday about how that transition will work, saying the government will help consumers buy the necessary equipment to upgrade to digital -- a converter box that attaches to the TV set.

The Department of Commerce's National Telecommunications and Information Administration (NTIA) said it is setting aside $990 million to pay for the boxes. Each home can request up to two $40 coupons for a digital-to-analog converter box, which consumer

electronics makers such as RCA and LG plan to produce. Prices for the box have not been determined, but industry and consumer groups have estimated they will run $50 to $75 each.

"Besides our own consumer education efforts, NTIA is working with partners such as broadcasters, consumer electronics retailers, manufacturers and consumer organizations to reach out to those most in need of the coupon program," said the telecommunication administration's Assistant Secretary for Communication and Information John Kneuer. "We welcome partners and ask that interested parties contact our office at (202) 482-6260 to learn how they can help inform the public about the coupon program." An estimated 20 million consumers in the United States depend on a free, over-the-air signal for television. Another 15 million might have cable or satellite television service but have extra sets in their home that aren't hooked up and depend on their antennas for service.

In the Bay Area, about 325,000 residents still depend on an over-the-air signal, according to the Television Bureau of Advertising, a nonprofit trade association. Out of 2.5 million homes with television, that represents between 12 and 13 percent of the population. Congress set the deadline several years ago in an effort to free the nation's airwaves for public safety and other services. "The whole digital TV transition will enable public safety responders to have more spectrum for more operability and public safety uses," said Todd Sedmak, a spokesman for the telecommunications administration.

But the transition to a digital TV world might not be smooth. Consumers were expected to move to digital televisions naturally as they became cheaper and more attractive to buy. New technology and services such as high-definition television also were supposed to push consumers into upgrading their television.

And indeed, as prices continue to drop, consumers are picking up digital televisions, particularly flat-screens, in droves. But consumer groups worry that poor and middle-class families, who can't afford to spring for a new television, will get left behind in the move and that the $40 vouchers won't be enough.

"How do you get it to the people who need it?" said Mark Cooper, director of research for the Consumer Federation of America. "Has Congress set aside enough money to make sure everyone is held harmless? The answer is: probably not. Now you have a problem of certain consumers being hurt. They have a TV set that works today and won't work tomorrow and they have to spend money to make it work again."

Cooper said broadcasters have not made it appealing for consumers to pay for a new TV set, such as by introducing better high-definition programming and other services. "This is a dilemma made by the broadcasters," Cooper said. "If they had done their job and innovated, we would not have this problem." Starting Jan. 1, 2008, all U.S. households will be able to start requesting the coupons, said Sedmak. If the initial $990 million allocated is used up, another $510 million will be set aside to cover the cost of the coupons. Consumers must show that they do not subscribe to cable or satellite or other television services.

Tom Lim, owner of TV Man, a television retail and repair shop in Daly City that caters mostly to poor families, said that he is waiting until 2009 to buy a digital television set. "By then, hopefully I can afford it," he said.
Consumers might also resist getting a new television if their current one still works, said Paul E. Astry, owner of Sierra TV in Burlingame. If it ain't broke, why fix it?

"I think it'll be a while before people get rid of their analogs," Astry said. "If they have them, they like to hold on to 'em."
…Ellen Lee, Justin Berton Staff Writer SF Chronicle March 13, 2007

VIDEO SURVEILLANCE GROWTH TO SHIFT IC REVENUE

Robust short-term growth projections for the video surveillance camera market represents a big growth opportunity for chip suppliers and will propel a major shift in semiconductor revenue, according to market research firm iSuppli Corp.

Global video surveillance camera revenue is expected to grow to from $4.9 billion in 2006 to more than $9 billion in 2011, a compound annual growth rate (CAGR) of 13.2 percent, according to iSuppli.

Unit shipments of video surveillance equipment are expected to more than double from 29.8 million in 2006 to 65.7 million in 2011, a 17.1 percent CAGR, iSuppli (El Segundo, Calif.) said.

The projected growth in video surveillance should opportunities for associated semiconductors, iSuppli said. The firm projects the market for surveillance-camera chips will hit $1.25 billion in 2011, more than double the $525 million in 2006.

According to iSuppli's latest report on the subject, the rapid growth in the video surveillance industry is being driven by a combination of rising security needs and a host of technical innovations, including the migration to digital, fully networked systems.

"With the emergence of networked Internet protocol (IP) video surveillance cameras and IP video servers—along with the rising use of digital video recorders (DVRs) —video surveillance is moving beyond traditional security and into new applications such as transportation, retail, government and even home networking," said Mark Kirstein, vice president of multimedia content and services at iSuppli. "This expansion is being helped considerably by the idea of networked video surveillance, which allows for greater flexibility, field upgrade ability, increased automation and more intelligence to be incorporated into the overall system."

Kirstein said these factors would enable IP cameras to displace existing closed circuit television cameras in 2011. He said he also expects to see the development of a consumer IP camera market. Telecom operators are expected to offer IP video surveillance as a value-added consumer broadband service, he said.

As the result in the growth of the video surveillance market, sales of video processor and interface chips, such as Ethernet, Power over Ethernet and Wi-Fi, will grow dramatically, iSuppli said. But spending on image sensors will fall off based on relentless price declines and accelerated adoption of less-expensive CMOS image sensors, the firm projected.
… Dylan McGrath EE Times 03/20/2007

U.S. DIGITAL TRANSITION COULD BLACK OUT AREAS THAT USE TRANSLATORS FOR TV RECEPTION

For rural West, DTV may be lost in translation. Many Americans are aware that the looming broadcast television transition from analog to digital in February 2009 will render legacy analog TV tuners useless without a converter box. Far fewer are aware that the digital transition could have the unintended consequence of eliminating over-the-air TV broadcast to some parts of the country, especially in the rural West.

Millions of rural dwellers in the western United States--particularly in states with expanses of open land, such as Colorado, Arizona, New Mexico and Wyoming--owe their TV reception to translator stations, which relay broadcasts from metropolitan areas. A translator station acts as a full-duplex repeater, capturing a transmission and then broadcasting it on a different band (either UHF or VHF). Some 5,000 translators are in use today in the United States, according to the National Translator Association (NTA), a trade group that serves owners of translators and advocates the preservation of free over-the-air transmission of TV and FM radio signals. Most translators are owned and operated by private TV stations, but some are overseen by community cooperatives, rural-government entities, public TV stations or universities.

For now, translator stations, as well as low-power TV stations, are specifically exempted from the digital TV transition mandated by the U.S. Federal Communications Commission (FCC) and set by Congress to begin on Feb. 17, 2009. But since many translators are nonprofit--and in some cases money-losing--ventures, there is a growing fear that some will not be able to make the required investments in equipment to receive, convert and rebroadcast digital signals following the transition.

"A lot of [translator stations] are being operated by community groups that don't have a lot of money to plow into new equipment," said NTA counsel George Borsari, a Washington-based attorney.

TV stations, meanwhile, operate translators because they want to reach a larger audience in rural areas, said Gerry Kaufhold, a principal analyst at market research firm In-Stat. But the television stations do not receive additional advertising revenue from the outlying areas that the translators help them reach.

Privately owned translators "are basically operated as a public service," Kaufhold maintained. "They cost the TV station money."

According to Karl Voss, an engineer with KPNX-TV in Phoenix, community cooperatives sprang up in the 1960s to fund translators. But as cable has become available in more areas and as satellite services have emerged, Voss said, the cooperatives have become less important. Those that lack the funding or the community support to invest in equipment upgrades for the digital transition could either "go dark" or be offered to the metropolitan TV stations they carry, he said.

Voss estimated the cost of upgrading a translator to receive and broadcast a digital signal at between $5,000 and $25,000, depending on such factors as the translator's physical location and the age of its existing equipment. That may not seem like a lot. But since most translators are not money-making propositions, "it's a really tough thing for the co-ops to have the money to keep up and maintain the equipment," he said.

Forcing even a small number of established translators to go dark, presumably leaving viewers cut off from any over-the-air TV broadcast, would be "a political cherry bomb," said In-Stat's Kaufhold. In Arizona, he noted, about 30 percent of the population lives outside the main metropolitan areas of Phoenix and Tucson, and many of them presumably get their TV and radio from translators. Over time, he said, it would make sense for all translators to go digital, but that would likely take years and cost millions.

"The FCC is probably going to have to have grandfathering, where they leave some of the analog in place," he said.

But Voss said that "it doesn't make a whole boatload of sense" to continue translating into analog, because as consumers replace their aging TVs they will buy digital models that won't be able to receive the translated signals. "The translators owned by [TV] stations, I am sure, will be converted," Voss said. "I am not so sure about the translators owned by co-ops and communities."

Should the FCC or the broader federal government help financially strapped translators finance the new equipment and upgrades needed for the digital broadcast transition? "The rules exist to keep the translators alive," Voss said, but "the financing is a different thing. I am not sure that the government should be financing those translators--then you get into a TV tax sort of deal, and that's not the way to go."

NTA counsel Borsari said he was not aware of any government proposals that would provide translators with financial support for making the transition. The FCC is reviewing translator operator requests for digital companion channels. But Voss sees a flaw in the FCC policy: If two or more translator operators request the same digital companion channel, it is put up for auction.

"You really should have some sort of coordination out there so that this doesn't all get bottled up and sent to the FCC," Voss said. "A lot of the decisions are being made by people that don't have to deal with low-power TV stations or translators"--in other words, by Washington insiders--rather than by the affected communities.

The NTA's position is that an auction in the case of mutually exclusive claims on a channel would be inappropriate, Borsari said. But if the FCC follows its typical operating procedures, he said, it will likely open a window of opportunity for stations to work out such issues among themselves before proceeding to an auction.

For Borsari, the difficulties of the DTV transition are personal. For three years, he's been receiving digital broadcast TV in his home. He said reception remains "terrible" and requires an outside antenna.
… Dylan McGrath EE Times 03/26/2007

CRITTER CAM- NEAT IDEA. ANYONE LIVE IN A RURAL AREA?

The Keystone ATV group installed a "critter CAM" in the woods behind one of their ATVers house. Could we do this? Any takers? John, W3SST, alerted me of this. It could be fun. Lets see... who lives out in the sticks on a farm that has lots of deer?....WA8RMC

The W3HZU Critter Cam is located out behind our club house right outside Rocky Ridge Park in York, Pa. It can be brought up by DTMF control and uses an output of 439.25 MHz. This is actually the transmitter of the York ATV repeater ... if anyone inputs a signal with video on 426.25 MHz; they will override the Critter cam and be repeated. The Camera itself is located in the woods behind the club house. It is a color camera and some of the shots of the wildlife, especially the deer are pretty cool. During the night, two banks of Infrared LEDs illuminate the field of view back to a distance of about 100 feet. On many evenings, there's quite a group of us yakking back & forth on 144.34 MHz FM simplex watching the deer. If you live within 5 to 10 miles of the club & have an outdoor TV antenna, look for the video on CABLE channel 60.

The link below is some video received in Mechanicsburg on Sunday evening, 15 April from the Critter cam.
...Dick, WA3USG http://home.comcast.net/~wa3usg/crittercam.wmv

SATURDAY BREAKFAST PIC's – BOY, we know how to have fun!

Here are some pictures of breakfast at the Fast Lane Diner in March 2007. Jay is displaying his "new" antenna!!!!!!!! (It looks like put together silverware to me but who's checking)

A T C O

2 0 0 7 S P R I N G E V E N T

1 : 0 0 P M - S U N D A Y

M A Y 8 , 2 0 0 7

A B B P R O C E S S A U T O M A T I O N

C A F E T E R I A

5 7 9 E X E C U T I V E C A M P U S D R I V E

F O R M O R E D E T A I L S , C O N T A C T

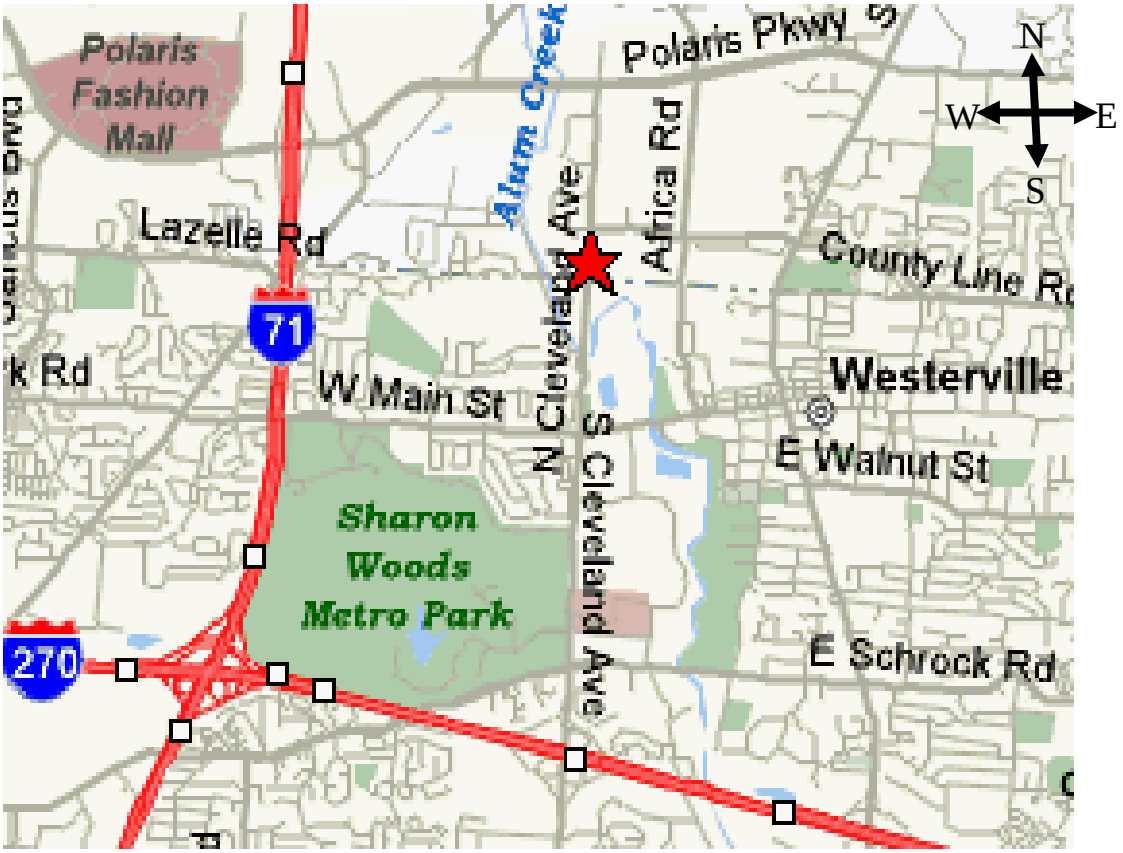
A R T - W A 8 R M C 8 9 1 - 9 2 7 3

L U N C H P R O V I D E D - D O O R P R I Z E S -

B R I N G A F R I E N D A N D S E E O L D B U D D I E S

M I N I H A M F E S T - S H O W A N D T E L L

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.

HAMVENTION DETAILS

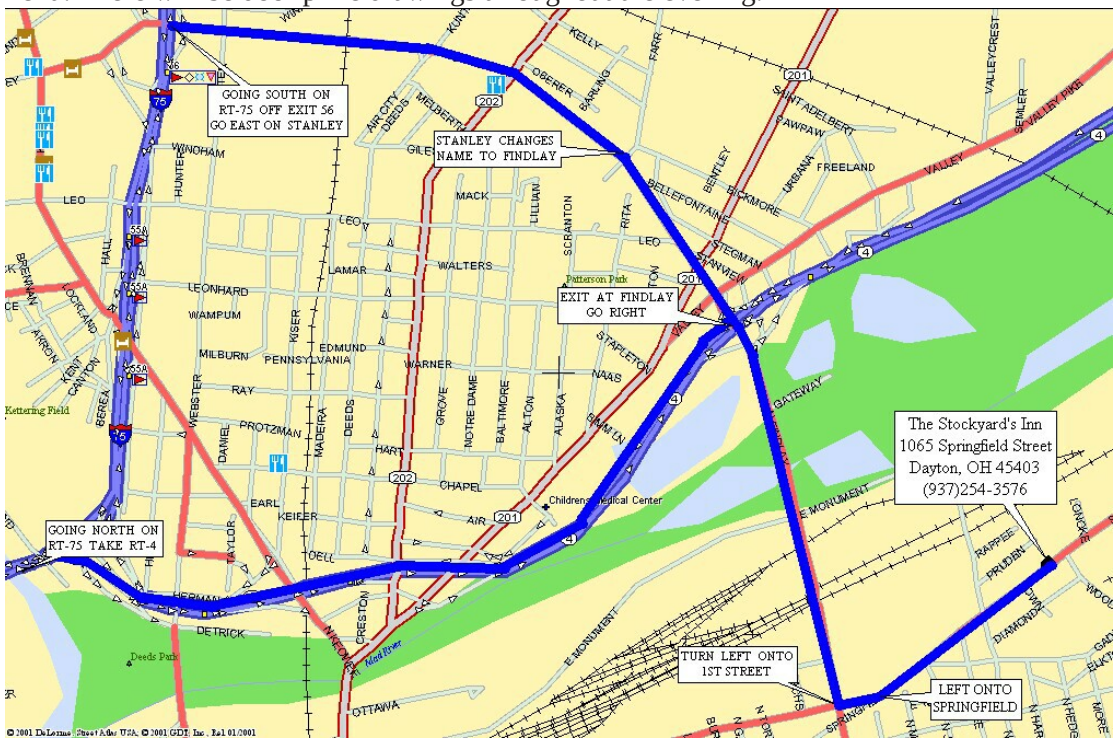
FRIDAY NIGHT ATV DINNER - FRIDAY MAY 18, 2007

Art Towslee, WA8RMC, has announced the Dayton weekend activities regarding Friday night ATV sessions. This year we will be back at "The Stockyards Inn", for the Friday night session. This will enable ATV'ers and guests to enjoy a moderately priced meal and also allow more time for technical presentations. The Stockyards Inn will provide separate checks as we order from the menu. There will be door prize drawings throughout the evening.

Location:
Stockyards Inn 1065 Springfield St.
Dayton, OH 45403
Phone 937-254-3576
Starting at 6PM
(39-46-22-N)
(84-08-56-W)

DIRECTIONS

From I-75 North, Exit 56, Stanley Avenue East, at RT-4 the road changes name to N. Findlay Street, at First Street turn left and the road will then merge into Springfield Street. Look for "The Stockyards Inn" on your left . The trip from I-75 is 3.4 miles and should take about 8 minutes.



From I-75 South, Exit onto SR-4 and get off at N. Findlay Street South. At First Street turn left and the road will then merge into Springfield Street. Look for "The Stockyards Inn" on your left. The trip from I-75 is 4.0 miles and should take about 6 minutes. Please note: Each person will be responsible for their own dinner expenses.

ATV FORUM SCHEDULE - SATURDAY MAY 19, 2007

This year we resume the ATV Forum at the Dayton Hamvention. The baton has been passed from Bill, W8DMR, to me so I hope I can be as entertaining as Bill has been in the past. We need to applaud Bill's effort in the past for a job well done! As moderator this year, I will be assisted by many fully qualified presenters so it should be well worth your time to attend. It will be held from 11:45 AM till 1:45PM on Saturday in room #2.

The focus this year will be digital television so we will lead up to that with some entry level topics, emergency ATV communications, linking activities, airborne ATV, an ATCO slide show featuring our digital equipment pictures then launch into a digital TV presentation by Henry Ruh who is among the best authorities on digital TV. Henry manages the engineering activities of a Chicago TV station and is the former editor of ATVQ Magazine.

The official schedule for Saturday is as follows:

11:45 to 11:50 - WA8RMC, Art Towslee Introduce everyone and welcome the presenters to forum.
11:55 to 12:10 - K3ZKO, Ron Cohen "Getting Started in Amateur Television"
12:15 to 12:30 -WB9MMM, Gene Harlan "Emergency Communications Using ATV - The Possibilities"
12:35 to 12:50 - WA6SVT, Mike Collis "Linking ATV Repeaters"
12:55 to 1:10 - WB8ELK, Bill Brown "Airborn ATV"
1:15 to 1:20 - WA8HFK, Frank Amore "ATCO Picture Slide Show"
1:25 to 1:45 - A9XW, Henry Ruh "Some Bits about TV Bytes"

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.

29 Apr 2007+ Athens County ARA http://www.ac-ara.org/hamfest_pix_05.html **Talk-In:** 145.15 MHz **Contact:** Drew McDaniel, W8MHV 61 Briarwood Drive Athens, OH 45701 Phone: 740-592-2106 Fax: 740-593-1837 Email: mcdanied@ohiou.edu Athens, OH Athens Community Center 701 East State Street

29 Apr 2007+ Athens County ARA http://www.ac-ara.org/hamfest.html **Talk-In:** 145.15 MHz 61 Briarwood Drive Athens, OH 45701 Phone: 740-592-2106 Fax: 740-593-1837 Email: mcdanied@ohiou.edu Athens, OH Athens Community Center 701 East State Street

18-20 May 2007+ Dayton Hamvention Dayton ARA http://www.hamvention.org/ **Contact:** Dayton, OH Hara Arena

9 Jun 2007+ Fulton County ARC http://k8bxq.org **Talk-In:** 147.195/147.795 **Contact:** Lindsay Infante, K8LI 7649 County Road L Delta, OH 43515 Phone: 419-822-4382 Email: webmaster@k8bxq.org Tedrow, OH Roth Family Park 131 Hill Avenue

16 Jun 2007+ Milford Amateur Radio Club http://www.w8mrc.com **Talk-In:** 147.345+ **Contact:** Jim Linn, WB8RRR 5110 Romohr Road Cincinnati, OH 45244-1023 Phone: 513-831-6255 Email: wb8rrr@arrl.net Milford, OH Eastside Christian Church 5874 Montclair Blvd.

14 Jul 2007+ NOARSFEST Northern Ohio ARS http://www.noars.net **Talk-In:** 146.70- (open repeater) **Contact:**Thomas Porter, W8KYZ 161 Herrmann Drive Avon Lake, OH 44012 Phone: 440-930-9115 Email: tporter161@oh.rr.com Wellington, OH Lorain County Fairgrounds Route 18

22 Jul 2007+ Van Wert ARC http://www.w8fy.org **Talk-In:** 146.250 /.850 repeater **Contact:** Louie Thomas, WD8LLO 208 North Chestnut Street Van Wert, OH 45891 Phone: 419-238-2812 Van Wert, OH Van Wert County Fairgrounds 1055 South Washington Street (US Route 127 South)

29 Jul 2007+ Portage Hamfair 2007 Portage Amateur Radio Club, Inc. http://www.hamfair.com **Talk-In:** 145.39 MHz – 600 **Contact:** Joanne Solak, KJ3O 9971 Diagonal Road Mantua, Ohio 44255 Phone: 330-274-8240 Fax: 330-274-8527 Email: KJ3O@arrl.net Randolph, OH Portage County Fairgrounds 4215 Fairgrounds Road

4 Aug 2007+ Columbus Hamfest & Electronics Show Voice of Aladdin **Talk-In:** 147.21 **Contact:** Jim Morton, KB8KPJ 6070 Northgap Drive.Columbus, OH 43229 Phone: 614-846-7790 Email: kb8kpj@cs.com Columbus, OH Aladdin Shrine Center 3850 Stelzer Road

19 Aug 2007+ 50th Annual Warren ARA Hamfest Warren Amateur Radio Association http://www.w8vtd.org **Talk-In:** 146.970 **Contact:** Jacqueline Cassidy, KD8DNE 293 Maplewood Drive, Apt. 307 Cortland, OH 44410 Phone: 330-240-1824 Email: kd8dne@yahoo.com Warren, OH Trumbull Country Fairgrounds 899 Everett Hull Road Cortland, OH 44410

9 Sep 2007+ Findlay Radio Club http://www.findlayradioclub.org **Talk-In:** 147.15/.75 **Contact:** Dean Calvin, N8RMF 141 Olive Street Findlay, OH 45840 Phone: 419-423-3402 Email: n8rmf@arrl.net Findlay, OH Hancock County Fairgrounds 1017 East Sandusky Street

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.

NO NEW MEMBERS THIS TIME! Come on guys. There has to be someone out there just itching to get involved in ATV and it's your job to find them. How about we offer a prize to the member(s) that bring new members to the Spring Event? Any takers?

…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 fregs.	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 21:00 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 04/15/06)

If you have access to the INTERNET, you may be interested to know of some of the HAM related information that is available. Most addresses listed below are case sensitive, so type exactly as shown.

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
http://www.kcatv.org	Kansas, Kansas City Amateur TV Group (KCATVG)
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.jones-clan.com/amateur_radio/klamath_amateur_television.htm	Oregon, Southern Oregon ATV
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)

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

TUESDAY NITE NET ON 147.45 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 (01/20/07)..... $1157.31
RECEIPTS(dues)..... $ 120.00
Logan Radio Club donation..... $ 25.00
Paypal charges..... $ (1.47)
CLOSING BALANCE (04/20/07)..... $ 1300.84

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 APRIL 20, 2007

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
N8CXI	Garry Cotter	2367 Northglen Drive	Columbus	OH	43224		gjcotter@aol.com
WB8CXO	Mike Young	289 Gaylord Drive	Munroe Falls	OH	44682		
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	wb8dzw@aol.com
KC8EVR	Lester Broadie	108 N Burgess	Columbus	OH	43204		
KB8FLY	Rod Shaner	124 West Walnut St.	Lancaster	OH	43130-4344	740-279-3614	rshaner@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
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
N3KYR	Harry DeVerter Jr	303 Shultz Road	Lancaster	PA	17603-9563		n3kyr@comcast.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
WB2LTS	Manny Diaz	74 Lincoln Rd	Medford	NY	11763		wb2lts@optonline.net
KA8LWR	Mel Alberty	1645 Olentangy Road	Bucyrus	OH	44820	419-468-2971	ka8lwr@bright.net
W8MA	Phil Morrison	154 Llewellyn Ave	Westerville	OH	43081		
KA8MID	Bill Dean	2630 Green Ridge Rd	Peebles	OH	45660		ka8mid@qsl.net
WB8MMR	Mike Knies	1715 Winding Hollow Dr.	Columbus	OH	43223	614-875-4236	
K4NQV	Dean Maggard	1612 Benson Ave	Bowling Green	KY	42104		k4nqv@insightbb.com
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
N8OPB	Chris Huhn	1667 Pickering Court	Reynoldsburg	OH	43068		cjhuhn@hotmail.com
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		paul.schmitter@verizon.net
KE8PN	James Easley	1507 Michigan Ave	Columbus	OH	43201	614-421-1492	jeasley11@hotmail.com
W8PGP,WD8BGG	Richard, Roger Burggraf	5701 Winchester So. Rd	Stoutsville	OH	43154	740-474-3884	rgburggraf@juno.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 Winchester	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	wa8rut@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	lpjp@copper.net
W8SJV, KA8LTG	John & Linda Beal	5001 State Rt. 37 East	Delaware	OH	43015	740-369-5856	w8sjv@nexgenaccess.com
N8SNG	Terry Rankin	414 Walnut Street	Findlay	OH	45840		
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
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

Call	Name	Address	City	St	Zip	Phone	URL
N8XYJ	Dan Baughman	4269 Hanging Rock Ct.	Gahanna	OH	43230		danohio@wowway.com
N5XZS	Tim Johnson	1629 Speakman Dr SE	Albuquerque	NM	87123		
KB8YMN	Mark Griggs	2160 Autumn Place	Columbus	OH	43223	614-272-8266	mmgriggs@aol.com
KB8YMQ	Jay Caldwell	4740 Timmons Dr	Plain City	OH	43064		kb8ymq@aol.com
KC8YPD	Joe Ebright	3497 Ontario St	Columbus	OH	43224		----------
N8YHY	Chris Scott	1145Rural Ave SE#5	Salem	OH	97302		
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 O NEW MEMBER O DATE _____
CALL _____
OK TO PUBLISH PHONE # IN NEWSLETTER YES O NO O
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 O MONEY ORDER O
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 FOR THE EXPIRATION DATE.
SEND N8NT A CHECK IF EXPIRED.
Email recipients – check ATCO web page under your personal account for expiration.