ATCO NEWSLETTER

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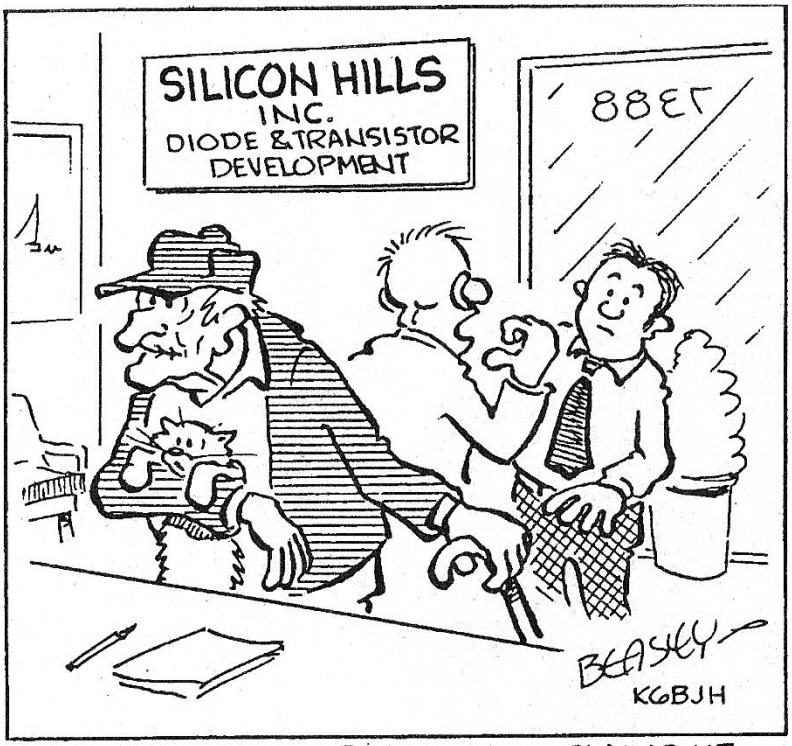
The ATCO newsletter is the official publication of a group of amateur television operators known as "AMATEUR TELEVISION IN CENTRAL OHIO Group Inc" published quarterly (January, April, July, October)

ATCO SPOTLIGHT TOPIC



SAYS HIS NAME IS MR. GALENA --- CLAIMS HE INVENTED THE FIRST SOLID STATE DEVICE AND HIS CAT DEVELOPED THE JUNCTION

ACTIVITIES ... from my Workbench

Well, it's Newsletter time again and time for some reflection. I am going to sit back and think about all of the Ham related activity going on around here since the first of the year. Sadly, it's been very little. It's mostly my fault because as we naturally age, we become a little more complacent and willing to accept things as they now are instead of actively pursuing new things. I'm approaching my mid 80's now so tower climbing is not what I'd like to do as a steady diet any more. Not that I **can't** climb my tower if something is broken but I don't have the desire to do it if things work ok as is. That said, creating new electronic gadgets don't take lots of **physical** energy so why don't I just sit at my workbench and design something or build that DATV transmitter I've been thinking about, it seems like, years now? I have no excuse on that one! I do good if once I get started, but it's the "getting started" part that's real tough. Our VersaTune project is progressing a little faster because some major bugs have been identified and eliminated. That helps the motivation part - I'm starting to get more energy already. See, just talking about it gets me going again!

So, let's look at the ATCO repeater activity now. I see none so I assume there are many of you out there that are not enthused about ATV operation either. Let's see what we can do to change that. I notice there is no or very little repeater activity which is partly my fault due to the fact that because of infrequent noise or other interference, the repeater gets locked up in the ON condition occasionally so I disabled the 439.25 input selection. It's easy to enable it by sending the DTMF command 01* on 147.48 MHz and 01# to disable it again. You are free to enable / disable it as you see fit so how about some activity?

I still have the VersaTune project to work on but I am also going to divert some activity towards getting my DATV gear back on the air and check in with the ATV Dx guys on occasion. (I have a hard time getting up and having breakfast by 7:00 in the morning when they start).

So, if I do my part by becoming more active, how about you? I've made it clear that if any of you need help re-activating your old ATV gear (yes, analog ATV still works in the ATCO repeater) I'm here to help. We can work at your place or mine to test most ATV receivers or transmitters. If it's an antenna you need, I have some items or the makings of a new one. I have a well-equipped machine shop here so "bending and cutting metal" is my specialty. We need more activity so I need you to speak up! Let me know what you need to get going again. At the very least, join us in our Wednesday night ZOOM session at 8 PM each week for some encouragement. There are Hams from around the country that join us each time. Sometimes you'll even have to put up with me as host but I'm sure you'll tolerate that. (If not, I'll just shut up and let someone else take over). The check-in details are included in the later part of this Newsletter.

I need more article material. Please, if you know of something I can publish, let me know. I can use activity material from other Ham groups or if you're working on a special project, we'd like to know about it. Do you know about any news item that you would like to share? Let us join in. Don't forget about items you have for sale or you're looking for. I can list it free of charge if you send me details and pictures.

Last item:
Please review the ATV repeater directory later in this Newsletter. Send me any new or revised data you have so I can share it with the rest of us. Who knows! There may be a repeater in your area that you don't know about.

That's about it for this time guys. 73 for now.

A NOTE ABOUT ANALOG (A5) TV INTERFERENCE OCCURRING ON 439.250 MHZ WITHIN THE INTERSTATE 70 CORRIDOR

I would like to make a brief comment about the DX ATV Midwest Group's reception of analog Television signals received on 439.250 MHz.

In the past five weeks or so, the Midwest ATV group has been receiving analog television signals, on an intermittent basis, during weekdays. The video signals have been in the form of a live video feed (see photo below) of a front-facing camera from a moving vehicle. These signals have been observed by ATVers located in Englewood, Ohio and throughout the Columbus, Ohio region. The signals have been detected as far away as Hebron Kentucky. The signals are emanating from semi-trucks in motion on the Interstate highway thoroughfare.

The source of these signals has been associated with two large Semi-trucks, and the signals have been only noticed during the Weekday Midwest ATV nets.

We have determined that the TV signals are part of a test involving an Ohio Department of Transportation $8 million dollar grant to test "Semi-Autonomous Truck Platooning". The platooning deployment is a collaboration between the Ohio Department of Transportation (ODOT)'s Drive Ohio Initiative and the Indiana Department of Transportation (INDOT) to advance the adoption of truck automation technologies in the logistics industry across the Midwest. A pair of tractor-trailers with automated truck platooning technology began traveling Interstate 70 between Columbus, Ohio, and Indianapolis, Indiana. Note that the trucks have drivers and are not fully autonomous.

We do not know what the experimental licensing status for employment of this common amateur radio ATV frequency for this project is. However, it is our understanding that the FCC's Office of Engineering and Technology Filings, in accordance with Part 2 and Part 5, has granted Experimental Licenses in the past on assigned 70 cm amateur radio frequencies to entities, (other than licensed amateur radio operators) involved in open-air testing. Consequently, we do not know what the experimental licensing status is for this ODOT operation, nor are we able to find anything referencing it within the FCC's experimental licensing database. Without knowing who the experimental license was filed under, it typically is difficult information to find within the database. I will be notifying the entities involved to let them know the signals are being detected through the ATV repeater in Dayton, and also by amateur radio ATV operators (mainly within Ohio) involved in simplex operation.

PHOTO: Note that this is a snapshot of the 439.250 MHz A5 transmission being re-transmitted by the W8BI ATV repeater via the DVB-T ATV repeater output, and then received at the W8CWM (Bill McCoy) QTH. Since Bill lives adjacent to Interstate 70, he has experienced very strong simplex signals as the trucks have passed by. Note that other ATVers have received the video, likely out to distances of 40 miles or more. The above photo helped narrow the source down as the semi-truck mirror is the same mirror mounted on the semis involved in the platooning test. We speculate it appears that the video link on 439.250 MHz is being used for the situational awareness of the "trailing" semi driver in the platoon. It is further speculated that the video is likely not being used for in-lane navigation, but just for situational awareness since the trailing truck follows very closely behind the lead truck and the additional view provides the trailing driver a "front seat" view of what the lead driver is experiencing.

…Dave Pelaez AH2AR

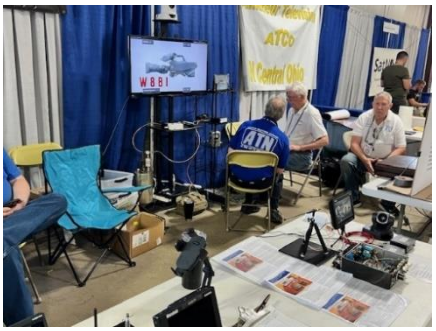
HAMVENTION 2025 - ATV HIGHLIGHTS

- This article is in "bullet form" as there were a number of separate yet related ATV Hamvention activities that needed to be separately showcased. The weather was actually excellent for the greater Dayton area, and attendance appeared to be pretty solid. The Dayton Daily News reported 35,000 attendees, however, there would likely have been more if the really "full force" threatening weather (that never arrived during the day) had not scared some of the people away on Saturday. There had been some wind gusts that launched several canopies, so we still did not completely skirt the systems that tracked North and South of us on Saturday. Unfortunately, one of the launched canopies landed on Tom Holmes N8ZM's brand new truck, cracking the windshield and severely scratching the paint.

- ATV Booth: We had many visitors to the booth on Saturday. Representation at the booth included the Amateur Television at Columbus Ohio (ATCO) Art Towslee WA8RMC, the Amateur Television Network (ATN) Joel Wilhite KD6W, and Dayton Amateur Radio Association (DARA) Bruce Kobe K8FIX, Dave Pelaez AH2AR, Dave Stepnowski KC3AM and Bill Bouchard from Delaware and Rick Lesquier KK4LW from Somerset Kentucky.
- A total of 43 requests came in from hams nationwide to be placed on the Newsletter and ATV Journal mailing lists. Interest in ATV certainly had not waned as the requests appeared to be double than what it was from last year.
- Art WA8RMC has achieved major progress on his VersaTune Receiver project. The ATV booth had a side by side "shootout" between Art's VersaTune receiver and an HV-110 that was receiving the DARA ATV repeater on 428 MHz, 22 miles in distance from the Huber Heights Ohio DARA clubhouse. There is no doubt that in the congested RF environment of the Hamvention location at the fairgrounds, there were far less "freeze frames" caused by interfering signals encroaching within the receivers' passband on Art's VersaTune receiver. I know for certain that I want to be first-in-line once these receivers become available as they will also have far more features than the HiDes receivers.
- We were unable to run a QAM demo due to the extremely limited separation of the QAM signal at the booth from the incoming DARA ATV repeater signal. The cavity we were using did not provide the isolation we needed to pull it off this year. I have an interdigital filter that might be a better choice and will likely revisit this demo for next year.
- KD6W's ATV Forum presentation was outstanding! it can be viewed on Youtube: https://www.youtube.com/watch?v=4pyNZPshXZ0 Note that this link is a seven hour Youtube recording of all of the "forum #4 activities", and you can find Joel's presentation at the 1 hour 14 minute point of this posted video. Enjoy!
- The ATV Dinner was a resounding success! We hosted a total of 20 ATVers from around the country and three items were given away: A Jim Andrews 70 cm preamplifier donated by Mel Whitten K0PFX. Included in the giveaway was an AHD camera, along with a Sony desktop HDMI PTZ camera. Three lucky attendees left the dinner armed with new ATV gear!
- The primary demo ran for the entire event was in the form of a crossband link on 23 cm that provided a live video feed of activities around the ATV booth. The live link was transmitted to the Huber Heights clubhouse and re-transmitted through the DARA ATV repeater back to the Hamvention site. The "latency" that occurred typically may be considered a little annoying, but for this demo, a number of young folks had fun waving at themselves, to experience the delayed video wave back at them three seconds later!
- We also streamed the majority of Hamvention on Zoom. This is something we had done last year and it appeared to be worthwhile as a number of Zoom check-ins occurred throughout the three-day event.
- Of additional interest is that some of the in-band interference to our ATV link was emanating from a number of sources. With 35,000 attendees and no local Hamvention band plan, such issues are bound to arrive. The 70 cm bandwidth resembles a hodgepodge of signals that simply has to be tolerated. We did some DFing to determine what some of the signals were. One signal was a 2 MHz-wide DVB-T signal that had popped up on Friday for a few hours, and appeared to be coming from a source within the RV parking area. On Saturday, the signal had disappeared. Another signal appeared on Saturday that was

emanating from a nearby booth as a narrowband data signal, but that signal did not seem to be creating any destructive interference to the receiver at the booth that was receiving the incoming DVB-T signal from the DARA repeater.

- Next Year: We are already making plans to change up the appearance of the ATV booth as it will be a great opportunity to help out ATN. This is a work in progress as there are only 353 days left to prepare for Hamvention 2026!



…AH2AR Dave Pelaez

EXCELLENT 70 CM ATV BAND CONDITIONS ON 1 JUNE 2025

Sun 6/1/2025 9:11 AM

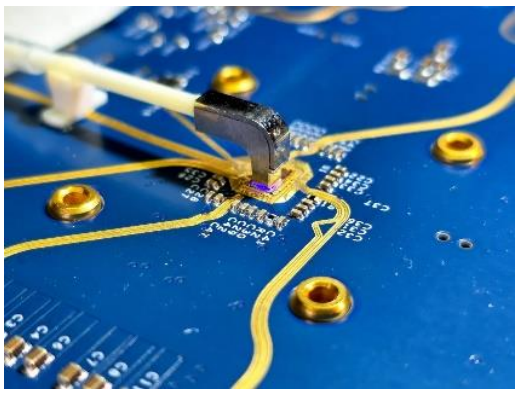
The MidWest ATV DX group experienced an excellent 70 cm band opening on 1 June that coincided with the severe G4 geomagnetic storm that was occurring. I went ahead and took a couple of snapshots of W8URI's received point-to-point video to mark the occasion. He is located in Mt Gilead Ohio, at a distance of ninety miles from my location in Vandalia, Ohio.

…David Pelaez AH2AR

TINY LEDS POWER FUTURE AI INTECONNECTS

Read in IEEE Spectrum: https://apple.news/A-pVO4FZiSxKB6PG7hTZSbQ
Shared from Apple News

*Here's an article about LED's that is not exactly Ham ATV material but interesting and educational none-the-less. We're exposed to these tiny amazing devices on a daily basis so it's good to be exposed to some of the inner workings of them. I suspect you know them only for their light emission capability but, there's more to the big picture. See some of the **AI** (Artificial Intelligence) applications below. WA8RMC.*



Tiny LEDs May Power Future AI Inteconnects. MicroLED-based inteconnects could fuel energy-efficient AI data centers. TSMC Bets on Unorthodox Optical Tech MicroLED-based interconnects could fuel energy-efficient AI data centers.

Artificial intelligence data centers photonics microleds tsmc. In the race to an all-optical AI data center, a major player has now placed a bet on a different horse. Semiconductor manufacturing giant Taiwan Semiconductor Manufacturing Company (TSMC) announced that it will work with Sunnyvale startup Avicena to produce microLED-based interconnects. The technology is a pragmatic twist on replacing electrical connections with optical ones to meet the high needs of communication among an increasing number of GPUs in a low-cost, energy-efficient way.

Thanks to the computational demands of large language models and their cousins, AI clusters are facing unprecedented requirements regarding amounts of data, bandwidth, latency, and speed. Sooner or later, the copper wires that connect processors and memory within a single AI data center rack will have to be replaced with optics. “There’s a huge push to get optical connections as close to the board as possible,” says Lucas Tsai, a vice president at TSMC.

Avicena offers a unique approach, using hundreds of blue microLEDs connected through imaging-type fibers to move data. The company’s modular LightBundle platform avoids problems with lasers and their associated complexity that threaten the reliability, cost, and power consumption of other optical chiplets. Tsai says, “it’s very unorthodox.” But it is ideal for these short-distance applications, and that’s precisely what makes it interesting.

Laser-free

Optical connections today carry vast amounts of data tens to hundreds of meters across data centers at very high data rates. Traditionally, a pluggable module connects the optical fiber to the rack, where it converts between electrical and optical signals. Companies are making strides toward getting rid of these energy-inefficient pluggable transceivers using co-packaged optics (CPO), which instead perform electrical-optical transformations adjacent to the silicon chip itself. Commercial versions exist for the network switch, and prototypes are making strides toward the GPU. The most prominent optical chiplet designs encode electronic bits onto multiple wavelengths of light using lasers and modulators.

However, the main challenge for laser-based optical interconnects is the laser itself. The laser and fiber attachments have caused the biggest problems in terms of reliability, manufacturing, and cost. Moreover, a single optical fiber that hosts dozens of GPU-to-switch links in the form of multiple wavelengths suffers from computational overhead: It’s far simpler to pipe each data lane down a separate physical channel than to electronically parse one big channel later on.

That’s where Avicena comes in. Instead of sending a multi-wavelength laser down an optical fiber and then parsing it into individual channels, the LightBundle interconnect links hundreds of blue microLEDs to a photodetector array via multicore imaging fibers—one for each 10 gigabits per second data lane. The transmitter acts like a miniature display screen and the detector like a camera. “We’re doing optical interconnects without the complexity of lasers,” says Avicena CEO Bardia Pezeshki.

A simple optical link with just 300 pixels at 10 Gb/s per lane can extend over a 10-meter distance, carrying a net total of 3 terabits per second. Since displays and cameras can scale to millions of pixels, the technology can scale to much higher data rates at much lower energy and much higher density than copper wiring.

Mature industry

One major advantage touted by Avicena is that their technology harnesses LEDs, cameras, and displays: all mature industries. “We can scale our approach to the volumes and costs required much more rapidly than if we were developing new building blocks,” says Pezeshki. Even though silicon photonics has a 30-year head start on optical interconnects, they have to develop new components like ring resonators and comb lasers. “It takes a lot of time for these things to mature,” he says. In contrast, the LightBundle interconnects design requires only minor modifications to existing camera and display technologies.

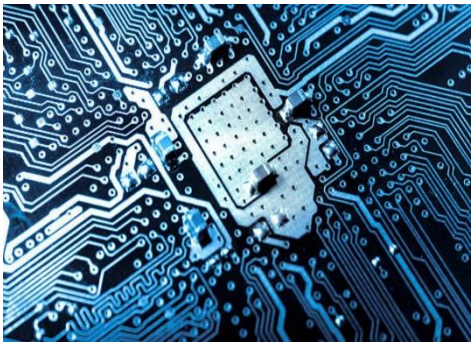
That’s one main reason that TSMC signed up to produce the photodetector arrays for Avicena’s optical chiplets. “LEDs is a mature industry already; there are a lot of consumer products,” Tsai says. LEDs are, of course, lower power than lasers—but for, say, 10-m distances within and across a rack, that’s enough. “There’s a potential that it will be a lot cheaper, and by nature you have a lot of redundancy,” says Tsai.

Avicena’s results are already “blowing away” what silicon photonics can do, according to Pezeshki. The LightBundle prototype has already demonstrated sub-picojoule-per-bit energy use for the whole link, where other optical approaches “are struggling to show” 5 pJ/bit energy consumption.

Pezeshki acknowledges that Avicena has a ways to go to build and scale the product. But “the combination of showing great results together with using mature building blocks is winning over converts,” he says.

NEW SILICON-FREE TRANSISTORS

Tiny device, massive leap: Japanese scientists make new silicon-free transistors. Researchers deposited gallium-doped indium oxide one atomic layer at a time to build tiny transistors with increased electron mobility.



Stock image of a computer circuit board with transistors.
Researchers at the Institute of Industrial Science (IIS) at the University of Tokyo in Japan have built tiny transistors that do not use silicon. Instead, the team doped gallium into indium oxide and then crystallized it to make a material that supports the movement of electrons.
Transistors are everywhere. From the smartphone to smart homes, cars to airplanes, transistors are an integral part of modern-day electronics. Made out of silicon, transistors have helped hasten the development of newer technologies but are also now lagging behind.

Computers that once filled the room now fit in the palm of the hand, thanks to silicon-based transistors. However, as we seek to minimize the size of electronics further, we have started to see the limitations of silicon as well. Squeezing out more from silicon-based transistors in smaller configurations is getting harder by the day, and this is where researchers are looking for new alternatives.

While seeking transistors that can be further miniaturized, the researchers at IIS were also looking for ways to improve upon the transistor design further. The gate of the transistor decides whether it remains on or off. The researchers wanted to design a gate which surrounds the channel, where the current flows. “By wrapping the gate entirely around the channel, we can enhance efficiency and scalability compared with traditional gates,” explained Anlan Chen, researcher at IIS, who was involved with the work. By dumping silicon in their design, the researchers also dumped its limitations. But indium oxide had to be improved in certain aspects to make it work with electricity more favorably. So, the research team set up to dope it with gallium.

Silicon-based transistors have hit a wall when it comes to shrinking their size. Alternates are the need of the hour. How was the transistor made? Indium oxide is known to carry oxygen-vacancy defects, which lead to defects in the device and reduce its stability. The doping with gallium addresses these oxygen vacancies and can improve the transistors’ reliability. However, this needs to be carefully done. The team used atomic-layer deposition to coat the channel region with a thin film of gallium-doped indium oxide (InGaOx), one layer at a time. Once the deposition was complete, the film was heated to form a crystalline structure that supports electron mobility.

The research team successfully developed a metal oxide-based field-effect transistor (MOSFET) with a gate-all-around design. “Our gate-all-around MOSFET, containing a gallium-doped indium oxide layer, achieves high mobility of 44.5 cm2/Vs,” added Chen in the press release. “Crucially, the device demonstrates promising reliability by operating stably under applied stress for nearly three hours.”

The researchers also reported that their MOSFET outperformed other devices that have previously been developed. It paves the way for the development of reliable, high-density electronic components. These are likely to have applications in futuristic areas such as artificial intelligence or processing big data. By further shrinking the size of transistors, the researchers also showed that next-gen technology will likely be accompanied with a further shrinking in size of devices. More importantly, it also showcased that research into material design could yield solutions that look beyond silicon for future applications.
Now you know “the rest of the story”! There may be a comprehention test later in this Newsletter.
…WA8RMC

CINEMATIC MOVES TO LOCAL TV NEWS

The following article is mainly focused on commercial robotic broadcast TV camera use today. Although I suspect no one in the ATV community has anything like this in their hamshack, it's great to dream about it now and perhaps eventually employ something similar in their system. Even if you never intend to do something like this, it's still good to see what is actually in use in the present broadcast industry and "dream on". After all, AI is alive and well creating applications to enhance the viewer experience and reduce the manual labor part of it. So, this is a stretch for ham applications, but it is good information material for discussion.
WA8RMC

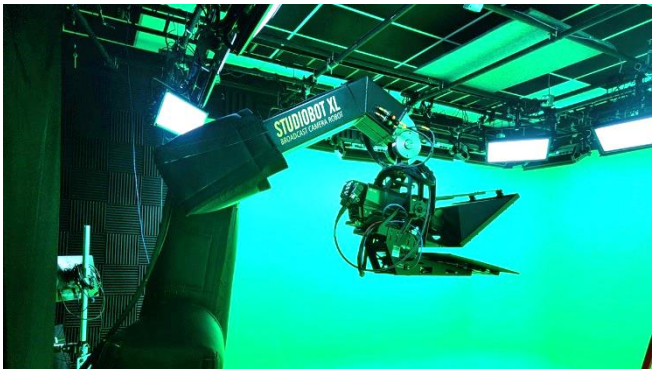
From TV Tech magazine July 9, 2025. For complete article see TV Tech 511 - July 2025 by publications
Leveraging the latest robotics technology newscasts can move cameras smoothly around anchors, reporters and AR graphics to engage viewers on an entirely new level.
When you purchase through links on our site, we may earn an affiliate commission. Here's how it works.

(Image credit: MRMC Broadcast)
Camera robotics and local newscasts go hand in hand. For years, stations have added robotic pedestals operating under automation control to improve workflows, save on expenses and ensure consistency.
But there's much more to robotics and newscasts—especially if the goal is to add striking cinematic camera moves with the range and fluidity of camera motion associated with Steadicam rigs without incurring the initial cost of equipment and recurring expense of an operator.
For those types of moves, a robotic arm mounted to a robotic pedestal or track system can unlock the true potential of camera movement by enabling cinematic camera motion.

You may like

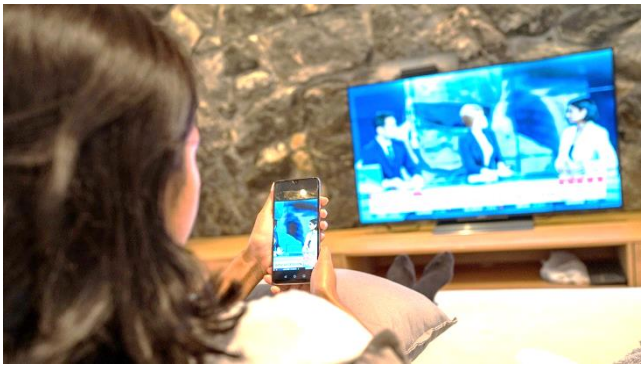
- Sponsored: Robotic Deployments Are Transforming Local News
- Sponsored: How Cinematic Camera Moves Can Solve the Problems With Local TV News
- Sponsored: How Robotic Cameras are Transforming the Modern Newsroom

Leveraging the latest robotics technology, such as the MRMC StudioBot multi-axis robotic arm, newscasts can move cameras smoothly behind and around anchors, reporters and AR graphics to engage viewers on an entirely new level.



Similarities and Differences
The technology that creates cinematic camera movement shares many characteristics with the robotic pedestals in use at many local stations. For instance, both ensure camera movements are precise and repeatable. Both also move cameras without a heavy reliance on skilled workers and the physical stamina of operators. Both can even support a full-sized studio teleprompter.
Like the robotics used today at stations, a robotic arm or robotic arm-pedestal combination is cost-effective over time, streamlining labor and operator costs, and when it

comes to MRMC's StudioBot, the robotic arm can be integrated into a Media Object Server (MOS)-based news automation rundown.



There is one critically important difference that distinguishes a robotic arm or robotic arm-pedestal combination from traditional robotic studio camera setups: specifically, unmatched creativity.
When combined with virtual sets and augmented reality (AR) graphics, the freedom of movement MRMC's robotics offers and their seamless integration into this virtual world create opportunities to engage viewers more deeply in stories and experience news in a way that holds their attention.

A track-mounted robotic arm or one mounted to a robotic pedestal can follow an anchor or reporter walking around a news set. They can shoot behind reporters and anchors as well as move smoothly around AR graphics to reveal critical details viewers need to understand certain types of stories. While sets may change, the range of motion and repeatability of shots allow newscasts to maintain a consistent look. Operators benefit as well because they will remain familiar with the types of shots and workflow required.

The How-To
Creating this type of cinematic camera movement on a news set requires the right combination of hardware and software. From a hardware perspective, stations will need one or more multi-axis robotic arms. They can be mounted to the floor, the ceiling or a track system. The MRMC StudioBot can also be mounted on a robotically controlled pedestal, offering maximum creative and placement freedom.
Software essential to creating cinematic camera moves in the confines of a TV studio includes AI-powered talent tracking, collision-avoidance LiDAR scanning and MOS-compliant production automation software. If multiple systems are needed, software to control multiple cameras and multiple robotic systems will also be necessary.
Understanding a bit of the back story of MRMC, or Mark Roberts Motion Control, makes it clear why the company can help broadcasters make striking cinematic camera moves part of their newscasts.
MRMC was founded in 1966 when its sole focus was building rostrum animation camera stands, which led to developing motion control camera tech for the film industry. The effort included the development of motion control camera tracking software and camera rigs as well as push motion control rigs. Since then, studios and producers have relied on MRMC solutions to make thousands of movies, episodic television shows and commercials.

For its efforts, MRMC has received multiple awards, including an Academy Award for Technical Engineering as well as the Queen's and King's Award for Enterprise: International Trade. The company's technology has even made it to outer space, assisting SpaceX and Boeing with automated docking with the International Space Station.
In 2017, Nikon acquired MRMC and since then has supported the company in its mission to bring motion expertise to television broadcasters and producers. Major broadcasters now use MRMC robotic camera systems for introducing and connecting sequences between live news segments, remote VR-based productions for major sporting events and adding camera control and cinematic motion to broadcasts from small studio spaces.

MRMC Systems for Local TV
To make it possible for local stations to add cinematic camera moves in their news studios, MRMC has developed a range of technology solutions, including:

- StudioBot XL—a 9-axis robotic arm with a 5'8" reach that can support 44 pounds, including a camera, lens and teleprompter. Quick and easy deployment; enables integration into AR and VR setups.
- StudioBot LT—a 6-axis robotic arm with a 4'2" reach that can support 22 pounds. Its compact design offers exceptional flexibility, enhancing production quality in the most confined spaces.

- Prompter support, including a PTZ prompter.
- Robokam control/automation software—MOS-compliant software that enables news producers to trigger cinematic camera moves from newscast rundowns, create dynamic motion paths and control multiple robotic camera systems.
- Track Robotic Head (TRH), a lift column that runs on rails and can also carry a teleprompter.
- Rail Lift Systems (RLS), a cost-effective solution that combines lightweight lift with horizontal rails, creating jib-like motion from the floor, wall or ceiling. Perfect for adding motion to PTZ cameras.
- Polymotion Chat—AI-driven, automatic talent tracking software leveraging a computer vision engine that detects limbs and builds stick models to track subjects more reliably than face-tracking solutions. Supports multi-camera production and allows for people to be occluded by walking in front of one another.

For stations that have previously invested in robotic camera solutions and pedestals, MRMC enables stations to integrate its robotic camera arms into existing studio workflows, while offering a full range additional solutions to support PTZ, studio and cinecameras, creating a pathway to cinematic camera moves while enabling stations to fully amortize their current systems.

Affordability

Local stations have a long history of adopting technologies—some quite expensive, like news choppers—to stay one step ahead of the competition, build bigger audiences and ultimately earn higher ad revenues. When considered in the context of vital news tech investments over the years like ENG and SNG vehicles, helicopters and production control room equipment, the technology required to add striking cinematic camera moves to local news is affordable.

Not only will this technology pay for itself over a three- to five-year period, but it also offers local stations a way to compete more effectively with cross-town TV rivals and the digital platforms Americans increasingly cite as their go-to sources for news.

Adding MRMC robotic solutions to newscasts isn't an all-or-nothing proposition. Stations can augment their existing robotic pedestals by separately adding a ceiling track-mounted MRMC StudioBot, for example, to introduce cinematic camera movement while continuing to derive the full value of their investment in existing robotics and replacing those less-capable systems when that technology approaches its end of life.

Given the highly competitive nature of local TV and the never-ending mission of building audience, stations would do well to evaluate the expense of the tech needed to create cinematic robotic camera moves not simply on the basis of its price tag, but also on the cost of doing nothing and missing out on all of the advantages these systems bring to local news.

70 CM HAM RADIO USERS CLASH WITH STARLINK RIVAL

Watch out for this one, guys! The intent is for non-USA operation but you know how it goes when they get a foot in the door. They are asking for "worldwide operation" but say the intent is "only for ***non-USA use"****. It doesn't look good any way you slice it! It may turn out to be detrimental to our current 70 cm use We'll see! WA8RMC*

From Apple News. Read details in PC Magazine:
https://apple.news/ATGvnMN1uQYyowxZ3FlnDXA
By Michael Kan Senior reporter. July 18, 2025. I've been working as a journalist for over 15 years. I got my start as a schools and cities reporter in Kansas City and joined PCMag in 2017.

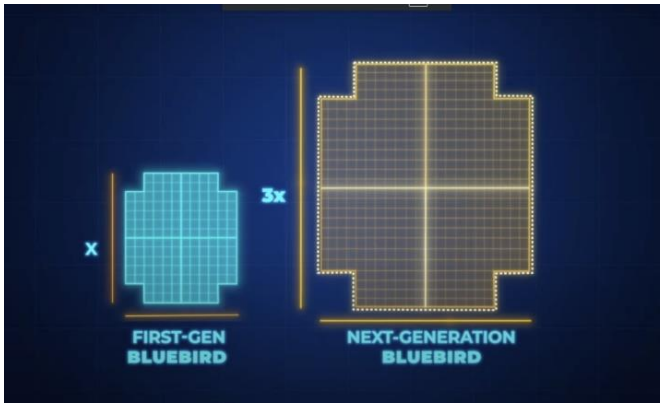
Ham Radio Users Clash with Starlink Rival AST SpaceMobile Over Spectrum Use. AST wants to use the 430 to 440 MHz band for a satellite-to-phone service. Ham radio enthusiasts say the company's plan is vague and could interfere with their slim slice of spectrum.

AST SpaceMobile and its giant satellites are facing opposition from a surprising group: Amateur "ham" radio operators. The community is protesting AST SpaceMobile's request to use the 430 to 440 MHz band, which includes spectrum already allocated for ham radio operations, including emergency communications.

An amateur radio operator in Germany named Mario Lorenz is asking the US Federal Communication Commission to deny AST's proposal to use the spectrum outside the US. (Why is the FCC ruling on non-USA business?) AST seeks worldwide access to a significant portion of this spectrum in a way which would almost guarantee significant international harmful interference," Lorenz says.

Texas-based AST wants to use the spectrum outside the US to track and control its proposed fleet of 248 satellites, which promise to deliver internet connectivity to everyday smartphones in cellular dead zones. However, Lorenz claims AST's application is "vague" and lacks details about how it'll harness the spectrum and avoid interference with ham radio operators.

Thus, in a worst-case scenario, the proposal is an "unprecedented grab of spectrum, and in violation of applicable Radio Regulations," Lorenz told the FCC. "Unlike Amateur Radio stations in the US, who have a much larger 70 cm allocation (420 MHz to 450 MHz) and other bands (220 MHz) not available to Amateur Radio stations in Region 1 (Europe), amateur radio activity is much more concentrated," he added. "The 70 cm band is heavily used. It is one of the few bands available to Novice class operators in Germany."



Since then, other ham radio users have been rallying the community and sending complaints to the FCC, warning about the risk of interference. "Amateur radio has a proven track record of saving lives in wildfires, hurricanes, earthquakes, and other disasters," said another

user. "It is widely used for public-service events, community coordination, search-and-rescue, and auxiliary communications for local agencies when all else fails."

The complaints arrive as the FCC has kicked off a process to review and possibly greenlight AST's proposal to power a commercial satellite-to-phone service through the company's emerging satellite constellation. AST currently has five BlueBird satellites in orbit, but plans to launch dozens of larger second-generation satellites in the coming months and years to compete with SpaceX's cellular Starlink service.

AST didn't immediately respond to a request for comment. But the turf battle highlights how next-generation satellite constellations can rankle existing services by harnessing radio spectrum already in use. SpaceX, for example, has been waging a regulatory battle to use the radio spectrum that Globalstar and EchoStar currently rely on in an effort to bolster the cellular Starlink service for T-Mobile.

AST's application to the FCC shows it plans on using different radio frequencies to track and control the satellites in the US. The company also notes the FCC cleared it to use the 430 to 440 MHz radio bands for its first five BlueBird satellites.

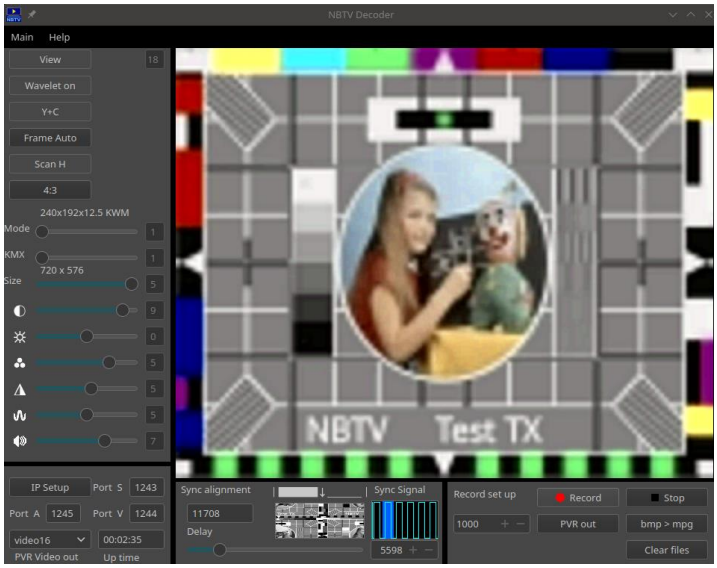
Domestic and International Capabilities		
Frequencies	**Use**	**Direction**
37.5-42.0 GHz	Gateway/Feeder Links, Routine TT&C	space-to-Earth
47.2-50.2 GHz	Gateway/Feeder Links, Routine TT&C	Earth-to-space
50.4-51.4 GHz	Gateway/Feeder Links, Routine TT&C	Earth-to-space
Additional Non-U.S. Capabilities[29]		
Frequencies	**Use**	**Direction**
400-410 MHz	*Non-U.S.* Off-Nominal TT&C and Orbit-Raising Maneuvers	space-to-Earth and Earth-to-space
430-440 MHz	*Non-U.S.* Emergency TT&C Communications	space-to-Earth and Earth-to-space
45.5-47.0 GHz	*Non-U.S.* Gateway/Feeder Links	Earth-to-space
2025-2110 MHz	*Non-U.S.* Off-Nominal TT&C and Orbit-Raising Maneuvers	Earth-to-space
2200-2290 MHz	*Non-U.S.* Off-Nominal TT&C and Orbit-Raising Maneuvers	space-to-Earth

Table 1 – Gateway/Feeder Link and TT&C Frequencies

But in his letter to the FCC, Lorenz argued: "With a planned total of 248 satellites in orbit, almost certainly there would always be one or more satellites in view, causing significantly more interference potential.

"At the very least, the FCC should require from AST a clear showing and commitment to protect the Amateur Radio and Amateur Radio Satellite services," he added.

NEW NARROW BAND ATV TRANSMISSION SYSTEM

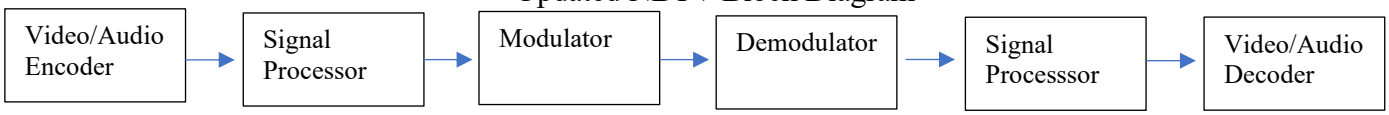


Narrow band Television (NBTV) is a way to send vision and sound information within a limited bandwidth, such as the available space on HF. This hybrid transmission mode uses analog alongside digital compression to provide images well into the noise without the need for error correction. This is done with Quadrature Amplitude Modulation (QAM) at 2 power of 16 constellations, or 2 bytes/symbol, maximizing amount of information sent.
To send Television pictures via Sky-wave propagation it is important display image no matter how bad the received signal gets, as there will be amplitude and phase affects that will happen, sending a signal through the Ionosphere. With the levels of compression that are now possible, the HF spectrum from 10 to 30 MHz could be used for television broadcast services. The only Amateur radio band that falls within this space, would be the 10 meters, from 29 to 29.5 MHz where a new ATV/DATV mode could go.

This television format has four modes which are: M1 240 x 192 x 12.5, M2 120 x 96 x 12.5 high, M3 120 x 96 x 12.5 low and M4 120 x 96 x 8.33 (DX mode with higher level of noise rejection). The video data frame is made up of six parts chrominance, luminance A & B, wavelet and motion or movement. The audio data has two parts made up of sum of left plus right and the difference of the left and right, where the difference is compressed at a height ratio to sum signal. The video frame has one port with User Datagram Protocol (UDP) and audio is another port used. With sync having its own UDP port as well, providing three data frames for the Software defined Radio (SDR) stage to process.

I have done this in three parts, one using a Graphical User Interface (GUI), for the video/audio/sync encoder and decoder. Part two uses GNU Radio SDR, for the signal processor, modulator and demodulator sections. Where part three is hardware interface made up of a HackRF, filters and 1KW HF to 6M band linear power amplifier.

Updated NBTV Block Diagram



Here is the block diagram of current design, where the GUI connects through to GNU Radio via UDP, after which SDR has all required building blocks make up the modulator and demodulator sections. The signal processor converts the incoming compressed video/audio/sync data into a form to maximize the information within a limited bandwidth and to provide added performance with encoded noise reduction.

With the modulation is very important to provide a high level of rejection to noise, interference and to stand up to the effects of Sky-wave propagation. Therefore, there is two modulated systems used one is Orthogonal Frequency-Division Multiplexing (OFDM), and the other is Code Division Multiple Access (CDMA). In the case of OFDM there 192 QAM carriers that fit into 96 kHz of bandwidth, the CDMA is made up of blocks using 24 Pseudo-random Noise (PN) codes, making up eight blocks across this bandwidth.

For this all to sync up, two sine waves are sent (125 & 100 Hz) multiplex within an QAM signals space out between the data carriers. The way the sync encoding works by taking the difference of two sine waves to create the reference sine wave, which uses hysteresis to set the trigger point and help eliminate noise. By taking this approach, I can also use these two sine waves as a phase and amplitude reference to set the Automatic Gain Control (AGC) and the

Automatic Phase Control (APC). Now by having a sync signal available, it can also be used for CDMA in finding the start point of the PN codes, to rebuild the QAM carriers.

To date the OFDM system is working well, but the CDMA I am still having a few issues to work through, so far, the performance is very good with the amount of compression use. Now with the sync being sent, this new television mode works more like PAL/NTSC where picture sync is automatically done without the need for the user setting the start point. The down side is high speed computer is required no older than five years, you will also need to build your own hardware interface for transmitter and receiver.

Last weekend, I made good progress on getting sync encoded into the NBTV signal. It is still not 100% as there are issues in the recovery of the information, but it is ongoing work. To fit the sync into the modulated bandwidth, I needed to increase the level of audio compression in the encoder by limiting the amount of R-L signal. With this extra level of processing, I added in more SDR blocks to get all to work well, but the good thing is that it is hard to notice the higher level of compression. The way the sync encoding works is by taking the difference of two sine waves to create the reference sine wave, which uses hysteresis to set the trigger point and help eliminate noise. By taking this approach, I can also use these two sine waves as a phase and amplitude reference to set the Automatic Gain Control (AGC) and the Automatic Phase Control (APC).

Now, by having a sync signal available, it can also be used for CDMA in finding the start point of the PN codes, which was an issue up to now. I have also added a signal processing block to the GNU Radio modulator and demodulator to do extra Video, Audio and sync processing; therefore, the new updated encoder/decoder GUI will soon be available, which I will place up on GitHub at a later date. In the files I have sent, there is a picture of the new form layout of the decoder; both the encoder and decoder use three UDP ports to communicate with GNU Radio. One is to send the compressed video, audio and the dual wave tables for the sync, as this is required to provide an independent path for the sync timing. A good part of this signal processing is done within SDR blocks within GNU Radio. The other diagram shows the new signal processing blocks used for improved performance, as it has become part of the GNU Radio side. This project has come a long way since I started the beginning of 2022, opening up HF for ATV/DATV Dxing.
…Grant VE3XTV

Mike responds with the following comments,
Grant, I am afraid your average DXCC enthusiast has little to no interest in the technical side of the hobby so not surprising the major manufacturers don't cater for that. There are manufacturers that do, but even they are mostly focused on improving century old communications tech, SSB/CW rather than moving forwards. The likes of Apache labs and their ANAN-G2 might be better in this respect, it is basically a Raspberry PI interfaced to an FPGA and HF/6m TX/RX front end, but their advertising doesn't even think to mention it. Also, they are extremely expensive. Similarly, FlexRadio, though they have a "Waveform API" which might be usable with Gnuradio etc. but needs an agreement, it all seems very proprietary.

Fortunately there is a solution, which is to use a low power SDR and build the RF front end for it like you have done. If starting from scratch, would not advise a HackRF, it is only 8 bits, not duplex, not very clean. They are very cheap though, under $100. I found this cross reference https://wiki.gnuradio.org/index.php/Hardware but the majority do not cover HF. You could always use on of the many AD9363 based SDRs with a transverter, that's what we did for the trans-Atlantic 10m DATV tests a few years back. As HF can be covered with just DAC/ADC something like the redptaya might be a good option. Maybe also the RadioBerry, it seems to have sufficient bandwidth. HF is essentially baseband.

I have a LimeSDR (the big one, not the mini) and a LimeRFE, so I can test these things at up to a few watts.

Mike, yes, you are right the "HackRF, it is only 8 bits, not duplex, not very clean" that is why I need to use a 29 MHz band pass filter after the HackRF and before the RF amplifier. I was thinking that it would be an easier way to get on the air, if I could get a HF transceiver with a USB connection and a in build SDR. But that is not going to happen, so I am now getting in parts in to build my RF amplifier, such as these:

https://www.ebay.com/itm/334454204211
https://www.minicircuits.com/WebStore/dashboard.html?model=SBP-29%2B

One is a 20W high gain input stage and the other is the SBP-29+, 29 MHz filter, I am also planning on getting another SDR unit to experiment with, but I will need to do the HF frequency range, maybe the LimeSDR.

Because of all this, I expect only a few ATVers would be interested in making NBTV contacts on HF as you will need to build you own hardware to use with GNU radio and a SDR unit, to get on the air.
…VE3XTV

VERSATUNE PROGRESS

As many of you know, we are working on the design of a completely self-contained DVB-T / DVB-S receiver for DATV use. We **ARE** making progress with some software "tricks" and compromises to be able to get to where we are now. We now have the DVB-S / DVB-T and back mode switching issue solved and a new prototype PCB is ordered.

OPERATIONAL DESCRIPTION:
This receiver is designed primarily for digital Amateur Television reception operation as a stand-alone scanning receiver / DATV repeater controller. It can be used as a simple self-contained receiver for individual use or as the receive portion of an Amateur Television repeater. It can be programmed to scan up to 7 separate stored frequency selections from up to 5 selected RF sources.

It will receive DVB-S/S2/S2X (250-2150 MHz) and DVB-T/T2 (52-900 MHz) digital television signals from one onboard tuner with 2 separate RF input connections. (An expanded frequency range will be available as soon as the tuner module manufacturer sends me a new tuner chip for it). It will also have PCB pads for the addition of one available optional tuner. The received signal is processed to output composite or HDMI video / audio output signals. When an active signal is not received, it can output up to 7 separate sequential "slide show" identification screens from jpeg, mov or internet sources using internal stored registers or selected Ethernet internet or USB sources.

Setup is accessed using a Windows PC computer interface or Smartphone menu and transferred to the receiver via Bluetooth, WiFi or Ethernet data ports in real time. Ethernet access allows internet parameter selection from a remote repeater installation. All setup parameters are stored and transferred in real time to the VersaTune receiver when the setup screen is exited. VersaTune will use this for all operational parameters.

…WA8RMC

USA ATV REPEATER DIRECTORY July 2025

NOTES:

1. All repeaters are NTSC, VUSB-TV, 6 MHz channel, unless otherwise noted. Some repeaters use non-standard lower sideband inputs VLSB to reduce interference with FM repeaters in upper portion of band. The frequency listed is the video carrier frequency.
2. Digital TV lists center frequency. 6 MHz channel, unless otherwise noted.
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(s)	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 2441.5	VUSB FM DVB-T FM	wb9kmo@gmail.com kwjacob@icsaero.com
Mesa	W7ATN	421.25 1289.25	 434.0 434 / 2 2441.5	VUSB VUSB FM DVB-T FM	wb9kmo@gmail.com kwjacob@icsaero.com
Tucson, Mt. Lemmon	W7ATN	1277.25	 434.0 434 / 2 2441.5	FM VUSB DVB-T FM	wb9kmo@gmail.com kwjacob@icsaero.com
CALIFORNIA					W6ATN rptrs linked to AZ & NV
Orange Santiago Peak	W6ATN	 1253.25 5910	434.0 434 / 2 2441.5	VUSB FM DVB-T FM	www.atn-tv.org wa6svt@gmail.com
Los Angeles, central Mt. Wilson	W6ATN	1265.25	 434.0 434 / 2 2441.5	FM VUSB DVB-T FM	www.atn-tv.org wa6svt@gmail.com
Los Angeles, north Oat Mtn.	W6ATN	919.25 3380	 434.0 434 / 2 2441.5	VUSB DVB-T FM FM	www.atn-tv.org wa6svt@gmail.com
Jobs Peak	W6ATN	 1253.25	434.0 434 / 2 2441.5	VUSB FM DVB-T FM	www.atn-tv.org wa6svt@gmail.com
San Bernardino Snow Peak	W6ATN	1242 / 4	 434.0 434 / 2 2441.5	DVB-T VUSB DVB-T FM	www.atn-tv.org wa6svt@gmail.com
Santa Barbara	WB9KMO	1289.25	434.0 434 / 2 2441.5	VUSB, DVB-T FM	www.atn-tv.org wb9kmo@gmail.com linked with W6ATN
San Diego	KD6ILO	423 1243 1268	441 1286 5885	DVB-T DVB-T DVB-S FM	kd6ilo@yahoo.com also AREDN mesh
San Jose	W6SVA	427.25	 910 1255	VUSB FM FM	www.k6ben.com :w2nyc@pacbell.net
Clayton	W6CX	1244.5	1292.5 1273 915	DVB-S, FM	www.mdarc.org info@mdarc.org
Palomar	W6NWG	 1241.25	915	FM VUSB	w6nwg@palomararc.org mountain.michelle@gmail.com
COLORADO					
Boulder	W0BTV	423 / 6 421.25 5905	1243 / 6 441 / 6 439.25	DVB-T, DVB-T VUSB VUSB FM	www.kh6htv.com kh6htv@arrl.net
Pueblo	W0PHC	423 / 6t	441 / 6	DVB-T	billn@billnicoll.com www.puebloradio.org
DELAWARE					
Wilmigton	KC3AM	423 / 6	 439.25	DVB-T VLSB	KC3AM@verizon.net

Location	Call Sign	Output	Input	Mode	Web Site & Contact info
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 426.25		FM VUSB	ka7anm@yahoo.com
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	421.25 423.0 /2	439.25 1280	VUSB FM DVB-T	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 434		FM VUSB	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	VLSB	KC8LMI@hotmail.com
Grand Rapids	K8DMR	421.25	439.25	VUSB	ron_fredricks@att.net
Flushing	KC8KCG	1253.25	439.25	VLSB	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	440 / 4	DVB-T	k0pfx@arrl.net
NEBRASKA					
Omaha	WB0CMC	421.25	434.0	VUSB	wb0cmc@cox.net
NEVADA					
Las Vegas	N7ZEV	1253.25 912	434.0 434.0 / 2 2441	VUSB FM DVB-T FM	frank.n7zev@gmail.com linked to W6ATN S. CA & AZ
NEW JERSEY					
Vernon	W2VER	5885	5665	FM	jaythienel@yahoo.com
OHIO					
Columbus	WR8ATV	423 / 2 427.25 1258 1268 2397 10350	439 / 2 439.25 1288 1288 10450	DVB-T VLSB AM DVB-S MESH FM	www.ATCO.tv gkenmorris@gmail.com art.towslee@gmail.com
Dayton	W8BI	421.25 428 / 2 1258	439.25 439 / 2 1280 1280	VUSB DVB-T FM DVB-S	www.w8bi.org dpel@aaahawk.com
Van Wert	W8FY	434.0	923.25	VUSB	ka8zge@w8fy.org
OREGON					
Portland	W7AMQ	1257 426.25		FM VUSB	belles73@comcast.net
Portland	WB2QHS	 426.0	910 fm	FM VUSB	emellnik@emavideo.com
PENNSYLVANIA					
Delaware County	KC3AM	421.25	439.25	VLSB	KC3AM@verizon.net
PUERTO RICO					
Aguas Buenas	KP4IA	426.25	439.25 1252	VUSB FM	kp4ia@yahoo.com
WASHINGTON					
Seattle	WW7ATS	1253.25	434.0	VUSB	https://www.qsl.net/ww7ats/ ww7ats@gmail.com qrz.com

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.

08/02/2025 - Columbus Hamfest
Location: Grove City, OH
Type: ARRL Hamfest
Sponsor: Aladdin Shrine Audio Unit
Website: http://columbushamfest.com

08/09/2025 - Cincinnati Hamfest℠
Location: Owensville, OH
Type: ARRL Hamfest
Sponsor: Milford Amateur Radio Club
Website: https://CincinnatiHamfest.org

08/16/2025 - Portsmouth Radio Club 2025 Hamfest
Location: New Boston, OH
Type: ARRL Hamfest
Sponsor: ARRL, Jett Fire Equipment, Shawnee Computer and More
Website: http://www.portsmouthradioclub.com

08/16/2026 - Warren Hamfest
Location: Cortland, OH
Type: ARRL Hamfest
Sponsor: Warren Amateur Radio Association
Website: http://w8vtd.com/hamfest

08/17/2025 - Warren Hamfest
Location: Cortland, OH
Type: ARRL Hamfest
Sponsor: Warren Amateur Radio Association
Website: http://w8vtd.com/hamfest

08/30/2025 - Athens Trunkfest
Location: Athens, OH
Type: ARRL Hamfest
Sponsor: Athens County Amateur Radio Association
Website: https://www.ac-ara.org

09/07/2025 - Findlay Hamfest
Location: Findlay, OH
Type: ARRL Hamfest
Sponsor: Findlay Radio Club
Website: http://w8ft.org

09/13/2025 - Swap Meet / Hamfest
Location: Toledo , OH
Type: ARRL Hamfest
Sponsor: Lucas County ARES
Website: http://WWW.LUCASARES.ORG

09/28/2025 - Cleveland Hamfest
Location: Berea, OH
Type: ARRL Hamfest
Sponsor: Hamfest Association of Cleveland
Website: https://www.hac.org

10/04/2025 - Northwest Ohio Amateur Radio Club (NWOARC) Hamfest
Location: Lima, OH
Type: ARRL Hamfest
Sponsor: Northwest Ohio Amateur Radio Club
Website: http://www.nwoarc.com

10/11/2025 - Williams County ARA Hamfest
Location: Montpelier, OH
Type: ARRL Hamfest
Sponsor: Williams County ARA

11/02/2025 - 2025 MARC Hamfest at MAPS
Location: N. Canton, OH
Type: ARRL Hamfest
Sponsor: Massillon ARC
Website: http://www.w8np.net

11/15/2025 - 11/16/2025
Fort Wayne Hamfest & Computer Expo
Location: Fort Wayne, IN
Type: ARRL Hamfest
Sponsor: Allen County Amateur Radio Technical Society
Website: https://www.fortwaynehamfest.com/

WEDNESDAY NITE ZOOM NET

Every Tuesday night @ 8:00 PM WA8RMC **used to** host an ATCO net for ATV topic discussion. However, in order to consolidate the two nets, ATCO on Tue. and the DARA on Wed. we'd like to have only one net on Wednesday, same time at 8 PM. We'll rotate the net control host duty so you won't be bored with just me. All are invited as we get check-ins from around USA & sometimes from international participants. Normally there's 12-20 check-ins.

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.

ATCO TREASURER REPORT - de N8NT

OPENING BALANCE (06/20.25) …….……..…….	$ 4984.48
Internet plugins (2024/2025)……...…..	$ (66.00)
Internet DNS/Email (2024/2025)…….,,,…......	$ (20.00)
Internet domain fee (2024/2025)..……	$ (49.99)
Internet domain fee (2025/2026)..……	$ (49.99)
Internet hosting fee (2024/2025)...…….	$ (46.46)
CLOSING BALANCE (07/23/25)……....	$ 4752.04

ATCO CLUB OFFICERS

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

Repeater trustees: Art Towslee WA8RMC
Ken Morris W8RUT

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. It is now a free publication so all people on my Email list are automatically either members or guests.

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.

Your support of ATCO is welcomed and encouraged.

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 average street level of 760 feet ASL (1390 feet above sea level)
TV Transmitters: 423.00 MHz DVB-T, 10W FEC=7/8, Guard=1/32, Const=QPSK, FFT=2K, BW=2 MHz, PMT=4095, PCR=256, Vid=256, Aud=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 SR=3.125MS, FEC=3/4, PMT=32, Video=162, Teletext=304, PCR=133, Audio=88, Service =5004)
Two video channels on this output: Channel 1 is fed from all receivers. Channel 2 is fed from 439.25 analog receiver.
2397 MHz Mesh Net transceiver 600 mw output (channel 1 minus 2). ID is WR8ATV-2
10.350 GHz: 1W continuous analog FM
Link transmitter: 446.350 MHz: 5W NBFM 5 kHz audio. This output used for control signals & to repeat 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.
423 MHz DVB-T, 1268 MHz DVB-S & 10.350 GHz FM - Continuous transmission of ATCO & WR8ATV with no input signal present.
Transmit antennas: 423.00 HHz - Single slot rib cage horizontally polarized 5 dBd gain "omni"
427.25 MHz - Dual slot horizontally polarized 7 dBd gain "omni" major lobe east/west, 5 dBd 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, Upper sideband. (Input here = output on all TV transmitters & also direct output 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, Vid=33, Aud=49 (In here=out on all Transmit.)
10.450 GHz - F5 video analog NTSC. (Input here = output on all TV transmitters)
Receive antennas: 147.480 MHz - Vert. polar. Diamond 6 dBd 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 analog) Functions:

00* then 1 for Ch. 1	Select 439.25 analog /4389 digital receiver (if video present on digital, it is selected. Otherwise,
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 analog /439 digital rec. scan enable (01* to enable & 01# to disable)
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

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