432 AND ABOVE EME NEWS
SEPTEMBER 2013 VOL 41 #10

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CONDITIONS: Autumn is almost here and with it the EME SEASON. Activity did not seem to slow down this summer, but it is now about to go into overdrive! Coming up on 13/14 Sept is the 2014 XXI CW/SSB ARI EME Contest. Then the following weekend is the first leg of the ARRL EME Contest for 13 cm and Up. The hard part will be to decide which band to operate on and when. On top of the contest activity is a plethora of dxpedition activity. At this writing 3B9EME (MH10qh) is already QRV from Rodrigues Island on 432.090 first sequence on JT65B with an LFA 23 el yagi and 600 W. They plan to be QRV through 12 Sept. Starting operation on 9 Sept will FP6 from St. Pierre and Miquelon Islands (GN17tc) on 70, 23 and 13 cm – see their report for more details, and on 20 Sept TA, Turkey on 70 and 23 cm also reported on in this newsletter (NL). Just in XX/DL1YMK will be QRV from a mystery DX location from 22 Sept to 3 Oct on 70 cm thru 3 cm! See XX- report. Next month's dxpeditions will include H44HP and BJ9TM. Aug was no slouch with the very successful J45EME dxpedition to Rhodes, a fine turnout for the 6 cm activity weekend (AW), extra activity on 9 cm on 31 Aug/1 Sept, and much improved activity during 70 cm CW activity time period (ATP). Because of the ARRL and ARI contests, there will not be another 70 cm ATP until Dec, but there should be plenty of 70 cm CW activity during the contests.

HB9Q now has a 2nd dish for 23 cm up at their EME campus – see their report

BJ9TM: Michael (BD5RV) michael.bd5rv@gmail.com will be putting BJ9TM on 432 (all so 2 and 6 m) on EME (NM79) in Oct (including ARRL EME contest) -- if the station is set up on schedule, I plan to operate from 17 to 20 Oct, from moonrise to moonset. The QTH is in the middle of a desert with a very clear horizon in the south, west and east, which should be perfect for EME. On 432, I will have two 42 el yagis, 1 kW QRO, preamp. I am hoping for both JT65 and CW QSOs, maybe even SSB?

DK3WG: Jurg dk3wg@ok.de added on 432 in Aug initials on CW with N8DJB, and on JT65B with PE1DAB, J45EME for DXCC 107, W6FCS and F8KCF.

DL7APV: Bernd dl7apv@gmx.de had a lightning strike and lost 2 of his A2 digital encoders but is back in full operation now –– Fortunately, it hasn´t very cloudy and I have been able to track visually. During the Aug 70 cm CW ATP, I worked G3LTF, SM2CEW, N8DJB for an initial (#) and K2UYH. The day before, I added W6FCS (JT) for another new one (#). Also QSO'd was J45EME for an easy new country and (#). Their signal was up to (16DB) from their 12 el CP antenna – a very good signal!

DL9KR: Jan bruinier@T-Online.de updates us on his recent activity -- As you know, the WSJT scene with computers talking to each other and loggers playing important roles, is not my thing. The more I still cherish any CW QSO including with expeditions who are kind enough to give me a chance. On 24 April 9G5EME gave me such a chance for CW DXCC #120. Ursula and I returned just one day late from a nice tour thru France and thus missed 9X0EME. On 6 July RO's were exchanged with VK4EME (actually 549), on 23 Aug Faraday showed a vertical, sharply defined pol yielding unusually weak echoes. Therefore, it was a perfect idea of the J45EME team to use circ pol resulting in an easy Q, CW DXCC #121 and init 927. One day later the same pol situation. It was comforting to receive VK3UM (589). I'll try to pick up some initials in the ARRL contest. G4RGK is doing a fine job with his initial list, but it should be noted that for many years there is a more detailed (50 MHz thru Laser) list run by DF6NA. It is real time at www.vhf-dx.net/top/top.html.

EA3XU: Benjamin bpaloma@telefonica.net is now QRV on 10 GHz EME -- On 21 Aug I made my first QSO on JT65C 10 GHz EME with OK1KIR; thanks to the experience of the OK1KIR Radio Club, who provided the Doppler correction. I am using a 1.5 m offset TVSAT dish (horiz pol), a 17 W SSPA and an LNA. My oscillator is a very stable PT-160 + 10 MHz Rubidium reference. I also have 30 W on 6 cm that I could use with the same antenna, and am putting together a system for 13 cm using grid antenna (65 x 95 cm) with 150 W. [Why not also use the 1.5 m dish on 13 cm].

1.5 m offset dish used by EA3XU to make his 1st 3 cm EME QSO

F8KCF: Phil (F5JWF) f5jwf@free.fr sends new that the F8KCF Radio Club will be active on 70 cm during the ARRL EME Contest. They are using 4 x DJ9BV 13 lambda yagis and 1 kW, and have already made a number of 432 QSOs while testing the system in Aug.

FP6???: Peter DJ4TC DJ4TC@t-online.de sends news that the St. Pierre and Miquelon Islands (GN17tc) will be on 70, 23 and 13 cm (also 2 m) between 9 and 21 Sept. They do not yet have a schedule for operation on particular bands as there are still some open issues that will not be finalized until they are on the island. On 432 they will operate on 090 with a single 38 el yagi and 300 W, on 1296 they will be on 120 with a 67 el yagi and 200 W, and on 2320 they will operate on 120 with a 67 el yagi and 300 W, but will also be able to listen on 2304 They will use the HB9Q reflector for the higher frequencies, but not the will have a very limited Internet connection – one of their unresolved problems.

G3LTF: Peter g3ltf@btinternet.com reports some real progress -- During the 5 days prior to the 6 cm AW, I worked almost solidly on the re-covering of the outer 1 m of my 6 m dish; I removed the 12 mm chicken wire and replacing with 6 mm stainless steel welded mesh. To support the mesh in smaller "squares" than before, I fitted very lightweight intermediate ribs (cut from aluminum sheet) between the 16 main ribs, and spanning the outer 1.8 m. This meant that I

corrected errors closer in to the centre as well. I had to do a lot of soldering of joints and I was grateful for the tip I got from watching the film of SM7GVF working on SM4IVE's dish. Kjell cut the steel mesh with an angle grinder, which is much easier than using tin-snips. The results have made all the efforts and expense well worthwhile. From the reduction in leakage and the profile correction, I have gained between 1 and 1.5 dB of Sun noise on all bands, 6 thru 13 cm and even a small amount on 23 cm where I now measure Taurus as 0.4 dB. There is also, of course, an improvement in Moon noise on all bands. The feed positions all needed re-adjustment and their phase centers are now much closer to the theoretical focal point of the dish indicating a lower phase error. I can now copy my 9 cm SSB echoes with 25 W at the feed. This HB dish started out as a 4 m 0.5 f/d in 1995 that I thought would probably be good enough for 13 cm... It has had an enlargement, 2 rebuilds and two recoverings and it works pretty well at 6 cm. It still has some errors, but I can't correct those now. I am now building new feeds for 13 and 6 cm. At the start of the AW, Saturday morning, 29 July the wind had got up and was very gusty, so I was only able to work OK1KIR, ES5PC, G4NNS and DL7YC. I heard SQ6OPG and WA6PY. On Sunday the wind was much lower and I worked G4CCH, PA0BAT, DL7YC, SV3AAF, ON5TA, VE4MA, SM6FHZ, PA3DZL and VE6TA for initial #41. CWNR were JA6CZD and I heard SM6PGP, JA8ERE and ON5RR and I was heard by LA8LF. Sun noise was 15.5 dB with SF 107 and Moon noise 1.2 dB. On 6 Aug, on 9 cm I worked KL6M for initial #45 at the moonset/moonrise limit for both of us! On 10 Aug, on 23 cm I worked PA3CQE for initial #377 and on 11 Aug on 6 cm G3WDG for initial #42 and G4CCH. On 24 Aug, on 70 cm I worked K2UYH and in the CW ATP VK3UM - sadly during this period (2130-2330) no-one other than Doug was heard. The next day in the second leg of the ATP, I worked W8TXT, K2UYH, SM2CEW, OZ4MM, SV3AAF, G4RGK, and later DL7APV, and heard KD7YZ. On 26 Aug on 70 cm, I added N8DJB for initial #451. On 28 Aug, I was on 23 cm and worked N4PZ, SM2CEW, N8DJB #378, SP7DCS and RN3A #379, and on 29 Aug N4PZ. I worked on 31 Aug, on 13 cm OZ5G for initial #111, and on 1 Sept, on 9 cm PA3DZL, PA3CQE #46, SP6OPN, SM6PGP #47, W5LUA and K2UYH. Finally a very big thank you to the many people who kindly offered advice and replacement parts for the MRF21120 that failed in my 13 cm PA. It is now working again giving 280 W output and with a nice 4 pole interdigital filter before it to ensure a clean spectrum.

New mesh being installed on G3LTF's 6 m dish

G4CCH: Howard howard@g4cch.com send information on his 6 cm EME AW results on 3/4 Aug -- After a bad start on Saturday with all kinds of problems - I had no elevation control, which turned out to be the jack screw was jammed at the end of its travel, and the motor would not turn it. Took me some time to figure out what was going on as I couldn't remember how I wired my lash up (I will keep notes next time). It took most of the day to get it going. I then heard an electrical crackling sound in the shack followed by a nasty burning smell. It turned out to be my HP436 power meter. I will have to find out what has burned up, but the meter still appears to work. I had a much better day on Sunday. Activity was not quite as good as for the DUBUS contest in May, but I made 15 QSO's of which 7 were initials. In the log are PA3DZL, PA0BAT, SQ6OPG, JA1WQF, JA8ERE for initial #26, JA6CZD #27, G3LTF, DL7YC #28, G4NNS, SM6PGP #29, ON5RR #30, ON5TA #31, SV3AAF, VE4MA and VE6TA #32. The WX was calm on Sunday morning, but the wind increase during the day with gusts > 20 mph. Signals were in and out as the dish moved ± 0.5 deg in the wind due to backlash in the azimuth gearbox. That's just one of the many things I need to improve somehow. My Sun noise = 16.5 dB and Moon Noise = 1.5 dB. I have made no attempt to optimize the feed position yet. I may have got lucky and it could be OK where it is, but at some point I would like to check. The following weekend, I had more problems. This time the motor was seized. On stripping the motor, it was obvious that water ingress was the reason. I cleaned it up as best I could, greased the bearings and re assembled. The motor runs again now, but I am not sure how long for, so I have ordered another. It was quite windy, but took the risk to try and work a few stations while there was a chance. I worked PA7JB (549/539) #33, G3WDG (569/559) #34 and (53/43) on SSB, and G3LTF (569/569). The wind calmed down later, but by that time there was no activity, so I did some echo tests. You can find clips of my echo testing on CW and SSB, and some of the stations I worked in the last two weeks at http://www.g4cch.com/data/log/newsofmy.html. My system is 5.4 m HB mesh dish, scaled N2UO feed, 30 W SSPA at the feed point and MGF4919 LNA with 0.6 dB NF. I haven't checked how the figures stack up in EMECALC yet.

HB9Q: Dan's (HB9CRQ) dan@hb9q.ch group are eagerly awaiting the EME season this fall/winter with a new 10 m dish -- HB9Q is now QRV on 23, 13 and 9 cm with a third dish in addition our 2 m array and present "big" 15 m dish that will continue to be used on 432. The new dish has on 1296 an IMU dual mode feed with septum polarizer by OM6AA with MKU 1 kW SSPA by DB6NT and 0.22 dB NF LNA by G4DDK, on 2320/2304/2420 an IMU dual mode feed with septum polarizer by OM6AA mounted offset with MKU 100 W SSPA by DB6NT and 0.25 dB NF LNA by G4DDK, and on 3400 a VE4MA horn mounted offset, with MKU 75 W SSPA by DB6NT and 0.4 dB NF LNA by G4DDK. The 10 m solid dish has an f/d of 0.43 and was built by Zeppelin in Germany in 1966. We will also have 7/8" hardline connections, a FLEX-5000A, IQ+ 28 MHz single channel by HB9DRI, MAP65 and WSJT by K1JT, and HDSDR by DG0JBJ/I2PHD. Tests show that on 1296 and 2300, we can easily work single yagi stations using 50 W, and on 3400 the smallest station worked so far is a 2.5 m dish and 60 W, however we belief a 1.5 m dish and 30 W should do it. We are very much interested to try with Tropo and/or Satellite stations. Our target is to work as many and as small QRP stations as possible. We would like to find out how small a station we can work on these bands. If you are interested to try please e-mail. More information about HB9Q is on our web page at www.hb9q.ch.

Feeds (23, 13 & 9 cm) mounted offset on new HB9Q 10 m dish

J45EME: DL8YHR and DM1CG DM1CG@darc.dput put on another great dxpedition. They ended up QSOing on 432 OZ4MM, OK1DFC, DL7APV, DK3WG, UA3PTW, DL9KR, OK1KIR, G4RGK, HB9Q, WA4NJP, JA6AHB, LZ1DX, UX0FF, G4FUF and K2UYH, and on 1296 OK1DFC, UA3PTW, HB9Q, OZ4MM, I1NDP, OK1KIR, DJ9YW, PA3CSG and PY2BS on EME. On 23 cm they had problems with radar that forced then to operate on 250 and with equipment (with both antennas and TS2000) that caused them to stop operation early. QSLs should include an SAE with enough postage for the way back to you and be sent to DL9MS, Joachim Werner, Kastanienstr. 21, 18209 Bad Doberan, Germany.

JH1KRC: Mike has made improvements to his dish and plans to be active during the ARRL EME Contest this year on 1296 -- Finally the rebuilding of my dish is done. AZ/EL can now be controlled to within 0.2 degrees. Some optimization of my feedhorn position may still be needed, but I am seeing 12 dB of Sun noise and hearing good echoes with 800 W on TX. Due to tree growth, I now need a Moon elevation of greater than 10 degs to avoid blockage. Please look for me during the contest on 23 cm CW/SSB.

K1DS: Rick rick1ds@hotmail.com is working on portable EME capabilities for both 432 and 1296 -– On 432, I will use 4 x 9.5 WL yagis with almost 22 dBd of gain with a 180 W PA. I will use a short piece of superflex from the PA to my 4-

way splitter and then short pieces of LMR400 to connect the splitter to the antennas. I worked on 432 OK1DFC on CW last year (539) using just 2 of these yagis, and Arecibo with just 1 and 100 W on CW! My plan is be on for at least 1 pass on 1296 and another on 432 during the contest. Once I have validated the 432 system with more CW QSOs, I will hopefully be able to also do some JT65 on both bands.

K4MSG: Paul's Phbjr@aol.com Aug EME report -- I recently upgraded my 70 cm PA to 180 W, and now when operated at the antenna the power gain over the previous setup (70 W) is about 4 dB. This change showed its merit on 17 Aug when I successfully QSO'd PY2BS, adding SA as another WAC continent to NA and EU on 70 cm. Back before I made the change, I received an email report that VK4EME had successfully decoded my signal, so I am hopeful with the new PA that I might be able to work "Down Under" on 70 cm. Africa has been problematical since the only 70 cm station regularly active seems to be ZS6OB and Pine's 70cm set-up is a bit too small for a two-way with mine until I "add more metal" to the antenna system. [Also try ZS5Y.] Tentative plans for that kind of upgrade are still being formulated. I must admit, however, that my activity on 70 cm has been very low the past month owing not only to rearrangement of my equipment but also the dearth of station activity. With most of the larger, long-time stations seemingly spending much (or most) of their time on 23 cm and above there are far fewer stations capable of successfully QSOing with single yagi operators on 70 cm and this may be stifling interest and making 2 m more attractive to newer stations just starting out in EME. Based on the JT65 EME-1 "chat page" I am seeing a *LOT* of new call signs with single or twin yagis and 200-300 W on 2 m EME these days, mostly domestic U.S. stations. It would be great to see some of them migrate to 70 cm, but if the larger stations are never around they will quickly return to 2 m where contacts can be had on any favorable day by even small stations and there is a plentiful supply of new grids and countries to be worked. [I do not have a good answer. Activity on the microwave bands does thin out activity on 70 and even 23 cm. Even in the so called "good old days" 70 cm was basically a weekends only band, and activity was mainly during a designated activity weekend (AW). I have observed that stations that are on every day, tend to burn themselves out and disappear. Most of the regulars (not necessarily on a daily basis) have been active for many years.] I am looking forward to the Mid-Atlantic VHF Conference in Sept and having a chance to provide a brief overview of Navy EME during the 1960s as I experienced it aboard ship.

KD7YZ: Bob kd7yz@denstarfarm.us continues to provide KY on 70 cm – I worked 8 new ones on 432 EME since my last report. I have only QSO'd one Asiatic station (JA6AHB) - where is everyone from over that way. I've not been able to work ZS6OB despite the two of us running 3 times now. I have an 18 inch floor fan that really keeps the amp cool with 600 W out. I am also still looking for a TVRO dish to use on 1296, but no luck so far - the mailman doesn't know of any on his route.

KL6M: Mike melum@alaska.net has been concentrating on his new 9 cm EME system -- So far I am up to initial #9 on 3400. I most recently added PA3CZD and WA9FWD. I also had 2 near misses with K2UYH. The system needs some optimizing, but is working. My tree situation here is very bad. My moonrise window has almost completely closed up so my European contacts must be made on or near my moon set. This window is narrow, but the trees are on my own property, so my only challenge is my tree-hugging wife. When the leaves fall, I can penetrate the trees on moonrise on 432 and 1296 to some degree. Other projects here are a 8877 amplifier for 144, 222 SSPA, 902 EME system, and a 5760 transverter.

KL6UW: Ed kl7uw@acsalaska.net is making good progress on his enhanced 23 cm system -- Sun noise measurements made on my 4.9 m dish with a septum feed with 10" square opening pyramidal horn resulted in 13.1 dB. This is not the 16.5 dB that is predicted by using VK3UMCalc. G3LTF, suggested that the horn had too narrow a beamwidth for the dish and under illuminating it. He suggested measuring the HPBW, so I did and came up with beamwidth of 3.85 deg (33.26 dB gain) vs 3.23 deg (34.54 dB gain) being predicted, which could account for the up to 2 dB lower Sun noise. The dish's effective area being used is 4 m vs 4.9 m. As a result, I am getting a W2IMU feed via Steve, N4PZ, from the estate of K1RQG. My f/d=0.5 dish is perfect for this feed and I am expecting delivery mid-Sept. In the meantime I have been making needed mechanical repairs on the dish support structure and a few other improvements. I may try looking for EME signals with the current feed. I may be able to test echoes using a new LMR-400 RX cable and 50 W PA at the dish. Now I only need to install/test the new feed, when it arrives.

N8DJB: Craig is QRV of 432, 1296 and soon 2304 -- My 12' dish was not performing up to my expectations, so I expanded the petals to make it now 18'. I thought keeping the original curve was important, so I curved the new extended ribs to have the same curve as I had before. I thought I would have the same f/d as before, but now realize my f/d has been considerably lowered to an almost unusable .25! Feeding this with my old VE4MA scalar feed still seems doable, but at reduced efficiency. [Craig has since made a number of initials with his enlarged dish on 432 and 1296. Although not ideal, the .25 f/d offers an exceptionally low antenna noise temperature. To take full advantage of a deep dish, you should work to have the lowest possible NF. You also want to optimize the position of your scalar ring for the low f/d. Craig was active on 432 EME back in the 90's. If you worked him back then as I did, he does not count as an initial as he is still at the same location.]

OK1KIR: Tonda and Vlada vladimir.masek2@seznam.cz send their group's EME reports for the last few months [Their last emails did not arrive and Vlada has re-sent the info] –- On 10368 during the floods on 2 June they worked at 0937 OZ1LPR (O/O) for initial #78 with a mutual spread close to 130 Hz (Moon was at 1.45 dB degrd (close to apogee), Sun measured 18.2 dB and Moon noise was 2.9 dB, and on 24048 on 9 June the worst possible conditions (Moon in apogee, 2.3 dB degrd, spread close to 500 Hz) prevented PA0BAT from making his 1st QSO on 24 GHz. Our own echoes were about 200 Hz wide and about 7 dB down from the obvious level at around 100 Hz spreading. In the 13 cm part of the EU EME Contest on 15/16 June activity was good and brought a total of 42 QSOs and initials with OK2ULQ, IK6EIW, SP7DCS and SM3JQU to bring us to initial #127. CWNR were IK2RTI and OZ6G. We also worked the same weekend ON5TA (14DB/O) on JT65Cfor digital initial {#11}. Our Sun noise measured 20.8 dB (SF 115), Moon noise 1 dB and CS/G 7.2 dB. The biggest surprise was the decrease of WiFi interference in the current JA band (2424) from about S7 to S2 after a terrible 6 years, probably due to a significant move of traffic to 5.6 GHz. This improvement allowed us to work 3 JA stations! Unfortunately, the WiFi interference level in 6 cm band has notably increased. In the DUBUS 9 cm EME contest leg, we made 25 QSOs. New ones were SG6W, PA3CQE, S50C and SM6PGP raised our initials count to #52. We also QSO'd HB9Q (15DB/9DB) on JT65C for digital initial {#5}. We worked the 9X0EME dxpedition with JT on all 4 bands; on 432 on 28 June at 2306 (27DB/24DB) {#83} a new DXCC and KI field, on 1296 on 30 June at 0034 (17DB/19DB) {#146} a new DXCC, on 2320 on 01 July at 0314 (27DB/25DB {#12} a new DXCC, KI field and 1st 9X-OK on 13 cm. Later we added at 0608 HB9Q (12DB/8DB) {#13}. On 13 cm we used for the first time a new rotatable linear loop feed (scaled from an OM6AA design). On 14 July we worked on 24048 at 1756 G3WDG (M/O) for initial #14, followed at 1903 by JT4F QSO (14DB/14DB) for digital initial {#3}. For both QSOs we used our prime focus dishes, 3 m size at Charlie and 4.5 m at OK1KIR. The predicted spread of 330 Hz was decreased by the big dishes to about 100 Hz. Charlie employed a new SSPA with 5.7 W at feed, and OK1KIR an SSPA with 20 W at feed. Both sides' LNAs were about 1.5 dB. OK1KIR measured G/CS noise of 3.35 dB and Moon noise of 1.5/1.7 dB (close/far off); the Moon elevations were 20/25 degs during the test. On 3 Aug we QSO'd on 3400 at 0120 OZ6OL (539/559) and 0229 KL6M (O/O) for initial #53, new DXCC, BP field and the 1st KL7–OK 9 cm QSO, and on 5760 for the AW JA8ERE (569/559), 0422 JA1WQF (549/549), 0544 S57NML (O/O), 0610 DL7YC (559/569), 0658 OH2DG (549/559), 0834 ES5PC (559/559), 0900 PA0BAT (569/569), 0913 G4NNS (549/539), 0951 SV3AAF (549/549), 1004 G3LTF (559/569) and 1039 VE4MA (549/549). On 23 Aug we worked on 432 using JT65B at 2027 PE1DAB (15DB/19DB){#84}, 2204 J45EME (26/O) {#85} and new DXCC, 2252 UY5HF (29DB/23DB) {#86}, 2308 F8NCF (7DB/O) {#87} and 2331 LZ1DX (9DB/O), and on 24 Aug on 432 at 0031 UN9L (27DB/24DB) {#88}, 0124 PY2BS (8DB/18DB), 0149 VA3ELE (27DB/27DB) {#89}, 0233 WA2FGK (15DB/20DB) {#90}, 0428 G4RGK (13DB/O) and 0517 K2UYH (6DB/18DB), and on 1296 at 2057 RN3A (549/559) for CW initial #356 and 2115 R4YM (23DB/14DB) on JT65C digital initial {#147}, 2137 VK2AMS (22DB/18DB), 2352 J45EME (23DB/O) JT65C {#148} and new DXCC, and on 25 Aug on 1296 on JT65C at 0009 DJ5BV (26DB/O) {#149}, 0555 SQ7DQX (13DB/9DB), 0607 LU8ENU (19DB/14DB), 0646 YL2GD (16DB/9DB) and at 0715 OK1TEH (24DB/30DB) {#150}. We also worked on 10368 on 26 Aug EA3XU at 2236 (27DB/24DB) on JT65C for digital initial {#27} and 1st OK-EA 3 cm QSO. Both stations were GPS locked and OK1KIR employed an RX/TX mutual Doppler correction by hand. Bejamin used a 1.5 m tropo dish with H-pol and Az-El control and 17 W. Problems with SW and the dish pointing at EA3XU prevented completing tests with JT4G(F).

OK1TEH: Matej ok1teh@seznam.cz is now QRV with a new higher power SSPA -- On 23 cm I have new 1 kW PA made by OK1VPZ and based on 4 PE1RKI's modules with 2 x MRFE6S9160 transistors. I used this PA at only CCA 600 W out on WSJT because the N connectors get hot. Using the new PA, I took part in the great SK6OSO's tests and worked them with my small 1 m (17 dBd) dish on CW as well as JT65C (17DB). At web site http://www.sk6yh.se/activities/2013/SK6OSO_23cm/ can be found SDR-RF I/Q data files and if you check 1296.036, you can hear my weak CQ on CW. I plan to be on with a bigger EME dish by the end of this year. On 70 cm after several attempts, I finally worked KD7YZ in JT65B on 27 June for a new WAS state, KY, and my mixed initial #84* with a single 23 el DK7ZB yagi. Recently, I did a presentation at

SP6 EME Meeting in Zieleniec about QRP EME on 23 cm. This presentation is online at: http://www.ok2kkw.com/xyz/zieleniec/qrp_eme_1296_teh_zieleniec.pdf. [It is well worth seeing.]

OK1TEH's new 1 kW SSPA

ON0EME: Walter (ON4BCB) on4bcb@gmail.com forwards the following report on reception of the 23 cm EME Beacon from DJ2DY, Rainer -- Thank you very much for the beacon. It allows me to compare and optimize my equipment. I can only RX, but have a PA in the works. I am using a 48 el DL6WU yagi with a G4DDK LNA and a DB6NT Transverter. The ON0EME signal is automatically Doppler corrected with my DSP10 and have a frequency deviation of only 2 Hz! All these components are completely homemade. I h0ope the beacon can be QRV long time in the future so many other radio amateurs will be able use it.

OZ4MM: Stig vestergaard@os.dk says he has not been able to be on the Moon as much as he would want because of travel for QRL -- On 23 Aug I missed J45EME on 432 because very strong multicarrier interference on their frequency. On 25 April, I joined 432 ATP during the last part and worked G3LTF, SV3AAF, W8TXT, SM2CEW, K2UYH and G4RGK all with great signals on CW. Later in the evening J45EME activated again luckily on 432 and I worked them easily on JT65B (21DB). Back on 24 Aug I added J45EME on 1296 (20DB). Many thanks to Carsten and Frank for their great effort.

PA3DZL: Jac PA3DZL@planet.nl has now added 3 cm to the list of bands that he is QRV on EME – In Aug I made my 1st 10 GHz EME QSO LX1DB. It was to be an RX test just to see if the system worked. Signals were very nice, so I tried calling with only 3 W at the feed. I was very surprised when Willi replied and we were able to complete a QSO (O/M). Willi has very good ears! On 3 cm my rig is a 3.7 m mesh (5 x 5 mm) dish f/d 0.4, DB6NT transverter + DB6NT preamp (0.7 dB NF) waveguide switch with 10 MHz GPS lock. Sun noise is 7.5 dB and Moon noise is 0.3 dB, which is not very good! CS/G is 4.5 dB with the feed only. I obviously have a lot of improvements to make. During the 6 cm AW, I worked G4CCH, DL7YC, VE4MA and G3LTF. Heard were PAØBAT, ON5RR and SV3AAF. I was QRV for only a few hours as I had some RX problems on Sunday due to a bad connector. My 70 cm EME tower was also between the dish and the Moon, so when pointing south I had some degradation. On 6 cm, I measure a Sun noise of 12.3 dB and a Moon noise of 0.4 dB. On 13 cm, I worked PA3CSG during a test for initial #75. Geert has a 13 cm feed for his big dish and had a very nice signal off the Moon. I was on 9 cm and worked on 31 Aug OZ6OL (559/559), SM6PGP (O/O) for initial #23 and DXCC 16, and SP6OPN (559/559) #24 and DXCC 17, on 1 Sept G3LTF (559/559), SM6PGP (559/529), PAØBAT (569/569), PA3CQE (O/O) #25, SP6OPN (569/569)), W5LUA (579/579) strongest station of the day and K2UYH (569/569), and partial KL6M, and on 2 Sept KL6M (O/O) #26, DXCC 18 and first PA – Alaska QSO. On 3400 I am using the same 3.7 m dish with a RA3AQ feed, 0.5 dB NF LNA and 150 W at the feed. I measured 13 dB of Sun noise and 0.3 dB of Moon noise.

SM6FHZ: Ingolf ingolf.fhz@gmail.com was QRV for the 6 cm AW on 3/4 Aug – I made 5 initials and heard/worked a lot of stations. My Sun noise was 15 dB, Moon noise 1.0 dB, and Ground to cold sky 4.5 dB. These results indicate that my preamp does not have the NF I hoped for and is probably about 1.3 dB. Then all the numbers fit well in EMECalc.

SM6PGP: Hannes sm6pgp@telia.com is now QRV on 9 cm EME – My 9 cm license is only good until 31 Nov. After this date, we don't know what will happen with our 9 cm special licenses. My setup for 9 cm is a 1.8 m prime focus dish with a Kumar feed of SM6FHZ design, 160 W LDMOS PA mounted at the feed, G4DDK LNA and a transverter of my own design. I had some initial problems with frequency stability, which I seem to have fixed. High power was leaking into the VCXO. In the PA I am using NXP LDMOS devices that are for pulsed applications, but so far I haven't been able to destroy them - not even with a 1 min key-down (JT65). Those devices seem to be very robust (BLS6G3135-120) and very usable at 9 cm. I have worked so far on CW: HB9Q, PA0BAT, PA3DZL, G3LTF, W5LUA and K2UYH, and PA3DZL on JT65. I am interested in skeds. PSE email.

SV3AAF: Petros sv3aaf@yahoo.com reports of his 6 cm AW activity in Aug –– The AW provided plenty of opportunity for random activity unlike the 3 cm AW in July where participation was very low. Despite unfavorable condx of apogee coupled with a high smear geometry, there was a good amount of noise generated by 6 cm stations on both passes. I worked ES5PC, OK1KIR, G4NNS, PA0BAT, DL7YC, G3LTF, G4CCH and VE4MA. In mid Aug, I had a nice 13 cm QSO with DL1YMK while re-optimizing equipment on this band. There was also fair activity on 70 cm during the Aug CW ATP where I worked K2UYH, OZ4MM, G3LTF and SM2CEW. I plan to be on for the ARI EME Contest 21/22 Sept. [Petros received the Excellent Quality Award from ARI for the XIX Italian EME CW/SSB Contest!]

TA???: Rene (PE1L) hasperrene@gmail.com reports that although the call has still not been decided that his, PA3FPQ and PE1LWT's plans for operation from Turkey (KM39) are all on track. They will be on 432.090 for the moonpass from 22 to 23 Sept with a 23 el DK7ZB yagi, preamp and some power, and on 1296.090 for the moonpass from 23 to 24 Sept with a 67 el yagi horiz pol, preamp and some power. They will listen at their own (calculated) echo with TA in the first period on JT. They will be on HB9Q logger. For updated information see www.emelogger.com/TA.

TI2AEB: Armando aebonilla@ice.co.cr has lost power from his 23 cm SSPA and believes he has a bad device or devices. By the time you read this he hopes to have his SSPA repaired, but he is presently QRT and very upset over his predicament.

UA3PTW: Dmitrij ua3ptw@inbox.ru was active on 70 and 23 cm during the past month. He added on 432 using JT65B R4YM, PE1DAB, LU7HI, F8KCF and J45EME, and on 1296 using JT65C PA3CQE, PE1DAB, J45EME, DJ5BV, OK1TEH and YL3AG.

VE3KRP: Eddie eddie@tbaytel.net was QRV on 1296 in Aug/beginning of Sept – I worked on 23 cm, on 4 Aug using JT65C LZ1DX, GM4PMK, SQ7DQX and OH1LRY, on 1 Sept G4CCH on CW, LU8ENU on JT65C for an initial {#}, OK1YK JT65C and WB7ABP JT65C {#}, on 2 Sept G3LTF on CW and W3HMS on JT65C, and on 7 Sept moonset VK4CDI JT65C {#}.

VE5KKZ: Kees kaperk@sasktel.net now 150 W at the feed on 1296 and has been received by I1NDP, PA3FXB and others, but [to my knowledge] has still not completed his first QSO -- I believe I may have a preamp problem and am thinking to enlarge my 10'dish to a 16' dish. I am making slow progress and hope to work complete my first QSO soon.

VK3UM: Doug tikaluna@bigpond.com was active from 2100-2245 (his moonset) during the first leg of the Aug 432 CW ATP – I worked only G3LTF and DL9KR. They were the only other stations on from what I could tell. This was disappointing, but we were there and the gear still works FB.

W4AS: Sebastian w4as@bellsouth.net reports completing his first 70 cm EME QSO -- I just made an EME QSO on 432 (24 Aug). While that might not be big news, my station consists of a pair of 18 el yagis, and I'm limited to 50 W in this part of the USA. I don't have elevation control, so I was limited to just a few minutes between the time the Moon was visible above the homes in my suburban lot, and the time the Moon would be too high for my antenna's beamwidth. I worked LZ1DX (25DB/27DB). I have a mast mounted preamp and a relatively short run of 7/8 hardline. If there are other large stations who would like to setup a skeds with me, please feel free to email me.

W6YX: John johnhill5000@gmail.com reports that the Stanford group expects to be QRV on 3 cm for the ARRL EME Microwave Contest -- The Skunk Works division of Team W6YX has been hard at work all summer long, secretly building our new station addition for the 2013 ARRL EME contest. Half a dozen grad students plus various team members have been meeting at least once a week to get a 4.6 m dish and 150 W station ready to be QRV on 3 cm! We plan to operate CW and JT4. As always, we'll be relying on a SDR and Linrad in our

receive chain. If we finish in time for the contest, you won't want to go to sleep before CA gets the Moon!

W6YX's new 4.6 m dish for 3 cm EME under construction

WA2FGK: Herb (K2LNS) wa2fgk@yahoo.com reports that they are back on 432 EME with an improved station -- We should have been on 432 EME a month ago. The antennas (4 x 13 wl yagis) were ready, but we have had a problem with the feed line. Everything is now working well. Our first QSOs with the new system were on 24 Aug with OK1KIR and PY2BS on JT65B. Since then I worked several more. I plan to add a mast mounted preamp and reduce our feedline loss, which is about 1.5 dB. We will be glad to take skeds if anyone needs FN21/PA (CW & JT).

W5LUA: Al w5lua@sbcglobal.net reports that he is working with a group on 77 GHz EME or at least Moon mapping using a 21 m dish that WA3ZKR has control of. They plan to provide a demonstration at Microwave Update this Oct.

XX/DL1YMK: Michael and Monica dl1ymk@aol.com will be QRV from a mystery DX location starting on 22 Sept -- Our DX destination plans for our 10th XX-DXpedition this year failed due to licensing problems, but we were able to switch to plan B - thanks to the talents of Monika. The preliminary band schedule is 22 Sept (2000 moonrise) 23 cm, 23 Sept (2040 MR) 13 cm, 24. Sept (2120 MR) 9 cm, 26 Sept (2300 MR) 23 cm - if interest, 28 Sept EME contest (0000 MR) 13 cm, 29 Sept EME contest (0100 MR) 9 cm, 30 Sept (0220 MR) 70 cm, 1 Oct (0300 MR) 3 cm, 2 Oct (0400 MR) 6 cm tentatively, and 3 Oct (0500 MR) 3 cm if needed. This DXCC to our knowledge has never been activated on 13 cm or higher. Some contacts so far have been made on 70 and 23 cm on JT, none or few on CW. It is meant to be preferably a holiday trip with a little EME. We will have 2 dishes onboard, the little solid one for 3 cm and also 6 cm as an experiment (although a bit small). We will have about 11 hours of Moon time.

YO2BCT: Liviu yo2bct@yahoo.com is now able to RX on 2304 -- I now have a HB converter that moves up 16 MHz the signal from my transverter, to keep it in the 144 MHz band of my transceiver. I can now work stations from the USA. I need a high elevation (>35 degs) and my maximum usable azimuth is 225 degs. My station consists of a 3 m dish and 200 W SSPA. Only CW (no JT) is possible because of drift problems.

K2UYH: I a.katz@ieee.org participated in an interesting EME test on 21 Aug. I received a request from the SETI Institute, http://www.seti.org, to provide a test signal on 2304 to help calibrate their Allen Radio telescope. I thought it would be good to have a back up station. I contacted some of the NA/SA 13 cm stations to assist as the time they wanted was at a low dec and outside the EU window. None of the regulars were available, but PY2BS came through. Burce and I alternately provided the signals they wanted, which included a combination of CW, SSB and JT. At one point we both TX'd at the same time. They seemed to be very happy with the results and indicated that there might be future tests involving Aricebo. I was not very active in July because of travel and problems with my dish drive and a lightning strike that affected my computer and took out one of my digital encoders. My only QSOs were on 5 July on 1296 JT65C at 1227 LU8ENU (22DB/0), 1306 IK5EHI (15DB/16DB) for mixed initial #451* and 1453 G4IDR (24DB/16DB) #452*. I also tried with G4IDR on CW, but did not get sufficient copy for a QSO. I was back in business on 432 and QSO'd on 18 Aug at 2330 LU7HI (20DB/23DB) JT65B for mixed initial #856*, and on 19 Aug at 0015 partial N8DJB (O/-) CW – Craig could not find me on CW and 0145 W6FCS (16DB/23DB) JT65B #857. On 21Aug I was on 2304 prior to the SETI tests looking for stations, but only worked at 0230 PY2BS (569/559) CW and later on both JT and SSB. (I did not send out a general announcement about the tests as the SETI people were concerned that pre-publicity might cause uncontrollable signals/interference). The actual tests were between 0600 and 0900. On 24 Aug I was on 432 looking for J45EME (heard 29DB) but they quite minutes before I had a usable Moon window. I did work at 0516 OK1KIR (16DB/6DB) JT65B, who reported a great night. I switched to 1296 and QSO'd at 0558 RN3A (8DB/12DB) JT65C and at 0630 (559/549) for CW initial #345, 0637 YL2GD (16DB/9DB) JT65C and 0703 G3LTF (559/569) CW. On 25 Aug, I was on early for J45EME with the Moon almost 100% blocked by trees, but was pleased to still detect my own echoes and worked at 0439 LU8ENU (17DB/16DB) JT65C, but no J45EME as they had equipment problems. After I was convinced there was no point in continuing looking for J45EME, I switched to 432 to work during the CW ATP at 0546 G3LTF (559/559), 0558 SV3AAF (449/549) – very nice to work Petros after our meeting in SV, 0612 SM2CEW (559/559), 0634 OZ4MM (579/579) and 0705 G4RGK (559/559). At the end of the ATP, I switched back to 1296 for at 0732 SQ7DQX (14DB/10DB) JT65C #453 – I tried to get them on CW but there was no CW op present and 0811 I1NDP (589/579) CW, and back on 432 at 0831 DL7APV (579/559) for another CW QSO. The next day I finally QSO'd at 0504 J45EME (26DB/O) JT65B #858* and DXCC 113 – in last try by them just before they had to packed up [TU!], and 0610 N8DJB (O/O) CW – this was not an initial as I had worked Craig back in the 90's from the same grid. I added on 31 Aug on 432 at 1219 WA2FGK (21DB/O) JT65B #859* and on 1296 at 1445 WB7ABP (24DB/10DB) JT65C. I was on 9 cm for a mini AW on 1 Sept and QSO'd at 1027 G3LTF (559/559), 1042 SP6OPN (579/569) for initial #31, 1047 W5LUA (569/569), 1104 SM6PGP (559/O) #32, 1113 PA3DZL (569/569), and 1800 partial KL6M (O/-). The next day I tried again with Mike (O/559), but had to leave before we could complete.

NETNEWS: **WB7QBS** reports no progress on his 432 EME system, but is still interested in skeds. **VE4MA** will return to AZ in Nov. **N4PZ** was active on 23 cm CW in Aug and worked G4RGK, F5SE/P and had a partial with YL2GD who is using 8 loop yagis and 350 W - al 1296.020 CW. **DL1YMK** has been working on his portable 10 GHz EME setup and is exchanging his 1.8 m solid dish for a 2.4 m micro-mesh dish. **OK1DFC** reports working on 432 CW N8DJB for initial #353 and R4YM #354.

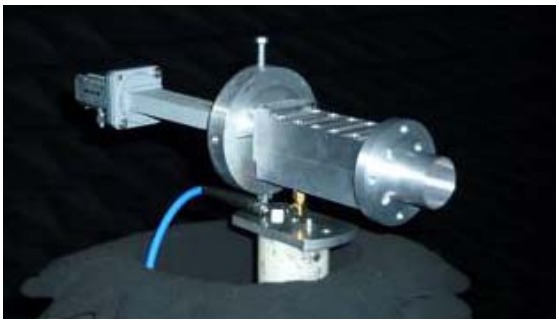
FOR SALE: **N4PZ** has available from K1RQG's estate 5 3CX400U7s which were in the original Eimac cans. Some are new others he is not sure of. He have no idea what they are worth but Pearl, K1RQG's wife wants his stuff to go to anyone who will actually use it. Make any reasonable offer and they are yours. There may be other stuff but Steve does not say. If you care interested contact Steve at n4pz@live.com. **OK1DFC** is cleaning house and has for sale: a complete EME system for 3400 – TVR, 45 W Toshiba SSPA, septum feed feedhorn with chock and 0.5 dB NF G4DDK LNA that is all plug and play; K1FO 432 PA with 3CPX800 A7 putting out 1800 W with 3.5 kV on the plate without HV power supply - plug and play; SSPA driver 300 W - I0JXX module, including switching power supply and circulator inside - plug and play; Portable EME Sequencer including switching power supply inside; and DSP filter NIR. Send offers to Zdenek ok1dfc@seznam.cz. **TI2AEB** is looking for a length of Heliax with connectors of about ½" or larger in diameter and about 33' in length (26' minimum). Conact Armando at aebonilla@ice.co.cr ASAP. **KD7YZ** is also looking for Heliax cables with connectors, but longer length. They must be shippable to him. Bob is also looking for a dish. His email is kd7yz@denstarfarm.us. **K2UYH** is looking for a N connector transfer relay at a reasonable price. It must handle power and be low loss but does not need high isolation. **9A4QV** has for sale universal latching relay driver boards. Details can be found at http://latching-relay.blogspot.com/. Contact Dragan (9A5AA) at Miodrag.Viskovic@voda.hr if you are interested. DL1YMK is searching desperately for a run of WR90 flexible waveguide, ideally 70 - 90 cm in length with 4 hole rectangular flanges. If you can help email Michael at dl1ymk@aol.com. **KT1J** has a 13 cm 350W SSPA made in Sweden by Ericsson for sale. It consists of a 30 W driver and three 100 W final amplifiers with Anaren splitter and combiner. The original operating frequency 2140 MHz, easily retuned to EME with built- in trimmer caps in the driver amp. No PA adjustment needed. It provides 200 W out at 28 VDC/30 A, 300W out at 40 A. It needs serious external cooling and requires good SWR. MRF21120 LDMOS are said to be virtually indestructible, but the terminal resistors in output combiners will fail first. Power outputs of 400-450 W have been reported. This unit is unmodified and has not been retuned. Schematic and connector data included for $US450. If interested contact Henry at kt1j@madriver.com.

TECHNICAL I: JA4BLC's 10450-10368 MHz CONVERTER -- I have developed the simple converter to listen JA EME band (10450 MHz) using a regular 10368 MHz receiver. The converter consists of 10 GHz AMP (15-20 dB), pipe cap filter, double balanced mixer and 82 MHz oscillator. Yes the 10450 MHz signal is converted on 10368. The converter is placed between the LNA and 10368 MHz receiver of your EME system. I made a prototype on a wood board and could hear my echo successfully almost nearly equal strength as with my regular 10450 MHz receiver. I hope many 10 GHz EMEers will listen

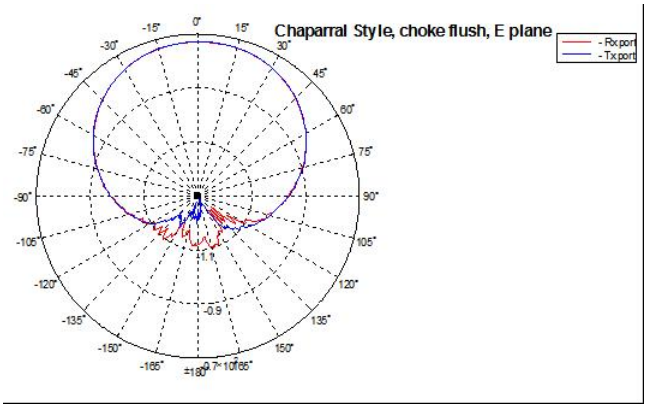
10450 very soon. I believe the idea originated from DL4MEA 2424-2320 converter. [See pictures at the end of this NL.]

TECHNICAL II: OM6AA has sent advanced information about his new antenna project: a very high performing septum feeds for 10 GHz -- The feed consists of two parts. The first one is the excitation part with built-in septum polarizer. This part is equipped on the TX port with either a SMA or N style connector. On the RX port one can directly mate a WR75 waveguide and flange – see septum feeds follower by dual mode version in figures below.

The second part is the radiation part, which forms the radiation pattern for various dishes with a possible range from f/D 0.31 up to 0.55 depending on which radiation part is used. Four different radiation parts have been fabricated to date, Chapparal, plane waveguide, VE4MA and dual-mode horn W2IMU – see figures above. Feeds were measured in the anechoic chamber of the Czech Technical University in Prague. Measured axial ratio is better than 1.3 dB.

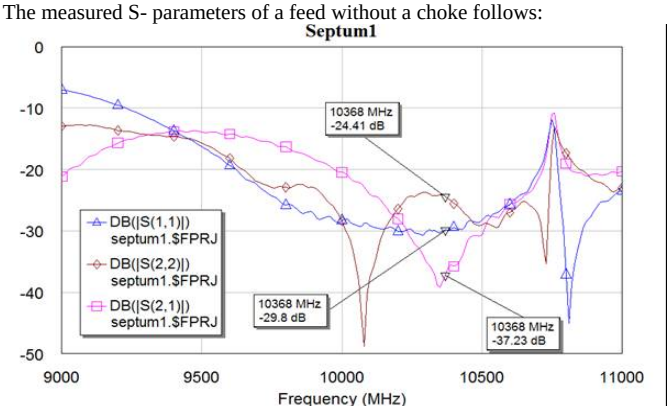


The measured radiation pattern for a Chaparral choke horn is shown below:



Two other people have helped with this project; WA6KBL and PE1RKI who fabricated the mechanical parts. After the tests are completed, feeds will be available for purchase from PE1RKI. More information about this project will be published in DUBUS magazine.

The measured S- parameters of a feed without a choke follows:



FINAL: This NL is being completed about a week later than I had planned**.** It should be in time to remind you of almost all the important EME events.

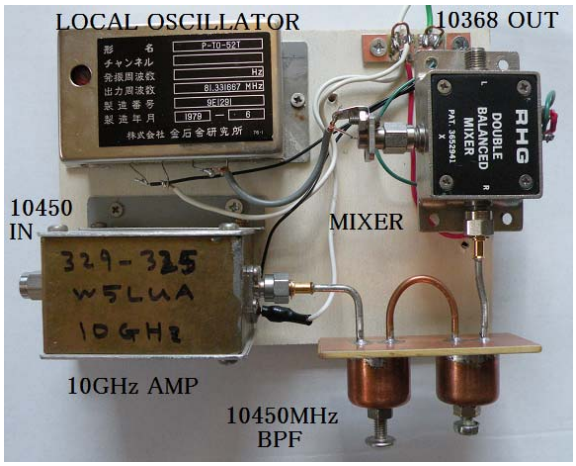
There are some corrections for the last NL: 9X0EME worked HB9Q and OK1KIR besides W5LUA on 13 cm. VE3KRP's call was written incorrectly as VE3KPR. Also the order of the names in the photo of the SV EME gathering should have read: L-R SV1CAL, SV1IXP, K2UYH, SV3AAF and SV1DNU. These errors have all been corrected in the web version.

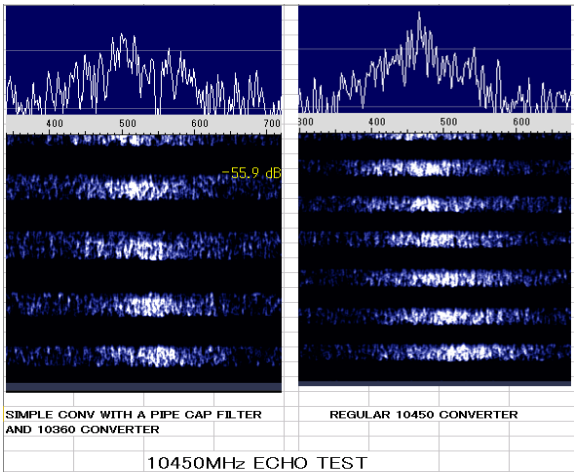
If looks like the 20 m EME net is becoming more informal and possibly breaking apart. If no net control shows up please take over and send notes to N4PZ n4pz@live.com. The start time remains 1500 on 14.345, but there is also an informal group that has been meeting Sunday at 1600 on the same freq.

JA EMEers and the 8N1EME/8J1AXA group had a booth and a dinner during the 2013 Tokyo Ham Fair 2013 held on 24/25 Aug.

K1RQG QSLs – N4PZ has about 100 of K1RQG's QSL cards that he will bring to next International EME Conference in France. Bring your information on contacts with K1RQG and Steve will give you a card for free at the meeting. If you cannot wait, send N4PZ $US5 and a self addressed envelope with the QSO info and Steve's wife will send you a K1RQG card.

That the news for this 29 days. Please the reports and great tech info coming. I will be looking for you in the ARRL EME Contest under the call K1JT. 73, Al - K2UYH




400
500
600
700
-55.9 dB
300
400
500
600
SIMPLE CONV WITH A PIPE CAP FILTER
AND 10360 CONVERTER
REGULAR 10450 CONVERTER
10450MHz ECHO TEST