



ELECTRONICS
Est. 1965



Amateur Television Ham Radio with Vision



Get the ATV Bug !



Show the family on ATV

See our Plug and Play ATV web page.

ATV is no more difficult or different than any voice mode; additionally you plug in your video camera or camcorder to the ATV transmitter, and 70cm antenna to your TV set to receive the picture. New digital TV's must also have analog cable tuners per FCC Rule 15.118(b). That's it - you're seeing as well as talking to other hams live and in color! No other radios or interface devices needed.

With ATV you can show the shack, family, home video tapes, zoom in and describe projects, show computer graphics and programs from the home station. Put ATV in high altitude balloons, rockets or R/C vehicles. Go portable or mobile, do public service events, RACES, AREC, SKYWARN, even transmit the radio club meetings to those hams that can't make it in person live or by tape. See our web site for all kinds of fun application notes and info on ATV.

Emergency Operations Centers (EOC) or mobile command posts can really benefit by having an ATV eye at the incident site. Video can give incident commanders a better impression of what is needed to efficiently allocate resources. With ATV you can run full duplex audio by transmitting from the camera location and the receive end can transmit back at the same time on two meters. See our Emergency Communications application note on our web site.

Point to Point Portable ATV System for Public Service Events

>15 miles line of sight DX with just 4 Wpwp from the TX70-5s ATV TX using the 31" boom OAL 5L-70cm Antennas to the TV set on cable channel 57-60.



Forest fire seen at an EOC on the other side of the mountain via ATV.



5L-70cm Antenna..\$85ea



TX70-5s 70cm ATV Transmitter.....\$499

Ready to go, Plug & Play, 4 channels audio and video.

See app note & page 2 for packaging your own TX - about \$360 using our source/parts list.



Your TV on cable channel 57-60 to receive.

Need greater DX? Add a Downeast 7025PA (35W), Mirage D26N (50W) or Mirage D100-ATVN (90W) linear amp. See our ATV DX graph on our web site for expected DX mileage given TX power and antenna gains.

Need A/V output to drive a video monitor, VCR or computer instead of a TV? Add our Rch3 channel 3 receiver to your downconverter - page 3.

Need short range (1/4 to 1/2 mile) for a wireless camera to the Comm Van? Check out the Videolynx 434 or Z70A 50-100 mW small ATV transmitters - pg 5, cameras pg 2. A hard hat cam got >1/2 mile to a trail race aid station.

pg	In this Catalogue:
2-3	70cm gear - transmitter, antennas
4	33, 23 and 13cm gear
5	Videolynx 50mw to 5W 70cm ATV transmitter modules and gear for R/C,rockets and balloons
6	ATV repeater gear
7	Video Overlay boards - Intuitive Circuits
8	70cm ATV test generator Gunnplexer modulator Sales policies
9	Order Form



5 WATT 70CM ATV TRANSMITTER



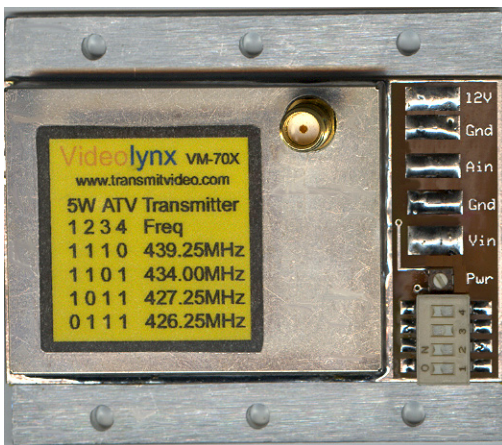
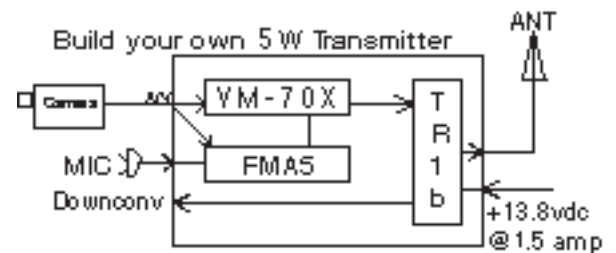
Save some \$\$ and have the fun and accomplishment of assembling your ATV transmitter using the VM-70X transmitter module and TR-1b relay board.

Our application note has a drill template to make it easy to drill out the aluminum enclosure, and a priced out parts list with sources.

Build your own alternative:

If you wish to assemble your own transmitter, download our app note with parts list (est. total cost \$300), sources and drill templates so you can package the VM-70X module and TR-1b board in a Hammond 1590D Diecast Aluminum box.

Go to www.hamtv.com, click on Transmitting ATV, scroll down and click on Application Note next to the VM-70X module pix.



Videolynx VM-70X 5 Watt 4 channel ATV TX Module.....\$199

RF output adjustable from 0 to over 5 Watts PEP on your digiswitch selected frequency - 426.25, 427.25, 434.0 or 439.25 MHz. Comes built and tested. Draws typically 1.5 A @ 13.8 Vdc when set to 5W out, DC input range from +11 to 14.0 Vdc. Line audio and video input solder pads. SMA RF out jack. For R/C, robots, rockets and balloons, the module can run set to 1/2 Watt without adding a fan or heatsink. App note included for adding a computer fan or packaging in a Hammond 1590D box for home and portable use as shown above. 421.25 MHz for repeater output transmitter add \$25. (421.25 MHz requires using a VSB filter in antenna line).

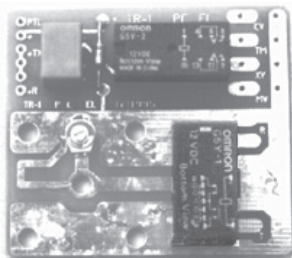
Size 2.35"x2.8"x .75" 2.5 oz. Small and light for high altitude balloon flights.

Price Reduced

TR-1b 70cm Antenna & DC power T/R Relay Board.....\$15

T/R Antenna switching ≤25 Watt 70cm ATV systems. Negligible insertion loss, 60dB isolation. Mounts on flange type UG58 N chassis jack (\$4). 1A contact relay for switching + power to the VM-70X, FMA5 and downconverter. Relay for switching camera video in receive from video monitor to transmitter. Can be used on 33 & 23cm with trimmer cap removed. Also used to make a 30W linear - see the PA5 application note using a RA30H4047M power module on our web site:

www.hamtv.com/pdf/PA5RA30H4047M.pdf. 2 TR-1b for \$25.



2 x 1.8"

ACCESSORIES:

- SMAp-10" cable connects from VM-70X RF out to TR-1b.....\$6
- SMAp/UHFj SMA plug to SO239 UHF jack adaptor.....\$6
- SMAp/Nj SMA plug to type N jack adaptor.....\$6
- Fp/Nj type N jack to F plug for cable ready TV to ham antenna...\$3

Cameras: Any camcorder with an A/V cable or video camera with composite video output can be plugged into our transmitters, color or black and white. If you don't have one, we suggest ATV Research - www.atvresearch.com 800-392-3922 - They have a wide variety of cameras available at wholesale prices to licensed radio amateurs6



TX70-5s Plug and Play ATV Transmitter....\$499

This transmitter comes ready to plug in your 70cm antenna, 12-14 Vdc @ 2A, video camera with or without line audio or optional separate dynamic mic and get on the air right away. The unit contains antenna and DC power T/R relays to turn your TV or downconverter off while in transmit - connecting cables included. The transmitter contains the adjustable 0-5W pep 4 channel 70cm Videolynx VM-70X ATV Transmitter module. The channel selector shows 5 channels, however, channel one is not used in the transmitter but corresponds to the same numbered channels as the TVC-4s downconverter - Ch 2= 426.25, 3=427.25, 4=434.0, 5=439.25 MHz - cable channel 60. Sound subcarrier has automatic gain control limiter. Rugged 7.4" L x 4.75" W x 2.2" H die cast aluminium enclosure.



Rear panel

To Receive, any TV with a cable channel tuner - ch57-60 - will work directly without a downconverter. We are out of our TVC-4s downconverter and have no plans to make more. Check the www.qrz.com swapmeet and eBay for used TVC-4 series downconverters if you don't have a TV with a cable channel tuner.

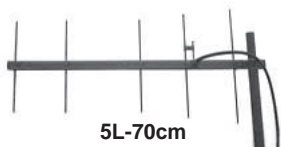


Rch3
TV Receiver
5 x 3.25 x 1.5"

CHANNEL 3 RECEIVER, Rch3 with AC supply.....\$89
 Allows you to connect your downconverter to this unit to get audio and line audio outputs if you prefer to drive a monitor or recorder than a TV set. Comes with the app note on adding S meter, squelch and 12Vdc. Originally imported by MCM Electronics - model 33-2060.

ANTENNAS FOR 420-450 MHZ ATV

OAL 5L-70cm 8 dBd gain beam, 31" boom, vertical or horizontal polarization rear mount. This antenna was specifically designed by the Olde Antenna Lab for ATV point to point, fixed at a repeater or is small enough to be portable for R/C or at public service events to minimize multipath ghosts and get some gain at the same time. Wide 60 degree beam width. Type N female connector.



5L-70cm

- 5L-70cm 5 element 8 dBd Yagi antenna, end mounted H or V\$85*
 - 5LX 5 element extension for the 5L, adds 3 dB gain.....\$70*
 - 10L-70cm 10 element 11 dBd gain beam, 61.5" boom, 48 deg. beamwidth.\$145*
 - MP-1.5 Mast Clamp- heavy duty for 10L or 5L in high weather areas.\$35*
 - 7CP-70cm 7 element 10 dBdc circular polarized beam, 36" boom.....\$160*
 - LITTLE WHEEL horizontal omnidirectional antenna, 14" dia.....\$70*
- prices include priority mail shipping in the contiguous USA



Wheel

DIRECTIVE SYSTEMS DSFO ATV- 25 16 dBd gain, 17 ft boom, center mounted.....\$229*

Highest gain ATV beam by K1FO. The antenna, coax and tower height are the most important part of your ATV system and deserves your most care and attention. ATV antennas must have broad bandwidth in addition to high gain and low VSWR. Few other antennas work well at both 439 and 421 MHz. The gain has been proven out at VHF/UHF conference antenna measuring contests, and is not marketing hype. The DSFO ATV-25 can take up to the maximum legal power limit. Balun or matching network with female type N connector is included. We suggest using Belden 9913 (2.6 dB/100') or better 50 Ohm low loss coax or hard line. Belden 8214 (4.2 dB/100') is more flexible and is fine for runs less than 50 feet. Antenna height to get above trees is more important than coax length. Check with local ATVs to find out polarity - up to -20 dB if wrong. Always verify any new antenna system with a RF power meter for less than 10% reflected power before normal transmitting over 20 seconds. Weather-proof all outside connectors.

OAL 2x70cm 50 Ohm Splitter for stacking 2 beams...\$75* **4X70cm Splitter** for stacking 4 beams.....\$85*

DIAMOND X510NJ dual band vertical omni, 428-442 MHz/143.5-146.5 MHz, 9.5/6.1 dBd, 17.2'.....\$219
X510NA dual band vertical omni, 438-450 MHz/144-148 MHz, 9.5/6.1 dBd, 17.2'.....\$209

shipping added for these two antennas

Great for repeaters, EOC or home - no beam to rotate.



ATV Gear in the 33, 23 & 13cm Bands

Did you know you can run full duplex or repeat with your 70 CM ATV system by simply adding a crossband system? Link weather radar or Space Shuttle NASA select satellite video to your local ATV repeater or base 70 cm station - over 40 miles snow free using the TX23-.1 transmitter and 3340PA amp and loop Yagi's line of sight. Sure the 1200 MHz band goes 1/3 the distance of the 400 MHz band, and 2.4 GHz 1/6 given the same power and antenna gain, but you can make up for most of that with smaller but higher gain beams and an antenna mounted preamp. Standard ATV is AM and uses a regular TV set, however FM ATV can be used on the higher bands where there is the 20 MHz bandwidth required. AM is better for weak signal DX and FM is better between 5 to 200 uV, in the same band with 4 MHz deviation.

TRANSMITTER's for the 902-928 and 1240-1300 MHz bands: **Sale Price**



TX33-.1s and TX23-.1s Transmitter

TX33-.1s 900 MHz Transmitter, 5 channel, 50-100 mW.....\$329

TX23-.1s 1200 MHz Transmitter, 4 channel 50-100 mW.....\$329

These two transmitters are built into the same chassis as the TX70-5s and have the same features. Power adjustable for driving an external amplifier for higher power.



TVC-9S or TVC-12S Downconverter

RECEIVING on the 902-928 and 1240-1300 MHz bands:

We are out of our downconverters and have no plans to make more. Check the www.qrz.com swapmeet and eBay for used TVC-9x and TVC-12x downconverters



Rch3 Receiver

Rch3 Channel 3 Receiver provides A/V output when connected to a downconverter..\$89

Great for driving a video monitor or camcorder. See catalog page 3.

ANTENNAS for the 900, 1200 and 2400 MHz bands:



OAL TCR-23 Corner Reflector



OAL Wheel Horizontal Omni

33CM, OMNI Horizontal, OAL Nano Wheel or 23CM Mini Wheel antenna\$70

33/23CM, dual band, OAL 900/1200 MHz band Helix, circular pol., 14.5 dBc, 36"....\$210

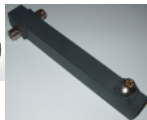
23CM, CORNER REFLECTOR OAL TCR-23 8 dBd, 90° beamwidth, N jack, 12"x9" ..\$115

23/13CM, dual band, OAL 1.2/2.4 Helix, circular polarized, 14.5 dBdc, 24".....\$210

Single 50 Ohm type N feed covers both 23 and 13cm bands, end mounting mast clamp.



OAL 1.2/2.4 GHz Helix for ATV or Satellite



Splitter

OAL 2x70cm50 Ohm Splitter for stacking 2 antennas.\$75

4X70cm Splitter 4 way....\$85

70cm splitter also works on 23cm. 900 MHz band versions available.

We suggest the Directive Systems Loop Yagi antennas for 33cm and 23cm beams.

Please contact them directly as we no longer stock them - www.directive-systems.com

For vertical omni antennas we suggest the 33cm Comet KP-20 and 23cm Comet GP-21.

Check with HRO, AES or your favorite ham store as a stocking source.



Directive Systems Loop Yagi

Horizontal or Vertical end mounting 6 ft. boom.

2390-2450 MHz Ham Band

2400VH-1 FM ATV 1 Watt, 4 channel Transmitter is no longer being made and the replacement is not easily modified for all ham band channels and 6 MHz sound.

13FMR-1 FM ATV Receiver, sensitive, 16 channels, A/V RCA jack outputs.....\$179

2398, 2417, 2430, 2441.5 MHz plus 2407, 2410, 2413, 2419, 2420, 2425, 2429, 2432, 2433, 2434, 2435 & 2442.0. & matches 2400VH-1 transmitter 5.5 MHz sound or specify 6.0 MHz and add \$10. 12Vdc wallplug power supply, rubber duck and SMA to N jack adaptor supplied.

We suggest the Comet GP-24 for an omni vertical antenna

DC24, 24 dB, 2.4 GHz Dish Ant.- contact Pacific Wireless directly www.pacwireless.com or 601-572-3024



13FMR-1 FM ATV Receiver

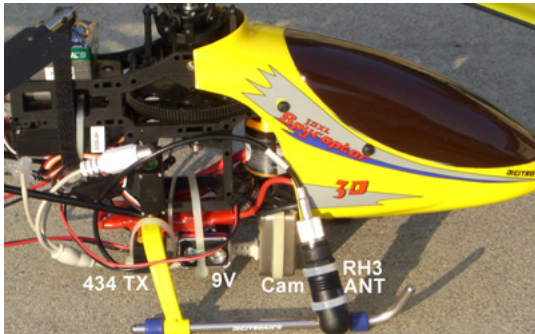


GP-24 12.4 dBd Comet vertical omni antenna



R/C, ROCKETS, BALLOONS, PORTABLE ATV 420-450 MHz Band

DX is farther on the 420-450 MHz band than any higher band given the same power level and antenna gains. It's the first band available for ATV applications and may be received on analog cable channels 57-60. Hat Cams or R/C vehicles using a 50 mW Videolynx 434 or Z70A from a dipole in the vehicle to a ground plane at the receive site can get 1/2 mile snow free video line of sight and over a mile using a OAL 5L-70cm small beam - snowy pictures are readable to over 10 miles. Balloons can be seen and tracked with a beam all the way up to 100,000 ft until the balloon bursts running 1-5 Watts with the VM-70X module. See ATV DX Variables application note.



Videolynx 434 Transmitter module.....\$99

Get on ATV quick and easy with this ready to go module. Mount in a hat cam, R/C vehicle or box with 9V alkaline battery, plug in 70cm antenna and video from camera and you are on the air. 50 mW on 434 MHz



Videolynx Z70A Transmitter module...\$149

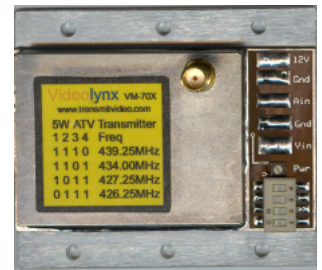
Want to add sound and the 4 selectable 70cm frequencies -426.25, 427.25, 434.0, 439.25? Then go with the Z70A transmitter module. Req. 9V @250ma.(parallel two 9V alkaline batteries). Wt. 3oz. 3.25x1.5x.75"



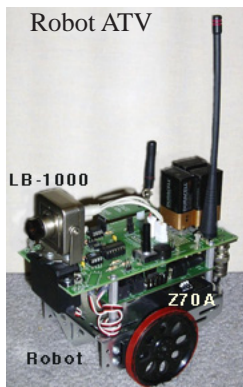
See the PA5 app note for adding a 20W amp to the 50mw modules:
www.hamtv.com/pdf/PA5RA30H4047M.pdf

Videolynx VM-70X Xmtr module.....\$199

High altitude balloons, rockets and greater portable DX can be had with this adjustable 0-5W pep 4 channel transmitter.module. Heat sinking required >.5W. Req +11 to 14Vdc @ up to 1.5A A/V and DC wire to solder pads. RF out SMA jack. wt. 2.5oz 2.35x2.8x.75"



See our app notes: 434 TX in ATV R/C copter and a hat cam - www.hamtv.com/info.html



N8UDK Balloon



Rch3 TV Channel 3 Receiver for those that want A/V output to a monitor or recorder rather than a TV set with the downconverter.....\$89



See the mini camera selection at www.atvresearch.com - 800-392-3922 - for use with these transmitters and applications. Wholesale prices available to licensed radio amateurs.

Check out all our ATV Application Notes on our web site - www.hamtv.com/info.html

ACCESSORIES:

- TR-1b RF T/R relay module, mounts on UG58 chassis N conn...\$15
- 1000 pF Feed-thru Cap for R/C or repeater builders.....\$4
- RG174 50 Ohm 1/10 inch dia. coax cable for connections, 6ft....\$3
- SMAp-10" cable connects from VM-70X RF out to TR-1b.....\$6
- SMAp/Nj SMA plug to type N jack adaptor.....\$6
- Fp/Nj type N jack to F plug for cable ready TV to ham antenna...\$3
- Rch3 Channel 3 TV receive, line audio and video output\$89

ANTENNAS:

- DIAMOND RH3 2m/70cm omni miniduck ant., BNC, 1.75".....\$32
- DIAMOND MX-72N 2m/70cm antenna duplexer.....\$55
- OAL 5L-70cm 8 dBd Yagi ant., 31" boom, >60 deg. BW.....\$85
- 5LX Extension adds 5 elements and 3 dB to the 5L-70cm ...\$70
- OAL 10L-70cm 11dBd Yagi antenna, 62" boom\$145
- DSFO 25-ATV 16 dBd gain 17 ft boom center mount Yagi...\$229
- OAL 7CP-70cm 10 dBdc circular polarized beam, 36" boom ...\$160
- OAL LITTLE WHEEL 70cm horizontal omni antenna, 14" dia....\$70



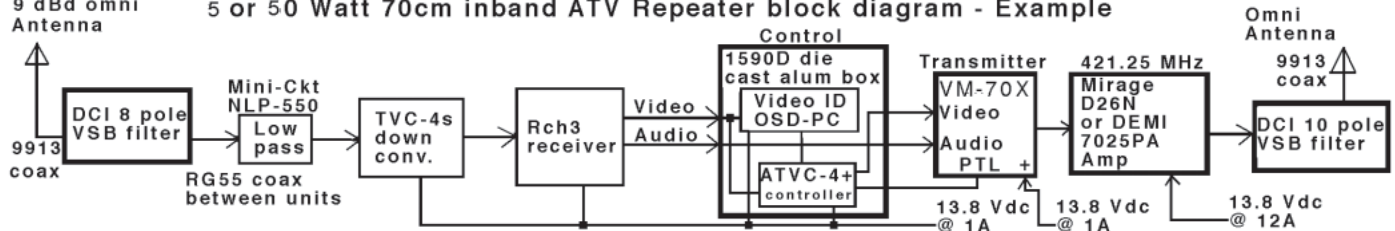
ELECTRONICS

9 dBd omni Antenna

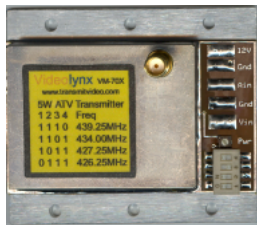


READY FOR AN ATV REPEATER OR LINK IN YOUR AREA? WE HAVE THE MODULES AND SOURCES FOR INBAND OR CROSSBAND

5 or 50 Watt 70cm inband ATV Repeater block diagram - Example



Download our 10 page ATV Repeater Application Note including recommended sources of filters, antennas, video IDers, expected line of site DX, etc., before you start so you can do it right the first time. Most can put together a good working ATV repeater for \$2400 to \$3200. Select a Transmitter, TVC Downconverter + Rch3 for the bands and power you want, add optional linear amp, VSB filters & antennas, ID & ATVC-4, power supply and coax for your own repeater. We suggest low in / high out for crossband repeat as best choice for seeing your own video, DX and cost considerations.



Videolynx VM-70X 5W Transmitter module

TRANSMITTER's for AM ATV repeaters:

420-450 MHz band - Videolynx VM-70X 5 Watt 4 channel ATV TX Module.....\$199

Package this module in a diecast aluminum box per our application note for continuous duty at the repeater site. Add an amp for higher power. See module description on page 2. 4 standard frequencies but if you want 421.25 MHz for the repeater transmitter, add \$25.

902-928 and 1240-1300 MHz bands:

TX33-1s for the 900MHz band or **TX23-1s** for the 1200 MHz band. 50-100mW.....\$329

Drive an external amplifier for higher power. You might also check on eBay for our model TX or RTX-33 or 23 , or listing your wants on the www.qrz.com Online Swapmeet.



TVC series Downconverter
3.7x4.7x2.2"

RECEIVE: use one of our TVC- xS AM ATV downconverters for the respective band plus the Rch3 channel 3 receiver (\$89) for A/V outputs. Check Ebay and www.qrz.com for our downconv.

ACCESSORIES

VSB FILTER, DCI -8 Pole VSB, specify video carrier frequency on 70, 33 or 23cm band, 1 dB loss, >200 W, 12wx9.3dx6h" stacked or 19" rack mount. **10 pole VSB** with more out of band rejection on 421.25. Wider FM ATV filters for 900 MHz and up also available. **70cm Duplexer**, 10 pole VSB tx plus 8 pole VSB rx filters to one antenna jack.

Contact DCI directly at www.dci.ca or 1-800-563-5351 to order these filters.

ATV Repeater Controller board, ATVC-4 Plus, by Intuitive Circuits\$349

4 video inputs with horizontal sync detectors, scan or individually DTMF tone control selected. 5 audio inputs. 6x3.85". For the expanded ATV repeater with links, Shuttle video or tower cam. Programmable MCW ID, timers to switch to ID video. Audios mixed each with its own pot. Mount in a Hammond 1590D die cast aluminum box.

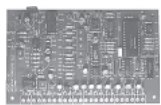
VOR-3 Video Operated Relay board..\$59. Senses horizontal sync and keys a 6A relay for power and a dpdt relay for receive and ID video. 6 switch selected modes for simple ATV repeater including 10 min ID and end hang time, beacon10sec on every 10 min., VOR for remote VCR pause or TV squelch, or control via RS-232. 1.75x3.2", +10 to 15Vdc

DTMF-8 Decoder board..\$119. Great for remote controlling a tower cam or repeater. 8 1A relay outputs. Programmable momentary or latching. 12 to 14 Vdc @250ma. 4.5 x 2.5".

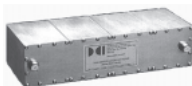
ENC-16 DTMF Encoder & key pad..\$109. Puts DTMF audio tones on your transmitter.



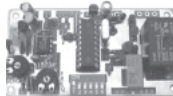
Rch3 channel 3 to A/V receiver



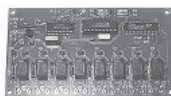
ATVC-4+ Controller



DCI VSB filter
specify stacked or 19" rack mount



VOR-3 1.75x3.3"



DTMF-8 decoder

ANTENNAS

See page 7 for Call ID Video Overlay boards.

70cm X510NJ 428-442 MHz and 143.5-146.5 MHz Diamond vertical omni 9.5/6.1 dBd gain, 17.2 ft long.....\$219

X510NA 440-450 MHz and 2 meter band Diamond vertical omni 9.5/6.1 dBd gain, 17.2 ft long.....\$209

Recommended vert. omni for dual antenna inband 70cm or crossband repeaters.

33cm We suggest the Comet KP-20 Comet omni vertical, 7 dBd gain, 7 ft 5 inches long. Covers 902-928 MHz

23cm We suggest the Comet GP-21 omni vertical antenna, 12.7 dBd, base or repeater, 8 ft, N jack

13cm We suggest the Comet GP-24 vertical omni antenna, 13 dBd gain 2390-2450 MHz, 5', 11" long

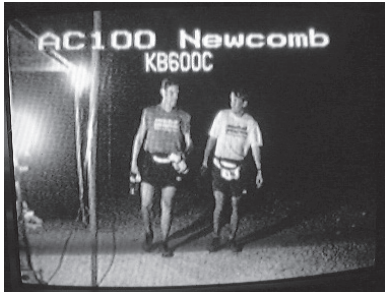
For horizontal polarized areas, we suggest the OAL dual stacked Wheel antennas...\$215 - see our web page.

Quad stacked wheels \$365.



ELECTRONICS VIDEO CALL ID AND TEXT OVERLAY BOARDS

These built and tested boards, made by Intuitive Circuits, are simply placed in the video coax line between the camera and the transmitter to overlay your call and other data on top of your video. They are great for automatically IDing during long transmission periods like at public service events, repeaters, links, balloons, rockets, R/C, etc., to satisfy the FCC requirement as well as info such as city, state, name, 2 meter calling frequency. Choose one that fits your application - fits in a Hammond1590C box.



Event, Location and ID overlaid on ATV of runners coming into a remote night time aid station at the Angeles Crest 100 Mile Trail race. Use the OSD-ID+ board.

VIDEO ID GENERATOR, OSD-ID+ with carrier board\$129

Great board to overlay your call, city, state, 2 meter talk back frequency and other info on an ATV Repeater, tower cam, home station or at a public service event. Overlays on your video source, NTSC or PAL, but also can generate its own video signal with your selected background color and text overlaid up to 30 characters x 13 lines. Program text page into the nonvolatile memory from the 4 on board buttons or from your PC with DB9 RS232 cable and software included. This allows you to change text in the field or to any preprogrammed OSD page stored in your computer by connecting the cable and a quick download into thenon-volitive memory and then disconnect. Computer only plugs in for changing text page. <2 oz. 2.5 x 2.5", 7 to 14 Vdc @ 150ma.

Packaged version in 4.25x3.5x1.25" enclosure OSD-ID+w/e...\$249



TV screen grab of the ID and GPS overlay from an in-flight R/C Aircraft showing Latitude, Longitude, Heading, Speed, Time, Altitude, waypoint DX and bearing plus Call letters from an OSD-GPS+ board.

VIDEO ID GENERATOR, OSD-GPS+ with carrier board\$139

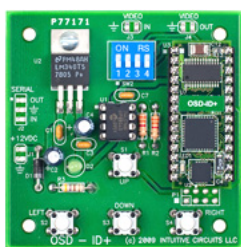
Perfect for R/C vehicles, rockets, balloons or mobile to overlay your call and GPS info on your camera video - NTSC or PAL. Accepts NMEA 0183 two line or RS-232 data from your GPS receiver - we suggest the Garmin 18PC. Up dates every time your GPS receiver outputs a complete GPRMC and GPGGA sentence. Displays Latitude, Longitude, Heading, Speed, Time, Altitude, call ID, DX and bearing to a waypoint. Use the on board buttons to program waypoint and your call or up to 10 characters into nonvolatile memory. 2.5" x 2.5", <2oz., 7 to 14Vdc @150 mA.

Packaged version GeoStamp+....\$279

VIDEO ID GENERATOR, OSD-232+ with carrier board\$119

Overlays on your NTSC or PAL video source or generates its own background color video the same as the OSD-ID+ but text, background color, etc., is sent through a standard RS-232 serial communications connection from your attached computer or micro controller like a Basic II Stamp in real time. 256 defineable characters, up to 30 per 12 rows. Graphic images may also be imported. 28 pin hybrid dip chip can be unplugged from carrier and run by itself. 1 oz, 2.5x2.5x.7", 7-14V @ 160 ma.

Packaged version Video Stamp+.....\$249



These carrier boards connect in series between your camera and transmitter. The respective 28 pin hybrid IC in the carrier board can be removed and run by itself after programing in the OSD-GPS and OSD-ID+ models.

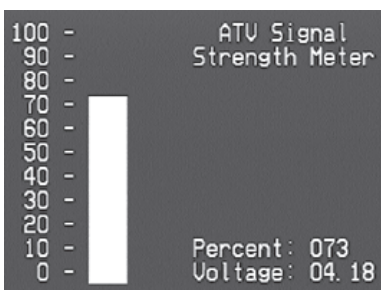
OSD-ID+ board, <2 oz. 2.5 x 2.5 x .7", 7 to 14 Vdc @ 150ma.

VIDEO OVERLAY, KEYBOARD, OSD-KB.....\$119

Directly type in characters from a PS/2 keyboard and overlay on your video. 28 characters x 11 lines. 1.2 oz, 3.5 x 2.5", 8-14Vdc @ 60ma.

SIGNAL STRENGTH VIDEO OVERLAY, OSD-SSM.....\$139

Great addition to a repeater to allow users to see and compare how they are getting in, check antenna positioning and gain, etc. Generates a video screen or overlay which gives relative signal strength when connected to the AGC voltage in your receiver. Also can be used to indicate the actual DC voltage between 0 and 10 with a precision of 2.2 mV for other applications - can be special ordered for higher DC voltages. You can easily program the no signal to full signal voltages with jumpers on the board so it is adaptable to just about any ATV receiver's AGC range. 1oz, 3.25 x 2.5", 8-14Vdc @ 70ma.



OSD-SSM Signal Strength video meter Background is blue.

P. C. Electronics is an authorized stocking dealer for Intuitive Circuits products. You may also view detailed board descriptions at their web site: <http://www.icircuits.com>

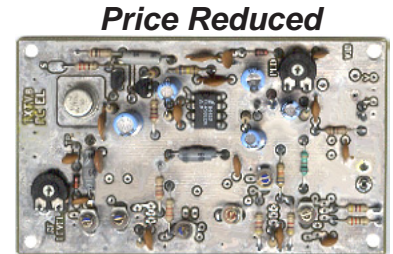


ELECTRONICS Analog Cable tuners must also be in new HD TV's per FCC Rule 15.118(b)

420-450 ham band spans cable channels 57-61, 439.25 MHz = cable ch 60 and channels are spaced every 6 MHz. Analog ATV still has the advantage of real time communication and low cost, while Digital ATV has a few second time delay and is still very expensive for transmitting gear - see the 2010-12 ARRL Handbook page 32.6. So analog ATV will be around for years to come. Don't trash your old analog only TV sets, use them for getting on ATV.

TXTVb 70cm ATV Transmitter and Test Generator Board.....\$15

Board comes built as shown and with kit of 12 parts for you to put in and easily tune up with just a DC Voltmeter - final assembly and tune up instructions included. Outputs 1 to 10 mW RF; great for club ATV demo's, public service events and transmitting up to a few hundred feet, peaking up downconverters and antennas. Requires 8 to 14 Vdc @ 40 mA. For portable, it can run on a 9V alkaline battery for over 8 hours. Uses International crystal #473370 output frequency divided by 4 - call 800) 725-1426 to order crystal.



Price Reduced

Board 4.0 x 2.25"

Great club ATV project. Quantity discount - additional boards just \$10.

GVM-1 Gunnplexer Modulator Board for 10 GHz FM ATV.....\$15

Video modulate the varicap in a Gunnplexer for 10-100mW wideband FM ATV. Gunnplexers can be obtained from SHF Microwave or Advanced Receiver Research. See our Application Notes web page. GVM-1 can also be used as a sound subcarrier mixer with video, video pre-emphasis amp, distribution amp, etc. Club project special: \$10 for each additional ordered at one time.



See our Specials and Surplus web page From time to time there will be items that can save you a few dollars. Check back often. There are production samples, working prototypes, parts, crystals, over stocked items, etc.

MIGHT WE SUGGEST AMATEUR TELEVISION QUARTERLY MAGAZINE for what's happening in ATV, construction articles, etc. Subscription \$22/yr. Write to: **ATVQ, POB 1594, Crestline CA 92325. Tel:1-909-338-6887** email: WA6SVT@atvquarterly.com

ORDERING INFORMATION & SALES POLICIES

P. C. Electronics manufactures and supplies amateur television equipment for licensed Radio Amateurs and assumes the purchaser has a level of technical knowledge and resourcefulness to safely and successfully put together a working ATV station. Prices, methods of sale, and information supplied are also geared for direct mail or telephone sales to the licensed Radio Amateur. We have no store or showroom - our address is for mail order only due to city zoning ordinances. All USA or Canada orders must be purchased by a licensed Radio Amateur for lawful Amateur purposes only (see 47 CFR part 97, FCC Rules and Regulations), and may be refused by us if we believe the equipment will be used unlawfully, or the purchaser does not check out in the current FCC or QRZ web site. New licensees may mail or email a copy of their test certification if not yet listed. Equipment may be purchased by anyone for use outside of the USA or Canada only when a signed End User form is received by us - see How To Order on our web site."

RETURN POLICY. All orders are final once shipped by us as far as returns, quantity or package discounts. Returns of unused equipment will be refunded 85% of the product price if the purchaser calls us for authorization within 15 days of our shipping date. Unused in this case means, that in our opinion is completely resaleable as new after our testing and was never connected up or handled in any way that caused electrical or physical damage.

SERVICE POLICY. In case of difficulty, check all cables and connections, power supply, VSWR, test points, etc., and reread the info sheet or manual before calling us for technical advice or return authorization for repair. Over 80% of the time the problem is with the customers cables, unfamiliarity with UHF techniques or lack of test equipment. Call so we can give you some trouble shooting hints to save you time and money. Our policy on our manufactured equipment is the customer ships the item to us with the Return Authorization Form (download from our web site) filled out, at their cost. If we deem that the problem is due to our workmanship & materials within a reasonable time period (different parts have different expected lifetimes - we feel this is far fairer & more realistic than the usual 90 days), it will be fixed & returned with no repair charge. Normal turn around time is 2 days. If we believe the problem is due to the customers misuse, abnormal wear, natural causes, physical damage, or no problem found, then the board modules can be repaired & tested for \$40 plus parts cost & packaged units (TC70, TX70, RTX, ATVR, etc.) repaired for \$80 plus parts cost and shipping. No other warranty is expressed or implied than that noted here. Any equipment not manufactured by us is limited to the warranty made by the manufacturer, your recourse is with the manufacturer & their repair & warranty policy. Return other manufacturers equipment to them per their policy for service, not to us - we are not authorized for their warranty evaluations nor do we stock their replacement parts. Anything left unpaid more than 90 days will become our property.

METHODS OF PAYMENT WITH ORDER:

VISA or MASTERCARD, purchasers card only, no third party using someone else's card with permission accepted. \$25 minimum charge card order (keeps bank cost and your prices down). We do not accept American Express or Discovery Cards, bank transfers, letters of credit, or trades. CHECK. U.S. Postal Money Orders, obtained at any U.S. Post Office, are treated same as cash and do not delay shipment. ALL other checks, including cashiers checks or bank money orders will wait 3 weeks to clear the bank before shipment. All checks must be in U.S. dollars drawn on a U.S. bank.



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 Tel: (626) 447-4565 m-th 8am-5:30pm pst (UTC - 8) Tom (W6ORG) & Mary Ann (WB6YSS)
 Web site: www.hamtv.com Email: ATVinfo @ hamtv.com



Ordering Information and Sales Policies Continued

METHOD OF SHIPMENT. Unless you specify, we will ship via US Priority mail insured at our option, and cost added to your total order. Products drop shipped from the manufacturer are shipping included. UPS requires a street address or known UPS location for delivery (no PO box). Allow up to 6 working days for shipping across country. Other shippers or air can be used at customers request at cost plus a special added handling fee depending on complexity.

Canada, APO's, and outside contiguous USA states and possessions are shipped via Air Parcel Post at cost with a \$15 minimum charge or UPS, if specified, at cost. Foreign shipments are made via Air Parcel Post or UPS at cost - note if Air Parcel Post specified, you may have to wait up to 6 months if lost, stolen or damaged to be reimbursed by insurance. Call, email or write for amount. We cannot assure foreign delivery, and suggest foreign customers have us ship to their freight forwarder or agent in the USA. We cannot act as an export agent for you.

PURCHASING AGENTS: Payment must accompany the order. A paid invoice is sent in one of the equipment boxes for your records and we will list your order number if requested for your accounting but in no way should be implied that we accept any terms and conditions connected with your order number. We do not accept purchase orders, or order forms with any terms, conditions, etc., other than those listed here. We do no billing. We are not into paperwork, red tape or bill collecting and won't pass it's cost on to other hams in the price of our products. Include a signed note with call letters from the licensed Radio Amateur: "I take full responsibility for the legal use and operation of the amateur radio equipment purchased by (business name) from P. C. Electronics." - Form available on our How To Order web site.

TELEPHONE ORDERS: (626) 447-4565 call 8 a.m. to 5:30 p.m. Pacific time Monday through Thursday. This is the fastest way to get your order on it's way usually by the next day. Best time to call is before noon Pacific time with your credit card ready and a list of the model numbers and frequencies. We usually are able to get in-stock items out that day or within 24 hours. E-mail address is ATVinfo @ hamtv.com

MAIL ORDERS: fill out the form below. Don't forget to list desired frequency on transmitters. Californians only are to pay 8.0% sales tax, LA County 9.0%. We will add shipping at cost and you can call or email us for the amount if sending a check. Our prices may change later from those in this catalogue - you can download the latest from our Products & Prices web page at <http://www.hamtv.com>. Orders will be sent back with the check or card info if there is a price change or total is incorrect. Double check your card numbers & expiration date. Name for Visa or Mastercard must be same as printed on the card, & also must be the same as the licensed radio amateur.

CRYSTALS: See www.hamtv.com/xtals.html for crystals and info. Other frequencies you can order direct from International Crystal Mfg. at (800) 725-1426. Specify crystal series resonant frequency and catalog #473370.

Order Form - Please Print

Postal mail this completed form to our address at top of the page. Telephone orders are accepted at 1-626-447-4565 Monday through Thursday 8am to 5:30 PM pacific time. If there is any question, please call or email ATVinfo @ hamtv.com before sending the form. We will email you if any information is missing or needs clarification.

Quantity	Model #	Description	Frequency(s)	Price ea.	Total

Equipment Total _____

Calif. ship to addressee's only (LA 9.0%, all other counties 8.0%) add sales tax _____

Shipping & Handling via US Priority mail insured unless you specify otherwise _____

Charge card minimum \$25. Checks, other than USPO MO, wait 3 weeks to clear . **TOTAL** _____

Name(same exactly as appears on credit card) _____ Ham Call _____

Street (same as card billing) _____ City _____ State & Zip _____

Daytime Phone (____) _____ Email _____ Country _____

Visa or MC Number _____ Expiration mo/yr ____/____ Varification code _____

Ship to (if different than above and indicate if business or residence) _____

Street _____ City _____ State & Zip _____ Country _____

Address above same as on ham license? _____

Where do I start?

The 70cm 420-450 MHz band; It's the first Amateur band that will support a standard 6 MHz AM ATV channel and you only need a code free Technician class license or higher to transmit. Also since the lower the frequency, the farther the distance, given the same power and antenna gain, this is where 98% of ATV operates. The 902-928 MHz band goes half the distance. The 70cm band is also lowest cost and easiest to get on. ATV frequencies work best with unobstructed line of sight paths between the transmitting and receiving antennas. So the antenna and height is the most important part of the ATV station.

To see your first picture it may be as easy as turning your cable ready TV to cable channel 57 thru 60 and connecting it to a good outside 70cm antenna. Cable channel 57 is 421.25 MHz, the most common ATV repeater output, and 60 is 439.25 MHz, the highest frequency used in the band. Contact a local ATVer on two meters (144.34 typ) and have them send a picture your way. If you dont know of one, call or email us and we will try to put you in contact.



ATV is live action color and sound just like analog cable TV - show the family to fellow hams!

After you see your first picture, you will want to improve your reception for DX or get less snow with one of our downconverters and high gain beams - see page 3 For transmitting see the 5W unit on page 2. We also have boards and modules for those who want to package their own systems or use them for R/C, rockets or balloon ATV.

ATV Info Sources:

See all the Fun ATV applications and info on our web site - www.hamtv.com

I suggest reading the ATV section of the 1995 -2013 ARRL Radio Amateurs Handbook (W6ORG wrote it) and Operating Manual. It will give you all the basic information and background for this visual mode of ham radio as well as all other facets of the hobby.

Contact local ATVers to find out the local antenna polarity, nets and frequencies used in your area. 144.34 or 146.43 simplex are the most common ATV coordination and talk back frequencies. If you cannot find a local ATVer contact us and we will look some up from our customer data base for you to try.

The ARRL Repeater Directory lists all the coordinated ATV repeaters in the country - see if one is in your area.

Email us if you have any ATV questions - [ATVinfo @ hamtv.com](mailto:ATVinfo@hamtv.com)

For non-amateur video links, we suggest the FCC Type Accepted transmitters from Microtek - (888) 366-4276 - they have both license free FCC Part 15 (1000 ft) and commercial Part 90 2.5 GHz systems (up to 20 miles) or ATV Research, call 1-800-392-3922, for their catalogue or web site www.atvresearch.com. Amateur frequencies cannot be used to further a business, profit or non-profit, or local government purpose per 47 CFR 97.113 and 97.111.

Special -70cm ATV Test Generator Board, **TXTVb.\$15**

Partially built with kit of 12 parts for you to put in and easily tune up. Output 1 to 10 mW; great for club ATV demo's, public service events up to a few hundred feet, tuning up downconverters and antennas. See page 8.

page 10

From: P. C. Electronics
2522 Paxson lane
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USA



**Get the ATV Bug and
SEE who you are
talking to!
It's Easy and Fun!**

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TO: