

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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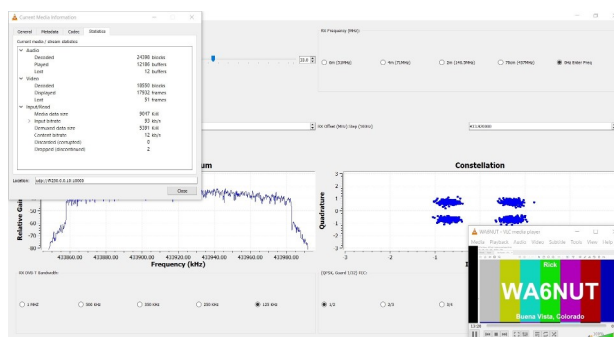
The screenshot displays the OBS Studio interface. On the left, a 'Video buffer analysis' graph shows a fluctuating line between 1300 and 2000. The main OBS window shows a video feed of a man with glasses. Overlaid on the right is the 'DATV-Easy V2.16' configuration window. The 'Configuration' tab is active, showing settings for 'DVB / MPEG-TS', 'DVB Tables', and 'PTT / Monitoring'. Key settings include: Target bitrate (94.25 kb/s), Video bitrate (56 kb/s), Frequency MHz (433.920), Mode (DVB), Codec (H264), Image Size (16/9), Bandwidth (125), Fps (12), and Audio Codec (AAC+). The 'Transmission' section shows a green indicator and a '94 kb/s' value. The interface also includes 'START +', 'STOP', and 'EXIT' buttons.

Report on Current ATV Activity in the Upper Arkansas Valley in Colorado

The mountainous terrain, and the lack of an ATV repeater, keeps us from having QSO's between our QTH's. So our activity is restricted to portable operation as weather permits. But there's plenty of opportunity to tinker. So, here at WA6NUT, we've been making the transition from analog ATV to digital (DVB-T). There are currently 4 amateurs here interested in ATV: Leon, NØVWX (Coaldale); Russ, NØRCG (Nathrop); Brian, KF5WCW (Buena Vista); and myself (Buena Vista). We hope to set up for some portable operation later this year.

At this point, I've got DVB-T working on 70 cm with an Analog Devices Pluto SDR for transmitting. I've substituted a Leo Bodnar GPSDO for the Pluto's internal clock. For software, I use the F5OEO 0303 firmware, OBS Studio, and DATV-Easy by F1EJP. On the receiving side I use an RTL-SDR V3. For software I use a DVB-T software receiver by HB9DUG and G4NZV along with VLC Media Player.

I've attached screenshots of the transmitting and receiving setup. And currently I'm setting up to boost my transmitting power from 5 mW to a more respectable 3-5 watts, using the Chinese amplifier reviewed in a recent Newsletter article, along with my homebrew amplifier using a Mitsubishi RA30H4047M module.



I've documented my setup with a PDF you can download here:

<https://www.qsl.net/wa6nut/DVB-T%20Operating%20InstructionsB.pdf>

73, Rick, WA6NUT, Buena Vista, Colorado

W0BTV - DATV Repeater Status:

The Boulder, Colorado ATV repeater will be going off the air temporarily starting this week. We have had recent failures of the 5.9 GHz, FM-TV beacon transmitter (after 3 years of service) and now more recently the 2 m radio control receiver. We will be taking advantage of this opportunity to do an upgrade to the repeater. We will be removing the NTSC analog 439.25 MHz receiver and replacing it with a 439 MHz, 2 MHz BW, DVB-T receiver. We will also be removing the unused, NTSC, 421.25 MHz modulator. In the interim, we will be installing the BCARES portable, 70cm, DVB-T repeater (same frequencies, 441 in / 423 out). 23cm input users can use the WA0TQG cross-band repeater to access the 70cm repeater. Input is on 1255 MHz. ---

Jim, KH6HTV, W0BTV trustee

IARU Region I -- ATV Contest

For ATV hams in region 1, you need to mark your calendars for June 10 & 11. The ATV contest is scheduled for the 2ed weekend in June. Full details are available on the BATC web site at:

https://wiki.batc.org.uk/IARU_ATV_contest



DATV Activity -- SPAIN & ITALY -- June 2023

June 6th is approaching, the legendary date we've been waiting for!!!

Departure from Civitavecchia and arrival in Barcelona on the evening of 8 June. We have permissions and.... ship ticket. You already feel the pressure: materials list, antennas (which ones to bring), filters to be calibrated, Pa to try, etc.

The "mobile team" is formed by me - IZ5TEP, by IW1QEF and by IU1BOT. There will be an aspiring amateur radio with us that you will know later, and we will have "operators" of reference for Italy:

IK2OWU - IT9HZM at Mount Beigua -Liguria

IT9FKD, IT9BDM, IT9GAJ, IW9GUR, IT9FUR, IW9ARO, IT9GNJ, IT9SWH, at Monti Peloritani, Messina

The location will not be in Barcelona but in Alicante, so a transfer will be needed - time to settle down and on Friday we will test the equipment and the location. Traveling by camper will not be the easiest - we have many hours of driving before arriving in Alicante, the equipment requires meticulous preparation, but there are 4 of us - this doesn't worry me too much. We will also set up a satellite broadcast that will give everyone the opportunity to follow us.

On Saturday and Sunday 10 and 11 June we will participate in the IARU R1 contest. For all those who want to join, an interactive map will be available on the ATV Italia facebook page through which everyone can register through the link below and participate by entering their position and indicating the type of transmission. <https://www.facebook.com/groups/atvitalia>

For Thursday evening the Spanish friends have organized a dinner - all together - of course I snatched the guarantee for an unforgettable "paella" no problem - they answer - and that's enough for me! An unforgettable evening.

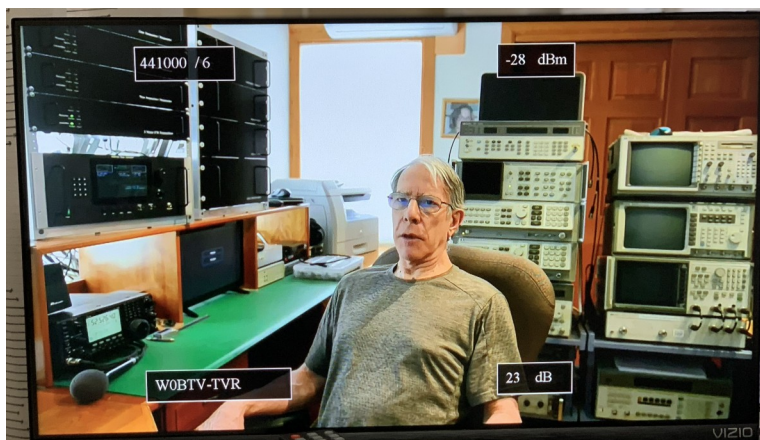
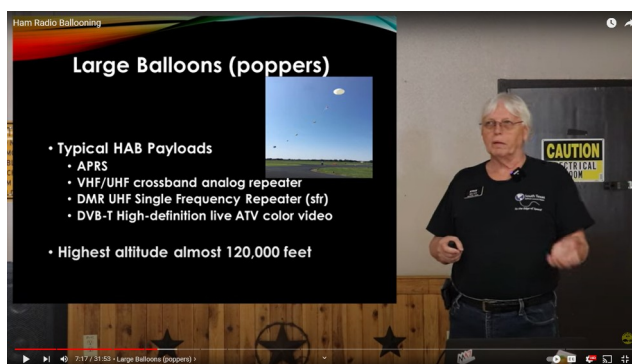
I want to thank on behalf of myself and the whole group, the Spanish friends in particular Ben EA3XU, for the commitment to the documents and the support in perfect coach style. This journey which has been a "work in progress" for the past two years of work during which not only the technical aspects of the DATV but interpersonal relationships have been taken care of. Our group, from north to south passing through the centre, is made up of serious, determined people, interested in experimenting and above all in sharing, sometimes not without bickering, but always with the utmost esteem and respect.. Our group is open, and that's what I say every time I get the chance. Open to all those who want to join us in knowing how to do and above all in the desire to create relationships that in the end they are the ones who stick in the mind with the records broken or not, it doesn't matter... Therefore and for all that will follow, I thank from now on all my adventure companions, those with whom I will share the journey in the strict sense and those who will remain in Italy to allow our goal to be achieved.

Hasta luego a todos. Filippo, IZ5TEP, Viareggio, Italia

Video From Balloons You Tube Video

www.qrz.com -- recent had a promo for "*Ham Radio Ballooning*". It was for Walter Holmes', K5WH, presentation at the 2023 Houston Hamfest. Walter discussed why Hams launch balloons, balloon types, board types and past launches. The video lasts 32 minutes. Here is the URL link.

<https://www.youtube.com/watch?v=iZLdVHIsHpc&t=433s>



Meet Our BATVC Members Steve, WA0TQG

Steve, WA0TQG, is our resident "Mr. Radio Wizard" ! On a recent weekly ATV net, Steve gave us a detailed tour of one of his extremely complicated, ham radio projects. He blew us all away with it !

Steve is a retired radio design engineer. He explained that while working for a telecom company, he had proposed that they build a Universal Radio Controller.

The idea didn't fly with his employer. So, in retirement, Steve resurrected the idea and designed and built it for himself. On the TV net, here is a photo of Steve demonstrating his master controller. The controller and all of the various radios which it controls are in the rack above his operating desk seen in the first photo. He also designed and built from scratch all of the radios which the controller controls. They include multi-mode (including DATV), separate rigs for 6m, 2m, 70cm, 33cm, 23cm and 13cm bands. The following photos show more details of the controller and one of the rigs and separate power amplifier. The photos come from a 222 page (!!!) document which Steve shared with us which describes in detail just the controller's features. It does not even include the detailed schematic diagrams, nor the thousands of lines on computer code required ! This was truly a work of love for Steve. Obviously, Steve has not been idle in retirement.



Figure 1 - Controller front panel

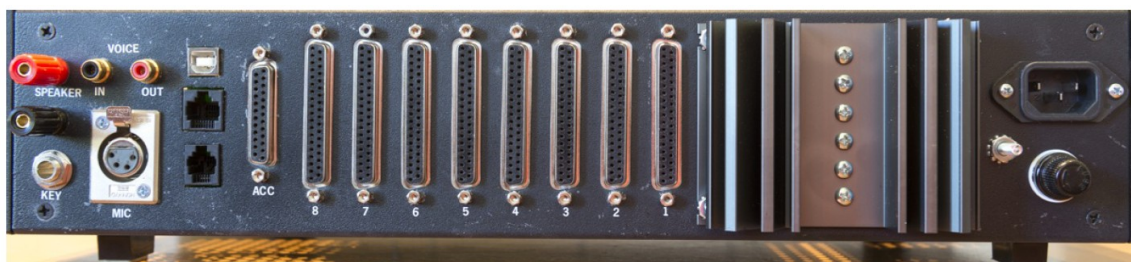


Figure 2 - Controller rear panel



Figure 4 - Controller inside from front



Figure 12 - 23cm Radio internal

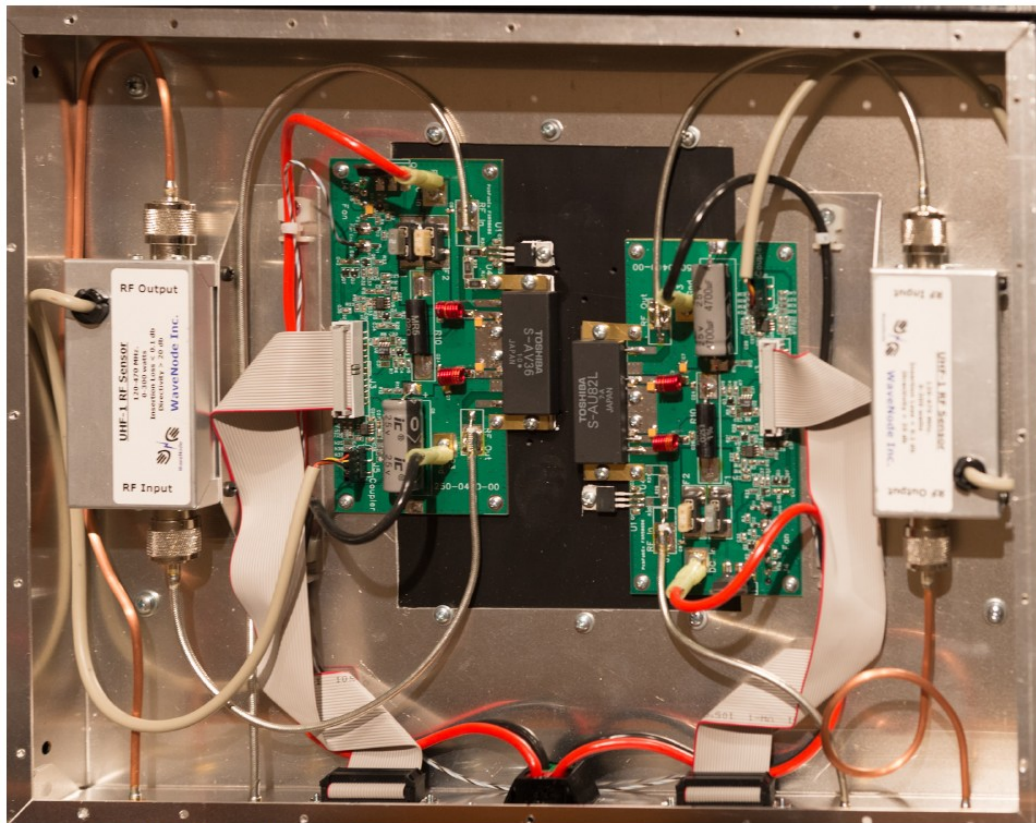


Figure 16 - 2M / 70cm PA internal

Steve lives up in the mountains in the western, mountainous part of Boulder County. His QTH is completely shielded from our Boulder DATV repeater, W0BTV. But a tall mountain was no barrier for Steve. His work around was "OK if I can't hit the repeater directly, then I will build my own cross-band repeater to get into W0BTV." We reported in detail in earlier issues of this newsletter, Steve's repeater. See issue #72 (March, 2021) for his impossible rf path profile. Issue #76 (April, 2021) gave more details about the work in progress. Then issue #85 (Aug. 2021) showed us the finished product. Steve's Half-Duplex mode, Translator is installed at Jack, K0HEH's QTH within the city of Boulder where Jack has line-of-sight paths to both Steve and W0BTV. The link between Steve and Jack is on 1255 MHz. Between Jack and W0BTV, Steve's translator either transmits on 441 MHz or receives on 423 MHz. Steve controls it via 2 meters.

MC-145151P2 FEED-BACK:

Hi Jim -- I show 13 of the MC145151P2, IC's on my W6ORG Surplus web page if anyone is interested. <https://hamtv.com/surplus.html#IC>

Tom W6ORG, Arcadia, California

Jim --- There are aftermarket MC145151s on eBay in several packages. I use a sister part, the MC145190, in my HF synthesizers for the C line, S line, and in the HRO-500 replacement oscillator. They are great.

Gary, WA8SPM, Lafayette, Colorado

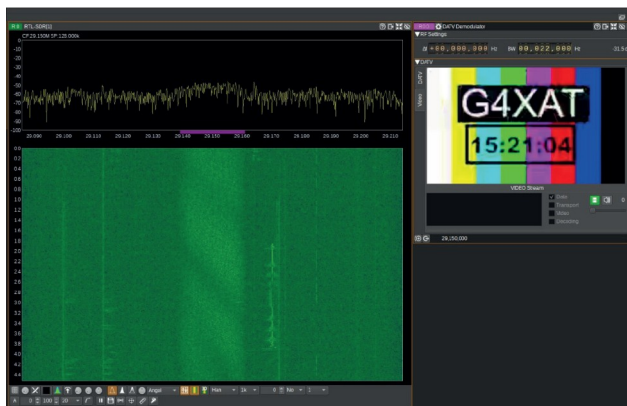


Spring Time in Colorado

10 meter, Trans-Atlantic DATV

The latest issue (#279) of the BATC's CQ-TV magazine is now out. They report:

There has been a lot of excitement about the experiments on 10m across the Atlantic. It has proved to be challenging and the goal of moving pictures has yet to be achieved. This screenshot from John K0ZAK shows that he was able to decode a sequence of individual frames from Gareth G4XAT using SDR Angel and an RTL USB SDR.



G4XAT as received by K0ZAK on 11th January

Perhaps when 10m opens up more as the Solar Cycle progresses there will be a chance of moving pictures. Currently, it looks as though the restrictive licencing in the US will prevent a two-way contact though.

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Advice for DATV Beacon Operators:

In the good old analog ATV days, it was a simple matter to know when you were actually receiving a picture - or not. It would flash on your screen and then quickly disappear a second later. Not so now with digital. Most digital TV receivers now simply continue to display the last frame received, even if it was minutes earlier. Thus if a TV repeater simply transmits a fixed call sign test pattern, and we want to try receiving it, make antenna adjustments, etc. -- we never really know if what we are doing has any effect as the image always is there, with or without a valid signal. Thus, when I am testing my DATV gear on my bench, my test signal generator is always putting out "live" video and audio. I get my "live" A/V by playing a pre-recorded DVD. Likewise, for our Boulder DATV repeater, W0BTV, when it is in either the Beacon mode or doing the sign-off IDing, it plays a continuous looping, 30 second slide show. That way our viewers are always getting "live", in motion video. -- KH6HTV

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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/> Select *ab0my* 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/>

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.

For Sale -- \$25 TinySA Spectrum Analyzer

New condition, with all accessories in original box. Works quite well up to 350 MHz. Also includes signal generator. Can also be controlled via USB with a PC. These are selling new online for typically about \$65. For more details, go to www.tinysa.org

Reason for selling -- I replaced it with the Ultra version.

Price = \$25 local, Boulder, Colorado pick-up, or \$35 mailed to you via USPS priority mail.

Jim, KH6HTV, kh6htv@yahoo.com

