An Amateur Radio publication for the Microwave Enthusiast

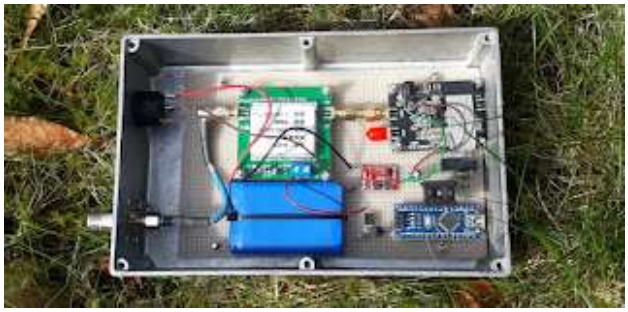
scatterpoint

September 2022

Published by the UK Microwave Group

In This Issue

Visitors to Crawley Microwave Round Table



Portable Signal Source Robin G1YFG

UK Microwave Group

Subscription Information

The following subscription rates apply

UK £6 00 US $12 00 Europe €10 00

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 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

payukug@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)

Please send pictures and tables separately, as they can be a bit of a problem.

Thank you for you co-operation

Roger G8CUB

Reproducing articles from Scatterpoint

If you plan to reproduce an article exactly as in Scatterpoint then please contact the Editor – otherwise you need to seek permission from the original source/author.

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 (e.g. 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 contact the committee.

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 UKµG 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 components on the site will not be a guarantee of availability of that component.

The service is run as a free benefit to all members of the UK Microwave Group. The service may be withdrawn at the discretion of the committee if abused. Such as reselling of components.

There is an order form on the website with an address label which will make processing the orders slightly easier.

Minimum quantity of small components is 10.

These will be sent out in a small jiffy back using a second class large letter stamp. The group is currently covering this cost.

As many components are from unknown sources. It is suggested values are checked before they are used in construction. The UKµG can have no responsibility in this respect.

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

UK Microwave Group Contact Information

Chairman: Position vacant	General Secretary: John Quarmby G3XDY	Membership Secretary: Bryan Harber G8DKK
email: chairman@microwavers.org	secretary@microwavers.org Suffolk JO02OB Tel: 01473 717830	membership@microwavers.org Hertfordshire IO91VX
Treasurer: David Millard M0GHZ	Scatterpoint Editor: Roger Ray G8CUB	Beacon Coordinator: Denis Stanton G0OLX
email: treasurer@microwavers.org	editor@microwavers.org Wiltshire IO91DK Tel: 07900 261121	beacons@microwavers.org

Scatterpoint Activity news: John G4BAO scatterpoint@microwavers.org
Contests & Awards Manager: G3XDY as above g3xdy@btinternet.com

Assistants

Murray Niman	Webmaster	G6JYB	g6jyb@microwavers.org
Kent Britain	USA	WA5VJB/G8EMY	wa5vjb@flash.net
Mike & Ann Stevens	Trophies	G8CUL/G8NVI	trophies@microwavers.org
Noel Matthews	ATV	G8GTZ	noel@noelandsally.net
Robin Lucas	Beaconspot	G8APZ	admin@beaconspot.uk
Chris Whitmarsh	mmWaves	G0FDZ	chris@g0fdz.com
Mike Scott	Chip Bank	G3LYP	g3lyp@btinternet.com
Paul Nickalls	Digital	G8AQA	g8aqa@microwavers.org
Heather Lomond	SDR	M0HMO	m0hmo@microwavers.org
Neil Smith	Tech Support	G4DBN	neil@g4dbn.uk
Barry Lewis	RSGB uWave Manager	G4SJH	barryplewis@btinternet.com

UK Regional Reps

Martin Hall	Scotland	GM8IEM	martinhall@gorrell.co.uk
Gordon Curry	Northern Ireland	GI6ATZ	gi6atz@qsl.net
Peter Harston	Wales	GW4JQP	pharston@gmail.com

International

Kent Britain	USA	WA5VJB/G8EMY	wa5vjb@flash.net

Loan Equipment

Don't forget, UKuG has loan kit in the form of portable transceivers available to members for use on the following bands: **Contact Neil G4DBN for more information**

5.7GHz 10GHz 24GHz 76GHz 122GHz(soon)

Notices

UK Microwave Group Subscription Changes

The committee have reviewed overseas subscription rates in the light of current exchange rates and have set new annual rates of $9 or €9 for non-sterling subscriptions. These rates take immediate effect.

Measuring Phase Noise

Phase noise can often be a limiting factor for stations local to a beacon, and some recent PLL based sources may not be suitable for beacons or local oscillators when operating in close proximity. We are intending to create some loan beacon systems to increase beacon coverage, but need to understand the performance that will be achieved in practice.
The committee would be interested to hear from any members with access to professional phase noise measurement systems that might be able to assist with characterising beacon/LO sources.
Please contact the secretary in the first instance: g3xdy@btinternet.com

This month I have been……..

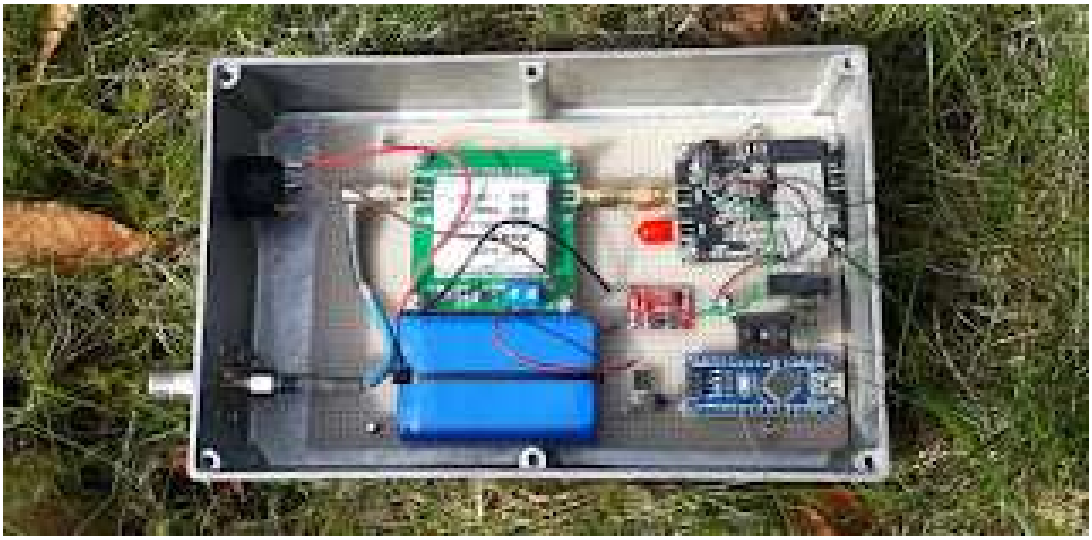
A short project for a modulated, portable signal source, ideal as the "other end" of an antenna test range.

Anyone who has tried to measure the performance of an antenna knows there are 2 halves to the problem ... detecting the signal and sending the signal. Detecting and accurately measuring the signal is a well solved problem, the venerable HP415E is the weapon of choice. The '415 is self-contained, battery powered and very accurate. With a simple diode detector it makes an ideal portable measuring device and has been the backbone of many professional and amateur test ranges for many decades.

The problem with the '415 is it needs a modulated signal source, 1kHz of AM is needed on a carrier of the desired frequency. There is little point having a portable detector if you have to lug 20 kilos of bench equipment out into the field and provide it with mains power to generate the test signal.

To solve this, I used a cheap synthesised signal ADF4351 signal source from eBay, driven by an Arduino to set the control registers. A cheap 20dB gain stage boosts the output to a level more than sufficient to be detected by the '415 ... and the Arduino drives a P channel MOSFET with a spare pin switched at 1kHz to modulate the power to the gain stage. Finally a 7.2 LiPo battery pack intended for model aircraft is used as a power source and a 5V buck convertor efficiently takes the battery power and provides a steady 5V for the electronics. A diecast box houses the project.

Power consumption is around 120mA, which gives me 12 hours of use. A hex switch allows selection of amateur bands from 50MHz though to 3.4GHz All in all a simple project that is very useful and saves a lot of frustration when measuring antennas in the field.



Arduino code: https://github.com/rszemeti/ADF4351_Loader/tree/CalSource

Robin Szemeti G1YFG

Getting started with Waveguide on the Millimetre Bands

Roger G8CUB

Going above 24GHz generally requires that the RF travels through waveguide rather than coax. Certainly above 47GHz there is no option other than waveguide for Microwavers. Commercially there is 1mm coax for use to 110GHz. However that is not practical on both cost and high loss grounds. Generally at 47GHz waveguide is used.

Though before I start on waveguide, I need to clarify the different type of coax connector for the higher frequencies. The first group will mate with sma, though to maintain their higher frequency performance, they need to mate with connectors of the same type.

The first is 3.5mm. The dimension is the diameter of the air dielectric around the centre pin. This connector is good to 34GHz.

The next in the series is k-connector developed by Wiltron/Anritsu. A slightly modified (and inferior) connector produced by HP/Agilent was designated 2.92mm. This is good to 40GHz. The original k-connector can in some circumstances be used to 50 or even 54GHz, which is the spec of the WR-19 transition on the right.

For higher frequencies again Wiltron/Anritsu developed the V-connector. Again copied and modified to be designated 2.4mm. These connectors are specified to 50GHz. Although of a similar size they are NOT thread compatible with an SMA. The original V-connectors in the right situation can be used to 67GHz.

An Agilent 2.4mm 50GHz transfer relay is shown opposite.

To try and produce something equivalent and improved reduced internal spacing connector was produced and designated 1.85mm, working to 67GHz. These mate with 2.4mm, although the slight step transition limits performance at the highest frequencies.

A ‘simple’ bias-T using 1mm connectors. Think of the caps and inductors required for that range!

After that we are into really small totally different connectors. The 1.0mm for use up to 110GHz, and now the 0.8mm developed by Anritsu for use up to 145GHz. Totally priced outside any Amateur and most professional use.
Something I have been caught out on, is that the high performance, high frequency cables, are not the lowest loss at lower frequencies. As with the connectors, as you go up in frequency the diameter of the cable gets smaller. Of course the largest diameter gives the lowest loss. Like LDF5-50 is very low loss at 1.3GHz, but 10GHz is outside its frequency range.

So to waveguide.
Let’s start at wr-28. This is the last in terms of increased frequency, with a square flange. The specified frequency range is 26.3 – 40.1GHz. However it works well at both 24 & 47GHz (with care).
The lefthand picture of the 2.92 transition, is wr-28 waveguide.
Flanged waveguide can be obtained fairly cheaply, and waveguide switches are available.
After wr-28 is wr-22 (33-50GHz) which has a large round flange. As does wr-19 (40-60GHz).
However there are exceptions. There is wr-28 waveguide with a large round flange, and wr-22 with a square flange as per wr-28. Then there is wr-19 with a small round flange!
The important bit, is the waveguide size. To check the size a simple gauge can be used as shown. The French ‘Hyper’ one, is cut it out yourself. The other, often given away at professional shows, is already to size.

Before I stray too far. Consider waveguide screws. These are an American 4-40 size thread. There are two different hex head sizes. These are 3/32 & 5/64. One bit of advice is to buy a decent ball ended driver of both sizes. I have found Bondhus the best. It allows the screw to be turned, when at an angle to the flange. It is recommended to use the same size screws in any one flange. It helps when trying to change something in the field. Usually two screws work, at either end of the long waveguide slot.
However at the higher millimetre frequencies with a small centre surface area. Careful alignment is needed, and 4 screws are better. The way to check that the flange surfaces are touching, is either to hold up the mated pair to a light, or put a light behind.
It is easy to mate waveguide of different size, but with the same flange. Generally connecting say wr-12 to wr-15 works fine. The mismatch in the transition is relatively minor. A bigger mismatch will occur between wr-10 & wr-15. This may not be too bad at the frequency you are using. However as will a mismatch in coax, phase, and hence length will change things. Therefore try a couple of different lengths of waveguide for the lowest loss. The ideal way of joining two different size waveguides, is to use a tapered transition. A couple are shown in the picture.

It is a similar case for rectangular waveguide to circular. If of a similar size, just bolting together will work. One thing to avoid here, is a twist. If you have started to twist the guided wave, it can continual to spiral down a circular guide. Then if a dish feed, you may not have the polarisation that you thought you had!
Other than it is a low loss transmission medium. The very important property of waveguide, is that it is a high pass filter. This is especially important as we go up in frequency, as high-pass or band-pass filters are not available.
On the higher millimetre bands, using waveguide high-pass filter properties, is often the only way of knowing that you are on the right band! It is essential that a waveguide filter is used at least on one end of a link. This is because harmonic multiplication can occur in a mixer on the receive side as well as on the tx side!
Table of LF cutoff frequencies

Waveguide	**Freq. GHz**
WR-28	21.08
WR-22	26.35
WR-19	31.39
WR-15	39.88
WR-12	48.37
WR-10	59.01
WR-08	73.77
WR-06	90.79
WR-05	115.7
WR-04	137.2
WR-03	173.6

Flann Microwave have a more complete table:
https://flann.com/standards/
Cut off below the frequencies given is fairly sharp. Some of the unloved lower frequency transitions like WR-62 (9.5GHz), when put together provide useful HPF's.

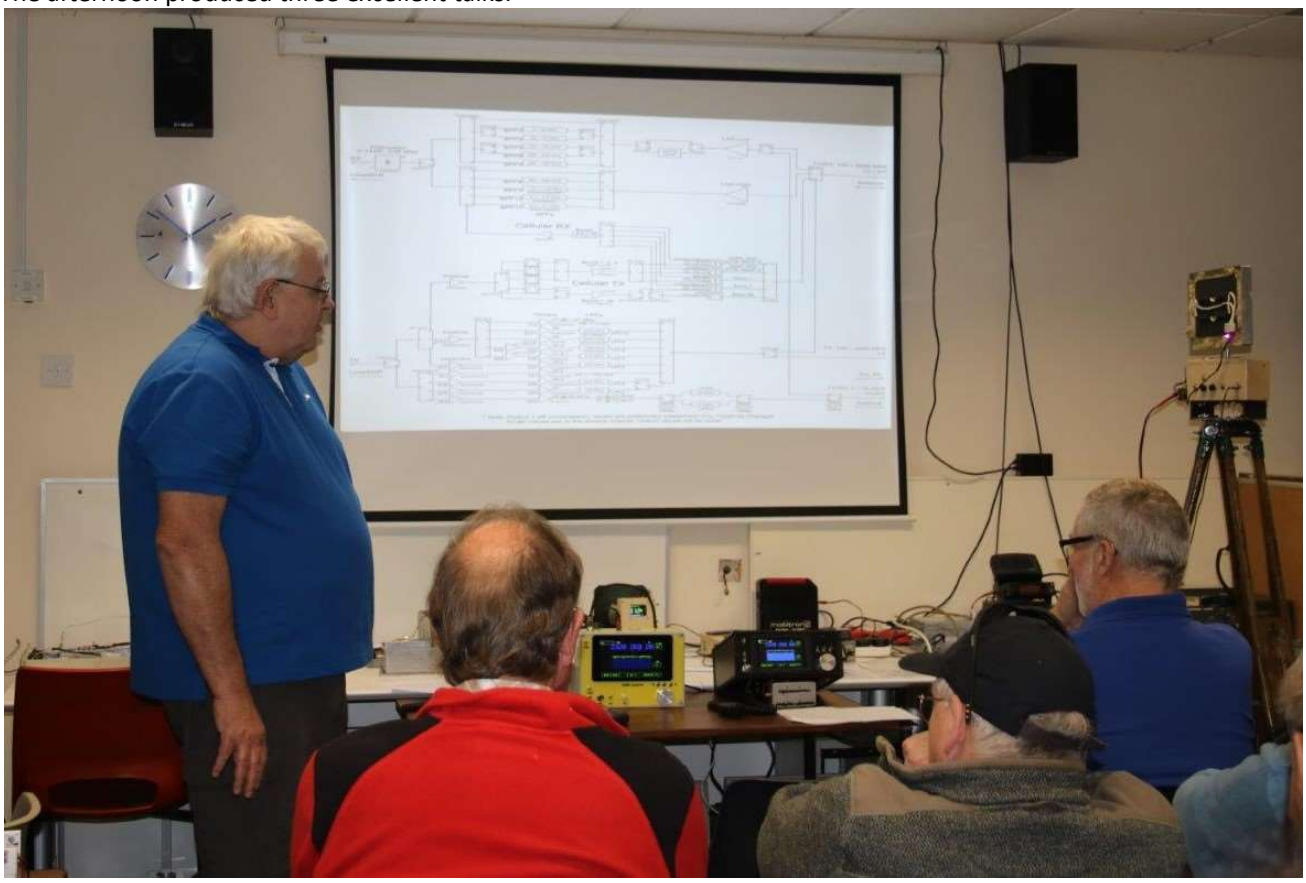
To be continued…….

Crawley Microwave Round Table
Sunday 18th September 2022

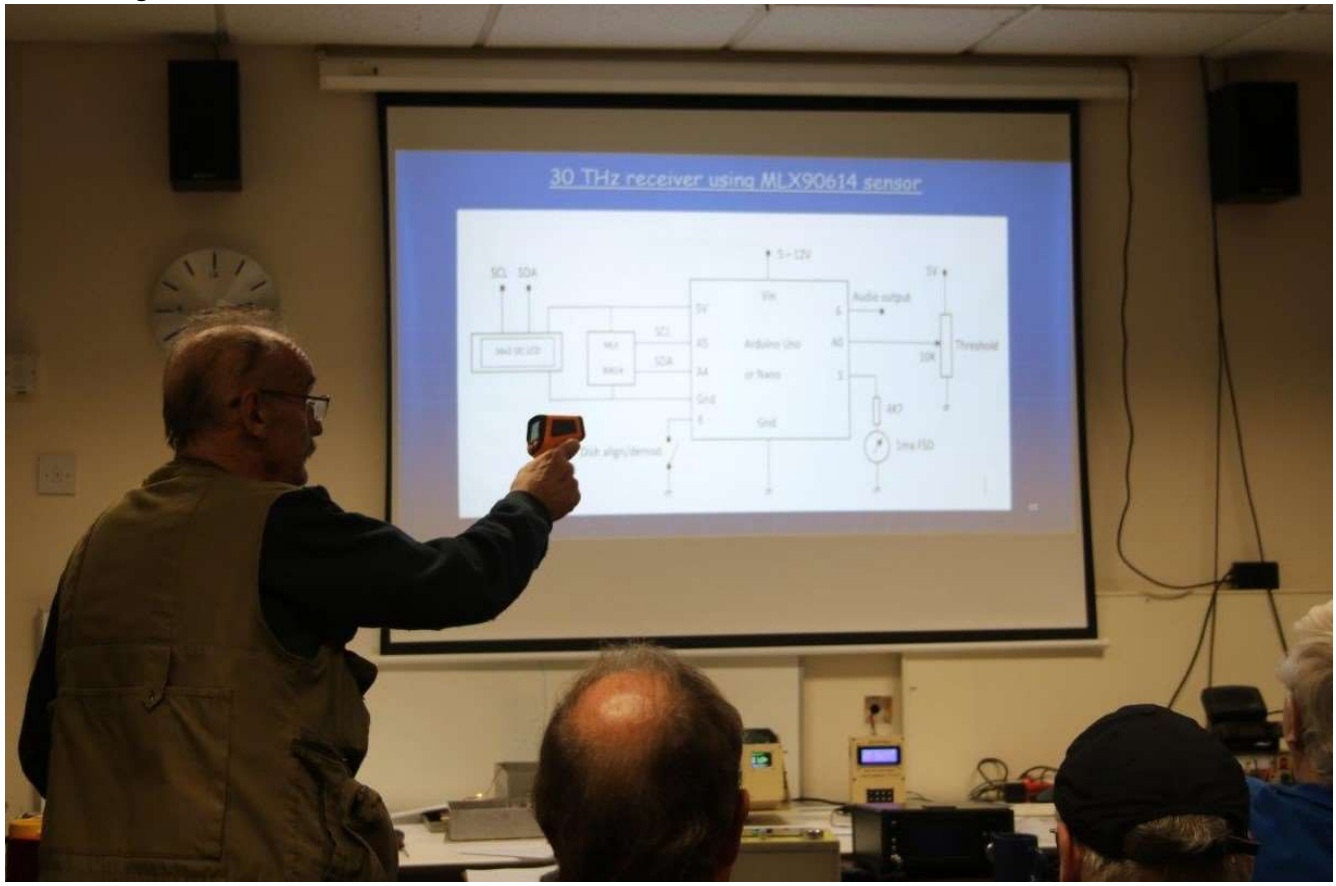
This year's event at the Crawley Amateur Radio Club 'hut', was again an informative but relaxed event.
The morning was a good social event, to catch up with others, on their microwave activities. There was a reasonable selection of 'junk' available, some in aid of the hosting club funds.

This round of the UK Microwave Group annual Project contest, had a significant number of entries. Eventual winner of the G3GRO trophy was Chris G0FDZ, with his well-crafted 'Weather box'.

The afternoon produced three excellent talks.



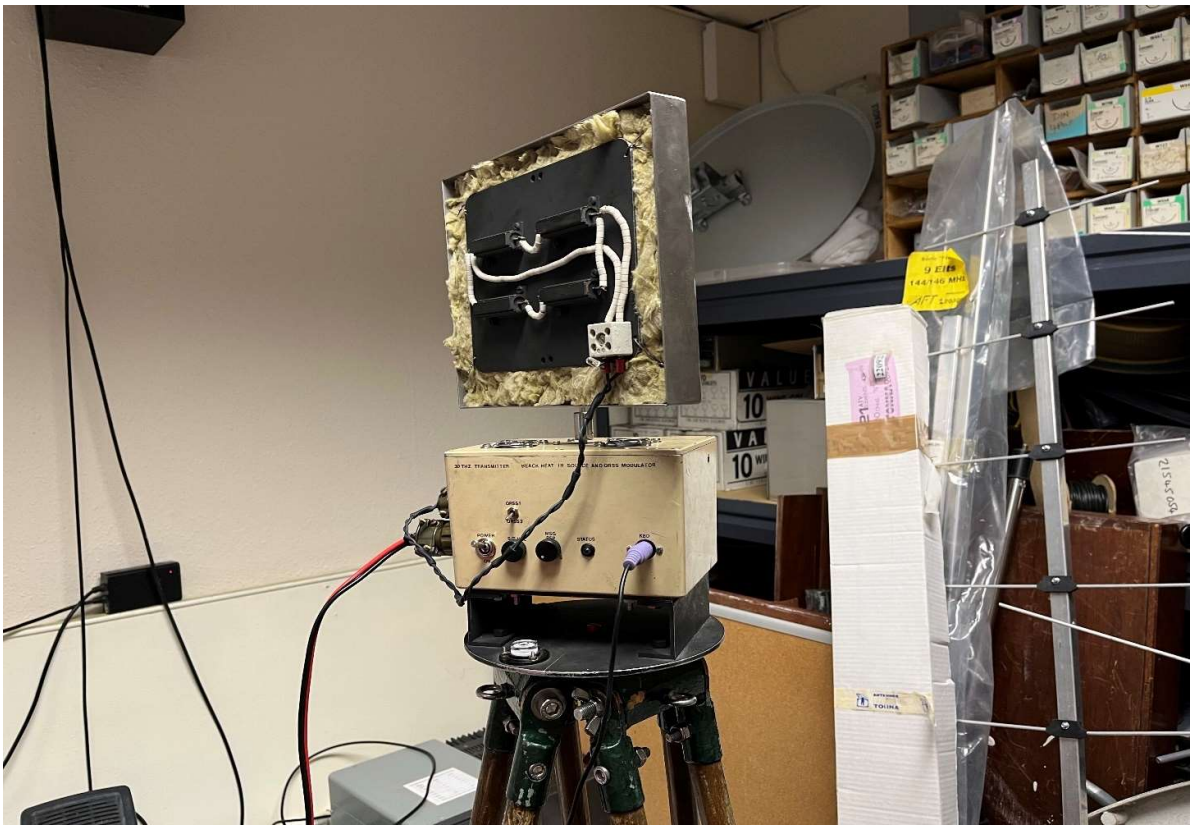
Langstone SDR Transceiver, Colin G4EML



30THz, Chris G0FDZ

10GHz Small Dish Moonbounce, Denis Stanton, G0OLX

30THz Receiver



30 THz Transmitter

Some of the construction competition entries

Scottish Microwave Round Table

The 2022 GM Microwave Round Table will be held on Saturday 22 October in the Museum of Communication in High Street, Burntisland, Fife, KY3 9AA. Full details are at:

https://www.gmroundtable.org.uk/

PROGRAMME

09.30	10.30	DOORS OPEN	Coffee, tea and biscuits available
10.30	12.30		Morning Session: Chair Martin Hall GM8IEM
10.30	10.35	Welcome	Martin Hall GM8IEM (UK Microwave Group Scottish Representative)
10.35	11.15	Talk	Roger Blackwell GM4PMK "EME from the Hebrides – An update 10 years on"
11.15	11.30	Break	
11.30	12.10	Talk	Brian Howie GM4DIJ "OpenEMS for Microwaves"
12.10	12.30	Break	In the museum: The GM4LBV Projects Trophy. The esteemed judges will be Ian White GM3SEK and David Stockton GM4ZNX.
12.30	13.45	LUNCH	
13.45	16.15		Afternoon session: Chair Andy Sinclair MM0FMF
13.45	14.30	Talk	Malcolm Hamilton GM3TAL "Microwaves - theory and practice or five different ways to cook eggs"
14.30	15.00	Break	
15.00	15.40	Talk	Peter Bates GM4BYF "122GHz Operations and Experiences"
15.40	15.50	Award	Construction Competition Conclusion and Award - Ian White and David Stockton
15.50	16.15	Break	Tea and Coffee. Social Time. Winding up of measurement facilities.
17.00		EXIT	End of let
19.00			Dinner in Kingswood Hotel

Brian Flynn
GM8BJF

Microwave Round Table Dates

Scottish 22nd October 1030 – 17.00
Midlands 3rd December 10.00 – 16.00

Editors Comments

This edition is the lightest for a while on construction articles. So please put pen to paper, and send in details of your projects.

I look forward to seeing a report on the Scottish Microwave Round Table.

Roger G8CUB

Beacon News

Activity News: September 2022

By John G4BAO

Please send your activity news to: **scatterpoint@microwavers.org**

From Peter G3LTF

During the ARRL microwave EME contest 24/25 Sept, I operated exclusively on CW on 2.3 GHz and had 15 QSOs. These included 4 crossband to 2304 with North American stations plus 2 more initials. My initials score now stands at 157. On switching to 3.4GHz I had 5 QSOs including 3 with North America.

From Bryan G8DKK

After much head scratching with the mast luffed, I have fixed my defective 23cm masthead preamp. A dry joint to the 0V rail from the -5V board. Needless to say, it was also an intermittent fault! G8MBU/b a good signal here and brief A/S burst from GB3NGI at 520km.

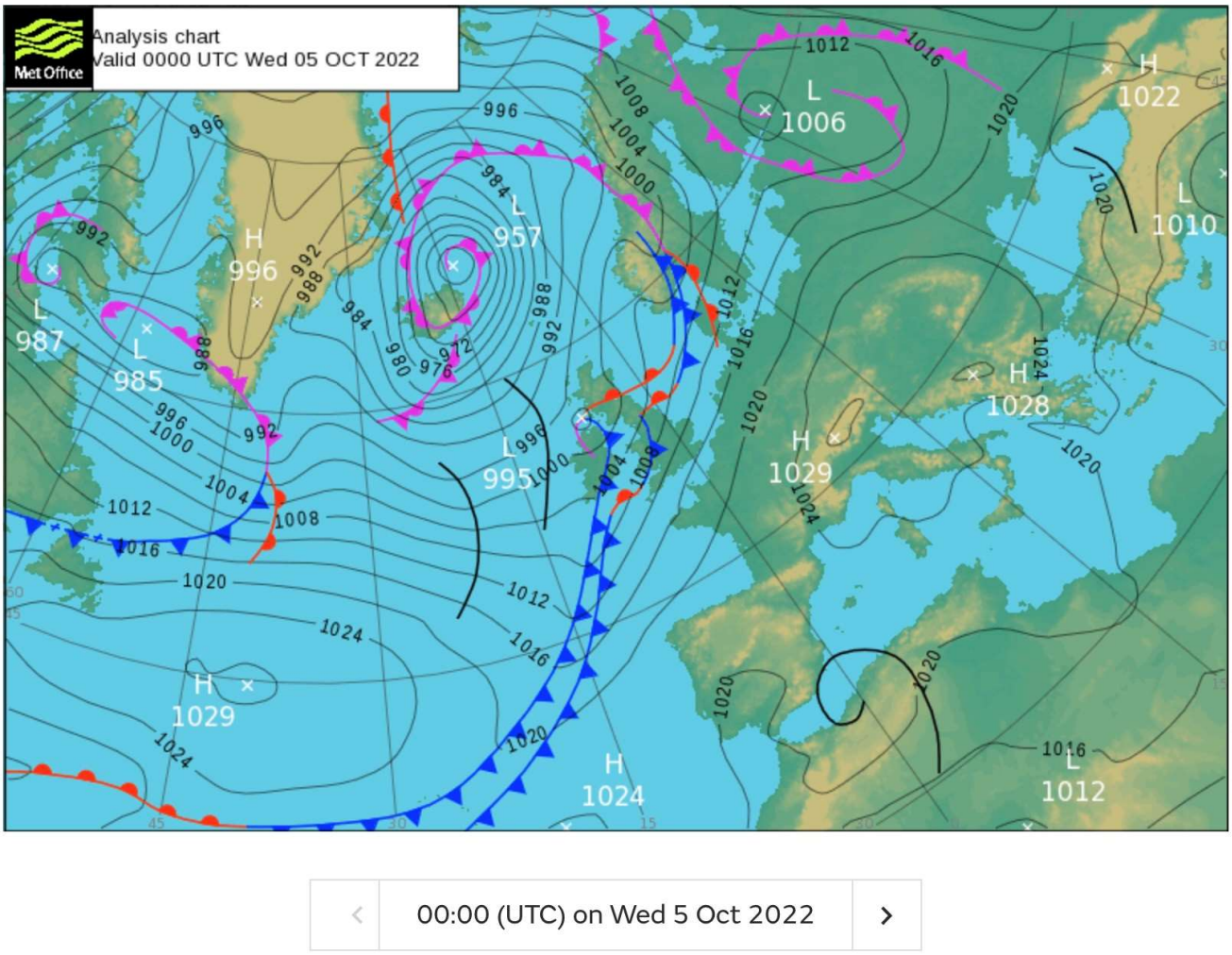
From John G4BAO

Not one GHz QSO since last Scatterpoint I'm ashamed to say! I've not been totally inactive though. Most of the month was taken up with my RSGB convention presentation and there is a bit of a rebuild in progress of my 10GHz EME system to allow me to operate in the JA band at 10450MHz. I recently discovered I have a very short Moon window between the trees with Mitsuo-san, JA1WQF. This would give me a new continent on the band, plus be a really good try out for an attempt at a 24GHz QSO with him once I finally get my system on the air. I now have the final piece of the jigsaw for EME on 24, namely an eye-wateringly expensive WR42 waveguide relay! I now have to work out how to drive a stepper motor with an Arduino! All a good learning curve.
I missed the fact that G1PPA/P was operating 24GHz in JO03 to work G4ODA (see above) as no announcement of potential activity was made on the microwave reflector. Upshot is I'm still looking for that 5th 24GHz square! If you go out portable, on a non – contest day tell people!

From Neil G4DBN

"Conditions on 10 GHz could not conceivably get any worse than last month, but they succeeded admirably". Doesn't make for exciting column-inches, does it? Not much more inspiring from the "abandon all hope" disaster area into which my radio operations activity has descended." I've made a few Things, but mostly Thought about Stuff. Bit of an internal monologue. Did have a nice ragchew on 10 GHz with some rare DX from alongside the M62 though. That probably made up more QSO-minutes than all my contest contacts this year to date!

From Dave G4GLT



Tropospheric Conditions on 10GHz at G4GLT/P on 4th October 2022 didn't look promising. I got to my portable spot at IO80DO in the early morning, but with towering banks of low cloud I didn't hear anything across the channel so eventually I went back home. It was blowing a howling wind so all of the tripod legs were double pegged. With a massive area of high pressure over central Europe and a cold front to the northwest of it passing over much of the southern UK I thought that I might be on the fringe of things. However, when I went back at 1100Z the ED1ZBE beacon was coming in and eventually peaked 599. This was not a leisurely outing I might add. The dish had to be held firmly when scanning for beacons, otherwise the wind would have swung it round. Thank goodness for the swivel lock. After lunch I was back on site just before 1500Z and heard HB9G and F5ZBA beacons coming through. The HB9BBD beacon popped up briefly too at 982km. At 1545Z I was contacted on
ON4KST by F5BUU/P in JN02TW. We soon had a SSB QSO with 55 both ways which was surprising considering the distance of 945km. Jean Claude was 1200 metres above sea level. After this I had a CW QSO with Jean F6APE in IN97PI.
I went back for my evening meal and went out again just before 1800Z . F1ZUQ beacon was coming through as well as F5ZBB, F5ZBA, F5ZTR and HB9G beacons. Via ON4KST I was in contact with Dom F6DRO and we had a CW QSO at 2040Z. He is in JN03TJ so that is a path of 900km. He was a good signal with me but I was weak with him. After that the wind became stronger and the rain unbearable , so I went home. The usefulness of F5ZBA beacon is now beyond doubt as it seems a really good indicator that is not a rarity. The next morning of 5th October at 0600Z the wind was still blasting at me but at least for a while the rain abated somewhat. I was able to receive F1ZUQ (599), F5ZBA, F5ZVV, F5ZTR, F5ZBB, and HB9G beacons. I gave up eventually as the rain started to soak everything. I must admit to not expecting good tropo under such extreme weather, and can only assume that it is not just the high pressure with a warm south west wind, but it's also the proximity to a cold front that produced such good tropo. The Mark 3 10GHz project has already been started and is on a trailer, so will be rain proof!

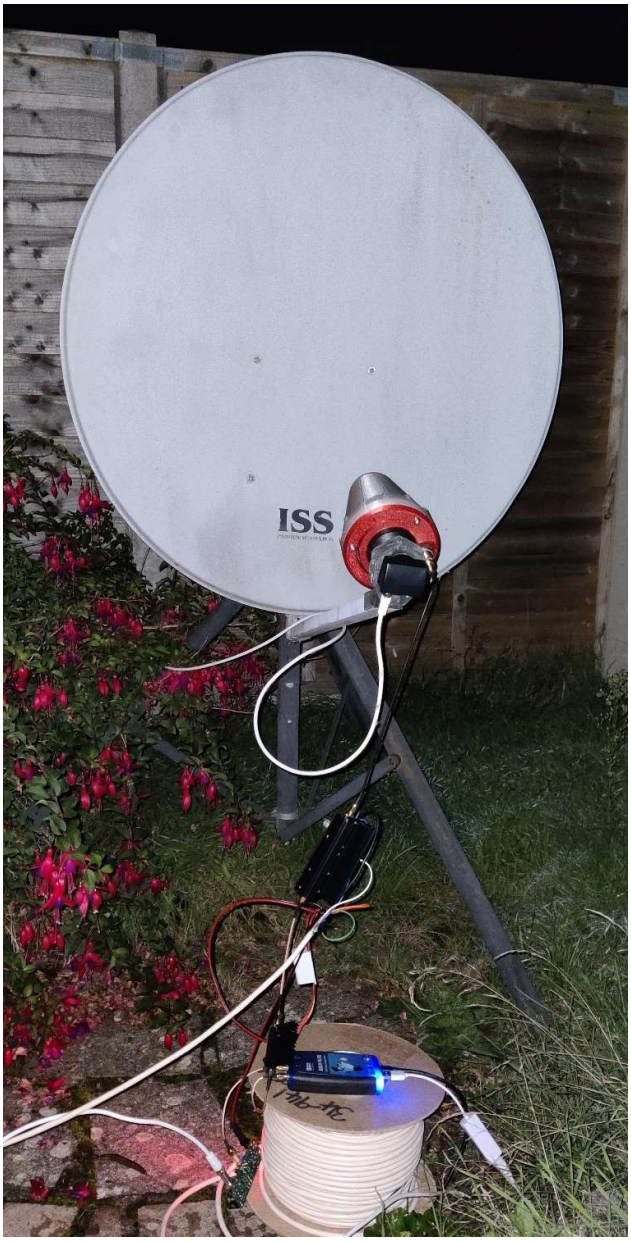
From Keith G4ODA

I completed a 24GHz QSO at 14.40 GMT on October 11th with Steve G1PPA/P in JO03AE 53km each way. GB3CAM was also peaking S7 later with deep QSB. The distance to both is about the same. Suffice to say, “well chuffed” as I think this may be Steve's 1st 24GHz QSO.

From Phil G0JBA

On 11th September at 1415 UTC from my home station in JO01PG I worked Maarten, ON/PA0MHE/P in JO11KE on 24GHz at a distance of 108km, he was located on top of a sand dune, South of Ostend, Belgium. Reports 55 each way on SSB and then later worked on FM at 57 each way. He was using a wave labs system with 30cm PF dish and 2Watts. My system is a Kuhne with a 40cm off set dish and 2Watts. There was some QSB and flutter but both very pleased with the QSO. He is going to try a new location at a later date from a 25m high dune nr Middleburg, Netherlands. Humidity was 64% at my location and conditions not great. A new country and locator grid for me. Now worked 6 Large Grids and 3 countries on 24GHz and all from home on Tropo.

From Rob M0VFC



From Cottenham, the next Fen Edge village round from G4BAO, First contact on the QO-100 satellite from home! Nothing fancy or original: 60cm Offset, Bullseye LNB and Ice Cone feed. Pluto, AMSAT driver and 5W PA.

Lots of work still to do on the mechanical side, and frequency stability is a little more "artisan" than ideal. But I made some RFs, and they went into the sky and came back down! Thanks to TF3VP for the QSO:-)

Reports from “across the pond”

Following the US microwave reflector microwave@mailmanlists.us is always interesting. It recently reported that after a few dozen attempts over the course of the past 15 months Chris, N0UK managed to work Gedas, W7BYA, on 10GHz CW rainscatter via a storm cell near Cedar Rapids, Iowa. His new ODX on the band at 804km, as well as new grids and states for the both of them.

Well-known EME operator, Ed KL7UW replied that there is no 10GHz activity in Alaska (YET!), but he has two 2W DEMI transverters, one an unfinished kit. When completed, he plans to loan one with a 22-dBi horn to Brandon, KL7BSC 100km to the North of him and start out looking for mountain-bounce paths, then encourage Brandon to rove to activate longer paths on “hike up” spots. Ed has a good 400-foot ASL hilltop 7-miles from home to shoot from with his 18-inch dish as his home QTH is only 135 foot ASL with 50-foot high surrounding forest.

UKuG MICROWAVE CONTESTS – 2022

September 5.7GHz Contest 2022

Entry levels, activity and conditions were poor for this session. Telford & DARS G6ZME/P were the winners and also worked the best DX at 265km with G3XDY. Runner up was David M0GHZ.
73
John G3XDY
UKuG Contest Manager

5.7GHz Contest September

Pos	Callsign	Locator	QSOs	Score	ODX Call	ODX Kms
1	G6ZME/P	IO82QL	7	1047	G3XDY	265
2	M0GHZ	IO81VK	6	890	G3XDY	246
3	G1EHF/P	IO91GI	7	844	G3XDY	200
4	G1DFL	IO91NL	2	73	G1EHF/P	43

September 10GHz Contest 2022

Telford & DARS G3ZME/P won this session in the Open section, with John G4ZTR runner up. These two stations were a long way out in front of the other entrants. Best DX was the contact from G3ZME/P to F6DKW at 535km.
Barry G4SJH/P took the leading place in the Restricted section by a substantial margin over Mike G7AQA/P.
Activity levels, conditions, and the number of entries all seemed somewhat lower than usual.
73
John G3XDY
UKuG Contest Manager

10GHz Contest September 2022

Open Section

Pos	Callsign	Locator	QSOs	Score	ODX Call	ODX Kms
1	G3ZME/P	IO82QL	21	4470	F6DKW	535
2	G4ZTR	JO01KW	20	4145	F6DKW	365
3	M0GHZ	IO81VK	12	2320	F6DKW	433
4	G0WZV	JO01KV	12	2306	M0DTS/P	304
5	G4BXD	IO82UJ	5	474	G4ODA	153

Restricted Section

Pos	Callsign	Locator	QSOs	Score	ODX Call	ODX Kms
1	G4SJH/P	IO91GI	14	2110	M0DTS/P	340
2	G7AQA/P	IO93CV	4	696	G4ZTR	282
3	G1DFL	IO91NL	2	73	G4SJH/P	43

Highband Championships 2022

5.7GHz

After last year's tie for first place another battle between G1EHF/P and G6ZME/P took place, with G6ZME/P achieving the maximum possible score from three session wins. Dave G1EHF/P Had one win and one runner up slot. Telford & DARS therefore take the G3KEU Trophy this year.

Entry levels were similar to 2021.

10GHz

Barry G4SJH/P continued his winning position in this contest with wins in all three sessions he entered. Runner up was Dave G1EHF/P with one session win from the same site used by G4SJH/P.

The Open Section also has a familiar look, with John G4ZTR in the lead with three session wins and two runners up slots. Telford & DARS G3ZME/P were overall runners up with two session wins and two runners up places. The number of entries is similar to the last two years.

The G3JMB Trophy goes to Barry Lewis G4SJH/P, and the G3RPE Memorial Trophy goes to John Lemay G4ZTR.

Congratulations to all those mentioned.

73

John G3XDY

5.7/10GHz Championship Tables

Final positions after five events, best 3 count to the total

5.7GHz

Pos	Callsign	29/05/2021	26/06/2021	31/07/2021	28/08/2021	25/09/2021	TOTAL
1	G6ZME/P	0	1000	1000	717	1000	3000
2	G1EHF/P	1000	0	913	808	806	2721
3	M0GHZ	867	502	745	614	850	2462
4	M0EYT/P	877	0	558	521	0	1956
5	G4LDR	0	296	660	827	0	1783
6	G1PPA/P	0	0	768	1000	0	1768
7	GW4HQX/P	744	0	0	656	0	1400
8	G4CLA	996	0	0	0	0	996
9	G3ZME/P	916	0	0	0	0	916
10	G4BRK	0	262	298	0	0	560
11	G0JBA	0	0	0	556	0	556
12	G8AIM	193	78	0	0	0	271
13	G1DFL(/P)	0	0	0	151	70	221
14	GW4MBS	0	0	0	0	0	0

10GHz Open

Pos	Callsign	29/05/2021	26/06/2021	31/07/2021	28/08/2021	25/09/2021	TOTAL
1	G4ZTR	1000	824	1000	1000	927	3000
2	G3ZME/P	767	1000	0	969	1000	2969
3	G4LDR	0	743	501	425	0	1669
4	M0GHZ	478	256	365	506	519	1503
5	M0EYT/P	573	0	513	374	0	1460
6	G0WZV	234	328	0	0	516	1078
7	M0DTS/P	0	0	439	466	0	905
8	GW3TKH/P	456	0	0	354	0	810

9	G4CLA	641	0	0	0	0	641
10	G(W)4MBS(/P)	264	201	35	102	0	567
11	G1PPA/P	0	0	155	378	0	533
12	G4BXD	140	0	126	208	106	474
13	G4BAO	0	0	185	266	0	451
14	G4KUX	0	0	425	0	0	425
15	G4ASR	0	0	356	0	0	356
16	GW0MDQ(/P)	231	0	88	0	0	319
17	G(M)0HIK/P	73	0	0	241	0	314
18	G4RQI	0	0	0	249	0	249
19	G4DBN	0	0	0	201	0	201
20	G0JBA	0	0	147	0	0	147
21	G8AIM	41	46	0	0	0	87
22	GM4DIJ/P	28	0	0	29	0	57
23	G3YJR	0	0	45	0	0	45

10GHz
Restricted

Pos	Callsign	29/05/2021	26/06/2021	31/07/2021	28/08/2021	25/09/2021	TOTAL
1	G4SJH/P	0	0	1000	1000	1000	3000
2	G1EHF/P	1000	0	0	0	0	1000
3	G1DFL(/P)	0	0	0	496	35	531
4	G7AQA/P	0	0	0	172	330	502
5	GW4JQP	0	0	169	90	0	259

24GHz/47GHz/76GHz Contest September 2022

Activity was rather low for this session, although there was a contact made outside the UK for the first time in many years, with G0JBA working ON/PA0MHE on 24GHz.
Congratulations go to Neil G4LDR(/P) who won on 47GHz and 76GHz, with Roger G8CUB/P leading on 24GHz. Roger G8CUB/P was runner up on 47GHz and 76GHz, with Martyn G3UKV/P the runner up on 24GHz.
John G3XDY
UKuG Contest Manager

24GHz Contest September 2022

Pos	Callsign	Locator	QSOs	Score	ODX Call	ODX Kms
1	G8CUB/P	IO91GI44	3	213	G3UKV/P	124
2	G3UKV/P	IO82QL83	3	207	G8CUB/P	124
3	G4LDR	IO91EC02	4	140	G8CUB/P	44
4	G0JBA	JO01PG63	1	108	ON/PA0MHE/P	108
5	G8ACE	IO91IB05	3	92	G8GTZ/P	34
6	GW3TKH/P	IO81KR73	1	91	G3UKV/P	91
7	GW4HQX/P	IO81KR73	1	46	G3UKV/P	91

47GHz Contest September

Pos	Callsign	Locator	QSOs	Score	ODX Call	ODX Kms
1	G4LDR/P	IO91GC68	2	39	G8CUB/P	26
2	G8CUB/P	IO91GI44	1	26	G4LDR/P	26

76GHz Contest September

Pos	Callsign	Locator	QSOs	Score	ODX Call	ODX Kms
1	G4LDR/P	IO91GC68	2	52	G8CUB/P	26
2	G8CUB/P	IO91GI44	1	1	G8GTZ/P	1

24/47/76GHz Championship Tables

Positions after three events, best 3 count to the final total

24GHz

Pos	Callsign	15/05/2021	10/07/2021	11/09/2021	16/10/2021	TOTAL
1	G3UKV/P	529	1000	971	0	2500
2	G8CUB/P	235	341	1000	0	1576
3=	G(W)4FRE/P	1000	0	0	0	1000
3=	G4SJH/P	659	341	0	0	1000
5	G4LDR(/P)	152	154	657	0	963
6	G8ACE(/P)	145	154	431	0	730
7	G0JBA	0	0	507	0	507
8	GW3TKH/P	0	0	427	0	427
9	G1EHF/P	0	392	0	0	392
10	G1DFL/P	281		0	0	281
11	GW4HQX/P	0	0	215	0	215

47GHz

Pos	Callsign	15/05/2021	10/07/2021	11/09/2021	16/10/2021	TOTAL
1	G4LDR/P	0	1000	1000	0	2000
2	G8CUB/P	597	712	666	0	1975
3	G8ACE/P	314	1000	0	0	1314
4	G(W)4FRE/P	1000	0	0	0	1000
5	G1DFL/P	6	712	0	0	718
6	G1EHF/P	0	700	0	0	700

76GHz

Pos	Callsign	15/05/2021	10/07/2021	11/09/2021	16/10/2021	TOTAL
1=	G8ACE/P	1000	490	0	0	1490
1=	G4LDR/P	0	490	1000	0	1490
3	G8CUB/P	38	1000	19	0	1057
4	G1DFL/P	38	18	0	0	56

UKuG MICROWAVE CONTEST CALENDAR 2022

Dates, 2022	Time UTC	Contest name
16 -Oct	0900 - 1700	4th 24GHz Contest
16 -Oct	0900 - 1700	4th 47GHz Contest
16 -Oct	0900 - 1700	4th 76GHz Contest
13 -Nov	1000 - 1400	5th Low band 1.3/2.3/3.4GHz

Useful Links

There are still many DMC modules around at rallies. A link here provides more info:
http://www.xertech.net/Tech/DMC/DMC_main.html

Goonhilly 23 & 13cm WebSDR
https://vhf-goonhilly.batc.org.uk/

Wanted

GB3ZZ - Lime mini wanted.
GB3ZZ, the Bristol ATV repeater, is building a new Portsdown transmitter for lower symbol rate transmission. Does anyone have a Lime mini that they would be prepared to sell us for this project?
Shaun G8VPG.
g8vpg@aol.com
Tel. 01225 873 098.

For Sale

u-blox C94-M8P evaluation kit. Bought to complete Barry's dish alignment system, that was in September Scatterpoint. Mouser cancelled my order, then sent it! So I ended up with two. At the original price, but offered post free…
Contact the editor.
Tel. 07900 261121

MICROWAVE CONTESTS - 2022

Month	Contest name	Certificates	Date 2022	Time GMT	Notes
Jan	1.3GHz Activity Contest	*Arranged by RSGB*	18-Jan	2000 - 2230	RSGB Contest
Jan	2.3GHz+ Activity Contest	*Arranged by RSGB*	25-Jan	1930 - 2230	RSGB Contest
Feb	1.3GHz Activity Contest	*Arranged by RSGB*	15-Feb	2000 - 2230	RSGB Contest
Feb	2.3GHz+ Activity Contest	*Arranged by RSGB*	22-Feb	1930 - 2230	RSGB Contest
Mar	Low Band 1296/2300/2320/3400MHz	F, P,L	6-Mar	1000 - 1600	First 4 hours coincide with IARU event
Mar	1.3GHz Activity Contest	*Arranged by RSGB*	15-Mar	2000 - 2230	RSGB Contest
Mar	2.3GHz+ Activity Contest	*Arranged by RSGB*	22-Mar	1930 - 2230	RSGB Contest
Apr	Low Band 1296/2300/2320/3400MHz	F, P,L	10-Apr	1000 - 1600	
Apr	1.3GHz Activity Contest	*Arranged by RSGB*	19-Apr	1900 - 2130	RSGB Contest
Apr	2.3GHz+ Activity Contest	*Arranged by RSGB*	26-Apr	1830 - 2130	RSGB Contest
May	REF/DUBUS EME 1.2GHz	*Arranged by REF/DUBUS*	7-May to 8-May	0000 - 2400	REF/DUBUS EME 1.2GHz
May	*432MHz & up*	*Arranged by RSGB*	*7-May to 8-May*	*1400 -1400*	RSGB Contest
May	*10GHz Trophy*	*Arranged by RSGB*	*8-May*	*0800 - 1400*	Sunday, to coincide with IARU
May	Low Band 1296/2300/2320/3400MHz	F, P,L	8-May	0800 - 1400	Aligned with IARU event
May	24GHz/47/76GHz		15-May	0900-1700	
May	1.3GHz Activity Contest	*Arranged by RSGB*	17-May	1900 - 2130	RSGB Contest
May	2.3GHz+ Activity Contest	*Arranged by RSGB*	24-May	1830 - 2130	RSGB Contest
May	REF/DUBUS EME 10GHz & Up	*Arranged by REF/DUBUS*	28-May to 29-May	0000 - 2400	REF/DUBUS EME 10GHz & up
May	5.7GHz/10GHz	F, P,L	29-May	0600-1800	
Jun	REF/DUBUS EME 2.3GHz	*Arranged by REF/DUBUS*	4-Jun to 5-Jun	0000 - 2400	REF/DUBUS EME 2.3GHz
Jun	Low Band 1296/2300/2320/3400MHz	F, P,L	5-Jun	1000 - 1600	Aligned with some Eu events
Jun	1.3GHz Activity Contest	*Arranged by RSGB*	14-Jun	1900 - 2130	RSGB Contest
Jun	2.3GHz+ Activity Contest	*Arranged by RSGB*	21-Jun	1830 - 2130	RSGB Contest
Jun	5.7GHz/10GHz	F, P,L	26-Jun	0600-1800	
Jul	REF/DUBUS EME 5.7GHz	*Arranged by REF/DUBUS*	2-Jul to 3-Jul	0000 - 2400	REF/DUBUS EME 5.7GHz
Jul	VHF NFD (1.3GHz)	*Arranged by RSGB*	2-Jul to 3-Jul	1400 - 1400	RSGB Contest
Jul	24GHz/47/76GHz		10-Jul	0900-1700	
Jul	1.3GHz Activity Contest	*Arranged by RSGB*	19-Jul	1900 - 2130	RSGB Contest
Jul	2.3GHz+ Activity Contest	*Arranged by RSGB*	26-Jul	1830 - 2130	RSGB Contest
Jul	REF/DUBUS EME 3.4GHz	*Arranged by REF/DUBUS*	30-Jul to 31-Jul	0000 - 2400	REF/DUBUS EME 3.4GHz
Jul	5.7GHz/10GHz	F, P,L	31-Jul	0600-1800	
Aug	1.3GHz Activity Contest	*Arranged by RSGB*	16-Aug	1900 - 2130	RSGB Contest
Aug	2.3GHz+ Activity Contest	*Arranged by RSGB*	23-Aug	1830 - 2130	RSGB Contest
Aug	5.7GHz/10GHz	F, P,L	28-Aug	0600-1800	
Sep	24GHz/47/76GHz		11-Sep	0900-1700	
Sep	ARRL Microwave EME	*Arranged by ARRL*	17-Sep to 18-Sep	0000 - 2359	ARRL EME 2.3GHz & Up
Sep	1.3GHz Activity Contest	*Arranged by RSGB*	20-Sep	1900 - 2130	RSGB Contest
Sep	5.7GHz/10GHz	F, P,L	25-Sep	0600-1800	
Sep	2.3GHz+ Activity Contest	*Arranged by RSGB*	27-Sep	1830 - 2130	RSGB Contest
Oct	*432MHz & up*	*Arranged by RSGB*	*1-Oct to 2-Oct*	*1400 - 1400*	IARU/RSGB Contest
Oct	*1.3 & 2.3GHz Trophies*	*Arranged by RSGB*	*1-Oct*	*1400 - 2200*	RSGB Contest
Oct	ARRL EME 50-1296MHz	*Arranged by ARRL*	15-Oct to 16-Oct	0000 - 2359	ARRL EME Contest
Oct	24GHz/47/76GHz		16-Oct	0900-1700	
Oct	1.3GHz Activity Contest	*Arranged by RSGB*	18-Oct	1900 - 2130	RSGB Contest
Oct	2.3GHz+ Activity Contest	*Arranged by RSGB*	25-Oct	1830 - 2130	RSGB Contest
Nov	ARRL EME 50-1296MHz	*Arranged by ARRL*	12-Nov to 13-Nov	0000 - 2359	ARRL EME Contest
Nov	Low Band 1296/2300/2320/3400MHz	F, P,L	13-Nov	1000 - 1400	
Nov	1.3GHz Activity Contest	*Arranged by RSGB*	15-Nov	2000 - 2230	RSGB Contest
Nov	2.3GHz+ Activity Contest	*Arranged by RSGB*	22-Nov	1930 - 2230	RSGB Contest
Dec	1.3GHz Activity Contest	*Arranged by RSGB*	20-Dec	2000 - 2230	RSGB Contest

Sections	**F**	Fixed / home station
	P	Portable
	L	Low-power <10W 1.3/2.3/3.4GHz, <1W 5.7GHz)

Main changes from 2021 calendar

122GHz+ events removed (no fixed dates in 2022)

EVENTS 2022

2022

October 15-15	National Hamfest	www.nationalhamfest.org.uk
October 22	Scottish Roundtable	https://www.gmroundtable.org.uk
December 3	Midlands Roundtable	Eaton Manor SY6 7DH

2023

January 14	Heelweg Microwave Meeting	info@pamicrowaves.nl
April 1	CJ-2023, Seigy	cj.r-e-f.org

80m UK Microwavers net

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

73 Martyn Vincent G3UKV