An Amateur Radio publication for the Microwave Enthusiast

scatterpoint

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A horn antenna for 6cm PAL TV

By Graham Coyne G3YJR

In this Issue

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UKµG wiki - https://wiki.microwavers.org.uk/

Subscription Information

The following subscription rates apply.
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This basic sum is for **UKuG membership**. For this you receive Scatterpoint for **FREE** by electronic means (now internet only) via

https://groups.io/g/Scatterpoint/files and/or Dropbox. Also, **free access to the Chip Bank**.

Please make sure that you pay the stated amounts when you renew your subs next time. If the amount is not correct your subs will be allocated on a pro-rata basis and you could miss out on a newsletter or two!

You will have to make a quick check with the membership secretary if you have forgotten the renewal date. Please try to renew in good time so that continuity of newsletter issues is maintained. Put a **renewal date reminder** somewhere prominent in your shack.

Please also note the payment methods and be meticulous with PayPal and cheque details.

PLEASE QUOTE YOUR CALLSIGN!

Payment can be made by: PayPal to

ukug@microwavers.org

or a cheque (drawn on a UK bank) payable to 'UK Microwave Group' and sent to the membership secretary (or, as a last resort, by cash sent to the Treasurer!)

Articles for Scatterpoint

News, views and articles for this newsletter are always welcome.

Please send them to

editor@microwavers.org

The CLOSING date is
the FIRST day of the month

if you want your material to be published in the next issue.

Please submit your articles in any of the following formats:

Text: txt, rtf, rtfd, doc, docx, odt, Pages

Spreadsheets: Excel, OpenOffice, Numbers

Images: tiff, png, jpg

Schematics: sch (Eagle preferred)

I can extract text and pictures from pdf files but tables can be a bit of a problem so please send these as separate files in one of the above formats.

Thank you for you co-operation.

Martin G8BHC

Reproducing articles from Scatterpoint

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You may not reproduce articles for profit or other commercial purpose.

You may not publish Scatterpoint on a website or other document server.

UKµG Project support

The UK Microwave Group is pleased to encourage and support microwave projects such as Beacons, Synthesiser development, etc. Collectively UKuG has a considerable pool of knowledge and experience available, and now we can financially support worthy projects to a modest degree.

Note that this is essentially a small scale grant scheme, based on 'cash-on-results'. We are unable to provide ongoing financial support for running costs – it is important that such issues are understood at the early stages along with site clearances/licensing, etc.

The application form has a number of guidance tips on it – or just ask us if in doubt! In summary:-

- Please apply in advance of your project
- We effectively reimburse costs - cash on results (eg Beacon on air)
- We regret we are unable to support running costs

Application forms below should be submitted to the UKuG Secretary, after which they are reviewed/ agreed by the committee

www.microwavers. org/proj-support. htm

UKµG Technical support

One of the great things about our hobby is the idea that we give our time freely to help and encourage others, and within the UKuG there are a number of people who are prepared to (within sensible limits!) share their knowledge and, what is more important, test equipment. Our friends in America refer to such amateurs as “Elmers” but that term tends to remind me too much of that rather bumbling nemesis of Bugs Bunny, Elmer Fudd, so let’s call them Tech Support volunteers.

While this is described as a “service to members” it is not a “right of membership!”

Please understand that you, as a user of this service, must expect to fit in with the timetable and lives of the volunteers. Without a doubt, the best way to make people withdraw the service is to hassle them and complain if they cannot fit in with YOUR timetable!

Please remember that a service like our support people can provide would cost lots of money per hour professionally and it’s costing you nothing and will probably include tea and biscuits!

If anyone would like to step forward and volunteer, especially in the regions where we have no representative, please email john@g4bao.com

The current list is available at

www.microwavers. org/tech-support. htm

UKµG Chip Bank – A free service for members

By Mike Scott, G3LYP

Non members can join the UKuG by following the non-members link on the same page and members will be able to email Mike with requests for components. All will be subject to availability, and a listing of a component on the site will not be a guarantee of availability of that component.

The service is run as a free benefit to all members and the UK Microwave Group will pick up the cost of packaging and postage, that is, Jiffy bags, small plastic bags for individual component values, and Large letter 2nd class postage, currently 76p.

Minimum quantity of small components supplied is 10.

The service may be withdrawn at the discretion of the committee if abuse such as reselling of components is suspected. We have asked Mike to check with the Chairman (or designated officer) if any individual is making excessive requests, and we will ensure that the service is only available to members.

There is an order form on the website with an address label which will slightly reduce what I have to do in dealing with orders so please could you use it.

Also, as many of the components are from unknown sources, if you have the facility to check the value, particularly unmarked items such as capacitors, do so, and let me know if any items have been mislabelled.

The catalogue is on the UKµG web site at www.microwavers. org/chipbank. htm

Chairman's thoughts – on GDPR

Sam Jewell G4DDK

Like most clubs and organisations across the UK, and elsewhere, we have been busy getting ready to ensure compliance with the new GDPR (General Data Protection Regulations) effective from the 25th May 2018.

There have been a lot of different interpretations of the requirements necessary to comply with the regulations and this has led to the many e-mails in all our in-boxes as clubs and organisations seek to get us to positively confirm that we want to continue receiving communications etc. Your Committee are advised that this is not a requirement in most cases. In seeking to clarify what we need to do the ICO (Office of the Information Commissioner) has used a lot of legalese that has probably caused further confusion!

We asked in the last Scatterpoint that you respond to our request for you to confirm we are happy to hold your personal data to enable the Group to provide you with our membership services and would not pass this information to a third party. Around 50% of you responded and all those that did provided a positive response. Thank you for taking the time.

The latest advice from the ICO is that you do not need to reach a 100% refresh of all existing consents from scratch in preparation for the new law. However, given that the bar has been made higher by the new rules, we have formulated an appropriate Privacy and Data Usage policy which is now online on our website. Current members are already considered to have consented for the purposes of receiving UKuG membership services.

Renewing and new members will now see a tick box and policy link on membership application forms and webpage for fresh consent to store your details. Membership forms, web application forms and the microwavers.org web page will carry our Privacy policy, as will other forms if it is appropriate.

In the unlikely event that UKuG need to change the terms of collecting and storing your data, we will inform you first, seek permission to continue storing it and offer you the opportunity to have your data deleted.

We are taking our GDPR responsibilities seriously and assure you that we will be keeping your data safe.

We will be further updating our practices to improve the security and efficiency of our membership data storage following our recent risk assessment of current practices.

I should add that as radio amateurs, with callsigns, a great deal of personal information about us has been, and will probably continue to be, readily available from multiple on-line and printed sources. Communications is the nature of our hobby. We are not usually anonymous.

Sam Jewell, G4DDK

Chairman, UKuG

UKµG PRIVACY & DATA USAGE POLICY - MAY-2018

Privacy & Data Policy [1]

The purpose of this privacy statement is to advise you of the personal information that the UK Microwave Group (UKuG) hold and how we use it:-

Who are we?

The UKuG is a not-for-profit organisation set up to promote the use of the amateur radio bands above 1GHz and is run by an elected committee of members, for its ordinary members, on a voluntary basis.

The legal basis for processing your data

When you join or re-join the UKuG, we will ask you for some personal information which we will use to provide you with membership services. As you will be about to or have already entered into a membership contract with the UKuG, your consent to do this is given when you complete the application form in print or electronically on the UKuG web site.

What personal data do we hold?

The UKuG holds your name, callsign (if applicable), and relevant contact details for the purposes of administering membership and related UKuG services including publications, technical support and awards/contests. In delivering these services UKuG may use volunteers and third party services/platforms (such as PayPal, Groups.io etc) for which we use best practice on a reasonable endeavours basis

Where is it held?

Our primary website (www.microwavers.org) and membership database systems are based in the UK and we will make every effort to keep your data inside the UK. However we also make use of 3rd party platforms/services such as Groups.io, PayPal, Twitter, Youtube etc where we have no direct control of their location. By accepting this membership policy you give us consent to store/process data in the UK as well as via such 3rd parties where necessary.

How long will we keep it?

Your details will be deleted from our membership database 12 months after membership expiry. Other records such as for Chipbank requests, etc., will also be deleted after 12 months. Summaries may be retained in our financial records for UK tax purposes for up to 6 years, after which they will be deleted. Note that items intended for publication (eg in Scatterpoint) may be made available online. We also reserve the right to maintain certain long term records (eg for Loan Equipment, Project Support funding etc).

The General Data Protection Regulation (GDPR) provides several rights concerning your personal information and these are detailed on the ICO website: ICO.org.uk

> *If you have any questions about the UKuG and GDPR, please contact the Membership Secretary or Chairperson. Additional contact details are on the contacts page of the club website.*

Footnote:

1. A current copy of the Privacy & Data Policy can be found online at http://www.microwavers.org/?privacy.htm

Phase Noise Measurements of Some Synthesizers

Paul Wade W1GHZ ©2018 w1ghz@arrl.net

At the 44th Eastern VHF/UHF/Microwave Conference in April 2018, I got a chance to measure phase noise of some of the newer microwave synthesizers. Few hams have test equipment capable of making phase noise measurements of good oscillators, so we must rely on test equipment at various VHF and Microwave conferences. The excellent equipment at this conference was provided by Greg Bonaguide, WA1VUG, of Rohde & Schwarz.

A frequency synthesizer is an attractive way of generating a signal at a desired frequency, particularly since it has become very difficult to find quality crystals. A modern synthesizer may operate at a high enough frequency to provide the Local Oscillator for a microwave system, and the frequency may be locked to an accurate reference to provide frequency accuracy and stability.

Phase Noise

However, the phase noise generated by almost all synthesizers is significantly worse than a good crystal oscillator. For very weak signals, my experiments1 in 2009 suggest that the difference in Minimum Detectable Signal is about 2 dB, between a multiplied crystal oscillator LO and a synthesizer LO. On the other hand, 10 GHz MDS tests at the NEWS (North East Weak Signal group – www.newsvhf.com) picnic over several years suggest that knowing the frequency of a very weak signal can improve the MDS by up to 5 dB, when listening by ear. The addition of an SDR waterfall display eliminates the unknown frequency problem – all signals appear on the screen – so minimizing phase noise can help to hear very weak signals.

In 2012, I developed a locked VCXO2 which can provide the source for a microwave LO with phase noise very nearly as good as a crystal oscillator and also be locked to a reference source to provide frequency accuracy and stability. This might be an ideal solution, but there are few choices for available VCXO frequency. As part of the development, phase noise comparisons were made with the synthesizers available at that time, shown in Figure 1. The bottom three curves clearly show how phase noise increase with frequency multiplication, whether done my a classic frequency multiplier or in a phase-locked loop. Since all the synthesizers are operating at 1152 MHz and are referenced from the same 10 MHz TCXO, any phase noise greater than the multiplied VCXO is additional noise generated by the synthesizer.

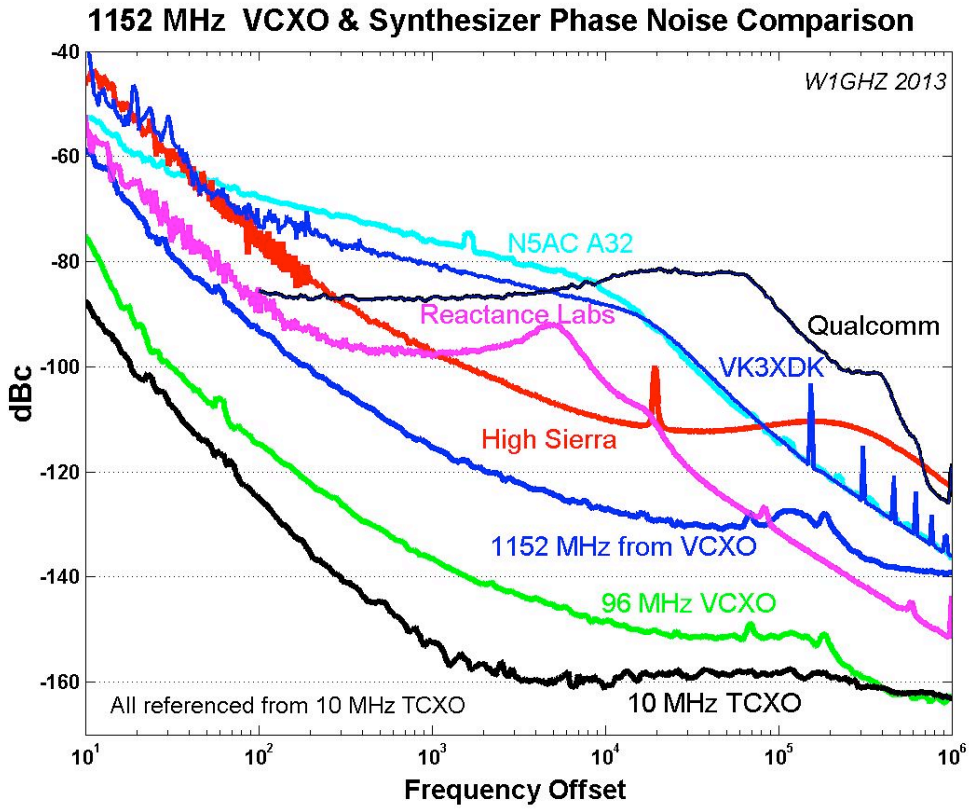


Figure 1 - Synthesizer Phase Noise measurements from 2012 and 2013

More recent synthesizers may have better phase noise characteristics than the N5AC A32 used for my 2009 experiments. Many of the synthesizers in Figure 1 are better, at least over part of the range of frequency offsets.

The measurements at the 44th Eastern VHF/UHF/Microwave Conference in April 2018 are shown in Figure 2. These were made with a Rohde & Schwarz FSW-43 analyzer. Where possible, synthesizers were referenced to a 10 MHz TCXO, the same unit as Figure 1. The VCXO system and several other synthesizers from Figure 1 are also included for comparison, including the N5AC A32. Some of the units were provided by conference attendees for a wider range of comparisons. Figure 3 includes a picture of each unit, and the Appendix provides more details.

Note that these are not definitive measurements, just what we able to accomplish during the lunch break at the conference. The measurements were made with 10X averaging, so they should be reasonably accurate. Better results might possibly be found with different programming of the synthesizer chips – for instance, for some New England beacons, W1EX found that an ADF4153 programmed for multiplication by four to 10368.320 or 10368.400 had fewer spurious outputs than at other nearby frequencies.

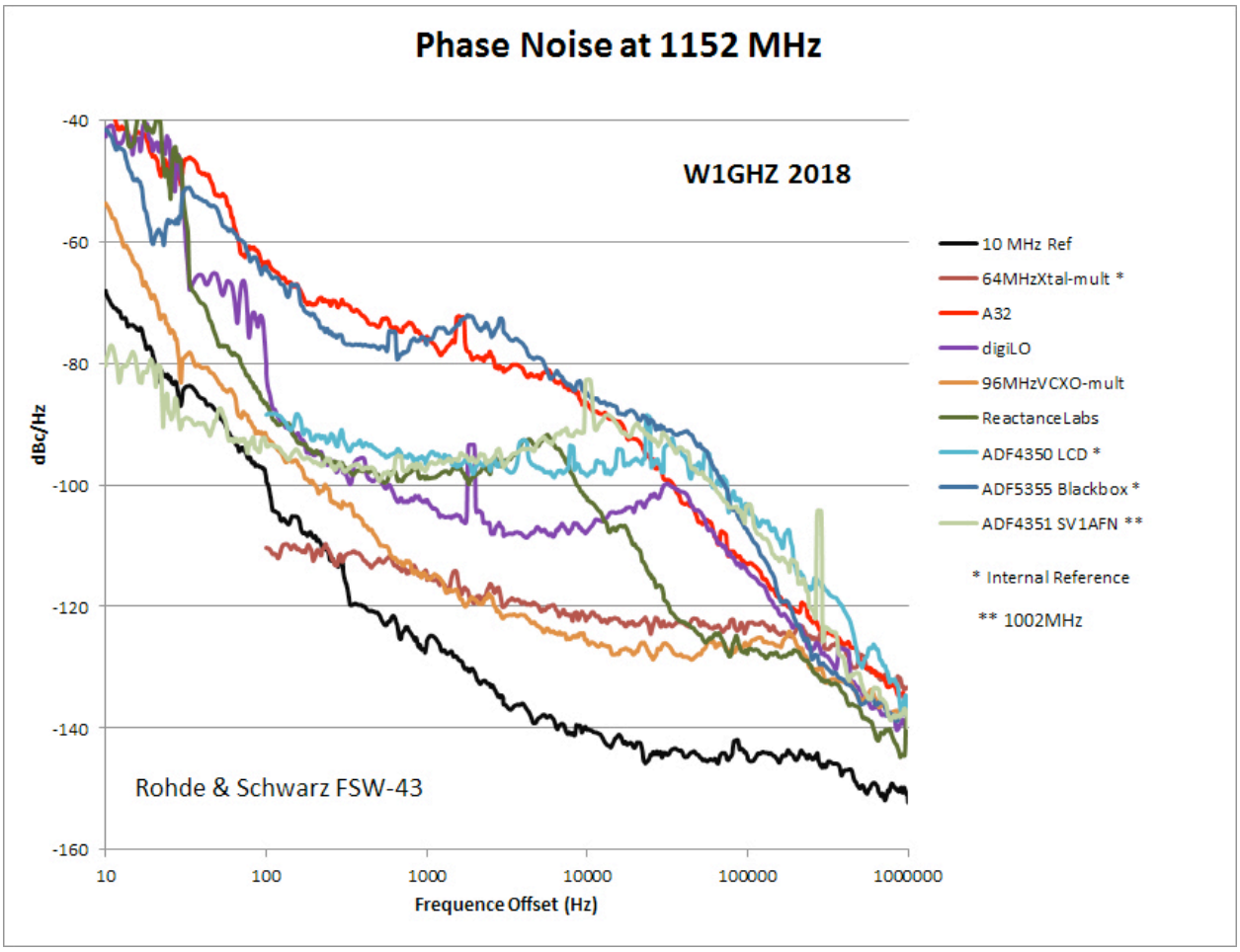


Figure 2 – 1152 MHz Phase Noise measurements at 2018 Eastern VHF Conference

Several of the newer synthesizers have pretty good performance. The digiLO from Q5 Signal (q5signal.com) has the best phase noise at 1152 MHz except for a spike at 2 kHz; it can be easily programmed with jumpers to popular ham frequencies from 23.5 MHz to 6 GHz.

A surprisingly good one is the ADF4350 with the LCD display and programming buttons3, available from China on ebay, which goes up to 4 GHz. The buttons make it able to run standalone – with a USB battery, it makes a handy signal source.

And a good cost-effective one is the SV1AFN ADF4351 (www.sv1afn.com/adf4351m.html), which requires something like an Arduino for programming, to frequencies anywhere between 35 and 4400 MHz.

The ADF5355, available complete as shown or as a programmable board, operates up to 13.6 GHz. This one arrived just before the conference, so I didn't get a chance to check it out thoroughly.

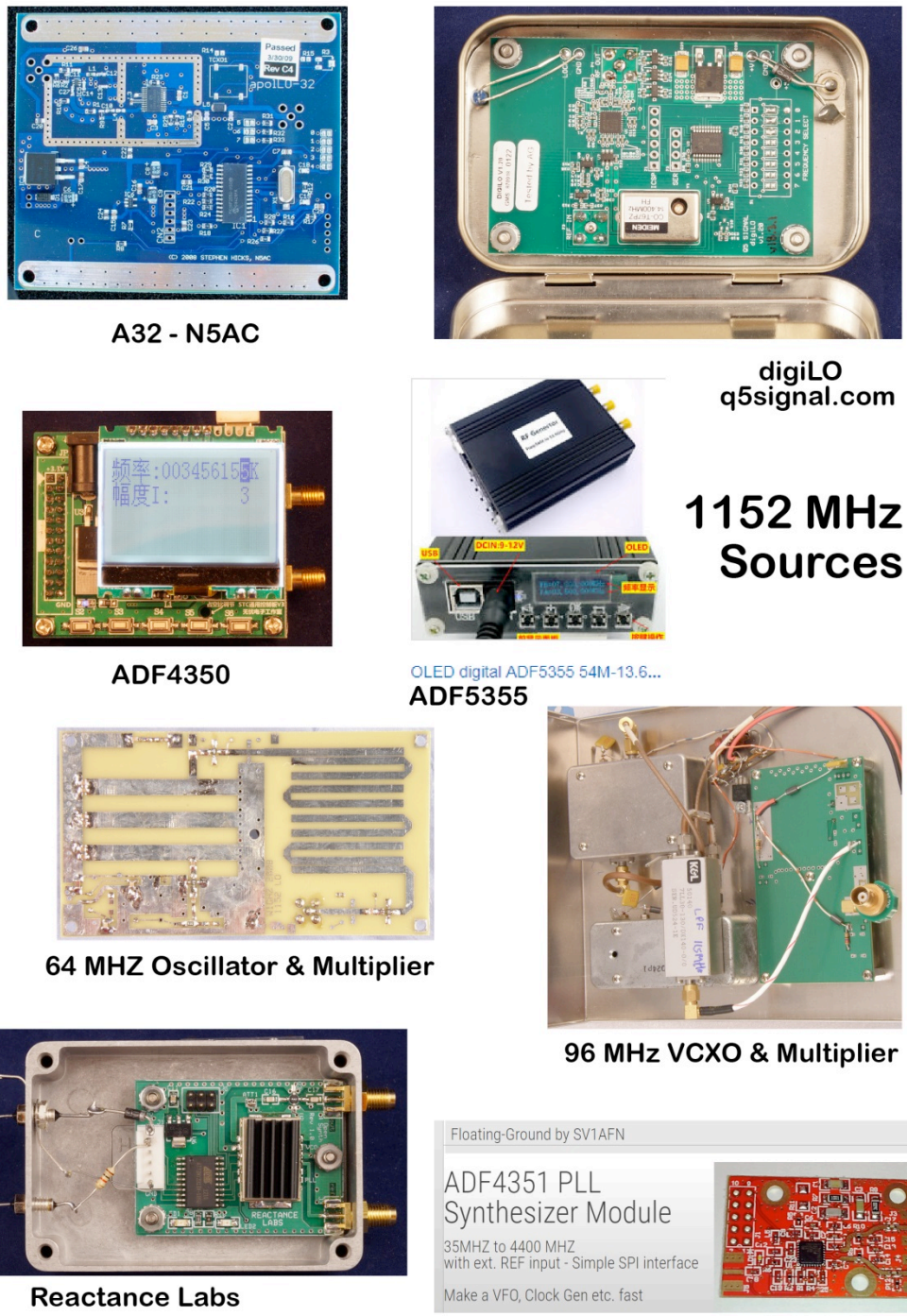


Figure 3 – 1152 MHz sources measured in Figure 2

X-Band Synthesizers

Conference attendees also brought several synthesizers that work directly at X-band, good for 10 GHz or higher bands. The phase noise of these units is comparable to what we would expect from the other synthesizers after frequency multiplication. The 120 Hz spike on the ZL-PLL curves are hum from a crappy power supply – a clean power supply makes a difference.

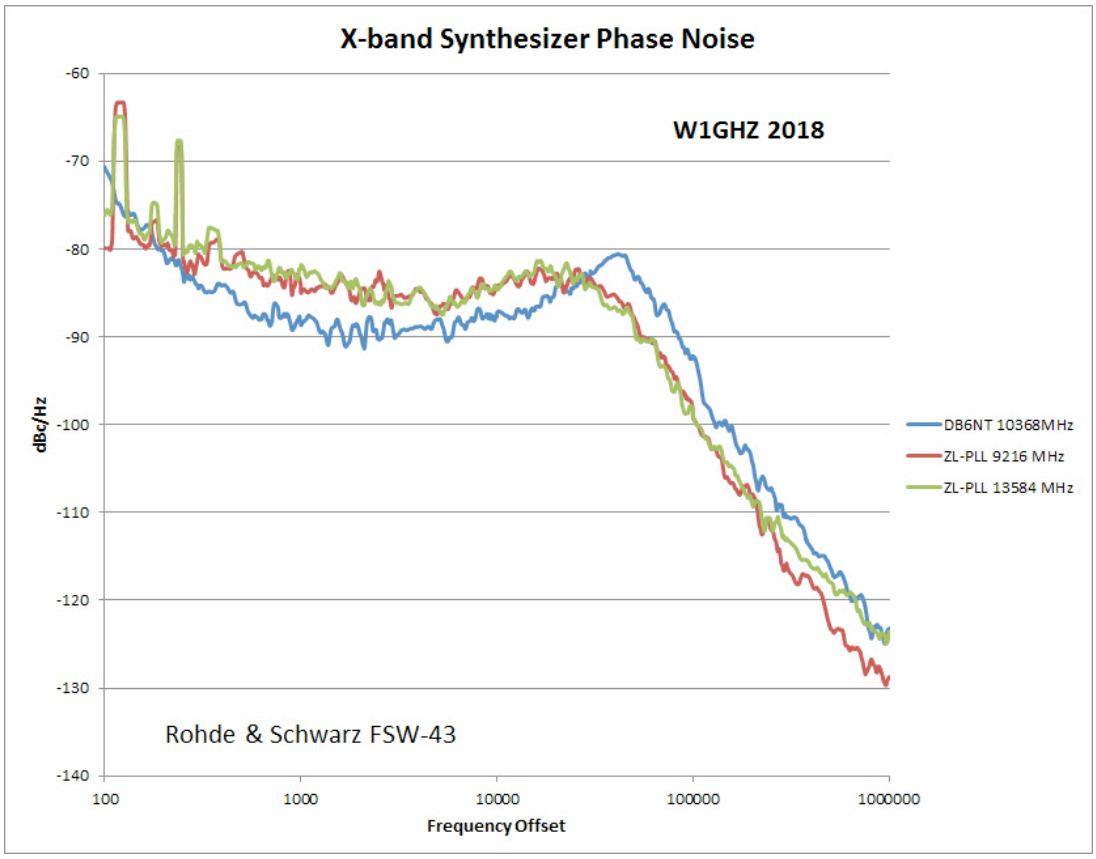


Figure 4 – X-band Phase Noise measurements at 2018 Eastern VHF Conference

DB6NT = MKU LO 8-13 (kuhne-electronic.de)
ZL-PLL = ZL-PLL 14G (zl2bkc.com)

Appendix: Phase Noise Test Hardware

Unit	Frequency	Reference	Owner	Manufacturer or source
TCXO	10.000 MHz		W1GHZ	Microsonics TK84/099
Crystal	1152 MHz	64 MHz xtal	W1GHZ	www.w1ghz.org/MBT/1296MHz_Transverter-Right_Side_Up.pdf
VCXO	1152 MHz	TCXO	W1GHZ	www.w1ghz.org/small_proj/VCXO_for_Microwave_LO_update2.pdf
N5AC A32	1152 MHz	TCXO	W1GHZ	www.downeastmicrowave.com
digiLO	1152 MHz	TCXO	W1GHZ	www.q5signal.com
Reactance Labs	1152 MHz	TCXO	W1GHZ	www.reactancelabs.com
ADF4350 LCD	1152 MHz	int 25 MHz	W1GHZ	ebay - ADF4350 board
ADF5355	1152 MHz	internal	W1GHZ	ebay –OLEDdigitalADF5355
SV1AFN ADF4351	1152 MHz	HP OCXO	KV1J	www.sv1afn.com/adf4351m.html
ZL-PLL 14G	9216 MHz	ZL 10 MHz	N1JEZ	https://zl2bkc.com/projects/zlpll/
ZL-PLL 14G	13584 MHz	ZL 10 MHz	N1JEZ	https://zl2bkc.com/projects/zlpll/
DB6NT MKU LO 8-13	10368 MHz	internal	KA1LEX	shop.kuhne-electronic.de/kuhne/en/shop/signal-sources/oscillators/

Notes:

1. Paul Wade, W1GHZ, “Phase Noise and MDS,” Proceedings of Microwave Update 2009, ARRL, 2009, pp. 193-196.
2. Paul Wade, W1GHZ, “A Flexible VCXO Locking Board,” Proceedings of Microwave Update 2012, ARRL, 2012, pp. 101-113.
3. Paul Wade, W1GHZ, “Synthesized Signal Source From China,” 44th Eastern VHF/UHF/Microwave Conference, 2018.

This month I've been mostly...

From Graham - G3YJR

I'm hoping I can put computer problems on the back burner for a while. I've obtained a reconditioned PC & put Ubuntu Linux on it as a replacement shack computer. As a long shot, in an attempt to cure the random crashes on the old HP PC, I've swapped all the cylinder electrolytics in its very compact & complicated power supply. I used higher voltage-rating capacitors. It hasn't crashed since, so this may have worked.

I found the erratic power problem in the LT23S. Gently distorting the circuit board suggested a dry joint on one of the driver chain transistors. I cleaned up, fluxed & re-soldered this & it is back to its normal self with an 8W reading on the front panel meter.

Also, I've re-discovered GB3MHZ on 23cm via the old Bob Platts pre-amp. So I'm back on the air on 23cm.

I've lashed up a transceiver for 6cms wide-band TV:

https://g3yjr.wordpress.com/2018/04/01/a-horn-antenna-for-5-6-ghz-pal-tv/

On-Air Activity:

I had my first outing on 6cm doing tests with Barry G8AGN using wide-band TV modules. I used a horn-in-a-box from the car park at the Crown & Glove pub, about 250m ASL. (Excellent beer, food and tea by the way). Barry was on Roper Hill. The path was only about 4km, but it showed something was working.

https://g3yjr.wordpress.com/2018/04/06/6cm-atv-test-with-barry-g8agn/

My 23cm transverter was faulty, but I went on 13cm in for the Low Bands contest & gave some points away. Bets DX was Keith G4ODA.

I tried out the repaired LT23S in the 23cm UKAV and made 30 contacts. Best DX was Conrad PA5Y on CW.

https://g3yjr.wordpress.com/2018/04/17/17-april-2018-23cm-ukac/

In the SHF UKAC I made 10 contacts on 3cm, a personal best for me. Four new stations for me on this band were: David G4RQI, Mel G8EOP/P, Pete G4CLA and John G3XDY.

https://g3yjr.wordpress.com/2018/04/24/24-april-2018-shf-ukac/

A horn antenna for 6cm PAL TV

Graham G3YJR

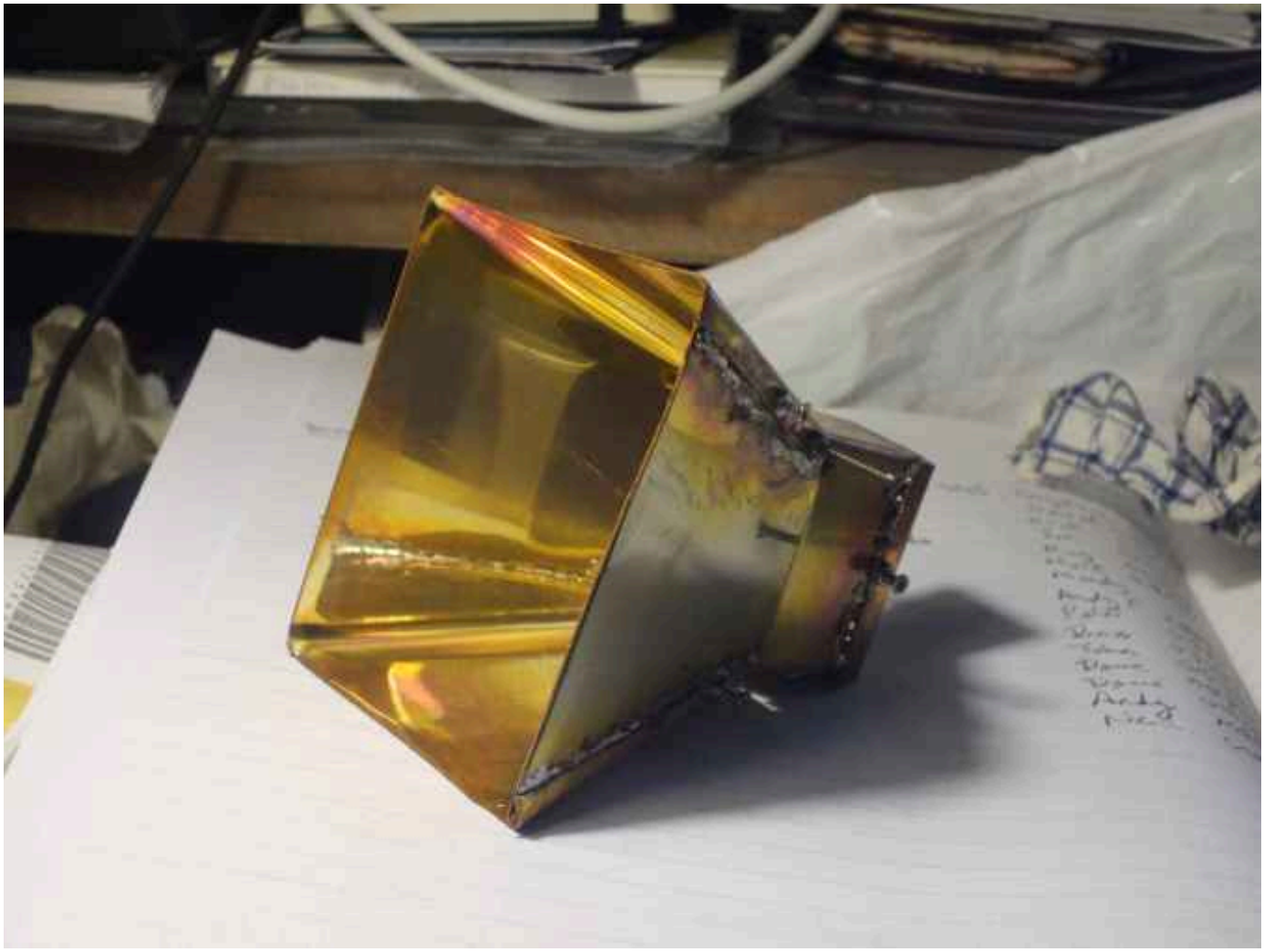
Barry G8AGN and a few others hereabouts are experimenting with little Chinese TV modules & I thought I would have a go too. These are nominally 5.8GHz modules, designed for drone/helicopter use, so very compact & light weight. The transmitter module I've bought is rated at 0.6W. There is a useful overlap between the available channels & the 6cm amateur band. Apparently the BATC use "channel 33", 5.665 GHz for these modules. (More info from the BATC). The transmission bandwidth is about 27MHz wide. I seem to remember the old 625 line broadcast TV channels were 8MHz each? Maybe the modules allow higher definition?

I've never tried the 6cm band & I've never tried amateur television either.

I took the opportunity to make a horn out of copper sheet. I used a design from Brian G4NNS's website. See "Details for feed horns…".

I used 0.5mm thickness copper sheet & marked it out with a marker pen according to Brian's template. Then I cut it out using tin snips (metal shears) & bent the pieces on the bench edge, on the vice & with pliers. I found the resulting two pieces a bit fiddly to assemble and they didn't mate perfectly, so I decided to drill the connecting flaps at strategic points & secured them together with stainless steel screws and dribbled some liquid flux under the flaps.

I "cooked" the whole thing on a hot plate. The plate was turned on full blast (over 300C on my IR thermometer). I fed fluxed solder into & into the joins & then let it cool. It went reasonably well. I got only one small dribble inside and there are only a couple of cracks between waveguide & horn where the two pieces didn't quite mate. I doesn't look as professional as Brian's effort, but I was quite pleased with it for my first attempt at a horn. It looks like it should do something.



3-April-2018 update: I tried using my biggest soldering iron to fix the holes, but it didn't work, so I bashed the cracks closed as best I could and then cooked the horn on the hot plate again & soldered over the cracks. At the same time I soldered in an SMA socket with a long protruding pin. The pin is about 12 to 13mm long, so I've left it untrimmed. I'll try it as it is. I removed the temporary screws, so there are a few little holes through the horn now. I hope they won't matter.

I bought a little box (a Toolstation "moulded enclosure") which I hope will house the horn & the transmit & receive modules along with a sequencer & a relay in order to make a transceiver which will take the weather. Maybe it could go on the dish? I will need to feed & receive video, audio, DC & PTT. A monitor line would be useful. Remote channel control might be fiddly.

Perhaps the microwaves will pass straight through the plastic case & grommets? We'll see!

Editor's footnote.

I have one of the 200mW camera+transmitter sets (Eachine FPV 200-set FOV 110°) and the Eachine RC832 Boscam FPV 5.8G 48CH Wireless AV Receiver.

The camera has a 12mm lens thread which matches my telescope eyepiece-webcam adapter so I'm hoping to use this for a remote telescope display.

Sam G4DDK has checked the transmitter for undesirable emissions and it seems clean, unlike one of the 600mW version (TS832) which does nasty things when not terminated in something that looks like 50R (i.e. not the stick antenna that ships with the device!). Plug in an antenna with poor match and the transmitter hoots at 438MHz (big signal.....). That modulates the 5.7GHz.

Martin G8BHC

Beaconspot changes its web address

From Robin Lucas G8APZ

At 00:00 UTC 20 May, changes were made to beaconspot.eu so it no longer allows access for users. The user is informed that the site is now beaconspot.uk, and is transferred there by a redirect button.

The beaconspot.eu website will continue to exist until 30th October 2018, but will only be there to redirect users and to redirect spots from the OZ2M program PI-RX. It will not be available for queries, since the complete history and functionality is transferred to beaconspot.uk which is now the primary site.

In making this move, GDPR consent has been catered for, with positive consent having to be given to hold a user's email address. The consent date is recorded in the user profile, as is the method of consent (either at registration for new users, or at first sign in for existing users).

In addition, this was an opportunity to undertake the major task of upgrading the code from PHP 5.6 to PHP 7.2 which has now been done.

21st April - Beaconspot 10th Anniversary 2008-2018

Contest results

John Quarmby G3XDY

April 2018 Lowband Contest Results

There were 20 entries this year, a 17% increase on last year. As expected most of the action was on 1296MHz, with 2300MHz still the Cinderella band.

Conditions were nothing special, there was a reasonable spread of stations available on 1296MHz including several continentals who provided good DX.

On 1296MHz Conrad PA5Y was the winner with John G4ZTR as runner-up. PA5Y also reported the best DX with a 710km QSO with Ralph G4ALY. The leading low power station was Peter G3PHO.

2300MHz saw just a single entrant, M0HNA/P who worked G4ODA and G3XDY.

On 2320MHz M0HNA/P ran out the winner with Martyn G3UKV as runner up. Mel G8EOP managed the best DX with G0JBA at 334km. Graham G3YJR was the only low power entrant.

M0HNA/P took the top spot on 3.4GHz, with Martyn G3UKV as runner-up.

The overall winner was the Combe Gibberlets group M0HNA/P consisting of G3TCU, G4SJH, and G1EHF, who won three bands. Overall runner up and leading fixed station is Martyn G3UKV.

Certificates go to the overall Winner M0HNA/P and Runner-up G3UKV and to the following winners:

1296MHz	PA5Y, G4ZTR, G3PHO (Low Power)
2300MHz	M0HNA/P
2320MHz	M0HNA/P, G3UKV, G3YJR (Low Power)
3400MHz	M0HNA/P, G3UKV

Overall

Pos	Callsign	1296MHz	2300MHz	2320MHz	3400MHz	Overall
1	M0HNA/P	676	1000	1000	1000	3676
2	G3UKV	275	0	618	783	1676
3	PA5Y	1000	0	0	0	1000
4	G3UVR	315	0	531	0	846
5	M0GHZ	132	0	252	439	823
6	G4ZTR	693	0	0	0	693
7	G8EOP	155	0	435	0	590
8	G4RQI	472	0	0	0	472
9	G4KIY	382	0	0	0	382
10	G8AIM	84	0	69	184	337
11	G3PHO	306	0	0	0	306
12	G4BAO	266	0	0	0	266
13	G4NZV	172	0	0	0	172
14	M0OMB/P	151	0	0	0	151
15	G3YKI	138	0	0	0	138
16	G3YJR	0	0	134	0	134
17	GM8IEM	97	0	0	0	97
18	G8DOH	58	0	0	0	58
19	G0LGS	2	0	0	0	2
20	M0GDX/P	1	0	0	0	1

1296MHz

Pos	Callsign	Locator	QSOs	Score	ODX Call	ODX km
1	PA5Y	JO21VO	24	10812	G4ALY	710
2	G4ZTR	JO01KW	33	7489	GI6ATZ	531
3	M0HNA/P	IO91RF	32	7313	DK2MN	532
4	G4RQI	IO93IR	24	5099	F6DKW	603
5	G4KIY	IO92WN	20	4133	DK2MN	490
6	G3UVR	IO83KH	16	3401	F6DKW	628
7	G3PHO	IO93GG	18	3311	PA5Y	525
8	G3UKV	IO82RR	22	2976	G4ALY	276
9	G4BAO	JO02CG	14	2878	DK2MN	467
10	G4NZV	IO82WA	13	1864	PA5Y	546
11	G8EOP	IO93EQ	10	1673	G0JBA	334
12	M0OMB/P	IO83RO	12	1629	M0HNA/P	297
13	G3YKI	IO92BD	11	1487	PA5Y	530
14	M0GHZ	IO81VK	6	1422	PA5Y	554
15	GM8IEM	IO78HF	3	1044	GI6ATZ	428
16	G8AIM	IO92FH	11	904	G4ZTR	171
17	G8DOH	IO92FA	7	624	G4ZTR	166
18	G0LGS	IO81WV	2	20	G4NZV	14
19	M0GDX/P	IO93EI	1	15	G3PHO	15

2300MHz

Pos	Callsign	Locator	QSOs	Score	ODX Call	ODX km
1	M0HNA/P	IO91RF	2	327	G4ODA	174

2320MHz

Pos	Callsign	Locator	QSOs	Score	ODX Call	ODX km
1	M0HNA/P	IO91RF	15	2839	G8DMU	314
2	G3UKV	IO82RR	11	1754	G4ALY	276
3	G3UVR	IO83KH	8	1507	G3XDY	324
4	G8EOP	IO93EQ	8	1236	G0JBA	334
5	M0GHZ	IO81VK	4	715	G0JBA	244
6	G3YJR	IO93FJ	5	380	G4ODA	118
7	G8AIM	IO92FH	2	197	M0HNA/P	139

3400MHz

Pos	Callsign	Locator	QSOs	Score	ODX Call	ODX km
1	M0HNA/P	IO91RF	7	1073	G3UKV	216
2	G3UKV	IO82RR	6	840	M0HNA/P	216
3	M0GHZ	IO81VK	3	471	G4ODA	206
4	G8AIM	IO92FH	2	197	M0HNA/P	139

May 2018 Lowband Contest Results

This years entry level was comparable with 2017, but with a couple more on 1296MHz and two less on 2320MHz. Due to equipment problems there were no entrants active on 2300MHz this time.

As usual the IARU region 1 contest provided good DX on 1296MHz and 2320MHz for those in range of the continent.

Conrad PA5Y was the run away winner on 1296MHz with a substantial score from over 50 QSOs. His continental location was very beneficial as high levels of activity in central Europe were within reach by aircraft scatter. Conrad also made the best DX, working OM3KII at 900km. M0HNA/P were the runners up this time.

On 2320MHz Neil G4LDR took top spot by a small margin from G8OHM and also registered the best DX with a 620km QSO with PI4GN.

M0HNA/P won 3400MHz with over three times the score of runner up Neil G4BRK. Ralph G4ALY provided the best DX to two out of the three entrants.

The overall winner was the Combe Gibberlets, M0HNA/P, with a leading score on 3400MHz and runner up position on 1296MHz. Overall runner up was Neil G4LDR who won 2320MHz and was third on 3.4GHz.

Certificates go to the overall Winner M0HNA/P and Runner-up G4LDR and to the following winners and runners up:

1296MHz	PA5Y, M0HNA/P, G3YJR (Low Power)
2320MHz	G4LDR, G8OHM, G3YJR (Low Power)
3400MHz	M0HNA/P, G4BRK

Overall

Pos	Callsign	1296MHz	2300MHz	2320MHz	3400MHz	Overall
1	M0HNA/P	360	0	0	1000	1360
2	G4LDR	100	0	1000	232	1332
3	G8OHM	193	0	979	0	1172
4	PA5Y	1000	0	0	0	1000
5	G4BRK	74	0	323	311	708
6	G8EOP	43	0	430	0	473
7	G3YJR	76	0	304	0	380
8	G4KIY	220	0	0	0	220
9	G4BAO	189	0	0	0	189
10	GU6EFB	144	0	0	0	144
11	G3TCT	140	0	0	0	140
12	GM8IEM	56	0	0	0	56
13	G4GSB	14	0	0	0	14

1296MHz

Pos	Callsign	Locator	QSOs	Score	ODX Call	ODX km
1	PA5Y	JO21VO	51	20883	OM3KII	900
2	M0HNA/P	IO91RF	35	7517	PI4GN	547
3	G4KIY	IO92WN	18	4586	DL0GTH	783
4	G8OHM	IO92AJ	19	4040	DF0MU	631
5	G4BAO	JO02CG	14	3941	DJ5AR	618
6	GU6EFB	IN89RK	10	3007	PA5Y	637
7	G3TCT	IO81QC	10	2927	ON7BV/P	574
8	G4LDR	IO91EC	10	2089	PI4GN	620
9	G3YJR	IO93FJ	10	1593	GI6ATZ	310
10	G4BRK	IO91HP	7	1552	PA5Y	495
11	GM8IEM	IO78HF	3	1160	G8SFI/P	552
12	G8EOP	IO93EQ	6	907	G2L	330
13	G4GSB	IO82XM	3	302	G3XDY	227

2320MHz

Pos	Callsign	Locator	QSOs	Score	ODX Call	ODX km
1	G4LDR	IO91EC	4	1144	PI4GN	620
2	G8OHM	IO92AJ	6	1120	G6TRM/P	269
3	G8EOP	IO93EQ	4	492	G3XDY	263
4	G4BRK	IO91HP	2	370	M1CRO/P	186
5	G3YJR	IO93FJ	3	348	M1CRO/P	257

3400MHz

Pos	Callsign	Locator	QSOs	Score	ODX Call	ODX km
1	M0HNA/P	IO91RF	6	840	G4ALY	271
2	G4BRK	IO91HP	2	261	M1CRO/P	186
3	G4LDR	IO91EC	1	195	G4ALY	195

Lowband Champs

Results after three sessions, the best three events count towards the total.

Overall

Pos	Callsign	04/03/2018	08/04/2018	06/05/2018	TOTAL
1	M0HNA/P	3592	3676	1360	8628
2	G4LDR	1940	0	1332	3272
3	PA5Y	947	1000	1000	2947
4	G4BRK	2233	0	708	2941
5	G3UKV	0	1676	0	1676
6	G4ZTR	856	693	0	1549
7	G3UVR	499	846	0	1345
8	G8EOP	124	590	473	1187
9	G8OHM	0	0	1172	1172
10	G4KIY	426	382	220	1028
11	M0GHZ	0	823	0	823
12	G3YJR	47	134	380	561
13	G3TCT	362	0	140	502
14	G4RQI	0	472	0	472
15	GU6EFB	324	0	144	468
16	G4BAO	0	266	189	455
17	G8AIM	0	337	0	337
18	G3PHO	0	306	0	306
19	GM4BYF	290	0	0	290
20	G3YKI	138	138	0	276
21	GM8IEM	69	97	56	222
22	G3SQQ	182	0	0	182
23	G4NZV	0	172	0	172
24	M0OMB/P	0	151	0	151
25	G8GTZ/P	129	0	0	129
26	G4GSB	57	0	14	71
27	G8DOH	0	58	0	58
28	G1DFL	36	0	0	36
29	G0LGS	0	2	0	2
30	M0GDX/P	0	1	0	1

1296MHz

Pos	Callsign	04/03/2018	08/04/2018	06/05/2018	TOTAL
1	PA5Y	947	1000	1000	2947
2	M0HNA/P	1000	676	360	2036
3	G4ZTR	856	693	0	1549
4	G4KIY	426	382	220	1028
5	G4BRK	853	0	74	927
6	G4LDR	449	0	100	549
7	G3TCT	362	0	140	502
8	G4RQI	0	472	0	472
9	GU6EFB	324	0	144	468
10	G4BAO	0	266	189	455
11	G3UVR	96	315	0	411
12	G3PHO	0	306	0	306
13	GM4BYF	290	0	0	290
14	G3YKI	138	138	0	276
15	G3UKV	0	275	0	275
16	G8EOP	25	155	43	223
17	GM8IEM	69	97	56	222
18	G8OHM	0	0	193	193
19	G3SQQ	182	0	0	182
20	G4NZV	0	172	0	172
21	M0OMB/P	0	151	0	151
22	M0GHZ	0	132	0	132
23	G8AIM	0	84	0	84
24	G4GSB	57	0	14	71
25	G8DOH	0	58	0	58
26	G1DFL	36	0	0	36
27	G0LGS	0	2	0	2
28	M0GDX/P	0	1	0	1

2300MHz

Pos	Callsign	04/03/2018	08/04/2018	06/05/2018	TOTAL
1	M0HNA/P	1000	1000	0	2000

2320MHz

Pos	Callsign	04/03/2018	08/04/2018	06/05/2018	TOTAL
1	M0HNA/P	1000	1000	0	2000
2	G4LDR	491	0	1000	1491
3	G4BRK	685	0	323	1008
4	G8OHM	0	0	979	979
5	G8EOP	99	435	430	964
6	G3UVR	403	531	0	934
7	G3UKV	0	618	0	618
8	G3YJR	47	134	304	485
9	M0GHZ	0	252	0	252
10	G8AIM	0	69	0	69

3400MHz

Pos	Callsign	04/03/2018	08/04/2018	06/05/2018	TOTAL
1	M0HNA/P	592	1000	1000	2592
2	G4LDR	1000	0	232	1232
3	G4BRK	695	0	311	1006
4	G3UKV	0	783	0	783
5	M0GHZ	0	439	0	439
6	G8AIM	0	184	0	184
7	G8GTZ/P	129	0	0	129

UKµG Microwave Contest Calendar 2018

Dates 2018	Time UTC	Contest name	Certificates
4-Mar	1000 - 1600	1st Low band 1.3/2.3/3.4GHz	F, P,L
8-Apr	1000 - 1600	2nd Low band 1.3/2.3/3.4GHz	F, P,L
6-May	0800 - 1400	3rd Low band 1.3/2.3/3.4GHz	F, P,L
20-May	0900 – 1700	1st 24GHz Contest	
20-May	0900 – 1700	1st 47GHz Contest	
20-May	0900 – 1700	1st 76GHz Contest	
27-May	0600 - 1800	1st 5.7GHz Contest	F, P,L
27-May	0600 - 1800	1st 10GHz Contest	F, P,L
3-Jun	1000 - 1600	4th Low band 1.3/2.3/3.4GHz	F, P,L
10-Jun	0900 - 1700	24/47GHz Trophy / 76/122-248 GHz	
24-Jun	0600 - 1800	2nd 5.7GHz Contest	F, P,L
24-Jun	0600 - 1800	2nd 10GHz Contest	F, P,L
29 -Jul	0600 - 1800	3rd 5.7GHz Contest	F, P,L
29 -Jul	0600 - 1800	3rd 10GHz Contest	F, P,L
26-Aug	0600 - 1800	4th 5.7GHz Contest	F, P,L
26-Aug	0600 - 1800	4th 10GHz Contest	F, P,L
16- Sep	0900 - 1700	3rd 24GHz Contest	
16- Sep	0900 - 1700	3rd 47GHz Contest	
16- Sep	0900 – 1700	3rd 76GHz Contest	
30 -Sep	0600 - 1800	5th 5.7GHz Contest	F, P,L
30 -Sep	0600 - 1800	5th 10GHz Contest	F, P,L
21 -Oct	0900 - 1700	4th 24GHz Contest	
21 -Oct	0900 - 1700	4th 47GHz Contest	
21 -Oct	0900 – 1700	4th 76GHz Contest	
18 -Nov	1000 - 1400	5th Low band 1.3/2.3/3.4GHz	F, P,L
Key:	F	Fixed / home station	
	P	Portable	
	L	Low-power (<10W on 1.3-3.4GHz, <1W on 5.7/10GHz)	

French microwave activity for 2018

Ralph G4ALY

May	WE 26 & 27	August	WE 25 & 26
June	WE 23 & 24	September	WE 29 & 30
July	WE 28 & 29	October	WE 27 & 28

Activity News : April 2018

By Neil Underwood G4LDR

Please send your activity news to:

scatterpoint@microwavers. org

Introduction

The weather improved as we moved into May, but had remained relatively cool and wet during most of April. Almost aligned with the improving weather was an apparent increase in microwave activity, so plenty to report this time.

Before I start on this month's report I must apologise to Barry G8AGN who sent in a report on the use of drone 5.8GHz TV modules. Somehow it did not get included in the final published version of Scatterpoint.

Band Reports – cm Bands

From John, G4BAO, JO02.

John has been active on tropo and on EME and sent in a list of what he has worked recently.

Once again it's mainly EME. Terrestrial stuff was "the usual suspects" (i.e <400km) with a couple of exceptions, namely.

23cm Terrestrial:

08/04/2018	F6DKW	JN18CS	SSB	414km
08/04/2018	DK2MN	JO32MC	SSB	466km

23cm EME New ones ("initials"):

16/04 K5DN JT65C; 16/04 IK3COJ JT65C; 19/04 I5YGI JT65C; 19/04 DGØFE JT65C; 19/04 DL8FBD JT65C; 22/04 K5SO 559/549 CW and 23/04 3B8MB JT65C **NEW DXCC (Mauritius)**

Four of these were new squares bringing my 23cm worked square total to 141.

I also completed my 3.4GHz EME system and had my first EME QSOs on the band running 35W to a 1.9m dish:

25/04 PA3DZL JT65C; 25/04 OK1KIR JT65C and 25/04 DF3RU JT65C

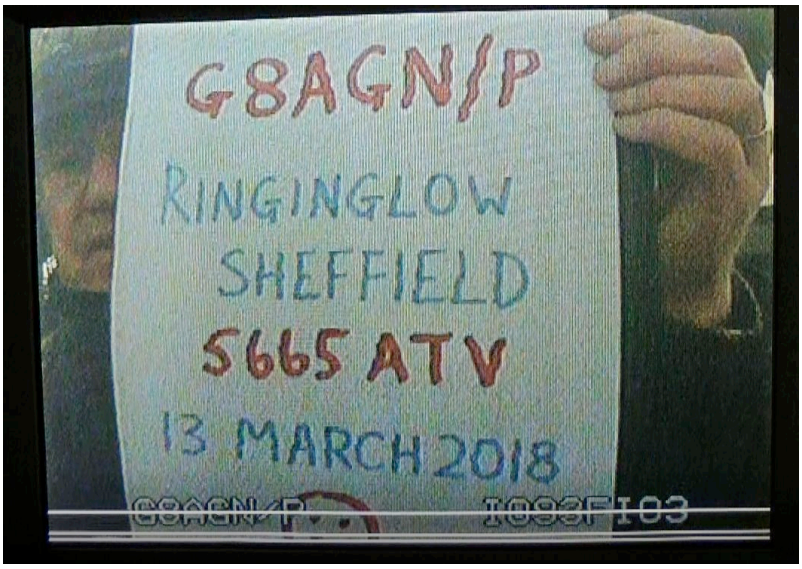
That's all for April, apart from finally fixing my 24GHz beacon at GB3PKT after a year of head-scratching!

From Barry, G8AGN, IO93.

This didn't make it into last month's edition although things have moved on since March, (see below).

Barry has been helping get activity going on the 6cm band using cheap TX and RX modules for ATV contacts.

"Up North" on 13th March, we worked 124km on a path between Sheffield and the North York Moors using 5.6GHz ATV based on the low cost quadcopter modules. At the Sheffield end were G8AGN/P and Richard G0RPH/P and at the North York Moors end was Rob M0DTS/P. The pictures reproduced here were show the quality of the pictures received each end over the 124km path.



G8AGN/P Sheffield
as received by M0DTS/P North York Moors

G0RPH/P Sheffield
as received by M0DTS/P North York Moors

M0DTS/P North York Moors
as received by G8AGN/P Sheffield.

Since Barry's report the distance record has been extended during early May to 158km with 5.6GHz ATV being exchange over a path from Bridlington North Yorkshire IO94VB45TP to West Runton near Cromer Norfolk JO02OW95RW. Richard G0RPH and Barry G8AGN travelled up to Bridlington whilst Noel G8GTZ with G8JAN, G0FVG and G4NJJ were at the Norfolk end.

5.6GHz ATV equipment set up at Runton JO02OW for the current UK distance record.

From Robin, G8APZ (M1CRO/P, JO01).

Robin reports on 10GHz activity during the IARU Region 1 UHF and up contest on the 5th/6th May 2018, from M1CRO/P (JO01PU), Walton on the Naze.

On 10GHz, there was extensive ducting across the North Sea, with the Dutch beacons PI7ALK (JO22IP) and PI7RTD (JO21FV) received at S9+ during the whole contest. The beacon on the island of Heligoland DB0GHZ (JO34WE) at 512km was audible all the time, often at S9+ and LB2SHF

(JO48AD) at 822km was also audible all the time up to S2. This last beacon was often heard on some strange (skewed) beam headings between 45 and 115 degrees but never on the direct path.

Much of the enhanced propagation seemed to be limited to the coasts, except for a period on Saturday night and Sunday morning when strong signal reports were exchanged on 10GHz with a number of Dutch stations and some DLs. On Sunday morning, OZ7Z (JO44VW) was worked on 10GHz at a distance of 660km. The new DB0WML beacon (JO31MU) at 396km was also heard on 10GHz at good strength for a short time.

Inter-G conditions were remarkably poor on 10GHz however. It took several attempts to complete with G4ASR (IO81MX). A contact was completed on the first attempt with G8OHM on 10GHz but signals were not strong.

Band Reports – mm Bands

From Robin G8APZ, (M1CRO/P, JO01)

Robin reports on a contact with Germany on 24GHz which is believed to be a 'first' G/DL on this band.

May UHF Contest 5th/6th May 2018, From M1CRO/P (JO01PU):

On Sunday morning, 6th May we tried on 24GHz with a number of PAs and DLs but all failed - the only exception to this was the test with DK0PU (JO31JN) at 381km. At 0543z we called DK0PU, and the most surprising thing was the ease with which we completed the contact. CW signals were not very strong at 519 each way, but the S-meter was moving! Some of the other operators in the contest tent were able to hear DK0PU as well on the second set of 'phones. This was definitely not aircraft or any other kind of scatter, since DK0PU's frequency was constant. There was some QSB, but not to the extent that it made the contact difficult at any time.

Working conditions at M1CRO/P on 24GHz were a GPS locked PLL, subharmonic mixer/transverter, and RX preamp all from DB6NT, and a SSPA delivering 3W output. The path from the RX and TX is via a Spinner four port relay into a Flann 30cm lens horn. The masthead unit was 10m above ground (30m above sea level) - and the IF 144MHz.

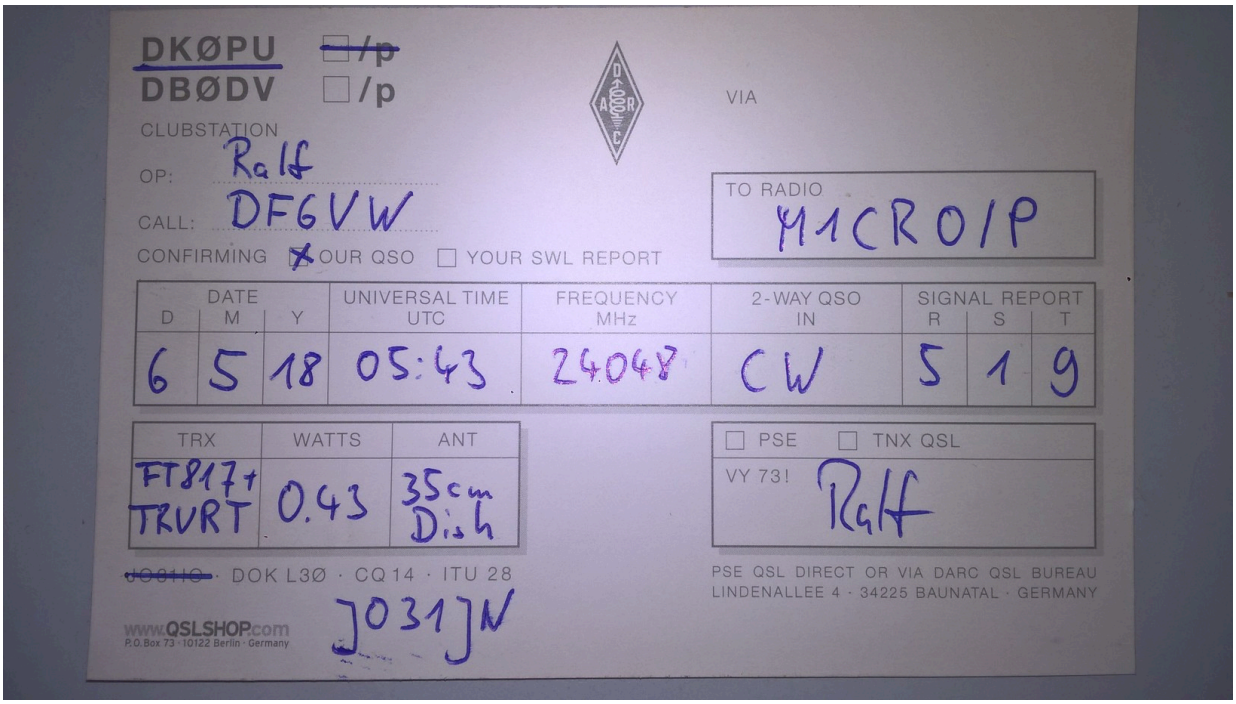
DK0PU transmitter output was 430mW into a 35cm Andrew dish with a waveguide switch from I3OPW. The antenna height was 5m agl and 80m asl and the view is entirely clear in the direction of the UK.

In an email received from Ralf DF6VW (one of the operators at DK0PU), he commented "even today I can't believe our 24GHz contact. Not very often I can reach PA3AWJ at 160 km, but 381 km seemed impossible. Thanks for very nice QSO. QSL will follow."

While this is not a 24GHz tropo distance record (we believe this is currently held by DL7QY and F6DKW for a 581Km contact) we think it may be the first terrestrial G-DL QSO on 24GHz, unless anyone knows better.

March 2008 Scatterpoint carried a front page item on the G4EAT - PA0BAT 24GHz UK distance record - the QSL card. www.microwavers.org/scatterpoint/2008/Scatterpoint_Mar_2008.pdf

I have attached front and back photos of the QSL card for the recent 24GHz contact between M1CRO/p and DK0PU.



From G4LDR, IO91.

Firstly I'll report on the 76GHz activity of Noel G8GTZ/P using the UKuW loan equipment which he recently borrowed and has been keen to use.

We arranged to meet up in late April at Noel's QTH in Basingstoke to check that we could hear each other across the garden. We then set off to two locations that were line of sight, Noel to Hannington, north of Basingstoke and myself just south of the M3 near Basingstoke. Once set up, Noel switch on the beacon transmitter, which comes with the loan equipment; I heard it straightaway. Noel then switched to the transverter and we had a fully quieting FM QSO. Although the path was only 12km long, it was a start and was the first time in about three years since a QSO on 76GHz has taken place using the loan equipment. Both ends of the QSO were posted on Twitter at the following addresses. https://twitter.com/twitter/statuses/988815035622404101 and https://twitter.com/twitter/statuses/989155533646053376.

The UKuW 76GHz Loan Equipment Operated by G8GTZ/P at Hannington.

Tests over longer paths were planned, however Noel has gone on to extend the distance to 93km with a contact with GW3TKH/P on the Blorenge South Wales (IO81LS) from Hackpen near Malborough (IO91CL) during the May mmWave contest on Sunday 20th May.

For myself other than the tests with Noel, I had to operate from home during the May mmWave contest. As a consequence I only worked G8GTZ/P and G8ACE/P on 24GHz and only G8ACE/P on 47GHz and 76GHz. The 30km path from my home QTH to the site used by John G8ACE/P at Chessefoot Head near Winchester is line of site. I am therefore claiming the first contest entry for a fixed (home) station on 47 and 76GHz, (unless anyone knows differently).

Beacon News

The GB3PKT 24GHz beacon near Clacton-on-Sea (JO01mt) is now back on the air, thanks to John G4BAO efforts. John reported on the 12th May that despite no visible trace whatsoever on the WSJT-X waterfall display I've been getting continuous, averaged decodes from GB3PKT's 24GHz JT4G signal via "Drizzle scatter". This is over a 77km, totally obstructed path from Sea level here on the Fen Edge to Sea level at Clacton over the "Essex/Suffolk Alps". Signals vary from -19 to -21dB.

He also reports on the enhancement in signal strength seen following a hot day when it cools down during the evening (something I often see in the summer with my local 24GHz beacon GB3SCK – Ed.).

From John Worsnop G4BAO

GB3PKT Clacton 24GHz beacon is back on air

Finally found the fault with the interference from the 10MHz beacon causing the 24GHz beacon power to drop. First wideband buffer stage after 1336MHz Synthesiser was being modulated by 10MHz pickup up the coax and causing the 1336 drive to the X9 varactor carrier to drop by 10dB.

500MHz High pass filter fitted to the buffer input and the problem is resolved.

Reports to beaconspot.eu please.

GB3PKT JO01MT 24048.945MHz

700mW to a slotted waveguide at 20m ASL

From Per Dudek DK7LJ (via moon-net dated 8 May).

After 3 month of work this night the 10368,025MHz eme beacon will be back with 50W at a 7.2m dish .good luck and thanks again to Charlie G3WDG for the new PA.

.....and finally

The deadline for activity reports to be included in the next issue is Friday 1st June 2018.

The Fraser Shepherd Award

Presented to Jean Powis, widow of Dave G4HUP, by retiring RSGB Chairman, Graham Murchie G4FSG

Monitor DSLWP-A – URGENT HELP NEEDED!

Background

I am Wei Mingchuan, a radio amateur BG2BHC and a doctor candidate of Harbin Institute of Technology, China. We have an amateur radio club BY2HIT and a student satellite team here, and we have launched two amateur satellites, LilacSat-1 and LilacSat-2.

Our university is leading a lunar formation flying satellite mission, **D**iscovering the **S**ky at the **L**ongest **W**avelengths **P**ioneer, for low frequency radio astronomy, amateur radio and education. The constellation consists of two 47 kg micro-satellites, and will be launched into a lunar transfer orbit UTC this Sunday evening, and finally enter a 300 x 9000km lunar elliptical orbit.

Onboard each satellite, there are two VHF/UHF SDR transceivers to provide beacon, telemetry, telecommand, digital image downlink and a GMSK-JT4 repeater. Onboard transmitting power is about 2 W.

The first launch window will open at about 21:30 May 20th UTC. The transmitters will be activated soon after separation. Satellite A will transmit 500 baud GMSK with 1/4 turbo code on 435.425 MHz and 250 baud GMSK with 1/2 turbo code and precoder on 436.425 MHz, and satellite B will transmit 500 baud GMSK with 1/4 turbo code on 435.400 MHz and 250 baud GMSK with 1/2 turbo code and precoder on 436.400 MHz, in every 5 minutes by default. Each transmission will last about 16 seconds. Radio amateurs in South America will have the earliest chance to receive the signals from the satellites, then North America, Oceania, Asia, Europe and Africa.

As the satellites will be quite far away from earth, and the onboard transmitting power is small, the downlink is quite weak, similar to EME. Could you help us to find some radio amateurs who are willing to help to receive the downlink signals from the satellites?

We will prepare different QSL cards for different flight phase for amateurs successfully made QSO or received telemetry. Awards will also be given to the first 10 amateurs in each continent who successfully decoded the signals from the satellites, received the most number of packets, or received an image.

An open source decoding software based on GNU Radio to work with RTL-SDR and USRP is provided. Not difficult to change the grc files to support other SDR receivers. A small proxy software will send the decoded data to a server for real-time display.

Thank you very much and fingers crossed for a successful launch!

Help needed

Can you help to monitor DSLWP-A on 435.425 and 436.425 now? [US amateurs]. We lost the contact of satellite A on S band after an orbit adjustment. We just tried to switch on UHF, but we don't know if it works or not. The sat is just above South America. If it works, 435.425 should be 500bps GMSK and JT4 alternately. 436.425 should be 250 bps GMSK. Both transmit once in 5 minutes.

Best Regards,

Wei Mingchuan BG2BHC bg2bhc@gmail.com

Links:

1. IARU frequency coordination page: http://www.amsatuk.me.uk/iaru/finished_detail.php?serialnum=530
2. Link budgets: http://lilacsat.hit.edu.cn/wp/?page_id=676
3. Decoder (GNU Radio OOT module): https://github.com/bg2bhc/gr-dslwp
4. Decoder (Linux Live CD): https://1drv.ms/u/s!Av6J6WjI3UbMhHm8gwMr4Z_keqWH
5. TLE: http://lilacsat.hit.edu.cn/tle/dslwp.txt
6. DSLWP-A Telemetry Display: http://lilacsat.hit.edu.cn/dashboard/pages_en/telemetry-a.html
7. DSLWP-B Telemetry Display: http://lilacsat.hit.edu.cn/dashboard/pages_en/telemetry-b.html

Editor's footnote:
Not strictly microwaves but some readers are active on that band and may have suitable EME kit.

RAL

Harwell Amateur Radio Society will be hosting the 2018 RAL Microwave Round Table on Sunday 17th June at Chilton Village Hall, OX11 0SU, near Didcot in Oxfordshire.

It is the ideal meeting place for both experienced microwavers and those who may interested in starting on the bands 1GHz and up.

In order to assist organisers, all visitors are asked to pre-register below.

Registration

Please register by emailing Ann Stevens G8NVI below including names and callsigns of those attending so we can make up badges and plan the catering

E-Mail Registration for RAL 2018

Event Info

The event is to be held in the CHILTON VILLAGE HALL. The village hall consists of a large hall, a small hall, a committee room and a kitchen, together with parking and a large attached recreational field. The event will open at 10am and feature:-

- Surplus and small trade stalls will be available in the Small Hall (£5 per pitch please)
- Chipbank
- Round 2 of the Microwave Round Table Construction Contest
- Afternoon Talks - for which offers are most welcome!

Refreshments and Lunch

Bacon Butties will be available between 1000 and 1130. Homemade sandwiches and cake will be available for lunch. Tea, coffee and limited soft drinks will be available all day. (Any profits to Harwell Amateur Radio Society)

The Round Table - Sunday 17th June 2018 - Timetable

1000	Doors open.
1030-1200	Informal socialising / bacon butties / surplus swap tables
1200-1245	Lunch
1245-1330	Talk-1:
1330-1345	Talk-2:
1415-1430	Tea Break
1430-1515	Talk-3:
1515-1600	Talk-4:
1615	Event closes

We are looking for another talk at RAL as a previous speaker has had to pull out. Any volunteers?

Mike G0MJW

RAL Travel Information:

Village Hall: Google Map, Hall Website

Note that the interchange on the A34 at Chilton is now full access both north and south and not restricted

Beginners workshop on SDR programming using the Gnu Radio Companion

John Worsnop G4BAO

On the day before the RSGB Convention, Friday the 12th of October, Kent's Hill Conference Centre Milton Keynes will be hosting a *"Beginners workshop on SDR programming using the Gnu radio companion"*

The course will be for RSGB members and based around "Gnu Radio" a free, graphical, software development toolkit that provides signal processing blocks to implement software-defined radios and signal-processing systems. It is widely used in hobbyist, academic, and commercial environments to support both wireless communications research and real-world radio systems. This is a PROGRAMMING course, so is aimed at people who want to create their own SDR Applications.

The Course Team

The course will be led by Derek Kozel MW0LNA, a Carnegie Mellon University graduate and Software Design Engineer at Ettus research, and Heather Lomond MIET, M0HMO an Embedded Software Engineer, specialising in Linux, audio and memory systems for mobile phones.

Delegate Requirements

As part of the course fee of £60, the course delegates will be provided with an "RTL Dongle" type SDR receiver and all the required software on a memory stick plus lunch and refreshments throughout the day.

Delegates must provide their own (preferably laptop) computer, meeting a minimum specification of, two or more USB ports, preferably one of which is USB 3.0, 4 GB or more of RAM, Wifi, Intel or AMD processor.

Numbers are strictly limited to 20 on the day. You may apply for a place at the workshop by emailing john@bravoao.co.uk requesting an application form. This will describe the course in more detail and in the interests of getting a balanced course intake it will ask you to provide a brief resume of your interests in Amateur radio and how you plan to use the knowledge gained on the day in advancing the SDR aspect of our hobby.

For further information see http://rsgb.org/sdr-workshop

Some links to whet your appetite

Getting Started 1	https://wiki.gnuradio.org/index.php/Guided_Tutorials
Getting Started 2	https://hackaday.com/2015/11/11/getting-started-with-gnu-radio/
The Manual	https://www.gnuradio.org/doc/doxygen/index.html

80m UK Microwavers net

Tuesdays 08:30 local on 3626 kHz (+/- QRM)

73 Martyn Vincent G3UKV

Events calendar

2018

June 1–3	Ham Radio, Friedrichshafen	www.hamradio-friedrichshafen.de/
June 17	RAL, Chilton Village Hall OX11 0SH	www.microwavers.org/ral-2018.htm
July 7–8	Finningley RT	www.g0ghk.com/
August 17–19	EME2018, Egmond aan Zee,NL	https://www.eme2018.nl
Sept 7–9	63.UKW Tagung Weinheim	www.ukw-tagung.de/
Sept 9	Crawley Round Table	https://crawleyuwavert.blogspot.co.uk
Sept 15–16	BATC Convention (CAT 18), Midlands Air Museum	https://forum.batc.org.uk/viewforum.php?f=115
Sept 23–28	European Microwave Week, Madrid	www.eumweek.com/
Sept 28–29	National Hamfest	www.nationalhamfest.org.uk/
Oct 11–14	Microwave Update, Fairborn, Ohio USA	www.microwaveupdate.org/
Oct 12–14	RSGB Convention & AMSAT Colloquium	http://rsgb.org/convention/
Nov 3 tbc	Scottish Round Table	www.gmroundtable.org.uk

2019

May 17–19	Hamvention, Dayton	www.hamvention.org/
June 21–23	Ham Radio, Friedrichshafen	www.hamradio-friedrichshafen.de/
Sept 15–20	European Microwave Week, Utrecht	www.eumweek.com/

NB Some of the 2018/19 event links may not be working/updated yet.

Last Call for EME2018

ATTENTION!: All registrations (hotel + excursions) will be closed on the 30th of June. Any registrations done after this date will not be processed anymore.

STOP PRESS! Microwave DXpedition

Jean Claude F5BUU & Ralph G4ALY

We're currently preparing our annual microwave XP.

This year, it should be more easy to work you [1].

Please note that we'll be QRV in IN73EN from June 9th till June 24th with EG1SHF call sign.

Talkback around 144.390 and KST chat.

Hope to see you down the log and some others G stations as well.

1. Ralph notes that IN73 is a good place well clear of the French coast except for a bit of the Brest Peninsular.