

Boulder Amateur Television Club TV Repeater's REPEATER

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BATVC web site: www.kh6htv.com

ATN web site: www.atn-tv.com

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Fire Storm Video: I am including with this ATV newsletter a separate attachment of a short 1 min. 40 second video showing how fast the Marshall fire storm of 30 Dec. 2021 moved into and through my Spanish Hills area south-east of Boulder, Colorado. The video was shot by a neighbor lady at about 1:30pm. She was parked beside Baseline Lake about 2 miles north. It is astonishing to see how fast the fire roared into our area. No one could have out run the fire. My son-in-law, Mike, was closer to the fire and he reported that the flames were twice as high as the high voltage power lines which ran through the area. ---- Feel free to replay this video over your ATV repeaters.

REFLECTIONS on REBUILDING an ATV HAM SHACK

Jim, KH6HTV

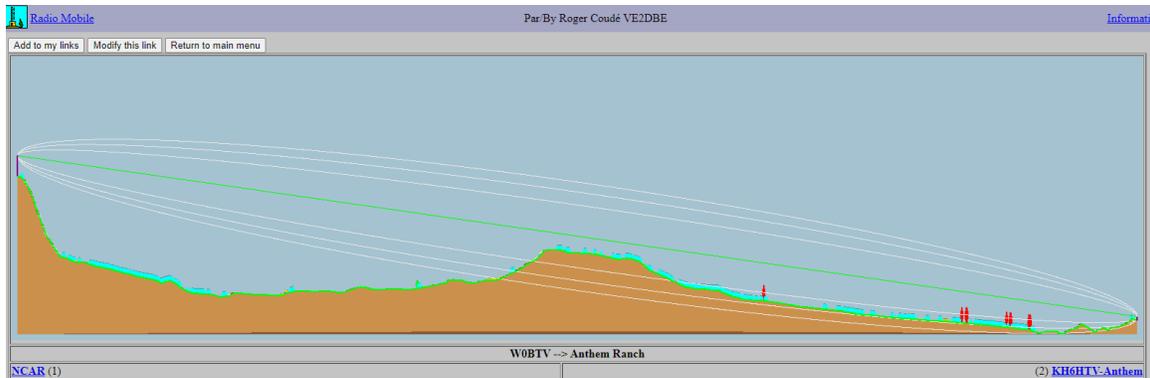
The Dec. 30th Marshall Fire Storm wiped out my 80 years of history and 68 years of ham radio. The only records I have left were the digital files I had stored on an old HP laptop which I grabbed while evacuating my house along with my beloved bulldog, Ruby. Fortunately, I had actually backed up the files from my main Dell All-in-One PC to the HP just that morning.

Since the fire, Janet & I have found another house to live in. It is in a 55+ retirement community, 15 miles east of Boulder. The long commute back into Boulder seems like we now live half way to Kansas ! We are debating about rebuilding again on our 2 1/4 acre lot another lovely home in the Spanish Hills area south-east of Boulder. But with the dramatically rising costs of materials and labor, it probably will not happen. In the meantime, ham radio is going to be more difficult as the new house is in a tightly CC&R controlled development. Any antennas need to be "invisible". Definitely no 50 ft antenna tower allowed here !

Using our fire insurance money, I have started to reequip my ham shack. I have replaced my ICOM IC-7300 HF rig. So far the only HF antenna I have been able to cobble together is using some MFJ ham sticks with an MFJ mag. mount. I have parked my Saab in the driveway, ran an extra 25ft. coax cable out the bedroom window to a 20 meter ham stick on the trunk lid of the Saab. It does work. So far I have worked California and Missouri on 20m SSB and I have heard a station from as far away as Argentina. Also have a 2 meter FM rig in the shack. Don, N0YE, has given me an SGC remote auto antenna tuner. Hopefully with this tuner and tacking a vertical wire to the side of the house and burying some ground radials in the backyard will give me a serviceable HF antenna.

Also making progress towards getting back on the air with ATV with the local Boulder, Colorado gang on our DATV repeater, W0BTV. I have replaced my CANON camcorder, my Hi-Des HV-320E, DVB-T modulator and HV-110 receiver. My ATV ham friend Jack, K0HEH, had previously purchased from me a model 23-11A, 4.5 Watt, 23cm rf linear power amplifier. Jack has loaned it back to me until I am able to build more of them myself.

I am fortunate in that the house we purchased does look west towards the Rocky mountains and backs onto Boulder County open space. We do not have any houses behind us blocking our view of the mountains. We also lucked out being on a bit of high ground out on the Colorado eastern prairie. As luck would have it, from my back deck, I actually have a line-of-sight rf path to the W0BTV, tv repeater.



Line-of Sight, RF Path from W0BTV, tv repeater to new KH6HTV QTH

The distance to the repeater is 19km (11.8 miles). This past Sunday, Feb. 20th, I had finally gotten enough gear purchased to see if I could receive the tv repeater. I temporarily set up a new M-Squared model 440-6SS, 6 element, 70cm Yagi antenna (11dBi) on an antenna tripod on my rear deck. I was able to key up the repeater in beacon mode with my HT and YES ! I was able to receive the test pattern signal. The HV-110 receiver measured it at -66dB with S/N of 17 to 20dB. I also ran the Radio Mobile rf path prediction program and it predicted the signal strength would be -66dBm. Great Correlation !

The next test was to see if I could get a 23cm signal into the repeater. I set up the Canon camcorder, the Hi-Des HV-320E and the 4.5 watt, amplifier feeding directly a Directive Systems model DSE2414LYRMK, 14 element, loop Yagi antenna (15dBi) also mounted on the same tripod as the 70cm Yagi. Yes ! It also worked. The tv repeater reported the signal strength on 23cm was -75dBm with S/N of 23dB. Dropping the amplifier's power down to 300mW, I was still able to key the repeater with a S/N of 13dB.

I am using an extra bedroom as my new ham shack and electronics workshop. The next step will be to drill several holes in the house to then be able to run coaxial cables from the rear deck into the ham shack.



View from KH6HTV back deck towards the W0BTV TV repeater



Beacon mode test pattern from W0BTV



My own 23cm signal coming back on 70cm

ATV Needs to be a TEAM EFFORT !

Participation in an activity such as ours, a hobby in image communications is one of the keys to success in any group function or activity. With the time invested, funding and lots of hard work in network infrastructure it needs to be used at its fullest potential not by the few but by all interested parties. Having one or two key personnel doing all the work is not teamwork. Set your members up to be successful team members by putting

together committees , work groups or task them with certain activities that they have strong interest in when it comes to AmateurTelevision projects. Get the next generation involved as we have with adapting STEAM science classes from our neighborhood schools. We now have over 15 new young hams in our DATV family along with parents and teachers. I could go on about the subject but I know your time is important too. Do the best you can, make this hobby count, make it interesting and make a difference.

Mario, KD6ILO, Oceanside, CA



THOR Petit -- as most already know I own two of these set aside on my bench for my experiments and mods. With its capability of three modes of user operation, ATSC, DVB-T and QAM. The user can select its' operational status from the front panel or by using the NMS access. *But as most don't know* that it is also used to access its operational software gateway, a backdoor. But it takes a special application and some know how. This is a great starter package for getting into digital TV for the price. It's flexibility, ease of setup, operates on 12 VDC and simplicity to integrate with other video components makes for a simple operational digital TV station. But it's not for most ATV enthusiasts because of the 6 MHz bandwidth limitation, but 6 MHz is the broadcast standard {2 MHz is the so-called sweet spot for most}. I've done some very simple add-on modifications like being able to still use the AC to DC wall adapter or switch to a 13.8VDC power source, adding a small 4-Input HDMI Switch with IR control {since it only has one HDMI input} and a N type RF output connector. Again simple stuff for a starter package. This unit works very well with {Jim's} KH6HTV Video model 70-7B & 70-9B RF power amplifiers. I've attached some photos.

Mario, KD6ILO, Oceanside, CA

Editor's Note: The "Petit" modulator sells for \$469. It covers 57 MHz to 1 GHz. It supports ATSC, DVB-T, QAM & ISDB-T. For full details go to: www.thorbroadcast.com



San Diego Amateur Radio Television Society 2022
KD6ILO TV Oceanside - California USA



- 1) AC|DC Power Selectable Inputs
[L = AC 110VDC to 12VDC | R= 13.8 VDC]
- 2) 4 Input HDMI Switch w/ IR Control
- 3) DVB-T /ATSC {User Selectable via NMS Port
or via front panel
- 4) Adjustable Mobile Mount
- 5) Single HDMI Cable from HDMI SW to Single
HDMI Input on rear of PETIT [not shown in photo]
- 6) ATSC 3.0 Firmware Upgrade [1 of 2]

ATV 5dB UHF Square



San Diego Amateur Radio Television Society



Amateur Radio TV | UHF Square loop Half Wave Dipole
 Super Light Weight and High Gain [Mounted Horizontally]
 Frequency: 420 - 450 MHz
 Max Power: 800 Watts
 Impedance: 50 Ohm
 VSWR : Less than 1.5
 Gain: 5 dB
 Size: 11 x 11 inch (28 x 28 cm)
 Connector: SO-239 (UHF)

Horizontal Loop Base Antenna

Another great add-on for the THOR Petit digital RF modulator. I like this loop antenna because of its size 11"X11", light weight, ease to setup and install, 5 dB gain and low SWR: 1:5. And it can handle up to 800 watts. With the THOR Petit, KH6HTV Video PA, 50' LMR400 coax and this small loop antenna I've gotten reports of a great P5+ video over 35 miles.

Mario, KD6ILO



San Diego Amateur Radio Television Society
Active Channel Listing

CH 001 Programming Channel Listing
 CH 002 SDATV Society Bulletin Board
 CH 003 Society Activity Schedule
 CH 004 Local Weather Channel
 CH 005 CERT TV
 CH 006 ARES/RACES News TV
 CH 007 Amateur Radio Today
 CH 008 MESH TV San Diego
 CH 009 BATC Programing
 CH 010 QO-100 DATV ITALIA [Italy] via udp: I IPTV
 CH 011 AUX CH1 >Open Programing<
 CH 014 Oceanside DATV
 CH 015 San Diego DATV
 CH 016 AUX CH2 >Open Programing<
 CH017 STEAM ACTIVITIES Channel
 CH018 STEAM EDUCATION Channel
 CH 019 ROMONA | VISTA | RANCHO BARNADO Channel
 CH020 SDATV TECH-SHOP TV





The San Diego, California ATV group is really setting the bar high for us other ATVers. Look at all the program channels they now have on their system !!!

Converting a PVR-350 into Television Standards Converter

Grant, VE3XTV

Over the last two weeks I have been converting ATV recordings from VHS / SVHS tape to digital files, the issue is they were recorded in PAL, SECAM and NTSC formats. There is no problems with recording to digital as the video formats are fully supported with VLC, but analog playback is an issue when providing an output composite video waveform. I downloaded it's manual and carefully read it.

It is important to remember that the PVR-350 video card came in two variances one that was NTSC and PAL using the SAA7127H encoder chip, and the other type that had the SAA7129H that is the PAL, SECAM and NTSC encoder. Out the five PCI cards I have here three are multi-standard and the other two are dual-standard. From my research here in the US and Canada were the dual-standard and in the UK, EU and Australia, NZ were the multi-standard type.

From looking at the Linux source code in saa7127.c, it support both encoder chip sets and by using bash script files it is possible to set the video format for the required video output system. On the video input stage this can be setup through VLC for the colour system or via a bash script file, making possible to input any video colour system and convert it to another. The down side between the analog input and output there is a requirement to trans-code 576i 50 to 480i 60, if there is a need to go from PAL / SECAM to NTSC or NTSC to PAL / SECAM, but not between PAL to SECAM or back the other way.



So if you have a Hauppauge WinTV-PVR-350 multi-standard card with the SAA7129H encoder, I can provide setup files for the Ubuntu OS, if there is a need for a simple standards converter.

73 de Grant, VE3XTV, North York, Ontario, Canada

Editor's Note: It is good to hear again from Grant. While living in New Zealand, Grant was very active with ATV, operating under the call sign, ZL1WTT.

OMAHA, NEBRASKA ATV STATUS

The ATV is off the air for a while. They are doing some major moving around at the site including removing a 25KW FM transmitter that was damaged by a direct lightning strike. They are on a stand-by TX right now. It will be replaced by a new one that doesn't take up as much room. They are moving some racks around including the one the ATV was in. Over all there should be more room in the building when it is all done. It is a good opportunity to go through the system and test, calibrate and repair as needed. The control receiver didn't work. The crystal had drifted way off frequency. I replaced it with a PXO (programmable crystal oscillator) available from Digikey. They have gone up in price to about \$20 with shipping, tax and packing. Still, It's cheaper than ICM (or other MFRs) of a few years ago, many of whom are now out of business. It required a slight mod to the RX since they run on 3.3 VDC. I had a bunch of boards from an earlier foray with them so it just took a bit of time to get the right voltage and switching to work correctly. The TV transmitter works fine. I'll do some more testing and calibration of the rest of the system so it's ready when we can get it back on the air. The TX will still

do 300 watts CW but it needs to be backed off to 200 so it doesn't clip sync. The little pattern generator had a bad contact on it so that got fixed. The color bar generator is still in the rack out there but that is not an issue. 444.95 is still out there as well and working fine. It will probably be a few weeks before we can get the TV back out there since they are going to do some tower work as well. We'll see.

73 de John, WB0CMC, Omaha, NE

W0BTV Details: **Inputs:** 439.25 MHz, analog NTSC, VUSB-TV; 441MHz/6MHz BW, DVB-T & 1243 MHz/6MHz BW, DVB-T
Outputs: Channel 57 --- 423 MHz/6MHz BW, DVB-T, or optional 421.25 MHz, analog VUSB-TV. Also, secondary transmitter, FM-TV output on 5.905 GHz (24/7). Operational details in AN-51a Technical details in AN-53a. Available at: <https://kh6htv.com/application-notes/>

W0BTV ATV Net: We hold a social ATV net on Thursday afternoon at 3 pm local Mountain time (22:00 UTC). The net typically runs for 1 to 1 1/2 hours. A DVD ham travelogue is usually played for about one hour before and 1/2 hour after the formal net. ATV nets are streamed live using the British Amateur TV Club's server, via: <https://batc.org.uk/live/kh6htvtvr> or *n0ye*. We use the Boulder ARES (BCARES) 2 meter FM voice repeater for intercom. 146.760 MHz (-600 kHz, 100 Hz PL tone required to access).

Newsletter Details: This is a free newsletter distributed electronically via e-mail to ATV hams. The distribution list has now grown to about 500. News and articles from other ATV groups are welcomed. Permission is granted to re-distribute it and also to re-print articles, as long as you acknowledge the source. All past issues are archived at: <https://kh6htv.com/newsletter/>

Newsletter Frequency: In the past, I was able to put out this newsletter two and sometimes three times per month. After losing my home and everything in it to the Dec. 30th Marshall Fire Storm, I simply have not had the time, nor motivation to devote to the newsletter. I will however, try to get it out on a monthly basis. - Jim, KH6HTV

ATV HAM ADS

Free advertising space is offered here to **ATV hams, ham clubs or ARES groups. List here amateur radio & TV gear For Sale - or - Want to Buy.**

repeater WØATN
maryland heights, mo
input 440 mhz output 426 mhz



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