ATCO NEWSLETTER

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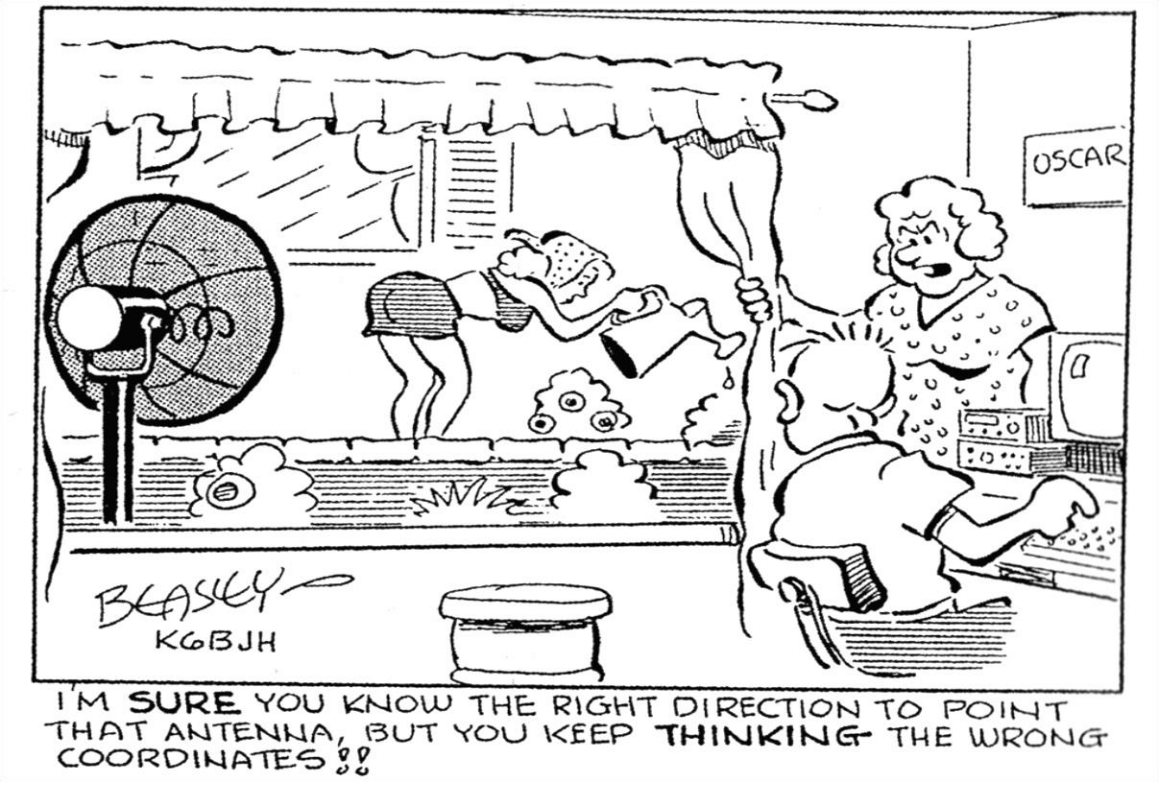
The ATCO newsletter is the official publication of a group of amateur television operators known as "AMATEUR TELEVISION IN CENTRAL OHIO Group Inc" published quarterly (January, April, July, October)

ATCO SPOTLIGHT TOPICS



QUESTION: Why did the capacitor kiss the diode?
(Answer on next page)

ACTIVITIES ... from my Workbench

Here we go again guys, it's still "COVID-19 season"! Too bad, because it's sure changed the way we live. It looks like we're on the back edge of the pandemic but don't let your guard down just yet. For that reason, I decided that it's still too early to have any active get-togethers so there will be no Fall Event again this year. However, if things keep going the way the trend is, next Spring looks good for a Spring Event. Also, so far, it looks like Hamvention is a GO for next year.

Addressing our Spring and Fall Events again, we no longer will have access to the ABB cafeteria going forward so we'll search for a new location. I have some prospects but if you know of a good location, please speak up. Also, after the new year, I recommend a pizza party. I feel that year 2022 will be a great year but our membership has been dwindling so I need us to band together and encourage those who have abandoned us for other activities to return to our great hobby. Call or contact someone you know that we haven't heard from in a while and ask if they will again check in to the net on Tuesday night. I have been conducting a ZOOM net on Tuesday at 8PM but also listen to 147.48 too. I haven't heard even a peep there in some time. If you can, try to check with us on ZOOM on Tuesday even if you just say Hi and Good-bye! Details are later in this Newsletter.

Now to some repeater activities. I've now been given access to our location in the State Office Tower communication room. The repair activity is still going on and the roof area is still a MESS but it's passable. The Mesh transceiver on the roof has been inoperable for over a year but now I can get there so I wanted to make it operable before it gets too cold. I removed the entire unit, antenna, filters and all. An inspection at home revealed that a break in the cable insulation feeding the power to it allowed water intrusion to both ends and ruined the Ethernet connector in the Mesh transmitter and the connector on the interconnect box which houses the 10GHz equipment. Luckily only the male cable connector on the interconnect box was damaged, not the receptacle. At home, I replaced the Mesh Bullet unit and cable, then returned it to its position beside the SOT tower beacon light. Stan, AA8XA, checked it for operation. A-OK now.

While I was at the repeater, I noticed the fan in the DATV transmitter unit was frozen. (We have two fans). It was a simple chore to replace so all is well now. Other things were checked and found to be OK. I DID string a new Ethernet cable from the Mesh Bullet unit down the girders and coiled it up close to the roof entry point outside. No actual connections were made because roof work to replace the cable entry feeds are scheduled but not until next Spring so the cable will be ready when they do that.

We REALLY need more activity here! It's getting to the point where the remaining people are also losing interest. What can we do to change that??? Suggestions are invited. My only hope now is that when this pandemic is over, people will re-emerge from their hiding place. I'll keep my fingers crossed. I've not checked the membership Excel database for membership expirations so you may get a phone call or Email from me if you owe dues. Beat me to the punch, check your status in the www.ATCO.TV listing and send me or Bob, N8NT, your dues if yours is expired.

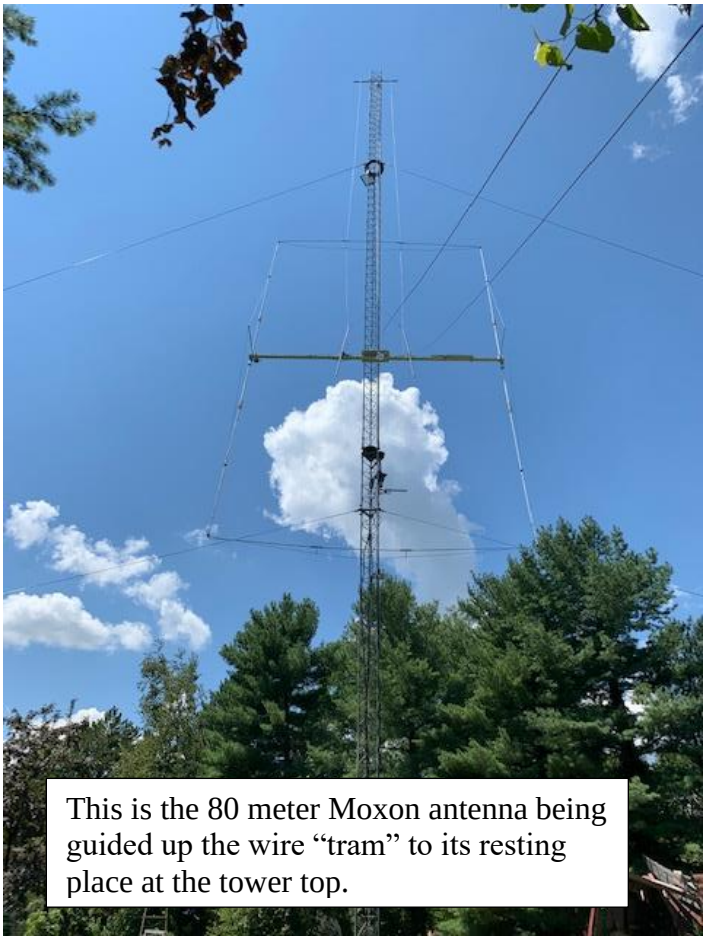
NOTE: Bob, N8NT now lives in Vermont so be sure you get the mail to his new address if you use the "snail" method. See the new listing for N8NT.
…WA8RMC

Answer: He just couldn't resistor.

LOCAL TOWER RECONSTRUCTION EFFORT

Last time I reported on Bill's 100-foot tower that came down and his efforts to re-install it. Now, it's complete with a new "Moxon" Optibeam OB2-40M-P 80-meter antenna at the top and several "smaller" antennas below. His description follows:

"I had the need to rebuild most of my existing 100-foot high rotating tower and all of the older antennas. The first antenna I constructed and installed was a Moxon directional yagi. I've wanted one for years, and the opportunity arose. Several local ham radio friends stopped by, took photographs during the construction phase and had questions. Hopefully this page will provide answers and instill ideas for others as well.



This is the 80 meter Moxon antenna being guided up the wire "tram" to its resting place at the tower top.

Here is the Moxon at the top with the 40-10 meter beam in the center and the 6 meter beam below at about 60 feet.

At its design frequency, the 80M antenna provides a cardioid with a beamwidth so wide that it is a full-size cardioid. The forward gain is down from a full-size 2-element Yagi only by about 0.2 dB. At the same time, the rear lobe is minuscule (compared to a full-size F/B ratio of about 10- 12 dB as typical of a full-size 2-element Yagi). The Moxon achieves this pattern without the use of a phasing line. Although the most suppressed rearward pattern is frequency-specific, the Moxon pattern holds up quite well across the ham band. The gain changes by about 0.6 dB across the band, while the front-to-back ratio is still around 20 dB near the band edges. Not only does the pattern hold up well, so does the feed point impedance. So, coax feed--with a choke, of course--is the order of the day.

The design it is well worth considering if you want a compact beam about 0.35 wavelength long by 0.13 wavelength wide with direct coax match. For those who desire more QRM rejection than raw gain, the design has much to offer.

The Optibeam Moxon is a shortened design that uses inductors as a loading element. Some loss does occur with any inductor and the Optibeam antenna will not deliver the full-size forward gain and F/B ratio performance mentioned by W4RNL. This loss can be mitigated by using Hi-Q, low loss inductors. Optibeam does do this.

Optibeam OB2-40M-P design and construction

This antenna uses inductors. They are pre-made, install easily, and are handsome to behold.

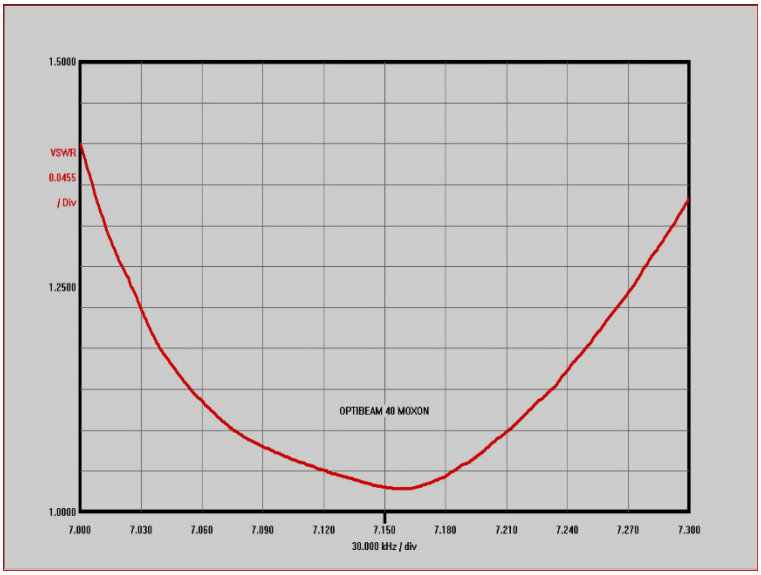
To the right are the Optibeam yagi parts as received.

All stainless hardware means there is nothing in this antenna to rust. No synthetic parts to degrade in the sunlight either. All parts are metric size, and the rectangular 80x80 mm boom appears rugged for the task.

If you don't plan to use your tower as a shunt-fed antenna, no modification to the balun is required.

Antenna Performance

Here is an actual VNA SWR plot of the Optibeam 40 Moxon at K8CU. This pattern is the SWR curve presented to the radio. The modified balun is included in this analysis.

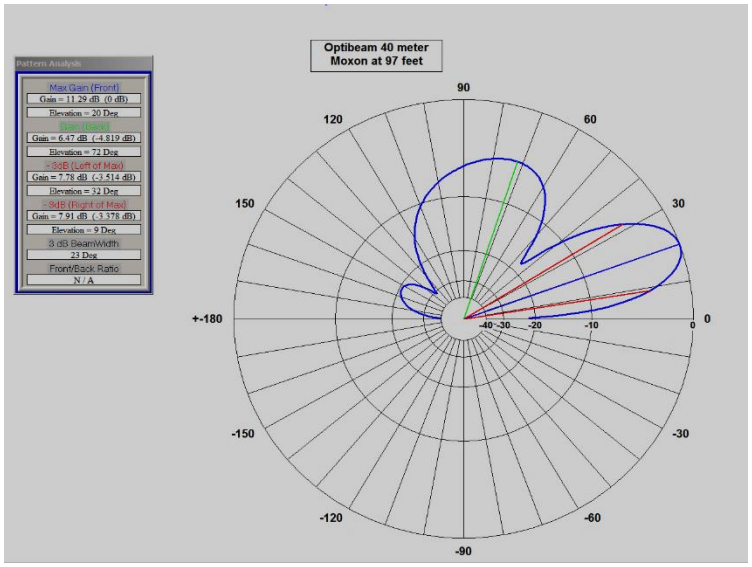


Upon seeing this plot, the president of Optibeam, Tom DF2BO, said, "I had a look at the file showing the SWR of your OB2-40M; this does look perfect!

For such a small antenna, it is amazing that it covers the entire 300 KHz spectrum so well."

Optibeam actual SWR measured with an N2PK VNA at K8CU. Analysis includes the modified balun.

To get an idea of the signal radiation performance, I made an electrical model of a 40-meter Moxon beam antenna using NEC-2 software. The main lobe plot at an installed height of 97-feet shows decent favor in the preferred low radiation angle, and of significant note is the rear rejection characteristics. The F/B ratio is superior to a regular two-element yagi and agrees with the W4RNL assessment mentioned earlier.



Conclusion

On-the-air use shows that my transmitter is happy anywhere on the band. Communications quality agrees with the general antenna specifications, and the antenna performs as expected. ***I can say without hesitation that this small-sized Optibeam two-element array is solidly built for the task, looks physically pleasing, satisfies manufacturer specs, and feels and listens almost like a three-element yagi.***

FCC APPLICATION FEES UNLIKELY TO GO INTO EFFECT UNTIL 2022

From ARRL Headquarters Newington CT August 17, 2021.
The schedule of FCC amateur radio application fees likely will not go into effect before 2022. FCC staff confirmed during a recent virtual meeting with Volunteer Examiner Coordinators (VECs) that the agency is still working on the necessary changes to the Universal Licensing System (ULS) software and other processes and procedures that must be in place before it starts collecting fees from amateur applicants. Earlier this year, the FCC said it would not start collecting fees from amateur applicants before this Summer. The new estimate is that the fees won't go into effect until early next year.

Once it's effective, the $35 application fee will apply to new, modification (upgrade and sequential call sign change), renewal, and vanity call sign applications. All fees will be per application. Administrative update applications, such as those to change a licensee's name, mailing, or email address, will be exempt from fees. ARRL VEC manager Maria Somma, AB1FM, said Volunteer Examiner (VE) teams will not face the burden of collecting the $35 fee.

"Once the FCC application fee takes effect, new and upgrade applicants will pay the exam session fee to the VE team as usual, but they'll pay the $35 application fee directly to the FCC using the FCC Pay Fees system," she explained. When the FCC receives the examination information from the VEC, it will email a link with payment instructions to each successful candidate who then will have 10 days from the date of the email to pay.
The FCC Pay Fees system can be accessed at, https://apps2.fcc.gov/Batch_Filer/login.cfm .

After the fee is paid and the FCC has processed an application, examinees will receive a second email from the FCC with a link to their official license. The link will be good for 30 days. Licensees also will be able to view, download, and print official license copies by logging into their FCC ULS account. The FCC no longer provides printed licenses.

Licensees can log into the ULS with their 10-digit FRN (FCC Registration Number) and password at any time to view and manage their license and application, print their license, and update anything in their FCC license record, including adding an email address.

FEE SCHEDULE:

INDIVIDUALS -
$35 FEE: New, modification (upgrade and sequential call sign change), renewal, and vanity call sign applications. All fees will be per application.

NO FEE: Administrative updates, such as a change of name, mailing or email address, or license cancellation.

AMATEUR RADIO CLUBS -
$35 FEE: New, renewal, trustee change, and vanity call sign applications. All fees will be per application.

NO FEE: Administrative updates, such as a change of name, mailing or email address, or license cancellation.

NextGen ATSC 3.0 STANDARD DETAILS

The SBE Central Pennsylvania Chapter 41 Ennes Workshop on "Transitioning to ATSC 3.0" was held August 27th. The speakers did an excellent job of presenting the fundamentals of the new, NextGenTV standard for over-the-air broadcasting in the US approved by the FCC just a few years ago. The workshop was very well attended, including members of our Mid-Atlantic ATV group; Gary Black - WA3CPO, Jeff Elliot - W3JVU, Rick Reese - KR3EE and myself - WA3ATV. As one would expect there were also several other ham operators among the broadcast engineers, so our hobby was well represented.

One of the speakers was Javier Ruano of Televes USA who spoke on the various pieces of test equipment broadcasters will need to maintain a top quality NextGenTV signal. For those not familiar, Televes makes both broadcast quality and commercial (hotel, hospital, bar, etc.) grade MATV equipment. They are a European company that has been around for decades and has a good reputation. Here I need to stress that I have no relationship with Televes, no financial interest in their products and nothing to gain by passing this information along.

Having said that, one of the items in particular that caught the attention of those of us from the DATV world is a device called the AvantX "Head End in a Box."

This is a remarkable device that takes signals from up to four off-air TV antennas, plus an FM radio antenna as well as a CATV input all at the same time! It processes the signals digitally (much like a wide-band SDR.) The box filters out the LTE signals that were dropped into the middle of the UHF television band and then provides up to 32 individual, programmable filters that can be applied to the inputs independently. The output of each filter then has AGC applied to it. The output of each filter can then be individually frequency shifted to another physical channel! The output level is up to +55 dBmV which makes it suitable for use as an MATV distribution amplifier. The box can do all of this from 54 to 1220 MHz. All of this is in a rugged package that is less than 3-1/2" x 2" x 1" and it is NOT made in China! If this were being done with traditional cable TV processing amplifiers, channel filters, combiners and converters it would take up several racks and would cost thousands of dollars. This box? $400 on Amazon!

What really caught the attention of us ATV guys was the ability to filter and frequency shift individual channels. After the workshop I spoke with Javier at length, asking whether the box could frequency shift channels outside the standard US television channels into a US television channel. I explained that ham operators were using frequencies in the 420 to 450 MHz and 902 to 928 MHz for digital television and the ability to filter and frequency shift signals in those bands would be very useful in ATV applications. I asked Javier whether the box could do that. His answer was no, not a present (the channel selection can only be made by channel number and CATV channels cannot be shifted) but he felt it would simply be a matter of a software change to add that capability.

Today we exchanged a few emails. Seeing a potential niche market for the product he has submitted the idea to the Televes R&D department to see what the feasibility might be. The question is whether there would be enough of a market to make the software alterations worthwhile. If this feature were added, it would be possible to filter, shift and amplify any ATV channel - no matter what format - to another frequency. It would, for example, be possible to shift your local analog or ATSC 3.0 ATV Repeater to a standard off-air TV channel, mix it in with signals you are receiving by antenna or by cable TV and watch it on any set in your household, watch it on multiple TV sets in an Emergency Operations Center or on multiple sets at an ATV demonstration.

If you think this is something you might find useful, here is a link to a pdf of the AvantX product sheet:
https://www.televes.com/downloadfile/PLA11200000_TUSA_76038.pdf/L_AVANTX_532180_EN_USA_PLA11200000.pdf

If you'd like to see the AvantX have the ability to frequency shift channels in the ham bands to regular TV channels and filter ATV channels and would like to add your voice, feel free to pass along your thoughts to Javier Ruano at:
jruano@televes.com
Mention that you received information about the AvantX on one of the ham radio lists and are curious as to whether it

can shift channels in the ham radio bands of 420 to 450 and 902 to 928 or something to that effect.

Maybe this is not something members of our niche hobby are in fact interested in, but if it is I suspect Javier could use the additional ammunition to convince his R&D department to go forward with the software change.

Personally, I will eventually purchase one these for my home, software change or not. I can receive signals from several TV markets and have been looking for a cost-effective way of combining the signals from several antennas into one MATV stream. This box fits the bill rather nicely.

Please feel free to share this info with any other ATV lists you may be a member of.
… Dan Rapak - WA3ATV

ATSC ANNUAL MEETING FOCUSES ON 3.0 ROLLOUT

(Article in part from TV Technology Magazine)

WASHINGTON—After a hiatus of more than a year, the Advanced Television System Committee resumed its long run of in-person meetings, with its Aug. 26 gathering of ATSC members, station and network personnel, consultants, vendors and others at the Ronald Reagan Building and International Trade Center here.

The all-day event, which was also live-streamed for those unable to travel, featured a progress report on broadcasters' deployment of NxtGen TV, ATSC 3.0 receiver development, NextGen TV's place in distance learning, automotive applications for the new DTV standard, award presentations, as well as addresses from FCC Commissioners Brendan Carr and Nathan Simington.

FULL STEAM AHEAD

Lynn Claudy, ATSC board chairman and NAB senior vice president of technology, got things underway by stating that he and the board have all been "really, really, really looking forward" to this first live event since the pandemic began. He observed that education about the new standard is important, along with advocacy by its adopters, as well as promotion and marketing.

How the consumer audience perceives the new services is really important as to whether they're going to spend money on the new technology. In her introductory remarks, ATSC President Madeleine Noland was grateful that an in-person meeting of the organization was at last possible, and provided news about developments on the receiver side of the industry.

"I can't tell you how pleased I am with this conference," said Noland, noting that attendance and the number of exhibitors at the hybrid event had exceeded all expectations. "We're very delighted to be back here and put on this conference for you." In remarking about 3.0-related developments, she noted that sales of NextGen TVs are now exceeding previous expectations, and offered praise for the cooperation among broadcasters that's making the rapid deployment of 3.0 possible.

"The new system is allowing broadcasters to enrich and expand their roles serving their communities delivering important content to audiences in a way, and on devices that newer generations are adopting," she said. "And this new platform is evolvable, allowing broadcasters to expand their offerings including distant education solutions, advanced emergency messaging capabilities and more."

RECEIVERS BECOMING MORE PLENTIFUL/AFFORDABLE

A television standard is useless without receivers to support it, and the good news is that NextGen TVs are becoming more numerous, more affordable, and more in demand.

This year's ATSC annual meeting featured a special panel ("Receiving the Future- New Features, New Receivers") that examined the receiver side of the 3.0 equation. Digital Tech Consulting's Myra Moore served as moderator, and panelists included LG Electronics' John Taylor from LG Electronics, MediaTek's Alfred Chan, Dolby Labs' Ellis

Reid, and Sony's Nick Cosley. (Due to pandemic-driven travel and other restrictions, the panel took the form of a Zoom gathering.)

Moore got things started by asking about receiver availability, observing that the first receivers shown for ATSC 3.0 were all high-end models.

"It's not surprising that NextGen TV is starting at the high end if you look at how new features are introduced in our industry," said LG's Taylor, observing that other advanced consumer technologies such as stereo and 4K were generally quite expensive when they first became available. "We anticipate that ATSC 3.0 capability will gravitate into more and more models more quickly [than in previous technologies]. Despite the pandemic [hindering] getting signals on the air, as we look ahead to 2022, we think that's going to be a turning point year when you have more and more models from more and more manufacturers."

Sony's Cosley stated that all of the new models from his company are being equipped for NextGen reception.

"All of the new 2021 models that Sony is selling in our TV lineup have NextGen built in," he said. "We look at the fundamental capabilities of the TV as being something that really should be common across the entire lineup. That produces the economy of scale that we need to bring the price of these new capabilities down."

Despite the shortage of integrated circuits plaguing the global supply chain for the past year or so, panelist Chan stated that his company, MediaTek, is on top of things when it comes to supplying the specialized chips needed for ATSC 3.0 receivers.

"MediaTek is the fourth-largest chip company in the world and the largest supplier of TV chips," he said. "More and more companies are working with us on ATSC solutions. As far as chip sets are concerned, we have complete solutions. The chips are ready."

"Consumers have a lot of choices," she said. "How do proponents of the NextGenTV system communicate to consumers what the advances are in a way that doesn't confuse them or overpromise something that's not quite ready yet?"

"The opportunity at hand is for all of us in the ecosystem—manufacturers, broadcasters, and retailers—to jointly promote the capabilities of NextGen TV without overpromising; we're all sensitive to that," said Taylor. He suggested that stressing the "future- proof" nature of 3.0, its feature set upgradability, the robust emergency alerting and informing that comes with NextGen might be useful.

"Right now, we have a lot to talk about and sell in terms of the improved picture and sound performance," he said.

ATSC 3.0 AND EDUCATION

Reflecting the distance learning situation forced and accelerated by the global pandemic, a recurring theme in presentations at the 2021 meeting was education and how NextGen TV might play a role in it.

In her presentation "ATSC 3.0 in Action," Susi Elkins, the director of broadcasting and general manager of Michigan State University's WKAR Public Media, described on-going efforts in this area within her organization.

"Three years ago, we had a vision of creating a NextGen media innovation lab on campus where we could experiment with ATSC 3 and create public service applications in areas that we felt would be of interest to all public broadcasters and that would facilitate academic research," said Elkins. "I felt that we had an opportunity here to move beyond adapting what we've [already] done in a new space."

She said that in developing the apps, she became aware of the potential for such things as interactivity and data collection afforded by 3.0, as well as the necessity of "on-ramp" apps to make it easy for audiences to seamlessly interact with broadcasters.

Elkins envisioned making use of NextGen's interactive capabilities for a full distance learning experience.

"Imagine being able to do motion detection if you're in a video conference with students. Are they understanding what I'm saying? You could use motion detection and all kinds of other tech applications to help make it feel more immersive and get information back."

"Perhaps the biggest takeaway for me in all this is understanding how big our vision needs to be," said Elkins. "If we don't start big enough and then work towards having that one person who's counting on us having that wonderful experience, we're really shortchanging ourselves."

Education and NextGen was also the topic of another forum, "Distance Learning 1.0 > ATSC 3.0," in which Mark Aitken, senior vice president of advanced technology at the Sinclair Broadcast Group, and Sang Jin Yoon, senior vice president of business development at DigiCAP, fielded questions from moderator Mark O'Brien, SpectraRep's president and chief executive officer.

In opening up the discussion, Aitken observed that distance learning is part of the ATSC 3.0's datacasting feature set and that it's "a business that's already in the works and already deployed and filling a place in the marketplace."

O'Brien noted that the utility of datacasting had come a long way since the pandemic erupted, and that what had happened in the last 18 months was a "foot in the door" for ATSC 3.0.

"The technology that ATSC 3 brings takes datacasting to a whole new level with SFNs, greater building penetration, ease of reception, more capacity, mobile reception, and other things that we can't do today with ATSC 1 datacasting," he said. "It's not about the technology; it's about solving problems."

O'Brien observed that datacasting had been used to help bridge the student internet gap in Indiana during the past year, and described technology used for pulling lessons teachers had uploaded to the cloud via learning management systems and intended for use by students with Internet access. These lessons were then distributed to students lacking internet access via public television stations and a special datacast receiver that connected with their computers. The missing return loop missing for students without broadband could be supplied by parents' cellphones with data plans.

"That's our return path," said O'Brien. "When mom comes home they use that [the cellphone] to send the answers to tests or questions back to the teachers. And we integrate it that way and make it easy for the teachers and easy for the students."

He said that the receivers were equipped with both ATSC 1.0 and ATSC 3.0 tuners, and even though they were being used with 1.0 signals, they were NextGen TV-ready.

"This is a deployment of ATSC 3.0 receive devices in homes that were originally designed to be an ATSC gateway," said O'Brien. "We're using them for a special purpose of datacasting for education today, but we've got an established base—and it's a growing established base—of ATSC 3.0 devices in homes."

He observed that this deployment of datacasting had been done in weeks instead of the months or years that it would take to extend broadband by fiber installation or construction of new cell sites, and said that this application of NextGen TV had now been deployed in 10 states.

For more detail on this topic see https://www.tvtechnology.com/news/atsc-awards-alan-stein-with-its-highest-technical-honor.

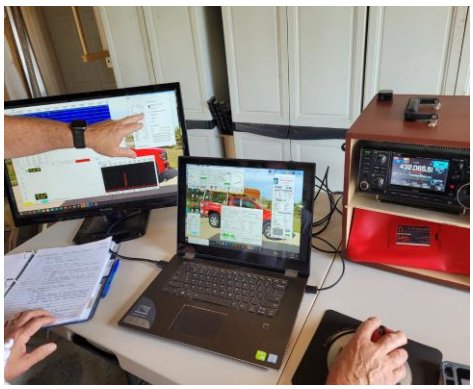
MIDWEST VHF/UHF Society ANNUAL PICNIC

The Midwest VHF/UHF Society in Dayton held their annual meeting/picnic on August 28 at the house of Daun Yagley, N8ASN, near Willmington, Ohio. Daun's location is ideal for antenna measurements as his back yard is directly adjacent to the Wilmington County airport. In fact, one person flew in and walked over to join us!

This day we took advantage of the nice weather to do some moon bouncing on 432MHz with Joe's homemade antenna array. It was the most colorful antenna we have seen.

A 432 MHz EME portable station was set up at the MVUS Picnic at Daun Yeagley's (N8ASB) QTH on Saturday August 28, 2021. It was operational starting at about 9 a.m. until the moon set at about 1 p.m. Several "contacts" were made in which the return signals were heard seconds later.

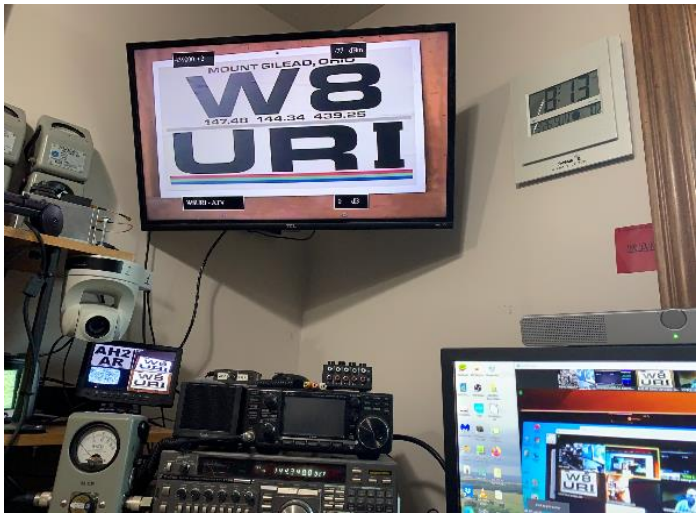
Joe (WA8OGS) & Richard (WC8RK) were the ones who set up the portable station. It consisted of 4 home-brew 15 element yagis (15LFA-JT, horizontal polarization), a home-brew power divider, an AGO Products preamp NF = 0.29 dB, az-el G-5500 rotor, Icom 9700, and Tajfun amp with 600 watts out. They were using the WSJT digital modes.



ATV BAND OPENING

Photos of Another Excellent Band Opening on Sunday Morning 26 September 2021

The photos below are some of the ATVers within the Midwest region that were successfully being repeated through the W8BI Dayton Repeater this past Sunday. W8KHP (an A5 ATV transmission) in Hebron Kentucky and WB8CJW (a digital ATV transmission) in Powell Ohio are located approximately 60 miles from the repeater. W8URI (a digital ATV transmission), is located in Mt Gilead, approximately 80 miles from the W8BI ATV repeater. I was able to work into the ATCO repeater during this same session. Lastly, W8CWM continues to make ATV station improvements, as he is now DVB-T receive capable.



That's all for now, See you at ATV net time!
…AH2AR

A GREAT DATV MAGAZINE "BITES THE DUST"

After 100 issues, Ian G8IQU, Trevor, G8CJS, & Terry, V5TM are calling it quits with their fine, free, on-line only magazine, "CQ-DATV" dedicated to amateur television. I have full sympathy for the "burnout" factor. In the past I was the editor of club newsletters for a couple of ham clubs. When readers fail to provide material, it becomes increasing harder to put out a quality publication month after month. Our TV Repeater's Repeater newsletter has become somewhat of the national USA ATV newsletter. With the demise of CQ-DATV, we hope to be able to fill their void and cover ATV news world-wide. To do that we solicit news, articles and photos from you, our readers.

…Jim Andrews, KH6HTV, editor - kh6htv@arrl.net www.kh6htv.com

PS: If anyone needs to look at back issues, I have a complete set available.
…Art WA8RMC

CQ-DATV 100 - Final - October 2021

3GHZ BAND DEMISE DETAILS

ARRL Continues Its Efforts to Preserve Amateur Radio Secondary Use of the 3 GHz Band

ARRL President Rick Roderick, K5UR, in a written statement on the newly filed H.R.5378 before the US House Commerce Communications and Technology Subcommittee on Wednesday, urged Congress to direct the FCC to preserve amateur radio's secondary use of the 3-GHz band. President Roderick's statement was the result of a quick, well-organized response by ARRL to counter the continuing threat to amateur radio's secondary use of the 3 GHz band.

Approximately 10 days ago, ARRL became aware of a provision in the $3.5 Billion Budget Reconciliation Bill that would have required that approximately 200 MHz of the 3.1 - 3.45-GHz band be reallocated to the use of 5G vendors. Moving swiftly, the ARRL Executive Committee authorized ARRL's Washington Counsel to begin preparations to respond. But, confronted with the probable delay of the Reconciliation Bill and an uncertain future for the 3 GHz provisions, Subcommittee Chairman Michael Doyle (D-PA-18) and Representative Doris Matsui (D-CA-6) introduced similar reallocation language on September 29 as H.R.5378 (117th Congress, 1st Session) and scheduled hearings on it and related communications bills for October 6.

The Executive Committee and the Legislative Advocacy Committee immediately set efforts in motion in Washington to obtain support for ARRL's position. Meetings were held on short notice to request support with the offices of Subcommittee members including Representatives Adam Kinzinger (R-IL-16) and Tim Walberg (R-MI-7), as well as with Representatives John Larson (D-CT-1) and Joe Courtney (D-CT-2).

In addition, ARRL Atlantic Division Vice Director Bob Famiglio, K3RF, and ARRL Washington Counsel David Siddall, K3ZJ, met with Chairman Doyle's Chief of Staff on October 1, to explain why it's important that amateur radio continue to be permitted to operate in the 3.3 - 3.45-GHz band.

In his written statement to the Subcommittee in conjunction with the hearing, President Roderick emphasized that permitting Amateur Radio to continue to have use of the 3.3 - 3.45-GHz band on a strictly secondary, non-interfering basis will provide full protection to commercial licensees with exclusive licenses and further the public interest in providing a means for continued technological innovation.

Despite vigorous opposition from ARRL and others, the FCC in 2020 ordered the "sunsetting" of the 3.3 - 3.5 GHz band in order to auction the spectrum to commercial 5G providers. The Commission allowed amateur operations to continue in the lower 150 megahertz of the band, 3.3 - 3.45 GHz, until it acts in a future rulemaking to address that spectrum. Amateur operations were allowed to continue in the upper 50 megahertz, 3.45 - 3.5 GHz, only until 90 days after the auction including that spectrum has closed. The auction began this week; it is likely that operations will have to cease in February or March, 2022.

"A core standard of spectrum policy should be to maximize use of this valuable but finite spectrum resource," President Roderick told the panel. "The [FCC] in earlier proceedings adopted a variety of methods to share and maximize use of the spectrum by radio amateurs and others, but in its latest 3 GHz proceeding it did not do so, despite hundreds of comments filed by radio amateurs."

President Roderick said that if the current policy continues, existing spectrum at 3 GHz being addressed in H.R.5378 "will be cleared indiscriminately," leaving "significant spectrum resources vacant into the foreseeable future while radio amateur experimentation and operation will be forced to cease for no reason except regulatory myopia. It need not be so."

President Roderick pointed out that in earlier proceedings, the FCC adopted methods to ensure unencumbered spectrum access by primary users while accommodating secondary users on a non-interference basis. "These methods work well and remain effective without complaint in other frequency bands, and also should be applied to the 3 GHz band," he said.

Primary commercial users "would rarely use all of their licensed spectrum throughout their entire licensed service areas," President Roderick said. In its recent 3 GHz proceeding, however, the FCC "went beyond merely prohibiting amateur operations in areas and at times when primary Commission licensees might use the spectrum," ruling instead that all amateur operation in the subband being auctioned must terminate within 90 days of the auction's close. President Roderick told the FCC that it is not logical for the Commission to leave spectrum unused before licensees start using it.

He said there’s no technical basis for removing amateur secondary operations from the 3 GHz band. Radio amateurs long have used the bits and pieces of unused spectrum for technological innovation. Read an expanded version.

9TH DIGITAL ATV WORLDWIDE QSO PARTY

On the 15th August 2021 Peter Cossins told the Melbourne ATV Community, “The conversion to HD for VK3RTV was completed. Uplink signals on 1246 MHz, 1255 MHz and 1278 MHz are DVB-S2 with the output on 445.500 MHz DVB-T2, as before, VK3RTV has a two-channel multiplexed output. There are two controllers each with a CHA and CHB input. The 1255MHz and 1278 MHz inputs feed CHA and CHB switched to VK3RTV2 and “Remote Access" and 1246 MHz inputs feed CHA and CHB switched to VK3RTV1.

“Remote Access" is an input from the Internet which is restricted for special purposes. The system still accepts a DVB-S signal to ensure no station is disadvantaged if they are not HD. Signal video is taken from the HDMI outputs of the receivers and is then routed via a HDMI switch and a HDMI Splitter. One output of the Splitter feeds the HDTV Encoder and the other goes to the BATC Streamer.

DVB-T2 is an advanced HD technology not yet implemented by Australian commercial stations. It is likely that receiving stations will have to re-scan for the signal and remember that no television set or older set top box will decode DVB-T2. Currently the output is on test with a 3 dB lower output power. Thanks go to the members of the Melbourne ATV Group who funded this extensive project.
…Regards Peter”

PREPARING 2021 ATV QSO PARTY PRE-RECORDED VIDEO

After the success of pre-recorded video last year, it was time to do an update. Last years ATV info session was nearly six and a half minutes long, too long for a single ATV session according to Peter Cossins, saying many more stations were expected this year, 2.5 minutes maximum was the goal. So, I worked out I had 10 sessions of things to show and narrate. Two and half minutes a total of 150 seconds, so that's an average of 15 seconds over 10 sessions, some longer sessions than others, some sessions shorter. I typed up a running sheet with what I was going to say, this is better than talking "on the fly". A test run was done in the shack, timing how long it took to speak each session. Then it was time for the real deal, the live recorded production.

TEN SESSIONS TO PUT ON 2021 ATV QSO PARTY

Each ATV session was broken down to;

1. Welcome / Doncaster QTH
2. X7000 VHF/UHF antennas + 6mx Vertical + HF Loop on quarter acre
3. 160mx top loaded Vertical
4. ATV TX/RX beams + 10GHz dishes
5. Outside 2 VHF/UHF radios in enclosures
6. 6 outside cameras and capping and local TX control switch
7. BBQ cam
8. Shack ATV gear
9. Shack radio MF/HF/VHF/UHF/SHF desk equipment
10. ATV shack seat view

I use Movavi Video Suite 2020 to edit the video and sound and post video production, as I did last year

VIDEO PRODUCTION

As anyone will tell you, what video you see as a finished product takes way more time to produce. Filming was done during the two-week Stage 6 Melbourne COVID-19 Lockdown, so I was happy to have something constructive to do, legally at home, to pass the time. The biggest hassle seemed to be getting a nice sunny day, then filming was done, But as I commenced filming the council rocked up and decided to drill holes in the road a few houses away – lots of noise – what are the odds? Anyway, between gaps of works and noise I managed to film everything outside, the noise was not so bad inside the house. Cutting a video from six minutes to three minutes and still retain most of the information is no mean feat. Without talking really fast, it's hard. I culled a lot of words from my practice 'running sheet' several times, that proved the best way to time it, before getting the camera and producing the video. But in an hour filming was complete and by late afternoon video editing, titling and saving was done. Three minuets of video took six hours to complete a finished product. After doing it last year most of the steps were second nature. The video was a shorter version of the video I presented the year prior. The software comes with a 170 page PDF manual that I have never read, in true ham radio operator style!

TESTING BEFORE THE DAY

To avoid unexpected hassles a few days before a practice test was done, but all the hard work years ago still pays off with everything working as per design. All the outside cameras working fine, no weather damage. But one of the radios was dead, no DC power, the fault was under the house. After a lot of dusty crawling about the cable fault was fixed. As VK3RTV is now DVB-T2 the television no longer receives VK3RTV in the new mode. One of the spare new DVB-T2 set top boxes was connected to the outside TV coax feed to monitor the repeater in real time. As the set top box top outputs HDMI any decent sized computer monitor will do now, or any TV with HDMI inputs. A future project, for watching VK3RTV out on the backyard deck, is housing the set top box outside in a weatherproof box ready for use, this will save setting it up each time.

SATURDAY – 28th AUGUST – (Friday night starting at 8PM EST in the USA) VK LOCAL & INTERNATIONAL STATIONS LINK UP LINKED AMATEUR RADIO TELEVISION REPEATERS
VK3RTV MELBOURNE VICTORIA
VK2RTS SYDNEY NEW SOUTH WALES
VK3RMD PORT PIRIE SOUTH AUSTRALIA
WR8ATV COLUMBUS OHIO USA
WO8TV BOULDER COLORADO USA
W6ATN NETWORK CALIFORNIA USA

The day started with links to Columbus Ohio, then Boulder Colorado, ending with Los Angeles California. It was a very interesting and varied view of what the guys in the states get up to with amateur television. Like VK they had some technical hassles, audio seems to be the problem. It is easy to forget that they are staying up late to talk to us, but they all seemed very keen to tell their stories. They are very into microwave television with demonstration videos aplenty. So many USA stations came up I did not have time to catch all the locations, names or calls. Unlike VK, not all USA ATV operators have callsign ID up when transmitting, or mentioned really briefly, or they hold up a QSL card. Hopefully this list is accurate and includes everyone that came on.

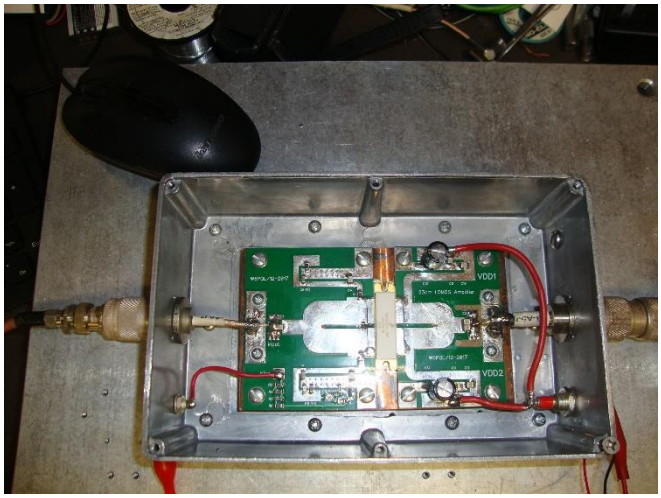
USA STATIONS
WA8RMC Art, WB8CJW Dale, WA8KQQ Dale, KH6HTV Jim, K0JOY Ed, K0CJG Chris, N0YE Don, KC6JPG Roland, KC6AV Wolfgang, KB4ICU David, KE6BXT Don, N7ZEV Fran, KA7HQP Dennis, WB9KMO Rod, K6SOE Jim, WB6ASU FRED, W6ORG TOM, N6GKB KEITH, W6KGE BOB.

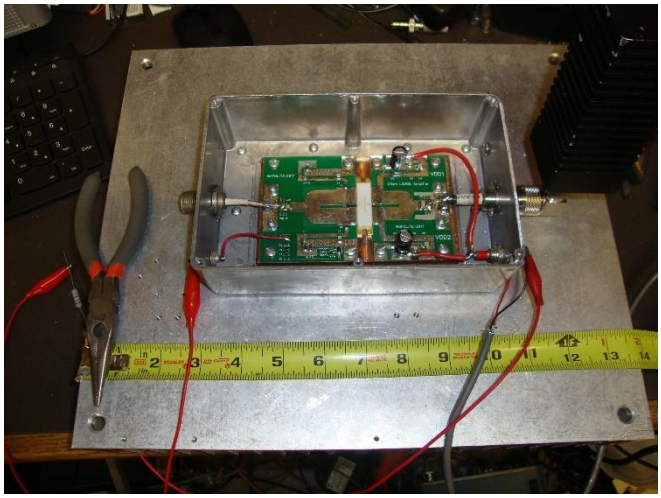

It's too bad that my hosting portion had so many difficulties but maybe better luck next year. I couldn't receive Peter's ZOOM link and my audio didn't work properly. That was compounded by the fact that only three of us participated in the event. Maybe it's my fault for not promoting it enough, or maybe there's just not enough interest. They had much better success on the west coast.
…WA8RMC

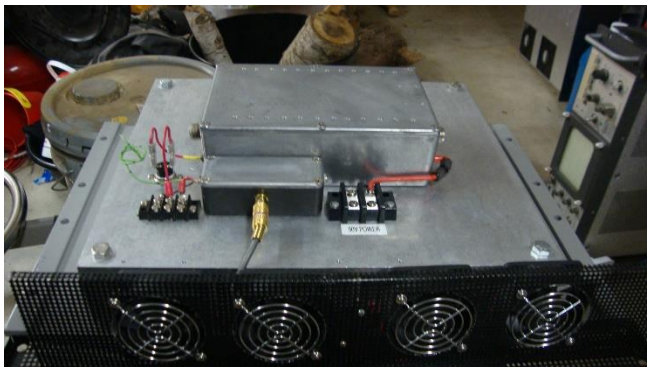
WA6SVT 23CM AMP UNDER CONSTRUCTION

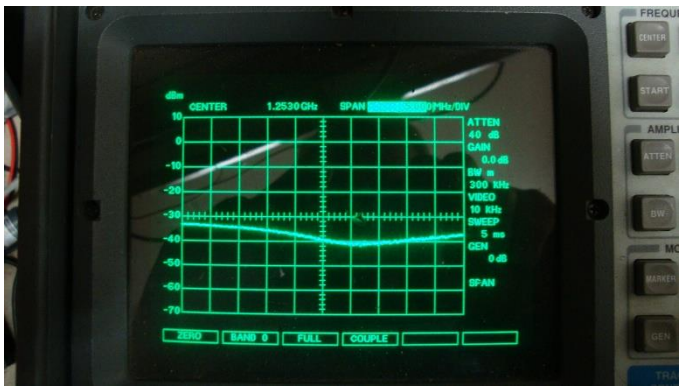
WA6SVT's new 23CM 600-watt output power amp. In fact, it's so new he has not had time to describe it. The PC Board is from W6PQL. Sorry….more details next time.

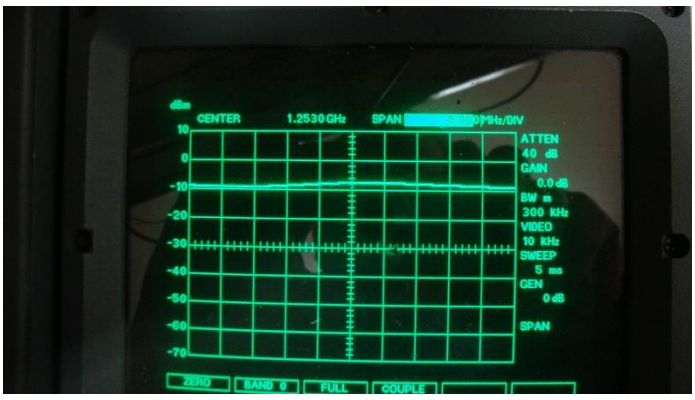
…WA8RMC

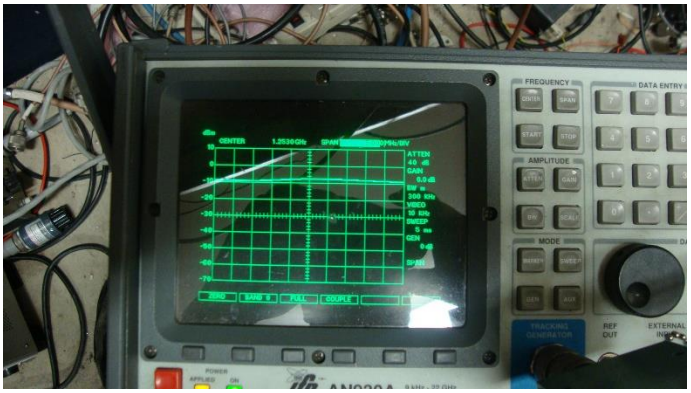


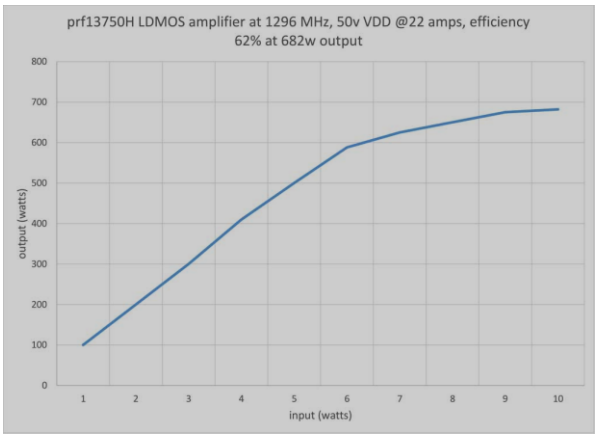












USA ATV REPEATER DIRECTORY June 2021

NOTES:

1. All repeaters are NTSC, VUSB-TV, 6 MHz channel, unless otherwise noted. Some repeaters are using non-standard, lower sideband instead of upper sideband. The frequency listed is the video carrier frequency.
2. Digital TV lists center frequency. 6 MHz channel, unless otherwise noted. dt = DVB-T, ds = DVB-S, da = ATSC
3. For full details, go to the listed web site, or send an e-mail to the contact person
4. Some ATV groups also post repeater info on www.qrz.com under their call sign

Location	Call Sign	Output	Input(s)	Modes	Web Site & Contact for info
ARIZONA					note: AZ is linked to W6ATN in S. CA & NV www.atn-tv.org
Phoenix, White Tank	W7ATN	1253.25	434.0, 434 / 2 dt 2441.5 fm	VUSB, FM DVB-T	wb9kmo@gmail.com kwjacob@icsaero.com
Mesa	W7ATN	1289.25	434.0, 434 / 2 dt 2441.5 fm	VUSB, FM DVB-T	wb9kmo@gmail.com kwjacob@icsaero.com
Tucson, Mt. Lemmon	W7ATN	1277.25	434.0, 434 / 2 dt 2441.5 fm	VUSB, FM DVB-T	wb9kmo@gmail.com kwjacob@icsaero.com
N.E. AZ & NM Green's Peak	W7ATN	1289.25	434.0	VUSB	wb9kmo@gmail.com kwjacob@icsaero.com
CALIFORNIA					W6ATN rptrs linked to AZ & NV
Orange Santiago Peak	W6ATN	1253.25 5910 fm	434.0, 434 / 2 dt 2441.5 fm	VUSB, FM DVB-T	www.atn-tv.org wa6svt@gmail.com
Los Angeles, central Mt. Wilson	W6ATN	1265.25	434.0, 434 / 2 dt 2441.5 fm	VUSB, FM DVB-T	www.atn-tv.org wa6svt@gmail.com
Los Angeles, north Oat Mtn.	W6ATN	919.25 3380 fm	434.0, 434 / 2 dt 2441.5 fm	VUSB, FM DVB-T	www.atn-tv.org wa6svt@gmail.com
Jobs Peak	W6ATN	1253.25	434.0, 434 / 2 dt 2441.5 fm	VUSB, FM DVB-T	www.atn-tv.org wa6svt@gmail.com
San Bernardino Snow Peak	W6ATN	1242 / 4 dt	434.0, 434 / 2 dt 2441.5 fm	VUSB, FM DVB-T	www.atn-tv.org wa6svt@gmail.com
Santa Barbara	WB9KMO	1289.25	434.0, 434 / 2 dt 2441.5 fm	VUSB, FM DVB-T	www.atn-tv.org wb9kmo@gmail.com linked with W6ATN
San Diego	KD6ILO	423 dt 1243 dt 1268 ds	441 dt 1286 ds 5885 fm	DVB-T, DVB-S, FM	kd6ilo@yahoo.com also AREDN mesh
San Jose	W6SVA	427.25	910 fm, 1255 fm	VUSB, FM	www.k6ben.com :w2nyc@pacbell.net
Clayton	W6CX	1244.5 ds	1292.5, 1273, 915 ds, & 1273 fm	DVB-S, FM	www.mdarc.org info@mdarc.org
Palomar	W6NWG	1241.25	915 fm 2441.5 fm	VUSB, FM soon be DVB-S	w6nwg@palomararc.org mountain.michelle@gmail.com
COLORADO					
Boulder	W0BTV	423 / 6 dt or 421.25 5905 FM	1243 / 6 dt 441 / 6 dt 439.25	DVB-T, VUSB, FM	www.kh6htv.com kh6htv@arrl.net
Pueblo	W0PHC	423 / 6 dt	441 / 6 dt	DVB-T	billn@billnicoll.com www.puebloradio.org
DELAWARE					
Wilmigton	KC3AM	423 / 6 dt	439.25 AM, LSB	DVB-T AM	KC3AM@verizon.net qrz.com
FLORIDA					
Cape Coral	W1RP	421.25	439.25	VUSB	paul@cardlink.com
Cocoa Beach	K4ATV	427.2	439.25	VUSB	www.lisats.org
Panama City	KV4ATV	434.0	919.25	?	kv4atv@gmail.com
S.W. Idaho	WI7ATV	1257 fm	426.25	VUSB, FM	ka7anm@yahoo.com under construction
IOWA					
Davenport	W0BXR	421.25	439.25	VUSB	http://www.arcsupport.com/drac/

KANSAS					
Wichita	KA0TV	421.25	439.25	VUSB	k0wws@arrl.net
KENTUCKY					
Bowling Green	KY4TV	421.25	439.25 1280 fm	VUSB FM	w4htb@ieee.org www.qrz.com www.atn-tv.org
LOUISIANA					
New Orleans	WD0GIV	421.25	439.25	VUSB	wd0giv@att.net
MARYLAND					
Laurel	W3BAB	421.25	434.0	VUSB	www.qsl.net/w3bab
Towson	W3BAB	1291 fm	434	VUSB, FM	www.qsl.net/w3bab
Baltimore	W3WCQ	439.25 911.25	426.25 1253.25	VUSB	http://bratsatv.org/ brats@bratsatv.org
MICHIGAN					
Jackson	KC8LMI	923.25	439.25, AM LSB	VUSB	KC8LMI@hotmail.com
Grand Rapids	K8DMR	421.25	439.25	VUSB	ron_fredricks@att.net
Flushing	KC8KCG	1253.25	439.25 AM LSB	AM	kf8ui@mscginc.org
Flint	KC8KGZ	1253.25	439.25	VUSB	www.mscginc.org kf8ui@mscginc.org
MINNESOTA					
Wabasha	KD0HWX	421.25	439.25	VUSB	jonmcpete@yahoo.com
MISSOURI					
St. Louis	W0ATN	426 / 4 dt	440 / 4 dt	DVB-T	k0pfx@arrl.net
NEBRASKA					
Omaha	WB0CMC	421.25	434.0	VUSB	wb0cmc@cox.net
NEVADA					
Las Vegas	N7ZEV	1253.25 912 fm	434.0, 434.0 / 2 dt 2441 fm	VUSB, FM DVB-T	frank.n7zev@gmail.com linked to W6ATN S. CA & AZ
NEW JERSEY					
Vernon	W2VER	5885 fm	5665 fm	FM	jaythienel@yahoo.com
OHIO					
Columbus	WR8ATV	423 / 2 dt 427.25 1258 fm 1268 ds 2397 mesh 10350 fm	439 / 2 dt 439.25 AM LSB 1288 fm 1288 ds 10450 fm	VUSB AM FM DVB-T DVB-S MESH	www.ATCO.tv gkenmorris@gmail.com towslee1@ee.net
Dayton	W8BI	421.25 428 / 2 dt 1258 fm	439.25, 439 / 2 dt 1280 fm	VUSB, FM DVB-T	www.w8bi.org dpel@aaahawk.com
Van Wert	W8FY	434.0	923.25	VUSB	ka8zge@w8fy.org
OREGON					
Portland	W7AMQ	1257 fm	426.25	FM, VUSB	belles73@comcast.net
Portland	WB2QHS	426.0	910 fm	VUSB, FM	emellnik@emavideo.com
PENNSYLVANIA					
Delaware Cty	KC3AM	421.25	439.25 AM, LSB	VUSB, AM	KC3AM@verizon.net
PUERTO RICO					
Aguas Buenas	KP4IA	426.25	439.25, 1252 fm	VUSB, FM	kp4ia@yahoo.com
WASHINGTON					
Seattle	WW7ATS	1253.25	434.0	VUSB	https://www.qsl.net/ww7ats/ ww7ats@gmail.com qrz.com

Revision Notes:
Aug. 2019 --(1) corrected data for Kentucky (2) changed call sign for Boulder, CO Sept. 2019 - -added Pueblo, CO
Oct. 2019 --added San Diego, CA Feb. 2020 -- changed K6BEN to W6SVA, CA --added KC8KGZ, MI Mar. 2020 -- added Davenport, IA
May 2020 --corrected typos Jan. 2021 -- updated Boulder, CO rptr info June 2021 -- found 20 more ATV repeaters listed on www.repeaterbook.com -- attempted to contact all of their trustees to confirm them. Most are obsolete listings and are no longer on the air. Added only two -- Cocoa Beach, FL, Wichita, KS,

LOCAL HAMFEST SCHEDULE

This section is reserved for upcoming Hamfests. They are limited to Ohio and vicinity easily accessible in one day. Anyone aware of an event incorrectly or not listed here; notify me so it can be corrected. This list will be amended, as further information becomes available. To see additional details for each Hamfest, Control Click on the blue title and the magic of the Internet will give you the details complete with a map! To search the ARRL Hamfest database for more details, CTL click ARRLWeb: Hamfest and Convention Calendar …WA8RMC.

10/31/2021 - Massillon (Ohio) Hamfest
Location: Green, OH
Type: ARRL Hamfest
Sponsor: Massillon Amateur Radio Club
Website: http://w8np.org

10/31/2021 - Massillon (Ohio) Hamfest
Location: Green, OH
Type: ARRL Hamfest
Sponsor: Massillon Amateur Radio Club
Website: http://w8np.org

12/04/2021 - FCARC WinterFest
Location: Delta, OH
Type: ARRL Hamfest
Sponsor: Fulton County Amateur Radio Club
Website: http://k8bxq.org/hamfest

01/16/2022 - Sunday Creek AR Federation Hamfest
Location: Shade, OH
Type: ARRL Hamfest
Sponsor: club members
Website: QRZ KC8AAV

03/13/2022 - Winter Hamfest
Location: Elyria, OH
Type: ARRL Hamfest
Sponsor: Northern Ohio Amateur Radio Society

04/09/2022 - Sixty-Sixth Cuyahoga Falls Amateur Radio Club Hamfest
Location: Cuyahoga Falls, OH
Type: ARRL Hamfest
Sponsor: Cuyahoga Falls Amateur Radio Club, Inc.
Website: http://www.cfarc.org/hamfest.php

07/17/2022 - Van Wert Hamfest
Location: Van Wert, OH
Type:
Sponsor: Van Wert Amateur Radio Club
Website: http://W8FY.ORG

08/13/2022 - Cincinnati Hamfest℠
Location: Owensville, OH
Type: ARRL Hamfest
Sponsor: Milford ARC
Website: https://CincinnatiHamfest.org

TUESDAY NITE ZOOM NET (We listen to 147.48 also)

Every Tuesday night @ 8:00PM WA8RMC hosts a net for ATV topic discussion. There is no need to belong to the club to participate, only an interest in ATV. All are invited. We usually chat for about an hour so please join us via the internet using ZOOM on your computer. We also listen to 147.48 during the meeting so if there is anyone checking in there you will be heard and included. It would be great if some of the previous ATCO members would join us as it's been a long time since we've heard from you.

We normally have 10-15 check-ins from various parts of USA and beyond. It's a fun informal time with various topics and jokes. Share with us a funny story or one liner you have if you can.

To join ZOOM for the first time, simply type **https://zoom.us/join** then download, install the .exe program and run it. ZOOM will start. Click on **join**, enter the **9670918666 meeting ID** then the **191593 password.** Use video or just audio if you don't have a camera.

Note: The DARA ATV ZOOM Net is on Wednesday at 8PM using this same ZOOM link. Feel free to join the discussion there as well.

ATCO TREASURER REPORT - de N8NT

OPENING BALANCE (07/22/21)	$ 3515.22
Receipts (dues)	$ 40.00
PayPal fee	$ (2.86)
CLOSING BALANCE (10/23/21	$ 3552.86

ATCO REPEATER TECHNICAL DATA SUMMARY

Location: Downtown Columbus, Ohio
Coordinates: 39 degrees 57 minutes 47 seconds (latitude) 82 degrees 59 minutes 58 seconds (longitude)
Elevation: 630 feet above the average street level of 760 feet ASL (1390 feet above sea level)

TV Transmitters:
423.00 MHz DVB-T, 10 W cont. FEC=7/8, Guard=1/32, Const=QPSK, FFT=2K, BW=2MHz, PMT=4095, PCR=256, Video=256, audio=257
427.25 MHz Analog VSB AM, 50 watts average 100 watts sync tip (cable channel 58)
1258 MHz 40 watts FM analog
1268 MHz DVB-S QPSK 20W continuous. SR=3.125MS, FEC=3/4, PMT=32, Video=162, Teletext=304, PCR=133, Audio=88, Service =5004)
Two video channels in this output: Channel 1 is fed from all receivers. Channel 2 is fed from 439.25 analog receiver only.
2397 MHz Mesh Net transceiver 600mw output (channel 1 minus 2). ID is WR8ATV-2
10.350 GHz: 1watt continuous analog FM

Link transmitter: 446.350 MHz: 5 watts NBFM 5 kHz audio. This is an output used for control signals and to repeat the 147.48 MHz and 449.975 MHz input.

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

Transmit antennas:
423.00 MHz - 8 element Lindsay horizontally polarized 5 dBd gain "omni"
427.25 MHz - Dual slot horizontally polarized 7 dBd gain "omni" major lobe east/west, 5dBd gain north/south
1258 MHz - Diamond vertically polarized 12 dBd gain omni
1268 MHz - Diamond vertically polarized 12 dBd gain omni
2397 MHz - Ubiquiti dual polarity omni 13dBi gain slot for channel 1 minus 2 MESH Rx/Tx operation
2397 MHz - Comet Model GP24 vertically polarized 12 dBd gain omni (Used for experimental Mesh operation)
10.350 GHz - Commercial 40 slot waveguide horizontally polarized 16 dBd gain omni

Receivers:
147.480 MHz - F1 audio input with touch tone control. (Input here = output on 446.350)
439.000 MHz - DVB-T QPSK, 2MHz BW. Receiver will auto configure for FEC's. (Input here = output on all TV transmitters)
439.250 MHz - A5 NTSC video with FM subcarrier audio, **lower sideband**. (Input here = output on all TV transmitters & also direct to 1268 MHz DVB-S output channel 2.)
449.975 MHz - F1 audio input aux touch tone control. 131.8 Hz PL tone. (Input here = output on 446.350).
1288.00 MHz - F5 video analog NTSC. (Input here = output on all TV transmitters)
1288.00 MHz - DVB-S QPSK SR=4.167MS, fec=7/8. PIDs: PMT=133, PCR=33, Video=33, Audio=49 (Input here=output on all Transmitters)
2398.00 MHz - F5 video analog NTSC. (Input here = output on all TV transmitters) (inactive at this time because of MESH on 2397)
10.450 GHz - F5 video analog NTSC. (Input here = output on all TV transmitters)

Receive antennas:
147.480 MHz - Vert. polar. Diamond 6dBd dual band (Shared with 446.350 MHz link output transmitter)
439.00/439.250 MHz - Horizontally polarized dual slot 7 dBd gain major lobe west (Shared with 439 digital & 439.25 analog receivers)
1288.00 MHz - Diamond vertically polarized 12 dBd gain omni (shared with analog and DVB-S receivers)
2398.00 MHz - Comet Model GP24 vertically polarized 12 dBd gain omni (inactive at this time because MESH is on 2397)
10.450 GHz - Commercial 40 slot waveguide horizontally polarized 16 dBd gain omni

Auto mode Input control:	Touch Tone	Result (if third digit is * function turns ON, if it is # function turns OFF)
	00*	turn transmitters **on** (enter manual mode-keeps transmitters on till 00# sequence is pressed)
	00#	turn transmitters **off** (exit manual mode and return to auto scan mode)
	264	Select Channel 4 Doppler radar. (Stays on for 5 minutes) Select # to shut down before timeout.
	004	Select 10.450 GHz receiver. **(Always exit by selecting 001)**
	001	Select 2398 MHz receiver then 00# for auto scan to continue
Manual mode Functions:	00* then 1 for Ch. 1	Select 439.25 analog /438 digital receiver (if video present on digital, it is selected. Otherwise, analog)
	00* then 2 for Ch. 2	Select 1288 digital receiver
	00* then 3 for Ch. 3	Select 1288 analog receiver
	00* then 4 for Ch. 4	Select 2398 receiver
	00* then 5 for Ch. 5	Select video ID (17 identification screens)
	01* or 01#	Channel 1 439.25 MHz scan enable (hit 01* to scan this channel & 01# to disable it)
	02* or 02#	Channel 2 1288 MHz digital receiver scan enable
	03* or 03#	Channel 3 1288 MHz analog receiver scan enable
	04* or 04#	Channel 4 2398 MHz scan enable
	A1* or A1#	Manual mode select for 439.25 receiver audio
	A2* or A2#	Manual mode select for 1288 digital receiver audio
	A3* or A3#	Manual mode select for 1288 analog receiver audio
	A4* or A4#	Manual mode select for 2398 receiver audio
	C0* or C0#	Beacon mode – transmit ID for twenty seconds every ten minutes
	C1* or C1#	No function at this time
	C2* or C2#	No function at this time

ATCO MEMBERS as of October 2021

Call	Name	Address	City	St	Zip	Phone
KD8ACU	Robert Vieth	3180 North Star Rd	Upper Arlington	OH	43221	614-457-9511
KC3AM	Dave Stepnowski	735 W Birchtree Ln	Claymont	DE	19703	
AH2AR	Dave Pelaez	1348 Leaf Tree Lane	Vandalia	OH	45377	937-264-9812
W8ARE	Terry Meredith III	6070 Langton Circle	Westerville	OH	43082-8964	
K9BIF	Charlie Short	415 West Pike Street	Goshen	IN	46527-0554	
VK3BFG	Peter Cossins	14 Coleman Road	Melbourne	Au	03152	
N9BNN	Michael Glass	6836 N. Caldwell Rd	Lebanon	IN	46052	
WB8CJW	Dale Elshoff	8904 Winoak Pl	Powell	OH	43065	614-210-0551
N8COO	C Mark Cring	2844 Sussex Place Dr.	Grove City	OH	43123	614-836-2521
N3DC	William Thompson	6327 Kilmer St	Cheverly	MD	20785	301-772-7382
K8DMR	Ron Fredricks	8900 Stonepoint Ct	Jennison	MI	49428-8641	
WA8DNI	John Busic	2700 Bixby Road	Groveport	OH	43125	614-491-8198
WB8DZW	Roger McEldowney	5420 Madison St	Hilliard	OH	43026	614-405-1710
KB8EMD	Larry Baker	4330 Chippewa Trail	Jamestown	OH	45335-1210	
WB4IR	Bob Holden	7725 Tressa Circle	Powell	TN	37849	865-314 - 4285
WA8HFK,KC8HIP	Frank & Pat Amore	P.O. Box 2252	Helendale	CA	92342-2252	760-503-8106
W8KHP	Allen Vinegar	2043 Treetop Lane	Hebron	Ky	41048	
WA8KKN	Chuck Wood	5322 Spruce Lane	Westerville	OH	43082-9005	614-523-3494
WB9KMO	Rod Fritz	8334 E. Culver Street	Mesa	AZ	85207	
WA8KQQ	Dale Waymire	225 Riffle Ave	Greenville	OH	45331	937-548-2492
WB8LGA	Charles Beener	2540 State Route 61	Marengo	OH	43334	
W8MA	Phil Morrison	154 Llewellyn Ave	Westerville	OH	43081	
KA8MID	Bill Dean	2630 Green Ridge Rd	Peebles	OH	45660	
N8NT	Bob Tournoux	135 Barrett Hill Road	Center Rutland	Vt	05736	614-876-2127
W8NX, KA8LTG	John & Linda Beal	5001 State Rt. 37 East	Delaware	OH	43015	740-369-5856
KB8OFF	Jess Nicely	1888 Woods Drive	Beavercreek	OH	45432	
W6ORG,WB6YSS	Tom, Maryann O'Hara	2522 Paxson Lane	Arcadia	CA	91007-8537	626-447-4565
AE6QU	Ron Phillips	2227Via Puerta unit N	Laguna Woods	CA	92637	
WA8RMC	Art Towslee	438 Maplebrooke Dr W	Westerville	OH	43082	614-891-9273
W8RUT,N8KCB	Ken & Chris Morris	2895 Sunbury Rd	Galina	OH	43021	
KB8RVI	Dave Jenkins	100 Miller Ave Apt. 108	Ashville	OH	43103	740 954-9221
W8RWR	Bob Rector	135 S. Algonquin Ave	Columbus	OH	43204-1904	614-276-1689
W8RXX, KA8IWB	John & Laura Perone	3477 Africa Road	Galena	OH	43021	614-579-0522
WA6RZW	Ed Mersich	34401 Columbine Trl West	Elizabeth	CO	80107	
WA6SVT	Mike Collis	PO Box 1594	Crestline	CA	92325	
NR8TV	Dave Kibler	243 Dwyer Rd	Greenfield	OH	45123	937-981-1392
KB8UWI	Milton McFarland	115 N. Walnut St.	New Castle	PA	16101	
WA8UZP	James Reed	818 Northwest Blvd	Columbus	OH	43212	614-297-1328
KB9VGD	Gary Oaks	472 Storle Ave	Burlington	WI	53105-1028	
KC8WRI	Tom Bloomer	PO Box 595	Grove City	OH	43123	
AA8XA	Stan Diggs	2825 Southridge Dr	Columbus	OH	43224-3011	
AC8XP,KE8GTT,KE8HPA	Troy,Seamus Bonte	5210 Smothers Road	Westerville	OH	43081	
AC8YE	Larry Howell	4080 Dill Road	Centerburg	OH	43011-9771	
KB8YMQ	Jay Caldwell	4740 Timmons Dr	Plain City	OH	43064	
KC8YPD	Joe Ebright	3497 Ontario St	Columbus	OH	43224	
KD8YYP	Anna Reed	818 Northwest Blvd	Columbus	OH	43212	
WB8YTZ	Joe Coffman	233 S. Hamilton Rd	Gahanna	OH	43230-3347	
N8YZ	DaveTkach	2063 Torchwood Loop S	Columbus	OH	43229	614-882-0771
W8ZCF	Farrell Winder	6686 Hitching Post Ln.	Cincinnati	OH	45230	513-218-3876
N8ZM	Tom Holmes	1055 Wilderness Bluff	Tipp City	OH	45371	

ATCO CLUB OFFICERS

President: Art Towslee WA8RMC
V. President: Ken Morris W8RUT
Treasurer: Bob Tournoux N8NT
Secretary: Mark Cring N8COO
Corporate trustees: Same as officers

Repeater trustees: Art Towslee WA8RMC
Ken Morris W8RUT
Dale Elshoff WB8CJW
Statutory agent: Stan Diggs AA8XA
Newsletter editor: Art Towslee WA8RMC

NEW MEMBER(S)

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

No new members this time.

ATCO MEMBERSHIP INFORMATION

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

ATCO publishes this Newsletter quarterly in January, April, July and October. It is sent to each member without additional cost. All Newsletters are sent via Email unless the member does not have an internet connection. Dues payments are as of the date paid and will expire on the same month/year on the due date year.

Your support of ATCO is welcomed and encouraged.

Membership expiration notices will be sent out via Email starting 30 days prior to expiration date.
NOTE: Dues records on your individual portion of the ATCO website are listed as the date money is received and shows due one year from that date.

ATCO MEMBERSHIP APPLICATION

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

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

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

FIRST CLASS MAIL

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