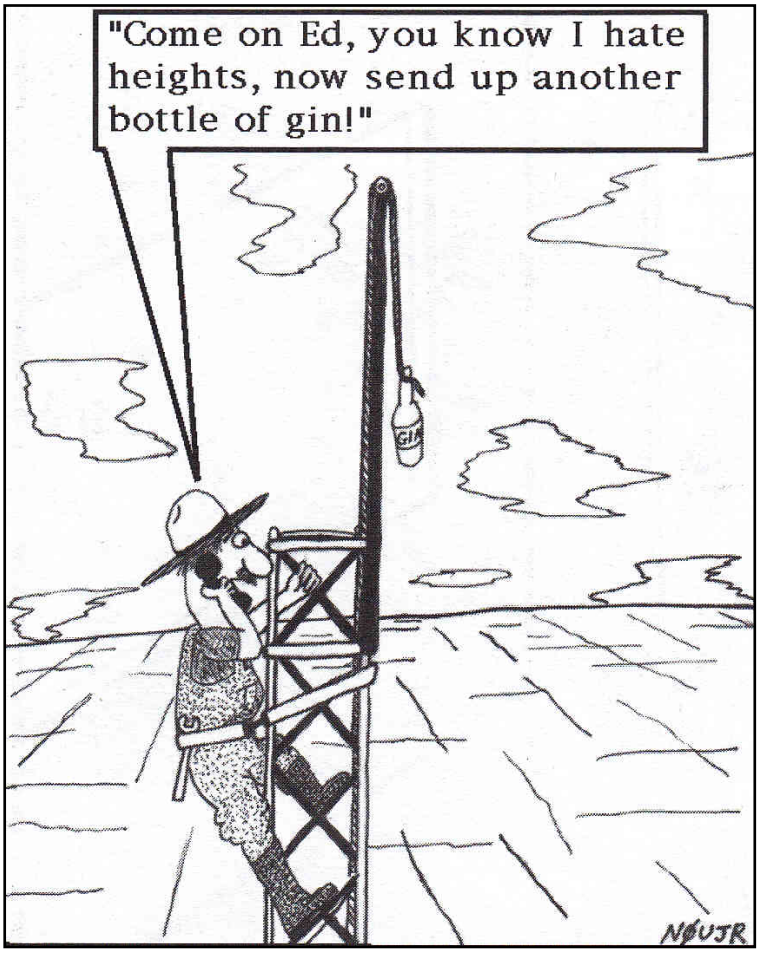
ATCO NEWSLETTER

VOLUME 28 NUMBER 4 **October 2011**

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 SPOTLIGHT TOPIC

Thanks to Greg Trook N0UJR for allowing us to share one of his cartoons. See also http://incolor.inetnebr.com/n0ujr/.



Origin of the term "GIN pole".

ACTIVITIES ... from my "*Crippled*" Workbench

Well, here we go again, and now from my new QTH! Things are not totally settled yet but the living area is in good shape. My workroom needs a lot of work but that's for the winter months as the grass and associated outside things need more attention as long as the good weather holds out. I notice that my outside work is starting to produce results as the grass seed I planted a month ago is coming up now! I've been eyeing potential antenna locations but so far, I've only been able to install a temporary vertical antenna on the roof to receive the 446.350 link and a 427.25 yagi antenna in the attic. The 439 antenna gets the repeater about P4 and could be better but the attic antenna is working great considering where it's located amidst the attic insulation and rafters. All the workroom stuff is still in boxes and has been a challenge to be able to find the stuff I need to do limited work.

The repeater has been performing very well this year…there I go, causing problems by talking like that! I haven't been there the whole summer, but to be honest, the needed work had to wait till the home stuff tapered down a little. The 1268 MHz digital antenna failed sometime last year so I swapped it to the spare antenna already there. I would retrieve the main antenna later. The signal seemed OK at the time but WB8LGA later reported the signal was much worse or most times, not there at all. Everyone else said it was OK so I figured Charles had an antenna problem. When I tried to receive it at my new QTH, I could not see it either. That made me look at the path from repeater to me and repeater to WB8LGA. It is the same. While at the repeater, I sighted between the spare antenna and my QTH and noted a large vertical structural beam between us. That may be the problem as the original antenna signal is not blocked by the beam. When I removed the original antenna, I found the connector had vibrated loose and not making connection. That DEFINITELY was contributing to the problem. I decided to remove the whole antenna and completely check it out at my QTH as it was loose in its mount from continual wind pounding. (It's brutal up there…no antenna can survive that forever!). The repaired 1268 antenna is now re-mounted and so far, things look real good at WB8LGA's QTH. He called me today to say he can now see it with no pixilation. That's the first time in months he's been able to see the digital signal so things are MUCH better. So, it looks like we fixed something. (It happens once in a while guys).

Some desense has shown up lately as the repeater signal seems to cycle for a while after an input signal is removed. Charles, WB8LGA and I are looking into the cause. It seems that tightening the N connectors going to the 1268 and 427 transmitters made things better. The spurious signal causing the repeater to cycle after the input signal went away is coming from the 427 exciter or power amp. When the 427 amp is shut down, then there is no cycling. Also, it's noted that removing the 427 antenna and replacing it with a dummy load does NOT correct the problem either. The problem seems to be a low level signal inside the 427 modulator unit is radiating somehow and getting into the 1280 receiver. Again, removing the 1280 antenna and replacing it with a dummy load does not correct it either. So we can eliminate either antenna as contributing to the issue! Last but not least, I re-routed some cables and the problem disappeared. Now, close the door gently and leave. (I know that's not the way to fix it but it'll have to do till we can dig into it deeper).

We're going to install new antennas at the Jones road site in South Vienna, Ohio. The antenna swap is for the Springfield 145.31 repeater but we'll check the ATCO antennas installed there also. We need to get the Dayton guys to turn on their ATV more often so keeping the Jones road 2 meter voice link operational is important. We haven't heard Dick, W8RVH, lately either. What say you, Dick??? Remember, it's 147.45 MHz in and out for the guys near the Dayton area for us to hear and talk to you in Columbus. Should we re-activate the remote 439.25 MHz ATV input there for the Dayton guys to be able to work into our repeater? With video on 439 and audio on 147.45, both video and audio from Dayton can be done. How about it guys???

I've noticed a sharp drop in ATV activity around here. I don't know why. I need your suggestions on how to stir up more activity. Do we need more features at the repeater? Do we need some construction projects? How about our Tuesday night net? What can we do to encourage more people to join in the discussion? In the last few weeks there's been only about 4 to 6 check-ins each time. That's pathetic considering that we used to have 15 to 20 check-ins. Where did everyone go? Let's discuss it at the Fall Event!!!!!!!

Well, that's about all from me this time. Don't forget the ATCO Fall Event coming up next Sunday October 30 in the ABB Cafeteria. See the announcement on the inside pages for details. As always, we look for any donated items to place on the door prize table.

…73, WA8RMC

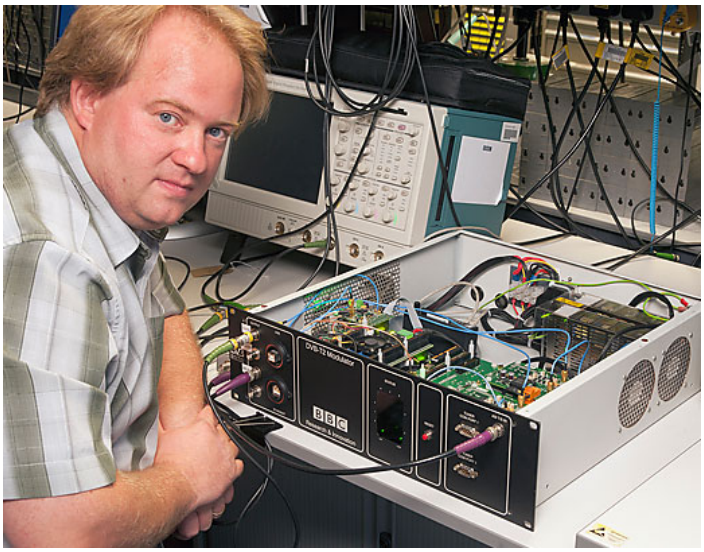
DVB-T2-LITE PROFILE TECH STANDARD APPROVED!

Europe has been working on a new DVB digital terrestrial standard. (It's not the DBV-S standard we use at our repeater). Although we do not use this standard in the USA, it is interesting to read about the digital TV advances elsewhere. Read more about it at:
http://www.bbc.co.uk/blogs/researchanddevelopment/2011/07/dvb-t2-lite-profile-tech-stand.shtml
Ed.

DVB-T2, the technology standard that enabled High Definition on Freeview now has a new profile which has been provisionally called T2-Lite. This new profile will allow simpler receiver implementations for very low capacity applications such as mobile broadcasting. This new profile can be mixed with conventional T2 signals in a single multiplex, to allow separate optimization of the individual components. The T2-Lite component could provide audiences with a reliable live 'broadcast' TV or radio experience on their handheld devices. Using this new profile live broadcasts can be delivered to multiple audience members at a fixed cost to the content provider. *Justin Mitchell* Lead Engineer at BBC R&D explains the technical know-how behind it - KG

Andrew Murphy, Justin Mitchell and Martin Thorp (from left to right) with the transmit antenna above them

On 7 July 2011 we began transmissions of DVB-T2-Lite from the roof of BBC R&D's South Lab opposite TV Centre in West London. As DVB-T2 is widespread throughout the UK, you might wonder what's unusual about this? Well, the DVB-T2 specification has just been updated with a new profile which we are evaluating. This marks the start of a thorough technical evaluation by us in BBC R&D and is especially exciting because the specification that defines the format of the signals to be transmitted has only just been approved as standard by the DVB Steering board! Just as with the existing profile - which went on to become 'Freeview HD' in the UK - we are pleased to be there from day one with transmitter (modulator) and receiver (demodulator) designs that we can use to validate the standard and also to license to manufacturers interested in developing products for mobile applications.



Justin Mitchell with the prototype modulator.

The new T2-Lite profile is designed to make use of the same reliable features we are familiar with from DVB-T2, but by a careful selection of a sub-set of modes, allows for receivers to be implemented using much smaller and more efficient silicon chips. So T2-Lite will efficiently deliver TV and radio to mobile devices such as phones and tablets (for which power consumption is an important issue) and in-car at the same time as providing services to existing fixed receivers. It's obviously early days but we are interested to find out how this new technology may play a part in delivering BBC content (and maybe one day content from other broadcasters) to an ever-growing 'mobile audience'.

This new profile is defined in version 1.3.1 of the DVB-T2 specification. It was designed so that only minimal changes were needed from an existing DVB-T2 modulator and demodulator to be able to support the new profile, which will encourage its adoption by equipment manufacturers.

In the existing DVB-T2 spec, different services can already been sent with different levels of robustness so that some services might be targeted at roof-top reception (e.g. HD) while others targeted at portable or mobile receivers. However, in the UK, we have chosen a mode (using 32K carriers) which maximizes the data rate for HDTV for stationary receivers. The close spacing of the carriers in this mode means that the signal cannot be received reliably by mobile receivers.

In the existing DVB-T2 spec, the signal can, if required contain periods of time which can be used to transmit something other than DVB-T2. This feature was included in the spec to future proof it against changes and allows improvements in modulation technology to be incorporated into the system. These periods of time are called future extension frames (FEFs).

However, in the new version of the spec, both the main part and the FEF contain valid DVB-T2 but with different modes (in terms of number of carriers) and varied levels of robustness, allowing both services to mobiles and fixed receivers to be transmitted as part of the

same transmission on the same frequency. The system also permits the transmission of a service to mobile devices without a second DVB-T2 service being there.

The new profile allows most of the flexibility of the DVB-T2 spec, but to maximize its effectiveness for mobile and minimize the requirements for the receiver, it has the following differences:

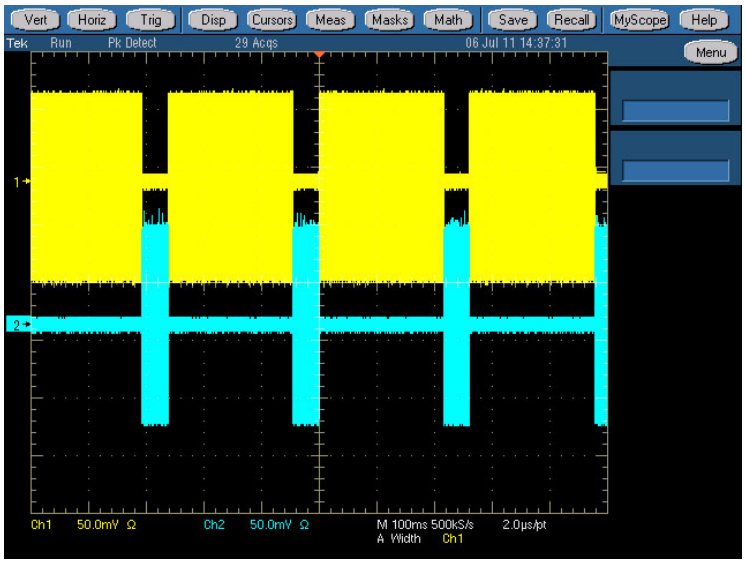
- It has a maximum bitrate of 4 Mbits/sec
- Limits the FFT size to exclude 1K and 32K
- Prohibits the use of rotated constellations in 256-QAM
- Allows only short FEC frames (Nldpc = 16200)
- Adds two new more robust code rates (1/3 and 2/5)
- Limits the size of the time interleave memory to approximately half that of standard DVB-T2
- Reduces the number of permitted mode combinations, prohibits the use of PP8 and provides the capability of scrambling the L1 post preamble signaling bits.

Andrew Murphy, Justin Mitchell and Martin Thorp (from left to right) with the prototype T2-Lite receiver.

As part of the digital switch-over program, the UK has already rolled out a nationwide DVB-T2 multiplex which provides several HD terrestrial channels. For this technical trial of T2-Lite, we've combined an HD multiplex intended for reception on fixed receivers with a more robust mobile service which could be television, radio or data or any combination of these. In the UK, we currently use the mode 32K 1/128 256-QAM 2/3 which gives a bitrate of 40.21 Mbit/sec in an 8 MHz multiplex. In our technical trial, we've used the same mode for the HD part of the multiplex but added a Future Extension Frame (FEF) containing mobile service. The multiplex HD part consists of a DVB-T2 frame which is 216.9 ms in duration followed by a FEF of 44.6 ms. This FEF contains the mobile service.

The mobile part of the service is transmitted in a more robust mode with a smaller FFT size. We have chosen 8K 1/32 QPSK ½ with L_DATA = 46. This gives a bitrate of 1.02 Mbit/sec for the mobile service. The HD part of the service is contained within a FEF of the mobile service. This means that the HD service and mobile service are both FEFs of each other.

The screenshot of the oscilloscope shows how the FEFs combine. The yellow signal represents the HD signal and the blue trace represents the mobile signal.



An oscilloscope plot showing how the HD (top trace, in yellow) and mobile (bottom, in blue) services slot together; each sits exactly in the gap left in the other service and are combined inside the modulator to create a single signal.

The evaluation is being carried out on UHF channel 53 (730 MHz) and is being carried out under a test and development transmission license issued by OFCOM. This is entirely separate from the BBC HD service and will have no effect on it.

For those of you interested in the technical details of the SI used in our evaluation, the base stream (at 33.36 Mbit/sec) contains 2 HD services. The network ID of the base stream is 12512 and the T2_system_id is 57568. In the mobile stream (at 1.02 Mbit/sec), the network ID is 12513 and the t2_system_id is 57569.

The modulator uses two Xilinx Virtex 5 FPGAs on Synopsys HAPS-51 cards together with some circuits designed by BBC R&D to provide the transmitted signal at UHF. The demodulator uses three Xilinx FPGAs on Synopsys HAPS-51 cards to receive the new signals. The service to fixed receivers is displayed on an existing Freeview HD television.

My project team (Martin Thorp, Andrew Murphy, Chris Clarke, John Elliott, Tom Ellinor, Nicholas Jayaratnam, Karen Kingston-Lee, and Colin Howes) and I, are thrilled to have been able to begin transmission and reception of T2-Lite the day that the specification was approved by DVB as we were chomping at the bit to get it all going,

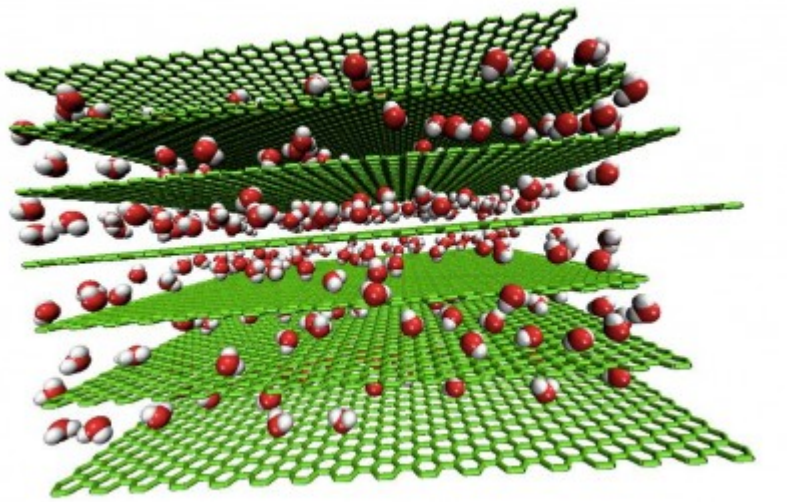
We are planning to demonstrate this technology at IBC in Amsterdam in September on the DVB stand (1.D81) so if you are going to be there come and visit us. We will have a live over-the-air demonstration of both the transmitter and receiver and will be more than happy to have a chat about how it's all been going.

GRAPHITE + WATER = THE FUTURE OF ENERGY STORAGE

OK, not everything has to be ATV related. On second thought, a super battery like this COULD help with ATV portable operation. Ed.

15 July 2011

Graphene sheets. Credit: Gengping Jiang



A combination of two ordinary materials – graphite and water – could produce energy storage systems that perform on par with lithium ion batteries, but recharge in a matter of seconds and have an almost indefinite lifespan.

Dr Dan Li, of the Monash University Department of Materials Engineering, and his research team have been working with a material called graphene, which could form the basis of the next generation of ultrafast energy storage systems.

"Once we can properly manipulate this material, your iPhone, for example, could charge in a few seconds, or possibly faster." said Dr Li.

Graphene is the result of breaking down graphite, a cheap, readily available material commonly used in pencils, into layers one atom thick. In this form, it has remarkable properties.

Graphene is strong, chemically stable, an excellent conductor of electricity and, importantly, has an extremely high surface area.

Dr Li said these qualities make graphene highly suitable for energy storage applications.

"The reason graphene isn't being used everywhere is that these very thin sheets, when stacked into a usable macrostructure, immediately bond together, reforming graphite. When graphene restacks, most of the surface area is lost and it doesn't behave like graphene anymore."

Now, Dr Li and his team have discovered the key to maintaining the remarkable properties of separate graphene sheets: water. Keeping graphene moist – in gel form – provides repulsive forces between the sheets and prevents re-stacking, making it ready for real-world application.

"The technique is very simple and can easily be scaled up. When we discovered it, we thought it was unbelievable. We're taking two basic, inexpensive materials – water and graphite – and making this new nanomaterial with amazing properties," said Dr Li.

When used in energy devices, graphene gel significantly outperforms current carbon-based technology, both in terms of the amount of charge stored and how fast the charges can be delivered.

Dr Li said the benefits of developing this new nanotechnology extend beyond consumer electronics.

"High-speed, reliable and cost-effective energy storage systems are critical for the future viability of electricity from renewable resources. These systems are also the key to large-scale adoption of electrical vehicles.

"Graphene gel is also showing promise for use in water purification membranes, biomedical devices and sensors."

Dr Li has been working with graphene since 2006 and his team's research findings have recently been published in a number of prestigious journals including Advanced Materials, Angewandte Chemie and Chemical Communications.

GA GROUPS FILE PROTESTS OVER LIGHTSQUARED

AOPA, GAMA, and Garmin added their comments to a roster of more than 2,700 on Monday to protest FCC plans that would allow LightSquared to broadcast over frequencies that would interfere with GPS signals. Garmin said the "laws of physics prevent the results LightSquared desires," adding that "no workable filters currently exist" that would eliminate the problems with LightSquared interference. AOPA and the General Aviation Manufacturers Association issued a joint commentary, strongly urging the FCC to rescind the conditional waiver it granted to LightSquared. "The evidence is clear: LightSquared's proposal puts the entire GPS system at risk," said AOPA President Craig Fuller in a news release. A recent FAA report also showed that the LightSquared plan would cost the aviation sector $70 billion over the next 10 years, and would "severely impact" NextGen.

The FAA assessment, according to The Wall Street Journal, also said LightSquared's plan could hurt U.S. leadership in international aviation by eroding confidence in commitments made to ICAO to maintain the GPS system's safety and availability. "Study after study has shown that LightSquared's plan is simply 'incompatible' with GPS," said AOPA's Fuller. "At the same time, the company's proposed solutions rely heavily on technology that doesn't exist. That's why we are joining with GAMA to ask the FCC to revoke LightSquared's waiver immediately, and to begin a rulemaking process that will protect the integrity of the GPS system into the future." The full text of all comments to the FCC regarding LightSquared can be found online at the FCC web site; insert Proceeding Number 11-109 to reach the list.
…Daun E. Yeagley, II, N8ASB *8/4/11*.

ATV AUGUST BAND OPENING

KC8LMI in Michigan reports a terrific band opening Tuesday morning August 2nd. The photos below show the pictures he received.

k8igu 80.6 miles

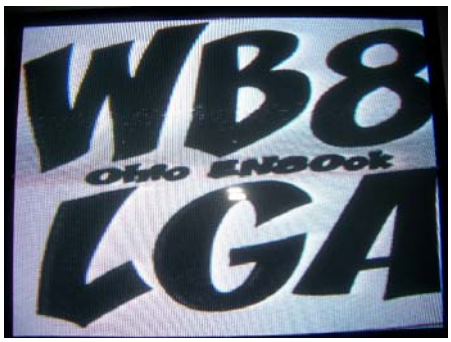
kd8kcf 67.2 miles

kd0fw 572.7 miles

k8dmr/r 81.0 miles

k8dac/r (1277.25) 72.5 miles

n9xhu 326.7 miles



wb8lga 156.2 miles

w8uri 150.4 miles

Not pictured but worked-seen

ka8mfd	p3	148.4 miles
w4htb	p2	389.8 miles
w8zcf	p4	229.1 miles
w8pu	p4	213.7 miles
w9uij	p3	263.1 miles
w9zih	p4	236.1 miles
wr8atv/r	p3	182.0 miles

W8KHP RECEIVES OUR DIGITAL ATV AT COLUMBUS HAMFEST!

Al Hebron, W8KHP, traveled from Hebron Kentucky to check out the Columbus Hamfest last August. He brought with him his portable Free-to-air receiver/monitor and a small yagi antenna. His goal was to be able to see the ATCO DATV 1268MHz signal with his portable setup. At first, there was nothing. We moved to a better spot in the parking lot with a clearer view of downtown. Still nothing. This seemed strange to me so we re-checked his parameter settings. All seemed to be OK. As a last resort, I suggested setting up a new channel in his receiver and rescan for the signal. Hurray, success! After that the picture came in crystal clear using his small yagi on a tripod in the Aladdin Shrine parking lot. The pictures below are what Al saw on his receiver.

Al is inspired about DATV so you will see more of him in the future. His comments to me are below.

"Hi Art,
Thank you very much for helping me out today. I was sure glad to finally see things work. Too bad we didn't get a picture of the setup while I was there. Anyway, here is a shot of the receiver, of the antenna, and the two best repeater shots. You can use them or not as you see fit. When I finally get things together here so I can take the whole rig portable I would like to give it another try.
…73 Al W8KHP

2ND ATV REPEATER IN THE USA GOES ON THE AIR!

The WR8ATV repeater in Ohio is the first active digital-ATV repeater in the USA. In January 2004 the ATCO Group in Columbus, Ohio installed a DVB-S digital output to their repeater which has been in service 24x7 since then.

It has been a long drought in the USA since 2004 for another active Digital-ATV repeater to show up!!

In another thread in this group about the DigiLite Project, Mario KD6ILO casually mentioned that the repeater for the San-Diego/Del-Mar ATV Group with the call of KD6ILO-R1 (aka ATVR-1) now had a DVB-S receiver and a DVB-S transmitter on 1.2 GHz. This DATV repeater is located on the roof of a hospital in the Del Mar Heights area of Southern California and is running 24x7 in a hot-standby (idle) mode. This repeater is designed to support CERT, ARES, RACES, and other emergency communication needs and can be brought up by DTMF control for nets, testing and EmComm drills/events. A unique aspect of the repeater design is that it is packaged in Pelican cases so that it can easily be transported for (B)(M)(P) usage, that is B=base, M=mobile , or P=portable needs.

I would like to offer big congratulations to Mario KD6ILO and all the members of the SDDM ATV Group for helping to further Digital-ATV activities in the USA … and setting up the second active Digital-ATV repeater here.

As an update report at DigitalATV@yahoogroups.com the repeater will be removed from its current location for a small upgrade back to the Communications Lab in Poway, CA. The current location was just a test point location for a coverage test. A new location in the Del Mar Highlands will be its' next test point in a leased space for a month.

73…de Ken W6HHC

THE 438MHz INTERFERENCE IS FINALLY GONE!

As you probably know by now, we've been bothered by strong 438.00 MHz interference for some time now. It initially started sometime last March as a digital pulsed signal on 438.00 MHz about 50 KHz wide and strong enough to be heard in Marion, Ohio more then 50 miles away! Because it was exceedingly strong in the Columbus, Ohio metropolitan area, it was within the bandpass of a 439.25 MHz ATV signal going into our repeater producing big black pulsed bars in the signal. As a result our 439.25 MHz input became totally useless. We tolerated it for about 3 weeks but since it didn't go away, I decided to do some signal searching. I traced it to somewhere in the vicinity of the Ohio State University football stadium.

I then contacted the OSU communication personnel for assistance in our search for it. They were very cooperative which took us to the university high rise dormitories. I scanned the roof area because there are a number of antennas on the roof of that 15 story structure but no luck. The signal seemed to be coming from the construction area across the street. I then circled the construction area, confirmed the interference was there somewhere but could not pinpoint the source. It seemed strange that I could locate the signal to within a 500 foot circle but could not spot any antenna. I reasoned that if the signal was receivable 50 miles away, the antenna was located very high and in the open. As a last resort, I called the FCC to report foreign interference in the middle of our 420-450 MHz Ham band.

The FCC obliged by travelling from Detroit, Michigan in search of it. They confirmed that the signal was VERY strong but could not locate it either with the equipment they brought with them. They then returned to Detroit. By this time about 2 months had elapsed. I waited another month and after I had no correspondence from the FCC, I gave them another call. They told me that we were definitely on their radar screen but current work loads prevented them from returning promptly.

In September they returned and found the source. It was a collision avoidance system on the tall vertical cranes in operation for the construction of the Ohio State University hospital complex. The antenna was located on top of one or both of the two 350 foot cranes! I never imagined someone would locate an antenna there. Even now, I cannot see it so it must be in the crane cab or something like that. They notified the owners and directed them to cease immediately. They didn't do exactly that but simply reduced the power. The signal was still there but weaker. Another call to the FCC produced the comment, "I'll get to the bottom of this!" A few days later the interference disappeared and so far, has not returned. Success???? We'll see.

Congratulations to the FCC. I know they're overloaded with problems and minimum personnel to solve them. However, it took a while but they solved our issue even though it wasn't a "commercial" one. Even Laura Smith from the Washington, DC office contacted me to find out if the issue was being properly addressed. WA8RMC

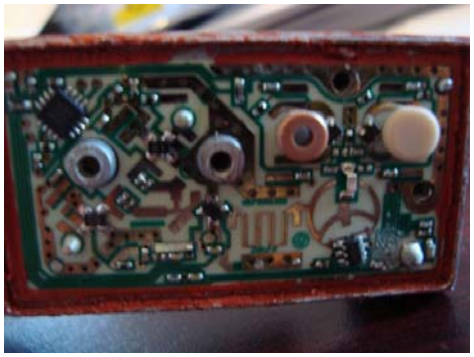
W8KHP 10GHz PROJECT

I am thinking of getting this LNB on Ebay to see if I can convert it for use on 10.350GHz ATV:
http://www.ebay.com/itm/330581624986?ssPageName=STRK:MEWAX:IT&_trksid=p3984.m1423.l2649
Fortec Star Single Universal Ku Band LNBF HD Ready Model: FSKUVN Noise Figure: 0.2 dB Price $15.95

The lower LO freq is 9.75 GHz. That is why I asked about a 9.0 GHZ DRO puck ("Dielectric Resonant Oscillator" instead of a crystal). I would just swap it for the 9.75 puck. That would be the easiest way. Otherwise people do a variety of things including putting the higher frequency puck on or near the low freq puck or putting a piece of the high freq on the low or grinding down the low freq puck. Even at that price the combined price of the 9.0 GHz puck and the Fortec LNB is less than the last price I have seen for that Brit's 10GHz LNB.

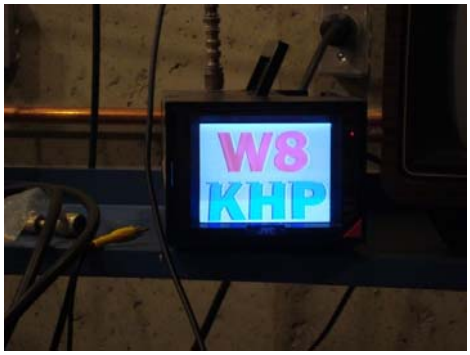
The 9.0 GHz puck is $49.00 on eBay:

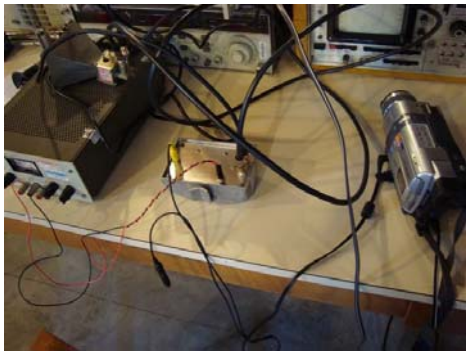
http://www.ebay.com/itm/110731854208?ssPageName=STRK:MEWAX:IT&_trksid=p3984.m1423.l2649

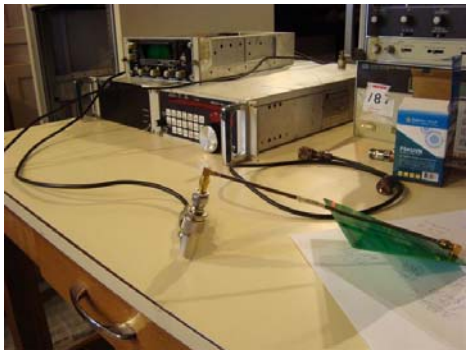


Well, I got the LNB open. You can see the two pucks in the upper right. I assume the one to the right is the lower frequency one which I will replace when the 9 GHz puck arrives. It was a bit of work getting it open. First I had to pry apart the plastic covering. Once inside there was hard red gunk sealing the LNB and over all the screws. This presumably is to keep everything waterproof. After a couple of hours scraping with a razor blade and dental tools I had enough of the gunk removed. I then discovered that the four retaining screws had Torx heads. My smallest bit was T10 which of course was too big so I went to a hardware store for a T9 bit. Got it home and everything came apart nicely. Now I'm just waiting for the new puck!

I am making some progress with 10GHz TV. I got hold of a pair of Microwave Associates 10GHz Gunnplexers. I also got a modulator board from P.C. Electronics and housed it in a shielded box. The three pictures below show the received picture (left), the video camera, boxed modulator, and gunnplexer (center) and pc board log periodic antenna and Watkins-Johnson receiver with FM video output (right) which goes to the monitor. My next step is to try receiving with the LNB that I modified with a 9 GHz DRO. Initially I will pick up the downconverted signal with the Watkins-Johnson receiver. Ultimately I hope that will use an Icom IC-R3 receiver. If that all works the final step is to try to pick up the 10 GHz ATV signal with the modified LNB and Icom receiver the next time I am up in Columbus.







The right picture shows the 10GHz received signal using LNB modified with a 9 GHz DRO to an ICOM R-3 receiver 1.3129GHz

The DRO is nominally 9 GHz. These results show 8.987 GHz for the DRO but I haven't fine tuned it yet to try to get it right at 9 GHz.

…Al W8KHP

WHO WAS THE FIRST HAM TV OPERATOR?

Well, we know that W1BHD, Melvin Dunbrack was authorized by the FCC to sign W1BHD-TV in the early 1930's - arguably the only amateur station ever to be allowed to use the -TV suffix - which is only authorized for television stations to use. Even today HAM TV operators are not legally allowed to use it.

We know that W5AGO, Truett Kimzey, was broadcasting mechanical TV at the time that television was still experimental and all TV stations had the letter X (for experimental) as the first letter in the suffix of their call signs.

According to my sources the first experimental TV station licensed was 3XN in 1927.

In the late 1920's and early 1930's mechanical television broadcasts were only allowed between 2.0 and 2.1 MHz - a 100 KHz band width.

Because they were in the HF band their broadcasts could be received hundreds - if not thousands - of miles away.
…Bil Munsil K1ATV HAM TV Mesa AZ

The above statement brought on a flurry of comments by individuals with their own opinions. I have not researched it so some or all may or may not be true. However, it makes interesting reading and is enlightening to know there are some really early pioneers of our hobby! Read one person's comments below.
Ed.

OK, OK. Let's keep it down folks and no flaming... LET'S look back at the history of RADIO, shall we??

In the beginning there was AM radio and nothing else...and the FCC looked upon it and smiled... THEN TV came along (YES experimental TV in the 30s was before Armstrong's FM trials in the 44-50MHz band) and then came FM...as AM owners started to branch out into TV and FM, they wanted to keep the same call sign, SO the FCC decided that the AM call is PRIMARY and the controller of the callsign...TV and later FM stations co owned would be assigned the same call but with a -TV or -FM suffix to distinguish themselves from the primary AM station...THAT RULE IS STILL IN EFFECT TODAY under Part 73/74 (Broadcast rules).

IT DOES NOT apply to hams. Actually today, TV stations can call themselves K or W XXX if there is NO controlling AM OR k/Wxxx -TV or -DT!! If it's a Low power digital, its -LD or CD (Class A Digital)...AND AMs do NOT EVER use -AM...they still are the primary call IF first (if not, they STILL do not use the -AM suffix)...HOWEVER, a AM, FM and TV can all be owned by different owners now....so the AM callsign holder MUST pass off on OKing the use of the FM or TV station of the AM call with the correct suffix...ONLY if they are the 1st with the callsign!

NO AM with the call means the FM or TV is in control (such as KBMT which is my local 12)...There is NO FM or AM using that call...and they do not have the -TV suffix....so they are the primary holder of the callsign...anyone else wanting to use it would have to PAY MONEY to KBMT to allow their use and KBMT would have to change to KBMT-TV or -DT to be legal...an AM with KBMT would NOT become the primary holder if they got to use it AFTER "leasing" it from KBMT TV who was 1st with the call...

Confused? Good...that's the way the FCC wants it.... Basically, if an AM was NOT the 1st station who held the call, then TV or FM can be primary holder....and if they allow an AM to use it, the other station must change/add suffix (usually get paid in an agreement to allow it..RARE though)....but they are still primary holder...IF AM WAS the first, they control the callsign period NO MATTER WHAT AND an AM and FM or TV DO NOT have to be in the same market....

KBTV full power is here in SE TX....KBTV-LP is in California....and not owned by same group.

…Chris WB5ITT Society of Broadcast Engineers Vice Chairman and Frequency Coordinator,
Chapter 134 SE TX and SW La Ham-TV List OWNER

ANTENNAS IN CLOTHES? A NEW DESIGN COULD PAVE THE WAY

From TV Technology August 25, 2011 & OSU Research News at http://researchnews.osu.edu/archive/antcloth.htm
(Finally! A bit of technology from in institution within our city! If they can't play football then why not this???? Actually, why not a stealth antenna in each football jersey??? Then coach Fickell could yell at them in real time!!!!!)

COLUMBUS, Ohio – The next generation of communications systems could be built with a sewing machine.

To make communications devices more reliable, Ohio State University researchers are finding ways to incorporate radio antennas directly into clothing, using plastic film and metallic thread.

In the current issue of the journal IEEE Antennas and Wireless Propagation Letters, http://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punumber=7727 they report a new antenna design http://ieeexplore.ieee.org/search/srchabstract.jsp?tp=&arnumber=5783293&queryText%3Dvolakis%26searchWithin%3Dchen%26refinements%3D4294967131%26openedRefinements%3D*%26sortType%3Ddesc_Publication+Year%26filter%3DAND%28AND%28AND%28AND%28AND%28NOT%284283010803%29%29%2CAND%28NOT%284283010803%29%29%29%2CAND%28NOT%284283010803%29%29%29%2CAND%28NOT%284283010803%29%29%29%26ranges%3D2011_2011_Publication_Year%26searchField%3DSearch+
All with a range four times larger than that of a conventional antenna worn on the body – one that is used by American soldiers today.

"Our primary goal is to improve communications reliability and the mobility of the soldiers," said Chi-Chih Chen, a research associate professor of electrical and computer engineering at Ohio State. "But the same technology could work for police officers, fire fighters, astronauts – anybody who needs to keep their hands free for important work."

For typical foot soldiers, mobility and communications are often at odds. An antenna can be a large and unwieldy addition to an already heavy load.

The idea of embedding communications devices in clothing to address this problem is not new, Chen explained. The Ohio State system takes elements from previous research and combines them in a new way, with the addition of a unique computer control device that lets multiple antennas work together in a single piece of clothing.

The result is a communications system that can send and receive signals in all directions, even through walls and inside a building, without a need for the wearer to carry an external antenna.

John Volakis, the Roy & Lois Chope Chair Professor and Director of the ElectroScience Laboratory at Ohio State, found a common analogy for the new design.

"In a way, we're doing what's already been done on a cell phone. You don't see cell phones with external antennas anymore, because the antenna is part of the body of the phone," Volakis said.

When antennas make contact with the human skin, however, the body tends to absorb radio signals and form a short circuit – a fact driven home by the recent difficulties with the antenna placement on the iPhone 4. Also, if an antenna is improperly placed, a person's body can block it when he or she moves against a wall or other obstacles.

The Ohio State system overcomes these problems by surrounding the body with several antennas that work together to transmit or receive a signal, no matter which way a person is facing. An integrated computer control device senses body movement and switches between the antennas to activate the one with the best performance given the body's position.

The idea of embedding communications devices in clothing to address this problem is not new. The Ohio State system takes elements from previous research and combines them in a new way, with the addition of a unique computer control device that lets multiple antennas work together in a single piece of clothing.

The engineers created a prototype antenna by etching thin layers of brass on a commercially available plastic film, called FR-4. The film is light and flexible, and can be sewn onto fabric.

They attached it into a vest at four locations –chest, back, and both shoulders. The computer controller – a metal box a little smaller than a credit card and an inch thick – was worn on a belt.

In laboratory tests, the experimental antenna system provided significantly greater signal strength compared to a conventional military "whip" antenna, enabling a range of communications four times larger.

Perhaps most importantly, the new antenna system worked in all directions, even as researchers tested it inside the hallways of the ElectroScience Lab, where doors and windows would normally interfere with the signal.

Key to the technology was the engineers' development of network communications coding to coordinate the signals among the antennas. Doctoral student Gil-Young Lee developed a computer module to make the antenna control automatic. Lee, Chen, and Volakis co-authored the IEEE paper with Dimitrios Psychoudakis, senior research associate at the ElectroScience Lab.

They are partnering with an antenna design company, Applied EM of Hampton, VA, to commercialize the research, which was funded by a Small Business Innovation Research grant.

Chen currently estimates that the antenna systems, as demonstrated in the prototype, would cost $200 per person to implement, but mass production would bring that cost significantly down.

In the meantime, the engineers are working on printing antennas directly onto clothing, and embroidering antennas into clothing with metallic threads. A typical home sewing machine is now part of their laboratory equipment, and early tests have shown that the swirly designs they've embroidered into fabrics such as cotton – and even taffeta – can work as functional antennas.

That's why Volakis envisions the technology to be adaptable for the general public. The elderly or disabled could wear clothing that would let them communicate in case of emergency, without the stigma they might feel in wearing a more visible assistive device.

"Imagine a vest or shirt, or even a fancy ball gown made with this technology," he said, scrunching a sample of embroidered taffeta in his hand. "The antennas would be inconspicuous, and even attractive. People would want to wear them."

Contact: Chi-Chih Chen, (614) 292-3403; Chen.118@osu.edu
John Volakis, (614) 292-5846; Volakis.1@osu.edu

Written by Pam Frost Gorder, (614) 292-9475; Gorder.1@osu.edu

THE OTHER SIDE OF W8DMR!

Tom, KC8WRI describes a discussion he had with W8DMR's son, Ed. He says:

"This being totally out of character for Bill would be a safe assumption, but not in his son Ed's. Ed and I met shooting skeet in my back yard one day. He then asked me about my antennas, saying his father was a long time amateur. I said, yeah, what's his call? Then I about fell over.

Ed has a car and motorcycle collection that rivals Malcolm Forbes. Top fuel funny car, lines of bikes.... pretty impressive. Ed and his wife Andrea have become pretty good buds, always upbeat and fun. One of his drag cars bears a vanity plate with Bills call.

Back to Bill. I would say that photo may have been his first time seated on a motorcycle. Jacket, whole bit..... W8DMR.... What are you rebelling against? "

FIRST WORLD WIDE DATV QSO PARTY

In celebration of the 100 Years of Amateur Radio Victoria supporting ham radio, Peter VK3BFG and the hams associated with the VK3RTV digital repeater (the first 100% digital-transmitting DATV repeater in Australia) conducted the first world-wide DATV QSO Party on August 26-27 (UTC).

In eastern Australia, most hams had contact with direct RF line-of-sight with the VK3RTV DATV repeater near Melbourne. In other parts of Australia, Thailand and United States, hams relayed their video to Peter VK3BFG by SKYPE video-connections who then uplinked the video and audio as DATV to the VK3RTV digital repeater using DVB-S.

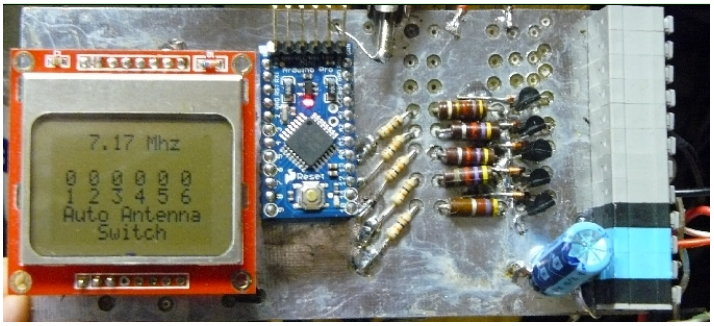
I was able to take my DATV 1.2 GHz DVB-S transmission in Orange California, receive it on my STB-to-notebook, and then relay this transmission by SKYPE video connections (desktop sharing) once to Peter VK3BFG and once to Don KE6BXT (of the ATN ATV group in California-and beyond) who in turn forwarded to Peter VK3BFG by SKYPE video connection. It was exciting to watch my DATV video come back from the VK3RTV digital-repeater via the BATC streaming server on the internet. I put up a photo my wife from my received DATV video on my notebook up on this Yahoo group's PHOTO area.

I want to thank Don KE6BXT for helping me sort out a dozen SKYPE issues before the QSO Party and Peter VK3BFG who took the time to test with Don and me using SKYPE before the QSO Party. The DATV QSO Party was great fun!! I got to meet (see) a lot of DATV hams. I think this event was a great promotion of DATV!!

73…de Ken W6HHC - Orange County, California ARC DATV group

WB8LGA DESIGNS ANTENNA SWITCHING SYSTEM

The following is a project I made to have my Icom radio automatically switch my antennas based upon the band it is on. It is an Icom IC7000 Ham rig Auto Antenna control switch using a Arduino min Pro PCB running at 16 Mhz.



How it works:
The Icom has an RS232 TTL output on its CV-I port in the back of the rig. Every time the frequency is changed on the rig it outputs that frequency to the CV-I port. This port is a two way port. We only read the output frequency. It *could* control the rig but we don't need to do that here.

Since the rig tells us what frequency it is at, we can control external relays to connect the correct antenna connection of the rig to the correct antenna.

The IC7000 has two antenna connections. One is for 160m to 6 meters. The other is for 2M and 70cm. At my shack I have a separate antenna for 160m, 80-20m , 6m , 2m and two for 70cm. The 5 Coaxial relays and my board controls all that antenna switching.

We also have it control the antennas for a dual band FM 2m/70cm rig with the IC7000 being the master controller. This way if the Icom is on 2meters it switches the 2m vertical antenna from the dual bands to the Icom. If the Icom is on 70cm but lower than 446 Mhz the Icom used the ATV antenna and the dual bander uses the 70cm vertical but if the Icom is above 446 then the Icom uses the Vertical , the dual bands has no antenna on 70cm connection and the ATV antenna still connect to the ATV setup.

This board is only 2.5 x 5 inches and runs off 6 to 18 volts @ 25ma if you don't connect the backlight to the display. Maximum current for outputs is 1 amp. and up to +30 volts DC coils.

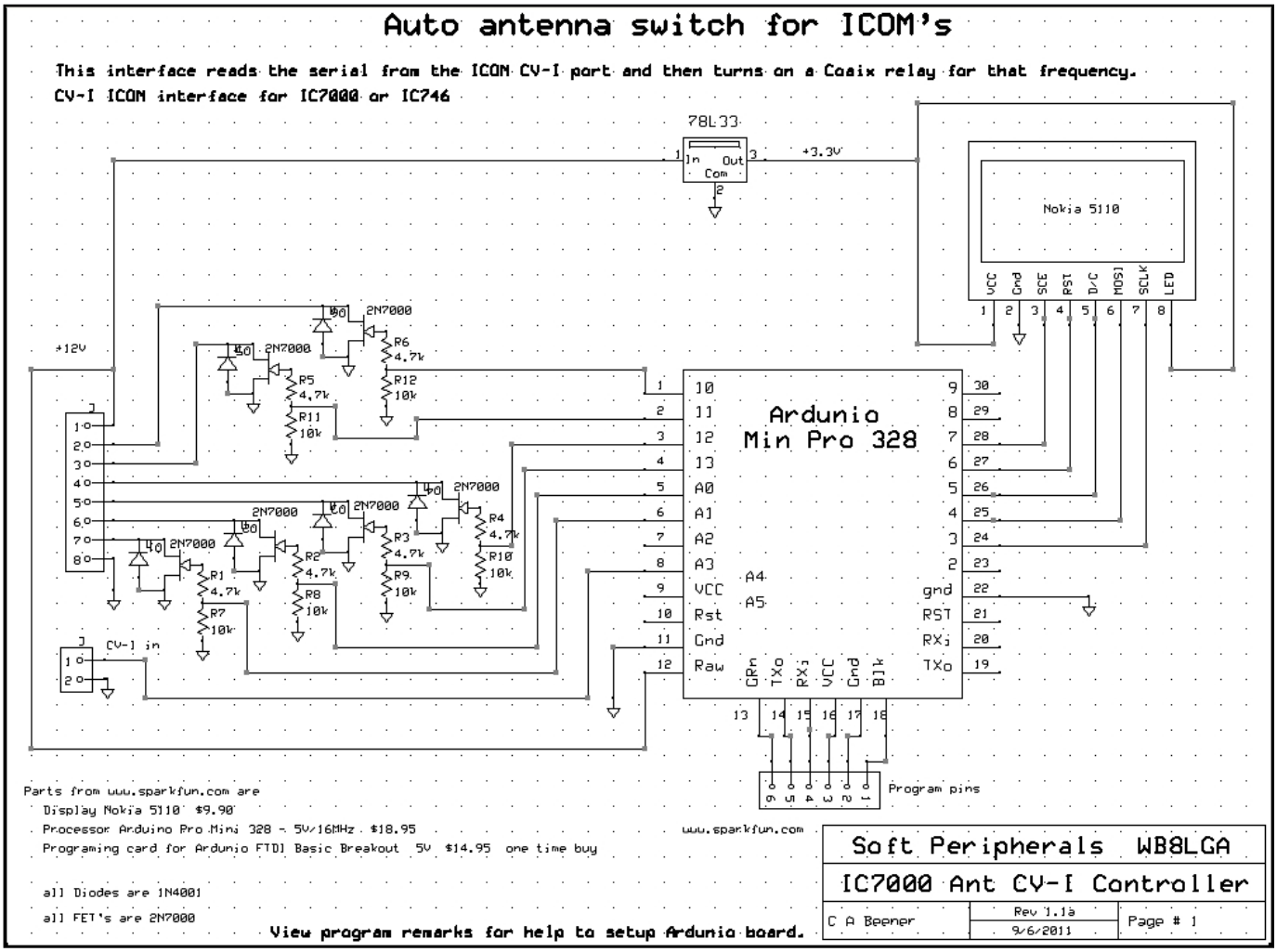
Here is a circuit that we made up for our IC7000 so the Icom freq controls the outputs on my project. This allows you to change freq and the board will switch on the coaxial relay to connect the Icom to the antenna that is use for that freq.

Some program info:
The Program and two pictures at full size is in the zip file. To read the program file IC7000_1c_5110_pde.pde just open it with WordPad. This program is used by Arduino.exe. Here is where you can get the program version 0022
http://arduino.cc/en/Main/Software The language is very close to C or C++ and very easy to use.

* a LCD 84x48 - Nokia 5110
* This display will show Icom Freq. output Coaxial state. * Up to 6 Coaxial Relays can be controlled. My outputs are:
1 = 420->446 MHz
2 = 144->168 MHz
3 = 446->460 MHz

4 = 50->54 MHz
5 = 1.5->2 MHz
6 = 21-> 29 MHz
with no relays powered the HF connection is connected to 80-20m antenna. Rs232 = 9600 8 N
You can have more than one relay on at a time if needed. Each output is independent from each other. It uses sinking outputs. The relays need + power to one side and the other goes to this board output. Each relay can have the same power supply or a different one.

Program setup:
switch1Low = Min. lower freq of operation to turn on output 1
switch1Hi = Max. Highest freq of operation to turn on output 1



IF the Icom freq is between switch1Low and switch1Hi it will turn on output 1.
To change its operation just edit the define for switch1Low and switch1Hi for wanted freq. It is in Mhz.
You can use two places to the right of "." Like 7.13
// output defines this is the start of the define of the control of the output on state.

```
#define switch1Low 420
#define switch1Hi  446
#define switch2Low 144
#define switch2Hi  168
#define switch3Low 446
#define switch3Hi  460
#define switch4Low 50
#define switch4Hi  54
#define switch5Low 1.6
#define switch5Hi  2.0
#define switch6Low 220
#define switch6Hi  224
```

…WB8LGA

CONSTRUCTION ARTICLE INDEX

The following list is an index of all construction related material that has appeared in the ATCO Newsletter since its inception in the early '80's. This is a handy reference for that particular construction article that you knew existed but didn't want to wade through each issue to find it. All Newsletters below are also listed in order in the ATCO homepage under "Newsletters". Once you locate the Newsletter section, the displayed list can then be re-sorted as needed by clicking on the "date" in the header.
…Bob N8OCQ

Issue	Page(s)	Article
Vol 1 II	5	439 Beam
Vol 2 I	4	439 Beam
Vol 2 II	8,9	439 Parabolic Ant
Vol 2 II	9	Video Modulator
Vol 2 III	7	1296 Ant 45 Ele loop yagi
Vol 2 III	10	RF Power Indicator (in-line) for 1296 MHZ
Vol 2 SE	2,3	Diode Multiplier for 23 CM
Vol 2 SE	4,5	1296 MHZ 10 Watt Solid State Linear Amp
Vol 4 I	3	RF/Video Line Sampler
Vol 4 II	3	P-Unit Meter
Vol 4 II	7,10,11	UHF Gated Noise Source
Vol 4 II	12	420 – 450 Broom Handle Rhombic Ant
Vol 4 III	4,8	25 Element 1.26 Loop Yagi
Vol 4 IIII	6	Video Modulator (Tube Type)
Vol 5 I	3	Video Modulator One Transistor
Vol 5 II	4,7	900 MHZ Yagi Ant
Vol 5 II	6	Video Modulator for 2C39 Final
Vol 5 III	3	440 MHZ Hidden Transmitter Finder
Vol 6 I	3	Video Line Amp
Vol 6 I	8	25 Ele 910 MHz Loop Yagi
Vol 6 II	4,6,7	Microwave Oven ATV Xmiter
Vol 6 II	5	Matching a Quad Driven Ele
Vol 6 II	8	Power Divider for 33CM
Vol 9 IIII	5,7	16 Ele Loop Yagi for 439.25 MHz
Vol 10		No Articles
Vol 11 II	4,5,6	439 48 Ele Collinear Ant
Vol 11 IIII	7	1280 MHZ Cavity Filter
Vol 12 I	6,7,8	439 & 1200 Horz Polarized Mobile Ant
Vol 12 II	5,6,7	ATV Line Sampler
Vol 12 II	10	439 & 1280 Interdigital Filter(s)
Vol 12 III	6,7,8	439 Cheap Attic Ant
Vol 13 I	9, 10	High Level Modulator for ATV
Vol 13 II	5	VGA to NTSC Converter for Computer
Vol 13 III	9, 10	AM Video Modulator
Vol 13 IIII	4	1200 MHZ Transistor Linear Amp
Vol 13 IIII	6	900 & 1200 MHz Loop Yagis
Vol 14 IIII	8	439 31 EleYagi
Vol 14 IIII	12, 13	1250 MHZ FM ATV 3 Watt Xmiter
Vol 15 I	16	427.25 Horz J-Pole Ant
Vol 15 II	14	2400 MHZ Loop Yagi
Vol 15 III	8	Wavecom Modification
Vol 15 III	12,13,14	2.4 Gig Antenna's
Vol 16 II	20	2.4 Gig Helix Ant
Vol 16 IIII	4	1280 MHZ Loop Yagi
Vol 17 I	14, 15	Video Amp (Multi Output)
Vol 18		No Articles
Vol 19 IIII	4	Pwr Supply for 28 Volt Ant Relay
Vol 20 III	9, 10	Video Sampler
Vol 21 II	4	RF Pwr Amp for 900/1200 MHZ
Vol 21 II	14	10-14 Volt Doubler for 28 Volt Ant Relays
Vol 21 III	5	S-Video To Composite Adaptor
Vol 21 IIII	3,4	Video Noise Rejection Amp
Vol 21 IIII	14,15,16 ,17	"S" Meter For Comtech Boards
Vol 22 I		No Articles
Vol 22 II	10	1260 MHZ Cavity Filter
Vol 22 III		No Articles
Vol 22 IIII		No Articles
Vol 23 I		No Articles
Vol 23 II	5,6	Linear 60 Watt For 70CM
Vol 23 II	8,9	Video Modulator Update
Vol 23 III		No Articles
Vol 23 IIII		No Articles
Vol 24 I	13	RF Sniffer For 2.4 GIG
Vol 24 II		No Articles
Vol 24 III	3	Quantum 1500 Rec Tuner Mod
Vol 24 IIII	9	Battery Recharge Ckt
Vol 25 I		No Articles
Vol 25 II	6,7	Comtech TX Module Improvement
Vol 25 III	11	Comtech TX Module Improvement Correction
Vol 26 I	6	Isolator (Circulator) Mod. 850 To 1260 MHz
Vol 26 II	5,6	Comtech 1200 MHz rec. module improvements
Vol 26 III		No Articles
Vol 26 IIII	9	Remote Touch Tone Decoder For Your Shack
Vol 27 I	10	ATV Low Pass Filter (427 Mhz)
Vol 27 II	15	PictureTel Camera Data Cable Wiring
Vol 27 II	10	ATV Low Pass Filter (427 Mhz)
Vol 27 II	15	PictureTel Camera Data Cable Wiring
Vol 27 III		No articles
Vol 27 IIII		No articles
Vol 28 I	11	Super 1280 MHz amplifier
Vol 28 II		No articles
Vol 28 III		No articles

This is the complete list for construction articles shown in past ATCO newsletters. The page numbers listed may not match the actual page in the newsletter. They are the number shown in the PDF file. Some issues are missing. Art did not have a copy of every year. This list is complete through Volume 28 III.
…Bob N8OCQ

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.

Tom Farrell W3RCJ Baltimore, MD.

…WA8RMC

A T C O

2011 FALL EVENT

12:30 PM Lunch/meeting

Sunday October 30, 2010

ABB PROCESS AUTOMATION

CAFETERIA

579 EXECUTIVE CAMPUS DRIVE

FOR MORE DETAILS, CONTACT

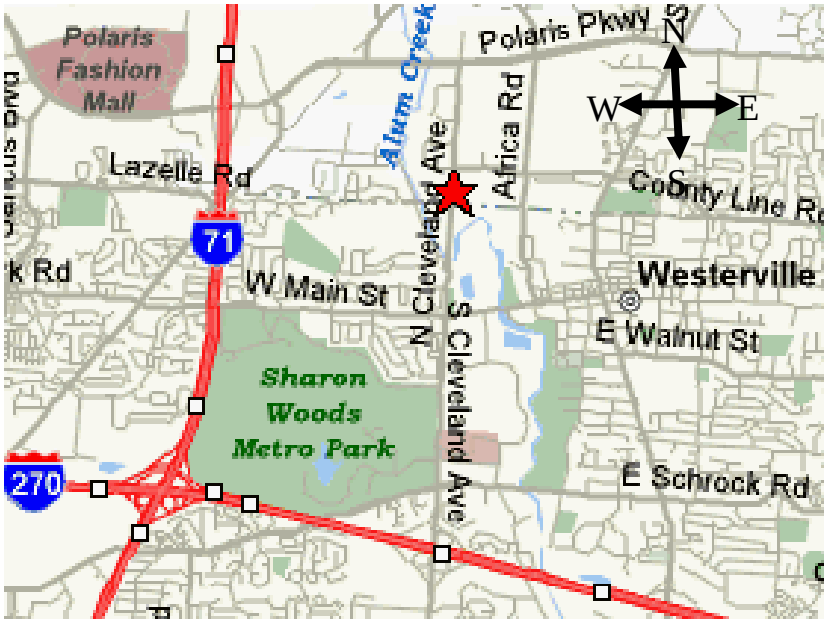
ART - WA8RMC 891-9273

LUNCH PROVIDED - DOOR PRIZES -

BRING A FRIEND AND SEE OLD BUDDIES

MINIHAMFEST - SHOW AND TELL

DIRECTIONS TO THE ATCO FALL 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.

LOCAL HAMFEST SCHEDULE

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

10/30/2011 | Massillon Hamfest
Location: Massillon, OH
Sponsor: Massillon Amateur Radio Club
Website: http://www.w8np.org

11/05/2011 | Grant ARC Hamfest
Location: Georgetown, OH
Type: ARRL Hamfest
Sponsor: Grant Amateur Radio Club
Website: http://garcohio.net

01/29/2012 | Tusco ARC Hamfest
Location: Strasburg, OH
Type: ARRL Hamfest
Sponsor: Tusco ARC
Website: http://www.tuscoarc.org

02/05/2012 | Winter Hamfest
Location: Lorain, OH
Type: ARRL Hamfest
Sponsor: Northern Ohio Amateur Radio Society
Website: http://www.noars.net

03/12/12 | Mansfield Mid-Winter Hamfest & Computer Show
Location: Mansfield, Ohio
Type: ?????

04/14/2012 | Cuyahoga Falls ARC's 58th Annual Hamfest
Location: Cuyahoga Falls, OH
Type: ARRL Hamfest
Sponsor: Cuyahoga Falls Amateur Radio Club
Website: http://www.cfarc.org/hamfest2012.html

INTERNET ATV HOME PAGES (list verified 01/14/11)

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://atn-tv.org/ATN.htm	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
www.bratsatv.org.	Maryland, Baltimore Radio Amateur Television Soc. (BRATS)
www.qsl.net/k7atv/	Salem, Oregon Amateur Television Associations-Salem
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
?	Pennsylvania, Pittsburg Amateur Television
http://members.bellatlantic.net/~theojkat/	Pennsylvania, Phila. Area ATV
?	Texas, Houston ATV (HATS)
http://www.hotarc.org/atv.html	Texas, WACO Amateur TV Society (WATS)
?	Utah ATV
www.qsl.net/ww7ats	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
http://www.batc.tv.	British ATV club (BATC)
http://www.cq-tv.com	British ATV Club and CQ-TV Magazine
	Finland ATV, OH3TR repeater.
	German ATV

Misc other ATV related sites

http://www.atv-tv.org	The Amateur Television Directory
http://www.atn-tv.org	Amateur Television Network
http://www.atvquarterly.com	Amateur Television Quarterly Magazine
http://gb3lo.camstreams.com	"GB3LO" Repeater Camstream westoft, UK
http://www.ham-radio.com/sbms	"SBMS" San Bernardino Microwave Society
http://www.qsl.net/kc6ccc/	“METS" Microwave Experimenters Television System

TUESDAY NITE NET ON 147.48 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 (07/20/11)....….....……...….$2083.96
RECEIPTS(dues)….....….....……. ..$
Paypal test receipt…….....….....…$
Paypal fee…….$ ()
CLOSING BALANCE (10/20/11)…….…… $

NOTE: A treasurer report will be available in next Newsletter

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)

TV Transmitters: 427.25 MHz VSB AM mod, 1258 MHz FM mod, 1268 MHz QPSK digital, 2433 MHz FM mod, and 10.350 GHz FM mod.
(multipole filters in output lines of all transmitters)

Output Power - 427.25 MHz: 50 watts average 100 watts sync tip
1258 MHz: 40 watts continuous (Analog ATV)
1268 MHz 20 watts continuous DVB-S (QPSK) DATV SR=3125, FEC=3/4 , 2 video 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, 1258, 1268, 2433, 10.350 GHz transmitters video identify every 30 min. with ATCO & WR8ATV on 6 different screens.
1268 MHz digital & 10.350 GHz analog - 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
1258 MHz - Diamond vertically polarized 12 dBd gain omni (Analog ATV)
1268 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: 147.48 MHz - F1 audio input with touch tone control
439.25 MHz - A5 NTSC video with FM subcarrier audio (lower sideband)
449.975 MHz - F1 audio input aux touch tone control. (An input here generates an output on 147.48 and 446.350).
1280 MHz - F5 video analog NTSC.
- DVB-S (QPSK) digital SR=4167, FEC= 7/8. This input is fed direct to 1268 MHz digital output channel 2)
2398 MHz - F5 video analog NTSC.
10.450 GHz - F5 video analog NTSC (not installed yet)

Receive antennas: 147.48 MHz - Vert. polar. Diamond 6dBd dual band (also used for 446.350 MHz link output)
439.25 MHz - Horizontally polarized dual slot 7 dBd gain major lobe west
1280 MHz - Diamond 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 (not installed yet)

Input control:

Touch Tone	Result (if third digit is * function turns ON, if it is # function turns OFF)
00*	turn transmitters **on** (enter manual mode-keeps transmitters on till 00# sequence is pressed)
00#	turn transmitters **off** (exit manual mode and return to auto scan mode)
264	Select Channel 4 Doppler radar. (Stays 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 for Ch. 1 Select 439.25 receiver
00* then 2 for Ch. 2 Unused
00* then 3 for Ch. 3 Select 1280 receiver
00* then 4 for Ch. 4 Select 2398 receiver
00* then 5 for Ch. 5 Select video ID (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 (not in use at this time)
03* or 03#	Channel 3 1280 MHz scan enable
04* or 04#	Channel 4 2398 MHz 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#	C1* to disable 427 MHz transmitter, C1# to enable it
C2* or C2#	C2* to disable 1268 MHz digital transmitter, C2# to enable it

ATCO MEMBERS AS OF October 2011

Call	Name	Address	City	St	Zip	Phone
KD8ACU	Robert Vieth	3180 North Star Rd	Upper Arlington	OH	43221	614-457-9511
KC3AM	Dave Stepnowski	735 W Birchtree Ln	Claymont	DE	19703	
AH2AR	Dave Pelaez	1348 Leaf Tree Lane	Vandalia	OH	45377	
W8ARE	Larry Meredith III	6070 Langton Circle	Westerville	OH	43082-8964	
KC8ASF	Tom Pallone	3437 Dresden St.	Columbus	OH	43224	614-268-4873
WB4ATV	Don Coy	489 Crystal Lake Drive	Melbourn	FL	32940	
KC8BTX	Dudley Field	357 N. Ridge Heights Dr	Howard	OH	43028	
W6CDR	Wynn Rollert	1141 Pursell Ave	Dayton	OH	45420	937-256-1772
WB8CJW	Dale Elshoff	8904 Winoak Pl	Powell	OH	43065	614-210-0551
N8COO	C Mark Cring	3941 Three Rivers Lane	Groveport	OH	43125	614-836-2521
N8CXI	Garry Cotter	2367 Northglen Drive	Columbus	OH	43224	
N9CX	Bill Erwin	231 Gateside Ct.	Gahanna	OH	43230	
WB8CXO	Mike Young	289 Gayloard Dr	Munroe Falls	OH	44262	
N3DC	William Thompson	6327 Kilmer St	Cheverly	MD	20785	
WA8DNI	John Busic	2700 Bixby Road	Groveport	OH	43125	614-491-8198
K8DMR	Ron Fredricks	8900 Stonepoint Ct	Jennison	MI	49428-8641	
K8DW	Dave Wagner	2045 Maginnis Rd	Oregon	OH	42616	419-691-1625
WB8DZW	Roger McEldowney	5420 Madison St	Hilliard	OH	43026	614-876-6033
KC8EVR	Lester Broadie	108 N Burgess	Columbus	OH	43204	
N8FRT	Tom Flanagan	1751 N Eastfield Dr.	Columbus	OH	43223	
W8FTX	George Biundo	3675 Inverary Drive	Columbus	OH	43228	614-274-7261
W8FZ	Fred Stutske	8737 Ashford Lane	Pickerington	OH	43147	
KB8GHW	Mike Amirault	5560 Refugee Rd.	Baltimore	OH	43105	614-859-7005
WA8HFK,KC8HIP	Frank & Pat Amore	3630 Dayspring Dr	Hilliard	OH	43026	614-777-4621
W4HTB	Henry Cantrell	905 Wrenwood Dr.	Bowling Green	KY	42103	270-781-9624
WG8I	Chris Vojsak Sr,	3536 W Henderson Rd	Columbus	OH	43220-2232	614-203-6000
WB2IIR	Michael Anthony	370 Georgia Drive	Brick	NJ	08723	
N8IJ	Dick Knowles	1799 Homeward Ave	Lima	OH	45805	
K8KDR,KC8NKB	Matt & Nancy Gilbert	5167 Drumcliff Ct.	Columbus	OH	43221-5207	614-771-7259
W8KHP	Allan Vinegar	2043 Treetop Lane	Hebron	Ky	41048	
N9KNV	Edmund Janowski	1721 Minnesota Ave	South Milwaukee	WI	53172	
WA8KQQ	Dale Waymire	225 Riffle Ave	Greenville	OH	45331	937-548-2492
N8LRG	Phillip Humphries	3226 Deerpath Drive	Grove City	OH	43123	614-871-0751
WB8LGA	Charles Beener	2540 State Route 61	Marengo	OH	43334	
KA8LWR	Mel Alberty	1645 Olentangy Road	Bucyrus	OH	44820	419-468-2971
W8MA	Phil Morrison	154 Llewellyn Ave	Westerville	OH	43081	
KA8MFD	Ross McCoy	227 S Boundary St PO Box 9	Edison	OH	43320	
KA8MID	Bill Dean	2630 Green Ridge Rd	Peebles	OH	45660	
W0MNE	Mike Doty	4300 Winchester Southern Rd	Circleville	OH	43113	740-420-9060
N8NT	Bob Tournoux	3569 Oarlock Ct	Hilliard	OH	43026	614-876-2127
N0OBG	Jim Conley	33 Meadowbrook C C Est	Ballwin	MO	63011	
WU8O	Tom Walter	15704 St Rt 161 West	Plain City	OH	43064	614-733-0722
N8OCQ	Bob Hodge Sr.	3750 Dort Place	Columbus	OH	43227-2022	
KB8OFF	Jess Nicely	742 Carlisle Ave	Dayton	OH	45410	
KG4OPZ,KG4OQA	Dave,MaryHoltschneider	7 Akal Court	Durham	NC	27713	
W6ORG,WB6YSS	Tom, Maryann O'Hara	2522 Paxson Lane	Arcadia	CA	91007-8537	626-447-4565
KE8PN	James Easley	1507 Michigan Ave	Columbus	OH	43201	614-421-1492
W8PU	Gary Poland	3347 S.R. 28	Midland	OH	45148	
KC8QJR	Adam Burley	580 East Town St. #202	Columbus	OH	43215	614-886-2326
W3RCJ	Thomas Farrell	1912 Burnwood Road	Baltimore	MD	21239	
WA6RCW	Ed Mersich	34401 Columbine Trl W	Elizabeth	CO	80107-7866	
WA8RMC	Art Towslee	180 Fairdale Ave	Westerville	OH	43081	614-891-9273
W8RRF	Paul Zangmeister	10365 Salem Church Rd	Canal Winchester	OH	43110	
W8RRJ	John Hull	580 E. Walnut St.	Westerville	OH	43081	614-882-6527
W8RUT,N8KCB	Ken & Chris Morris	2895 Sunbury Rd	Galina	OH	43021	
W8RVH	Richard Goode	9391 Ballentine Rd	New Carlisle	OH	45334	937-964-1185
W8RQI	Ray Zeh	2263 Heysler Rd	Toledo	OH	43617	
KB8RVI	David Jenkins	1941 Red Forest Lane	Galloway	OH	43119	614-878-0575
W8RWR	Bob Rector	135 S. Algonquin Ave	Columbus	OH	43204-1904	614-276-1689
W8RXX,KA8IWB	John & Laura Perone	3477 Africa Road	Galena	OH	43021	614-579-0522
W8SJQ	Rocky Eramo	795 Riverbend Ave	Powell	OH	43065	614-207-2740
W8SJV, KA8LTG	John & Linda Beal	5001 State Rt. 37 East	Delaware	OH	43015	740-369-5856
KB8SSH	Mike Cotts	3424 Homecroft Dr	Columbus	OH	43224	614-371-7380
W3SST	John Shaffer	6706 Gilette Dr	Reynoldsburg	OH	43068	614-751-0029
WA6SVT	Mike Collis	PO Box 1594	Crestline	CA	92325	
W8TIP	Gene Hawkins	1720 Liberty Street	Toledo	OH	43605	
K8TPY, K8FRB	Jeff & Dianna Patton	3886 Agler Road	Columbus	OH	43219	
NR8TV	Dave Kibler	243 Dwyer Rd	Greenfield	OH	45123	937-981-1392
W8URI	William Heiden	5898 Township Rd #103	Mount Gilead	OH	43338	419-947-1121
KB8UWI	Milton McFarland	115 N. Walnut St.	New Castle	PA	16101	
KB8WBK	David Hunter	45 Sheppard Dr	Pataskala	OH	43062	740-927-3883
KC8WRI	Tom Bloomer	PO Box 595	Grove City	OH	43123	
AA8XA	Stan Diggs	2825 Southridge Dr	Columbus	OH	43224-3011	
N8XYJ	Dan Baughman	4269 Hanging Rock Ct.	Gahanna	OH	43230	
KB8YMQ	Jay Caldwell	4740 Timmons Dr	Plain City	OH	43064	

Call	Name	Address	City	St	Zip	Phone
KC8YPD	Joe Ebright	3497 Ontario St	Columbus	OH	43224	
N8YZ	DaveTkach	2063 Torchwood Loop S	Columbus	OH	43229	614-882-0771
N8ZM	Tom Holmes	1055 Wilderness Bluff	Tipp City	OH	45371	
K3ZKO	Ron Cohen	915 Rowland Ave	Cheltenham	PA	19012	215-828-1263
KA8ZNY,N8OOY	Tom & Cheryl Taft	386 Cherry Street	Groveport	OH	43125	614-202-9042

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. All Newsletters are sent via Email unless the member does not have an internet connection.

The membership period is from January 1ST to December 31ST. New members joining before August 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. For those joining after August 1ST, they can elect to receive a complementary October issue with the membership commencing the following year or get the previous (3) Newsletters. Your support of ATCO is welcomed and encouraged.

Membership expiration notices will be sent out in January in lieu of Newsletters for those with an expired membership.

NOTE: Dues records on your individual portion of the ATCO website are listed as the date money is received and shows due one year from that date. The actual expiration is on January of the following year so we can keep the dues clock consistent with the beginning of each year.

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 and fill out the "pay ATCO dues" section. Alternately, you can use the ATCO web site www.atco.tv/PayDues.aspx directly. Credit card payment is made through "PayPal" but you DO NOT need to join PayPal to send your dues. Simply DO NOT fill out the password details and there will be no "PayPal" involvement.

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

FIRST CLASS MAIL

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