





Moses in Minnesota

SO, THIS IS WHAT WINTER IN COLORADO and Minnesota (Yes, I know it is Colorado and this is what we should expect) has felt like. We've been spoiled the past few winters, as it has been much milder. Haven't been able really to ride the motorcycle at all in the past 3 months. And of course, in my line of work it helps to have clear roads. WELL, so much for that this year. Thanks to Brian for this great descriptive picture!

On the day I am writing this Denver is experiencing near to blizzard conditions. March has definitely roared in a like a lion. We have had snowfall for 2 days, then 3 or 4 days of nice weather. Upper 40's even to 60 degrees the day before the blizzard. Saw many motorcycles out, people in the parks, etc. Then in the afternoon when the news broke about the "Bomb Cyclone" (yeah what a marketing name the local channels give to a snowstorm right?) hitting 24 hours before, school systems said they would be closed, airlines cancelled more than 900 flights for the next day, and it was 60 + degrees out, I expected to see Jim Cantore standing out in the street commenting about "Winter Storm Ulmer". No kidding! That's what they named it!

My favorite satellite view of the nation for weather has always been the GOES weather satellite that unfortunately (because I really like it anyway) is going away as of July of this year. Of course, it is being replaced with the latest greatest. Here is a western U.S. view on the day Denver got a big blizzard!



The venerable old GOES-15 imagery will be replaced by the operational GOES East (GOES-16) and GOES West (GOES-17) satellites, users may visit https://www.star.nesdis.noaa.gov/goes/. The webpage shows a full view picture of what the satellite sees from orbit, then you can click on the regional area that you want to view more detail on. Those views include new imagery of true color daytime, plus 16 different bands of information including one called "veggie". Don't know what that means, but it is going to be very cool to have these options.



13 Mar 2019 14:52Z NOAA/NESDIS/STAR GOES-East Band 03 "Veggie – Near IR .86um" view this day.



Tower sites are beautiful in Colorado! But getting there.....

Another project that I have been working on with Skyler KGØSKY with the Skyhub System project is of course the linking of the AllStar, DMR Talkgroup 310847, K1DUN 449.450 analog and 449.750 DMR repeaters plus other AllStar links around the country. Skyler is the brains of the outfit, utilizing his server system links to bridge all the different repeaters and systems together. Several of us are using the Zumspot hotspots and DMR radios to keep in touch on a daily basis. In reading about the various systems and after Skyler demonstrated the use of a MMDVM audio board with a raspberry pi to essentially build a repeater with 2 Motorola radios, I had to investigate this. My hotspot is very portable and allows me the use of my Yaesu radios utilizing the Fusion digital mode the access the Skyhub system from no matter where I am. But I got tired of taking it in and out of my truck to the office to home to the hotel I might be staying in. So, the audio board, a raspberry pi, and a Motorola radio I had on hand looked like a solution to this. The Pi-Star software download, (free on the internet at https://www.pistar.uk/) was easily imaged onto a mini SD card, and it automatically boots up to put out its own Wi-Fi signal so you can access the control GUI for the software. Buying the MMDVM board from Amazon was easy of course BUT took about 3-4 weeks to get to me. Here is a link to the order page on Amazon.

(https://smile.amazon.com/gp/product/B07MP6SBFL/ref=ppx yo dt b asin title_002_s00?ie=UTF8&psc=1 Here is a picture from the Amazon page showing the pinout on the radio and interface board. This board then plugs into the GPIO pins on the Raspberry Pi 3.



Really easy setup actually, but Skyler had to do a modification on the Motorola GM300 radio to allow tapping of the pre discriminator audio in the radio the pin 11 as seen above for being able to get the digital audio transmitted to the inputs on the MMDVM board. It comes with the connecting cable and some simple instructions, but better instructions are in the internet and by contacting myself at ke0vh@outlook.com



The RPi3, MMDVM board, and the Motorola GM300 node radio



A good look at the MMDVM board, lighting up in YSF (Fusion mode) linked to the Skyhub

Another part of the ongoing linking project involves Yaesu Fusion WiresX. WiresX is basically the Fusion "DMR" Talkgroup system called "rooms". We are going to integrate the room I created named "SBENETCOM" into the Skyhub system utilizing Skybridge link for the Monday night NET and general communication. And we want to connect to the Fusion repeater here in Denver run by the Denver Water Amateur Radio Club. I have been talking to Mark NØXRX and they have been looking for a better repeater site as right now the repeater is in the Lakewood area without a lot of height above average terrain. Our good friend Vic Michael has ok'd us to put that repeater at one of his Lookout Mtn (above Golden) sites. I have clear view to Lookout and probably will a remote base type setup like the AllStar remote base I have at my QTH now. My Yaesu FTM-100 DR will serve as the node radio for the WiresX box that basically serves as the Fusion system interface and inexpensive digital OR analog repeater controller in a small box. I am really impressed with the WiresX box. So, I obtained one to experiment with and offered it and my services to the DWARC. This will allow full Fusion repeater capability for Fusion room access here in the Denver area. Just like DMR, Fusion rooms offer many great groups worldwide to listen in on and participate in conversations with people all over the world thru the link systems.



The WiresX computer controller, WiresX box and node radio

Any Windows computer will serve as the unit system running the WiresX software. Great use for an older computer gathering dust!



A closeup of the node FTM-100 on the DWARC repeater frequency

WIRES-X	
File(F) View(V) Connect(C) Tool(T) Help(H)	
G.User ID + DT Act Call/Rm City State Cour Freq(MHz) SQL Lat Lon Corr Image: Control of the state 100 America Beau Texas USA 448.350M DG-ID:00-00 America America SQL Lat Lon Corr Image: Control of the state VSA VSA VSA 448.350M DG-ID:00-00 N41 Social and the state Social	NET DIGITAL ON-AIR LOCAL HI-200 RADO 1 COLORADO-LIK ON-AIR LOCAL - : Refresh Close T-700)
KEOJYZ-RP3 KCORF ATOU-ND KOCHK-ND K3CRS-HRO KCOJIM-ND N6BMW	KEOVH-JACK
* * +A.User ID DTM CallSign City State Cou Freq(MHz) SQL Lat Lon * * KD9KAE-ND 36343 KD9KAE Orland Park Illinois USA 144.000M DG-ID:00-00 N:3 W:08. * KD9LOR-ND 35455 KD9LOR Avon Indiana USA 333975M DG-ID:00-00 N:3 W:08. * KE0HWK-RPT 3332 KE0HWK Lone Jack Missouri USA 443.750M DG-ID:00-00 N:3 W:08. * KE0HWK-RPT 30284 K0HDZ Aurora Colorado USA 448.25M DG-ID:00-00 N:3 W:08. * KE0YEV-RP3 30284 KE0TWW Buckner Missouri USA 448.25M DG-ID:00-00 N:3 W:10. * KE0YW-ND 35094 KE0TWW Buckner Colorado USA 448.350M DG-ID:00-00 N:3	2019/03/05 19:52:01 Room Member 7 Node 2019/03/05 19:53:12 Transceiver TX Str 2019/03/05 19:53:12 ON Air Lock ON 2019/03/05 19:53:12 Digital transceiver TX Str 2019/03/05 19:53:12 Digital transceiver 2019/03/05 19:54:59
Room ID DTM Act Room name City State Cou Comment CQ-APAC 24000 000 CQ APAC Shinagawa-ku Tokyo Japan CQ Room for CQ-AMERICA 21000 000 CQ AMERICA Shinagawa-ku Tokyo Japan CQ Room for CQ-COLORADO-INVER 43489 000 colorado=river Bullhead City Arizona USA COLORADO-LINK 4052 007 COLORADO LINK Derver Colorado USA COCHISE-AZ 28574 000 CNY Finger Lakes Skaneateles New York USA CISARGE-SVI-ROOM 43899 000 CNY Finger Lakes Varazze USA Central New CISARGE-SVI-ROOM 27387 000 Wires-X CISAR Genova Varazze USA All Welcome CINCINNATI-LINK 40867 000 WAXF Hanover Towns Ohio USA All Welcome	News GM COLORADO-LNK #40052 > Colorado Link managed by C.A.R.T Colorado Link managed by C.A.R.T Colorado Amateur Radio Team http://ke0jyz.wixsite.com/cart1 HardCopy Sove Close Ver.1.500 ONLIN アークマ 255 3/5/

The WiresX software control screen

In the picture above you can see that the node is connected to the "Colorado Link" Fusion system. One thing I really like about this system over DMR is that the digital audio quality is better, AND you can easily change rooms from the radio that you have connected to the WiresX system. No bulky DMR codeplugs either. Yaesu radios are easily programmable from the front panel and connecting to WiresX then allows you to simply hunt for a room you want. And all selectable from the front panel of the radios, on the fly. Can't do that with the DMR rigs.



The FTM 400 DR mobile in WiresX mode thru the DWARC repeater connected to the SBENETCOM room

Friend of the NET Charlie WA5AIR and Chris WX0PIX down in the Montgomery Texas area connect to the Skyhub with their system on occasion and especially for the NET on Monday nights. It is great to chat with them and as Chris used to live in Denver it is great to keep in touch with an old friend. He and Charlie did some work here last month on setting up a 2 meter simplex node and a separate 440 repeater both on AllStar. Here are some pictures from their work at the repeater site in Conroe Texas last month.



The WA5AIR repeater and Charlie during setup (Thanks to Chris WXØPIX for the pics)



So, what do you do when the top 2/3'ds of your Diamond Super Gainer SG-7900 antenna just disappear? Didn't break, as examination revealed. Seems to have slipped off the top as Allen screws came loose and the interconnecting coil looked as though it had been tinned, but not soldered to the top section. One evening the antenna was whole, the next day it was not. SO, I called Diamond antenna in Lawrenceville Georgia after getting the number from Clayton and the Denver HRO, and they said to send in the remaining portion and would evaluate it for a replacement. I hope so since the antenna cost in the \$130 range. As you can see in the following picture the fiberglass shaft joiner isn't broken, and the coil looks as though it wasn't connected to the upper section well at all. They do have a "limited" warrantee for a year.



The connecting point. The fiberglass joiner inside the coil. You can see where the Allen screws were compressed into the fiberglass. The coil looks tinned but not like it had been connected.

I will update this hopefully with next months article. Diamond said the turn around time would just be a few days.

And if you were wondering how far they have taken Pi, here's the number out to 100,000 digits...

http://www.geom.uiuc.edu/~huberty/math5337/groupe/digits.html



Thanks to Stan K5JNT for this Pi(e)



Thanks to David Harris, KM6DNW for this picture from the Grand Mesa east of Grand Junction CO. Yep, winter in Colorado

See past editions of the newsletter at:

http://www.ke0vh.com/hamshack/archives/TheKE0VHHamshack201701Jan.pdf http://www.ke0vh.com/hamshack/archives/TheKE0VHHamshack201702Feb.pdf http://www.ke0vh.com/hamshack/archives/TheKE0VHHamshack201703Mar.pdf http://www.ke0vh.com/hamshack/archives/TheKE0VHHamshack201704April.pdf http://www.ke0vh.com/hamshack/archives/TheKE0VHHamshack201705May.pdf http://www.ke0vh.com/hamshack/archives/TheKE0VHHamshack201706June.pdf http://www.ke0vh.com/hamshack/archives/TheKE0VHHamshack201707July.pdf http://www.ke0vh.com/hamshack/archives/TheKE0VHHamshack201708Aug.pdf http://www.ke0vh.com/hamshack/archives/TheKE0VHHamshack201709Sep.pdf http://www.ke0vh.com/hamshack/archives/TheKE0VHHamshack201710Oct.pdf http://www.ke0vh.com/hamshack/archives/TheKE0VHHamshack201711Nov.pdf http://www.ke0vh.com/hamshack/archives/TheKE0VHHamshack201712Dec.pdf http://www.ke0vh.com/hamshack/archives/TheKE0VHHamshack201801Jan.pdf http://www.ke0vh.com/hamshack/archives/TheKE0VHHamshack201802Feb.pdf http://www.ke0vh.com/hamshack/archives/TheKE0VHHamshack201803Mar.pdf http://www.ke0vh.com/hamshack/archives/TheKE0VHHamshack201804April.pdf http://www.ke0vh.com/hamshack/archives/TheKE0VHHamshack201805May.pdf http://www.ke0vh.com/hamshack/archives/TheKE0VHHamshack201806June.pdf http://www.ke0vh.com/hamshack/archives/TheKE0VHHamshack201807July.pdf http://www.ke0vh.com/hamshack/archives/TheKE0VHHamshack20180809AugSept.pdf http://www.ke0vh.com/hamshack/archives/TheKE0VHHamshack201810Oct.pdf http://www.ke0vh.com/hamshack/archives/TheKE0VHHamshack201811Nov.pdf http://www.ke0vh.com/hamshack/archives/TheKE0VHHamshack201812Dec.pdf http://www.ke0vh.com/hamshack/archives/TheKE0VHHamshack201901Jan.pdf http://www.ke0vh.com/hamshack/archives/TheKE0VHHamshack201902Feb.pdf

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6 Years AGO: http://www.smpte-sbe48.org/wp/2013/03/



SBE VHF/UHF Chapter 73' of the Air HAMnet

The SBE Chapter 73 of the air HAMnet is today (Monday), at 9 p.m. US ET (6 p.m. US PT) and worldwide via ECHOLINK KG0SKY-L, node 985839, and ALLSTAR, node 46079.

The SBE VHF/UHF HAMnet is based in Denver on 449.450 pl 103.5, 449.625, pl 141.3, and 448.975, pl 123.0, On ALLSTAR node 46079, and, connected to the world via via ECHOLINK KG0SKY-L, node 985839 available via computer and radio. Contact <u>Jack</u>, KEØVH, for all the information. WE ARE Experimenting with a link now to DMR TalkGroup 310847, Email Jack for more information.

NOW we have added the LIVE STREAM thru Broadcastify at: https://www.broadcastify.com/listen/feed/25448/web

If you have AllStar capabilities or an AllStar repeater near you, connect to node #46079 during net time.

We hope you'll join us.

See the latest edition of "The KE0VH Hamshack" for more information at <u>www.ke0vh.com</u>.

Don't forget the SBE Chapter 73' Of the Air AllStar, Echolink, and DMR (Talkgroup 310847) Hamnet, every <u>MONDAY EVENING</u> At 7pm Mountain time (9pm Eastern) for radio discussions, both Broadcast engineering and amateur radio.

Details on how to join us are at http://www.ke0vh.com/net/net.html.

I hope You will be able to join us and share your engineering and Ham exploits!



73' from "the Shack" & God Be With You!