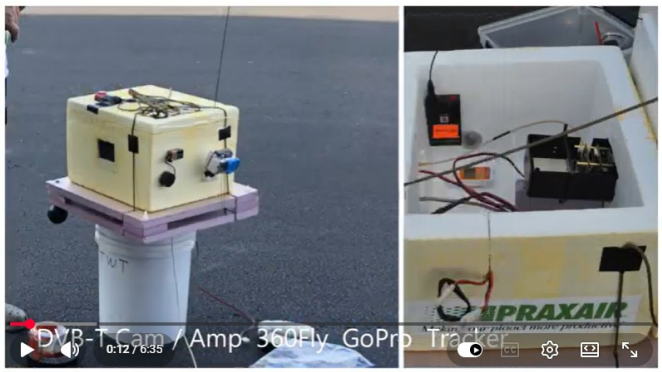
Amateur Television Journal

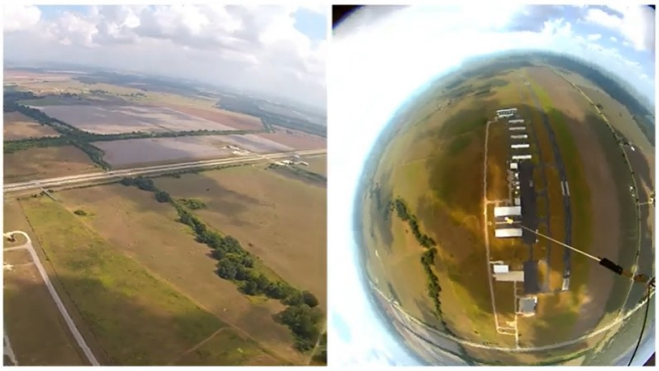


3ed edition, November, 2026
issue # 223
BATVC web site: www.kh6htv.com
ATN web site: www.atn-tv.com

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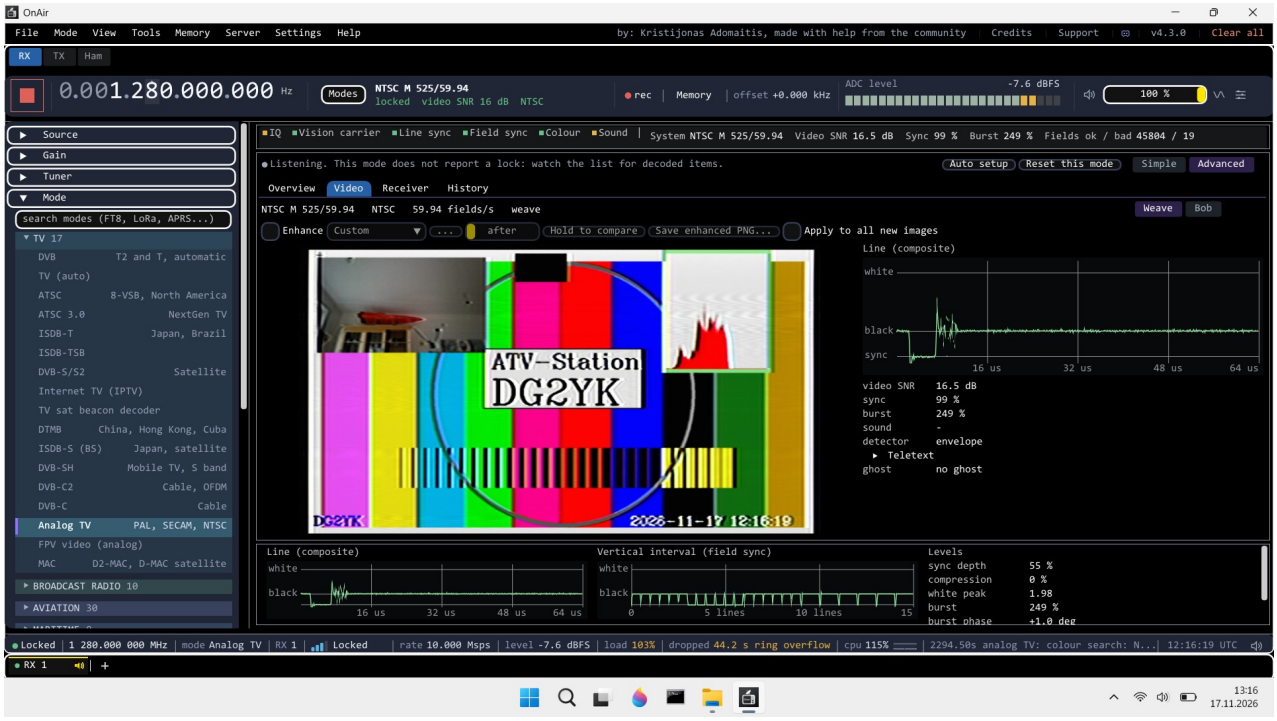
Hi-Definition Digital ATV from the Edge of Space

There are ham groups doing high altitude balloon flights. Some of them are in cooperation with local schools as part of their STEM programs. They do various pay-loads of APRS trackers, FM voice repeaters, along with atmospheric telemetry. Some groups even include a video camera and transmit live video down to the earth from near the edge of space. Typical balloon flights often reach up to about 100,000 ft. Walter Holmes, K5WH, and Kirk Kendrick, KK2z, have recently shared with us the YouTube URLs for some exceptional balloon flights the Wharton, Texas -- South Texas Balloon Launch Team did back in 2018. They used Hi-Des DVB-T gear for their digital TV. They said that Tom Matthews, K5SAF, (now SK) was the video master for their balloon flights. For the BLT-50 balloon flight, the HiDes camera/transmitter provided the live downlink to the crowd of onlookers which you see in the video. It truly worked well ! That video also contain footage provided by Bill Dillion, KG5FQX, from his GoPro camera which was also part of the payload. Here are the URLs:

https://www.youtube.com/watch?v=UvcM4pElhFE
https://www.youtube.com/watch?v=yrJnNtQ2bOk

Hi-Des Video: Plus, Hi-Des in Taiwan is now enhancing their web site to give publicity to Amateur Radio/TV and the applications of their DVB-T hardware. They have just added this new, edited video about the Texas group's balloon flight. See: ***https://hides.com.tw/en/ham/#film***

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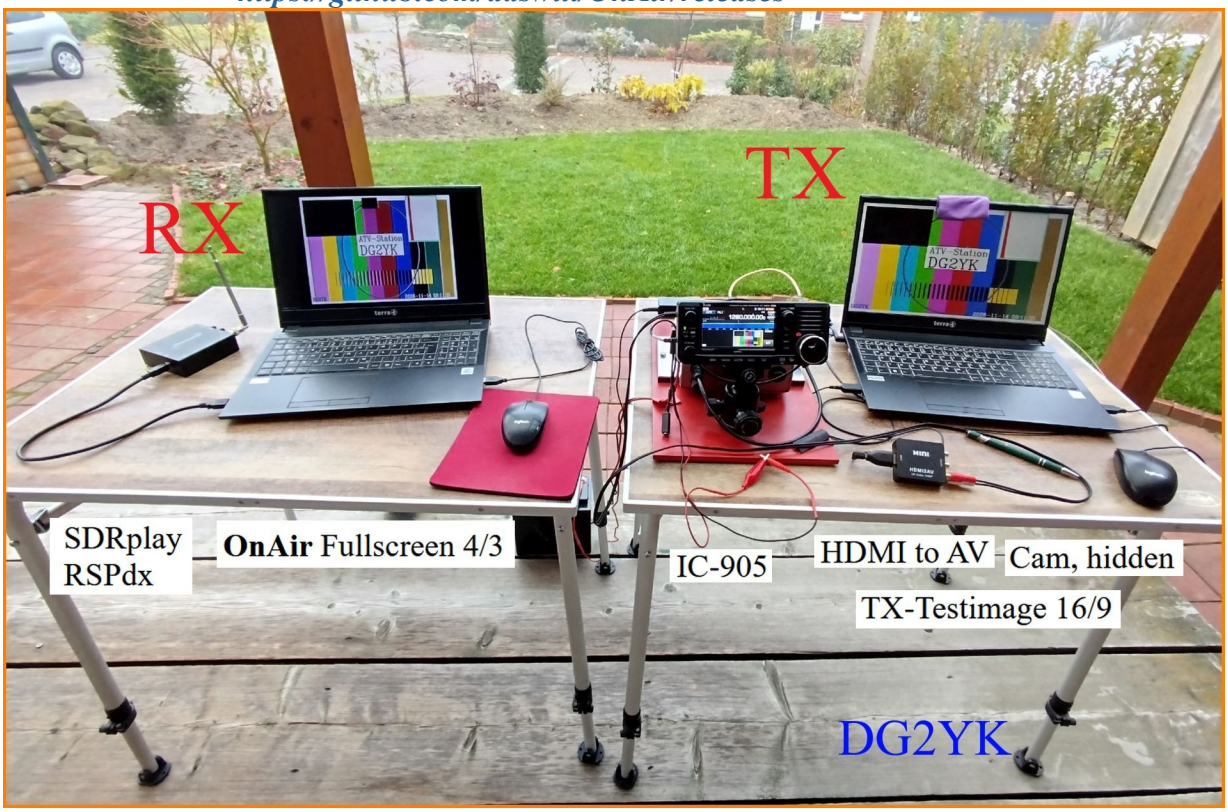


New (ATV)-SDR Software "OnAir"

Hello Jim --- Thanks for the ATV newsletter. I always enjoy reading it. There's a new SDR program that might also be of interest to ATV fans. I've written a bit about it: New (ATV)-SDR Software **"OnAir"**

The open-source SDR software **"OnAir"** has been available for about two months. Currently in version 4.1, the program includes a total of 393 reception and decoding modes. Of particular interest to AV enthusiasts is the fact that the software currently supports 17 TV modes (see screenshot). With the appropriate hardware, transmission is also possible. It is available on github.com

https://github.com/adswill/OnAir/releases



I am currently testing the program using my Icom IC-905 as the transmitter, a commercial transceiver that covers frequency bands from 2 m down to 3 cm. From 1.2 GHz (23 cm) upwards, it also enables FM-ATV (Amateur Television) operation.

For reception, I am currently using an SDRplay RSPdx. However, its 10 MHz sampling rate is insufficient for ATV, as noted in the yellow text in the screenshot. A rate of 16 MHz is required, which is something the HackRF-Pro, for example, can provide. Unfortunately, the HackRF-Pro is currently unavailable; it would also allow for transmission. Furthermore, the RSPdx only covers a frequency range up to a maximum of 2 GHz, whereas the HackRF-Pro can handle frequencies up to 6 GHz. Consequently, the RSPdx cannot be used to receive repeater outputs at 2.4 GHz.

Although the RSPdx does not function perfectly, I would like to share some images from tests conducted with this setup.

The connection works in principle; however, there is a noticeable delay, and the program crashes after a few minutes. I have already opened an "issue" regarding this on GitHub. Since OnAir is developed using the HackRF, such issues should not arise when using this hardware.

For FM-ATV, the IC-905 uses a 16:9 video format rather than the traditional 4:3 aspect ratio. As a result, my test pattern appeared compressed, see the photo with the garden. Conversely, a 4:3 video signal is stretched horizontally during playback. For this reason, I opened an "issue" on GitHub, requesting that the aspect ratio be made adjustable for both reception and transmission. This has now been implemented; see the screenshot. Now the circle is round.

As previously mentioned, the HackRF Pro has a lead time. My retailer lists January 22, 2027. I will provide an update then.

Have a good time, 73, Wilhelm, DG2YK, Gescher, Germany

(editor's note: Wilhem, is quite active on QO-100 with DTV. Check out his bio on ww.qrz.com for some very interesting pictures of his 10 GHz gear, especially a helix antenna.)

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UK Works on NBTV for HF:

We have been experimenting in the UK with Rob, M0DTS's Audio Video Modem, (AVM) which is an extension of Digital Radio Mondiale (DRM) that allows higher resolutions and frame rates using 10kHz and up bandwidths. It has multi-path tolerance and error correction like DRM so working well on HF and VHF channels and has been demonstrated over QO100, which it isn't intended for but it makes a useful link. It runs under Linux and Windows, on a Raspberry PI4 or a PC with an Adalm-Pluto, Lime-SDR for TX and Airspy, SDR Play and RTL Dongle or KiwiSDR on RX. I have tested it on 160m, 80m across the bench and on 2m and 70cm to local hams. Rob has tested it on 80m over a few miles and on 10m from the UK to EA8.

I noticed that the peak to mean ratio of OFDM has attention in all these developments. This is something we will need to address. I know I sound like a stuck record with this, but there is a real risk of an inexperienced ham, or an experienced one on a bad day, blowing up their LDMOS power amplifier by looking at the mean power and thereby subjecting the gates to severe overload on peaks. Currently PAs need to be backed off by at least the PMR. So 100W mean output needs at least a 1kW capable amplifier. There is also the issue of intermodulation and potential for beneficial use of pre-distortion to reduce the PMR and to clean up transmissions.

It is an exciting time in DATV and it would be good if we could coordinate these tests. Interestingly, when Rob converted his code from Python to C++ it ran twice as fast.

73 de Mike Willis, G0MJW, Harwell, U.K.

FLASH ! NEWS RELEASE: This just came in from the BATC

(*https://forum.batc.org.uk/viewtopic.php?p=40798#p40798*)

NBTV on 160 meter band, 5 frames / sec video !

As mentioned last night on the QO-100 net, (19/11/2026), Martin G4FKK and I will be trying AVM on the HF bands today from around 10 a.m. I will post my TX freq here as and when.
Using any of 80m Doublet wired as a Marconi T against Ground, approximately N/S, 160-10m, 10m Vertical, 50MHz QFH (circular polarisation) and 6/2/70 White stick vertical.
Reports etc welcome.
2m talkback 144.750 between the pair of us.
First up 1.905 @ 10am...
HF COdec 2 A 20khz...
Gareth

Re: AVM 'Activity Day' #1

by **radiogareth** » Fri Nov 20, 2026 10:51 am

Success 1 way, me to Martin....
80 and 40 no go atm....
Gareth



top band.jpg (216.73 KiB) Viewed 178 times

Looking forward to more details from the U.K. in the near future.

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ATV Ham in QST:



Jim, W6US, operates W1AW/7 on 10 GHz, making contacts with the remote station at the other end of the event.

Another ATV ham makes the news in QST. Check out the "Microwavelengths" section in the October issue (pp. 56-57). There is our own Jim Shepherd, W6US, operating 10 GHz. This time on SSB. But maybe in the future he will also do it with ATV.

Jim is the "spark-plug" behind the recent efforts in Reno, Nevada to put a DVB-T ATV repeater on the air.

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HDMI Issues Resolved at W0BTV:

The Boulder, Colorado ATV repeater, W0BTV, has been plagued with HDMI issues for a long time. The root cause of our problem has been the Quad Processor / Switch which has been quite unreliable. It often times would hang up on one setting and give us a blank screen. In our design of the repeater, we included a remote control command for "RESET". Resetting didn't resolve the problem. We use a separate FM voice radio control link to send touch-tone (DTMF) commands to the repeater to control several different modes of operation, plus Reset. On reset, we disconnected the 12Vdc power to most all digital devices in the repeater, except for the Arduino TT decoder/controller. The idea was if we pulled the DC power plug from the Quad processor it would then "re-boot" and resume normal operation. Wrong ! The darn Quad box must have been able to find an alternate source of dc on some other input ? Our temp fix was we installed an old school, mechanical electric clock timer on the 120Vac wall outlet. We programmed it to turn off completely all AC power to the repeater at midnight every night for 15 minutes. This at least resolved our repeater issues within 24 hours. But not a totally satisfactory solution.

Our resident Arduino Guru, Bill Eberle, AB0MY, decided to research the issue. After a long exhaustive search, Bill, finally found an HDMI Quad Processor with external computer control capability which he thought might be a better solution for us. He purchased one and did exhaustive testing on it. The old, defective, HDMI quad box was an OREI, model hds-402MV. It was controlled via a USB port. The new HDMI quad box, Bill found is an OREI, model HDS-401MV. It is controlled via RS-232. Because of the dramatically different control methods, Bill needed to completely rewrite all of his Arduino control software for the repeater.

A couple of weeks ago, Bill was finally satisfied with his code. So he and Don, N0YE, made a trip up to the repeater site, and pulled the controller box from the 19" rack. Bill took it home and rebuilt it with the new quad box and installed his new Arduino program. He then throughly tested it at home to be assured all was well. A week later, Bill and Don then reinstalled the controller in our repeater. All seems to be working well now for us. Keeping our fingers crossed that the new quad box will have fixed our reliability problems. Thank You Bill !

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AMAZON -- Today's Go To Radio Shack

We radio amateurs used to be good customers of Radio Shack when ever we had a home-brew project. While they didn't carry everything we needed, they often were able to supply our needs and had a store close by. If we really wanted some hard to find parts, we then went to the big electronics supply houses, such as Mouser, DigiKey, Newark, etc. Radio Shack no longer exists, but the big supply houses are still there, fortunately. But another one has come along which is often able to supply our needs at usually quite reasonable cost. That is Amazon. Plus with their prime service, throw in free home delivery and usually within 1 or 2 days. It is a bit harder to find some items at Amazon compared to looking them up in a Radio Shack catalog or a Mouser or DigiKey search engine. Sometimes one needs to be creative in describing what you want to Amazon's search engine. And then not just one item appears but page upon page of possible choices, so you have to scroll through them to make the best, intelligent choice, comparing prices, delivery times, exact specs. etc.

I recently needed a bunch of different parts for a home-brew project. Parts that I did not have on hand as stock for my normal products which I sell to other hams. I was amazed and shocked at some of the "KITs" of parts I found on Amazon. Rather than order one specific value of a capacitor, or resistor, I found it was far more favorable, dollar wise, to instead order a complete kit with a huge assortment of values from Amazon.



As an example, I bought this resistor kit from Amazon for only $18 with prime over night delivery. It was 1/4 watt, 1%, axial wire lead, metal film resistors in every 5% value from 1 Ω to 10 MΩ. Plus I got fifty pieces of each value. Over 3,000 resistors. Try buying that many values and quantity from DigiKey or Mouser.

As a result, I have stocked up the ham shack with other great buy kits from Amazon for capacitors, trim caps, trim pots, transistors, ICs both analog & digital, etc.

73 de Jim, KH6HTV

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Thanksgiving Greetings from Hi-Des:

Dear HAM TV Friends, -- Thanksgiving is a special time to express our gratitude and appreciation.

We would like to take this opportunity to thank all our HAM TV friends around the world for your friendship, support, and enthusiasm. Your passion for amateur radio and video communications continues to inspire us. As a small gesture of appreciation, we have prepared a special Thanksgiving greeting video created by the HiDes team. We hope it brings a little warmth and joy to you and your loved ones. May your Thanksgiving be filled with happiness, peace, and wonderful moments with family and friends. Happy Thanksgiving to all our HAM TV friends around the world!

🎬 Our Thanksgiving Greeting Video:
https://drive.google.com/file/d/1gUk-b1vBoMF3SL7kKKgrXborP9R0CZ3S/view?usp=sharing

Warm regards --- HiDes Technology

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E-Bay Buyers Beware - RA18H1213 Supply Problems:

A favorite amplifier for many years for the ATV gang has been the Mitsubishi 23 cm amplifier module, the RA18H1213. The reputable USA supplier for me for many years has been RF Parts in San Marcos, California. Recently I tried to purchase one from RF Parts but they no longer sell it as a discontinued part. Bummer ! So I went to E-Bay. I did find lots of vendors in China offering it. Plus a couple in the US. Plus all their prices were in the same general range of what I had been paying RF Parts. Well I didn't want to wait a long time for stuff to eventually get here from China, so I ordered one from the US vendor. Well they took a very long time, before actually putting it in the mail to me. I suspect they might very well have gone to China to get it ? When I did finally get it after a long wait and installed it in my amplifier box, I found the module to be defective. It did amplifiy but at 800 MHz, not 1200 MHz. Ugh ! Sent it back for a refund. Then went to the second USA vendor listed on E-Bay and ordered another one. It arrived yesterday (11/13). Installed it. Guess what ? It too was defective. Low gain and it only amplified on 400 MHz, not 1200 MHz. But the real kicker was the mailing label. According to the E-Bay ads, I was purchasing from two totally separate vendors. Wrong. Both parts came from the same identical address in El Monte, California. Bottom Line -- E-Bay buyers beware -- Do NOT purchase anything from either "DAILY MART" nor "SMARKUP"

73 de Jim, KH6HTV, Boulder, Colorado

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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.

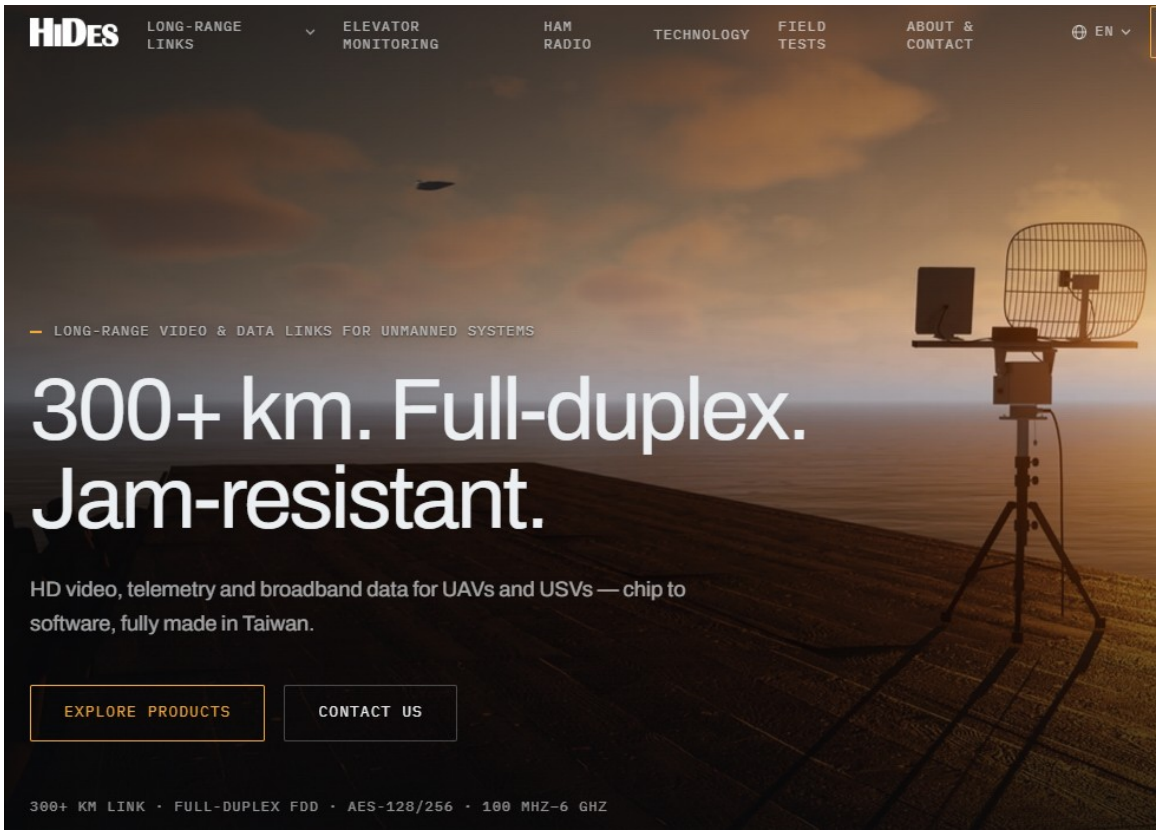
Boulder CO - W0BTV Details:

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



Check out the new web site
https://hides.com.tw/en/
(plus click on "ham radio")