



The VHF Transmitter



Keystone VHF Club, Inc.

W3HZU

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August/September, 2017

The Summer Corn Roast & MiniFest

By Dick Goodman, WA3USG

On Saturday, August 19th we held our Summer Corn Roast and MiniFest at the club. The MiniFest started at 8 AM and we had 7 people selling items in addition to the club which had three tables full of equipment for sale.



We had a nice row of tailgaters that arrived by 7:30 and were set up by 8. Eric Smyder, KB3CNH was set up & selling stuff on the lawn in front of the club house. Some good deals were had! I purchased a tiny dual band 2 meter/70cm FM rig for \$50. There were also DMR radios for sale.



Continued on Page 4

Digital Amateur Television (DATV)

By Jeff Elliott, W3JVU

A few of our members are currently pursuing getting on Digital Amateur Television (DATV). Right now, Jeff Elliott, W3JVU; Tony McMonagle, KC3EED, Fred Merker, K3TAZ; Nate Kirschman, WN3I and Dick Goodman, WA3USG are looking at available equipment and cost. Jeff has taken the lead and has actually purchased equipment to evaluate. Here are some of his comments:

The price of the JahyShow DVB-T receiver hooked me, only \$16. The price was good news but what was the cost of a transmitter? The UT-100 DVB-T transmitter and receiver was only \$250. Now I was ready to transmit DATV. Then reality set in, the software and digital settings were not user friendly. I took a short trip through a trial and error maze and finally solved that problem.

My software digital radio loved the signal but the UT-100 and the JahyShow DVB-T receiver couldn't find or lock on to the 439.250 MHz signal. Checking with other HAM's around the country, I realized they too had experienced the same DVB-T reception problems. And the solution was particularly tricky to fully diagnose. Some tuner dongles can't lock onto either a weak or very strong signal. The signal to noise ratio and the digital coding must be perfect to lock on. The solution was to find other HAM's who had attempted it before me.

Fred Merker/K3TAZ, of our DATV team, sent an e-mail to Mike Collis/WA6SVT, a CBS engineer and DATV guru, requesting programing help. After reading Mike's e-mail, I decided to upgrade to a separate transmitter HV-310 E and the receiver HV-110. This new equipment and refined software will allow the DATV team to share a configuration bin file with others who want to do DATV. The team will develop a plug and play configuration for the UT-100 Modulator/Demodulator dongle.

Coming soon: Our plug and play recommendations for DATV.

Continued on Page 5

Club Fox Hunts ... a new idea

By Dick Goodman, WA3USG

Over the course of the last few years, we have talked about holding club "Fox Hunts" ... also known as Transmitter hunts. Last year during the summer, we held one on a normal Thursday evening tech session. There were about 6 folks looking for the VHF transmitter that Tim, W3TWB hid out in the woods behind the club. Our main problem was that the transmitter didn't stay up long enough for most of our inexperienced participants to get a good fix on it.

I just spent about 20 minutes on the air with **John, K3NXU** and he had a GREAT idea. Take a dual band HT with a cross band repeat function. Hide it out in the woods and then activate the VHF transmitter via cross band repeat using a UHF frequency. In this manner, the transmitter can be on line long enough for the hunters to get a good fix. Actually, the hunter could activate the transmitter by himself. It would take a minimum of only 2 people, one to hide the transmitter, and at least one hunter. All the hunters would be given the UHF input frequency so they could key the VHF transmitter as often as desired. What a great way to develop the necessary skills to become a successful hunter!

John has also offered to donate to the club, a 1 watt HT with the cross band repeat function. Using this, it would be easy for anyone to hold impromptu Fox Hunts. I never thought of using this method to key the transmitter in the "Fox" but it seems remarkably simple and efficient.

A lot of our members have Tape Measure beams. We also have a few extra that we built that are located in the repeater room. We will have good weather over the next couple of months to try this. **Thanks John!**

OUR NEXT TWO MEETINGS

September 7th at the Club Site & Oct 5th at the EOC

KVHFC Data Net restarted on Sept 5th

Our first "End of Summer" Data Net was held on Tuesday at 8 PM. Unfortunately, this was the evening that severe thunderstorms, power outages, and a tornado hit the York area. I know that at least two of our members were without power since about 4:30 in the afternoon. I think that the weather up here in the Harrisburg area might have scared a few folks off too. During the net I heard a few rumblings of thunder. We had the following check-in's:

- WA3USG: Dick Goodman (NCS)
- KC3AB: Doug Good
- KR3EE: Rich Reese
- WB3HNA: Lee Lindsay
- KC3JD: Jack Dellinger
- N3RSY: Mike Weiskopff ** Not running digital but interested
- KB3YVS: Chuck Bigelow ** Runs digital from home

We ran about 45 minutes of FLDIGI & FLMSG practice and about 15 minutes of SSTV.

Schedule of Keystone VHF Club Sponsored VE Testing for 2017

Laurel VE Group Testing sponsored by the Keystone VHF Club are held the second Saturday of the odd months. All tests are at 10 AM, pre-registration is appreciated except at the Hamfest. Contact, Ralph Brandt at ralph.brandt@comcast.net or phone 717-792-1017.

Location is the York EMA Office at 120 Davies Road, York,

Testing dates: Sep 9 Nov 11

Keystone VHF Club sponsored testing by the Laurel V.E. Group. These sessions are held in the Training Room at the York County EOC, 120 Davies Rd., York, PA. Testing starts at 10:00 AM. Preregistration is appreciated. *Contact Ralph Brandt at:*

Ralph.brandt@comcast.net or phone 717-792-1017 to register.

VE exams will be sponsored by Southern Pennsylvania Communications Group (SPCG). These sessions are held at the Shrewsbury Borough Building, 35 Railroad Ave., Shrewsbury, PA. Testing starts at 9:30 AM. *The point of contact for these sessions is Virginia Moore, N3LZS at 717-252-1694*

Oct 14 Dec 9

Local area nets:

Capitol Area Traffic Net starts **Monday at 8 PM** on the South Mountain Radio Amateurs (SMRA) repeater on 146.46 (67.0 tone), 1 MHz offset.

The Combined Club ARES/RACES Net meets **Monday at 8:30 PM** on the Keystone 146.97 Repeater (Tone: 123 Hz).

South Mountain Radio Amateurs (SMRA) Net on **Monday at 9 PM** on the 145.43 (Tone: 67 Hz) repeater located in Mt. Holly Springs.

The Keystone VHF Club Digital Net on **Tuesday at 8 PM** on the York 146.97 Repeater.

The Keystone VJF Club ELMER Net on **Tuesday at 9 PM** on the York 146.97 Repeater right after the Digital net

A local FM Simplex Net runs **Thursday at 8:30 PM** on 146.55 MHz.

South Central PA 10 Meter Net **Friday at 8 PM** 28.495 MHz USB

Ham Shack Talk Net - Monday at 9 PM: 28.335 MHz.

Delaware Lehigh Valley ARC Net - Sunday 4:00 PM: 28.430 MHz

Do Drop In net - Sunday 8:30 PM: 28.450 MHz

Penn- Mar Club net - Friday. 8:30 PM: 28.495 MHz.

10 Meter Ragchew Net - Every evening starting 7:30PM: 28.600 Mhz

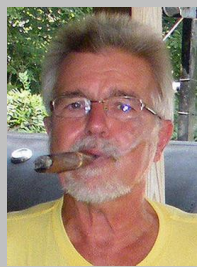
6 Meter Magicians Net from Pottstown Wednesdays at 8:30 PM on 50.130 USB. At 9 PM, they switch to 50.400 and run A.M. modulation and call themselves the Mini Boat Anchor Net.

The KVHFC 6 Meter Activity Net run by Steve Cruse, K3WHC meets on 50.140 MHz USB on Wednesday evenings starting at 8:30 PM.

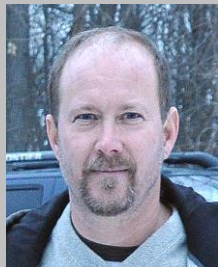
Trustee's Report



Tim, W3TWB



Dick, WA3USG



Jeff, KB3RCT

Not a whole lot happening now. Our Minifest really got rid of a lot of unused equipment from our storage shed. Now that it's in good shape, let's try to keep it that way.

Scheduled Club P.S. Events for 2017

* **Sept 9, 2017 - KTA Superhike *** SJ**
POC: Ken Wiggins, N2DYK n2dyk1940@yahoo.com

* **Oct 14 - 15, 2017 - MS Bike Tour Gettysburg *** SJ**
POC: Sandy Goodman, N3ECF n3ecf@arrl.net

* **Nov 5, 2017 - Michaux Team Challenge *** SJ**
POC: Dan McGlothlin kb3mun@mcglothlin.us

* **Dec 24-25, 2017 - Glen Rock Carolers**
POC: Stan Walters, AB3EM abacuspc@comcast.net

**** SJ - Your Slim Jim is advisable here**

Radio Station WWV

NIST radio station WWV broadcasts time and frequency information 24 hours per day, 7 days per week to millions of listeners worldwide. WWV is located near Fort Collins, Colorado, about 100 kilometers north of Denver. The broadcast information includes time announcements, standard time intervals, standard frequencies, UT1 time corrections, a BCD time code, geophysical alerts and marine storm warnings.

Broadcast Frequencies

WWV operates in the high frequency (HF) portion of the radio spectrum. The station radiates 10 000 W on 5 MHz, 10 MHz, and 15 MHz; and 2500 W on 2.5 MHz and 20 MHz. Each frequency is broadcast from a separate transmitter. Although each frequency carries the same information, multiple frequencies are used because the quality of HF reception depends on many factors such as location, time of year, time of day, the frequency being used, and atmospheric and ionospheric propagation conditions. The variety of frequencies makes it likely that at least one frequency will be usable at all times.

Antennas

The WWV antennas are half-wave vertical antennas that radiate omnidirectional patterns. There are antennas at the station site for each frequency. Each antenna is connected to a single transmitter using a rigid coaxial line, and the site is designed so that no two coaxial lines cross. Each antenna is mounted on a tower that is approximately one half-wavelength tall. The tallest tower, for 2.5 MHz, is about 60 m tall. The shortest tower, for 20 MHz, is about 7.5 m tall. The top half of each antenna is a quarter-wavelength radiating element. The bottom half of each antenna consists of nine quarter-wavelength wires that connect to the center of the tower and slope downwards to the ground at a 45 degree angle. This sloping skirt functions as the lower half of the radiating system and also guys the antenna.

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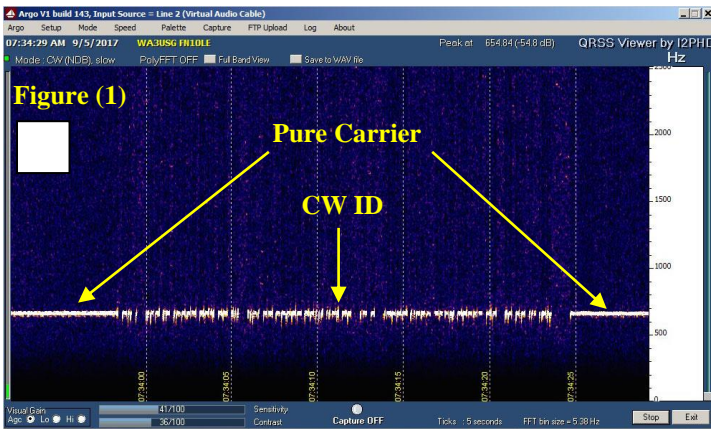
Aircraft Scatter Communications

By Dick Goodman, WA3USG

We Amateurs communicate by reflecting or refracting our signals off of a lot of different things. Traditional HF communications take place by refracting our signals off the Ionosphere. On VHF & UHF, we are capable of reflecting our signals off the Moon. We can also refract these signals off of the ionized trails of meteors as they enter our atmosphere.

Steve Cruse, K3WHC has been discussing another mode of communications on our Wednesday Evening 6 meter activity net, Aircraft Scatter ... reflecting our signals off of the metal surface of large airplanes. Could this be possible? Do we have the capability to detect VHF & UHF echoes from something as small as an aircraft at the power levels that we normally utilize?

The first thing that we need for this experiment is a reliable & constant signal on VHF or UHF. The WA1ZMS 2 meter beacon located in Bedford, Virginia (FM07) fits this requirement nicely. It transmits at a power level of 500 watts into a set of Yagi's aimed 60 degrees. Its frequency is 144.285 MHz. It is hoped that when conditions are right, this will be heard in Europe. The ERP in that direction due to antenna gain is 7 KW! I find that I can copy this beacon in Mechanicsburg at anywhere from an S3 to an S8 depending on time of day and conditions. The beacon transmits a CW ID for 30 seconds, followed by a pure unmodulated carrier for 30 seconds. It repeats this 24/7.



The audio output of the receiver copying this beacon is fed to the input of the computers sound card. The spectral analysis software "ARGO" is then executed and a plot of the beacons transmission may be seen on the screen. One screen takes about 45 seconds to fill. You can see here the pure carrier, then the transition to CW for 30 seconds, then back to the pure carrier again. This software will actually display signals that are too weak to copy by ear.

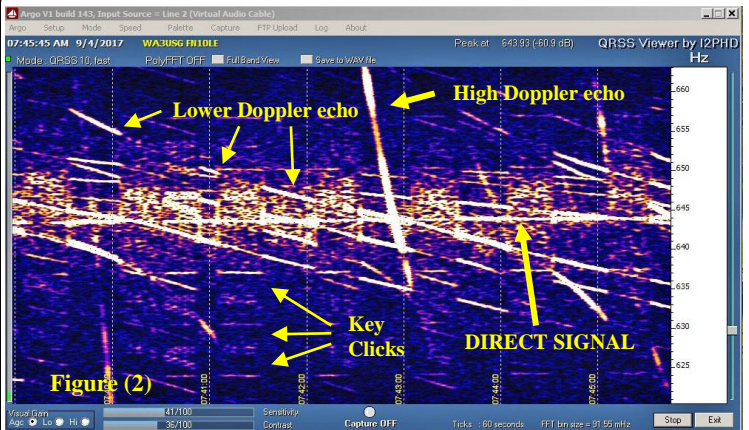
So what would the characteristics of a signal reflected by an aircraft be?

1. It would probably vary considerably in signal strength as the positional geometry of the aircraft changed between the transmitter location and my receiver location. Since these aircraft are flying at 30,000+ feet, at times the signal levels would be stronger than the signal being received directly.
2. As the same positional geometry between the transmitter & receiver changes, the beacon frequency should change due to Doppler shift. On 2 meters, this would result in a frequency shift of between 0 and 40 Hz. This shift depends on the relative change in velocity of the aircraft in relation to the beacon transmitter and the person receiving it.
3. If there is a way to know the position of aircraft in relation to the transmitter & receiver, reflections should be able to be correlated to a particular aircraft.
4. When the reflections are close to the same frequency as the direct signal (due to low Doppler shift), the signal strength of the direct signal should vary. If the reflection arrives at your receiver in phase, it will constructively add and the signal will get stronger. If it arrives out of phase, the signal will become weaker.

*** Note: Quite often while on 2 meter FM when talking to someone who is not full quieting (and are fairly distant), there is suddenly rapid QSB on their signal. I wonder if the cause of this could be contributed by the In-phase & out of phase mixing of aircraft reflections with the direct signal.

Could we use a program like ARGO to determine whether or not these reflections exist and may be detected? Looking at figure (1) above, the direct signal is quite obvious. It is easy to tell when the beacon is in the "pure carrier mode" and when it switches over to CW.

It's hard to tell much about the characteristics of the signal in Figure (1) however. If there are reflections, and there is Doppler shift, it will be hard to see. Doppler shift on 2 meters should only be about 40 hertz max and you can see that this graphic covers 3 KHz in bandwidth. A Doppler shift of 40 Hertz would not be detectable at this resolution. If the top to bottom span of this graphic could be reduced from 3 KHz to about 50 hertz, any Doppler would become apparent.



Fortunately ARGO allows you to set the frequency span to any value desired. In figure (2) above, the frequency span is set for about 50 Hertz. This spreads out the information in figure (1) by a factor of almost 100.

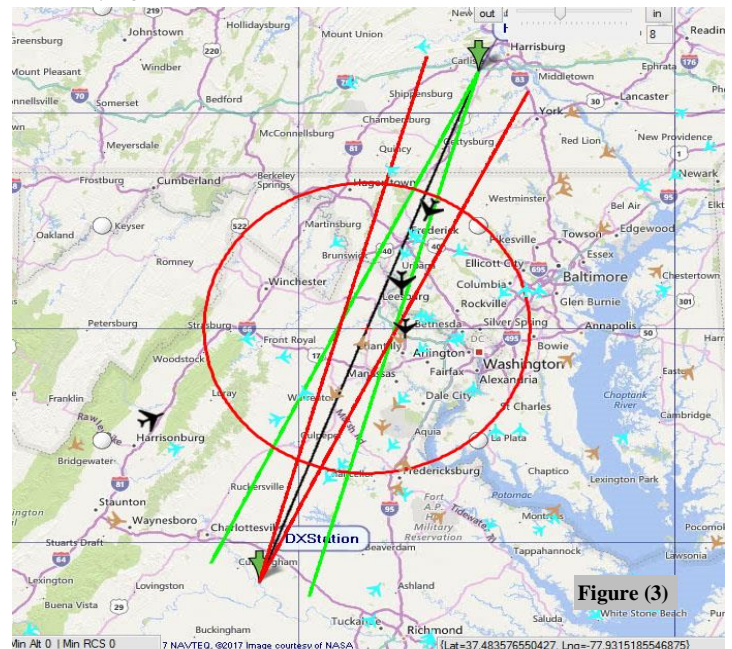
There are undoubtedly many aircraft reflections in figure (2). Everything in this graphic has been created as a result of interactions from the aircraft with the direct signal. This also shows imperfections in the signal itself.

Looking at the key clicks for example. You will notice that these only appear during the time when the beacon is generating a CW ID. During the 30 second period when there is just the pure carrier, things look pretty clean. Even though the signal looks fairly dirty, keep in mind that all of this is within about 10 Hertz below & above the carrier, it is not audible.

Also notice the strength of the direct signal compared to the reflections (the stronger the signal, the thicker & whiter the trace is). The strongest signals are actually coming from the reflections in many cases. Another interesting phenomenon is that in cases where the reflection is strong, and is more than about 20 hertz below or above the direct signal, you will start to hear what sounds like a second signal. If this happens when the beacon is IDing, the second signal will be sending CW in perfect synchronization with the direct beacon signal.

While this is all very interesting in its own right, the bottom line is that in many circumstances the reflection can be copied a considerable distance further than the direct signal. The final solution of this equation is knowing when a large aircraft is going to appear within the beam width of both stations trying to communicate.

Continued on Page 4





Sixty (60) Chicken halves were started at about 11:30 and were cooked to perfection.



We had over 60 members attend this year's Corn Roast. All 60 chickens were spoken for and we had plenty of covered dishes ... THANKS GANG!!!



Of course every year there's always someone who really "gets into" the corn big time! This year it was Tony McMonagle, KC3EED!



Figure (3) on the previous page is the output screen from a new application called "Aircraft Scatter Sharp". This app derives aircraft data in real time. It captures and displays graphically aircraft position data from internet plane servers, from a local RTL1090 server, or both.

Home	Midpoint	DX Station	Aircraft
Call			
Grid	FN10LE	FM19EA	FM07VT
Lat	40.187500	39.001517	37.812500
Long	-77.041667	-77.634783	-78.208333
km to Plane	295.8	165.8	86.0
AZ	184.50	Set Home and DX Positions	169.83
Skew	16.84		90.36
EL	0.42		4.56
Alt	330	0	330

Primary Alert	Second Alert	Skew Lines	Key Capture	SQLite Database
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Home	DX Station	Reflector	Frequency
PWR	30	30	50
Gain	37	2.32	37
BW	500	500	2.32
NF	1	1	222
Take Off	-0.5	-0.50	432
km	74.9	74.9	903
Alt	0.0	0.0	1296
dBm	-118.6	-118.6	2 GHz
Marg	27.4	27.4	3 GHz
Dop	0.0	0.0	5 GHz
Total Path Loss dB	-237.4	Aircraftscatter Angle	10 GHz
Maximum FE dB		Troposcatter Angle	24 GHz

This is the applications input data screen. It allows you to enter the location of the station that you want to work by using his 6 position Grid Square locator. You can also select the type of aircraft that you want to use as a reflector (the larger the aircraft, the better). You may also input the frequency (band) that you intend to use. This parameter is important because this program calculates the Doppler shift of whatever aircraft it is tracking and that will vary considerably from band to band. Please note that this application does not actually provide the vehicle to accomplish aircraft scatter comms, it predicts when this should be possible. *Using this app with ARGO, I found that I could definitely correlate the aircraft displayed to reflections received via ARGO.* I had no trouble installing and configuring this app.

The scatter communications itself could be accomplished using CW or SSB. Another distinct possibility is using some of the modes provided with WSJT-X.

ISCAT, MSK144, and optionally submodes JT9E-H are "fast" protocols designed to take advantage of brief signal enhancements from ionized meteor trails, aircraft scatter, and other types of scatter propagation. These modes use timed sequences of 5, 10, 15, or 30 s duration. User messages are transmitted repeatedly at high rate (up to 250 characters per second, for MSK144) to make good use of the shortest meteor-trail reflections or "pings". ISCAT uses free-form messages up to 28 characters long, while MSK144 uses the same structured messages as the slow modes and optionally an abbreviated format with hashed callsigns.

Knowing the Doppler shift of the received echo becomes more important as the band of operation becomes higher in frequency.

It should also be noted that aircraft scatter seems to optimally work best on 1296 MHz.

- Aircraft Scatter Sharp download: <http://www.nitehawk.com/w3sz/AircraftScatter.htm>
- User manual: www.nitehawk.com/w3sz/W3SZ-NEW-AirCraftScatterPackRats2013.pdf
- ARGO download: <http://www.weaksignals.com/>
- WSJT-X download: <https://www.physics.princeton.edu/pulsar/K1JT/wsjt-x.html>
- User manual: <http://physics.princeton.edu/pulsar/k1jt/wsjt-x-doc/wsjt-x-main-1.7.0.html>



Call (717) 767-1420 or email sales@hagenselectric.com

Hagens Electric is located at 2030 Carlisle Rd York, PA 17408

FOR SALE/WANTED

The following items are for sale from the estate of Silent Key Charlie Kuhn, KC3DRS. Charlie was very active in many of our Public Service Events during his short stint in the club. He also arranged for over 4 cubic yards of concrete to be donated for the EME dish project. The items below were used very little and are in excellent condition.

Item Name & Model	Current Price	Asking Price
Ameritron RSC4 Remote Antenna Switch	\$150.00	\$50.00
Diamond V2000A Tri-band base Antenna (6M, 2M, 70cm). In the air for about 2 years	\$159.00	\$ 90.00
12 Volt Gel-Cell battery, about 35AH Used very little, excellent for Go-Kits	\$100.00	\$ 30.00
Deltran Battery Tender, good Condx Will keep above battery well charged	\$45.00	\$30.00

Please contact Dick, WA3USG at rickwa3usg@gmail.com or at 717-697-2353 if interested in any of the above items.

WB3LKB Equipment For Sale - Inventory

Qty	Equipment	Model
1	Teac 1/4" Reel to Reel tape recorder	A-2300SX
1	Onkyo cassette deck	TA-2600
1	Realistic audio mixer	32-1200C
2	Kenwood CD player	DP-M7730
1	Tektronix oscilloscope	453 & manual
1	Sony AM/FM stereo	STR-AV1020
1	Interstate Log-Linear Sweep Generator	F37
1	Heathkit LV power supply	IP-27
1	Heathkit Marker Sweep Generator	IG-57

Contact Fred Merker, K3TAZ
k3taaz@hotmail.com
(410)876-3173

From Jack Dellinger, KC3JD:

On behalf of Ms. Darla, KB3YUY, thank you for your assistance in selling her station. She still has a set of Heil Pro Set 3 studio headphones, which weren't listed. If you know of anyone who may be interested in them, they can contact her at **443-691-9795**.

They've only been used twice and are in new condition with original box and accessories.

I think they sell for over \$100. I don't know what she wants for them. I'm thinking **\$80** or so.

Moving to restricted community, radio equipment must go.

Kenwood TS-2000 (Shack in a box)	\$1000
Astron 35A power supply	\$145
Ameritron ATR-30 Antenna match	\$300
MFJ-260 300w Dummy load	\$20
Hustler 5BTV 5-band Vertical Ant.	\$150

All equipment in very good, workable condition and all prices firm.

Contact Darla Smith KB3YUY 443-691-9795 to arrange inspection and operation. Stewartstown PA 17363

*** Note: This was received at the beginning of June so some of this may no longer be available.

Digital Amateur Television (DATV) ... Continued from Page 1

Here are some of the candidate equipment that Jeff Elliott, W3JVU has acquired and the DATV team is currently evaluating.



HV-310 is the most cost-effective solution to transmit long range HD video for FPV application with digital TV technology. The video input source from either HDMI/DVI or composite (CVBS) is encoded in H.264 streams, modulated with the open industrial standard EN 300-744 DVB-T/ARIB STD-B31 ISDB-T/ABNT NBR 15601 ISDB-Tb, and then transmitted over cable or air. All DVB-T/ISDB-T/ ISDB-Tb compliant receivers, including SetTopBox, Digital TV, PC/NB USB DTV dongle, or DTV capture card can receive, and watch the video from a HV-310 via the standard coaxial cable or antenna.

HV-110 DATV Receiver



HV-110 is a 1080 Full HD receiver box which receives and decodes DVB-T (ETSI EN 300 744) HD/SD terrestrial broadcast signals. It features the video output of HDMI and Composite (CVBS) for DVB-T. Specifically, besides regular 5/6/7/8 MHz bandwidth of standard DVB-T signal, HV-110 also supports 2/3/4 MHz bandwidth for HAM TV applications.

Features

- Standalone Digital DVB-T receiver
- Support 1080 Full HD H.264 and MPEG2 decoding
- SMA Antenna in Composite video output/ Stereo Analog (L/R) output
- Digital HDMI audio and video output
- On-Screen Display Menu
- Automatic or manual channel scan
- 2/3/4/5/6/7/8 MHz Bandwidth support



Features

- USB based modulator/demodulator with support for EN 300-744 DVB-T TX & RX
- Powered from the USB bus, so no external power adapter is required.
- Full hardware modulation/demodulation, no host CPU computation required.

Modulator (Transmitter)

- Direct digital conversion to 50~950MHz and 1200~1350 MHz for excellent signal quality
- Configurable bandwidth 2MHz ~ 8 MHz.
- UT-100A/UT-100B/UT-100C support configurable bandwidth from 2MHz to 8 MHz.
- Support only non-hierarchy mode
- Programmable digital attenuator
- Free Windows Stream Player
- Free Windows and Linux SDK

Demodulator (Receiver)

- UT-100A supports Worldwide (DVB-T) RX (5/ 6 / 7 / 8 MHz)
- UT-100B/UT-100D is a special custom version (supporting 2/3/4 MHz bandwidth) for amateur HAM TV reception.
- Standard Windows DVB-T BDA driver provided
- Windows Media Center compatible DVB-T TV tuner

Build a Home Emergency Disaster Kit

By Jack Dellinger, KC3JD

Make sure your emergency kit is stocked with the items on the checklist below. Most of the items are inexpensive and easy to find, and any one of them could save your life. Headed to the store? Print this page out to take with you. Once you take a look at the basic items, consider what unique needs your family might have, such as supplies for pets or seniors.

After an emergency, you may need to survive on your own for several days. Being prepared means having your own food, water and other supplies to last for 2 weeks! A disaster supplies kit is a collection of basic items your household may need in the event of an emergency.

Basic Disaster Supplies Kit contents:

Water - one gallon of water per person per day for at least 2 weeks, for drinking and sanitation.

Food - at least a 2 week supply of non-perishable food

Battery powered or hand crank radio and a NOAA Weather Radio with tone alert

Flashlight

First aid kit

Extra batteries

Whistle to signal for help

Dust mask to help filter contaminated air and **plastic sheeting** and **duct tape** to shelter-in-place

Moist towelettes, garbage bags and **plastic ties** for personal sanitation

Wrench or **pliers** to turn off utilities

Manual can opener for food

Local maps

Cell phone with **chargers** and a **backup battery**

Additional Emergency Supplies:

Prescription medications

Non-prescription medications such as pain relievers, anti-diarrhea medication, antacids or laxatives

Glasses and contact lens solution

Infant formula, bottles, diapers, wipes, diaper rash cream

Pet food and extra water for your pet

Cash or traveler's checks

Important family documents such as copies of insurance policies, identification and bank account records saved electronically or in a waterproof, portable container

Sleeping bag or warm blanket for each person

Complete change of clothing appropriate for your climate and sturdy shoes

Household chlorine bleach and medicine dropper to disinfect water

Fire extinguisher

Matches in a waterproof container

Feminine supplies and personal hygiene items

Mess kits, paper cups, plates, paper towels and plastic utensils

Paper and pencil

Books, games, puzzles or other activities for children

After assembling your kit remember to maintain it so it's ready when needed:

Keep canned food in a cool, dry place

Store boxed food in tightly closed plastic or metal containers

Replace expired items as needed

Re-think your needs every year and update your kit as your family's needs change.

Amateur Radio related items:

A mobile radio with power supply or an HT, Dual Band (2M/70cm) is recommended. Mono-Band OK.

Emergency power for your mobile radio (gel-cell battery).

120 VAC charger or solar charger for above battery.

Magnetic-mount antenna for your radio and BNC, SMA, PL-259, SO-239 adapters for your radio to connect to your antenna.

The dry cell battery pack and 2 extra sets of batteries for your HT.

The car and wall charger for the HT.

The radio manuals or a cheat sheet.

A headset with mike - can keep both hands free. Won't disturb Others.

A notebook, clipboard or logbook.

Several pens and pencils.

A copy of your Amateur Radio License as well as your Drivers license.

A multi-tool like Gerber or Leatherman or a Swiss Army knife. Get a good one. Lesser brands are not reliable. Any special size tools your radio uses like tiny screwdrivers, etc.

Funnel cloud seen in West York, building partially collapses

Tuesday's storm has caused the partial collapse of a warehouse in West York. Emergency crews are at the building in the 200 block of South Sumner Street in the borough on Tuesday, Sept. 5.

West York fire Lt. James Hope said the storm damaged three floors of the warehouse formerly known as the Big Ugly Warehouse. No one was inside at the time, and the structure is condemned until an engineer can look at it, he said. Additionally, the storm pushed a trailer on its side. West York Police said that the 100 block of South Sumner Street between Andrew Street and Hokes Mill Road will be closed for the foreseeable future.



Funnel forming: Geoff Myers, of West Manchester Township, said he was standing in front of the West York Area High School during the storm when he saw a funnel forming behind the school in the borough.

"I just seen it coming off the new gym that they created," he said.

He said it was fast-moving and lasted about 30 seconds before the funnel started dissipating.

Myers posted a video on his Facebook page that showed the funnel forming and then dissipating within a few seconds.

Several roads around the county have been partially or fully blocked by falling trees and utility poles, according to York County 911.



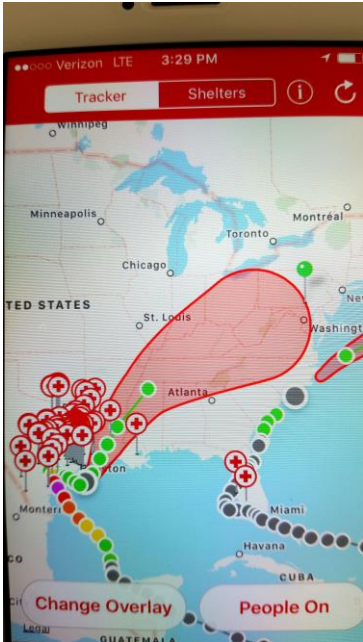
York City: In York City, Mayor Kim Bracey said during Tuesday's city council meeting that the city was hit by "a bit more than just a thunderstorm," and that the southeastern and western areas of the city were here particularly hard.

She urged residents to call (717) 849-2319 to have employees remove trees and debris from the street.

"Thankfully a large part of the city has been spared," she said. York City Council president Michael Helfrich encouraged people to treat the storm as "an emergency situation," adding if anyone doesn't have to come to the city, then they shouldn't. Met-Ed is reporting 14,000 customers without power in York County with clusters in Dover, Dover Township, York City, Springettsbury Township and West Manchester Township.

Some other Thoughts about Hurricane Season

By Ralph Brandt, K3HQI



Jon brings up some good points. There was not a lot covered in the session concerning the loss of power. It concentrate mostly on forecasting, what goes to Emergency Services and the public. One thing came over 100% clear, forecasting is not great on tracks and worse on strength. These change drastically even in the last 24 hours. And I might mention, the track for Harvey still has us in its crosshairs. As for radios, I will tell you that FRS is darned near useless unless someone is close. But they may be a life saver.

There are 4 daily reports by the Hurricane centers, 11 and 5 AM/PM. It is prudent to look for the latest info, usually the NWS

public reports based on them come out an hour later.

I will comment that because of my involvement in EMCOMM, FEMA Region 3 RECCWG and local EMA I have some insight into the power failures. Growing up I lived in a rural area near Mt. Holly where we lost power usually 5-10 times a year and for as long as 7 days in one stretch. We didn't call it an outage till it was over 12 hours.

I recommend a small generator that will handle needs, heat, water pump if applicable, refrigeration, medical equipment, not a massive whole house one. My brother in law and nephews have tried to keep up most of their homes several times with large (5kw) sets that would handle most of the house. It is just plain cost prohibitive for more than a short period.

Think about 10 gallons a day. A 3800 watt burns about 2/3 of the fuel, less if load is kept down, can keep up the essentials for most homes, comes in a 110/220 version, and can be used with a circuit selective cutover. That means you select the circuits to be cut over and only do the refrigerator, freezer, the furnace, well pump (they can have one 220) etc. These cutovers are available on line and are well within the capability of a person with some wiring experience to install. I have done 2 of them. I put a link below to one, I think you can find a better price by shopping around.

You can do the cutover and a gen set for less than \$750. You run it just enough to keep the home livable and the food good. For the food, a couple shots of an hour a day will handle that. You make sure you charge cell phones and batteries when the generator is running. My generator is in the garage, it can be pulled out and a rubber cord plugged into the switch. This is a 3/10 with ground and is quite heavy. It is 70 feet and I have a board with 2 quad boxes that has the same plug and 8 feet of cord so I can use it either 8 feet or 80 feet from the generator for an outing. I also have pieces of blue Styrofoam like used on homes cut up to form a 'dog house' for over the generator with one open side for air.

I duct tape it together when I need it and slit the tape with a knife for storage. I have two pieces of rope and stakes to keep it from blowing away. You may want to think of security for a generator that is outside. Piece of motorcycle chain to something immovable and a lock come to mind.

One more thing, a generator that is not tested like any device may not work. I am talking here from the bad experiences of others. One that is not started and run every 3-4 months will eventually not start. I use Stabil in the gas but even that is not a for sure of left too long. If a real expert on gas engines tells you different on the maintenance, follow him

not me. I only know that if I keep up an actual schedule of 3-6 months it keeps working but I have calendar reminders for 3 and do that unless it is run for some other reason. I put it on load when I run it, I have an old 1200 watt shop light that nicely loads it and gives me visible verification.

REMEMBER, gas engines give of carbon monoxide and they should be given time to cool before refueling. Nearly every storm takes a life with CO poisoning. I have CO detectors in my home and check them regularly.

Make sure you have water. I keep about two packages of 30 bottles of water on hand, when the one gets low I buy another. and keep a 2 gallon container in the refrig that is filled when it gets to the 1/2 mark, I do not let my insulin, needles, pills get below about a week and usually have more buffer than that, particularly if there is some situation on the horizon. I keep enough canned food for a couple weeks and have enough dried food storage for a month, a tank for the grill and a coleman gas stove and adapters to use propane from either small cylinders or the grill tank. I know that in bad situations I will move to the basement where it is going to stay above 40 degrees rather than the upper level that can easily go lower.

Make sure you have a working AM radio, batteries for it and lights. One of the best lighting options and a very inexpensive one is the round under the counter LED stick up lights that use 3 AAA batteries. I put the batteries in, test and then put a piece of paper between the one battery and contact to prevent them from being turned on accidentally. These are fantastic to place in a kids room, bathroom, etc. on a dresser and counter. They make enough light to walk around safely and are not a fire hazard like candles or other fire lights. Use batteries, gasoline, etc. sparingly. You do not know how long they will have to last. One snowstorm we lost our furnace early in the storm and did not notice it till there was no way out. The electric stayed on, we had a Kero heater, an electric heater and about 5 gallons of kero. We filled the tank on the stove with nearly the last of the kero just before the snowplow opened the road and the furnace guy got in. On the furnaces with the "white pipes" outside, one is an intake (pointed down), one an exhaust (pointed out). NEVER let either of these get covered with snow. The exhaust can back up in the house and it contains CO. If the other is plugged or even the snow gets close, the furnace will ingest snow, turn it to water in the firebox and disable the furnace by wetting the thermocouple. **I KNOW FIRST HAND.**

There is no substitute for avoiding stupidity.

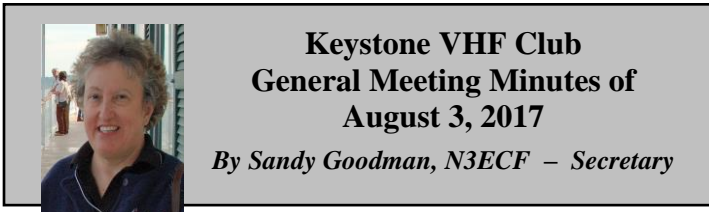
Inrush Current Limiters

By Eric Smyder, KB3CNH

I recently helped Bob N3NBT perform a modification to his 50 amp Astron Linear power supply. The supply had a huge inrush and was destroying switches and blowing fuses. An Inrush Current Limiting Thermistor was selected for the job. This was placed in series with the on/off switch. The concept is that the ICL (Inrush Current Limiter) is slightly a greater DC resistance than the transformer primary winding when cold. As the ICL warms up its resistance approaches zero. The ICL should be selected to survive an inrush greater than the line fuse. We used a 2.5 ohm thermistor rated for 15 amps. This simple modification allowed the power supply to turn on without the loud BANG BZZZZ sound normally associated with linear regulated supplies with large transformers. <https://www.ametherm.com/inrush-current/>

To help make the on/off switch last longer. I employed a suppressor network RG-1782-6 from Electrocube. This passive device is designed to absorb transient pulses from inductive loads. (It is a 0.1uF capacitor rated at 600 volts in series with a 100 ohm resistor all within a convenient potted package.) We've used them for years in the industrial automation field to protect relay contacts from inductive load kickbacks. The suppressor goes in parallel with the primary winding. When the field in the transformer collapses when the switch is opened, the suppressor absorbs the energy instead of arcing across the switch contacts. <http://www.electrocube.com/details/rc-networks-single-phase-application-data-sheet>

The operation of the power supply is now completely silent, and hopefully more reliable.



**Keystone VHF Club
General Meeting Minutes of
August 3, 2017**

By Sandy Goodman, N3ECF – Secretary

The General Club Meeting held at Keystone VHF Club was called to order by Pres. Mike, N3VQH, at 19:01. There were 35 members present.

SECRETARY REPORT: Sandy, N3ECF. Steve, WB3EFA, moved to accept the July minutes published, 2nd by Don, N3OSO. Motion carried.

TREASURER REPORT: Dan, KB3JSV, reported for July:
Revenues: \$661.49 plus \$500 was transferred from Savings to the Checking; Expenses: \$724.98 which was \$501.95 for the 6-meter beam and \$223.03 for electric.
Balances: Club CD \$7,668.80; Checking Acct \$798.82; Savings Acct \$2,203.97; Total \$10,672.59. Joe, KB3TCM, moved to accept the report; 2nd by Craig, WA3HEW. Motion carried.
Dan also did an inventory of the Safety Deposit Box, which has not been done since 2013. He will verify the relevant items with the Executive Board.

COMMITTEE REPORTS:

TRUSTEE REPORT – Cleaning has been done. We need to spray the parking lot. Dave, KC3GMQ, offered to that this weekend. Dick, WA3USG, also asked for help with the mowing.

TECHNICAL COMMITTEE REPORT -

The ATV repeater cannot be used now due to the 440 DMR, and to having tenants with internet. Dick, WA3USG, moved to sell the equipment to the Chesapeake Amateur Television Society for \$100. They are an active group who could use the equipment well. Ed, KA3LJL, seconded the motion. Discussion ensued about the equipment being worth more than we're asking. Rich, KR3EE, would like to keep the equipment, but has no place to install it. Motion was approved, with one opposed (KR3EE).

The trailer has been well equipped. A deep cycle battery and inverter have been donated. There is a generator with 12 volt output in the trailer. Dick, WA3USG, discussed the desire to mount a solar panel on the roof. Dick moved to spend \$150 for the Solar Panel, with a controller. Steve, WB3EFA, seconded the motion. Motion carried.

August 19 is our scheduled Corn Roast and Chicken Barbeque. The committee has suggested holding a mini-hamfest at the clubsite that morning in order to sell some of the equipment currently being stored in the club's shed. The mini-hamfest will be held from 8 am to 10 am. That will allow time to clean-up and prepare for the Corn Roast. Members are invited to set up their own sales, at no cost.

The 6-meter antenna for the repeater has failed. Dick, WA3USG, moved to spend \$208 for a Diamond CP62, 5/8 wavelength antenna. Steve, WB3EFA, seconded the motion. Motion carried.

EMCOMM/PUBLIC SERVICE NEWS –

Sandy, N3ECF, formally requested that a test be done on the DMR repeater for switching it to analog so it can be used for emergency communications. The Technical Committee has been thinking about that. The repeater has to be set-up for analog prior to doing remote switching. The committee needs to review some technical issues first.

Sandy also asked that after that is done we do a test of actually using it for Digital/Data communications.

For public service, we had nothing in July. Upcoming events are:
Red Lion Street Fair on August 12 -- Jack has volunteers assigned.

KTA Trail Challenge Hike on September 9 -- Sandy asked if anyone other than Tim could haul the trailer.

Brian Klimes, K3BEK, offered to do so. He will need to coordinate with Tim or Dick to get the correct connections. Sandy is collecting volunteers

Walk for Alzheimers on October 7. Chip, W3FJD, will be looking for volunteers

MS Bike in Gettysburg will be October 14 & 15. Sandy will ask for volunteers later.

VE/ED REPORT - In July, there were 3 new Technicians, and 2 new Extras. The September testing is cancelled due to the KTA Hike. Ralph, K3HQI, has sent out a notice about the FCC asking if an applicant has had a felony. That is being done for any new licensee or upgrade, or for vanity license.

CONTEST REPORT - September VHF contest if September 9 to 11 starting Saturday at 2 pm.

NEWSLETTER/WEBSITE – Website, though outdated, is up to date. The newsletter has been caught following the summer hiatus. Dick should be back to monthly newsletters.

OLD BUSINESS: none

NEW BUSINESS:

First reading was done for Brian Shanabrough, KC3JME.

Three prior members submitted dues and were reinstated to membership: David Eckman, WA3YVR, Jeff Orner, WN3DX (former KA3AVX), and Bob Hoke, KB3DXN.

GOOD OF THE CLUB –

Brian, K3BEK, thanked everyone who made contacts with the Boy Scouts during the National Scout Jamboree in West Virginia. There were 305 Boy Scout merit badges completed. They had set up K2BSA with 8 stations and 8 antennas. A reminder was made that the Jamboree on the Air will be the third weekend of October starting at 9 am on October 21.

Sandy, N3ECF, is collecting reservations and money for the chicken halves for the Corn Roast and Barbeque on August 19.

50-50 was won by Tom Conard, WA3IKQ, who donated his \$27 to the club.

Adjourned at 20:00.

York ARES RACES SKYWARN (YARS)



If interested contact
Sandy Goodman
N3ECF
717-697-2353
n3ecf@arrl.net

Are you a newly licensed Ham? Are you an experienced Ham looking to expand your horizons? Are you interested in taking part in Public service projects, Emergency Communications, operations in the field, and supporting your community? YARS is a separate organization from the Keystone VHF Club dedicated to all of the above. We support our country, state, county, and community and we could use **YOU**.

KEYSTONE VHF CLUB OF YORK, PA



W3HZU



Membership Application

Name: _____ Phone: _____ - _____

Address: _____ Callsign: _____ Expires: _____

City: _____ State: _____ Zip: _____ Lic Class: _____

Occupation: _____ E-Mail: _____

Membership Desired

- Full** → Full Club Privileges
\$25.00 annually & one time \$5.00 Application fee
- Family** → Sponsoring members call: _____
Privileges same as Full membership
\$6.25 annually & a one time \$5.00 Application fee
- Associate** → Repeater Support
\$20.00 annually & a one time \$5.00 Application fee

Are you a member of:

- ARRL Y-N
- ARES Y-N
- RACES Y-N
- OCWA Y-N

Special Areas of Interest (circle all that apply)

AM Antenna building ATV Contesting CW Digital (Packet, RTTY, PSK-31, etc)
DX FM HF QRP Satellites SSB SSTV SWL Tower climbing LF DSP
UHF/Microwaves VHF Astronomy Photography Other: _____

Application & Dues Mailing Address:

Make checks payable to: *Keystone VHF Club Inc.* Mail to: *PO Box 20143*
York, Pa. 17402-0140

FOR CLUB USE ONLY	
First Reading Date: _____	Second Reading Date: _____
Date voted IN-OUT: _____	Date Dues Collected: _____
Applicant Sponsored by: _____	