ATCO NEWSLETTER

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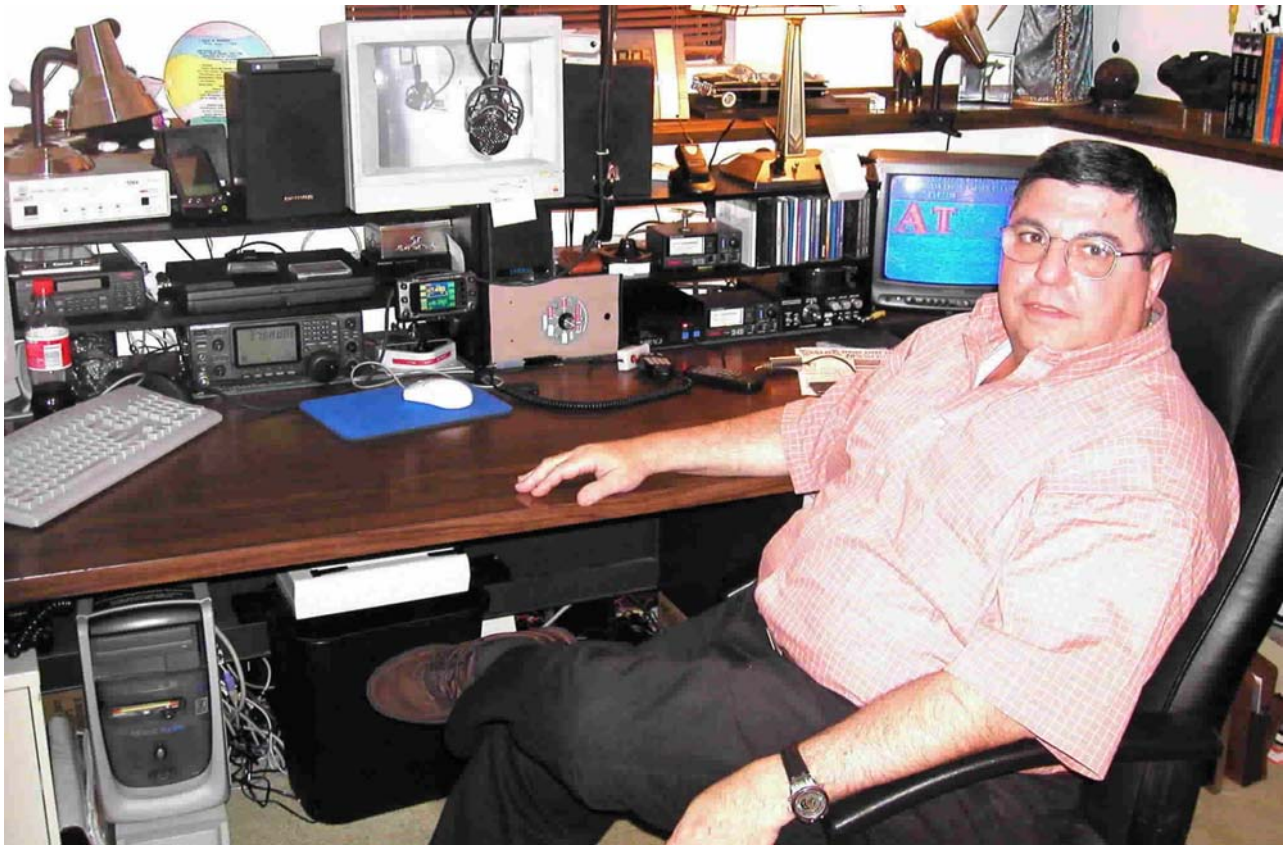
The ATCO newsletter is the official publication of a group of amateur television operators known as AMATEUR TELEVISION IN CENTRAL OHIO Group Inc." and is published quarterly (January, April, July, and October)

ATCO HAM IN THE SPOTLIGHT

This time we visit the shack of George Biundo, KC8OZV. George has a well-equipped and very neat hamshack, which is unusual among hams. Perhaps he hasn’t been a ham long enough or just maybe he just hid all of the normal stuff before I stopped over. In any case, George’s shack layout and three cameras positioned appropriately complement the rest of the gear. He also tells me that he loves 40 meters and the associated antenna requirements. Boy, I hope you don’t like it too much and abandon the rest of us George.



ACTIVITIES ... from my "workbench"

Well, the indoor activities should be complete by now so we can make room for the outdoor stuff. As I sit here composing my thoughts, I watch the rain pouring down to fill the street with two small rivers. It's kind of sad and good in a way for had it not been for the rain; I would likely have been in the yard with cleanup chores making the Newsletter publication even later. So it goes…tomorrow it will be sunny but I will be at work so for right now, let's "make hay while the rain falls" No, that's not quite right!

Well, let's see what I've been up to lately. First of all, the rebuild of the 425 MHz transmitter seems to be taking too long. The modulator and brick driver is packaged and operational but the final amp, even though it works and outputs about 100 watts, still needs to be packaged and combined with the power supply. As I visit the various hamfests, I seem to pick up something else that can be used to enhance the design. At Toledo, I found a good LCD display voltmeter that will work fine as the power supply status indicator. It now sits on the shelf awaiting the packaging effort. In the meantime my attention has been diverted in a number of various directions. I guess I can't concentrate on a given project too long.

Next, effort is given to the link transmitter. As you know, I am converting it into a full-fledged repeater with 449.350 MHz for the input and 446.350 MHz for the output. The input is being created for the roof camera touch tone control to keep the 147.45 MHz frequency open. Control tones on 147.45 will still work but it will be preferred to use 449.350 for this activity. The audio from the 449.350 input will be fed into the repeater controller so that the 449.350 input will mimic the 147.45 input and serve as the repeater control also. (Officially, 147.45 should not be used for the ATV repeater control anyway so we are only making the system more legal). There, I feel better now. Continuing with the design effort, I found that a duplexer filter at the Fort Wayne hamfest last fall that just wasn't going to work properly because of the excessive loss. We need a duplexer filter because we are going to use the same antenna for transmit and receive. Since the split between the two frequencies is only 3 MHz, a larger Motorola duplexer cavity set was needed. I have such a filter but it lacked the band reject facilities I needed so some research was conducted to find out how they worked and how to incorporate that feature into my cavities. To cut down on the research time, I borrowed a cavity that had band pass/reject features from KA8ZNY and reverse engineered it into my units. After some machining work (I like to do that) I had a unit that worked great with only about 1 dB loss through it and over 100 dB rejection from transmit to receive ports. Next the brick amplifier needed to be constructed. Initially I thought I had a bad brick but after I mounted it on a proper low inductance mounting surface, it output about 10 watts of stable RF. I think that signal will be plenty for we put only about 1 watt into the 446.350 antenna at this time. N8KQN gave me a GE Master 2 modulator/driver module to drive the brick so I believe that the signal quality will improve greatly also. The unit is now about 80% packaged so it will be ready soon. Comment: since we will have a fully functional repeater here, I think we need to ID at the appropriate time. How is the best way to do this? Shall it be an audio message to keep with the times or is a Morse message better? Does anyone have ideas? How about a message in one of those "talking greeting card" IC's?

Since I feel I don't have enough projects going on at the same time, I'm starting to work on the 1250 MHz transmitter also. The output is down from 50 to about 35 watts or so, mainly because the power supply voltage dropped from 13.5 to about 12.5 volts. Also there seems to be an intermittent somewhere causing the received signal to fluctuate wildly at times. I thought it to be a problem with the transmitter but now that I've replaced it with my backup 15 watt unit and still see the problem, I now think it's the antenna at fault even though we gave it a thorough inspection last fall. As long as I have the 50 watt transmitter here, I'll replace the power supply with a more efficient one (less heat is better!)

OK, if that wasn't enough, we're also looking into the feasibility of linking the DARA ATV repeater in Dayton to ours. A critical factor is to find a place halfway between for the link transmitter/receiver system. As luck would have it, the Springfield repeater group will let us use their tower located in South Vienna, Ohio almost exactly halfway between us and on the highest ground in this area. So the stage is now set. I've done a preliminary path loss study and found it's possible between here and South Vienna (about 35 miles) on 1250 MHz. It's about 40 miles from South Vienna to the Dayton repeater site and the available equipment is not known on their end so things are still a little bit up in the air. A path loss check on 421 will be made. In any case, it's early yet to start any construction so things won't happen overnight but it's exciting to talk about. If we can do it, it would be a tremendous benefit toward extending the range of normal ATV communication. It has not been decided yet how it would work but I envision someone here turning on their ATV transmitter, repeated out on the normal repeater channels and received at the S. Vienna site on 1250 MHz. It would then be repeated out from there to Dayton on, say on 439. They would then receive it as a normal local ATV signal. The same would work in reverse. They output on 421 into the S.Vienna site and out to us on 1280 to be received here as a normal local signal on 1280. The S. Vienna site would be only half duplex so it would not receive and send to a given site at the same time. If you have any thoughts on the matter, I would like to hear from you. We will discuss it further at the Spring Event on May 5.

That's all for now. Remember the Spring Event on the 5th and also Dayton May 18, 19, 20. More about Dayton later in this Newsletter. See you then!
…WA8RMC

ARRL GOING TO THE MAT ON 70-CM BAND THREAT

January 29, 2002

ARRL officials have met with FCC staff members as part of the League's effort to stave off a band threat on 70 cm. ARRL General Counsel Chris Imlay, W3KD, and Technical Relations Manager Paul Rinaldo, W4RI, delivered an ex parte presentation to FCC Office of Engineering and Technology staffers January 14. At issue was SAVI Technology's plan--already tentatively agreed to by the FCC--to deploy unlicensed transient RF identification devices between 425 and 435 MHz at much higher field strengths and duty cycles than Part 15 rules now permit for devices configured as such. RFIDs are used to track and inventory parcel shipments and vehicles.

"We told them that this was the worst possible choice of bands for these RFIDs," Imlay said. "Besides, there's no technical justification for that choice of frequencies." The request to use 70 cm has more to do with economics than technology, he said, because SAVI needs to bring down the cost of RFIDs in order to make a profit.

Imlay added that the ARRL would "do whatever it takes" to stave off the threat, and that could include further direct appeals to FCC staffers. The ARRL plans to file "strongly worded" comments on the SAVI petition by the February 12 comment deadline. Reply comments are due by March 12, 2002.

The FCC acted on the SAVI request last October in an FCC Notice of Proposed Rule Making and Order (ET Docket 01-278) aimed primarily at reviewing and updating portions of its Part 2, 15 and 18 rules. The ARRL argued in comments filed last March that the field strengths and duty cycles SAVI proposed for its RFID tags as Part 15 "periodic radiators" were unreasonable and "would undoubtedly seriously disrupt amateur communications in one of the most popular of the Amateur Service allocations," particularly for weak-signal enthusiasts.

The ARRL's January 14 ex parte presentation was complemented by an interference study prepared by ARRL Lab Supervisor Ed Hare, W1RFI, and ARRL Senior Engineer Zack Lau, W1VT. The presentation supported the ARRL's assertion that the proposed signal levels would cause "substantial interference to amateur stations in excess of 1000 meters from the RFID transmitter."

The League also maintains the FCC lacks the statutory authority to permit the RFIDs as unlicensed devices under Part 15 in the configuration SAVI has requested. The ARRL argues that under the Communications Act of 1934, such devices with substantial interference potential must be licensed. It wants the FCC to move such RFIDs to another band, such as an Industrial, Medical and Scientific (ISM) allocation.

A copy of the ARRL Ex Parte Presentation interference study is available on the ARRL Web site "Band Threats" page, http://www.arrl.org/announce/regulatory/rm-1005/SaviExParte.pdf .

COLOR IMAGE SENSOR DOES AWAY WITH FILTERS

URL: http://www.eetuk.com/story/OEG20020211S0075

Startup Foveon has designed an image sensor for digital cameras that does away with the color filters normally needed by CMOS and CCD sensors. The sensor has three photosensitive layers embedded in silicon that individually absorb photons in the red, green and blue color ranges. According to Foveon, its approach to CMOS sensor design will produce photographs that are sharper, have greater color separation than conventional sensors and better anti-blooming properties than the CCDs that are normally used in high-end cameras. The company claims the sensor's production cost will be the same or less than CMOS sensors and that it will use less power than a CCD. CMOS and CCD sensors typically use a repeating pattern of red, green and blue filters across the surface of a silicon sensor. The effect is to filter out two-thirds of the light hitting the sensor array, which limits color detail and creates photographic distortion called moiré on fine repeated images. Because photons of the 'wrong color' are not lost through absorption by color filters over other pixels, the X3 sensor should pick up more light overall. Eric Zarakov, vice-president of marketing, says the silicon in each layer is treated so that it absorbs different wavelengths of light at different depths. The sensor has a resolution of 3.5 million pixels for each color plane. Foveon is using National Semiconductor's fab at Portland, Maine, to make the device using National's 0.18m CMOS process. Foveon has named Japan-based Sigma, a lens supplier, as the first customer for the X3.

By Maria Langham, EE Times UK

PROGRAM DETERMINES ANTENNA REQUIREMENTS

http://www.antennaweb.org/antennaweb/

Welcome to AntennaWeb.org!

We'll show you the type of outdoor antenna to use to receive your local television broadcast channels.

Whether the antenna you want is for use with a home satellite system, high-definition television or a traditional analog set, this site, based on geographical maps and signal strengths, will show you what you need to know to buy the right antenna.

ARRL ASKS FCC TO DROP RFID RULES PROPOSED FOR 425-435 MHz

The ARRL says the FCC "cannot legally proceed with the rules proposed for unlicensed RFID tags at 433 MHz," and it's asked the Commission to not adopt them. The League filed comments February 12 as part of its continued opposition to what it called "this ill-conceived proposal" of SAVI Technology to deploy unlicensed transient RF identification devices between 425 and 435 MHz at much higher field strengths and duty cycles than Part 15 rules now permit for such devices. The FCC appears inclined to agree with SAVI's proposal, but FCC staff members have told the ARRL that it's not a "done deal."

"The level of interference from the devices permitted under the proposed rule is intolerable," the ARRL argued, citing its own interference study. The League reiterated its stance that the Communications Act of 1934 "is devoid of any authority to allow unlicensed devices with substantial interference potential; such devices must be licensed."

SAVI, the ARRL argues in its comments, "wants to have its cake and eat it too" by getting high power levels and lengthy duty cycles operating on a band heavily used by a licensed radio service that uses sensitive receivers "and all of the above on an unlicensed basis." Among other applications, RFID tags are used to track and inventory parcel shipments and vehicles.

The ARRL said the FCC's inclination to go along with SAVI Technology's proposal "eviscerates the periodic radiator rules, is vague and overbroad," and would permit digital RFIDs to operate "at unsuitable power levels and duty cycles." The result would be unacceptable interference that would "preclude or repeatedly disrupt amateur operation," the ARRL said.

The ARRL also said that the cost of the tags is a problem for SAVI, and the choice of frequency band is related only to the cost of components. The League said SAVI chose 433.9 MHz as an operating frequency because of the availability of relatively cheap components in Europe, where the 433.05-434.79 MHz band is available for industrial, scientific and medical uses in at least 10 countries.

The ARRL pointed out that deploying the proposed RFID tags elsewhere would make much better sense than 70 cm. "SAVI should seriously consider the frequencies around 868 or 915 MHz, which apparently stand at least some reasonable chance of global standardization," the ARRL advised.

The RFID rules proposed in response to SAVI's Petition for Rule Making last year "are flawed from their inception and should not be adopted under any circumstances," the League concluded. The ARRL has said it will "do whatever it takes" to keep the FCC from permitting the RFID tags on 70 cm. That could include further direct appeals to FCC staffers, Imlay has said.

The FCC included the Part 15 RFID proposals within a larger proceeding, ET-01-278, that's aimed primarily at reviewing and updating portions of its Part 2, 15 and 18 rules. A copy of the ARRL's comments in the proceeding is available on the ARRL Web site <http://www.arrl.org/announce/regulatory/savi/arrl-savicmts-0.html>. Reply comments are due by March 12, 2002.

CMOS SENSORS TARGET IMAGE DELIVERY ON MOBILE UNITS

March 12, 2002 (5:36 p.m. EST)
ROCHESTER, N.Y. — Two chip companies, startup Transchip Inc. (Tel Aviv) and Hitachi Semiconductor (San Jose), are in the hunt to bring digital camera capabilities to mobile phones, and have separately announced CMOS sensor modules to deliver such capabilities.

The wireless delivery of video clips and digital images is a key application going forward, and sources inside NTT Docomo, Japan's largest wireless service provider, indicate that 50 percent of all new mobile phones will require camera functionality, according to Viktor Ariel, chief executive officer of Transchip. Korean markets are making the same demands, Ariel said.

Japan will be an early driver of integrated camera modules in mobile phone s, said Tetsuo Sato, director of technical marketing at Hitachi. Many young users in Japan have Docomo's iMode mobile phones, and "camera capabilities are very useful for these users," Sato said.

Hitachi's HAM49002 CMOS sensor supports 352 x 288 common interface format (CIF) resolution and supports 15 frames per second of video. The product is equipped with an 8-bit analog/digital converter and 16-bit H8 series microcontroller, and draws 45 milliwatts when running 15 frames/s. The microcontroller handles signal-processing tasks that enhance picture quality, Sato said.

Compression functions, such as JPEG encoding, are left off-chip to allow different mobile architectures to use different compression schemes, Sato said. The Hitachi approach relies on a mobile phone's host processor to handle compression schemes, he said.

The Transchip TC5600 sensor offers similar features. It delivers the same CIF resolution, supports the same frame rates, and consumes the same amount of power as Hitachi's HAM49002. Transchip said it is also spending time and money to develop color processing algorithms to ensure high picture quality.

On the compression side, Tranship is also relying on third-party baseband architectures at present to handle JPEG and MPEG encoding. Over time, however, Transchip expects to integrate these functions into a single module. "Ultimately, we'll provide MPEG-4 and other encoding/decoding schemes on our chip," Ariel said. Transchip also provides some different features for its part. To ensure high-resolution images, it has integrated a 10-bit A/D in its solution.

Another difference is its ability to support streaming video. While Hitachi's HAM49002 is targeted mainly at still image capture, Transchip's TC5600 supports JPEG encoding/decoding as well as MPEG-4 and H.26L to deliver wireless video.

Hitachi's offering is slated to hit the market in April, and Transchip is also targeting a second-quarter launch. Both companies are working on VGA versions of their sensors.
By Robert Keenan CommsDesign.com
From EE Times Newsletter March 15,2002
http://www.eetimes.com/story/OEG20020312S0071

COMMENTS IN SAVI PROCEEDING BOLSTER ARRL POSITION

The ARRL says the large number of comments filed by amateurs in opposition to SAVI Technology's plans to operate RF identification tags on 70 cm support the League's position that the proposed rules are flawed and should not be adopted. The ARRL took note of the amateur community's response in its reply comments filed in the proceeding, ET Docket 01-278, on March 12. SAVI wants the FCC to authorize operation of the RFID system at 425-435 MHz at much higher field strengths and duty cycles than current Part 15 rules permit for such devices.

"There were approximately 132 comments filed by radio amateurs or Amateur Radio organizations in this proceeding," the ARRL pointed out, "all of which are opposed to the proposal to allow high-power, continuous-duty RFID tags and interrogators in the weak-signal portion of the most popular and heavily-occupied UHF amateur band."

RFID tags are used for tracking shipments and packages, among other applications. While the ARRL said package tracking using RFID technology "is a beneficial application as a general matter," it belongs elsewhere. The ARRL maintained that if the proposed rules were enacted as proposed, the inevitable result would be severe and harmful interference. Some commenters from the amateur community predicted interference from--and to--the RFID tags as a result of amateur TV operation in that portion of 70 cm. Others worried about the tags' effects on weak-signal work.

"The only way to mitigate the interference in this case would be for SAVI to select another band and abandon its plan for high-power, high-duty-cycle operation at 425-435 MHz," the ARRL declared.

The ARRL admonished the FCC to "not create Part 15 rules to accommodate a single company's product or even one type of RF device." The League also asserted that FCC approval of SAVI's proposal would undermine the regulatory philosophy underlying the current Part 15 rules governing unlicensed intentional radiators. The ARRL reiterated its argument that the RFID tags cannot be operated in the US under current Part 15 rules for unlicensed devices and in numerous European and Asian countries cannot be operated at all.

The ARRL's reply comments also characterized SAVI's tests and interference studies as "flawed" and not representative of real-world conditions.

Concluded the League, "Operation of near-continuous duty devices at Section 15.231(a) power levels at 433.92 MHz and the surrounding band segment is fundamentally incompatible with incumbent amateur operation and cannot be permitted." The ARRL again urged the FCC to not adopted the proposals.

The ARRL's reply comments include a summary of the League's ex parte presentation in the proceeding delivered to FCC Office of Engineering and Technology staff members February 26.
…From ARRL Bulletin 21 ARLB021
Newington CT March 19, 2002

IC MEDIA ROLLS OUT CELL PHONE AND PDA SINGLE-CHIP CAMERA

SAN JOSE -- In a move to lower the cost of handheld products, IC Media Corp. here today introduced a single-chip camera for cellular phones and PDAs.

The ICM-202 saves space by eliminating the need for a backendcontroller for PDAs and cellular phones. The chip provides CIF resolutions of 352 x 288 pixels and QCIF resolutions of 176 x 144 pixels for still or full-motion video at up to 30 frames-per-second.

The ICM-202 is a highly integrated single-chip camera. Each pixel is covered by a color filter, which forms an industry-standard Bayer pattern. Correlated double sampling is performed by the internal analog-to-digital converter and timing circuitry.

It utilizes 6- x 6-micron pixels and integrates IC Media's 1/7-inch sensor for high-picture quality and better low-lux performance. Running at 2.8-Volts, the chip boasts a power consumption of less than 35mW.

"Cell phone and PDA manufacturers are challenged to add new features yet make their products smaller than ever," said Ben Wu, president and CEO of IC Media in San Jose. "This makes the ICM-202 the ideal solution with the smallest footprint by far, especially considering that no extra digital processing controller is required."

The ICM-202 is available in production quantities now. It is available in a shrunk plastic LCC 48-pin package.
…Semiconductor Business News 03/21/02

GREAT NEWS ABOUT DIGITAL ATV: KITS ARE COMING!

2 cards are now in production and will be available very soon for your first DATV QSO on the 434 MHz band. These cards has been developed by Uwe DJ8DW and extensively tested in collaboration with the AGAF (ATV group of Germany). Description in English and pictures on: http://www.von-info.ch/hb9afo. Access this topic via the menu option: "ATNA" You can also read the "historic" of these developments since the year 2000 to now.
…michel hb9afo

DATV- DIGITAL AMATEUR TELEVISION

Developments in chronological order
By Michel Vonlanthen HB9AFO

Digital Amateur Television (DATV) Field-Tests in Germany Extended

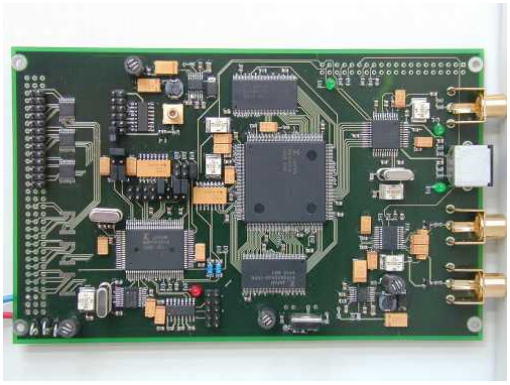
March 2002.
Since November 2001 the DATV transmitter designed by a group around DJ8DW at Bergische University Wuppertal is working properly on 23 cm (1255 MHz) in Cologne at the ATV-repeater site DB0KO. The transmitter, which may be programmed to various digital modulation schemes and data rates, at this site is programmed to QPSK and according to the DVB-S standard. Thus a reception is possible by a cheap digital satellite TV set-top box along with a preamp if required. The repeater FM ATV input signal is demodulated to baseband PAL, converted to MPEG II (5 MBit/s) and digitally retransmitted.

The repeater output can be switched between FM ATV and DATV by DTMF remote control thus allowing a fair comparison. In a distance of about 50 km the FM signal (repeater output power 20 W, 18 MHz bandwidth) resulted in a rather noisy picture whereas DATV (repeater output power 10 W, 6 MHz bandwidth, same 10dB omnidirectional antenna) showed a perfect picture. Although the set-top box has no echo equalizer there were only very few problems with multipaths reception most likely due to the fact that the repeater is installed on top of a building 150 m above ground and that highly directional receiving antennas are used.

In the meantime the tests are extended in the Wuppertal area to 70 cm (center frequency: 434 MHz, bandwidth: 2 MHz, data rate: 2 MBit/s, transmitter power: some mW through 80 W). Omnidirectional as well as highly directional antennas are used. The tests are covering field strength measurements at various places in rural and urban areas, check the multipath situations as well as possible problems which might be caused by ISM interference. In addition DATV-DX tests are performed.

DATV-Building blocks in preparation

Encoder MPEG-2



Transmitter DATV 434 MHz

The MPEG II encoder board and the DATV transmitter board are currently prepared for a small-scale production series organized by AGAF. These boards ready built and tested will be available in some months time for licensed Radio Amateurs and for amateur applications only, the price is calculated on a no profit no loss base. Ordering information is available from AGAF by fax (+49 231 486 989) or via Internet at www.datv-agaf.de (commercial applications may be possible under a special contract with the Wuppertal University).

Specifications of the boards:
General: Both boards, MPEG II encoder and DATV transmitter, have standard signal input/output interfaces. They may be used together for DATV but also separately for other applications. The various digital modulation schemes and data rates are generated on the transmitter board with 10 mW on 434 MHz and are selectable by jumpers or switches. Modulation schemes generating 2 MHz rf-bandwidth may be transmitted on 70 cm, all others with a higher rf-bandwidth are heterodyned to the GHz bands.

1: MPEG II Encoder (Fujitsu encoder IC)
* Input: analog PAL/NTSC, Y/C, stereo sound
* Output: 2 x standard MPEG II bit parallel, data rate selectable from 2 Mbit/s - 10 Mbit/s

2. DATV Transmitter
* Input: live MPEG II bit parallel, hard disk recorder, on-board plug-in memory card containing
* Short moving video scenes which may be transmitted cyclically for long time tests or station identification
* Output: 434 MHz rf-DATV-signal, 10 mW, 50 Ohm SMA, 36 MHz or 44 MHz if-DATV-signal
* Digital modulation schemes available: QPSK (DVB-S), GMSK, QAM, 8-VSB (ATSC)
* Power: Single 12 Volt (10 V - 14 V), ca. 600 mA each board
* Size: 100 mm x 160 mm Euro, 4 layers

… DJ8DW
(Translation Klaus, DL4KCK)

Digital-ATV at HAM RADIO 2001

June 2001
The digital Amateur Television test provided by a group around DJ8DW from Wuppertal university at the HAM RADIO 2001 fair in Friedrichshafen, Germany, was built up over a 9 km distance from the "Elektronikschule Tettnang" building to hall 6. On 434 MHz plus/minus 1 MHz 80 watt power output were used in GMSK modulation and a fourfold 11-el. yagi group at each location.

On Friday morning the video and sound transmission in MPEG2 quality was successful at times, but strong inband short-time carriers interrupted it more and more. So an originally planned long path test over 26 km from Austria was cancelled.

Several TV monitors at the combined stand of DARC public relations and AGAF e.V. were showing all three days long, how well an undisturbed 3. generation digital-ATV link can work. On 1255 MHz plus/minus 3 MHz 10 mWatt in QPSK modulation with FEC (forward error correction) provided excellent video and sound quality, received by a cheap digital satellite TV settop-box in MPEG2. After intentionally interrupting the path an error message from the settop-box menue appeared on a black TV screen, but after realignment the live picture was back with some delay.

Uwe Kraus, DJ8DW, will soon present a detailed description of 3. generation DATV which is designed to enable experienced amateurs to use the new single chip MPEG2 encoders and decoders from Fujitsu and a universal modulator for GMSK, QPSK or 8VSB.

…Klaus, DL4KCK

FCC PROCEEDING PUTS PRESSURE ON HAM MICROWAVE BAND

The FCC has again targeted Amateur Radio's primary allocation at 2390 to 2400 MHz for possible sharing or use by other radio services. A Notice of Proposed Rulemaking (WT Docket 02-55)--released in mid-March but not yet available for public comment--invites comments on either sharing the band with public safety services being displaced from 800 MHz or moving amateurs elsewhere. The ARRL plans to file comments in the proceeding.

The FCC says increasing incidents of harmful interference to public safety systems in the 800-MHz band prompted the proceeding, "Improving Public Safety Communications in the 800 MHz Band." To alleviate the problem, the Commission now is looking into restructuring the 800 MHz band and moving some occupants elsewhere.

"In this proceeding, if commenting parties believe that incumbent amateur services cannot co-exist with relocated 800 MHz services," the FCC said, "we seek comment on whether incumbent amateur services could be relocated, what spectrum could be used for their relocation, and what procedures would apply to such relocation." The FCC NPRM identifies 2390-2400 MHz as an "Unlicensed PCS Band." Unlicensed, asynchronous PCS devices were authorized there in 1995, but Amateur Radio remains primary.

The FCC also will seek comments on whether existing UPCS operations could continue in the band or be forced to cease. It also wants input on "the suitability of the 2390-2400 MHz band as replacement spectrum and whether there are other band segments with which this band could be paired." The FCC noted that the adjacent 2385-2390 MHz segment already is slated for auction.

The FCC said its discussion of 2390-2400 MHz and other segments in terms of replacement spectrum was intended to be "illustrative rather than exclusive" and that other bands "may also merit consideration."

Just last summer, the FCC invited comments on its proposals to reallocate some spectrum in the 2390 to 2400 MHz amateur segment--as well as in the non-amateur 1.9 and 2.1 GHz bands--for possible use by unspecified mobile and fixed services. The Commission has proposed 2390 to 2400 MHz and other bands to support the introduction of advanced wireless systems, including so-called third-generation (3G) mobile systems. The FCC also has asked for comments on whether amateurs could share the band with government users.

The complete NPRM is available via the FCC Web site <http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-02-81A1.doc>. The FCC will officially invite comments for 30 days after the NPRM is published in the Federal Register. Reply comments will be due 60 days following publication in the Federal Register.

NEW MEMBERS

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 the lifeblood of our group. It's important that we actively recruit new faces aggressively.
There are no new members this time, a first in a long time. Get busy guys and spread the word!
…Art WA8RMC

NEWS FROM FLORIDA…Pete, K4PRS, is active on ATV!

Hello Art,

Well it’s been busy here. I spent the last five weeks looking for a house. I finally bought one, but it was hard finding a nice community that allows antennas. I am going to be in Palm Harbor which is northwest of Tampa. The deed restrictions for the community say nothing about antennas, and driving around I spotted three TV antennas and two CB antennas so that was good enough proof for me.

Last weekend the ATV meeting was held to discuss the future of ATV in central Pinellas County. The group that wants to install the repeater has no experience with ATV. They will initially install the transmitter and have it ID. I will be about 14 miles from the repeater site which will be up 150 feet. Although I will get to have an outdoor antenna, I might be a little to far away. There seems to be a good deal of interest, but there doesn't seem to be any central leadership for this project. I hope it works out, but it isn't the same dedication as in Columbus.

Will send updates soon.
Take care,
Peter

ATCO HAMVENTION FLEA MARKET SPACES

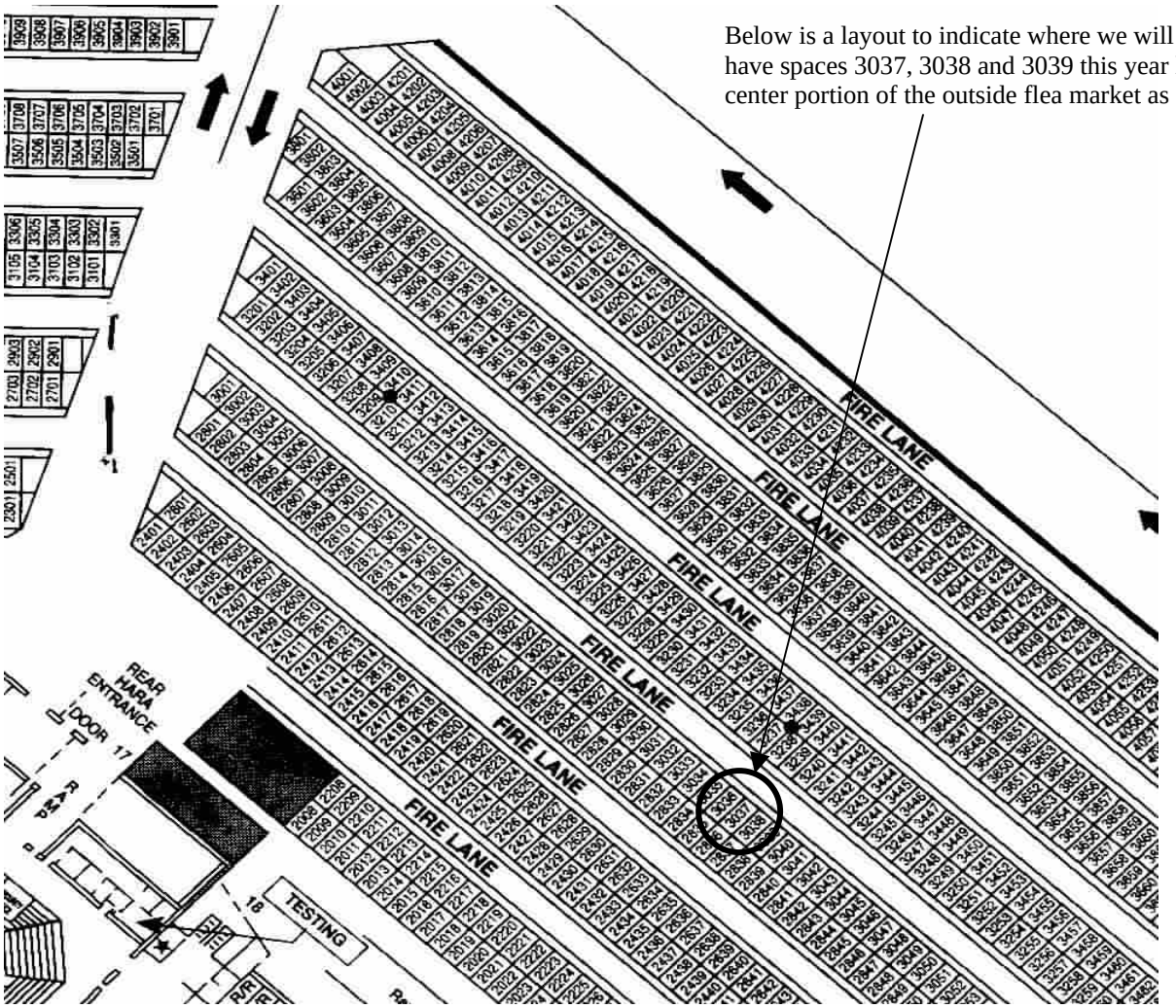
This year we will have three ATCO sponsored flea market spaces at Dayton . Our purpose is to provide a single place for members and friends to bring their items to sell instead of everyone acting individually. Wilbur, K8AEH, has graciously offered to bring his RV and set it up in the three spaces. He has an awning on the RV over which we will organize the tables so to keep "dry" during moments of unexpected rain outbursts. He even said we could store our purchased goodies there instead of carrying them with us or making frequent trips to the car to unload.

I'd like to make it our "ATV gathering spot" for ATV items for sale so bring your ATV goodies for sale and display them here. Since space is limited, please don't bring a truck load of stuff to sell. This space is meant for the person that has just a few items to sell and would otherwise not have a space of their own. To help manage the spaces at all times I'm calling for volunteers to sign up for space duty at a specific time. Hopefully, there will be enough of us so any one individual will need to be there for an hour or so. That way, all of us can spend some "quality" time in the rest of the flea market.

I've invited the DARA group to join us so a few of that group may be present. Also, I talked to Gene Harlan at ATVQ Magazine who would like to display some of his literature and magazines there. He said if we help sell these, he'd kick in some extra money to help pay for the spaces. By the way, talking about extra money, I think it would be great if the people who sell items here help defray the space cost by donating a part of their profits to ATCO. I'll set no specific requirements here…it's purely voluntary, but above all, let's have fun.

If we're successful this year, let's plan to continue in the years to come. It's my hope that we'll become recognized as the ATV place to be at the Hamvention. I've informally mentioned this to other clubs but haven't heard anything from them. Maybe we can get them to join us in future years and who knows, we could potentially occupy as much space as Mendelsons???? Who would like to construct an ATV transmitter there so we could communicate with Intuitive Circuits inside?

So, what yet needs to be done? Well, first we need someone to make us a banner announcing that our spaces are the combined effort of ATCO ATV. Second, we need a sign up list for volunteers to man the space. Last, we need someone to get some refreshments (I won't specify what kind) and some ice. Wilbur said he has a cooler and ATCO will pay for the food. Did I leave anything out? Let's discuss it at the ATCO Spring Event.



EXPERIMENTERS POWER SUPPLY…An item you can't live without.

I'm a pack rat! I've always been one and probably always will be, at least as long as I don't win the lottery. If I win…well, then we'll see. Until then, if I see a good deal I usually will try to capitalize on it. So, as things get tossed out at work that are electrically oriented, I'm usually there. This time it seems that my company is buying an electrical module that includes the power supply, cable and a number of accessories. Since our vendor is located "across the pond" as I like to state it, and the module comes with all the goodies, it would cost extra for them to remove the power supply and the other parts from the kit. So, it's cheaper for US to throw the unwanted parts away than it is for them to create a special package just for us. As a result, I am now the proud possessor of about a hundred small switching power supplies.

This power supply is small, has a universal input, that is it can be connected to a 120 or 240 VAC source without modification, and is of the switching variety meaning it is small and power efficient. The power supply as it stands is rated as 5.2VDC at 1 amp but can be simply modified for any voltage between 5 and 15 VDC. I modified one for 15 VDC and connected it to a ½ amp load for an hour without failure or overheating as long as I kept the input to 120 VAC. (I don't think any of us should have a problem with that)! I will make these units available to any of us free for the asking as long as you build something useful. I'll leave it up to you to determine what's useful.

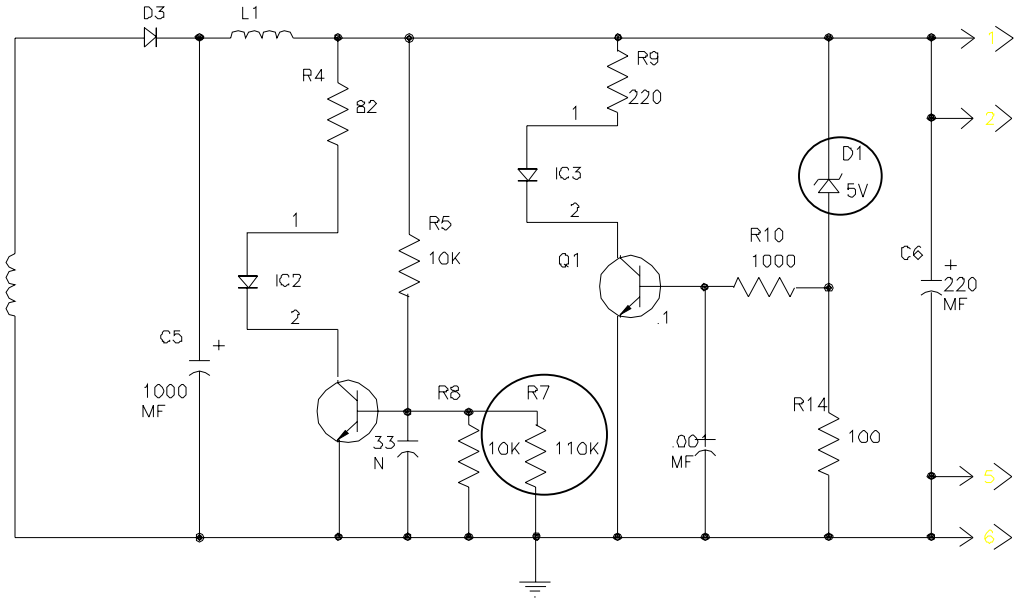
The modification instructions are as follows: Tap the case with a hammer on the sides as shown at the right to break the plastic welded joints and pry apart.

Remove the case and locate resistor R7. Its original value is 110K. Remove it and replace with a value shown at the right to suit your voltage requirements from the table below.

2.4k = 15.0 v
2.7k = 13.9 v
3.0k = 12.0 v
3.3k = 10.9 v
10k = 7.5 v
110k = 5.2v
(standard)

Finally remove the zener diode D1 and replace with one slightly higher in voltage than the desired new output voltage. The circuit around D1 is an overvoltage shutdown circuit of sorts and must have a voltage threshold above the output voltage. If you don't care about overvoltage protection, simply clip D1 out of the circuit.

That's all there is to it. Replace the case, power it up and you're in business. For your reference check out the output portion of the schematic shown below. So, let's get back to building things. I'll help with problems when requested.
…WA8RMC



HAMFEST FUN

Ahhh…the Nelsonville Hamfest! This was my first year for this one and only about a hour drive south east from Columbus. After having a hard time finding its location, I enjoyed it immensely. It's small but well stocked with goodies. With only about 150 people in attendance, the ATCO group of about 10 of those represented a significant portion. Most of us posed for the photo shone below. Next year put a note on the calendar around the first of February to check this one out.

…WA8RMC

PIZZA PARTY!

Again this year we had to have our mid winter pizza party. This time "we" decided to have it at Donato's in Westerville. (Actually I decided because no one had a good suggestion for a location so I selected the one closest to me). The group was small but friendly and as you can see below, the XYL's migrated together to allow the rest of us to talk ATV. Join us next time if you can. Stay tuned to the Tuesday night net on 147.45 for the time and place. See you then!

…WA8RMC

HAMVENTION INTINERARY

There are going to be lots of stuff going on for the ATV'er this year. First, there's the Friday Night gathering (and Saturday Night this year too) then there will be the Saturday ATV Forum in room 3 at 12:15 PM and last (but most important) will be the ATCO flea market spaces 3037, 3038 and 3039 which will have selling activity all three days. Check out the schedule below:

Friday Night gathering:
The ATNA group will take on a more active role in the planning as they were just a sponsor last year. Since John Hey W8STB is now SK, new leadership is required. John's presence will be sadly missed. the Friday night gathering for 2002 will change from last year. Ron, K3ZKO has the following announcement: " I made reservations for our meeting place in Dayton for this year. We have a private room, no smoking, starting at 6pm until 11pm. We are expected to have a meal there and there will be individual checks. They can hold up to 70 people with plenty of free parking. The dates are, Friday night May 17, 2002 and Saturday night May 18, 2002. Place is, The Stockyard's Inn, 1065 Springfield Street, Dayton, OH 45403. Phone 937 254-3576. The date and location along with a map will be placed on the ATNA WEB Page. Maps and information will be printed for handouts at the Dayton Hamfest and we will have a page in our next newsletter". John Shaffer, W3SST says, "This year we are locating both the Friday and Saturday night sessions at "The Stockyards" This will enable Atver's and guests to enjoy a moderately priced meal and also allow more time for technical presentations As we have for the past several years ATNA will make all the arrangements and provide the room to gather. The Stockyards have agreed to have separate checks and order from the menu.
THE FRIDAY NIGHT AGENDA IS AS FOLLOWS:
1745-1900 Dinner from menu with separate checks….PLEASE dine with ATNA.
1900 Program (and timing) review by MC, John Jaminet, W3HMS
1905 Where and What Does ATNA Do Now? and Officer Nominations for next term by John Shaffer W3SST, President, ATNA
1925 A Tribute to John, W8STB SK by MC and all with tributes
1930 First Prize Drawing by Art Towslee, WA8RMC.
1935- 2020 Linked ATV Repeaters via Amateur TV Network by Mike Collis, WA6SVT (Video report followed by Tech talk Q and A.
2020-2035 Break with refreshments courtesy of ATNA.
2035-2100 ATV From Arizona Balloon by Brian Miles, WB7UBB with video and talk
2100-2105 Second Prize drawing by Art Towslee, WA8RMC
2105-2140 Upcoming Balloon Flights by Bill Brown, WB8ELK. Video report?? and talk
2140-2155 Preparing a First Rate NPRM Response by Mike Collis, WA6SVT
2155- 2200 Wrap up Announcements/Good of the Order….MC

SATURDAY AFTERNOON AGENDA
12:15 – 2:00 PM Amateur Television moderated by Bill Parker W8DMR
Speakers:
Chris Cieslak, KC9L – "R/C ATV: Quick, Easy, Fun and useful" Why combining radio control and ATV is good for both club and public service events. How to do it. Actual demonstration of an RC ATV vehicle employing a 70cm AM wireless video link.

Steve McVoy, "The Early Television Museum" President and Curator. History of early television, preservation of early TV receivers, a demonstration of the Baird Televisor.

Announcements:
DARA ATV repeater status.
ATNA Activities, W3SST
ATVQ, Editor WB9MMM
ATCO, Editor WA8RMC

SATURDAY NIGHT AGENDA
1745-1900 Dinner from menu with separate checks..please dine with us.
1900 Program review by MC, John Jaminet, W3HMS
1905 ATNA Election for Officers for 2002-2004 by John Shaffer W3SST, President, ATNA
1915 ATNA Treasurer's Report by Harry DeVerter, N3KYR
1920 Informal discussion with Gary Hendrickson, W3DTN on ATV Regulatory Ideas
2010-2025 Break ….refreshments courtesy of your wallet!
2025-2040 A Video Review of the Seigy, France Hamfest April 2002 and Annual ANTA France Meeting by John, W3HMS
2040-2055 Linking of Wilmington, DE and Philadelphia, PA ATV Repeaters by Ron Cohen, K3ZKO and Dave Stepnowski ,KC3AM
2055-2105 ATNA Business by John Shaffer ,W3SST, Outgoing President ATNA.
2105-2115 Remarks by Incoming ATNA President _____
2115-2145 Internet ATV by Ron Cohen, K3ZKO
2145-2055 Microwave ATV Update by John W3HMS
2055-2200 Good of the Order ….MC

MESSY HAMSHACK CONTEST

Ending with this issue, I will accept nominations for the messiest Hamshack. This will be anonymous, as I'm sure that we do not want a self-confession of the worst kept hobby area, do we? Actually, the ones pictured here are not the messiest because I purposely have not shown my own shack…oops! But really, let's be honest. If it's messy, that's a good sign that we spend a significant time there. Besides, it's a hobby and supposed to be fun. Nominations will be accepted through next issue and I'll think of a great prize for the winner but if the submitter wishes to be anonymous, how will I hand out the prize? Let me think about that one for a while.

Entry number 1.

Entry number 2.

Entry Number 3

Entry number 4

Entry number 5

Entry number 6

OK, that's it for this time. I need more entries to make this interesting. It's best if you Email me the pictures (I promise not to disclose the source) or, if the internet is not available, just send it snail mail. Thanks!

…WA8RMC

ATCO

2002 SPRING EVENT

1:00 PM - SUNDAY

MAY 05, 2002

ABB PROCESS AUTOMATION
(ACCURAY)
*** SHELTERHOUSE ***
650 ACKERMAN ROAD
FOR MORE DETAILS, CONTACT
ART - WA8RMC 891-9273

LUNCH PROVIDED - DOOR PRIZES -

BRING A FRIEND AND SEE OLD BUDDYS

MINI HAMFEST - SHOW AND TELL

DIRECTIONS TO THE ATCO EVENT

From I-70 either EAST or WEST Bound:

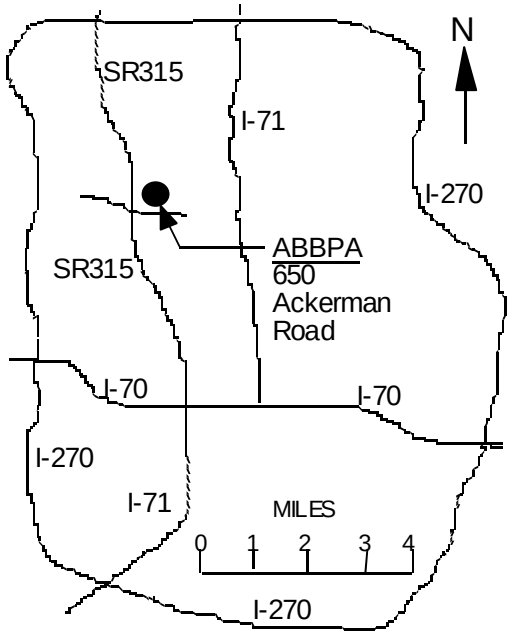
Take I-70 to SR-315 near downtown Columbus. Exit onto SR-315 north about 4 miles to Ackerman Road. Turn east on Ackerman about 200 yards to first driveway on left.

From I-71 traveling NORTH bound toward Columbus:

While traveling north on I-71, continue past I-70 and onto SR-315 north. Travel on SR 315 north about 4 miles to Ackerman Road. Turn east on Ackerman about 200 yards to first driveway on left.

From I-71 traveling SOUTH bound toward Columbus:

(DIRECTIONS IF YOU'RE "NORTH" OF I-270).
Take I-71 SOUTH to I-270 Bypass Loop & head WEST on I-270 to SR 315. Take SR 315 south about 5 miles to Ackerman Road. Turn east on Ackerman (under SR 315) about 200 yards to first driveway on left.



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
	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, Pheonix 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.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.

INTERNET MISCELLANOUS HAM RELATED HOME PAGES

(list verified 01/18/02)

The following addresses are helpful in searching for many different Ham Radio items on the INTERNET.

http://www.hampubs.com/	ATVQ Magazine home page. ATV equipment & article references.
http://www.hamtv.com	PC Electronics Inc. Lots of proven ATV equipment for sale.
http://downeastmicrowave.com	Down East Microwave Inc. Lots of uhf/microwave parts & modules.
http://www.arrl.org/hamfests.html	Current yearly hamfest directory.
http://amsat.org	AMSAT satellite directory/home page.
http://www.arrl.org	ARRL home page
http://www.arrl.org/fcc/fcclook.php3	ARRL/FCC revised CALLSIGN database. Search call sign or name.
http://hamradio-online.com	Ham Radio Online "newsletter" Lot of Ham related info.
http://www.qsl.net/atna/	ATNA homepage
http://www.ham-links.org	Ham Radio collection database
http://fly.hiwaay.net/~bbrown/index.htm	Tennessee Valley Balloon launch info (Bill Brown WB8ELK)
http://www.ipass.net/~teara/atv4.html	Arizona ATV 2.4Ghz Wavecom page (Wavecom mod. info)
	Space Shuttle Launch Info Service & Ham TV System (LISATS)
http://www.svs.net/wyman/	Wyman Research Inc. W9NTP Don Miller ATV equipment
http://www.m2inc.com /	M2 Antenna Systems Inc.
http://www.dci.ca/amateur_radio.htm	DCI Digital Communications Inc. Bandpass filters
http://scott-inc.com/wb9neq.htm	Kentucky, Airborn ATV from WB9NEQ in Bowling Green
http://www.icircuits.com/	Intuitive Circuits Inc
http://www.qsl.net/kd4dla/ATV.html	KD4DLA ATV web page index
http://www.severe-weather.org	Columbus, Ohio severe weather net at Columbus airport
http://www.mods.dk	Ham radio modification lists.
http://gullfoss.fcc.gov:8080/cgi-bin/ws.exe/beta/genmen/frequency.hts	look up any frequency on the FCC data base.
http://www.fcc.gov/wtb/	Starting point from which all radio license holders can be found
http://www.labguysworld.com	Lab Guy Antique TV camera listing
http:\\www.earlytelevision.org	Antique television museum in Hilliard, Ohio
http://radioscanning.wox.org/Scanner/scanner.htm	Radio scanner info for all frequencies in Columbus, Ohio area.
http://www.labguysworld.com/	Television recorder history web page. Lots of tv info.

HAMFEST CALENDAR

This section is reserved for upcoming hamfests for as far in advance as we know about them. 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. I maintain some fliers that compile this list so for additional info Email me at towslee@ee.net. This list will be amended, as further information becomes available.

28 Apr 2002+Twenty Over Nine ARC Contact: Don Stoddard, N8LNE 55 South Whitney Avenue Youngstown, OH 44509 Phone: 330-793-7072 Email: n8lne@arrl.net Canfield, OH
28 Apr 2002+Athens County ARA http://www.seorf.ohiou.edu/xx150 Contact: Drew McDaniel, W8MHV 61 Briarwood Drive Athens, OH 45701 Phone: 740-592-2106 Email: mcdanied@ohiou.edu Athens, OH
17-19 May 2002+Dayton ARA http://www.hamvention.org/ Contact: Dayton Hamvention PO Box 964 Dayton, OH 45401 Phone: 937-276-6930 Fax: 1-800-491-4267 Email: info@hamvention.org Dayton, OH
26 May 2002+Franklin County Hamfest Committee Contact: Chris Lind, KC8BUO PO Box 14281 Columbus, OH 43214 Phone: 614-267-7779 Fax: 614-263-7934 Email: clind2@juno.com Hilliard (Columbus), OH
9 Jun 2002+Fulton County ARC http://www.fcarc.8m.com Contact: Angela Infante, KB2AVN 7649 County Road L Delta, OH 43515 Phone: 419-822-4382 Email: lindsay@powersupply.net Wauseon, OH
15 Jun 2002+Milford ARC Contact: Chris Reinfelder, KB8SNH 3691 Charter Oak Amelia, OH 45102 Phone: 513-753-5066 Email: kb8snh@cs.com Milford, OH
7 Jul 2002+Wood County ARC http://wcarc.bgsu.edu/flyer.html Contact: Bob Boughton, N1RB PO Box 534 Bowling Green, OH 43402 Phone: 419-354-1811 Email: hamfest@wcarc.bgsu.edu Bowling Green, OH
20 Jul 2002+Northern Ohio ARS http://www.apk.net/noars/hamfest.htm Contact: Tom Porter, W8KYZ 161 Herrmann Drive Avon Lake, OH 44012 Phone: 440-930-9115 Email: n8pzd07@email.com Wellington, OH
27 Jul 2002+OH-KY-IN ARS http://www.ohkyin.org Contact: Mr. Lynn Ernst, WD8JAW 10650 Aspen Place Union, KY 41091-7665 Phone: 859-657-6161 Email: wd8jaw@arrl.net Cincinnati, OH
28 Jul 2002+Portage ARC http://parc.portage.oh.us Contact: Joanne Solak, KJ3O 9971 Diagonal Road Mantua, OH 44255 Phone: 330-274-8240 Email: ljs@config.com Randolph, OH
3 Aug 2002+Voice of Aladdin ARC http://www.qsl.net/w8fez Contact: James Morton, KB8KPJ 6070 Northgap Drive Columbus, OH 43229-1945 Phone: 614-846-7790 Email: kb8kpj@cs.com Columbus, OH

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 and 2433 MHz 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
		2433 MHz:15 watts continuous
	Link transmitter -	446.350 MHz 1 watt NBFM 5 kHz audio
Identification:	427, 1250 & 2433 xmtrs. Video identify every 30 minutes showing ATCO & W8RUT on four different screens	
Transmit antennas:	427.25 MHz - Dual slot horizontally polarized 7 dBd gain major lobe west	
	1250 MHz - Diamond vertically polarized 12 dBd gain omni	
	2433 MHz - Comet Model GP24 vertically polarized 12 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	
	2398 MHz - F5 video input	
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 8 dBd gain major lobe west	
	915 MHz - DB Products vertically polarized 10 dBd gain omni	
	1280 MHz - Diamond vertically polarized 12 dBd gain omni	
	2398 MHz - Comet Model GP24 vertically polarized 12 dBd gain omni	

Input control:	Touch Tone	Result (if third digit is * function turns ON, if it is # function turns OFF)
	00#	turn transmitters **off** (exit manual mode and return to auto scan mode)
	00*	turn transmitters **on** (enter manual mode -keeps transmitters on till 00# sequence is pressed)
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 01#	Channel 2 915 MHz scan enable
	03* or 01#	Channel 3 1280 MHz scan enable
	04* or 01#	Channel 4 2411 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 2411 receiver audio
	C0* or C0#	Beacon mode – transmit ID for twenty seconds every ten minutes
	C1* or C1#	427.25 transmitter power output select (C1* = 40W output power or C1# = 1.5W output)
	C2* or C2#	2433 transmitter for on/off. (C2* enables transmitter and C2# disables it)

Auto scan mode functions:		
	001	2411 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**)**

FOCUS ☼ 1	**ZOOM** ☼ 2	**APERATURE** ☼ 3	**DISABLE** A A A **A**
FILTER 4 steps ▯ 4	**TILT** ☼ 5	**PAN** ☼ 6	**ENABLE** B B B **B**
IN/RT/DN ☼ 7	8	**INC SPEED** Pan/Tilt 9	**C**
OUT/LT/UP ☼ *	0	**DEC SPEED** Pan/Tilt #	**D**

CAMERA CONTROLLER KEYPAD FUNCTIONS

002 = ENABLE CAMERA
001 = RETURN TO NORMAL

Note: sometimes enter 003 for room cam then 002 for roof cam is better.

OK, that's it folks. Play with it to your heart's content. Oh, one more thing. Use the camera in the repeater automatic mode only. If you access it in repeater manual mode, the first time you hit a function button, the controller thinks you want another input and shuts it down. In auto mode hit "002" to enable the roof camera and "001" when finished to return the controller to the 2400 MHz input. Since there will be no 2400 MHz signal, the repeater will shut down.
Use the keypad diagram at left as a function reference. Cut it out and paste it beside your keypad if you prefer. Thanks to Dale, WB8CJW, for the handy work.

ATCO MEMBERS AS OF 18 April 2002

Call	Name	Address	City	St	Zip	Phone	URL
AA8XA	Stan Diggs	2825 Southridge Dr	Columbus	Oh	43224-3011		sdiggs4590@aol.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@aol.com
KC8ASD	Bud Nichols	3200 Walker Rd	Hilliard	Oh	43026	614-876-6135	kc8asd1@aol.com
WB8CJW	Dale Elshoff	8904 Winoak Pl	Powell	Oh	43065	614-210-0551	delshoff@columbus.rr.com
WA8DNI	John Busic	2700 Bixby Road	Groveport	Oh	43125	614-491-8198	jbusic@copper.net
W8DLB	Denny Beardmore	PO Box 313	Bethesda	Oh	43719-0313	740-484-4822	Dlb@1st.net
K8DW	Dave Wagner	2045 Maginnis Rd	Oregon	Oh	42616	419-691-1625	
WA3DTO	Rick White	5314 Grosbeak Glen	Orient	Oh	43146	614-877-0652	wa3dto@aol.com
WB8DZW	Roger McEldowney	5420 Madison St	Hilliard	Oh	43026	614-876-6033	wb8dzw@aol.com
W8EHW	Foster Warren	PO Box #32	No. Hampton	Oh	45349		
KC8FGH	Bob Rector	135 S. Algonquin Ave	Columbus	Oh	43204-1904	614-276-1689	Rrector677@aol.com
KS4GL	John Barnes	216 Hillsboro Ave	Lexington	Ky	40511	606-253-1178	jrbarnes@iglou.com
W8FZ	Fred Stutske	8737 Ashford Lane	Pickerington	Oh	43147		
KA8HAK	Jim Reese	1106 Tonawanda Ave	Akron	Oh	44305		
KC8HCE	Adam Porr	6825 Ridgeway Ct.	Pickerington	Oh	43147	614-837-6489	Kc8hce@arrl.net
WA8HFK,KC8HIP	Frank, Pat Amore	3630 Dayspring Dr	Hilliard	Oh	43026	614-777-4621	
W3HMS	John Jaminet	912 Roberts St	Mechanicsburg	Pa	17055-3451		w3hms@aol.com
N8IJ (ex w8jnd)	Richard Knowles	2318 Britt Ave	Lima	Oh	45806		
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	mjgilbert@wcom.net
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.con
N8LRG	Phillip Humphries	3226 Deerpath Drive	Grove City	Oh	43123	614-871-0751	phumphries@columbus.rr.com
WB2LTS	Manny Diaz	8 Pearl Ave	Holtsville	Ny	11742-1711		wb2lts@worldnet.att.net
KC8LZC	Tom Walter	15704 St Rt 161 West	Plain City	Oh	43064	614-733-0722	kc8lzc@go.com
W8MA(ex wa8tte)	Phil Morrison	154 Llewellyn Ave	Westerville	Oh	43081		
KA8MID	Bill Dean	2630 Green Ridge Rd	Peebles	Oh	45660		ka8mid@qsl.net
N8NT	Bob Tournoux	3569 Oarlock Ct	Hilliard	Oh	43026	614-876-2127	rtournou@columbus.rr.com
WD8OBT,KB8ESR	Tom Camm & sons	1634 Dundee Court	Columbus	Oh	43227	614-860-9807	
N8OCQ	Robert Hodge	PO Box 23473	Columbus	Oh	43223	614-875-7067	
N8OPB	Chris Huhn	146 South Hague Ave	Columbus	Oh	43204	614-279-7577	
W6ORG,WB6YSS	Tom & Maryann O'Hara	2522 Paxson Lane	Arcadia	Ca	91007-8537	626-447-4565	tom@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
WB8PJZ	Dave Morris	2323 Allentown Road	Lima	Oh	45805	419-226-6997	dave@towercomminc.com
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
W8RXX	John Perone	3477 Africa Road	Galena	Oh	43021	740-548-7707	
WA8SAR	Gary Obee	3691 Chamberlain	Lambertville	Mi	48144		
N8SFC	Larry Campbell	316 Eastcreek Dr	Galloway	Oh	43119		
W8SJV	John Beal & family	5001 State Rt. 37 East	Deleware	Oh	43015	740-369-5856	W8sjv@midohio.net
W3SST	John Shaffer	2596 Church Road	York	Pa	17404		w3sst@juno.com
K8STV	Jim Carpenter	823 Quailwood Dr	Mason	Oh	45040		
KB8TRP,KB8TCF	Tom, Ed Flanagan	1751 N. Eastfield Dr	Columbus	Oh	43223	614-272-5784	ed@fastpc1.com
W8TZ	Ross Hatfield	47 Wildflower Lane	Chillicothe	Oh	45601	740-774-2777	w8tz@qsl.net
KB8UGH	Steve Caruso	6463Blacks Rd SW	Pataskala	Oh	43062-7756	740-927-1196	mixter.1@osu.edu
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	
WA8UZP	James R. Reed	818 Northwest Blvd	Columbus	Oh	43212	614-297-1328	wa8uzp@qsl.net
WB8VJD	Rick Morris	203 Merton Street	Holland	Oh	43528		wb8vjd@glasscity.net
KB8VUQ	Jack Wolff	2682 Hiawatha Ave	Columbus	Oh	43212	614-263-4816	kb8vuq@arrl.net
W2WIA,KA2EVC	Ed & John Kuligowski	63 Connecticut Ave	Massapequa	Ny	11758	516-541-3172	w2wia@netscape.net
KB8WBK	David Hunter	45 Sheppard Dr	Pataskala	Oh	43062	740-927-3883	hiramhunter@aol.com
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		
N8YZ	DaveTkach	2063 Torchwood Loop S	Columbus	Oh	43229	614-882-0771	
KB8ZLB	Dave Kibler	243 Dwyer Rd	Greenfield	Oh	45123	937-981-4007	k154@bright.net
KA8ZNY,N8OOY	Tom & Cheryl Taft	386 Cherry Street	Groveport	Oh	43125	614-836-3519	ka8zny@copper.net
N8ZTJ	Jeff Skinner	25956 Locust Grove Rd	New Holland	Oh	43145		

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. 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: (open)
Corporate trustees: Same as officers

Repeater trustees: Art Towslee WA8RMC
Ken Morris W8RUT
Dale Elshoff WB8CJW
Statutory agent: (open)
Newsletter editor: Art Towslee WA8RMC

ATCO MEMBERSHIP APPLICATION

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

ANNUAL DUES PAYMENT OF $10.00 ENCLOSED CHECK O MONEY ORDER O
Make check payable to ATCO or Bob Tournoux & mail to: Bob Tournoux N8NT 3569 Oarlock CT Hilliard, Ohio 43026. Or, if you prefer, you may pay dues via the Internet with your credit card. Go to www.tournoux.com/~atco 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.

TUESDAY NITE NET ON 147.45 MHz SIMPLEX

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

ATCO TREASURER'S REPORT - de N8NT

OPENING BALANCE (01/18/02)..... $1203.28
RECEIPTS (dues)..... $
OTHER INCOME (bank interest)..... $
January Newsletter postage..... $ (37.05)
Hamvention space rental..... $ (285.00)
Pay Pal charges..... $ ()
Check cashing charges..... $ ( )
CLOSING BALANCE (04/19/02)..... $

Note: *Complete data is unavailable at this time. It will be reported in its entirety in the next issue.*

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.