

432 AND ABOVE EME NEWS MARCH 2015 VOL 43 #3

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CONDITIONS: The 70 cm Funtest was pretty much a disaster due to a combination of poor conditions and bad weather (WX). I have no reports of any 70 cm SSB contest QSOs. On the other hand, **the CW part of the DUBUS 70 cm EME Contest attracted a reasonable turnout** despite the unfavorable WX and conditions. **G3LTF appears to be in first place with a score of 23x23.** I am sure **the 23 cm SSB EME Funtest, which starts on 21 Feb at 2200 and ends on 22 Feb at 2200 will be much livelier.** See the full rules in the Jan Newsletter (NL). During SSB contest weekend **the Svalbard Island (JW/DF8DX) dxpedition on 22 to 24 Feb will take place.** Bodo and DL2NUD will be on 23, 13 and 9 cm EME. The dxpedition details are in the last NL. The next weekend, **28 Feb/1 March, is the 13 cm leg of the DUBUS EME Contest** and should also have a high turnout. **There is also a 70 cm CW activity time period (ATP) this same weekend.** The ATP is on 28 Feb 2300-0100 and 1 March 1400-1600. The next DUBUS contest will be on 9 cm on 28/29 March.



OK2DL was top 1296 fun maker in 2014!

Who will it be in 2015?

DK3WG: Jurg dk3wg@web.de added some new stations on 432 and 1296 recently – I worked on 70 cm using JT65B F6APE and VK5APN who was using a single 21 el yagi and 60 W, and on 23 cm using JT65C PA3FXB.

DL7APV: Bernd dl7apv@gmx.de had serious antenna and health problems but managed to QRV a bit for the **DUBUS Contest on 70 cm** -- After working A65BR and 1AOC at the end of 2014, bad storms at beginning of Jan turned all 16 of my yagis by about 20° and bent the booms again. I temporarily fixed the array, but the bent booms will be a problem and probably will have to be replaced in the spring. Right afterwards, a bad case of Pneumonia put me in bed and later in the hospital. For the next 3 weeks I'll be away in a hospital for rehabilitation. While I was home for a week, I was on for the 70 cm contest. But due to snow and rain on my feedlines my VSWR was higher than normal and with my storm bent array, I was only able to give out a few points. **I made about 10 QSOs on CW and never heard anyone on SSB.** I note that there were lots of birdies below 020 even here in the country. DF3RU was nearly covered by the QRM on 008 and Karl is loud. Based on my observations, I feel we should move the CW activity segment up to 020-

040. [Bernd reports he is doing much better health wise and should be home by the time you read this.]



DL7APV's 432 yagis after recent storm

DL9KR: Jan Bruinier@t-online.de also was affected by the bad WX and had problems with his array that prevented operation in the 70 cm DUBUS Contest -- On 6 Dec I worked LZ1DX, K3MF (loud), OK2POI, N4GJV, OH2PO and VA3ELE for initial #958, and on 27 Dec DL6KAI (569) #959, A65BR easy CW QSO #960 and DXCC 129 and at the end of 2014 1AOC on CW #961 and DXCC 130. Jan and early Feb were dominated by lots of ice and snow. At the time of the DUBUS contest, the ice load forced the antenna elevation to minus 45 degs and there was no chance for re-adjustment.

F2CT: Guy F2CT@wanadoo.fr has a new home and is working on becoming QRV on 2.3 to 47 GHz – I have a new home that is located on the top of a hill near Ustaritz at 200 m elevation just in front of the Atlantic Ocean! I am working hard on my new 3.7 m Alcatel solid dish. I hope that it will be erected in May. [See news about Guy and Corine in FINAL section of this NL].

F5BQP: Pierre-François f5bqp@wanadoo.fr is setting up for microwave EME – I am using a telescope mount from Skywatcher, it's an EQ8 capable of a 50 kg load (with counter weights). I've added a counterweight on the back of the dish (1.2 m) mesh (2.8 mm). I plan to expand this to a 1.9 m dish from RFHamdesign. I am also waiting for a 13 cm septum feed. When the 13 cm is completed and operational, I plan to add 5.7 and 10 GHz. I milled some mechanical parts to install the dish and the counterweight on this telescope mount. I'll probably also mount a small refractor telescope associated with a GigE Basler CCD camera that I already have to do for some recording in parallel. [TNX to VE1KG for forwarding this report. Serge is doing something very similar for 3 cm using an Ioptron gear box 8200 and an 80 cm offset dish].

G3LTF: Peter's g3lft@btinternet.com report Jan -- At the end of 2014 I had the 23 cm feed in the dish as we had a few days of calm weather. On 30 Dec I worked ES6RQ and G4IDR to bring me to initial #400. This is a milestone but still behind my 432 total of 457, which shows how the balance of activity has shifted in recent years. Then I worked SP6ITF and had an SSB chat with G4CCH and finally worked VE6TA. On 2 Jan I had my first 2015 QSOs with ON5GS, LZ1DX, I5YDI and SP6ITF. Poor

weather and low moon declination then meant no activity until the end of the month. The weather for the **432 DUBUS contest** was not brilliant, with a lot of strong winds, but I was able to operate for about half of the time. On 31 Jan I worked ES5PC, OH2DG, VE6TA, K2UYH, G4RGK, KL6M, SP7DCS, N4GJV, UA3PTW and LZ1DX. On the second moon pass on the same day I worked VK3UM, OZ4MM, SP6JLW, OK1KIR, JA6AHB, DF3RU, SM4IVE, SV3AAF, I1NDP, DL6KAI, W2PU and K3MF. On 1 March I only added DL7APV for a total of 23x23. Heard and called were W5LUA, LX1DB and SM3JQU. I also heard PA0PLY briefly and didn't complete with a UA4 (probably UA4HTS). I copied SM7GVF and bits of copy from OH6UW and F6APE when they were working SM4IVE. I suspect they never called CQ or I think I would have seen them on the SDR. The fading (A mix of scintillation and libration) made copy very difficult at times as also noted by N4GJV. Faraday was between 60 and 90 degrees. I discovered a slightly dirty relay contact after the contest, which could have affected the receive performance slightly. Lots of the usual calls were missing, I think due to poor weather in central Europe, but it was enjoyable and the activity was up on last year and on the ARRL contest. [Peter is proposing we have Microwave Activity Weekends (MVAW). His comments are shown near the end of this NL].

G4BAO: John john@g4bao.com is an advocate for more activity on 13 cm and is looking for skeds -- I'll be setup for easier crossband operation just as soon as my new Elecraft K3 arrives - (it has been stuck in customs for 3 weeks!). Unfortunately, I've not yet found an easy way to TX on our new 2300 band with my EME transverter, or to receive in the JA band. I have a very short window to VK or JA due to surrounding trees/houses, but if any VK would like to try, I'd love to have a go.

HB9Q: Dan dan@hb9q.ch reports that he still has no news on his DXCC application and is now focused on completing 1296 WAS -- We still need the following states: AL, AR, DE, KY, MN, MS, MO, NE, NV, OR, SC, SD, TN, UT, WV, WI, WY. With our 10 m solid dish and 1 kW at the feed, we can easily work stations running tropo equipment; 1 yagi and 50 W or small 1.5 m dish and 10 W is very workable. So anyone willing to give it us a try is welcome. Please e-mail for skeds. We are very much looking forward to working you soon!

I1NDP: Nando i1ndp.nando@gmail.com writes -- I have been neglecting the 70 cm band lately, so I decided to give it a try for the **DUBUS contest**. I was able to log 13 stations mainly answering to signals I was able to copy. I decided then to dare calling CQ, but I had to give up when realized that the noise on the band was not allowing me to copy other than strong signals. My apologies to any stations I could not pick up.

JA4BLC: Yoshiro ja4blc@web-sanin.co.jp was on 24 GHz in Jan -- I tried some 24 GHz skeds with only partial success. On 23 Jan I copied JA1WQF (O) but could not get the report from him. On 24 Jan 24 I heard him (M) and again no report from him. PA0BAT also tried with me randomly. He heard me, but I never identify him. On 1 Feb, I did work on 13 cm crossband using our new TX band (2400/2304) WD5AGO (559/559) and JA6CZD (559/569) both on 2400. Tommy told me that the band is much clearer. I hope many people will listen on 2400 in the DUBUS 13 cm contest.

K4EME: Cowles candrus@mgwnet.com missed the DUBUS 70 cm contest due to health issues -- I was under the weather during the DUBUS weekend. I guess the lag on the Chemo caught up with me. As far as I know I am cancer free now, but the cure took its toll. Hopefully, as I get a few more months down the road, I will get to feeling like my old self. Sorry for not helping to generate some 432 CW activity this year. I have been working on getting a power amp built for 1296. So far I have two 150 W modules built using the W6PQL board design built around the XRF-286 transistors, and am now working on a 60 W driver amplifier and 2 more 150 W modules for about 500 to 600 W output. I still have much more work to do before I am QRV on 23 cm, but progress is slowly being made. I think half the fun is building the station! I enjoy putting together new designs and getting them to work!

LX1DB: Willi wbauer@pt.lu reports on his **432 DUBUS contest** efforts with his new circular feed -- During the contest I was QRV only on Saturday. On Sunday the snow was too heavy to allow operation. I made 18 QSOs in 4 hours of operation. I was only able to work from AZ 068° up to AZ 150°. Further west I had so high interference (noise by digital transmission) generated by the cable distribution that it was impossible to operate. I have contacted the cable company and hope to have a fix soon. This is a **must** request by the regulator to the cable distributor. Due to the bad WX the cable repairs may take a few weeks and I will be

off 432 during this time period. I used the CP feed and the received signals were quite stable and I am very satisfied of the result. So as soon as the QRM is no more, I will be on again and especially looking for W and VE land activity.

N4GJV: Ron rmb1991@live.com found conditions incredibly poor during my first Moon pass of the **DUBUS Contest weekend** -- Perhaps every signal that I heard was arriving nearly cross polarized at my QTH as signal were not good. This situation prevailed on both 2 m and 70 cm. Not only were signals very weak, but they were extremely difficult to copy with characteristics that did indeed suggest that they were nearly cross polarized. Ironically, the only stations that I heard with near normal signal strength were both located in the auroral zone - VE6TA and KL6M. Conditions improved dramatically during the second Moon pass. I answered many CQs from stations that I was hearing extremely well, yet I received only a QRZ or no reply at all. Perhaps the shoes were now "on the other foot"? On 70 cm, I logged random QSOS with UA3PTW, G3LTF, K2UYH, VE6TA, KL6M, VK3UM, SM4IVE, DF3RU, SP7DCS, SP6JLW, OH2DG, ES5PC, OZ4MM, I1NDP, and OK1KIR for a score of 15x15. I could only muster a partial QSO with JA6AHB before losing moon at an elevation angle of ~ 17 degs when the Moon becomes blocked by a metallic structure that abruptly ends my window. Got-aways include LZ1DX and JA6AHB. I was running 4 x 6.8 WL fixed horz pol yagis and a 2 x 4CX250 PA. Many thanks to all participants for a great CW EME fun with special thanks to the European enthusiasts that stayed up late to provide contacts for those of us in North America; and, of course, a multitude of thanks to DUBUS and the REF, for their sponsorship efforts!

NC1I: Frank frank@NC1I.COM reports on the wonderful WX in MA! -- I have no EME activity to report this month. My XYL and I enjoyed the last two weeks of Jan vacationing in Florida. Unfortunately we returned to a winter wonderland here in MA. Our State has had record snow and cold over the last three weeks including five major winter storms, two of which were officially classified as blizzards. Last night's blizzard even included thunder and lightning! Those five storms have dumped anywhere from 3-7 feet of snow across the state in just three weeks. Fortunately my QTH is about 40 miles west of the hardest hit areas but it has still been as bad as I can remember in my 58 years. It seems when I am not at my regular job, I am home clearing snow on our small horse farm. I spent seven hours on the tractor today blowing snow and I still have a lot more to clear. And now it appears we may have yet another major snowstorm just three days from now. As I am typing this report at 8 PM local time on 15 Feb, it is already -10 deg F along with wind gusts over 30 mph. The wind chill tomorrow morning could reach -40 deg F. It appears my antennas for 23 cm, 70 cm, and HF have all survived so far, although I have not powered up the EME stations since returning from Florida. I was able to clear a path to the dish, but I won't even attempt to clear paths to the 70 cm array (75 m from house) and my HF tower (125 meters from house). Some good news however, my late winter and early spring schedule has cleared up dramatically so if my antennas and equipment still work, I should be active on EME in the coming months. That activity will be focused on 23 cm until I get my 70cm polarity repaired in the spring. As it stands now, I anticipate being active the weekends of 21/22 Feb and 28 Feb/1 March. I will also try and be on the evenings during those weeks.

OK1KIR: Vlada and Tonda vladimir.masek@volny.cz send the latest news from their club -- On 70 cm we QSO'd using JT65B on 22 Jan in sked at 0945 VK5APN (27DB/23DB) for digital initial {#126} and PF field, 0958 F6APE (24DB/20DB). In the the DUBUS EME Contest we worked using CW on 31 Jan at 1334 VK3UM (559/559), 1411 SP6JLW (569/559), 1423 LZ1DX (559/559), 1502 OH2DG (549/569), 1511 SP7DCS (549/579) #382, 1520 KL6M (579/569), 1529 G4RGK (549/549), 1542 UA3PTW (569/569), 1553 OZ4MM (569/569), 1620 G3LTF (569/569), 1647 JA6AHB (559/559), 1708 ES5PC (559/559) #383, 1741 SM4IVE (579/579), 1948 I1NDP (569/569), 2101 N4GJV (549/549), 2302 PA2V (O/O) and 2316 DL6KAI (O/O) #384, and on 1 Feb at 0040 W5LUA (569/569), 0048 VE6TA (559/559), 0108 K3MF (559/559) #385 and 0153 DF3RU (559/559) for a total of 21x21. Out of Contest we QSO'd on 70 cm with JT65B on 31 Jan at 1438 HB9Q (5DB/8DB) and on 1 Feb at 0010 W7MEM (13BD/O), 0137 PA0PLY (13DB/23DB), 0220 KJ7OG (20DB/20DB) {#127} and 0310 VE4MA (26DB/O) {#128}. On 3 cm we worked using JT4F on 18 Jan at 1235 WA3LBI (15DB/13DB) for digital initial {#60} and on CW at 1319 WA3LBI (O/O) for initial #93 and the state of PA. Jim had a very strong signal from a 2.4 m dish and 170 W to CP feed from PE1RKI regardless -3 dB in both ways due to our linear pol feed.

PA0PLY: Jan pa0ply@pa0ply.nl reports on the 70 cm leg of the DUBUS Contest -- I was QRT on 70 cm for almost a year due to the failure of my GS35B final. I finally decided to replace it with an R&S SSPA able to run 1500 W easily. As I am running the PA remotely, preparing all the safety controls took a long time. I added VSWR protection and temperature protection. For the temp protection I used a Voltcraft TCM320 system. I has a truly wonderful display with 2 channels for sensor and external warning contacts, and can be set for both min and max levels - info is on my website. I'm operating the PA on the safe side at only 600 W because of concern with over damage to N-connectors in the chain. On 24 Jan, I made my first QSO in a long time with GW3XYW on random (26DB/O) JT65B for mixed initial #83*. During the 432 DUBUS Contest and it was amazing! My moonrise was affected by Faraday; it caused signals to be weak as I only have horz pol antennas. I made good use of MAP65 to locate these weak CW stations! It's really good to know how well it can work. I could see several CW stations, but they were simply too weak to hear. With MAP65, you can locate these stations far before you can copy them on CW! I worked on CW SM4IVE (549/559) and OZ4MM (529/449). Later on JT I QSO'd JA6AHB, UT5DL #84*, K3MF, YL2OK #85*, DF3RU, PA2V #86*, W7AMI, W7MEM and OK1KIR. On Sunday, I was on again briefly, but Faraday was still causing problems, which did not make for much fun. SM4IVE was like a lighthouse, strong but lonely. The most funny QSO was with PA2V. He lives only 25 km away, but due to the large Doppler we were able to get our moon reflected signals decoded, hi! My thanks to VK5DJ for an excellent for his help with my antenna controller boards. It was a matter of finding the right settings. I use VK5DJ controllers for both my 432 EME array and my 3 m dish.

PA2V: Peter's peter@pa2v.com 70 cm report -- I work on 18 Jan at 1130 P19CAM (12DB/25DB) for a demonstration to foreign visitors after the Heelweg meeting, on 24 Jan (conditions seemed good this weekend) at 1456 DF3RL (25DB/22DB) for mixed initial #64* and 1456 GW3XYW (26DB/O) #65*, on 25 Jan at 1453 GW3XYW (28DB/O), 1537 OH2DG (26DB/O) #66*, 1950 WA2FGK (20DB/O) #67*, 2027 K5QE (28DB/O) and 2046 KJ7OG (28DB/17DB). I also saw W7MEM (11DB) calling W4NH a long time. The following DUBUS 432 CW Contest weekend, I added on 29 Jan at 1849 UA3PTW (20DB/8DB) and 1939 HB9Q (12DB/23DB), and on 31 Jan at 1600 VK3UM (O/O) on CW, 1759 JA6AHB (22DB/15DB), 1808 SM4IVE (559/539) on CW, 2238 K3MF (17DB/19DB), 2255 OK1KIR (429/539) on CW and 2358 PA0PLY (22DB/O), and on 1 Feb at 0027 W7AMI (19DB/19DB), 0035 DF3RU (22DB/12DB), 1800 LZ1DX (O/O) on CW, 2000 SM4IVE (439/O) on CW and 2033 ES3RF (26DB/16DB). I also had a partial CW QSO on 7 Feb at 0630 VE6TA (O/O) -- never received Rs. All QSOs were using JT65B unless noted as CW. On 17 Jan, at the Heelweg meeting here in Holland, I brought two 432 preamps for testing with the HP NF meter there. The results were okay and even slightly better than I expected. My own FHX35 homemade preamplifier with a stripline input circuit measured at a NF of 0.27 dB and 21 dB gain. A modified K4EME preamp with an I believe ATF54143 measured 0.14 dB and 21 dB gain. This is better than originally produced and measured. I modified this one. First I replaced the N-female input connector with a male type. This change allows me to put the preamplifier direct on the coax relay. It gives less loss by eliminating an extra adapter or cable. The original preamp had more gain at the lower part of the band with >27 dB at 420. Bending at the coil did not do much. After I replaced the input C1 (8.2 pF) by an ATC 6.8 pF the bandpass shifted up. The gain at 432 was 1 dB less but with a better NF. I have no commercial connection with Cowles.

SM6FHZ: Ingolf ingolf.fhz@gmail.com has updated his feed design, "A Novel 5 Step Septum Feed Suite" originally presented at the Swedish EME Conference in Orebro in May 2013. In this Revision, G/T plots for the 23 cm feed are introduced (using W1GHZ's Feed_GT Software) for easy comparison as well as a correction and clarification in the drawing for the 10 GHz feed for dishes with a f/D of about 0.5 (dual mode feeds) has been made. The presentation can be found at <http://www.2ingandlin.se/Presentations.html> and a direct link to the PDF-file at http://www.2ingandlin.se/A%20novel%20step%20septum%20feed%20suite_E.pdf.

UA3PTW: Dmitry ua3ptw@inbox.ru was active of the Moon in Jan and added QSOs on 432 with DL6KAI on CW and with K8DIO, W4NH, K3GNC and OK2PMS on JT65B.

VA7MM: Mark (VE7CMK) and Toby (VE7CNF)'s va7mm@rac.ca report on the ARRL contest arrived a little late because of an email problem -- We were active on 1296 EME for the final leg of the ARRL EME contest,

6/7 Dec multi-operator, all mode. We concluded the contest with our highest score in 12 years of participation with a total of 63 QSO (28 on CW and 35 on digital) with a multiplier of 29 for 182,700 points. Our second best was 172,800 in 2010. Our log shows that digital mode contacts continue to increase over the years. In 2008, they were 2% of our QSOs. In 2014 they were 56%. The corresponding number of CW contacts has been in decline. We're also getting more frequent digital mode pile-ups, and suspect SDR deployed at other stations for directing many of the digital stations to us. We have yet to implement SDR at VA7MM. This contest generated 13 initials of which 11 were on digital and 2 were on CW. Our mixed mode initial count is now #180* of which {#57} are digital and #123 are CW. We're running a recently overhauled OZ9CR cavity amplifier that produces about 200 W of RF power at the feed of our 3 m parabolic dish antenna. On receive we have 0.33 dB NF preamp with about 35 dB gain in three stages. We're planning to operate in the 1296 SSB contest on Sunday 22 Feb and the DUBUS contest on 25/26 April and are otherwise available for skeds; please email us.

VE1KG: Serge ve1kg@eastlink.ca reports on his steps toward 3 cm EME -- I am in the process of duplicating PA0EHG's system with a small dish and an Ioptron gear box 8200. I have the model, which can handle 12 lb when using counterweights. This GoTO AZ/EL is GPS controlled with 9 different speeds and a resolution of 0.1 degs. The gear box is not designed for dishes, but with a little bit of mechanical work it will handle a small dish such as mine, which is an 80 cm offset dish. Ioptron is in MA (USA). They have several sizes of gear boxes that will handle higher loads. The top one will handle 55 lb or 25 kg. They do of course require some mechanical work to attach a dish to the gear box instead of a telescope. For my set up I am using a *dove tail* to attach the dish to the gear box and some counterweight to lessen the stress on the box. Check out <http://www.ioptron.com/support.cfm?module=fag> and PA0EHG's web site to get more info. I want to thank PA0EHG for his excellent assistance.

VE4MA: Barry ve4ma@shaw.ca writes on his activity from his winter QTH -- On 23 cm from AZ I have worked 38 different stations (21 on CW) with a 5' offset dish and 175 W. I could have worked more given time, but I have also been QRV on 3.4 and 5.7 GHz from AZ. Concerning comments I have seen on 1296 vs. 144. I think 1296 is the best band for EME.

VE6TA: Grant ve6ta@xplornet.com updates us on his recent 70 cm contest activity -- I found the conditions during 432 DUBUS Contest reasonably good, although the polarity was not aligned. At least there was little smearing, which keeps the echo strength up once the correct polarity is found. Stations worked were UA3PTW, G3LTF, SP7DCS, LZ1DX, K2UYH, ES5PC, OH2DG, W5LUA for an initial (#), KL6M, N4GJV, VK3UM, SM4IVE, SP6JLW, OK1KIR, DF3RU and JA6AHB for a total of 16x16; I also tried a couple of skeds with PA2V. Peter has a very good signal on 432 with his 4 yagis and 1 kW. Unfortunately, he has his preamp in the shack, which made it difficult for him to copy me. We will try again later this year. All in all activity seems a little better than last year, and I had an enjoyable time on the band.

W2LPL: Les is QRV on 23 cm with 2.4 m dish and 250 W and is please with his results off the Moon -- On 31 Jan I worked PA2DW on JT65C, who was using only a 2 m dish. This was one of the smaller stations I have worked. With my very modest 1296 setup, I had hoped to work a couple dozen of the larger dish stations; so I am more than pleased. I am also using is a TS-2000X, WA2ODO preamp and a simple N4QH scalar feed with LMR-400 feedline and a single relay. The dish is turned with only a G-5400 rotator, so a pointing accuracy of 5% or so. My point is that 1296 EME is not only doable, but even with a minimal investment you can work hundreds of stations with a small setup.

WA6PY: Paul pchomins@san.rr.com in preparation for the 13 cm DUBUS EME contest returned his PLL and filters from 2424 to 2400 MHz -- On 14 Feb, I checked out the new JA EME band 2400.100 and it was clean! I am using two sharp filters (the first in my LNA chain and the second as a diplexer between the 2304-2320/2400 down converters) with a relatively high IP3 in the LNA chain and 17 dBm mixer -- [See figure at the end of this NL; the schematics are the same, but the filters were returned to 2400; the top image is from the diplexer used in the LNA chain; and the images below are of the diplexer in the shack for splitting signals between receivers.] A few years ago, I was planning to split the signal between the bands after the first two stage LNA, use two separate second stage LNAs and run two coax cables to the shack. But I started with a simpler solution; combining the diplexer outputs using a circulator

lowers the interaction between filters and IL. Maybe I could capture S3p file of the diplexer and simulate how to combine in optimal way, but using a circulator was just a one minute job. I will be QRV and looking for 13 cm QSOs in the contest.

WD5AGO: Tommy wd5ago@hotmail.com is also preparing for the 13 cm DUBUS Contest -- In Jan, I put together a 2400 down converter to RX the new JA 13 cm TX frequency. On 1 Feb, I had a nice 2304/2400 QSO with JA4BLC (559/559). This QSO was his 1st to NA on the new frequency. It was the best I have heard Asia on 13 cm in years. This new band segment is several dB nicer than 2424 and puts the fun back in working the west window. Our club group is also working the get the 70 cm array back on line in the spring with added power. We will also be looking to run some additional tests with other stations using the long horn on 23 cm in May.

K2UYH: I alkatz@tcnj.edu was only able to operate during my first Moon pass of the **70 cm CW contest**. NE2U joined me for the contest, but we found copy difficult and often had to rotate 90 degs between RX and TX to be heard. **We QSO'd on 31 Jan at 0022 LZ1DX (569/569), 0030 W5LUA (559/559), 0037 G3LTF (559/559), 0042 SP7DCS (569/579), 0049 OH2DG (559/559), 0103 VE6TA (559/569), 0118 VE4MA/7 (O/O), 0130 ES5PC (579/559), 0140 KL6M (579/569), 0156 UA3PTW (579/579) – also earlier but lost Dmitry before we had Rs and 0212 N4GJV (O/O) - good (569) copy. Our overall score was only 11x11.** There was snow on the ground and the temperature was very cold. The WX caused problems rotating my dish to the west and we had to stop operation before our JA/VK window. We were disappointed not to be able to give out more QSOs. Because of a family/social conflict, I was also unable to be QRV Sunday and thus missed the entire SSB Funtest. The WX was a little better on 7 Feb and I was able to get my dish around to the west to QSO on 3400 at 1120 VK4CDI (O/O) for initial #39. Phil and I had tried several times before with success, but this time he was easy copy and actually sent (559), but I was pre-occupied because my dish drive was still not tracking smoothly. I plan to be QRV for the 1296 SSB Funtest and the 13 cm DUBUS Contest, and will be able to RX on the new JA frequencies.

NETNEWS: SQ7DQX was active on 1296 with the special call HF85PZK in JT65C mode on 1 Feb. **K4MSG** is running 432 skeds with ZS6JON to wrap up WAC. He has also started work on adding 1296 EME and has acquired a TS2000X. **KB2FCV** reports progress toward becoming QRV on 1296. Jim expects to have the AZ-EL tracking working soon and pour concrete sometime in the spring. **N6QVP** worked VK3UM on 23 cm SSB in Jan. David plans to be on for the 1296 SSB Funtest and will be looking for VK and JA stations, but presently does not have a window to EU.



KB2FCV's dish mount under construction

FOR SALE: K4EME reports he has a new version of his 432 LNA with a male N-type input connector as suggested by PA2V. The F-type are still also available. **PA0PLY's** 10 GHz LNA (info@pa0ply.nl), 0.65 dB NF for EU185) announced in the last NL is picture at the end of this NL.



PA0PLY's LNA 10368MHz DU3BC-2015-001

WA4GPM has an 8938 amp with a silver plated rectangular waveguide output cavity tuned by sliding the walls and an output loop that crosses the back wall. It is extremely stable and never needs tuning. It is fully metered, instrumented and documented. It has an extra tube to go with it. Buzz wants \$500. (He is moving to Florida and does not think he can use it there because of the power restrictions). He also has a 1296 cavity amp using an Eimac planar triode with an output of 400 W that he will consider selling for \$200. Pictures are available. Contact Buzz at imiklos@windstream.net.



Left Rack, top to bottom: 432MHz KW, (8938), Driver, 50 MHz 8877 KW, Pwr Supply
Center: 1296 MHz Cavity amp (YU-129B) and Pwr Supply
Right Rack: 144 MHz 8877 KW, 144 MHz driver (4cx250B), Pwr Supply

WA4GPM's amps for sale

SM4DHN has reported that the first of the 23 cm SSPAs (10 W input and ~520 W output) to be offered for sale has been completed. **UR4LL** has for sale coaxial resonators for GS35b triodes and GS23b tetrodes from Russian military stations. Pictures are available at www.ur4ll.net. The price is right. Contact Alex directly at dravva@gmail.com. **W2DRZ** report there is new info on his web page with new controller board hex file update. See <http://www.w2drz.ramcoinc.com/download.htm>.

2015 MICROWAVE ACTIVITY WEEKENDS (MVAW) BY G3LTF: The idea of activity weekends is to encourage activity on the less well used microwave bands outside contest weekends and their restrictions. If you wish, you can use the logger, telephone, HF, use any mode you please to make QSOs. The MVAW enables everyone to make QSOs, test new equipment, feeds, preamps etc. Hopefully some of the big guns will get on and give signals for newcomers to look for. In past years, I have suggested dates, but last year I did not announce the weekends until rather late, so this year I'm trying to be a bit earlier. My thoughts for this year are as follows: 1) High Northern declination weekends give the highest number of participants, otherwise SM, W6 and KL7 get a very short window. The VKs have less of a horizon problem than us in the N, if there's a tree in the way they just cut it down. We cannot have, at present, high N dec. and low loss, but remember the loss variation is

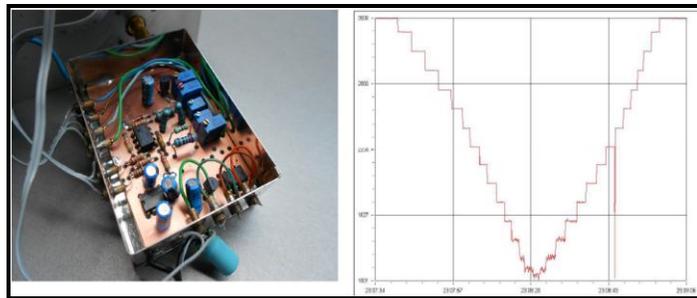
only +/- 1.2 dB. 2) Should we include 13 cm this year? Activity has been dropping recently but IMHO; it is the best band for EME (lowest sky noise, plenty of SS power and low NFs and HB dishes easy to achieve). 3) Should we leave out 24 GHz this year and go for 13, 9, 6 and 3 cm? 4) I can see four weekends that look reasonable. The date, declination and loss are shown respectively - 20/21 June, 12 deg, 2.2 dB; 11/12 July, 14 deg, 1.25 dB; 18/19 July, 10 deg, 2.3 dB; and 8/9 Aug, 15 deg, 1.4 dB. Please suggest alternatives. If you are active on these bands or planning to be active this year then please give some thought to bands and dates, and reply to the reflectors with them and we'll try and get a schedule together. Note that the latest VK3UM planner software now makes looking for suitable dates very simple. <http://www.vk3um.com/eme%20planner.html>.

TECHNICAL: PA0PLY has produced a 10 GHz Moonnoise detector based on the Total Power Project for Radio Astronomy Applications. The system layout consists of a LNB, which converts 10 GHz moonnoise to 900-1900 MHz. This RF signal is then fed to a RF detector (IC AD8313). The resulting DC signal is connected to a series of differential op-amps to create an off-set adjustment and 4 different scales. The Dc signal is also available as a digital signal using a MAX187. This digital signal can be used to connect to an RS232 port of a computer. Using a differential amplifier for the DC line, one is able to zero the environmental noise and thus apply more gain in the DC chain to the analogue meter-circuit.

The final packaged detector is shown below.



FINAL: I am pleased to report that Guy (F2CT) and Corine who helped lead the wonderful EME2014 Conference were married on 31 Jan!! Congratulations to the newly weds.

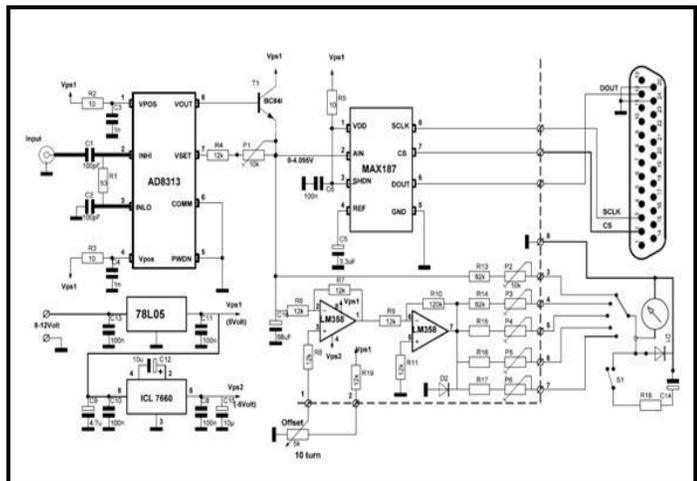


Using the LNB block converter, the detection of the Moonnoise will be much easier once a full-scale value of 1 dB can be obtained. The AD8313 RF detector from Analog Devices was selected because of its 0.1 -2.5 GHz frequency range, 70 dB dynamic range and +/- 1.0 dB over 65 dB accuracy. The RF signal from a LNB can be fed directly to the RF detector without the need for converters. After the construction of the PCB, the circuit is calibrated in order to get a meaningful figure during measurements. A signal generator at 1400 MHz was used. The RF output was stepped in 5 dB steps starting from 0 dBm to -70 dBm and back to 0 dBm. The result is shown in the following figure. The RF detector was set to 40 mV/dB. This noise power detector can also be used as a normal power meter with a frequency range up to 2.5 GHz.

There were many complaints about the mailing of the awards for the 2013 ARRL EME Contest. Matej (OK1TEH) has been in contact with the new ARRL Contest Branch Manager, Matt (W1MSW) and reports that he believes the problems have been corrected and the 2014 awards will be received on schedule. Matej also says that he has finally received his 2013 contest award, and that if you have any questions to contact Matt at w1msw@arrl.org.

The official dates for the 2015 ARRL EME Contest has been announced as 5/6 Sept for the 2.3 GHz & Up contest, and 31 Oct/1 Nov and 28/29 Nov for the 50-1296 weekends. Despite concerns there will be no substantial change in the contest rules. Assisted operation is still not allowed.

SM4IVE says time is running out to submit your talk information for the 2015 Swedish EME Conference – see <http://sm4ive.com/agenda.html>. It is also time to get your registrations in as well. If you have any questions email Lars at sm4ive@telia.com.



VK3UM has been busy working on his software, last month Doug reported on his Planner, this month he had news about EMECalc Ver 10.01. This latest version reflects W1GHZ and SM6FHZ's excellent papers along with G3LTF's considerable work on feed spill over. Other areas of refinement have also been addressed. Areas of change include new and improved mesh loss routines, Circular, Horizontal and Vertical polarity conditions, corrected cross polarization between dish and yagis (all combinations), Corrected Moon noise for phase and frequency - previously released in the EME Planner, RX performance option now linked directly to the two station EME (values transferred by default but User specific file save options remain), a new feed layout form and refined feed data has now been provided for all feed types. This includes the complex spill over/angle application as per W1GHZ's EME 2015 paper and G3LTF additional calculations. Direct web address access links for all feeds has been updated. In addition a blue current date line has been added to the monthly Summary. You may wish to update the EME Planner Ver 1.95 whilst you are there. My sincere thanks and acknowledgement for the considerable work done by W1GHZ, SM6FHZ and G3LTF, and additional suggestions from K6ICF, DL1HYZ and DL2FCN.

The WX here has been pretty terrible lately, but I am hoping the snows well let up enough to let me operate in both the SSB Funtest and 13 cm EME contests. Please keep the reports and tech info coming. I will be looking for you off the Moon. 73, AI – K2UYH