ATCO NEWSLETTER

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

ATCO HAM IN THE SPOTLIGHT

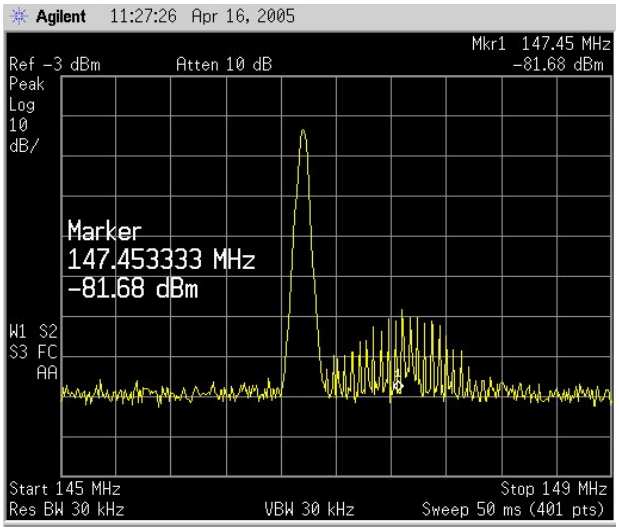
This time we tip our hats to Mike Cotts, KB8SSH. Mike has become one of the "regulars" within our circle of ATVers for he not only checks in to the Tuesday net almost every week but he's participated in many of our activities. He's been a regular pioneer with the digital ATV too being one of the first to receive the digital signal and of a select few that received it mobile. In addition to his ATV activity he also regularly participates in the severe weather net proceedings. Welcome, Mike. It's a pleasure to have you with us! (Check inside for a first hand report of his ATV detective work)!

ACTIVITIES ... from my "workbench"

OK, it's spring! Start the tower climbing exercises! Yes, that means outdoor ham activities but I confess, **the yard work is first…**now, my wife is not looking over my shoulder, let's start building ANTENNAS! Not a lot of ATV construction occurred over the winter from this QTH so it's been rather dull.

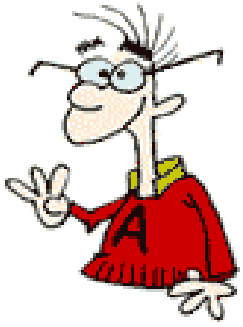
The first thing that is noteworthy is the ATCO/DARA repeater link construction. (I know you're tired of hearing about it and are probably wondering if it's real or not). I assure you it IS but is moving very slowly. I guess it's mostly my fault because I like to build things from scratch and that takes time. Actually a repeater unit to do the functions we want doesn't exist so we're forced to roll our own on this one. I completed two of the three modules needed and had the schematic complete for the third when Adam N1MX in Dayton volunteered to complete it. His ideas were a little more complex however, and decided to computerize the control adding a few bells and whistles. As of this writing, he is now complete and expects installation to begin in a week or two. I was going to install the lightning protection modules last weekend but forgot some of the pieces so it will have to wait till later. I stopped at the South Vienna site to make an analyzer check of the 439, 910 and 1280 MHz spectrum. Everything looks good. Some on air tests have also been successfully made. Jessie and Adam decided it was necessary to "blast" through the 910 MHz interference so they purchased 120 watt 910 amps for each end. I think it's a bit overkill but admit it's better to have too much RF than too little. (There probably will be some unhappy non-ham users of the 910 MHz portion in the Dayton area when those amps are running). The amps require 24 volt 20 amp power supplies so a rework of the existing supply was in order. Luckily I had a supply so now that's complete and mounted. Right now, there's hope for the link to be up and running before the Hamvention. We'll see!

The next thing I'm plagued with is the intermittent nature of the 2.4 GHz repeater output. As you know, it has been intermittent for some time now and I know the problem is in the driver amp that accepts the 20mw signal from a Wavecom module and amplifies it to about 2.5 watts for the Downeast Microwave final amp. I've had it apart a number of times and never can find anything wrong with it. Last time I thought I found it for when I pressed in a certain spot on the board the output would drop. I thought I traced it to an intermittent input coupling cap, changed it and the problem "went away". Now, it's back again so I don't know what to think. I am leaning toward tossing the whole thing out and replacing it with one of the Spectran amps that Tom WU8O bought. I have one now so I may use it and get myself another. If I did, that would boost the 2.4 GHz output from about 10 watts to over 20.



OK, now to the de-sensing problem plaguing us on 147.45. For some time now we have noticed considerable de-sense when the 146.76 transmitter is on the air. Since they are located close to us, it is no surprise but we have co-existed before with minimal problems so why now? Actually the problem has been there for a year or so but has not been too much of a problem because of the 146.76 low repeater usage. I decided to drag a spectrum analyzer down there and take a look and to my surprise I saw signal bursts every 50 KHz or so from the 147.76 up past 148 MHz (at the 147.45 receiver input). There are two ¼ wave band pass cavities in series between the antenna and the 147.45 input and the level of the 146.76 signal is still about -15dBm as seen in the chart to the left. The bursts are right where the 147.45 signal is. The small diamond marker in the plot shows the position. We inserted a directional coupler in the 146.76 transmission line and found it to be clean. As I looked around, I saw the 162.5 MHz NOAA weather transmitter and then knew where the problem lies. The NOAA transmitter runs about 1kw, the 146.76 transmitter runs about 150w and both antennas are located within 25 feet of our 147.45 antenna. I can't turn off the NOAA transmitter to verify but I know for sure that the 162 and 146 signals are mixing and riding together to the 147 receiver. Now I've now got a BIG problem: how to design a filter that will notch out both 146.76 and 162.5 while providing a pass to 147.45. I will call DCI to get some guidance but if any of you know how to solve this, let me know.

Another project in the works now is to combine the 439, 1280 analog and the new 1280 digital receivers into one rack module. These items are under construction and could be operational by the time you read this! The 439 receiver will be as it is now but the 1280 receivers need to be combined and manually selectable. Hit code C1* to activate the digital receiver and C1# to switch back to analog. Note that when the digital receiver is selected, the repeater will be locked onto that input because that receiver always has valid video even if no input signal is present. The analog receiver has a video output only when a valid RF signal is present so we can detect that and stop scanning. We have no convenient video detect circuit for the digital signal at present.



That's all for now folks. Work is in process to improve the digital signal, as I now know what causes the repeater ID video problems in the digital signal but more on that one at Dayton and in the next Newsletter.
…WA8RMC

CROWN CASTLE PLANS MOBILE TV SERVICE IN U.S. (DVB-H)

DUBLIN, Ireland — In a bid to become a leading mobile TV service provider in the United States, Crown Castle Mobile Media will begin a consumer DVB-Handheld trial this summer in Pittsburgh. It plans to deploy DVB-H-based mobile TV phones supplied by the world's three largest mobile phone vendors: Nokia, Samsung and Motorola. Houston-based Crown Castle has been running a three-site single-frequency network DVB-H technology trial in Pittsburgh since last year. It plans to expand its signal coverage to nine-site SFN network, reaching about 600,000 homes, according to Michael Ramke, vice president, marketing and business development at Crown Castle. The number of consumers scheduled to be involved in the new trial, however, will be in the "low hundreds," said Ramke. Many DVB-H engineers here at DVB World 2005 conference this week appear confident of the spec's robustness. Armed with the final report on the DVB-H verification test results, Ulrich Reimers, chairman of DVB's technical module, said initial tests showed that DVB-H can operate more than four hours on battery power. Further, a DVB-H handset equipped with an even smaller antenna than the one used in DVB-T devices demonstrated a gain of 8 dB in robustness compared to DVB-T, when deployed in an automobile moving at the high speed, he added. Crown Castle, which has been negotiating with U.S. content owners, is poised to become a mobile TV network wholesaler. It plans to offer eight video channels and a dozen audio channels using 5 MHz of nation-wide L-band spectrum the company quietly acquired in an FCC auction for $12 million. Crown Castle is reportedly launching the first commercial mobile TV service in 2005. Asked about timing, an executive declined to comment. "It all depends on the availability of mobile TV handsets." Crown Castle said it will introduce the commercial service in one of the 30 largest U.S. cities in the United States.
…Junko Yoshida EE Times March 03, 2005 (11:11 AM EST)

(Also see related article on next page)

AMATEUR RADIO SPECTRUM PROTECTION ACT INTRODUCED

From ARRL Headquarters March 1, 2005

At the urging of the ARRL, Rep Michael Bilirakis (R-FL) has introduced The Amateur Radio Spectrum Protection Act of 2005 into the US House of Representatives. The bill, designated HR 691, has been referred to the House Energy and Commerce Committee where Bilirakis serves as vice chairman. Like previous versions of the proposal, the current measure would require the FCC to provide "equivalent replacement spectrum" to Amateur Radio if the FCC reallocates primary amateur frequencies, reduces any secondary amateur allocations, or makes additional allocations within such bands that would substantially reduce their utility to amateurs.

ARRL President Jim Haynie, W5JBP, says the legislation "is vital for ensuring that the Amateur Radio Service, the only 100-percent fail safe emergency communication capability, remains a viable public safety option."

HR 691 references Amateur Radio's role in providing "voluntary, noncommercial radio service, particularly emergency communications," and it points out that hams have "consistently and reliably" provided communication support in the event of emergencies and disasters including tornadoes and hurricanes, chemical spills, forest fires and rail accidents. As the measure notes, FCC actions already have led to the loss of at least 107 MHz of spectrum to radio amateurs.

Rep Roscoe Bartlett (R-MD) has signed on as the bill's first co-sponsor.

Efforts now will focus on attracting additional cosponsors for the legislation. The League is encouraging members to urge their Congressional representatives to sign aboard HR 691. More than 100 lawmakers agreed to cosponsor similar legislation in the 108th Congress, where it was designated HR 713. Work is proceeding to have identical legislation introduced in the US Senate.

The text of HR 691 is available on the Government Printing Office Web site
http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=109_cong_bills

WIRELESS COMMUNITY SUPPORTS DVB-H FOR DIGITAL TV MARKET

Just when you are starting to get a grip on the 3 digital TV formats I talked about in the last issue, here is yet another. I'm sure it will not be the last for the advancing technology and the desire for manufacturers to create something NEW will be with us for quite some time. The following format is being developed for the portable market. I can't describe the differences here for I don't have enough information yet for a comparison so I'll reserve that for a subsequent issue. In the meantime, just say you learned it first HERE! Ed.

Crown Castle Mobile Media, DiBcom, Freescale, Intel, Microtune, Nokia, O2, S-Communications, Silicon & Software Systems Ltd (S3), Texas Instruments, TTPCom, and UDcast Publicly Promote and Drive DVB-H to Mobile Phones

LAS VEGAS (April 18, 2005) – A number of players in the wireless industry today announced support for DVB-H (digital video broadcast – handheld), an open industry standard for the delivery of mobile broadcast digital TV (DTV) for the U.S., European and Asian marketplaces. DVB-H is experiencing broad support across the wireless ecosystem, including partners and competitors alike, who are working together to foster competition and innovation for the growing digital TV market. Such companies include wireless operators such as O2; multicast network operators such as Crown Castle Mobile Media [NYSE: CCI]; wireless infrastructure providers such as UDcast; handset manufacturers such as Nokia [NYSE: NOK]; software stack providers such as Silicon & Software Systems Ltd (S3); and semiconductor providers such as DiBcom, Freescale [NYSE: FSL], Intel [Nasdaq: INTC], Microtune®, Inc. [NASDAQ: TUNE], S-Communications, Texas Instruments Incorporated (TI) [NYSE: TXN] and TTPCom. Each company listed, plus many others worldwide, is putting support behind DVB-H in efforts to provide an open environment for mobile operators and broadcasters to reach the largely un-tapped but promising digital mobile TV market.

DVB-H is an open, non-proprietary standard that will foster growth throughout the wireless market, allowing mobile DTV handsets and services to reach the mass market faster and at a lower cost to consumers. Additionally, DVB-H delivers an improved end user experience over current video streaming services that utilize cellular networks and reduce network capacity for voice services. Broadcast digital TV for mobile phones is a large opportunity for operators, broadcasters, handset manufacturers and silicon providers as it opens up new opportunities and provides additional users and revenue-generating services for digital TV services.

DVB-H trials are underway in the U.S., Germany, France, UK, Finland, Sweden and other countries, with more trials expected to launch later in 2005 and throughout 2006. Wider roll-out of DVB-H services is expected in 2006 and throughout 2007. In the U.S., DVB-H will be deployed using clear and "ready-for-use" spectrum that is available today, without interfering with existing analog TV stations or other TV or wireless services.

With DVB-H, consumers will be able to watch their favorite TV shows, sporting events, news and programming in real-time using their mobile phone at speeds comparable to watching their TV at home. To support the increasing consumer appetite for mobile TV without sacrificing battery life or voice call availability, DVB-H uses a technology called "time slicing" to enable up to eight hours of TV time on one battery charge. DVB-H's "time slicing" technology only provides information required for the one channel of content currently being watched which reduces power consumption and saves battery life. Since it is currently assumed that users will only "snack" on 15-20 minutes of TV programming at a time to catch up on news, sports, weather, major news and sporting events, and more, the battery life enabled by DVB-H will deliver support for voice usage and TV "snacking" throughout the day.

Wireless Community Shows Support for DVB-H

Crown Castle Mobile Media

Crown Castle Mobile Media, a subsidiary of Crown Castle International Corp (NYSE:CCI), intends to build and operate a dedicated DVB-H network for broadcasting digital television content and other rich media services to mobile devices. The network will utilize 5 MHz of vacant and unencumbered nationwide spectrum acquired by Crown Castle Mobile Media in FCC auction 46 in 2003, and will be built utilizing CrownCastle's 10,000 plus tower network. Crown Castle Mobile Media and Nokia have recently completed successful DVB-H demonstration trials in Pittsburgh, Pennsylvania.

"Open standards are expected to fuel innovation and growth in the mobile Digital TV market just as they did in the wireless voice market," said Michael Schueppert, President of Crown Castle Mobile Media. "We are pleased to see the broad and innovative support DVB-H is garnering as we continue to implement our business plan."

DiBcom

On February 7, 2005, DiBcom became the first company in the industry to introduce a mobile DTV chip based on the open industry DVB-H standard with the unveiling of its DIB7000-H(tm) chipset. Also an industry first, the DiB7000-H has already been demonstrated by Siemens in a fully functional mobile phone concept device. At NAB 2005 (DVB Booth SU11408), DiBcom announced that the drivers of its chipset have been ported onto Windows CE operating system. DiBcom's support of Microsoft Windows Mobile software is a significant boost to developers planning to integrate DTV services into consumer devices such as Smartphones, PocketPCs and portable media players. To ease this integration, DiBcom is now offering a complete DIB7000-H reference design based on a DVB-H Secure Digital (SD) memory card that can be inserted into devices equipped with Windows Mobile software and an interface slot.

DiBcom is a fabless semiconductor company that designs high-performance chipsets used at the heart of mobile broadcast digital TV as well as in automotive, PC/peripheral and handheld device applications. DiBcom has developed patented algorithms and architecture for fast and accurate channel estimation and high Doppler compensation that enable low-power portable TV reception everywhere and provide "Proven Performance" at speeds exceeding 100 mph.

"DVB-H clearly offers the lowest cost infrastructures for the operators and the highest mobility for consumers," said Yannick Levy, president and CEO, DiBcom. "We are pleased that the first mobile phone concept devices on the market are currently being

standardized by the European Telecommunications Standards Institute (ETSI) with the 'Proven Performance' of DiBcom's technology as implementation guidelines."

Freescale

Freescale continues to drive the DVB-H standard worldwide with easy, cost-effective, mobile connectivity technology. Freescale demonstrated the industry's first direct conversion zero IF tuner for DVB-H in February 2004, and first showcased its handheld DVB-H solution for mobile television at 3GSM World Congress 2005.

"Freescale is actively creating 'mobilevision' designs that converge television broadcasts and 2.5G and 3G cellular networks, providing the high bandwidth necessary to drive a whole new market for mobile entertainment," said Ken Hansen, Freescale's Senior Technical Fellow and Director of Advanced Technologies. "Freescale's direct conversion, zero intermediate frequency (ZIF) approach, allows for very low power consumption, reduced part count, extended battery life, and reduced form factors for mobile phones. Our solution is generating marked interest among major handset manufacturers, who will benefit tremendously from consolidated industry support of the DVB-H standard."

Intel

"As a leader in wireless and mobile computing technologies with its Intel Centrino™ based notebooks and Intel XScale® technology based handhelds and phones, Intel continues to drive and supports DVB-H that will enable the rapid adoption of the wireless lifestyle. Delivering TV programming and exciting data content to mobile users is next step in the convergence of the mobile phone," said Sam Arditi, vice president and general manager of Intel's Cellular and Handheld Group. "Consumers want to enjoy a great user experience and have access to their entertainment and personal data without having to be encumbered by the device, supporting standards like DVB-H with Intel XScale technology based handset platforms helps to make this a reality."

Microtune

Microtune, inventor of the single-chip TV tuner, pioneers advanced silicon technology for forward-looking applications in cable TV, digital TV and mobile TV. The company is committed to international standards, actively supporting DVB-H for handheld TV devices.

"Our silicon tuners offer core technology that allows our customers to deliver products with exceptional digital TV reception, whether in very large-screen televisions or in very small mobile devices," said James A. Fontaine, Microtune President and CEO. "By optimizing our TV tuner chips to deliver high-performance and reliability in an open-standards environment, we not only accelerate our OEM customers' time-to-market with innovative consumer products, but also help them to propel new electronics devices into the high-volume mainstream. DVB-H is an important standard for Microtune in developing advanced tuner solutions for mobile digital TV."

Nokia

Nokia is working within the DVB-H community to develop terminal and network solutions, and expects to bring a commercial mobile TV device based on the Series 60 platform to market during 2006. By making DVB-H a key feature on the popular Series 60 platform, Nokia will rapidly bring mobile TV into mass markets. Currently, Nokia has pilot DVB-H projects underway in Germany, the UK, the US and Finland and will be launching trials in other markets during 2005.

"Nokia is already involved in live DVB-H trials around the world and is working to bring mobile television to the hands of eager wireless users. Widespread industry support by network operators, handset manufacturers, component suppliers and others involved in the value chain will create a competitive environment where not only the industry will benefit, but the consumers who will be the ultimate beneficiaries of choice," said Richard Sharp, vice president of Nokia's Rich Media business.

O2

O2, a leading European mobile operator, has unveiled plans to conduct the UK's first usability trial of multi-channel television to mobile phones, beginning this summer. In partnership with ntl's Broadcast division, O2 will provide around 500 customers with a multimedia phone with a built-in digital TV receiver. Participants are expected to be able to choose up to 16 TV channels comprising music, sport, news, comedy, soaps, documentary, drama, cartoons and specialist channels.

O2 has more than 23 million customers and some 13,000 employees. It reported revenues for the year ended 31 March 2004 of £5.646 billion. Data represented nearly 24% of total service revenues in the quarter ending 31 December 2004.

S-Communications

S-communications is a leading edge fabless semiconductor company developing DVB-H compatible single chip solutions for the emerging mobile TV market. The company believes its proprietary technology will deliver world class performance in the areas of power consumption and mobility at low cost. Headquartered in Menlo Park, CA, the company's management team is comprised of wireless industry veterans from companies including Philips, RF Microdevices, Sirf and Trimble Navigation.

"Based on the number of participants supporting DVB-H including wireless operators, handset manufacturers and semiconductor suppliers, S-Communications believes that this standard will be the leading choice for transmission of mobile TV to consumers," said Morteza Saidi, Founder and CEO of S-Communications.

Silicon & Software Systems Ltd (S3)

S3 successfully demonstrated its *onHandTV*™ software solution for mobile broadcast digital TV in February at the 3GSM World Congress. S3's *onHandTV* provides a complete IPDC over DVB-H software solution based on the DVB-CBMS IP Datacast standard. The *onHandTV* product includes Protocol Stacks, Middleware and Applications, providing a low footprint software solution.

"*onHandTV* is a compelling offering that enables OEMs, ODMs and Semiconductor manufacturers to rapidly enter the Mobile Digital TV marketwith a cost effective, high performance solution," said John O'Brien, CEO of S3.

For more information on S3, please visit: www.s3group.com/onhandtv or email: onHandTV@s3group.com

Texas Instruments

Texas Instruments introduced the industry's first single-chip for mobile broadcast digital TV, code named "Hollywood" in October 2004. "Hollywood" is a complete single-chip solution for handsets that supports DVB-H for mobile DTV in the U.S. and Europe as

well as the Japanese standard, ISDB-T (integrated services digital broadcast – terrestrial) and works with TI's OMAP™ processors to display crisp, clear images on the display. "Hollywood" uses TI's DRP™ technology to achieve the lowest power, smallest size and lowest cost mobile DTV solution in the industry which will be key to driving DTV into consumer cell phones. (See: www.ti.com/wirelessdtv)

"Without an open ecosystem in the mobile digital TV marketplace, revenue opportunities, innovation and services to consumers will be restricted," said Gilles Delfassy, senior vice president and general manager of TI's Wireless Terminals Business Unit. "In large part this will be accomplished through wide industry support of open standards such as DVB-H at every level of the wireless ecosystem, including partners and competitors alike."

TTPCom

TTPCom Ltd, the world's leading independent supplier of digital wireless technology, supports the DVB-H standard and licenses their DVB-H demodulator/decoder technology to the industry. Semiconductor vendors will be able to deploy high performance DVB-H receiver solutions quickly and cost effectively using this intellectual property from TTPCom.

TTPCom's intimate understanding of handset manufacturers' requirements and the importance of low power consumption for mobile/battery powered applications has resulted in a dedicated hardware design, without embedded processor. The demodulator/ decoder design supports a variety of low IF and zero IF front end tuner architectures and provides standard MPEG transport stream and IP data stream outputs. Both DVB-H and DVB-T receiver functionality is supported on a common hardware platform so enabling devices to be targeted at both markets.

Paul Hanlon, DVB-H product manager at TTPCom comments: "The ability to deliver broadcast multi-media content to mobile phones and handheld devices opens up huge new opportunities for the industry. TTPCom are committed to supporting the DVB-H standard as the way to go in digital mobile TV."

UDcast

UDcast are heavily involved in this market, notably through a close partnership with Nokia, looking at the utilization of DVB-T networks for the delivery of content to mobile handheld devices.

The UDcast IPE-10 implements all the required as well as the optional features of the DVB-H standard: time slicing and forward error correction. Furthermore radio impairments, characteristic of mobile environments, are mitigated by the IPE-10's forward error correction mechanisms. The IPE-10 also delivers sophisticated head-end functionality, including network management, security, quality of service, and support for hand-over from cell to cell.

UDcast's IPE Manager contains network element management features including group management, which considerably facilitates the roll out of large DVB-H networks and the implementation of DVB-H services. The IPE Manager addresses the problem of efficient control of the tens or hundreds of IPEs distributed throughout the DVB-H network. UDcast's IPE-10 and IPE Manager are the most popular DVB-H equipments currently used by leading industry players.

SLOVENIA ATV

I don't have much in the way of details here but it is obvious that this group in Europe has way too much time (and money) on their hands. I absolutely don't know how they do it. The picture you see is what they say is their typical ATV installation. This one is fully equipped with digital as well as satellite uplink capabilities. Check out their web site at http://lea.hamradio.si/~s51kq/

THE SATURDAY MORNING BREAKFAST GROUP GATHERS…

I missed the Saturday morning gathering on April 2nd but from what I see here, it must have been a blast! Usually every Saturday morning the ATCO group will select a place to have breakfast. This time it was Mel's Diner in Hilliard. As you can see on the left, Dick, N8IJ, took charge of the gathering early with an appropriate hand sign. That's good Dick, for this photo, two fingers are MUCH better than one!
…WA8RMC

…Pictures by Jim, WA8UZP.

To the right is a group picture of what appears to be BEFORE breakfast. I think they would look much happier in the "after" shot.

OK, now this is an "after" shot. See how contented Wilbur looks?

TOSHIBA'S DIRECT METHANOL FUEL CELL OFFICIALLY CERTIFIED AS WORLD'S SMALLEST BY GUINNESS WORLD RECORDS

Again Guys, here I go with non-ATV related maternal. However, I like to highlight what I feel to be scientifically significant and, who knows, maybe we will have these in our portable ATV equipment in the near future. I thought it to be neat so…here goes! Ed.

28 February 2005. Tokyo -- Toshiba Corporation, the world leader in fuel-cell technology for handheld electronic devices, today announced that Guinness World Records has officially certified its highly compact direct methanol fuel cell (DMFC) as the world's smallest DMFC. The fuel cell will feature in the 2006 edition of Guinness World Records, the perennially popular compendium of record-breaking feats and achievements.

Designed for integration into devices as small as digital music players, Toshiba's DMFC is as long and wide as a thumb, only 22 x 56 x 4.5mm (maximum of 9.1mm with fuel tank). This size advantage offers greater design freedom to developers of handheld electronic devices, without any compromises in performance. Although small enough for integration into a wireless headset for mobile phones, the prototype is efficient enough to power an MP3 music player for as long as 20 hours on a single 2cc charge of highly concentrated methanol. The DMFC outputs 100 milliwatts of power, and can continue to do so, non-stop, for as long as users top up its integrated fuel tank—a process that is as simple as it is safe.

Commenting on today's announcement, Kazunori Fukuma, Managing Director of Display Devices & Components Control Center of Toshiba Corporation stated, "We are really honored and delighted that an organization as respected as Guinness World Records has certified our fuel cell as the world's smallest DMFC. This is welcome recognition of our efforts to stay a step ahead of our competitors in fuel cell miniaturization and operating efficiency. We will continue to develop even more compact, more efficient DMFC that can power the smallest portable devices on the market."

David Hawksett, science and technology judge at Guinness World Records said "Today's gadgets, with their color screens and powerful processors, are pushing battery technology to its limits. This portable power station will allow us all to use our mobile technology without having to stay within a few miles of a mains socket!"

Toshiba plans to introduce commercial samples of the world's smallest DMFC for small handheld electronic devices in 2005.

Main Specifications

Product:	Direct Methanol Fuel Cell
Output:	100 milliwatts
Size:	W22 x L56 x H4.5mm (thinnest) or H9.1mm (fuel tank)
Total Weight:	8.5 g including 2cc of methanol fuel inside the tank
Fuel Tank Size:	2cc
Fuel:	Methanol (99.5 percent concentration)
Continuous Operation:	20 hours with 2cc methanol (full tank)
Features:	- Passive fuel supply system - Simple structure that requires no pump or fan - Use high concentration of methanol - Small fuel tank

About Guinness World Record

Published annually since 1955, Guinness World Records has become an international publishing phenomenon, published in more than 100 countries and in 23 languages. Guinness World Records has become a household name and the global authority on world records. No other enterprise collects, confirms, accredits and presents world record data with such comprehensiveness and thoroughness. Guinness World Records is the universally recognized authority on record-breaking achievements.

TV REPAIRMAN IS BACK IN DEMAND

The television repairman is popular again. But today, he is just as likely to teach the modern couch potato which remote control to use as he is to replace a burned-out circuit board.

"It seems like nobody can hook up their own TVs any more," said Mike Bozzo, whose family owns Newark TV. "Some people will read through their whole service manual for a couple of days and they still don't get it."

Bozzo and other small television service shops are experiencing a renaissance thanks to the growing number of homes with high-definition televisions and elaborate home theater systems that require more know-how to set up than a computer.

The boost comes after decades of decline. In 2002, a federal labor report predicted that job growth in the home electronics service industry would remain slow until sales of the new generation of high-priced televisions picked up. That is because the heart of the old TV repair industry - the traditional tube television - has gotten so cheap consumers typically buy new equipment rather than fix an old set, according to the U.S. Bureau of Labor Statistics.

"The old TV repairman has gone by the wayside," said Joe Williams, who owns CB Joe TV and Appliance in New Castle.
Today, the ability to teach customers how to get the most out of expensive home theater equipment is more important than the ability to take a television apart, Williams said.

At CB Joe, nearly everything the company sells is delivered and installed by company employees. When a customer picks up a television and sets it up on his own, he usually calls the store for help, said Joey Szczepanski, who sells and installs televisions for CB Joe.

"Because of how high-tech everything is, people are intimidated," Szczepanski said. "The stuff is so expensive, they are afraid they are going to damage it."

The increase in demand for television repairs predicted by the Bureau of Labor Statistics already is happening.
After a long decline in the 1990s, service calls started picking up about 2000, said Ron Clark, who owns Kral Electronics in Newark. Nearly all of those calls are for big-screen, digital television, he said.

A lot of Kral's work comes from chain stores like Circuit City and K-Mart, which hire independent repairmen to handle in-home repairs, Clark said. The new sets are so complicated that repair shops rely heavily on TV manufacturers, said Clark, who has owned Kral's for 31 years.

"We get a lot of strange problems today with the digital stuff," Clark said.

At Newark TV, the fastest-growing service call isn't for a repair, Bozzo said. Customers call in Bozzo when they can't get their system to work properly after days of struggling with wires, remotes and manuals. Usually nothing is wrong with the equipment, he said.
"I come in and in five minutes make it work," Bozzo said. "Boy, that makes them mad."
…STEVEN CHURCH / The News Journal

03/31/2005*Contact Steven Church at 324-2786 or schurch@delawareonline.com.*

From www.Delawareonline.com on 4/6/05

ATV FOX HUNT

On April 23, 2005, there was an unknown video signal getting into the ATCO repeater. This was a very weak video signal, which, I am told, has been going on for about three days. After the Saturday morning breakfast get together, I decided to go look for it with my mobile equipment. I started at Cemetery Rd. and I-270 and headed to downtown using a 1.2Ghz Mag Mount with a 2.4Ghz receiver. I drove down Front St. to Board St. Headed east to Grant and back toward the freeway. At about Grant Hospital I started getting the signal. At Grant and Rich St. it was about P4 so I went back around and drove down Rich St. The signal came up to P5 and I saw the back of my truck as I drove by. The signal was coming from a building using a wireless camera for surveillance at the front door.

I went to the door and no one answered. Then I went to a building that was open to see if they would call security for me to see if it could be turned off. While waiting for security to show up and after about 10 minutes had gone by, the fire department showed up. Boy, what did I do now!! What had happened was the security officer from Franklin U. had gone in the building from the back and set off the fire alarm. (Bet that made his day) After the false alarm the security guard came up and talked to me about this. They could not turn off the camera but gave me a name and number to call on Monday. Mysteriously, the signal disappeared on Monday. Had a lot of fun and it was very interesting.
…Mike – KB8SSH

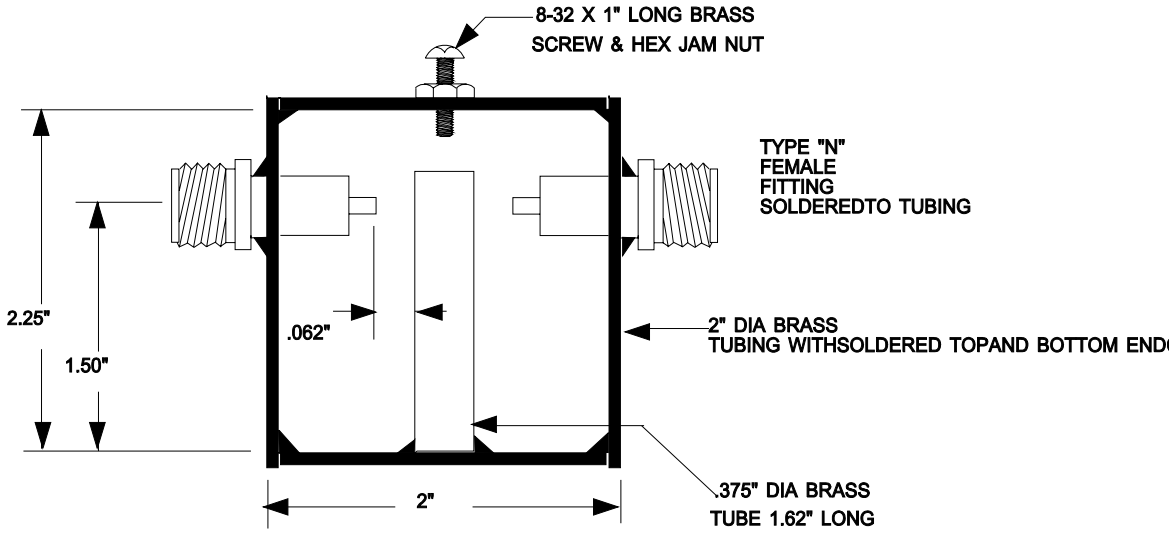
BUILD THIS 1260 MHZ CAVITY FILTER

Here is a simple filter I designed over 10 years ago for use on the 1250-1280 MHz band. Now that we have the 1260 MHz digital signal, some that are experiencing interference might try this design. It also works for the 1250 MHz analog signal. It's simple to build and easy to tune so give it a try on that next "rainy day". Ed.

Here is a simple single cavity filter for the 1260 MHz band. The design is the result of a need to provide a front end tuned input for the Down East Microwave 1260 MHz GASFET dual stage preamp. This preamp has no tuned input stage so its response is quite broad. To minimize unwanted interference from swamping and desensitizing the front end, this filter was born. Now I realize that many of you don't own a lathe that I used to construct this device so use this information to make do with whatever you have. For instance, a round cavity is not needed...a square one of similar dimensions made out of blank copper clad circuit board stock will also work. I used what was available...which turned out to be a piece of 2 inch diameter silver plated brass tubing that I found at a Hamfest disguised as some weird sort of RF filter. I look for items like this that can be used for these projects.

In any case, look at the input and output coupling of this design. Not very often will you find a cavity that is not link coupled on input and output. This design uses capacitive coupling to the center post provided by the end of each female "N" fitting. The spacing of about 1/16 inch seems just about right but leave room to be able to slide them in and out to obtain good coupling without reducing the Q too much. Closer provides more coupling and further away from the center post reduces coupling and raises the Q which will affect the sharpness of the bandpass. Also, and probably the most important, is that as coupling is reduced, the loss thru the cavity increases. With a little juggling a happy medium can be found where the coupling is minimized before the loss becomes noticeable. This is not a critical adjustment and "on the air" tests will be adequate but, in my opinion, nothing beats a good weak signal source and RF voltmeter so you can "play with the adjustments" longer.

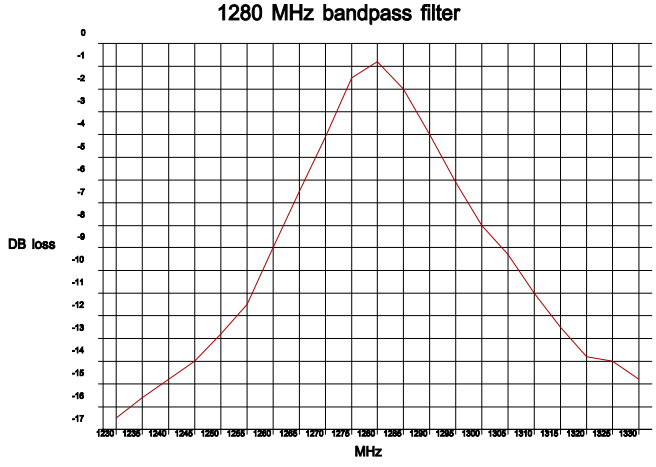
Note that even though the "books" indicate capacitive coupling steepens the lower frequency skirt of the curve, my tests show only *slight* differences. Oh well, it **is** better and it's easier to construct than link coupling so..."go for it".



1280 MHz bandpass filter

The diagram and graph on the right should provide sufficient data to enable duplication.

The plot at the right has 5 MHz / square resolution horizontally and 1dB/ square vertically.
Happy building!!!



Art...WA8RMC

HAMVENTION 2005 SATURDAY ATV FORUM

The 2005 Hamvention is nearly upon us. The following ATV schedule has now been finalized and presented here. If you can, please try to set aside time in your busy day to join Bill Parker host this year's event. I believe it will be time well spent, not just because I'm going to be one of the presenters, but the material will be of great interest. See you there! WA8RMC

Fast Scan ATV Forum, Saturday May 21 @ 12:14 PM

12:15 – 2:30 PM Amateur Television ……Room 1

Moderator: **Bill Parker W8DMR**

Speakers: **Ken Morris, W8RUT – Introduction to Digital ATV as applied to the WR8ATVRrepeater**.
The application of D-ATV to the Columbus, Ohio ATV repeater may be the first in the U.S. The gear selected, test trials, and results will be presented. Expected expansion plans declared.

Art Towslee, WA8RMC – The Care and Feeding of a Comprehensive ATV Repeater.
Bands, frequency choices, site selection, equipment and antenna types, power levels, transmission lines and other issues.

Bill Brown, WB8ELK – High Flying ATV
University balloonsat – Carrying ATV to the Edge of Space.

Also announcements by: DARA ATV Repeater status, Jessie, KB8OFF
ATVQ Editor, Gene, WB9MMM
ATNA Activities, Ron, K3ZKO

LOCAL HAM CLUB LISTING

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

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

HAMFEST CALENDAR

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.

20-22 May 2005 *Dayton Hamvention / ARRL National Convention Dayton ARA http://www.hamvention.org **Talk-In:** 146.94(-), 146.91(-), 223.94(-), 442.1(+) **Contact:** Hamvention PO Box 964 Dayton, OH 45401-0964 Phone: 937-276-6930 Fax: 937-276-6934 Email: info@hamvention.org Dayton, OH Hara Arena 1001 Shiloh Springs Road Trotwood, OH **Div:** Great Lakes **Sect:** Ohio
6 Aug 2005 +Ham "OH" Rama **Contact:** James Morton, KB8KPJ 6070 Northgap Drive Columbus, OH 43229-1945 Phone: 614-846-7790 Email: kb8kpj@arrl.net Columbus, OH **Div:** Great Lakes **Sect:** Ohio

5 Jun 2005 + Franklin County Hamfest http://www.franklincountyfest.org Talk-In: 147.840 / 147.240 Contact: Chris Lind, KC8BUO 57 Glencoe Road Columbus, OH 43214 Phone: 614-267-7779 Fax: 614-268-8539 Email: **clind2@juno.com** Columbus (Hilliard), OH Franklin County Fairgrounds Columbia Street

12 Jun 2005 + Hamfest/Trunk Sales Fulton County Amateur Radio Club http://k8bxq.org Talk-In: 147.195 Contact: Angela Infante, KB2AVN PO Box 521 Wauseon, OH 43567 Phone: 419-822-4382 Email: webmaster@k8bxq.org Tedrow, OH Fulton County Amateur Radio Club Field Day Site 101 Hill Avenue

18 Jun 2005 + Milford Amateur Radio Club Talk-In: 147.345+ Contact: Chris Reinfelder, KB8SNH 3782 Grovedale Place Cincinnati, OH 45208 Phone: 513-351-2776 Email: KB8SNH@fuse.net Milford, OH Live Oaks Career Development Campus 5956 Buckwheat Road

23 Jul 2005 + 8th Annual OH-KY-IN Hamfest OH-KY-IN Amateur Radio Society http://www.ohkyin.org Talk-In: 146.670 (-) Contact: Carol Hugentober, WA8YL 4441 Andreas Avenue Cincinnati, OH 45211 Phone: 513-661-5323 Email: hamfest@ohkyin.org Cincinnati, OH Diamond Oaks Career Development Campus 6375 Harrison Avenue

31 Jul 2005 + Portage Hamfair '05 Portage Amateur Radio Club http://www.parc.portage.oh.us/ Talk-In: 144.79/145.39 Contact: Joanne Solak, KJ3O 9971 Diagonal Road Mantua, OH 44255 Phone: 330-274-8240 Fax: 330-274-8527 Email: ljsolak@apk.net Randolph, OH Portega County Fairgrounds 4215 Fairgrounds Road

6 Aug 2005 + Ham "OH" Rama Voice of Aladdin ARC Contact: James Morton, KB8KPJ 6070 Northgap Drive Columbus, OH 43229-1945 Phone: 614-846-7790 Email: kb8kpj@arrl.net Columbus, OH

21 Aug 2005 + Warren Amateur Radio Association http://w8vtd.org/ Talk-In: 146.970 (minus offset - no tone) Contact: Richard E. Bell, KC8TAP 2918 Williamsburg Stree NW Warren, OH 44485 Phone: 330-898-6539 Email: kc8tap@neo.rr.com Warren, OH Kent State University Work Force Building, Trumbull Branch 4314 Mahoning Avenue

18 Sep 2005 x Greater Cincinnati Amateur Radio Association Talk-In: ARPSC 145.37 (-600), ALT. FM CLUB 146.88 (-600) Contact: Stan Cohen, W8QDQ 2301 Royal Oak Court Cincinnati, OH 45237-2939 Phone: 513-531-1011 Fax: 513-531-3834 Email: stanco49@aol.com Cincinnati, OH Scarlet Oaks Campus, Great Oaks Vocational System 3254 East Kemper Road Sharonville

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.

W6CDR Win Rollert Dayton, Ohio
N5XZS Tim Johnson Albuquerque, NM
N3DC William Thompson Cheverly, MD

…WA8RMC

ATCO

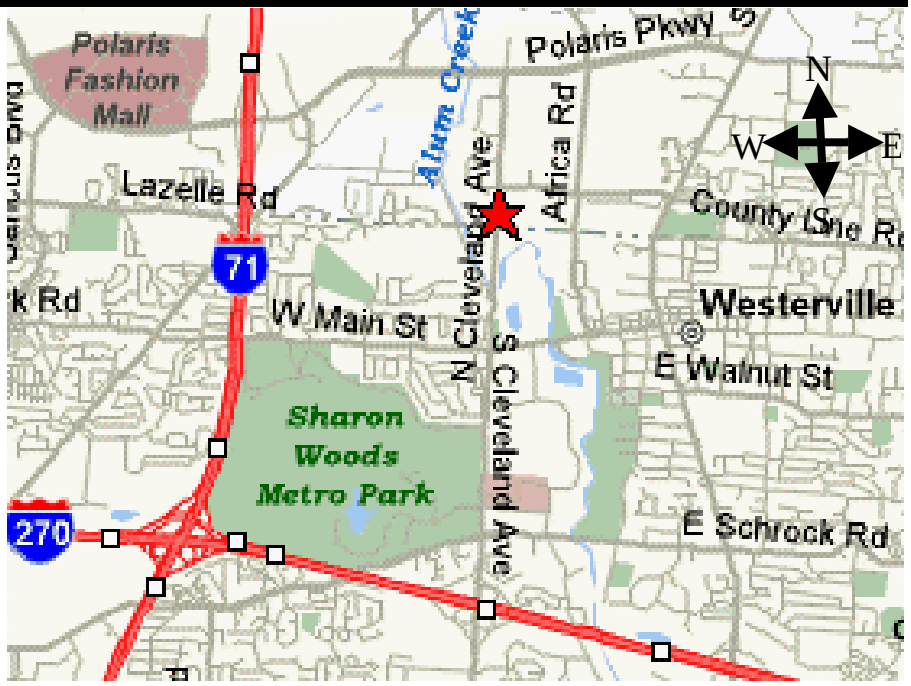
2005 SPRING EVENT

1:00 PM - SUNDAY
MAY 15, 2005
ABB PROCESS AUTOMATION
CAFETERIA

579 EXECUTIVE CAMPUS DRIVE
FOR MORE DETAILS, CONTACT
ART - WA8RMC 891-9273

LUNCH PROVIDED - DOOR PRIZES -
BRING A FRIEND AND SEE OLD BUDDIES
MINI HAMFEST - SHOW AND TELL

DIRECTIONS TO THE ATCO EVENT



From I-70 WEST Bound:
Take I-270 Northbound around and turning to the west to Cleveland Ave. Exit north onto Cleveland Ave and travel north about 2 miles to Executive Campus drive. (It's the next street past Westar Crossing Street). Turn left (west) to the ABB building at the end of the street.

From I-70 EAST Bound:
Take I-270 Northbound around and turning to the east past SR 315 and past I-71. Get off on the Cleveland Ave second exit and travel north (to Westerville). Continue north on Cleveland past Schrock road and then past Main Street. Continue north about ½ mile past Main Street to Executive Campus Drive. (It's the next street past Westar Crossing Street) Turn left (west) to the ABB building at the end of the street

From I-71 NORTH bound toward Columbus:
Drive through Columbus on I-71 to I-270 on the north side. Take I-270 east to the first exit, Cleveland Ave. Get off the Cleveland Ave second exit and travel north (to Westerville). Continue north past Schrock road and then past Main street. Continue north about ½ mile past Main Street to Executive Campus Drive. (It's the next street past Westar Crossing Street) Turn left (west) to the ABB building at the end of the street.

From I-71 traveling SOUTH bound toward Columbus (North of I-270):
Exit the Polaris Ave exit and travel East about 1 mile to Cleveland Ave. Turn right on Cleveland Ave to Executive Campus Drive. Turn right again on Executive Campus Drive. ABB is on the right side of the street about half way around the semi-circle.

INTERNET ATV HOME PAGES (list verified 01/18/02)

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. (For comments or additional listings contact me at towslee@ee.net).
Note: The listings below without URL's have disappeared! If any of you know otherwise, let me know.

Domestic homepages

http://psycho.psy.ohio-state.edu/atco	Ohio, Columbus, homepage (ATCO)
http://www.activedayton.com/community/groups/rmeeksjr/index.html	Ohio, Dayton ATV group (DARA)
http://users.erinet.com/38141/atv.htm	Ohio, Xenia KB8GRJ
http://www.qsl.net/ka8mid	Ohio, Chillicothe area, KA8MID homepage
	Alabama - Gulf Coast Amateur Television Society
http://www.hayden.edu/Guests/AATV	Arizona, Phoenix Amateurs (AATV) Carl Hayden High School
http://www.w7atv.com	Arizona, Phoenix Amateurs (AATV)
http://www.citynight.com/atv	California, San Francisco ATV
http://www.qsl.net/atn	California, Amateur Television Network in Central / Southern
http://www.qsl.net/scats/	Florida, Melborn Space Coast Amateur TV Society (SCATS)
http://www.bsrg.org/aatn/aatn1.html	Georgia, Atlanta ATV
http://members.tripod.com/silatvg	Illinois, Southern, Amateur Television group
http://www.ussc.com/~uarc/utah_atv/id_atv1.html	Idaho ATV
	Kentucky, Lexington Bluegrass ATV Society (BATS)
	Kansas, Kansas City Amateur TV Group (KCATVG)
http://www.bratsatv.org	Maryland, Baltimore Radio Amateur Television Soc. (BRATS)
http://www.icircuits.com/dats	Michigan, Detroit Amateur Television System (DATS)
http://come.to/amateurtv.mn	Minnesota Fast Scan Amateur Television (MNFAT)
	Missouri, St Louis Amateur Television
http://www.qsl.net/kd2bd/atv.html	New Jersey, Brookdale ARC in Lincroft
http://www.no3y.com/radio.html	New Mexico, Farmingham
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.geocities.com/Hollywood/5842	Tennessee, East ATV
http://www.hats.stevens.com	Texas, Houston ATV (HATS)
	Texas, WACO Amateur TV Society (WATS)
http://www.hamtv.org/	Texas, North Texas ATV
http://www.ussc.com/~uarc/utah_atv/utah_atv.html	Utah ATV
	Washington, Western Washington Television Soc. (WWATS)
http://www.shopstop.net/bats/	Wisconsin, Badgerland Amateur Television Society (BATS)

Foreign homepages

http://lea.hamradio.si/~s51kq/	Slovenia ATV **(BEST OF FOREIGN ATV HOMEPAGES)**
http://www.batc.org.uk/index.htm	British ATV club (BATC)
http://www.sfn.saskatoon.sk.ca/recreation/hamburg/hamatv.html	Saskatoon, Canada ATV
http://www.gpfn.sk.ca/hobbies/rara/atv3.html	Regina, Canada ATV
http://www.inside.co.uk/scart.htm	UK, Great Britain ATV (SCART)
http://www.cmo.ch/swissatv	Swiss ATV
http://www.rhein-land.com/atv	German ATV in "Niederrhein" area
http://www.arcadeshop.demon.co.uk/atv/	UK, G8XEU ATV homepage
	British Columbia, Canada VE7RTV repeater
	Auckland, New Zealand ATV
http://www.cq-tv.com	British ATV Club and CQ-TV Magazine
http://oh3tr.ele.tut.fi/english/atvindex.html	Finland ATV, OH3TR repeater.

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 1 watt continuous (DVB-S digital ATV)
	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, 2433 & 10.35 GHz transmitters video identify every 30 minutes showing ATCO & WR8ATV on four 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**)
	915 MHz - F5 video link data from remote sites
	1280 MHz - F5 video input or DTV-S digital selectable (C1* selects digital & C1# selects analog)
	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
	1280 MHz - Diamond tri-band vertically polarized 12 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 (future – not installed yet)

	Touch Tone	Result (if third digit is * function turns ON, if it is # function turns OFF)
Input control:	00#	turn transmitters **off** (exit manual mode and return to auto scan mode)
	00*	turn transmitters **on** (enter manual mode -keeps transmitters 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	Select 915 receiver - manual mode
	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 receive 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#	Manual mode select of 915 receiver audio
	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	Equipt. room camera (select 001 when finished viewing camera so repeater will shut down**)**

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 MEMBERS AS OF April 24, 2005

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	wilbur.w@juno.com
KC3AM	David Stepnowski	735 Birchtree Lane	Claymont	DE	19703-1604		kc3am@comcast.net
KC8ASD	Bud Nichols	3200 Walker Rd	Hilliard	OH	43026	614-876-6135	kc8asd1@netzero.com
KC8ASF	Tom Pallone	3437 Dresden St.	Columbus	OH	43224	614-268-4873	
W8CQT	Jim McConnell	350 N. State Road	Delaware	OH	43015-9644	740-363-1008	w8cqt@arrl.net
W6CDR	Winn Rollert	1141 Pursell Ave	Dayton	OH	45420	937-256-1772	w6cdr@hotmail.com
WB8CJW	Dale Elshoff	8904 Winoak Pl	Powell	OH	43065	614-210-0551	delshoff@columbus.rr.com
N3DC	William Thompson	6327 Kilmer St	Cheverly	MD	20785		
WA8DNI	John Busic	2700 Bixby Road	Groveport	OH	43125	614-491-8198	jabusic@yahoo.com
K8DW	Dave Wagner	2045 Maginnis Rd	Oregon	OH	42616	419-691-1625	
WA3DTO	Rick White	308 Orial Ct	Evans City	PA	16033	614-595-4966	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	740-654-5694	rshaner@copper.net
W8FZ	Fred Stutske	8737 Ashford Lane	Pickerington	OH	43147		w8fz@arrl.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		
N8IJ	Dick Knowles	4750 Larwell Dr	Columbus	OH	44323	614-451-0273	
WD8ITF	Larry Fields	953 W. Hopocan Ave	Barberton	OH	44203-7007	330-825-7148	lfields@neo.rr.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		
K4KLT, KD4ODQ	Bob & JoAnnSchmauss	P.O. Box 1547	Land O' Lakes	FL	34639-1547	813-996-2744	schmauss@att.net
N8KQN	Ted Post	1267 Richter Rd	Columbus	OH	43223	614-276-1820	n8kqn@juno.com
WA8KQQ	Dale Waymire	225 Riffle Ave	Greenville	OH	45331	513-548-2492	walkingcross@mail.bright.net
N3KYR	Harry DeVerter Jr	303 Shultz Road	Lancaster	PA	17603-9563		deverterhf@dejazzo.com
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
WU8O (ex kc8lzc)	Tom Walter	15704 St Rt 161 West	Plain City	OH	43064	614-733-0722	twalter@emec.us
W8MA	Phil Morrison	154 Llewellyn Ave	Westerville	OH	43081		
WD8MDI	Dave Mathews	2404 Hoose Drive	Grove City	OH	43123		wd8mdi@qsl.net
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
N8OCQ	Bob Hodge Sr.	3584Bluff Gap Dr.	Grove City	OH	43123		
KB8OFF	Jess Nicely	742 Carlisle Ave	Dayton	OH	45410		kb8off@prosurvisp.com
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
W2OTA,WA2DTZ	Michael Chirillo	942 Bruce Drive	Wantagh	NY	11793	516-785-8045	
KC8OZV	George Biundo	3675 Inverary Drive	Columbus	OH	43228	614-274-7261	kilowatt@biundo.org
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	614-474-3884	rgburggraf@juno.com
K4PRS	Peter R. Sinkowski	4532 W Kennedy Bl #114	Tampa	FL	33609-2042		k4prs@yahoo.com
WA8RMC	Art Towslee	180 Fairdale Ave	Westerville	OH	43081	614-891-9273	towslee1@ee.net
W8RRF	Paul Zangmeister	10365 Salem Church Rd	Canal Winchester	OH	43110		w8rrf@copper.net
W8RRJ	John Hull	580 E. Walnut St.	Westerville	OH	43081	614-882-6527	
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	
N8SFC	Larry Campbell	316 Eastcreek Dr	Galloway	OH	43119		
W8SJV, KA8LTG	John & Linda Beal	5001 State Rt. 37 East	Delaware	OH	43015	740-369-5856	w8sjv@bright.net
W8SMK	Ken Bird	244 N Parkway Dr	Delaware	OH	43015	740-548-4669	ken@midohio.net
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@juno.com
KC8UQS	David Dominy	7017 Taway Road	Radnor	OH	43066		
WB8URI	William Heiden	5898 Township Rd #103	Mount Gilead	OH	43338	419-947-1121	
KB8UU	Bill Rose	9250 Roberts Road	West Jefferson	OH	43162	614-879-7482	
KB8UWI	Milton McFarland	8287 Creekstone Lane	Blacklick	OH	43004	614-751-0476	
WA8UZP	James R. Reed	818 Northwest Blvd	Columbus	OH	43212	614-297-1328	wa8uzp@qsl.net
KB8WBK	David Hunter	45 Sheppard Dr	Pataskala	OH	43062	740-927-3883	hiramhunter@aol.com
KC8WRI	Tom Bloomer	PO Box 595	Grove City	OH	43123		Ohiomec@aol.com
AA8XA	Stan Diggs	2825 Southridge Dr	Columbus	OH	43224-3011		sdiggs4590@aol.com
N8XYZ	Dan Baughman	4269 Hanging Rock Ct.	Gahanna	OH	43230		dbaughma@insight.rr.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		

Call	Name	Address	City	St	Zip	Phone	URL
KC8YPD	Joe Ebright	3497 Ontario St	Columbus	OH	43224		
N8YZ	DaveTkach	2063 Torchwood Loop S	Columbus	OH	43229	614-882-0771	
KB8ZLB	Dave Kibler	243 Dwyer Rd	Greenfield	OH	45123	937-981-4007	s.crew@dragonbbs.com
KA8ZNY,N8OOY	Tom & Cheryl Taft	386 Cherry Street	Groveport	OH	43125	614-202-9042	ka8zny@copper.net

ATCO MEMBERSHIP INFORMATION

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

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

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

ATCO CLUB OFFICERS

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

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

ATCO MEMBERSHIP APPLICATION

RENEWAL ○ NEW MEMBER ○ DATE _____
CALL _____
OK TO PUBLISH PHONE # IN NEWSLETTER YES ○ NO ○
HOME PHONE _____
NAME_____
INTERNET Email ADDRESS_____
ADDRESS _____
CITY _____ STATE _____ ZIP _____-_____
FCC LICENSED OPERATORS IN THE IMMEDIATE FAMILY
_____
COMMENTS_____
_____
_____
ANNUAL DUES PAYMENT OF $10.00 ENCLOSED CHECK ○ MONEY ORDER ○
Make check payable to ATCO or Bob Tournoux & mail to: Bob Tournoux N8NT 3569 Oarlock CT Hilliard, Ohio 43026. Or, if you prefer, pay dues via the Internet with your credit card. Go to **www.atco.tv/paydues** and fill out the form. Payment is made through "PayPal" but you DO NOT need to join PayPal to send your dues. Simply DO NOT fill out the password details and there will be no PayPal involvement.

ATCO TREASURER'S REPORT - de N8NT

OPENING BALANCE (01/26/05)..... $2383.98
RECEIPTS(dues)..... $ 120.00
Pay Pal deposit for NCB account..... $ 0.48
*Banc One 3 month service fee..... $ (30.00)
Hamvention ticket and flea market space rental..... $(510.00)
*Banc One check charge ..... $ (45.00)
*National City Bank new check purchase..... $ (68.45)
CLOSING BALANCE (04/26/05)..... $ 1851.01

*Switched from Banc One to National City in March. Banc One now charges $10/mo for commercial accounts. National City is free.

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

FIRST CLASS MAIL

REMEMBER...CLUB DUES ARE NEEDED.
CHECK MAILING LABEL FOR THE EXPIRATION DATE AND SEND N8NT A CHECK IF EXPIRED.