ATCO NEWSLETTER

VOLUME 24 NUMBER 1 **January 2007**

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

ATCO SPAM IN THE SPOTLIGHT

This time the “candid camera” zeroed in on Kevin Walsh, K8KHW. Kevin has multiplexed his activities between ATV and computers for some time but recently had the good fortune to put together an ATV setup so he could transmit too. His receive capabilities have been in place for a few years but now that the transmit part is operational, that usually generous smile on his face just got bigger, like he’s saying, “mission accomplished”.

Now, Kevin wants to “be like Mike” so he’s working on a new portable setup. He was finally able to find enough adapters to hook up his new Spam-Can-Tenna! Just need to work a few kinks out of the packaging. If it doesn’t work, he’ll qualify as a Ghost buster.

ACTIVITIES ... from my "workbench"

Well, it's that time again. Not a lot to report since I'm sure you don't want to hear about the "honey do" projects.

I only made one trip up to the repeater since last time. It's not really a good sign, I just haven't had the time or have been too lazy to take the time to work on it. I fixed the 2.4 ghz transmitter again. It was the same relay that I replaced last time that failed again. I wised up this time and replaced it with a much bigger relay with heavy duty contacts. I'm sure the Downeastmicrowave amp we're using wasn't meant for the duty cycle we are subjecting it to. I thought that it was designed correctly so I replaced it with the same type that failed the first time. I was wrong so we improved it this time. It's been in operation now for a couple months and seems to be fine. If it fails again it'll be a solid state replacement!

The same time I fixed the 2.4 ghz amp, I replaced the 427 power supply with a switching unit. This new supply is much more efficient and takes up less space in the rack. We needed that. That same supply also powers the 1250 mhz amp so I eliminated the 1250 power supply too. Wait, there's more! This new supply also has an extra 24v 20 amp output that is reserved for the commercial 427 mhz TV amp yet to be installed. I plan to work on that amp next so I can replace the existing Mirage amp now still in service. For what it's worth, the Mirage D1010 amp is ok for individual use but it makes a terrible amp for repeater service. It is noisy and has almost no RF shielding. Nuff said on that one..

The existing 427 amp is in need of a "tuneup" so I'll probably find time to fix that before total replacement time. I usually don't look at the 427 MHz output because the 1250 signal is so good so I didn't know it was "crappy" as someone put it, till I was informed at a recent Saturday breakfast discussion. Speak up guys.

The link components for the ATCO/DARA link are now resting on my basement floor waiting for the overlay ID board completion. Between Charles', WB8LGA, software effort and my hardware efforts, I think it's ready for field tests again. I plan to deliver the entire package to Jessie, KB8OFF and Dick, W8RVH, for their shakedown soon.

Reminder: This is the first issue sent out as Email only. If your Email address changes, be sure to notify me so I can update the list. Presently, those members without Email addresses will continue to receive the printed edition. If you have an Email address and you are receiving a printed issue, please send me your Email address so I can minimize the postage burden. We are trying to trim costs so this is one way we can do it and still keep our ATCO sponsored Pizza parties. Thanks for the understanding. Comments are invited, pro and con!

Note to Email receipients – since you don't get a hard copy, the member expiration date is not known. Go to the ATCO web site and enter your personal page for your status.

That's all I can think about for now. Sorry to be so short of material…but wait, maybe that's a good thing as most stuff seems to be holding together pretty well. OK, now I've done it. All ##&** will probably break loose soon!

…Art WA8RMC

HF, DIGITAL TV OPERATION FROM SPACE ON THE ARISS HORIZON

Plans to deploy an HF transceiver and a digital TV system in space were among the highlights of the Amateur Radio on the International Space Station (ARISS) 2006 International Delegates Meeting October 9-10 near San Francisco. The session also marked ARISS's 10th anniversary. In November 1996, delegates from eight countries met in Houston, Texas, to lay the foundation for the joint educational outreach program and map plans to establish a permanent ham radio presence in space. ARISS International Chairman Frank Bauer, KA3HDO, called the establishment of ARISS "unprecedented, especially for a volunteer effort."

"You all should be proud of what you've accomplished in the last 10 years," Bauer told this year's ARISS gathering. The ARISS goal in 1996, he noted, was "to consolidate all those ham radio voices into one voice." By making it possible for youngsters around the world to speak with the ISS crew via ham radio, he said, the program now touches some 15,000 students each year.

At this year's gathering, ARISS delegates discussed expanding the complement of ham radio hardware and the operational capability of the two Amateur Radio stations on the ISS. On the near horizon are plans to launch and install a Yaesu FT-817ND transceiver on the ISS to permit operation on some HF bands from the ARISS Phase 2 station. That setup now features a modified Kenwood TM-D700E for VHF and UHF work, including school contacts, digipeating and slow-scan television (SSTV). An HF antenna already is in place on the space station. The FT-817ND runs up to 5 W and covers VHF and UHF too.

ARISS also wants an ISS crew to install an Ericsson 70 cm FM transceiver, already onboard. It would go in the ISS Zvezda Service Module -- the crew's living quarters and site of the ARISS Phase 2 station. An Ericsson 2 meter FM transceiver has been in use since 2000 at the ARISS Phase 1 station in the Zarya Functional Cargo Block or FGB.

A bit farther down the road, ARISS envisions installing a digital Amateur Radio TV (DATV) system aboard the ISS Columbus module. A contribution of the European Space Agency, the Columbus module is awaiting launch at Kennedy Space Center. Delegate Graham Shirville, G3VZV, speaking on behalf of ARISS-Europe, outlined plans for a mode L/S transponder aboard Columbus as well as a DATV downlink on 2.4 GHz. ARISS-Europe hopes to fabricate the necessary antennas by year's end.

NASA ISS Expedition 12 Commander Bill McArthur, KC5ACR -- a guest at the ARISS International Delegates Meeting and keynote speaker for the AMSAT Space Symposium and Annual Meeting banquet a few days earlier -- said the ISS crew members "very quickly get used to living on camera." He said the impact of ARISS school events on the crew's schedule has been minimal. Bauer concurred. "Where we're developing hardware, we need to make it simple," he said. "Crews can't afford lengthy setup times."

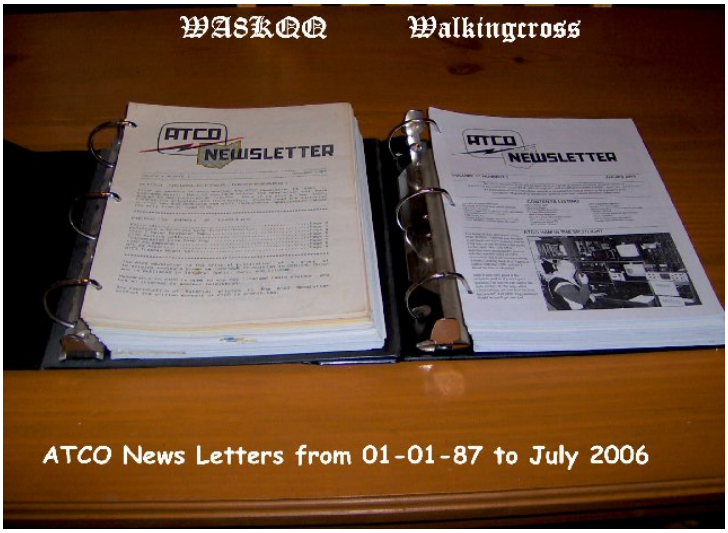
The SSTV system already aboard the ISS also came in for some discussion following a presentation by its development coordinator, Miles Mann, WF1F. After some successful initial testing, the SSTV has been off the air, ARISS-Russia delegate Sergei Samburov, RV3DR, explained. "We had had some challenging issues with the SSTV," he said. "We will be working to resolve these soon."

The possibility of having the ISS crew launch university-built CubeSats from the space station during space walks was another discussion topic. ARISS delegates will explore opportunities to work with schools constructing CubeSat projects with an eye toward enhancing the educational value of these tiny spacecraft and to entice the younger generation to consider Amateur Radio.

As ARISS International Secretary-Treasurer and ARRL ARISS Liaison Rosalie White, K1STO, reminded the gathering: "The ARISS Team has always stressed that ARISS equals education."

ATCO NEWSLETTERS, TREASURED ITEMS

Here is a picture of my ATCO news letters from when I joined the group in 1987 up to July 2006 - I have them in 2 large note books and look through them often - lots of stuff has come and gone - I remember when I got started in ATV in 1965 with an RCA camera and a CMU-15 (which I still have) - 2 other Hams here in Greenville got on with me for a short while and then both of them dropped out - my very first out of town contact was with Dick W8RVH first time he saw my picture was on his 160 meter long wire - was the only antenna he had available at the time - sure wish I could get to the get-togethers but seems like every time it's something with the Grandkids falls on the same day - pass along my greetings to the next gathering. Best 73's
…WA8KQQ Dale



NEWS TIDBITS…READ IT HERE FIRST! (FROM DEC 2006 QEX NEWSLETTER)

HAMS TO BE PART OF NATIONAL EMERGENCY SYSTEM

President Bush has proposed legislation that will make amateur radio operators part of the nationwide emergency communications network, in a section of a newly passed Department of Homeland Security 2007 Appropriations Act. Amateur radio was included within the legislation under Subtitle D, Section 671, known as the 21st Century Emergency Communications Act." In it, radio amateurs are among the groups with which a Regional Emergency Communications Coordination (RECC) Working Group must coordinate its activities. Among other responsibilities, these regional groups will draw up reports designed to help accelerate the deployment of interoperable emergency communications nationwide. The RECC Working Group will assess the survivability, sustainability and interoperability of local emergency communications systems to meet the goals of the National Emergency Communications Reports. That report will recommend how the United States might accelerate deployment of interoperable emergency communications nationwide. RECC's will also coordinate the establishment of effective multi-jurisdictional, multi-agency emergency communications networks that could be brought into play in an emergency or disaster. They will also work with equipment manufacturers, telephone companies, local broadcast media, cable television providers, satellite communications specialists, emergency services, hospitals and others. In this area, their job will be to set up plans for local communications systems in the event of an emergency. Potential disasters covered by this new plan might include anything from national disasters to terrorist attacks. A tall order for a group of hobby radio enthusiasts, but one the government is confident that the Amateur Radio Service and others can successfully undertake. (ARRL, CGC, others)

FCC ELEVATES HOMELAND SECURITY TO BUREAU STATUS

The FCC has elevated its Office of Homeland Security to a bureau. This new bureau will address matters of public safety, homeland security and emergency management and preparedness. The bureau is organized into three divisions: policy, public communications outreach and operations and communications systems analysis. Functions relating to EAS move to the new entity. As to ham radio, the new bureau will assume some functions that had been under the umbrella of the Wireless Telecommunications Bureau, where the Amateur Radio Service will remain. Some observers speculated ham radio would be shifted to the new bureau, thus removing it from the marketbased approach to regulations. This did not happen. Moving some of the Wireless Telecommunications Bureau current responsibilities to the new bureau could, nonetheless, speed up the process of moving amateur radio related proceedings through the Commission. (ARRL and others)

CERTIFYING NEXT-GEN WI-FI

Wi-Fi Alliance, Austin, Texas, plans to certify interoperability of Wi-Fi products that contain the next generation of routers and network cards. The certification process will include baseline features from the developing IEEE 802.11nA standard. The certifying process marks the first phase in a certification program of next generation of Wi-Fi products. A second phase brings full alignment with the ratified standard. The IEEE is targeting the first quarter of 2008 for final approval. However, Wi-Fi products implementing features from the draft specifications are on the market now and analysts forecast millions of pre-standard devices will ship in 2007. The Wi-Fi Alliance expects the second phase of the program, introduced at the time of the final IEEE 802.11n ratification, will support compatibility between Wi-Fi Certified pre-standard products and those certified to the full standard. The next generation of Wi-Fi, known as the "n" version, is projected to be about five times faster than current products. (Appliance Design)

CONGRESS WATERS DOWN WARN

The Warning, Response and Alert Network or WARN act, has been reassigned as the Commercial Mobile Service alerts and tacked onto the port security bill. Gone is the proposed National Alert Office and its standards based, multi-mode National Alert System. The bill is strictly about using cellular telephones for alerts. The use of public TV stations has been downplayed. Their purpose is to enable the distribution of geostationary targeted alerts by commercial mobile service providers. Also gone is the provision allowing the federal government to apply federal resources to the restoration of "essential services." This includes water and power utilities and telecommunications. It appear government is relying on the promise of cellular providers, even though historically, this is the system that is first to fail in just about any local or region wide disaster. Not included is the indemnification of volunteers like ham radio operators coming in from the private sector. More information online at www.incident.com.

ARRL PRESIDENT AIRS CONCERN ABOUT RED CROSS BACKGROUND CHECKS

ARRL President Joel Harrison (W5ZN), is urging Amateur Radio Emergency Service (ARES) and other ham radio volunteers, to tread cautiously when submitting for background checks the American Red Cross now requires. Local chapters were notified that volunteers and staff members must submit to criminal background checks by October 31 and extends to ARES volunteers who support Red Cross disaster relief efforts. The League recommends anyone submitting personal information for a background check carefully read what they are giving the American Red Cross permission to collect. "The Red Cross is requiring volunteers to grant permission for more than just a criminal background check," Harrison asserted. "They are also requiring permission to draw a consumer and/or investigative consumer report on the volunteer. That could also include credit and mode-of-living checks," Harrison added. "The Red Cross has stated they will not use credit reports. Requiring that volunteers authorize the procurement of a credit report is inconsistent with this assurance." he noted. The ARC has contracted with My Background Check.com LLC (MBC), to handle the online background checks. Prospective volunteers visit a secure, encrypted Web site: http://www.mybackgroundcheck.com/ check on the ARC logo and submit name, address, Social Security Number (or other acceptable government ID), telephone number and date of birth The Red Cross says the overall results of the background check are not shared with the ARC. In the course of applying, prospective volunteers must agree to let MBC obtain a wide range of personal

information bearing not just on criminal background and credit worthiness, but MBC says, “character, general reputation and personal characteristics.” MBC advises, “The nature and scope of this disclosure and authorization is all encompassing.” The Red Cross says its new policy is aimed at safeguarding clients, volunteers and employees alike. “Unfortunately, in this day and age, it is critical that the American Red Cross and other agencies, employers and organizations, perform due diligence in researching the people who will represent them,” the ARC said in a statement to ARRL. “ARES members, who are providing communications for ARC, are working for ARC and, as such, will follow their guidelines. The decision to go along with new Red Cross policy is up to the individual volunteers,” said Dave Patton (NM1N), ARRL Field and Educational Services Manager. Contact the Red Cross (toll free 800-507-3960) with any questions regarding the background check program. (ARRL Letter 10-27-06)

AMERICAN RED CROSS CLARIFIES BACKGROUND CHECK POLICY

The American Red Cross (ARC) has attempted to clarify its policy to require background checks of its employees and volunteers, as far as the policy applies to possible credit checks. In a statement to ARRL, on November 9, Laura Howe, ARC director of response communication and marketing, stresses that while background check applicants must give permission to conduct a credit check, the ARC has no intention of conducting them across the board. See: http://www.arrl.org/ FandES/field/RedCross-LauraHowe-statements.pdf. The standardized minimum check verifies the applicant’s Social Security Number and a search of the National Criminal File for the past seven years. “While the Red Cross will never run a credit check on the vast majority of its employees and volunteers,” Howe assured, “it is important this standardized language is included in the consent form to protect our clients, volunteers and employees.” The ARC has contracted with MyBackgroundCheck.com LLC (MBC) to handle the onlinebackground checks. MBC notifies the applicant’s local Red Cross Chapter whether or not the individual passed the background check, but it does not show any personal data. The ARRL Statement of Understanding (SoU) with the Red Cross does not address background checks and is up for review next year. (ARRL Letter Vol. 25 No. 45)

NEW “HELLO” VIDEO AVAILABLE

A new Amateur Radio promotional video is available from ARRL . Running time is around four minutes. A DVD .version may be played on cable and television stations. Contact Allen Pitts (W1AGP) at hello@arrl.org to obtain a copy. The video is available for viewing at http://p1k.arrl.org/files/Hello- Movie.wmv. For downloading in Windows Media and MPEG formats, see http://www.arrl.org/pio/ and scroll down to Hello Video Files Hello-4 minute mini-presentation. (ARRL Letter Vol.25 No. 45)

NEW TIRE PRESSURE MEASURING SYSTEM IS EMI PRONE

A new tire pressure monitoring device, used on luxury cars in Europe and the United States, is far from interference proof. The system operates on 433.92 MHz, for communications between the tires and a monitor receiver in the dashboard. Recent tests conducted by the Korean Amateur Radio League, found this system is at the mercy of radio frequency ingress and is seriously affected by any amateur station transmitting on or near the frequency at close range. The transmitter does not have to be mounted in the vehicle for interference to occur. This same frequency is being considered worldwide for remote vehicle keyless entry systems and is currently being used for radio frequency identification tags. (Amateur Radio Victoria via WANSARC News)

100 YEARS OF INTERNATIONAL RADIO REGULATIONS

This year marks the 100th anniversary of what became the International Communications Union (ITU) Radio Regulations. The first International Radiotelegraph Conference gathered 29 maritime states in Berlin, Germany, in November 1906, to sign the “International Radiotelegraph Convention,” establishing the principles of compulsory two-way coast-to-ship radio communication and at making it free from harmful interference. The annex to that contention contained the first regulations governing wireless telegraphy. Expanded and revised by numerous radio conferences, these regulations now are known as the Radio Regulations of the International Communications of the International Telecommunications Union or simply “The Radio Regulations.”

EVENT SCHEDULE FOR NOVEMBER 2006 SOLAR CYCLE 24 TO ARRIVE IN 2007

Researchers say the next sunspot cycle is expected to begin in early 2007. Evidence continues to mount after another backward sunspot appeared on the sun. According to Radio Bulgaria, backward sunspots occur when one solar cycle gives way to another. At that time, the magnetic poles of sunspots reverse polarity. By way of record keeping, this is the 24th cycle scientists have identified. This assumption is based on the fairly regular recurring pattern of peaks and valleys in solar activity. The first recorded observations of sunspots may be found in Chinese journals from about 800 B.C. The first telescopic observations came some 2,400 years later, in 1610. (Space)

SHORTWAVE CUTBACK

International radio broadcasters are cutting back on their short-wave transmissions. According to a report written following the demolition of 13 short-wave antenna towers in Spain, suggests many radio broadcasters are moving from short-wave to new forms of communication, such as Internet radio and pod casting. Some are considering a phase out of short wave. BBC World Service, the leader in international radio broadcasting, is revising its short-wave service. Fans of short wave have leapt to the defense of this technology. They argue it is one of the most reliable means of communication and highlight how it has allowed broadcasts to be heard by people in repressed countries, though FM and Internet broadcasts have been blocked. The history of short-wave can be traced back to 1927, when Dutch company Philips Laboratories, undertook short-wave broadcasts from Eindhoven to the Dutch East Indies. These early transmissions were the predecessor to short-wave station Radio Netherlands. (GB2RS)

VERIZON FIBER AIMS AT TRIPLE PLAY

Verison told investors that its fiber based FiOS TV service is experiencing strong early growth. Not only is Verizon providing TV, but Internet and telephone by bringing fiber optic cable into homes and businesses. No BPL funny stuff for the curb-to-drop connection. Much fiber remains to be laid in Verizon’s ambitious plan that will cost the company $23 billion. The service is

currently available in small parts of Texas, California, Florida, Virginia,, Maryland, Massachusetts and New York. (Broadcasting and Cable)

NEW SOURCE OF C-BAND INTERFERENCE

A set top amplified antenna, the RCA/Thomson ANT 525, appears to be an unintentional mini-broadcast transmitter capable of disrupting C-band (4 GHz) satellite downlink signals at a distance of 1/8 mile or more. A self-oscillating antenna was located in a residential section after clobbering a C-band downlink receiver in **Toledo, Ohio**. When new 525's were purchased and installed, each exhibited the same problem. If you encounter this type of interference, check into the set top antenna by RCA. (CGC)

HITSAT IS ON-ORBIT

A new ham radio satellite, called HITSAT, is on-orbit. On-orbit is a NASA term meaning that an object has successfully reached its assigned position in space. The bird was launched from Japan on September 22. HITSAT transmits CW telemetry data every 40 seconds on a downlink frequency of 437.275 MHz. The 1200 baud FM downlink is 437.425 MHz, using the call sign JR8YJT. The Hokkaido Cubsat Development Ham Club at Hokkaido Institute of Technology deployed the satellite. It rode into orbit as a secondary payload aboard the Japan Space Agency's launch of its Solar-B mission. (ANS)

FCC WARNS AGAINST UNINTENTIONAL INTERFERENCE TO LICENSED RADIO OP'S

The Federal Communications Commission has been busy solving interference problems suffered by radio amateurs from various sources. Among those were a furnace igniter, a security camera power supply and a swimming pool solar heater, along with interference from two power companies.

THUNDERSTORMS IN SPACE

Using data from NASA satellites, University of California at Berkeley scientist Thomas Immel has discovered that thunderstorms over South America, Africa and Southeast Asia, can cause turbulence in two bands of electrical gas. These are belts of vapor that hover some 250 miles above the equator in a part of the upper atmosphere known to hams as the ionosphere. These plasma bands are far too thin to be directly affected by wind from thunderstorms. However, the researchers have found that the wind can shape the plasma bands by generating electricity in the layer of atmosphere below them. Three of the densest sections of plasma were located as being directly above areas with frequent thunderstorms. This includes the Amazon Basin, in South America, the Congo Basin, in Africa and Indonesia. Another dense section of plasma is shown above the Pacific Ocean. This is far from thunderstorms and has led them to conclude this as evidence that tropical thunderstorms have a global influence. Researcher Immel sums up the discovery that this could lead to more accurate global positioning satellite navigation and shortwave radio transmissions, by improving forecasts of high altitude disturbances that can disrupt them. (Science Online)

A PLASTIC BATTERY

Brown University engineers have created a new battery that uses plastic, not metal, to conduct electrical current. The hybrid device marries the power of a capacitor with the storage capacity of a battery. The National Science Foundation funded the work. A description of the prototype is to be published in a journal called Advanced Materials. (Materials Technology)

160 METER EXPERIMENT TO EXPLORE MARCONI SUCCESS

A 160-meter beacon will take to the air this fall and winter, from Cornwall, England, to explore how Guglielmo Marconi was able to span the Atlantic by wireless for the first time, on December 11, 1901. That is when the radio pioneer copied the Morse code letter "s", sent repeatedly by his team in the Cornwall town of Poldhu and received successfully in Newfoundland. This is a cooperative venture between the Poldhu Amateur Radio Club and the Marconi Amateur Radio Club, in Newfoundland. The winter of 1901 coincided with a sunspot minimum and it was realized December 2006, should show similar conditions. How Marconi was able to receive the transatlantic transmission has long been a topic of controversy, since the given frequency was thought to be between 800 and 900 kHz and the time of day, afternoon in Newfoundland. The beacon will help understand the possibility of low sunspot number transatlantic propagation 24 hours a day, but especially 1400 through 1800 UTC. The 160 meter amateur band is being used as the original Marconi used frequency today is a highly populated piece of radio spectrum. The GR3SSS beacon will transmit on 1,960 kHz, using a two minute transmit sequence starting at the top of the hour. It will consist of CW identification, followed by a sequence of bursts, each reducing in power by 6 dB. Identification in PSK-31 will follow. The transmit sequence will repeat at 15 minute intervals. E-mail beacon reception reports to: gb3sss@yahoo.co.uk. (ARRL Letter 10/06)

JERICHO ON CBS

A new series on CBS television called "Jericho" features amateur radio in a prominent role. Residents in the small town of Jericho, Kansas, have seen a baffling explosion, creating a mushroom cloud and causing chaos in the community. There is a Yaesu FT-101-F radio that could be used to find out what is going on and a character knowing how to use and repair this equipment. In the opening credits, the word "Jericho" is spelled over and over in Morse. Other radio gear is a Gonset VHF transceiver and an amplifier. For more information on this program, go to www.cbs.com/primetime/upfront_2006/jericho.shtml. The program airs on Wednesday night at 8 p.m. ET.

CLOSING THE LED GREEN GAP

A team of researchers from Rensselear Polytechnic Institute has received $1.8 million in federal funding, to improve the energy efficiency of green light emitting diodes. As part of the U.S. Department of Energy's Solid State Lighting Program, the team aims to close the green gap in LED technology by doubling or tripling the power output of green LED's in three years. This is billed as an advance that ultimately could lead to the replacement of incandescent and fluorescent lamps in general illumination applications.

FCC LAUNCHES NEW BUREAU

The FCC has formally launched its new Public Safety and Homeland Security Bureau (PSHSB). The PSHSB will assume some functions that had been under the umbrella of the Wireless Telecommunications Bureau (WTB), where the Amateur Radio Service

will remain. WTB Public Safety and Critical Infrastructure Division Chief Michael J. Wilhelm (WS6BR) will serve as deputy chief of the PSHSB's Policy Division. The PSHSB is responsible for the combined public safety-related functions previously spread around other bureaus and offices. It will include Policy, Public Communications Outreach and Operations and Communications Systems Analysis divisions. The Public Communications Outreach and Operations Division will originate the FCC's Communication Center and the High Frequency Direction Finding Center. More information at www.fcc.gov/pshs/. (ARRL)

MOTION DETECTOR WITH EYES

The Eyetec, a new motion detector from Germany based Siemens, is equipped with an infrared detector and an optical sensor, capable of recognizing motion patterns up to 15 meters away. Algorithms evaluate these patterns and determine if the motion is acceptable, based on conditions determined by the users, or if it should trigger an alarm. If an alarm is triggered, the detector will archive the images of the incident. The Optical Detection System (ODS) installed in Eyetec, uses a CMOS sensor and fuzzy logic to determine an object's size, speed and direction of travel. (Appliance Design)

FCC RELEASES "OMNIBUS" AMATEUR RADIO REPORT AND ORDER

On October 10, the FCC released its 70 page Report and Order WT Docket 04-140. It does not include elimination of the Morse code requirement. The new rules will become effective 30 days after publication in the Federal Register. The complete document may be found at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-06-149A1.doc Some of the highlights from this Report and Order are as follows: Reframing of current Novice/Tech Plus bands to expand certain phone sub bands. Agreed to allow Novice and Tech Plus licensees to operate CW in the General class CW sub bands on 80, 40, 15 and 10 meters. Implement rules to discourage multiple vanity call sign filings on the same day from the same applicant. Permit auxiliary stations to transmit on portions of the 2 meter band. Permit amateur licensees to designate a specific Amateur Radio club to receive their call sign in memoriam. Eliminate certain restrictions governing the manufacture, marketing and sale of external power amplifiers, intended for Amateur Radio use. Clarified that "Amateur stations may, at all times and on all frequencies authorized to the control operator, make transmissions to meet essential communications needs and to facilitate relief actions." Deleted the requirement to publicly announce Amateur Radio examination locations and times and deleted the frequency bands and segments specified for Radio Amateur Civil Emergency Service (RACES) stations. The Commission agreed to 'reform' the HF sections currently authorized to Novice and Technician Plus licensees. The reallocation will expand the phone sub bands for General, Advanced and Amateur Extra licensees. On 75 meters, Generals will be able to on phone from 3,800 to 4,000 kHz, Advanced class from 3,700 to 4,000 kHz and Amateur Extras from 3,600 to 4,000 kHz. This greatly reduces the amount of 80 meter spectrum available for RTTY and data. The only segment where automatically controlled data stations may operate in 80 meters is 3,620 to 3,635 kHz. On 40 meters, Advanced and Extra Class licensees will be able to operate phone from 7,125 to 7,300 kHz and Generals from 7,175 to7,300 kHz. On 15 meters, General class operators may operate phone from 21,275 to 21,450 kHz. The FCC affirmed its intention to permit Novice and Tech Plus (or Technician with Element 1 credit) licensees to operate CW in the current General exclusive CW allocation on 80, 40 and 15 meters and CW/data on 10 meters, where the FCC provided an additional 100 kHz for Novice/Tech Plus licensees. Novice/Tech Plus licensees may run no more than 200 watts P.E.P., but the Commission has done away with Novice band power limitations for Higher-class licensees.

ADDITIONAL ON FCC OMNIBUS AMATEUR RADIO RESTRUCTURING

Regarding Novices and Techs, the FCC said it was not persuaded to expand their privileges on 10 meters. This decision was based in part on the belief that these classed should have incentive to advance their skills by upgrading. Changes will permit auxiliary stations to transmit on additional amateur service bands, including 2 meters. The FCC agrees with commentors who support allowing 2 meters to be used by auxiliary stations. Such use could result in the expansion of amateur service communication systems that incorporate voice over Internet protocol operations or other sophisticated amateur radio communications systems. This decision is being viewed by some as a big win for Kenwood Communications Sky Control station control system. Sky Command was designed in part to use 2 meters for auxiliary stations remote control of a high frequency station. Turning to spread spectrum communications, the FCC will permit hams to transmit this emerging mode on the 222 MHz band. The FCC was not authorizing use of this mode on 6 or 2 meters. The FCC is concerned about raising the noise floor in these bands or otherwise hindering or adversely affecting experimentation. Ham radio in space was also covered. A change will permit amateur stations to retransmit communications from the International Space Station without seeking any special permission or waivers to do so. Another change is in the area of emergency communications. In answer to a number of requests, the FCC will permit amateur radio station operators in Alaska and surrounding waters more flexibility in providing emergency communications. The FCC has decided to eliminate certain restrictions on equipment manufacturers that are no longer necessary. In the area of licensing, rule changes have been made to permit amateur radio licensees to designate the amateur radio club to receive their call after their death. The revised rules will also prohibit an applicant from filing more than one application for a specific vanity call sign and will also remove certain restrictions in the amateur service license examination system that the FCC, the NCVEC and the ham radio public see as no longer necessary. Another restriction on former hams whose licenses have been pulled or forfeited. The FCC says it agrees with the ARRL that an individual whose license is not renewed after a hearing is essentially the same as an individual whose license has been revoked. In both cases, the Commission rescinded its authorized operating authority and that neither individual would be able to continue using amateur service frequencies for exchanging messages. If you lose your license because it was revoked or not renewed, you cannot be a third party to any ham radio communications and Part 97has been amended to reflect this.

LCD-TV RESHAPING ELECTRONICS SUPPLY CHAIN

It's obvious that the rise of Liquid Crystal Display (LCD) Digital Televisions (DTVs) is reshaping the global television and display industries — but the phenomenal expansion also is impacting the wider electronics business, affecting diverse areas ranging from semiconductor production, to the overall chip market, to contract manufacturing.

An examination of iSuppli's vast library of research illustrates the significant impact LCD-TV is having on the global electronics supply chain, including:

*Revenue from sales of semiconductors for DTVs, a category that includes LCD-TVs, will more than double between 2006 & 2010.

*LCD-TVs will account for nearly half of the revenue in the global large-sized LCD panel market by 2010.

*By 2010, LCD-TVs will represent nearly three quarters of total worldwide television manufacturing revenue, up from less than one-third in 2005.

*Contract manufacturers will produce 38 percent of LCD-TVs in 2010, up from 30 percent in 2006.

LCD-TV shipments rise by a factor of 100

Worldwide shipments of LCD-TVs are expected to rise to 126.9 million units in 2010, increasing at a Compound Annual Growth Rate (CAGR) of 35.1 percent from 38.1 million units in 2005, according to data from iSuppli's Television Systems service.

Looking at the longer-term history, LCD shipments in 2010 will have risen at a CAGR of 77.1 percent from 1.3 million units in 2002. This means that shipments will rise by nearly a factor of 100 during the period from 2002 to 2010. Such a rapid rate of growth is affecting the global electronics supply chain significantly, starting with semiconductor manufacturing.

Extensive chip consumption

Partly because LCD-TVs are inherently digital, they have a higher level of semiconductor content than conventional analog sets. LCD televisions have an average of $44 worth of semiconductor content in 2006, according to iSuppli's Digital Television Semiconductors service.

In contrast, the average analog color TV in 2006 contains only $16.87 worth of semiconductors, iSuppli's Application Market Forecast Tool (AMFT) reveals. With more than two-and-a-half times more chip content per unit, and such a fast growth rate, LCDs are becoming a significant factor in the global semiconductor manufacturing business.

DTV eats wafers

In 2002, the DTV segment — a category that includes and is increasingly dominated by LCD-TVs — accounted for less than 1 percent of global chip production when measured in terms of square inches on semiconductor wafers, according to iSuppli's Semiconductor Application Market Forecast Tool.

However, this will grow to 4.6 percent by 2010, up from 2.9 percent in 2006. While this may appear to represent a small slice of global semiconductor wafer usage, it's important to put this figure into perspective. Mobile PCs, which represent a cornerstone application for the global semiconductor business, will account for 6.2 percent of global wafer square inches in 2006. Thus, by 2010, DTVs will be in a similar range as mobile PCs were this year in terms of wafer square inches.

Actual shipment revenue for DTV semiconductors will rise to $13.7 billion in 2010, increasing by a CAGR of 19.5 percent from $6.7 billion in 2006, and up by a CAGR of 45.9 percent from $668 million in 2002, according to the AMFT.

Looking at specific chips, the AMFT shows DTVs are expected to drive large volumes and rising revenue for semiconductors including:

*Display-driver integrated circuits, whose revenue from sales to the DTV market will expand to $2.9 billion in 2010, increasing at a CAGR of 14.9 percent from $1.6 billion in 2006, and up by a CAGR of 41.2 percent from $182 million in 2002.

*General-purpose logic parts, which will see DTV revenue rise to $3.0 billion in 2010, growing at a CAGR of 14.9 percent from $1.7 billion in 2006 and a CAGR of 40.9 percent from $195 million in 2002.

*Analog Application-Specific Standard Products (ASSPs), whose DTV sales will rise to $3.1 billion in 2010, growing at a CAGR of 26.9 percent from $1.2 billion in 2006 and a CAGR of 63.9 percent from $59 million in 2002, according to the AMFT.

*Logic ASSPs, which will achieve DTV revenue of $4.8 billion in 2010, increasing at a CAGR of 21.8 percent from $2.2 billion in 2006, and a CAGR of 47.6 percent from $211 million in 2002.

The fast growth in demand for these semiconductors generated by DTV will yield copious opportunity for chip suppliers. These areas are expected to generate significantly greater growth than the semiconductor industry as a whole, which is projected to expand at a CAGR of only 9.8 percent from 2002 to 2010, according to the AMFT.

However, among all the different types of semiconductors found in DTVs, logic ASSPs offer the best combination of large market size and fast growth for chip suppliers. Within the DTV logic ASSP segment is the key for market display processors, which perform digital signal processing tasks essential to drive the display.

The DTV display-driver market amounted to $785 million in 2005, according to iSuppli's Digital Television Semiconductors service.

Panels drive the LCD-TV market

While the rise of LCD DTVs is having a significant impact on the semiconductor business, it is having a much greater influence on the market for large-sized LCD panels, which iSuppli defines as being 10-inches or larger in size. This is not only due to the rapid sales growth for LCD-TVs, but also because of the high value of the panels used within these televisions.

The panel is by far the most expensive component in an LCD-TV. iSuppli's Teardown Analysis Service in February dissected a 40-inch LCD-TV sold by Samsung Electronics Co. Ltd. and determined that the panel represented 64.5 percent of its total material and manufacturing costs. While this is higher than the average for the entire industry, it does illustrate the importance of the panel in the LCD-TV market.

Over time, the panel's percentage of overall LCD-TV value will actually increase, as cost reductions are achieved in other parts of televisions, and as shipments of larger-screen sets grow to account for a greater portion of shipments. The panel Average Selling Price (ASP) will represent 43 percent of the total ASP of an LCD-TV on average by 2010, up from 35 percent in 2006, according to iSuppli's LCD Market Tracker service.

The most popular size of LCD for televisions in 2006 is the 30- to 34-inch range. However, by 2010, shipments of 40- to 44-inch display sets will pull almost even with those of 30- to 34-inch sets, according to iSuppli's Television Market Tracker service.

Unit production of LCD panels for televisions will rise to account for 28 percent of total large-sized LCD panel production by 2010, up from 2.1 percent in 2002, according to iSuppli's LCD Market Tracker service.

However, the impact is even more dramatic when viewed from a revenue perspective. Because of the large average size of television panels compared to those used in other applications, they have a higher manufacturing cost, resulting in more revenue for each unit sold. By 2010, LCD-TVs will account for 48.2 percent of global large-sized panel revenue, up from 5.6 percent in 2002.

Television clearly has emerged as the driver of the large-sized LCD panel market. Large-sized LCD panel shipment revenue will rise to $83.5 billion in 2010, expanding at a CAGR of 13 percent from $51.2 billion in 2006, iSuppli predicts. Shipment revenue for large-sized panels for LCD-TVs will rise to $40.3 billion in 2010, rising at a CAGR of 18 percent from $20.8 billion in 2006.

To put this into perspective, LCD-TV panel revenue by 2010 will be three times larger than DTV semiconductor revenue of $13.7 billion for the same year. Looking at it another way, LCD-TV panel revenue in 2010 will be about equal to the gross domestic product of the entire nation of Cameroon in 2005.

The impact of LCD-TV is magnified once again when looking at the television market itself. LCD-TVs will account for 56 percent of worldwide television unit shipments by 2010, up from 20.3 percent in 2006 and rising from less than 1 percent in 2002. Even more significant, LCD-TVs will account for 74.2 percent of total worldwide television manufacturing revenue in 2010, up from 29.1 percent in 2005.

Hence, most television brands are striving to take a position in the LCD-TV and are reshaping their supply-chain and brand strategies thusly.

One major strategy that television brand names are employing is the outsourcing of LCD-TV production to contract manufacturers, mainly Original Design Manufacturers (ODMs).

In the past, television makers have not employed outsourced contract manufacturing to a large degree. However, the availability of ASSP chips, which allow contract manufacturers to build sets more easily, have made outsourcing of design and/or manufacturing a more viable and attractive alternative to LCD-TV manufacturing.

Due to this outsourcing trend, contract manufacturing of LCD-TVs will grow at a faster pace than that of the overall industry. The ODMs and Electronics Manufacturing Service (EMS) providers will ship a total of 48.3 million LCD-TV units in 2010, rising at a CAGR of 43.3 percent from 11.4 million in 2005, according to iSuppli's Global OEM Manufacturing and Design Analysis service. Contract manufacturers will produce 38 percent of LCD-TV units in 2010, up from 30 percent in 2006.

Conclusion

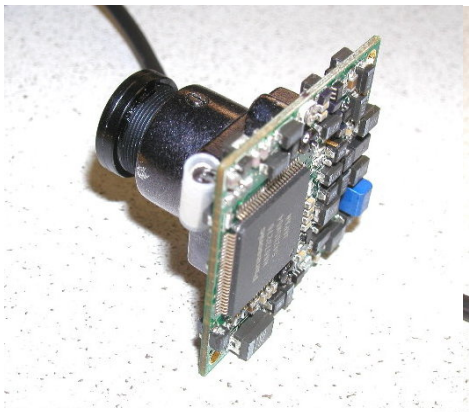
iSuppli's extensive market research clearly illustrates the massive impact LCD-TV is having on multiple segments of the global supply chain. Yet, this article presents only a narrow sample of iSuppli's data in this area. Other impacts are being seen in areas monitored by iSuppli, including DTV services and subscribers, LCD material supply, digital content and advertising.
For any company in any industry that even touches the market, access to such knowledge is essential to understand the transformational impact LCD-TV will have on their business.
…Jonathan Cassell, iSuppli

NEED A COLOR ATV CAMERA, "CHEAP"? CHECK THIS OUT

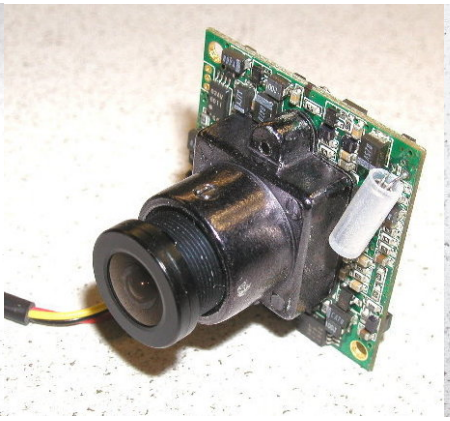
I was intrigued by the ATV Research ad about their small color "board" cameras. Since I am planning to re-install the building cam downtown as well as add a tower cam at my QTH, I gave it some thought. They were cheap enough but at that price, just how good are they? Since you usually get what you pay for, I was skeptical. However, I also didn't want to spend a lot of money for a tower cam because they usually don't last that long in bright sunlight so even at a lower resolution that should be ok. Boy, was I surprised! These little cameras are great and have high resolution and good low light level sensitivity.

They do everything the ad says, I measured resolution at about 450 lines, and they say 420. They say 9-12v @ 100 ma. My two cameras work from 8 to 13v (I don't want to find out what the upper limit is) and draw 110mA @ 12v and 140 mA @ 8V. I see a slight distortion interference bar at 8V. The lens supplied is a 3.6mm wide angle lens suitable for "in shack" use at close range but it can be removed so it can be fitted with a C mount lens. To add the C mount lens would require some machine work so it may not be for everyone but if the existing lens can be used, it would be simple to add an enclosure to the assembly for a complete camera. So, if you are on a budget and have the ability to add an enclosure, this camera may be for you.

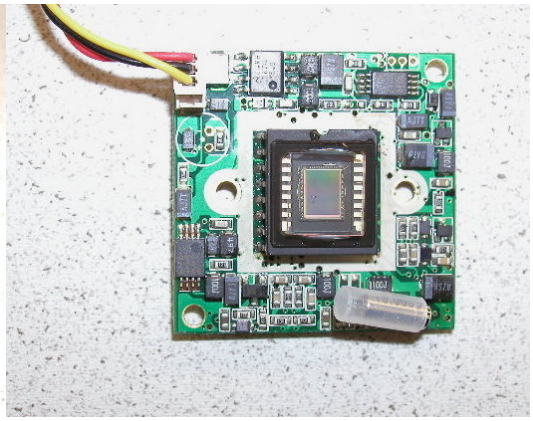
Rear photo



Front of camera



Front view with lens removed



Here's my video showing me taking a picture of the camera video

This gives you an idea of the camera's true size (1.5" square)

FRIEND FROM THE PAST…N8IJ CHECKS IN FROM LIMA,OH

11/3/06

Hi ART! I greatly enjoyed the latest newsletter. The latest from Lima is that the bank building that has our ATV antenna on it has been sold to a company that has yet to make their decision known regarding this and other antennas. We are looking for other potential sites just in case we have to vacate the present site.

VERY sorry to miss the Fall Event, but it couldn't be helped. Hope to make the spring one. Welcome to Garry, the newby to ATV. Nice looking station, Garry. Being a cw addict, I liked seeing the bug in a place of prominence. I'm putting a qrp station on 40 CW so might hook up with you. Just put up an ORIGINAL "Windom" antenna using a single feed line and will report on its proficiency.

Still off the air on ATV. Repeater is being rebuilt into a newer cabinet. My cohort in this project, Dave Morris, WB8PJZ, is saying it might well be spring before we get it back into operation. Would like very much to get it back on for those great winter contacts when the leaves are gone, but, oh well… 73's to all. Feel free to email me anytime at rgrant2001@yahoo.com.
… Dick Knowles, N8IJ.

12/17/06

All you ATVers in the Columbus area. Here's the latest from Northwestern Ohio: I am the newest member of the engineering team at WLIO-TV, here in Lima, an NBC affiliate. My position is that of Transmitter Engineer, and it is a great opportunity for me, as we are JUST going digital. The new transmitter arrived and was installed last week, and the new antenna went up on the tower this week. If all goes well, we should be on the air with 27.5Kw ERP on channel 8, here in the heart of Lima, before the end of the year. WLIO has been on channel 8 with 500 watts with a little TX for about a year now, but now we will have some real "reach out and touch someone" capability...all the way to Dayton to the south, and Ft. Wayne to the NW, and Marion to the East. Those of you with outside VHF TV antennas might just be able to see us when we go high power.

The TX is an Axcera, built in Pittsburgh, and it is a beautifully crafted unit with redundant exciters (hot-standby, automatic changeover with failure) and replaceable output modules in the PA section. 8 modules produce 650 watts each, giving the TX a 5Kw max output. For our 8-bay antenna at nearly 500 ft., we need only 4,320 watts out of the TX for 27.5Kw ERP.

The antenna was built by ERI, a major antenna builder, and it looks very much like some of the cris-crossed FM transmitter antennas that you see mounted on the side of some towers around. Ours is mounted on the side of our tower, south-east leg, just below the channel 35 UHF slot antenna on the top of the tower.

WLIO has been CH 35 for several decades, but as you all know, that will evaporate sometime around 2009. Interestingly enough, much of Europe is way ahead of the US, with Finland (of all countries) leading the way by making the complete switch from analog TV to Digital TV this coming Summer..(June, I think...or July).

For those of us who want a digital TV RX, but don't want to invest in a giant screen behemoth quite yet, Samsung makes a nice little silver box that becomes a digital TV when you add an ordinary computer monitor of regular or wide-screen dimensions. It will even work into s-video. It sells for about $300 at the big discount TV stores, like ABC Warehouse here in Lima. I assume Circuit City has them too, but there isn't one of those here in Lima yet. We have two of the things here at the station as monitor receivers for off-air monitoring and they work quite well. One is used with an ordinary sized computer monitor and. the other is feeding a state of the art wide screen computer monitor for the full HDTV effect, and they both work very well. Santa has promised to bring me one for Christmas this year. It just wouldn't do, me being the new TX engineer, to not have a good digital receiver on channel 8 all the time here in my shack, now would it?

I'll send pictures of the new TX and equipment as soon as I can along with oscilloscope pictures of the digital signals. It makes for interesting viewing. I imagine Jay already made such pictures available, as his station, CH 10, has long-since digital-capable.

I got a big laugh out of our staff along with the visiting techs and engineers from the TX factory, when I started opening all the doors and the many little panels on the new TX, obviously looking for something and not finding it, and my Chief, Fred Vobbe-W8HDU, asked, "Whatever are you looking for, Dick?" To which I replied, "There's gotta be some 6SN7's in here someplace!"

It certainly is a whole new world out here in TV broadcasting, Gang. Take it from an OT who has been through much of it. That's all for now, Art. Will keep you posted. Oh, by the way, the Chief has given me permission to bring in my ham ATV equipment when CH 35 finally goes dark and hook it up to the slot antenna on the top of our tower...won't be a good match, probably, but think of the range I'll have with ANY radiated power! The coax feed is 8" hardline so no loss there. Maybe in a couple of years, I'll build a matcher for 439 MHz and really set some distance records!

…73's for now. Dick Knowles, N8IJ.

CENTRAL PENNSYLVANIA REPEATER ATV REPORT (CATS)

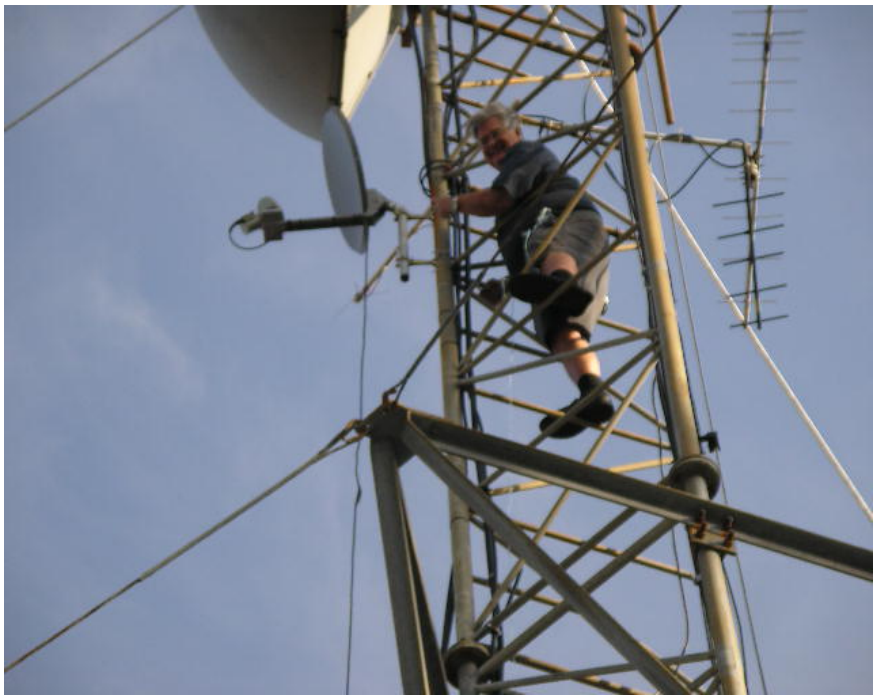
November 2006

An ATV meeting was held at Laurel, Md on Saturday, October 14, 2006. About 15 active ATVers attended. The Laurel repeater has added an additional input on 434 MHz, 3 miles North of the transmit site at the Laurel Hospital. This input is relayed on 1265 MHz to the 421.25 MHz transmitter. After discussion on how to proceed at the Tabco Tower site in Towson, an offer was made to loan a 3 GHz transmitter and antenna to the project. All persons present placed their home QTH on a map of the area. A directional panel antenna was a good fit to cover all the hams in the area. This antenna has an 85 degree beam width at the 3 dB points. The antenna would need to be mounted facing Southwest from Towson almost directly down route 95 towards Washington, DC. The antenna, 40 watt amp, and exciter were passed around the room. Everyone now has a Scientific Atlanta 9660 satellite receiver. The 3480 MHz signal mixes with the standard C band LNB with a local oscillator of 5150 MHz and has an IF frequency of 1670 MHz. The receiver will not tune to 1670 MHz when it is in the C band mode. This receiver will tune to the IF frequency of 1670 MHz when it is in the Ku mode. Unfortunately the video is inverted coming out the back of the receiver. Attempts were made to find a point in the receiver where the video was not inverted. Also phone calls were made to Scientific Atlanta and major repair facilities but they were no help. The manufacturer will not release any schematics either. Perhaps Ravi could help. The immediate fix is to invert the video with a small board supplied by KC3JG, John. The cost of the board is $10 with all the discrete components. Al has volunteered to come up with a better feed horn mounting bracket for the two foot dishes. A dish for about $50 and a C band LNBF for $13 with the Scientific Atlanta receiver ($10) and the receive system is ready to go.

The initial goal is to have the 3 GHz transmitter at Towson operational in a few months with video from White Rock. Then each receive location could begin aiming their dishes.

A 3420 MHz receive dish was mounted at White Rock to receive the signal from WITF on Tuesday October 31. At the 50 ft level the dish easily clears the trees and is just to the right of the new water tower. This is not at 300 feet it is only 50 feet off the ground. It is also inside the tower with a safety belt.

Next on the list is the 10 GHz link with the DB6NT DRO transmitter. Good news, the baseband video processor just came in. It is a Basisbandaufbereitung BBA 2.4. If you thought that was bad you should see the manual. This link will take the video and audio from White Rock to WITF. Then the output of WITF will be identical to White Rock.



The Microwave Associates 10 GHz transmitter that will send the signal from Bob Storm to Tabco Tower is being tuned up at the microwave shop on 10.40 GHz. The audio modulator should be here next week. Waveguide may come from the old WITF studio after Thanksgiving. The transmit feed horn ($9) is here and the receive LNBF (25 pounds) will come from Bob Platts in England. The 10.4 GHz receiver is a Scientific Atlanta 9660 unmodified receiver ($10) tuned to 1400 MHz on the C band.

A 30 minute presentation on our microwave approach to FM-ATV was presented to the Microwave Update 2006 seminar at Dayton, Ohio on 20 Oct 06 by John Jaminet, W3HMS. The MUD 2006 Proceedings, available from ARRL, contains the complete article, and many photos, from which the presentation was developed. In addition, the next ATVQ should contain the article and pictures.
The Editor of CQ VHF, Joe Lynch, N6CL, asked John for permission to publish his article in CQ VHF. It is now planned for publication in the February 2007 edition.

Hello ATVers.
We are going to try something new and not perfected as of yet for the Friday night net. On the Internet I will be broadcasting the ATV net at 8 pm with Video and Audio. The url is http://k3zko.camstreams.com . Thanks.
…Ron, K3ZKO

LOW-COST RF SNIFFER FINDS 2.4-GHZ SOURCES

This article appeared in EDN and also exists as an application note in the Linear Technology data page for their IC. You can find more product specifications by Goggleing LT5534. I challenge you home designers to try this circuit. If needed, you can request samples from the Linear Technology web site. If you cannot obtain samples, let me know and I will talk to the rep the next time he visits me. Also, contact me for any other parts you may be unable to find. I'll see what I can do. I'm going to try it myself and see how well it works. The article shows it for 2.4 Ghz but will work equally well on the lower bands. The filter shown can be replaced with a bandpass filter of your choice, cavity or otherwise. WA8RMC

Locate interference sources in the ISM band.

Vladimir Dvorkin, Linear Technology Corp, Milpitas, CA; Edited by Brad Thompson and Fran Granville -- EDN, 11/23/2006

Whether you measure or use RF circuits that operate in the popular 2.4-GHz ISM (industrial/scientific/medical) band, cordless telephones, Wi-Fi access points, Bluetooth devices, and microwave ovens can radiate RF signals, causing unwanted interference. A spectrum analyzer remains the instrument of choice for detecting and identifying interference sources, but analyzers are expensive, bulky, and sometimes not readily available.

The circuit in **Figure 1** shows an easily assembled, low-cost, and portable RF "sniffer" that provides a quick and reliable reading of the ambient-RF-signal level in the 2.4- to 2.5-GHz frequency band. At the circuit's heart, a Linear Technology general-purpose LT5534 RF-power detector, IC_1, measures RF-signal strengths from –55 to –5 dBm and provides an RSSI (received-signal-strength-indicator) dc-output voltage.

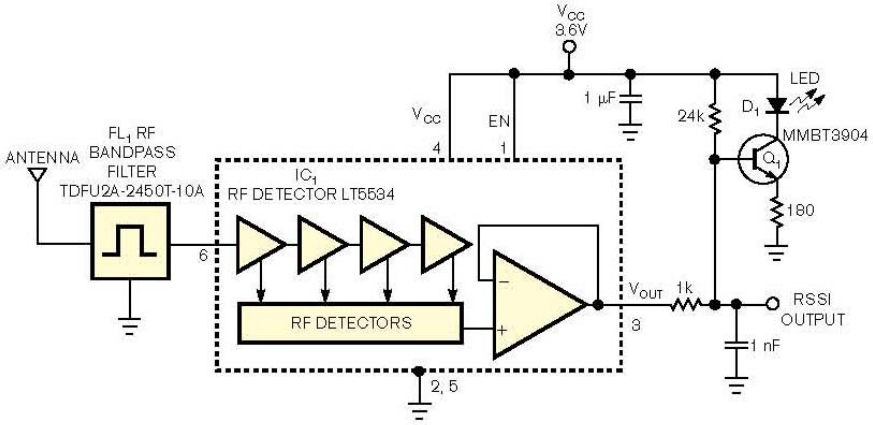


Figure 1 For best results, assemble this 2.5-GHz circuit on a double-sided pc-board layout according to the LT5534's data sheet and application notes.

An antenna for this frequency band drives FL_1, a Toko filter (Part No. TDFU2A-2450T-10A), which restricts the circuit's passband to 2.4 to 2.5 GHz and limits out-of-band interference. The filter drives IC_1, whose internal circuitry comprises a cascade of RF detectors and limiters. The detectors' and limiters' summed outputs generate an accurate logarithmic-linear voltage proportional to the RF input in decibels. A single discrete transistor, Q_1, converts IC_1's RSSI output to a current that drives a low-current-LED signal-strength indicator. You can connect a digital voltmeter to IC_1's RSSI output to provide a digital readout of signal strength or rely on the lighted LED to visually indicate an RF signal. Two 1.5V alkaline batteries or three nickel-cadmium cells provide 3V power for the circuit.

The LT5534's frequency range of 50 MHz to 3 GHz covers the VHF, UHF, 800-MHz-cellular-telephone, 902- to 928-MHz-ISM, 2-GHz-PCS (personal-communications-system)/UMTS (Universal Mobile Telecommunications System), and 2.4-GHz-ISM bands. For the 2.4- to 2.5-GHz range, use a Laird Technologies BlackChip antenna or a Toko dielectric antenna (Part No. DC2450CT1T). To build a sniffer for the 915-MHz band, replace the antenna with Part No. ANT-916-JJB-ST from Antenna Factor and replace the input filter with a Toko 4DFA-915E-10 ceramic filter that provides 26 MHz of bandwidth centered on 915 MHz.

NELSONVILLE HAMFEST…Just as good as always!

Sunday January 14, 2007 was wet and cold…outside. Inside the Nelsonville High School cafeteria it was warm and filled with people and goodies. It's just a small hamfest but the ATCO guys always come out in force to make a significant presence there. I didn't count but I think there were at least 10 ATCO people there. The pictures below tend to bear out my analysis.

Let's see now…just how did I get in this one?

Here's Kevin "attacking" a buyer.

Wait a minute! How'd Paul get in there twice?

Ahhh…the group is sitting waiting for customers.

…WA8RMC

THE TUESDAY 147.45 NET JUST GOT BETTER

I have an announcement regarding the Tuesday night Net. Mike, KB8SSH found an easy way to provide ATV activity streaming video on the internet during Net time. Just dial up his URL, http://kb8ssh.us.tc on your computer and by the magic of the Mictrsoft Windows Media Player, the entire check in activity can be watched via the internet with video delayed by about 20 seconds. At this time the sound portion is not included but that may be added at a future time. It's a neat addition to our activity. For those out of town or out of state people, check it out and give us a reception report.
…WA8RMC

LOCAL HAMFEST SCHEDULE

This section is reserved for upcoming hamfests. They are limited to Ohio and vicinity easily accessible in one day. Anyone aware of an event incorrectly or not listed here, notify me so it can be corrected. This list will be amended, as further information becomes available. WA8RMC.

28 Jan 2007+ Tusco ARC http://noard.com/tuscoarc.htm **Talk-In:** 146.730 (PL 71.9) **Contact:** Gary Green, K8WFN 32210 Norris Road Tippecanoe, OH 44699 Phone: 740-922-4454 Email: tuscofest07@hotmail.com Strasburg, OH Wallick Auction House 965 North Wooster Avenue

4 Feb 2007+ Winter HAM Fest Northern Ohio Amateur Radio Society http://www.noars.net **Talk-In:** 146.70- (open repeater) **Contact:** Tom Porter, W8KYZ 161 Herrmann Drive Avon Lake, OH 44012 Phone: 440-930-9115 Email: tporter161@oh.rr.com Lorain, OH Gargus Hall 1965 North Ridge Road

11 Feb 2007+ Mid-Winter Hamfest InterCity ARC http://www.iarc.ws **Talk-In:** 146.940 (PL 71.9) **Contact:** Dean Wrasse, KB8MG 1094 Beal Road Mansfield, OH 44905 Phone: 419-589-2415 Email: deanwrasse@yahoo.com Mansfield, OH Richland County Fairgrounds 750 North Home Road

18 Mar 2007+ Hamfest and Computer Fair Toledo Mobile Radio Association http://www.tmrahamradio.org **Talk-In:** 147.27+ (will be in net mode - no tone needed) **Contact:** Brian Harrington, WD8MXR 4463 Holly Hill Drive Toledo, OH 43614 Phone: 419-385-5624 Email: bharrington@meduohio.edu Maumee, OH Lucas County Recreation Center 2901 Key Street

14 Apr 2007+ Jackson County Hamfest and Computer Show Jackson County ARC **Talk-In:** 146.790 **Contact:** Edgar Dempsey, KD8XL 110 Morton Street Jackson, OH 45640-1335 Phone: 740-286-3239 Email: kd8xl@verizon.net Coalton, OH James A. Rhodes Community Center State Route 93

15 Apr 2007+ 53rd Annual Hamfest, Electronics, & Computer Show Cuyahoga Falls ARC http://www.cfarc.org/hamfest2007.htm **Talk-In:** 147.27 **Contact:** Ted Sarah, W8TTS 239 Bermont Avenue Munroe Falls, OH 44262 Phone: 330-688-2013 Email: hamfest2007@cfarc.org Cuyahoga Falls, OH Emidio & Sons Party Center 48 East Bath Road

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

18-20 May 2007 Dayton Hamvention Dayton ARA http://www.hamvention.org/ **Contact:** Dayton, OH Hara Arena 1001 Shiloh Springs Road

LOCAL HAM CLUB LISTING

Central Ohio ARES (COARES)
Rich Jordan, AA8DN – President
e-mail: aa8dn@arrl.net
Web Site: http://www.qsl.net/coares/

Hocking Valley ARC
Mel Myers AA8BJ – President
Sunday Creek Amateur Radio Federation
Russel Ellis N8MWK – President

Rusty Zipper HF & DX Contest Club
Contact Name: Mark Harvill
e-mail: na8kd@qsl.net or kg8dp@aarl.net
Web Site: http://www.qsl.net/na8kd

Delaware Amateur Radio Association (DELARA)
Bob Brown, W8BOB, President
160 Curly Smart Circle, Delaware, OH 43015
e-mail: bobb@midohio.net

Capital City Repeater Association (CCRA)
Ned Raybould, N8OIF, Secretary
e-mail: ccra@qsl.net
Web Site: http://www.qsl.net/ccra

Central Ohio Radio Club (CORC)
Joe Hahn, W8NBA, Membership Chairman
e-mail: membership@corc.us
Wed Site: http://www.qsl.net/corc

Lancaster & Fairfield County ARC
Charlie Snoke – President
(740) 653-9092 e-mail: k8qik@qsl.net
Web Site: http://www.qsl.net/k8qik

Columbus QRP Club (CQRP)
Web Site: **http://www.qsl.net/cqrp**

Central Ohio Severe Weather Network
John Montgomery, N8PVC, President (614-231-0590)
e-mail N8WX@severe-weather.org
Web Site: www.severe-weather.org

ATCO FALL EVENT…FUEL FOR HAPPY TIMES!

This years event is no different than the ones in the past, good times...good friends as we all shared current & past experiences. The event this year was again held last November in the ABB cafeteria facility on Cleveland Avenue courtesy of Ken, W8RUT.

We started with a mini trunk sale then lunch, a short business meeting finishing with door prizes. If you weren't there, you missed a lot of fun, food and excellent door prizes. The business meeting included repeater planned enhancements, election of all present officers, and discussions as what to do at Dayton in 2007. We had 3 spaces last year which put a burden on Tom, WU8O, to provide his trailer and maintain spaces. We decided to maintain a presence but at reduced participation levels. So, we will have two spaces and Tom, KA8ZNY, will place his van in one of them leaving the other for sale items. That way Tom gets a place for his van and we retain a place to put our purchases. Thanks Tom.

FCC ELIMINATES MORSE CODE FROM AMATEUR RADIO EXAMS

On December 15, 2006, the FCC announced they would be dropping the Morse code requirement for all classes of Amateur Radio license examinations. No effective date was given. Typically, the effective date of an FCC order is 30 days following publication in the Federal Register, however, the FCC can order its decision effective upon release. Until this order becomes effective, present rules apply, which means Morse code testing will remain in force until further notice.

NASA LAUNCHES FIRST LIVE HD SPACECAST

The U.S. National Aeronautics and Space Administration made history today, Nov. 15, with the first live broadcasts from space in HD. NASA, in cooperation with the Japan Aerospace Exploration Agency, Discovery HD Theater, and NHK of Japan, are jointly producing the spacecasts.

Two live HD broadcasts featured Expedition 14 Commander Michael Lopez-Alegria on the International Space Station, with Flight Engineer Thomas Reiter serving as camera operator aboard the lab floating about 220 miles above the Earth. The broadcasts were carried by Discovery HD Theater and NHK live at 11:30 a.m. EST (and were set to be shown at many of Discovery Channel's retail outlets and repeated through this week).

NASA said it has included HD cameras on previous missions but always had to wait until the ships returned to Earth to retrieve the tapes in order to watch the video. NASA's Space Video Gateway is a system that transmits high-bandwidth signals to ground stations. The Space Shuttle Atlantis crew delivered the equipment to the space station last September.

Without specifying brand names or models, NASA simply said the HD package includes "a commercially manufactured camcorder, viewfinder, lenses and power cables, an HDTV signal decoder, processor and hard drive, and power and data cables."

Date posted: 2006-11-15

ATV FORUM SCHEDULE AT DAYTON HAMVENTION

This year we resume the ATV Forum at the Dayton Hamvention. The baton has been passed from Bill, W8DMR, to me so I hope I can be as entertaining as Bill has been in the past. We need to applaud Bill’s effort in the past for a job well done! As moderator this year, I will be assisted by many fully qualified presenters so it should be well worth your time to attend. It will be held from 12 noon till 2:00PM on Saturday in a room yet to be arranged.

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

The official schedule for Saturday is as follows:
12:00 to 12:05 - WA8RMC, Art Towslee I will introduce everyone and welcome the presenters to the forum.
12:05 to 12:20 - K3ZKO, Ron Cohen "Getting Started in Amateur Television"
12:25 to 12:40 -WB9MMM, Gene Harlan "Emergency Communications Using ATV - The Possibilities"
12:45 to 1:00 - WA6SVT, Mike Collis "Linking ATV Repeaters"
1:05 to 1:20 - WB8ELK, Bill Brown "Airborn ATV"
1:25 to 1:30 - WA8HFK, Frank Amore "ATCO Picture Slide Show"
1:35 to 2:00 - A9XW, Henry Ruh "Some Bits about TV Bytes"

SATURDAY BREAKFAST…good times, good friends!

Here we are again at the breakfast restaurant selected this cold Saturday morning in early December (Well, it wasn't very cold that day but it sounds better with some poetic license). This time it's at the Breakfast Barn near where Ted lived. This place is not much for atmosphere but the food is GREAT, GENEROUS and inexpensive. Think about the inexpensive part then notice the people that showed up. Yes, Jim, WA8UZP, was there accompanied by Roger, WB8DZW, Jay, KB8YMQ, Bob, N8OCQ, Flo Post and myself. The location rotates each week so listen to 147.45 on Wednesday or Thursday for the selected Saturday location and join us if you can. Be there before 8:30 AM or you could be our topic of discussion.

WORLD'S WORST COMMUNICATIONS PREDICTIONS

- "Theoretically, television may be feasible, but I consider it impossibility - a development with which we should waste little time dreaming about." Lee DeForest in 1926, inventor of the cathode ray tube.
- "I think there is a world market for maybe five computers." Thomas J. Watson, in 1943, IBM Chairman of the Board.
- "This 'telephone' has too many shortcomings to be seriously considered as a means of communication. The device is inherently of no value to us." Western Union internal memo in 1876.
- "Who the hell wants to hear actors talk?" H. M. Warner, of Warner Brothers, in 1927.
- "640 Kilobytes ought to be enough (memory) for anybody." Bill Gates, in 1981.
- "All a ham needs to work DX is a good rotary spark gap, a lively piece of Galena Crystal for a receiver, some wire on the roof and a lot of luck." Early 1920's radio amateurs.

NEW MEMBER(S)

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

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

…WA8RMC

LOCAL HAM CLUB LISTING

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

INTERNET ATV HOME PAGES (list verified 04/15/06)

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

Domestic homepages

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

Foreign homepages

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

TUESDAY NITE NET ON 147.45 MHz SIMPLEX

Every Tuesday night @ 9:00PM WA8RMC hosts a net for the purpose of ATV topic discussion. There is no need to belong to the club to participate, only a genuine interest in ATV. All are invited. For those who check in, the general rules are as follows: Out-of-town and video check-ins have priority. A list of available check-ins is taken first then a roundtable discussion is hosted by WA8RMC. After all participants have been heard, WA8RMC will give status and news if any. Then a second round follows with periodic checks for late check-ins. We rarely chat for more than an hour so please join us if you can.

ATCO TREASURER'S REPORT - de N8NT

OPENING BALANCE (10/25/06)..... $1272.04
RECEIPTS(dues)..... $ 220.00
Fall event..... $(193.85)
Pizza party..... $(140.00)
Paypal charges..... $ (0.88)
CLOSING BALANCE (01/20/07)..... $ 1157.31

ATCO REPEATER TECHNICAL DATA SUMMARY

Location: Downtown Columbus, Ohio
Coordinates: 82 degrees 59 minutes 53 seconds (longitude) 39 degrees 57 minutes 45 seconds (latitude)
Elevation: 630 feet above average street level (1460 feet above sea level)
Transmitters: 427.25 MHz AM modulation, 1250 MHz FM modulation, 1260 MHz QPSK digital, 2433 MHz FM modulation and 10.350 GHz FM modulation

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

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

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

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

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

Input control:

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

Manual mode functions:

00* then 1 Ch. 1	Select 439.25 receiver - manual mode (hit 00* then 1 to view 439.25 signal only)
00* then 2 Ch. 2	Unused at this time
00* then 3 Ch. 3	Select 1280 receiver - manual mode
00* then 4 Ch. 4	Select 2411 receiver - manual mode
00* then 5 Ch. 5	Select video ID - manual mode (the 4 identification screens)
01* or 01#	Channel 1 439.25 MHz scan enable (hit 01* to scan this channel & 01# to disable it)
02* or 02#	Channel 2 915 MHz scan enable
03* or 03#	Channel 3 1280 MHz scan enable
04* or 04#	Channel 4 2398 MHz & camera video scan enable
A1* or A1#	Manual mode select of 439.25 receiver audio
A2* or A2#	Unused channel at this time
A3* or A3#	Manual mode select of 1280 receiver audio
A4* or A4#	Manual mode select of 2398 receiver audio
C0* or C0#	Beacon mode – transmit ID for twenty seconds every ten minutes
C1* or C1#	1280 analog/ digital select. Hit C1* for digital. Hit C1# for analog.
C2* or C2#	2433 transmitter for on/off. (C2* enables transmitter and C2# disables it)

Auto scan mode functions:

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

ATCO MEMBERS AS OF OCTOBER 25, 2006

Call	Name	Address	City	St	Zip	Phone	URL
KD8ACU	Robert Vieth	3180 North Star Rd	Upper Arlington	OH	43221	614-457-9511	rfvieth@yahoo.com
K8AEH	Wilbur Wollerman	1672 Rosehill Road	Reynoldsburg	OH	43068	614-866-1399	wilburapilot@yahoo.com
N4AK	Glen Farr	10 Autumn View Ridge	Travelers Rest	SC	29690-8024		
KC8ASD	Bud Nichols	3200 Walker Rd	Hilliard	OH	43026	614-876-6135	kc8asd2@netzero.com
KC8ASF	Tom Pallone	3437 Dresden St.	Columbus	OH	43224	614-268-4873	
W6CDR	Wynn Rollert	1141 Pursell Ave	Dayton	OH	45420	937-256-1772	w6cdr@hotmail.com
WB8CJW	Dale & Sharon Elshoff	8904 Winoak Pl	Powell	OH	43065	614-210-0551	delshoff@columbus.rr.com
N8CXI	Garry Cotter	2367 Northglen Drive	Columbus	OH	43224		gjcotter@aol.com
WB8CXO	Mike Young	289 Gaylord Drive	Munroe Falls	OH	44682		
N3DC	William Thompson	6327 Kilmer St	Cheverly	MD	20785		
WA8DNI	John Busic	2700 Bixby Road	Groveport	OH	43125	614-491-8198	jabusic@yahoo.com
W8DMR	Bill Parker	2738 Florbunda Dr	Columbus	OH	43209		w8dmratv@copper.net
K8DW	Dave Wagner	2045 Maginnis Rd	Oregon	OH	42616	419-691-1625	
WA3DTO	Rick White	2771Keystone Dr.	Painsville	Oh	44077-8830		wa3dto@aol.com
WB8DZW	Roger McEldowney	5420 Madison St	Hilliard	OH	43026	614-876-6033	wb8dzw@aol.com
KC8EVR	Lester Broadie	108 N Burgess	Columbus	OH	43204		
KB8FLY	Rod Shaner	124 West Walnut St.	Lancaster	OH	43130-4344	740-279-3614	rshaner@copper.net
W8FZ	Fred Stutske	8737 Ashford Lane	Pickerington	OH	43147		w8fz@arrl.net
KB8GHW	Mike Amirault	11354 Reussner Dr SW	Pataskala	OH	43062	740-927-5005	kb8ghw@ee.net
W8GUC	Reuben Meeks	1345 Helke Rd	Vandalia	OH	45377	937-454-0968	rcmeeks2@hughes.net
WA8HFK,KC8HIP	Frank, Pat Amore	3630 Dayspring Dr	Hilliard	OH	43026	614-777-4621	famore@wowway.com
WG8I	Chris Vojsak Sr,	3536 W Henderson Rd	Columbus	OH	43220-2232		
WB2IIR	Michael Anthony	370 Georgia Drive	Brick	NJ	08723		
N8IJ	Dick Knowles	1440 Northbrook Dr	Lima	OH	45805		rgrant2001@yahoo.com
K8KDR,KC8NKB	Matt & Nancy Gilbert	5167 Drumcliff Ct.	Columbus	OH	43221-5207	614-771-7259	k8kdr@arrl.net
W8KHW	Kevin Walsh	2396 Anson St	Columbus	OH	43220	614-442-7748	
N8KQN	Ted Post	1267 Richter Rd	Columbus	OH	43223	614-276-1820	n8kqn@copper.net
WA8KQQ	Dale Waymire	225 Riffle Ave	Greenville	OH	45331	937-548-2492	walkingcross@bright.net
N3KYR	Harry DeVerter Jr	303 Shultz Road	Lancaster	PA	17603-9563		n3kyr@comcast.net
N8LRG	Phillip Humphries	3226 Deerpath Drive	Grove City	OH	43123	614-871-0751	phumphries@columbus.rr.com
WB8LGA	Charles Beener	2540 State Route 61	Marengo	OH	43334		cbeener@columbus.rr.com
WB2LTS	Manny Diaz	74 Lincoln Rd	Medford	NY	11763		wb2lts@optonline.net
KA8LWR	Mel Alberty	1645 Olentangy Road	Bucyrus	OH	44820	419-468-2971	ka8lwr@bright.net
W8MA	Phil Morrison	154 Llewellyn Ave	Westerville	OH	43081		
KA8MID	Bill Dean	2630 Green Ridge Rd	Peebles	OH	45660		ka8mid@qsl.net
WB8MMR	Mike Knies	1715 Winding Hollow Dr.	Columbus	OH	43223	614-875-4236	
K4NQV	Dean Maggard	1612 Benson Ave	Bowling Green	KY	42104		k4nqv@insightbb.com
N8NT	Bob Tournoux	3569 Oarlock Ct	Hilliard	OH	43026	614-876-2127	n8nt@atco.tv
WD8OBT	Tom Camm	63 Goings Lane	Reynoldsburg	OH	43068	740-964-6881	firefoxtom11@netzero.com
WU8O	Tom Walter	15704 St Rt 161 West	Plain City	OH	43064	614-733-0722	wu8o@emec.us
N8OCQ	Bob Hodge Sr.	3750 Dort Place	Columbus	OH	43227-2022		hodgerob@yahoo.com
KB8OFF	Jess Nicely	742 Carlisle Ave	Dayton	OH	45410		kb8off@sbcglobal.net
N8OPB	Chris Huhn	1667 Pickering Court	Reynoldsburg	OH	43068		cjhuhn@hotmail.com
W6ORG,WB6YSS	Tom & Maryann O'Hara	2522 Paxson Lane	Arcadia	CA	91007-8537	626-447-4565	tom6ORG@hamtv.com
KC8OZV	George Biundo	3675 Inverary Drive	Columbus	OH	43228	614-274-7261	kilowatt@biundo.org
K2PMS	Paul Schmitter	57 East Main Street	Springville	NY	14141		
KE8PN	James Easley	1507 Michigan Ave	Columbus	OH	43201	614-421-1492	jeasley11@hotmail.com
W8PGP,WD8BGG	Richard, Roger Burggraf	5701 Winchester So. Rd	Stoutsville	OH	43154	740-474-3884	rgburggraf@juno.com
WB8PJZ	Dave Morris	12025 Wapak-Buckland Rd	Wapakoneta	OH	45895		
AE6QU	Ron Phillips	10858 W. Kaibab Dr.	Sun City	AZ	85373	602-369-4242	AE6QU@arrl.net
WA8RMC	Art Towslee	180 Fairdale Ave	Westerville	OH	43081	614-891-9273	towslee1@ee.net
W8RRF	Paul Zangmeister	10365 Salem Church Rd	Canal Winchester	OH	43110		w8rrf@copper.net
W8RRJ	John Hull	580 E. Walnut St.	Westerville	OH	43081	614-882-6527	jhull@wcmi.org
W8RUT,N8KCB	Ken & Chris Morris	3181 Gerbert Rd	Columbus	OH	43224	614-261-8583	wa8rut@aol.com
W8RVH	Richard Goode	9391 Ballentine Rd	New Carlisle	OH	45334	937-964-1185	w8rvh@glasscity.net
W8RQI	Ray Zeh	2263 Heysler Rd	Toledo	OH	43617		zehrw@glasscity.net
KB8RVI	David Jenkins	1941 Red Forest Lane	Galloway	OH	43119	614-878-0575	kb8rvi@hotmail.com
W8RWR	Bob Rector	135 S. Algonquin Ave	Columbus	OH	43204-1904	614-276-1689	w8rwr@sbcglobal.net
W8RXX,KA8IWB	John & Laura Perone	3477 Africa Road	Galena	OH	43021	740-548-7707	lpjp@copper.net
W8SJV, KA8LTG	John & Linda Beal	5001 State Rt. 37 East	Delaware	OH	43015	740-369-5856	w8sjv@nexgenaccess.com
N8SNG	Terry Rankin	414 Walnut Street	Findlay	OH	45840		
KB8SSH	Mike Cotts	3424 Homecroft Dr	Columbus	OH	43224	614-268-8497	mcotts@wideopenwest.com
W3SST	John Shaffer	1635 Haft Dr.	Reynoldsburg	OH	43068	614-751-0029	w3sst@juno.com
K8TPY, K8FRB	Jeff & Dianna Patton	3886 Agler Road	Columbus	OH	43219		cqcqk8tpy@yahoo.com
NR8TV	Dave Kibler	243 Dwyer Rd	Greenfield	OH	45123	937-981-1392	s.crew@in-touch.net
KB8UGH	Steve Caruso	6463 Blacks Rd. SW	Pataskala	OH	43062-7756		dae14@copper.net
W8URI	William Heiden	5898 Township Rd #103	Mount Gilead	OH	43338	419-947-1121	wb8uri@earthlink.net
KB8UU	Bill Rose	9250 Roberts Road	West Jefferson	OH	43162	614-879-7482	
KB8UWI	Milton McFarland	115 N. Walnut St.	New Castle	PA	16101		kb8uwi@yahoo.com
WA8UZP	James R. Reed	818 Northwest Blvd	Columbus	OH	43212	614-297-1328	wa8uzp@yahoo.com
KB8WBK	David Hunter	45 Sheppard Dr	Pataskala	OH	43062	740-927-3883	hiramhunter@aol.com
KC8WRI	Tom Bloomer	PO Box 595	Grove City	OH	43123		ohiomec@aol.com

Call	Name	Address	City	St	Zip	Phone	URL
AA8XA	Stan Diggs	2825 Southridge Dr	Columbus	OH	43224-3011		sdiggs4590@aol.com
N8XYJ	Dan Baughman	4269 Hanging Rock Ct.	Gahanna	OH	43230		danohio@wowway.com
N5XZS	Tim Johnson	1629 Speakman Dr SE	Albuquerque	NM	87123		
KB8YMN	Mark Griggs	2160 Autumn Place	Columbus	OH	43223	614-272-8266	mmgriggs@aol.com
KB8YMQ	Jay Caldwell	4740 Timmons Dr	Plain City	OH	43064		kb8ymq@aol.com
KC8YPD	Joe Ebright	3497 Ontario St	Columbus	OH	43224		----------
N8YHY	Chris Scott	1145Rural Ave SE#5	Salem	OH	97302		
N8YZ	DaveTkach	2063 Torchwood Loop S	Columbus	OH	43229	614-882-0771	
AB5ZJ	Tom Phillips	6712 Hickory Pl. Ct.	No. Richland Hills	TX	76180		
KA8ZNY,N8OOY	Tom & Cheryl Taft	386 Cherry Street	Groveport	OH	43125	614-202-9042	ttaft@columbus.rr.com

ATCO MEMBERSHIP INFORMATION

Membership in ATCO (Amateur Television in Central Ohio) is open to any licensed radio amateur who has an interest in amateur television. The annual dues are $10.00 per person payable on January 1 of each year. Additional members within an immediate family and at the same address are included at no extra cost.

ATCO publishes this newsletter quarterly in January, April, July, and October. It is sent to each member without additional cost.

The membership period is from January 1ST to December 31ST. New Members will receive all ATCO newsletters published during the current year prior to the date they join ATCO. For example, a new member joining in June will receive the January and April issues in addition to the July and October issues. As an option for those joining after mid July, they can elect to receive a complementary October issue with the membership commencing the following year Your support of ATCO is welcomed and encouraged.

ATCO CLUB OFFICERS

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

Repeater trustees: Art Towslee WA8RMC
Ken Morris W8RUT
Dale Elshoff WB8CJW
Statutory agent: Frank Amore WA8HFK
Newsletter editor: Art Towslee WA8RMC

ATCO MEMBERSHIP APPLICATION

RENEWAL O NEW MEMBER O DATE _____
CALL _____
OK TO PUBLISH PHONE # IN NEWSLETTER YES O NO O
HOME PHONE _____
NAME_____
INTERNET Email ADDRESS_____
ADDRESS _____
CITY _____ STATE _____ ZIP _____-_____
FCC LICENSED OPERATORS IN THE IMMEDIATE FAMILY
_____
COMMENTS_____
_____
_____

ANNUAL DUES PAYMENT OF $10.00 ENCLOSED CHECK O MONEY ORDER O
Make check payable to ATCO or Bob Tournoux & mail to: Bob Tournoux N8NT 3569 Oarlock CT Hilliard, Ohio 43026. Or, if you prefer, pay dues via the Internet with your credit card. Go to **www.atco.tv/paydues** and fill out the form. Payment is made through "PayPal" but you DO NOT need to join PayPal to send your dues. Simply DO NOT fill out the password details and there will be no PayPal involvement.

ATCO Newsletter
c/o Art Towslee-WA8RMC
180 Fairdale Ave
Westerville, Ohio 43081

FIRST CLASS MAIL

REMEMBER...CLUB DUES ARE NEEDED.
CHECK THE RIGHT CORNER OF THE MAILING LABEL FOR THE EXPIRATION DATE.
SEND N8NT A CHECK IF EXPIRED.
Email recipients – check ATCO web page under your personal account for expiration.