Amateur Television Journal

2ed edition, November, 2026
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BATVC web site: www.kh6htv.com
ATN web site: www.atn-tv.com
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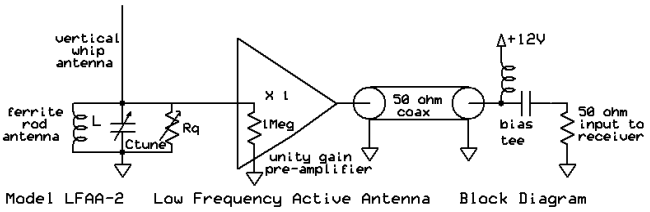




3 cm to 3 km !

Whow what a shift in wavelength ! Some of the Boulder, Colorado ATV hams have been recently investigating receiving LORAN signals which are way down in the Long Wave (km) band at 100 kHz. A far cry from our previous work at microwave frequencies up to 10 GHz, the 3 cm band. While this is a newsletter for ATV, we still wanted to use it as a forum to talk about this new ham project. Don't forget there is a nearby ham band at 2.2 km (136 kHz).

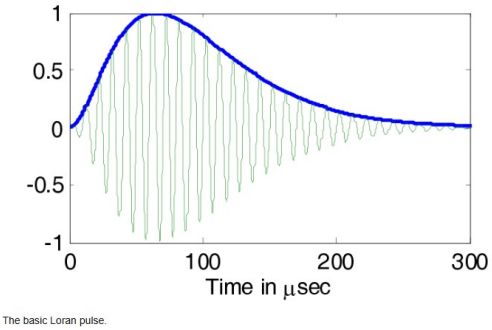
Some of the equipment being used includes some old Loran receivers, a KIWI-SDR, spectrum analyzers, various experimental active antennas and a home-brew Loran simulator signal generator. The most successful antenna so far is shown here in the block diagram. It used a tuned ferrite rod antenna along with a telescoping BNC whip antenna. Tuned to 100 kHz with an 8 kHz bandwidth.



KH6HTV active antenna

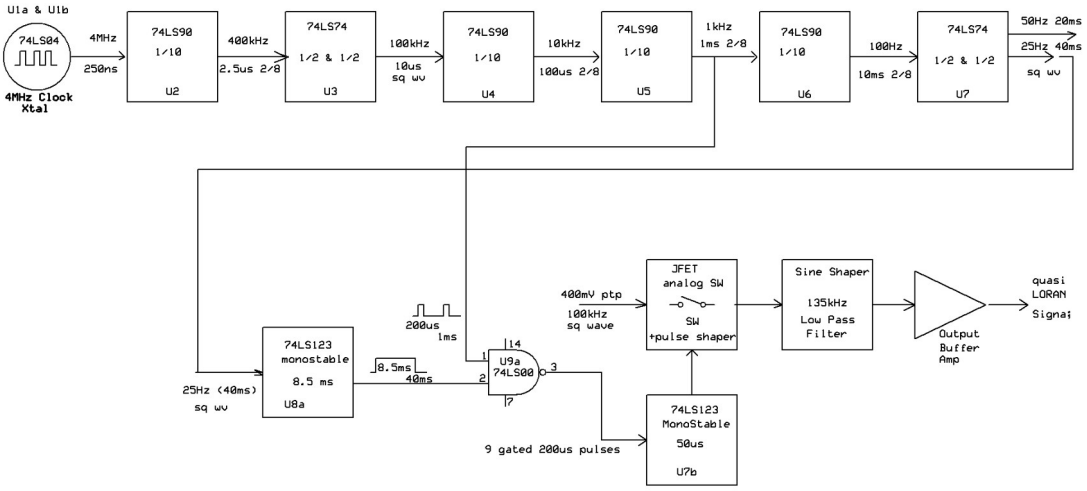
The basic specs. for the LORAN signal are:

100 kHz carrier frequency. Eight RF pulses spaced 1 ms apart (nine pulses with newer E-LORAN), RF pulses are to look like this waveform shown on the right. A set of master-slave transmitters all transmit with a Group Repetition Interval (GRI) ranging from 40 ms (25 Hz) to 99.99 ms (10 Hz). Slave transmitters followed at precisely known delays from their master transmitter.



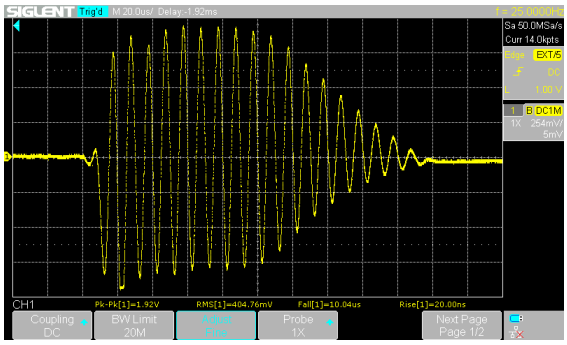
LORAN RF Pulse

We felt the need to have a really strong, LORAN signal to evaluate our test equipment, etc. So I designed a home-brew, LORAN simulator signal generator for our use. I used some old-school 74LSxx logic chips in the design. Here is the block diagram, photo of the generator and the resultant 100 kHz RF pulse from the generator. The geneator puts out 9 pulses seperated by 1 ms and with a rep. rate of 25 Hz, i.e. 40 ms GRI. The rf pulse was 1 Vptp, +8dBm PEP into 50 Ω.



KH6HTV -- LORAN Simulator Signal Generator





LORAN RF Pulse 250mV/div & 20μs/div

73 de Jim Andrews, KH6HTV, Boulder, Colorado

NEW PRODUCT EVALUATION:



BECEN 5W Variable RF Attenuator 0-60dB, 3GHz 50Ohm SMA Female to Female 8 Keys Adjustable Step Attenuator for RF Testing, Signal Calibration and Communication Devices

Visit the BECEN Store

Search this page

$68.00 Price history

Or $17.00 /2 weeks (x4) at 0% APR. Select plan

prime

A new product has recently appeared on Amazon which appeared very attractive for the price. It is a Step Attenuator as shown in the advertisement here.

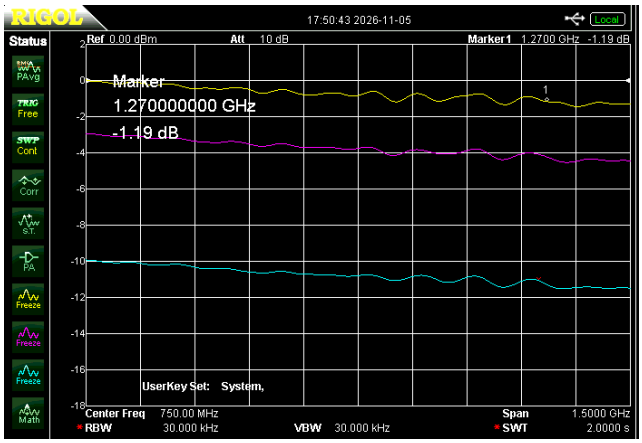
So is it really good to 3 GHz as the head-line claims ? The answer is a qualified "Yes & No"

Joe, K2EVK, recently bought one. I, KH6HTV, just got a chance to evaluate it.

The attenuator has SMA connectors. It has push-buttons to select various attenuator steps. They are: 1, 2, 4, 8, 16 dB, plus (3) 10 dB steps for a total of 61 dB.

For my initial tests on the attenuator, I used my Rigol DSA-815, 1.5 GHz Spectrum Analyzer with built-in Tracking Generator. It is a simple setup to make "normalized", insertion loss, S21,measurements with it. It is my reference standard for me. I have compared it against other quality instruments and components from reputable mfgrs including, H-P, Agilent, Tek, Weinschel, etc. Here is a sample of the several measurements I made on this new Amazon attenuator.

Test of Step Attenuator: Yellow trace is 0 dB
Magenta trace is 1+2=3 dB, Cyan trace is 10 dB



S21 sweep from 0 to 1.5GHz
2dB/div & 150MHz/div

OK here is the "gotcha" in the Amazon head-line spec. of 3 GHz. Please note the downward slope of the 0 dB curve. Here are the measured values for the 0 dB setting.

10 MHz -0.05 dB 150 MHz -0.15 dB 450 MHz -0.53 dB 1270 MHz -1.19 dB

What I found was for every dB push button setting, 0 to 61dB, I saw this same downward slope. I also found that the basic DC (& low frequency) accuracy was very good for every attenuator button. But the defect in the attenuator was high frequency skin effect loss in the internal pc board running the length (5") of the unit, and loss in their push-button switches. This lead to the high frequency offset error as noted above for the 0 dB setting. Thus the actual attenuator elements seemed to work very well up to high frequencies. What didn't work well was the pcb and switches for higher frequencies.

Amazon's head-line claims "3 GHz ! " Beliveable ? Now taking a closer look at the Amazon advertisement, buried way down, off the initial screen, was the statement "ultra-low insertion loss below 3 dB" 3 dB for a so called precision piece of test equipment ! Come on, be reasonable !

Bottom Line: This is a useful piece of low cost test equipment as long as one realizes it's limitations. For use up to 2 meters, I would use it as is. For use at UHF frequencies, one should always be careful and have a calibration table handy to correct it's readings.

73 de Jim Andrews, KH6HTV, Boulder, Colorado

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Feed-Back Geo-Stationary Ham Satellite for N. America:

A very interesting item (to me) in this newsletter was the discussion of a potential amateur radio payload on a GEO stationary satellite at 47 degrees West. The footprint would cover North America, South America and Europe. This would be a boon to amateur satellite operation in the Western Hemisphere and also amateur radio emergency communications.

I recall years ago using the AO-10 and AO-13 satellites. They were not geostationary, but due to their Molniya orbit had hemispheric coverage at apogee. I recall working Japan, Europe and all over with 10 watts on 435 Mhz SSB/CW on the uplink. With the decline of Solar Cycle 25, a geostationary amateur radio payload at 47 degrees West is timely.

73 -- Jon N0JK, ex WA50 - QST

Jim: You asked: (editor's note: Has anyone else heard about the possibility of a similar ham American TV satellite for the western hemisphere ?)

It wasn't a "TV" satellite, but yes, there was a valiant attempt at an Amateur Radio payload at GEO, which was entirely digital that could have easily accommodated digital television.

If you're a patient reader, most of the details of this failed attempt are in this article - ***https://www.zeroretries.org/i/90014693/geo-geo-geo***.
The uplink would have been on 5 GHz, downlink on 10 GHz.
The uplink would have been a unique system - you request a narrowband channel or channels on the uplink, and the satellite verifies you're legit and responds to you with your channel assignment.
The downlink would have been wideband and multiplexed.

It didn't happen because the host satellite (the AR portion was a payload, not an entire sat), a USAF research satellite, was canceled. I think it was an elegant concept because if you want to do DATV, you request some sequential channels and if they're available, go ahead. What I LOVE about it was that bits are bits - voice bits, data bits, video bits, whatever. Anything and everything that can be reduced to bits was welcome.

Despite there being "somewhat deep pockets" available at ARDC, and willingness to work on it at AMSAT, and many satellite manufacturers and operators based in the US / North America, AMSAT hasn't been able to get in the front door with the companies that claim that they're willing to do turnkey GEO. Despite claims that "just bring money and we'll get you online at GEO"… build sat to specs, launch it, and get it into GEO orbit, that doesn't seem to be actual reality.

It seems that AMSAT has lost its name recognition in the sat industry now that the primary focus of the satellite industry has shifted to LEO / MEO constellations, and microsats are so common that they can be built in middle schools.

To make any real headway on an Amateur Radio GEO for the Western Hemisphere, North American Amateur Radio would have to have a champion deep inside the GEO sat industry like there was with QO-100. Or, perhaps future GEO will make some progress because there's now AMSAT-CA, and Canada is a member of European Space Agency, who is the ultimate sponsor of futureGEO. But the most optimistic orbit slots I've seen would cover perhaps the Eastern third of North America, so you and I, in the Western third of NA would be out of luck for a futureGEO.

Thus my fantasy hope that a tech billionaire might get interested in Amateur Radio and buy the dedicated use of a 6 MHz transponder on a commercial GEO sat over North America (perhaps one that's past its prime). They'd also have to do the NRE for a simple ground station for that satellite, including having to lock on a pilot signal before the transmitter is enabled to avoid interfering with other transponders or satellites.

Or, on the hairy edge of feasibility, a group gets together to do the same thing and sells memberships for exclusive use (it's not Amateur Radio spectrum, so that's not an issue). I'd be in for, say, $500/year. Being able to use GEO is… just… cool.

73 de Steve Stroh, N8GNJ, Editor - Zero Retries Newsletter

Feed-Back on Art's VersaTune:

Hi Jim --- Just a comment on Art Towslee's VersaTune update. While Art hasn't heard any recent updates from the company, there has been some other independent chatter on the company's forum that sounds encouraging. Several other hams have been in communication with HDhomerun on their forum page in the last few months in regards to the same lower bandwidth DVB-T. After Art contacted them, HDHOMERUN updated their firmware for some of their devices and posted it on their website. So anyone currently owning these devices can load the low bandwidth firmware. However, this updated firmware only works with their HDHR5-2DT & HDHR5-4DT devices, which have unfortunately recently been discontinued. It will not work on any of their currently sold devices. From the forum chatter, it sounds like the company is pursuing how to add this mode to their current models or maybe bringing back an updated version of the discontinued model. This forum thread also discusses testing going on with their current ATSC-3 model which is interesting reading. It ties in with the lynx software you mentioned elsewhere in the newsletter.
https://forum.silicondust.com/forum/viewtopic.php?t=80761
Hope this information is of interest.

73 de John Kozak, K0ZAK, Reisterstown, Maryland

More About QO-100:



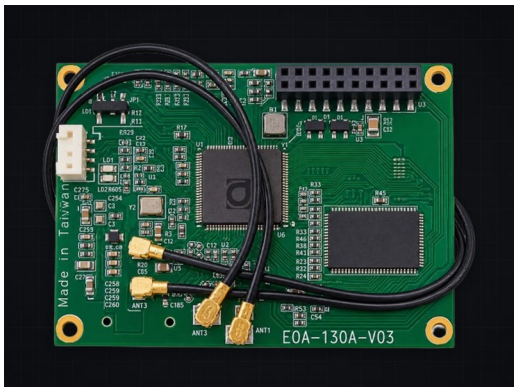
EA2RCF QO-100 receiver

Pau, EA3IGB sends us the URL link to watch another QO-100 receiver.
Jim -- Another DATV QO-100 streaming
https://www.ea2rcf.org/QO100/DATV/datv.html
Sponsored by the EA2RCF, Radio Club Roronda, in Vitoria-Gasteiz, Spain

Hi-Des Request for Marketing Support:

(*editor's note: I have just received the below email from Hi-Des in Taiwan requesting our support in developing marketing for the ATV market. It is to our benefit to help out Hi-Des in their continuing efforts to supply DATV equipment for us. Any thing you can go to help them will be appreciated.*

p.s. Their new EOA-130, "Ethernet Over the Air Adapter" product shown in the URL link is quite impressive. Check out their video.)



NEW Product !

email from Hi-Des, 8 Nov 2026
Jim -- Please take a look at the video clips on our web,
https://hides.com.tw/en/ ***https://hides.com.tw/en/products/eoa-130/***

We would like to produce a promotional video demonstrating how Hides products are used within the HAM (Amateur TV Radio) community. To be honest, I'm not very familiar with how things work in the HAM community, so I would really appreciate your guidance on how we could approach this. Could you suggest some possible scenarios or storylines for the video? Any supporting materials would be very helpful, including written descriptions, block diagrams, photos, or existing video clips. Your insights and suggestions would be greatly appreciated.

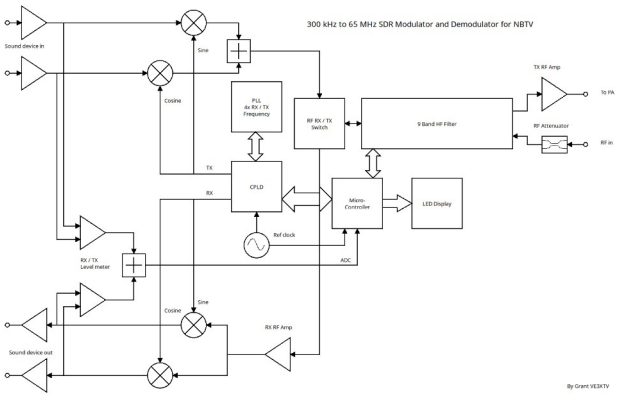
Best regards, Jeff, Hi-Des customer support, ***support@hides.com.tw***

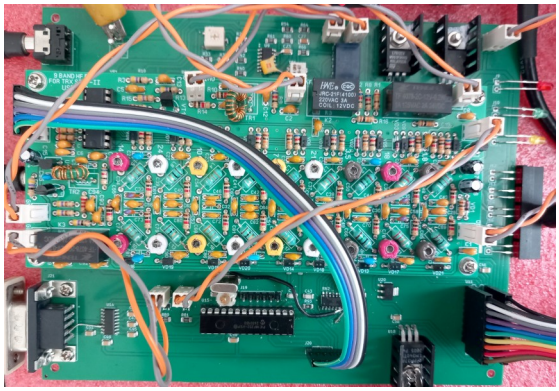
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Up-Date on Grant's NBTV Project:

On 9 Nov, Grant, VE3XTV, posted on the digitalatv@groups.io web site the following up-date.

"Hi All -- Over the weekend I decided to give AI coding ago, to see if it is a faster way to develop my NBTV GUI, it just took 48 hours to write ExSDR. Which is a all round SDR interface using sound devices for in and out for Sine / Cosine (I&Q) signals, I am still adding in code to this Python application. It is available for download at this address:
https://github.com/GrantXTV/ExSDR
Right now it is written for Linux, but I will soon upload a Widows version to tryout, since I do not use Windows, I will not be able to test it, this is why I am doing all work in Ubuntu Linux, so I can test it.







The images show the hardware interface I am working on, the circuit was posted on this reflector last month, I am doing a new design to fit into an aluminum extrusion metal case, with CAD files for end caps. So it should be as simple as buying the right size of case and getting metal plates made alongside the PCB to fit it all together. The other image is of the screen shot of the ExSDR (Experimental Software Defined Radio), on the TV side I have added in SSTV and NBTV software for Con's ZL2AFP

work, I plan add in the newer NBTV mode that I am working on at a later date. This where AI can not help me as I am still making updates to hybrid NBTV formats, such as the sync recovery.
I will be adding my Narrow band digital voice HF modes, based on the sound encoding system that is used for the NBTV, I am currently testing three modes these are: HxDX14, HxDX26 and HxDX50, which stands for Hybrid, Experimental, long Distance and the number of RF OFDM Carriers. I will working on improving the sync recovery for these modes as well.

As I post more and more updates the software should getting better and better, as AI is one very powerful coding tool. 73 de Grant, VE3XTV, North York, Ontario, Canada

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Mini MAD 10 GHz ATV Test:



Steve, W6US, has sent us this report he found on the ***50mhzandup.groups.io*** web site
Date: Mon, 09 Nov 2026 16:25:16 PST ----We had a successful 10.4GHz FM-ATV test this morning. Below is a screenshot of W6BY/Vargas as received at WF6R/Stanford. Brian and Teff are pictured. Oliver is off to the side. There is a lot of glare on the IC-905 display.
We learned a few things about the 905 in this mode:
-The 17 MHz wide filter and higher associated deviation yields the best picture quality. Seemingly even in lower C/N conditions.
-If you're going to run narrower bandwidths, you should pick an audio subcarrier frequency that fits within the IF filter passband.
-The video bandwidth of the link was good. A multi-burst test pattern determined performance to 4.2 MHz in the video baseband.
-The squelch control not only mutes the noise on no signal but it also mutes the desired audio on receive. (turn back the squelch for ATV).
We had full quieting P5 video with the 905 power turned all the way down to zero. At home, I determined that this corresponds to -26dBm from the radio. I had a 4ft dish on my end, I think Brian had similar.

73 de Steve, WF6R, Palo Alto, California

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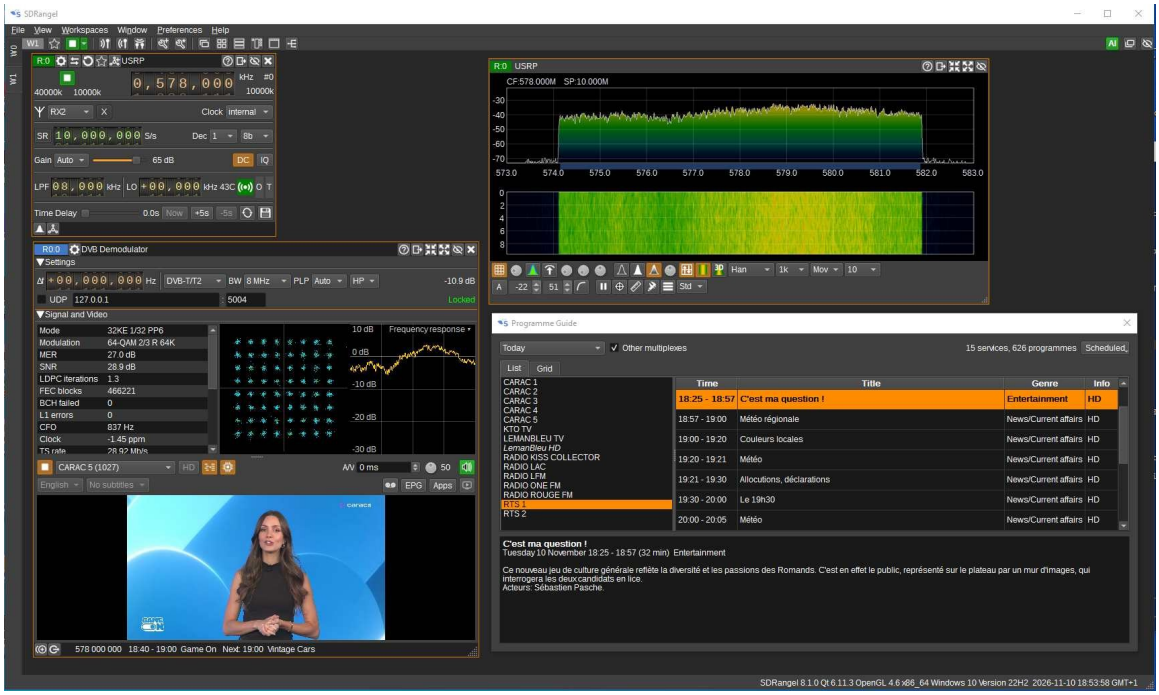
SDRangel 8.0.0 enters the AI era and DVB-T1/T2

Thanks to @srcejon SDRangel is now AI-ready, with the addition of a MCP server. There are also facilities to connect Claude or Chat GPT/Codex to it but the MCP protocol is model agnostic so it can be used with any model. All the details here :

https://github.com/f4exb/sdrangel/blob/master/plugins/feature/mcpserver/readme.md

This release also includes a new plugin that should be of particular interest to OMs using the DVB-T/T2 standard: the DVB Demodulator.

This plugin demodulates DVB-T and DVB-T2 digital terrestrial television, as specified in ETSI EN 300 744 and EN 302 755, and DVB-S, DVB-S2 and DVB-S2X satellite television, as specified in EN 300 421, EN 302 307 and EN 302 307-2, and plays one of the services (TV channels or radio) in the multiplex. The transport stream can also be sent over UDP, to be played or recorded by another application, such as VLC or ffplay.



All the details here :
https://github.com/f4exb/sdrangel/blob/master/plugins/channelrx/demoddvb/readme.md

The attached photo shows the reception of a DVB-T2 multiplex (578 MHz) near Geneva. The SDRangel configuration was set up by Claude Code. The task was to receive a DVB-T/T2 transmission on 578 MHz using an Ettus B200 SDR.

Amazing! 73 de Michel Burnand, HB9DUG, Vich, Switzerland

(editor's note: The Ettus B200 SDR covers from 70 MHz to 6 GHz with 56 MHz of real-time bandwidth. It is available from DigiKey for $1.7K, not an inexpensive SDR!)

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Silent Key - KA8HBT



James, KA8HBT

It is with a heavy heart that we share the passing of James D. Green (KA8HBT) on Thursday, November 5, 2026. Prior to his passing, James had relocated to Kentucky to receive hospice care.

A retired employee of Chrysler Airtemp Corporation, James was a man of many talents and passions. Outside of his career, he was an accomplished artist and a private pilot who flew his own plane.

Within the Dayton community, James was best known for his dedication to amateur radio and Amateur Television (ATV). He was exceptionally active on the airwaves—spanning from HF all the way through 70 cm ATV—and gave his time as a dedicated member of both the OMIK Amateur Radio Association and the Dayton Amateur Radio Association (DARA). He will be deeply missed by his fellow operators and all who knew him. 73, KA8HBT.

Sincerely, Dave P. AH2AR

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Newsletter Details:

This newsletter was started in 2018 and originally published under the title "*Boulder Amateur Television Club - TV Repeater's REPEATER*" Starting with issue #166, July, 2024, we have changed the title to "*Amateur Television Journal.*" This reflects the fact that it has grown from being simply a local club's newsletter to become the "de-facto" ATV newsletter for the USA and overseas hams. This is a free ATV newsletter distributed electronically via e-mail to ATV hams. The distribution list has now grown to over 900+, both in the USA and overseas. 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.

Newsletter Archive: All past issues of the newsletter are archived on the web site: ***https://kh6htv.com/newsletter/*** A **free DVD** with all past issues is available upon sending an e-mail request to the editor.

Boulder CO - W0BTV Details:

Inputs: 23 cm Primary (CCARC co-ordinated) + 70 cm & 3 cm secondary all digital using European Broadcast TV standard, DVB-T with standard 6 MHz wide TV channels. Frequencies listed are the center frequency of the TV channel.

23 cm = 1243 MHz (primary), 70 cm = 441 MHz & 3 cm = 10.380 GHz

Outputs: 70 cm Primary (CCARC co-ordinated), Channel 57 -- 423 MHz with 6 MHz BW, DVB-T

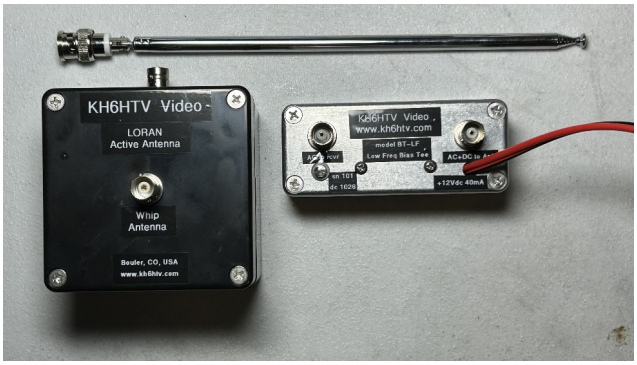
Also, secondary analog, NTSC, FM-TV output on 5.905 GHz (24/7 microwave beacon).

Operational details in AN-51d Technical details in AN-53d. Available at: *https://kh6htv.com/application-notes/* 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. 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*).

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 - ACTIVE ANTENNAs



The models AA-xx are Active Receiving ANTENNAs. Active means they include a built-in pre-amplifier immediately at the antenna. The active antenna is then powered remotely via a Bias Tee which sends +12 Vdc up the coaxial cable.

KH6HTV offers two different models of Active Antenna. They are:

model AA-LF-HF: uses a vertical whip antenna only. It covers the widest band-width reaching from long km wave lengths up to > 40 MHz.

model LFAA-2: uses a tuned ferrite rod antenna, plus whip. It is tuned to a specific frequency and rejects all others. The standard unit is tuned to the LORAN frequency of 100 kHz with a BW of 8 kHz. It can also be custom tuned upon request to other frequencies and/or band-widths in the range of 50 kHz to 200 kHz. Examples are WWVB (60 kHz) and the Amateur 2.2 km band (136 kHz).

For additional details: spec. sheets, supplemental data, and prices --- see web site:
www.kh6htv.com