

Amateur Television Journal

July, 2025
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BATVC web site: www.kh6htv.com

ATN web site: www.atn-tv.com



Jim Andrews, KH6HTV, editor - kh6htv@arrrl.net www.kh6htv.com

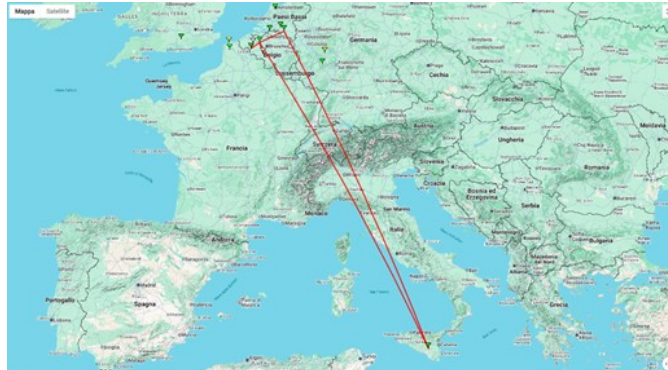


AH2AR 70cm to 23cm Cross-Band, ATV Link Repeater

These photos illustrate a build using a DeskPi rack 70cm / 23cm ATV link. RF Power output is 60 Watts on 23cm. The amplifier uses a board available from W6PQL Note that the configuration is

using the KH6HTV, model 23-11A, 23cm amplifier as an intermediate amplifier to drive the XRF-286 final amplifier. The various RF power level settings of the intermediate amplifier (as the driver) allows the flexibility to dial-in the RF power level to fit the application. The interesting element of this build is the use of a configurable DeskPi rack available from Amazon. The idea for employing this type of rack came from Joel, KD6W. The integrated hardware on the DeskPi is the crosslink that has been employed at Hamvention for the last three years, but repackaged into a portable setup. It's now "all tied down" as opposed to being loose on the bench and it's so much easier to set up. Weight is about 30 pounds.

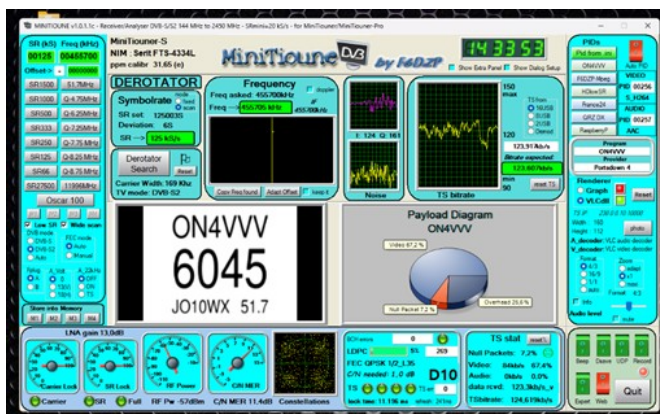
Cheers, Dave P. AH2AR, DARA, Dayton, Ohio



Report on IARU ATV CONTEST of June 2025

This competition, which is not only taking place in the Netherlands and Belgium but now also in a number of neighboring countries, started with a few spectacular D-ATV connections to Sicily.

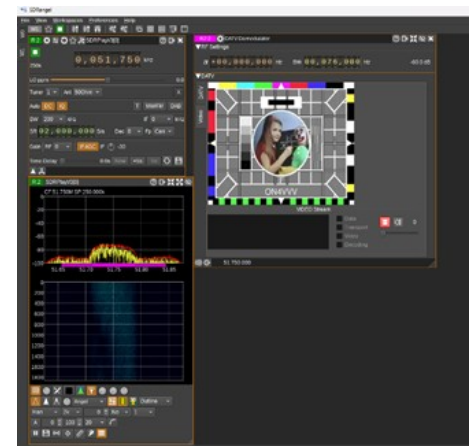
Rino IT9GNJ was already at the start of the contest standby on the DX-SPOT of the BATC and immediately answered my call to make an attempt on 6 meters. Only minutes later, after agreeing on Symbol Rate, Frequency and such, I got the message "got you" to read.



On the photos of the connection over a distance of **1735 km** I notice that my reception there in DVB-S2 and SR 125 with an upconverter and an MT with D10 or 10dB surplus could be received in QRA locator JM77FH. Here also is a photo of the 10dB S/N strength with which I was also able to receive Rino with the RX combination SDR ANGEL and SDR-PLAY while he was transmitting with a power of barely 40W. Rob PE1ITR was also able to make a 2-way connection with Rino a few hours later.

Rob PE1ITR has devised a mechanism to map sporadic E openings in the directions where OM's are QRV with D-ATV on 6m. More info can be found on his website: <http://dخالert.pe1itr.com/> as well as a map with the data of the last half hour for the 6m ES conditions towards Italy and Greece: <http://dخالert.pe1itr.com/dxspots-latest-datv50.htm> . A great initiative Rob, congratulations and many thanks for this fantastic tool.

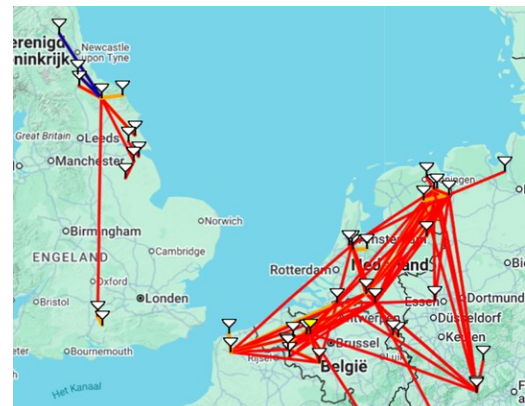
A few days later on Wednesday evening around 24h after the ATV round I looked at this card again despite the late hour and noticed that the band was "open". Then I called Rino IT9GNJ via the ZELLO ATV channels, and yes quite quickly another great connection, this time in DVB-S with a SR of 66ks on an RX combination SDR-PLAY SDR-ANGEL. On the spectrum of the SDR-ANGEL you can clearly see that my signal was about 20dB above the noise floor.



These successful contacts show that all kinds of phase distortions in the "skip zone" do not necessarily have to be an obstacle for DX contacts on the 10 meter band, where we are also not dependent on sporadic E phenomena.

In the meantime I am receiving quite a few messages from OM's in Sicily and the rest of Italy who are asking to make DX connections on 6 or 10m with our "low countries".

As is often the case during ATV contests, the conditions were quite miserable, but thanks to patience and perseverance, several OM's still managed to write down brilliant results. For example, I could traditionally be received on 70cm by PA0T Jaap over a distance of 307 km and by DL4FBN on 295 km. This while Jeff F4RZC also realized a connection with Lex PE1CVJ over 293 km. At 13 cm I passed Jack PA0BOJ with 113 km on the counter.



Guido ON1AFB also achieved excellent results despite his low altitude at home and on Sunday he went to work as a test/portable with excellent results from a nearby hill.

Rob M0DTS/P, who had driven especially to his favourite /P location for the occasion, made a fantastic 70cm connection with G8GTZ over a distance of 362 km, but despite several attempts he was unable to reach the continent this time.

In terms of international participation, this ATV contest with OMs from Belgium, the Netherlands, France, Germany, Italy and the UK was certainly a success.

73's de French, ON4VVV, Massemen-Wetteren, Belgium

EXPERIMENTS WITH D-ATV AT 10M (continued):



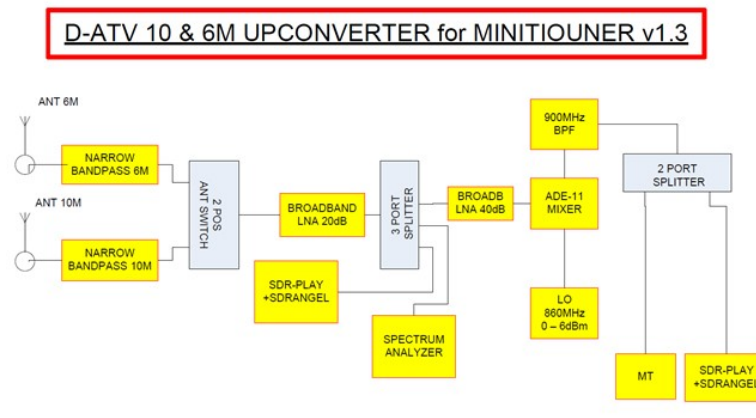
The band-pass filters I ordered from S1AFN have arrived and have been adjusted so that the signals around 27 MHz are better suppressed. I use 2 of these "tunable" filters in series.

To improve the result with the up-converter I have a wideband LNA giving 40dB gain added to my circuit. (see further block diagram of the new setup) The result obtained with a signal of +/- 10dB S / N can be seen below:

This new LNA (the 40dB version) not only offers a higher gain but also proves to be more robust against all kinds of too strong signals, the well-known golden container is relatively fragile in use and therefore easily breaks down. This new LNA that is also completely RF tight can be found on "amazon" for +/- 22 €.

Thanks to the better filtering and the larger pre-amplification, I now also achieve a much better result with my up-converter for reception with the Minitiuoner, where I no longer have any measurable loss in signal/noise ratio. So now I am completely ready for D-ATV experiments on 29.4 MHz, all that remains is to find counter stations.





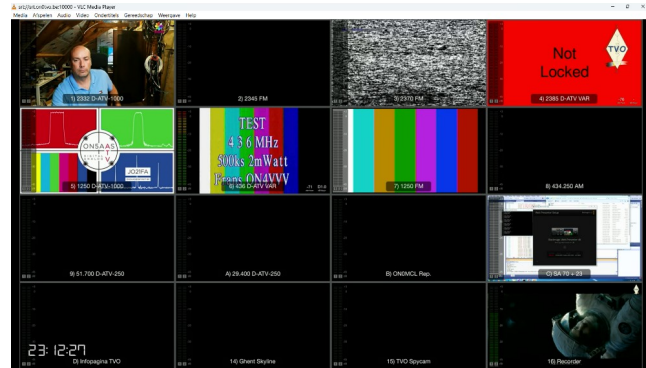
In the meantime I have contacts with a few OM's from Sicily and one from Canada to do a few DX attempts on 10 meters in RB D-ATV. For that I have a PA with which I can make more than 300W and a 4 element, monoband beam. For information for those who might be interested, the company Sirio from Italy offers very favourable 3 and 4 element yagi's for 10 m.

73's de French, ON4VVV, Massemen-Wetteren, Belgium

ON0TVO --- East Flemish ATV Repeater Update

A month ago a new output was added on 3 cm, the transmitter is currently working as a test on +- 10,280MHz with a SR of 4000ks and in 8PSK, full HD. This new output is a lot stronger than the (now partly defective) analogue output on 10,180MHz. The new mosaic looks like this:

You can already watch the stream with VLC player:
<srt://srt.on0tvo.be:10000>



NOT LOCKED only means that the RX does not see any signal coming in, in which case you will have to be patient during a TX test (max 30 sec) because the receiver is busy scanning the various preset SRs.

Testing with the new RX on 70cm that can receive both DVB-S and S2, also with an automatic SR of 250, 333, 500 and 1000ks and that can decode both H262, H264 or H265 are in progress. I come from Wetteren with barely 2mWatt over with an SR of 500ks. ON1AFB Guido also comes over brilliantly from +- 40 km with only a few Watts and Jeff F5RZC from the Calais area also does not have to open the tap completely from +- 130 km.

The input on 2385MHz is now also in service, this has a variable SR with 250, 500, 1000 and 4000ks. On the image of these new receivers you can read the strength with which you come across. On all D-ATV inputs you can not only go in QPSK, but also in 8PSK, 16APSK or 32APSK if you want to see an even better quality. The frequency 2385MHz at the top of the 13cm band has been specially chosen to meet the PA of Q100 users.

The 23cm input at 1250MHz will also get variable SR in the long term. The attentive reader will also have noticed that there is an input planned for 6 and 10m D-ATV each with an SR of 250ks. The rest of the new entrances including some with a fixed SR will gradually come into service very soon if the temperatures there in our "attic" will allow it. (yesterday it was 45°) The new mosaic and all peripherals donated by Guy ON4BHM are fully installed by Kenneth ON5KR assisted by Roger ON5ROG. The operation is still on 144.5625MHz but now by means of shorter DTMF tones of about 200 to 300 milliseconds long, these DTMF codes are always indicated at the bottom of the screen. If the entered DTMF code is recognized it appears as confirmation in the middle at the bottom of the screen. Please note that soon the 6cm D-ATV will be switched from DVB-S to S2 and from H262 to H264, so you may need a different receiver to receive these.

ATV NET: please note the adjustment of the start time. For a few weeks now, the ATV round starts at 8:30 PM instead of 8:00 PM. Every Wednesday evening at 20:30 we meet on 144.5625MHz for a small round, do you have, or do you want information about an ATV related subject, or do you want to try something then that is the perfect moment to let us hear from you. If you are too far to reach us via 2m then you can also call us on the Zello channel "ATV Belgium" or register via the chat of ON0TVO on the BATC. <https://batc.org.uk/live/onl12658>

73's de French, ON4VVV, Massemen-Wetteren, Belgium

Narrow Band DATV Progress Report:

Last weekend, I made good progress on getting sync encoded into the NBTv signal. It is still not 100% as there are issues in the recovery of the information, but it is ongoing work. To fit the sync into the modulated bandwidth, I needed to increase the level of audio compression in the encoder by limiting the amount of R-L signal. With this extra level of processing, I added in more SDR blocks to get all to work well, but the good thing is that it is hard to notice the higher level of compression. The way the sync encoding works is by taking the difference of two sine waves to create the reference sine wave, which uses hysteresis to set the trigger point and help eliminate noise. By taking this approach, I can also use these two sine waves as a phase and amplitude reference to set the Automatic Gain Control (AGC) and the Automatic Phase Control (APC).

Now, by having a sync signal available, it can also be used for CDMA in finding the start point of the PN codes, which was an issue up to now. I have also added a signal processing block to the GNU Radio modulator and demodulator to do extra Video, Audio and sync processing; therefore, the new updated encoder/decoder GUI will soon be available, which I will place up on GitHub at a later date. In the files I have sent, there is a picture of the new form layout of the decoder; both the encoder and decoder use three UDP ports to communicate with GNU Radio. One is to send the compressed video, audio and the

dual wave tables for the sync, as this is required to provide an independent path for the sync timing. A good part of this signal processing is done within SDR blocks within GNU Radio. The other diagram shows the new signal processing blocks used for improved performance, as it has become part of the GNU Radio side.

This project has come a long way since I started this back at the start of 2022, opening up HF for ATV/DATV Dxing.

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

DATV demo at Sierra Nevada Amateur Radio Society Field Day

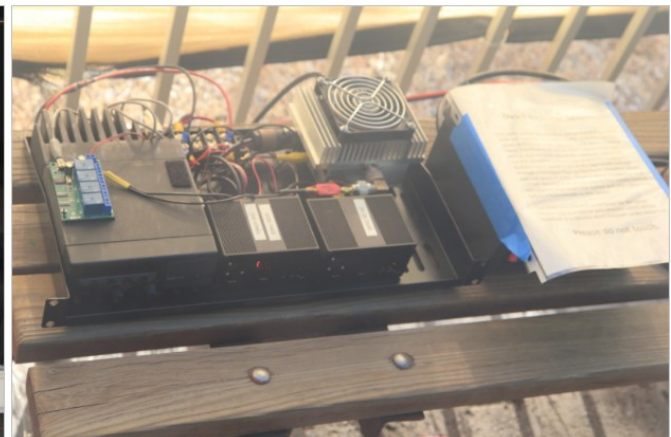
Field Day Demonstrates DATV --- W6US brought the new DATV system to Field Day and set it up to transmit from his station up at his RV near the horse arena to the actual repeater behind the fire pit in the main area, and then to a receiver with a monitor on one of the tables. We started with a camera feed, but Murphy struck and it failed so we hooked the video output of W6US' logging computer to provide a signal. You could have watched Jim make lots of FT8 contacts without having to walk up to his station.



received 1080P broadcast quality DTV signal



W6US station at Field Day-Video transmitter and amplifier are on the right side while the Elecraft K3s, P3 and computer were used to make contacts.



DATV crossband repeater. This will be put up on Ophir mountain this summer. It receives on 1.243 GHz and transmits on 423.000.

The large unit on the left side of the rackmount is a 2 meter radio with a DTMF board on top for control. We were just sending the TV signal across our FD site. This was the first 'field test' and it survived operating in full sunshine in 90° weather...

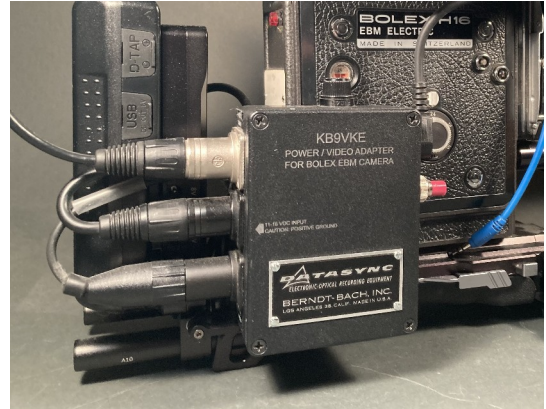
73 de Jim Shepherd, W6US, Sparks, Nevada, USA

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Hints & Kinks:

Hi Jim -- I noticed that you use Hammond die cast boxes for your products. Our local library makerspace has a laser engraver which I found works really well to remove Hammond's powder coat paint, leaving the bare aluminum behind as lettering. Makes my homebrew projects look like factory products! The library's machine is a 50 W CO2 laser.

My first engraving project wasn't ham-related but proved the concept, photo attached. This is an adapter box for a 16mm movie camera, "KB9VKE" brand; please disregard



the Datasync label which is just a decorative 'bumper sticker'. I had originally used P-touch adhesive labels on this box but they didn't stick well to the powder coat. Anyway, just an idea for you . . . Thanks much for your newsletter and support of the ATV community!

73 de Mark, KB9VKE, Algonquin, Illinois, USA

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FEED-BACK on Field Day Participation:

I liked Jim's comments re. FD. I feel it is better to let people operate, even if they are not a "seasoned" contestant. And especially if they are a newly lic. Op. Operating is a great way for them to learn with people there to mentor and enjoy HF/VHF contesting. But just "sitting there watching" is a turn off. — Jon, N0JK, Lawrence, Kansas, USA -- QST editor for "The World Above 50 MHz"

Point well taken. It depends on the group, but Field Day is a great OPPORTUNITY to get EVERYONE on the air and experience operating.

I had 2 ARRL employees join me at a world class winning contest station on Bonaire (PJ4G) last December. We decided to hook-up a radio and hand out some contacts during the ARRL 10m contest. One of them, a young man from the ARRL Lab, had zero experience contesting. We loved watching him evolve with the experience of making contacts and the smiles were ear to ear!

Deciding how the effort will be staffed needs to be agreed in advance to level set to avoid misunderstandings or hurt feelings.

Thanks for your email. And per usual GREAT job Jim.
73 de David, NA2AA, Newington, CT, --- ARRL CEO



David, NA2AA

San Diego CubeSat Satellite Update:

Our LEO-N, Near Earth Network is operational through our FSOC transponders at 1200 km LEO and now linked together at a distance of 9 km apart. The optic communications is working well video at 4k San Francisco to San Diego. We'll have a ground station in Hilo, Hawaii [Portable] for a test link back to California. Cubesats maintaining orbits. Our version of FSO transponders.

73 de Mario, KD6ILO, Oceanside, California, USA

THANK YOU ! In our last issue, I had a plea for more ATV articles from our readers. As a result, I immediately received several which all appear here in this issue.

Thank you, 73 de Jim, KH6HTV

WOBTB 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/>

WOBTB 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. 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 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 800+, 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. 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

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5.8/2.4 GHz FM-TV Gear For Sale:

Since I've only used this stuff once in the three years, I am giving up. I'm letting the following go:

- (2 sets) TS832 5.8 GHz xmitter & RC832 5.8 GHz Rcvr- \$15 for the pair
- (1) TS832 5.8 GHz xmitter -- bad, may be some parts?? Free
- (1) 5.8 GHz rcvr antenna, flat plate, RP SMA conn. \$8
- (4) Duracell 12-SF2 12V 5 AH AGM batteries w/pigtails to power the above- \$20 ea.
- (1) L-Com model HG4958-22EG, 5.8 GHz grid dish ("BBQ dish") antenna
(list on Lcom is \$127) \$70

Also, I have the following 2.4 GHz stuff that someone can have free, thanks to Jim:

- (1) Wavecom 4 channel 2.4 GHz rcvr
- (1) Radio Shack 4 channel 2.4 GHz xmitter

Finally, I have a 2.4 GHz, 17 element yagi I got at a hamfest- asking \$8.

Larry, N8GGG, Westminster, Colorado, lfn3@comcast.net 303-255-2199

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W0WNV Estate Equipment for sale 7/12/25**Make offer on each Item of interest.****Local pickup at K0RZ,s QTH or FedEx boxing and shipping is extra.****Item is unavailable if number is red**

Item #	Description	Condition
1	REA digital AM Modulation Monitor	Good
2	Samlex 1223 12V power supply	Good
3	Samlex 1223 12V power supply	Good
4	Behringer B1 Electret microphone with boom microphone stand	Good
5	Behringer phantom power supply	Good
6	Triplett 4200 frequency counter HF,VHF	Not tested
7	RF Concepts 440D Mini Power amplifier 440 MHz	Not tested
8	Alpha Delta-4 with SO-239 connectors	Not tested
9	Alpha Delta-4 with SO-239 connectors	Not tested
10	MFJ 1026 noise canceling unit	Good
11	MFJ 1275 sound card to rig interface	Not tested
12	MFJ 1275 sound card to rig interface	Not tested
13	Weller 8250A 250Watt Soldering Gun	Good
14	SoftRock direct conversion SDR receiver, use with a computer	Not tested
15	Icom ID-880H dual band D-Star transceiver with RT Systems programming cable	Good
16	K7DDY AM 160 Meter Senior Transmitter	Needs repair
17	K7DDY AM 80 Meter Senior Transmitter	Good
18	K7DYY Super Senior 160/80 375 Watt AM transmitter	Needs repair
19	Behringer CX 2310 Audio Crossover unit	Good
20	3U Rack cabinet	Good
21	Astatic D-104 microphone with K7DYY preamp installed used with the super senior	Good
22	Astatic D-104 microphone with electret element and K7DYY preamp installed	Needs repair
23	MFJ 269 Pro Antenna Analyzer	Not tested
24	Kenwood SP-940 Speaker	Not tested
25	Radio Shack Power Speaker requires 12 VDC	Not tested
26	Drake TV-3300 low Pass filter	Not tested
27	Telonics TG9050A 50 Ohm switchable attenuator, 0.5 to 82.5 dB	Good
28	Johnson Viking Ranger bought from W0ZUS	Good

W0WNV Estate Equipment for sale 7/12/25**Make offer on each Item of interest.****Local pickup at K0RZ,s QTH or FedEx boxing and shipping is extra.****Item is unavailable if number is red**

Item #	Description	Condition
29	Johnson Viking 6N2 transmitter used with the Ranger	Not tested
30	Box of Johnson Valiant parts including coils, switches, and transformers	Not tested
31	IP9825 120V four outlet IP remote power switch	New in box
32	IP9825 120V four outlet IP remote power switch	Not tested
33	Kenwood MC-60 microphone with stand in original box	Not tested
34	Dow Key Relays with SO-239 connectors 5 each 110 VAC and one 12 VDC	Not tested
35	Sony ICF-SW7600GR portable radio broadcast and SW	Good
36	Radio Shack Antenna Rotor	New in Box
37	Icom AT-180 Antenna Tuner repaired by Icom in box	Not tested
38	Ameritron ATR-30 3KW HF antenna tuner	Good
39	Box of 3 each stacked quad boxes with high current relay installed in each stack	Used
40	Box of 10 each quad boxes with duples outlets in each	Used
41	Bird 1KW dummy load model 8251	Good
42	Behringer CX-2310 Audio Crossover	Good
43	Kenwood TS-2000	Good
44	Box of assorted Wall Worts and packaged power supplies	working
45	Box of assorted power strips	Good
46	Box of assorted coax adapters	Good
47	Box of assorted audio adapters	Good
48	Alpha Power Alpha 99 HF Amplifier	Good
49	Vibroplex Bug Gray Base	Good
50	JFW 50FK-30-100 30dB 100 Watt attenuator rated to 1 GHZ	Good
51	Bag of BNC UHF, N TNC coax connectors	New/Used
52	Bag of assorted toggle and push button switches	New/Used
53	Yaesu MH-18A2B and MH-12A2B Speaker Mikes	Not tested
54	Icom IC-92AD dual band D-Star handheld with RT Systems software	Good
55	Box of 3 D-Star DVAP/Raspbury PI Hot Spots	Not tested
56	Shark Open Spot Version 1	Good
57	Astron VS-35M 12VDC 35 Amp linear power supply	Good
58	Astron RS-20M 12VDC 20 Amp linear power supply	Good
59	Telewave 44AP Wattmeter, 20-1000MHZ, Watt range 5,15,50,150,500	Good
60	Bird Model 43 peak reading wattmeter with 100C, 100D, 1000H, 2500H, 5000H	Good
61	Superior Powerstat N108, 120V to 0-132V out at 2.25 amps	Good
62	Superior Powerstat 118, 120V to 0-140V out at 7.5 amps	Good
63	Tripp-Lite Model 1050 Smart UPS no battery	Good
64	Box of assorted new and used 2 GHz audio video links with 5" B&W monitor	Good
65	Box of assorted two line telephones some cordless	Good
66	JCPenney 4 tray metal fishing tackle box	Good

**Interested in any of the above items ? -- Contact Bill McCaa, K0RZ,
 Boulder, Colorado at 303-499-1936
 or via e-mail at wmccaa@comcast.net**