



An Amateur Radio publication for the Microwave Enthusiast

scatterpoint

June / July 2021

Published by the UK Microwave Group

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New 24GHz club loan transverter



GB3GCT 10 GHz beacon

Subscription Information

The following subscription rates apply

UK £600 US \$1200 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, rftd, 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

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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 (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

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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

47GHz

76GHz

Arduino controlled solar reflector source for 30THz

Barry Chambers, G8AGN, 15 July 2021

Operating at 30THz on a hot sunny day when using a hot plate source has proved to be problematic for two reasons. Firstly, it is difficult to keep the ambient temperature of the receiver sensor low and secondly, the signal from the small area hot plate source is swamped by that from the much larger area warm background which surrounds it, even though the temperature of the latter is much lower than that of the source. Recent testing, however, has suggested that the 30THz power available from a solar reflector source is much larger than that from my hot plate source even when using a mirror of modest area and provided that the Sun is not obscured by cloud. I decided, therefore, to initiate some tests using an Arduino controlled solar reflector QRSS source and my progress so far is outlined below.

When designing a 30THz solar reflector source, it is useful to estimate the range of boresight elevation angles over which the mirror may need to be adjusted. This will be dependent on the day of the year and the location of the mirror on the Earth's surface.

The Sun's maximum elevation angle, e , can be calculated from
$$e = 90 + \text{mirror latitude} - \text{Sun's declination angle} \quad \text{degrees} \quad (1)$$

The Sun's declination angle, dec , will depend on the tilt of the Earth's axis and the day of the year
$$dec = -23.45 \cos \left[\frac{360}{365} (\text{day number} + 10.5) \right] \quad \text{degrees} \quad (2)$$

Most paper diaries list the day number for each day. If the calculation of dec results in a number greater than 90, then $dec = 180 - dec$.

As an example, let us calculate e for midday on 21 June at a location on the Earth's surface with latitude 53° . Then from (2)

$$dec = -23.45 \cos \left[\frac{360}{365} (172 + 10.5) \right] = 23.45$$

And from (1)

$$e = 90 + 53 - 23.45 = 119.55$$

Since $e > 90$, then use $e = 180 - e = 60.45^\circ$.

In practice, our mirror will need a boresight elevation angle which is half this value, i.e., 30° , since the Sun's 30THz radiation will need to be reflected in a horizontal direction towards the receiver.

A similar calculation, carried out for midday on 21 December, results in a required mirror boresight elevation angle of 7° . Hence for all year-round operation, our mirror must be capable of being set to any boresight elevation angle up to 30° .

Turning now to the question of steering the mirror in azimuth, since the Sun moves across the sky at the rate of $15^\circ/\text{hr} = 1^\circ$ every 4 minutes, to keep directing the Sun's 30THz radiation towards a fixed receiver, the mirror must be rotated at half this rate, or 1° every 8 minutes.

My prototype 30THz solar reflector source is basically a heliograph whose mirror incremental tilt angle is controlled by an Arduino in such a way as to send QRSS. A normal heliograph utilises visible light and so uses a rear-silvered plate glass mirror. Such a reflector will not work at 30THz, however, since glass is not transparent at such frequencies; consequently, a metal mirror must be used instead and mine is made from standard Aluminium sheet which has been partially polished using Autosol™. The mirror has dimensions of 25cm x 25cm and is tilted via a pair of horizontal pivots consisting of M8 dome-headed roofing bolts whose head slots have been deepened using a small cutting wheel and a Dremel™. The pivots were fixed in place on the mirror using two-part epoxy resin. The mirror is held in a U-shaped frame made from 20mm x 20mm X girder section such as that used in the construction of 3D printers and routers. Photos 1 to 3 show the general arrangement of the finished solar reflector source.

Once initial mirror alignment has been completed “in the field”, QRSS can be sent by tilting it through a small additional angle using a solenoid which is controlled using an Arduino Nano and a slightly modified version of the software which also controls my stepper-motor rotating hot plate source and which has been described previously in Scatterpoint. Since the solenoid requires more current than can be supplied directly from an Arduino digital output pin, the signal from the latter is used to control the gate of a power MOSFET whose drain is connected via the solenoid, and its attendant flyback diode, to an 8v supply which is obtained from a 12v battery using a 7808 regulator. The output from the latter also supplies the Vin pin on the Nano.

The MOSFET can be controlled in two ways, the first of which has already been described and is used during the sending of a QRSS1 message. In the second way, a 5v dc voltage is applied continuously to the gate to switch the MOSFET on. This has the effect of tilting the mirror into its “key down” position and is used for initial mirror alignment “in the field” to ensure that 30THz radiation is being received by the distant receiver. Once this has been achieved, then this 5v signal is switched off, which results in the mirror being tilted back to its “key up” position ready to transmit a QRSS1 message when it has been entered via a PS/2 keyboard.

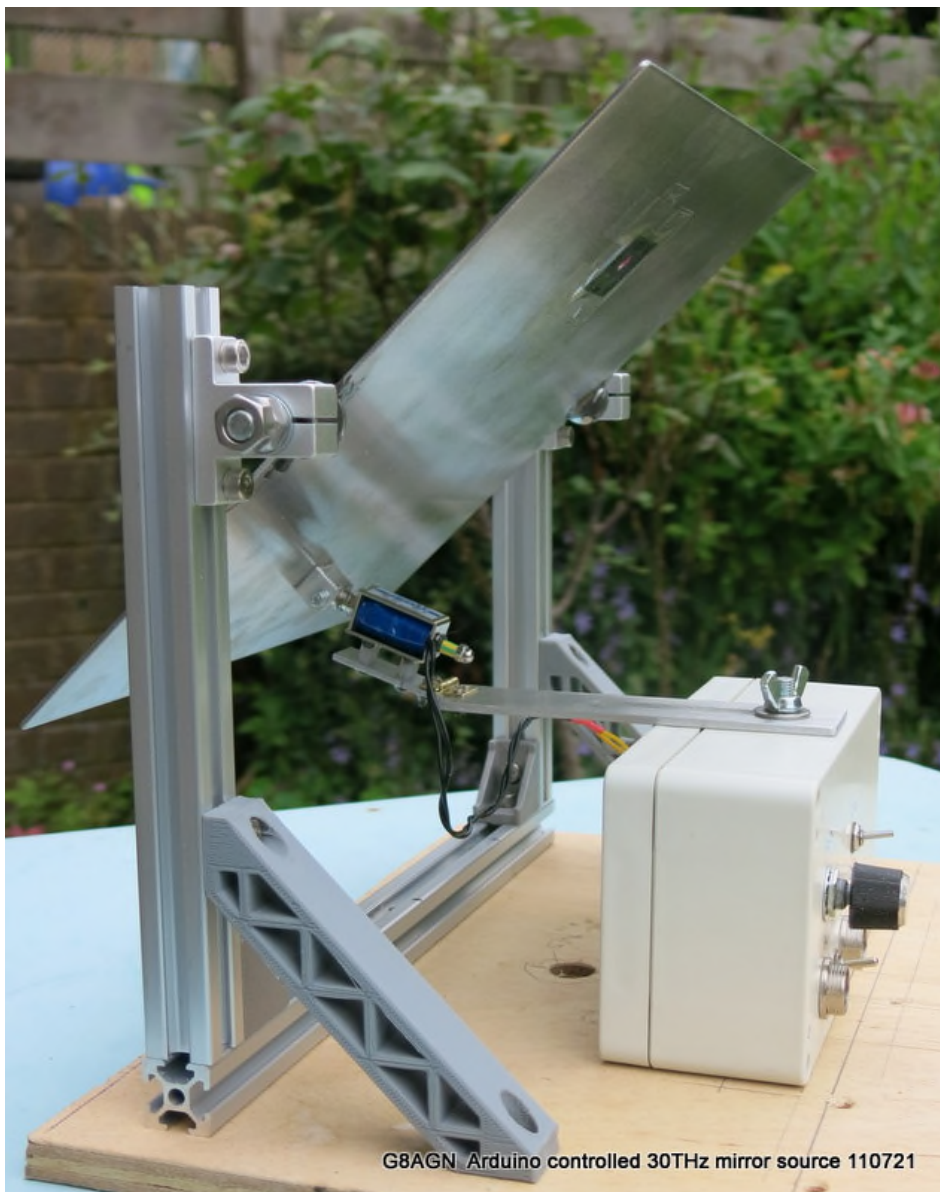
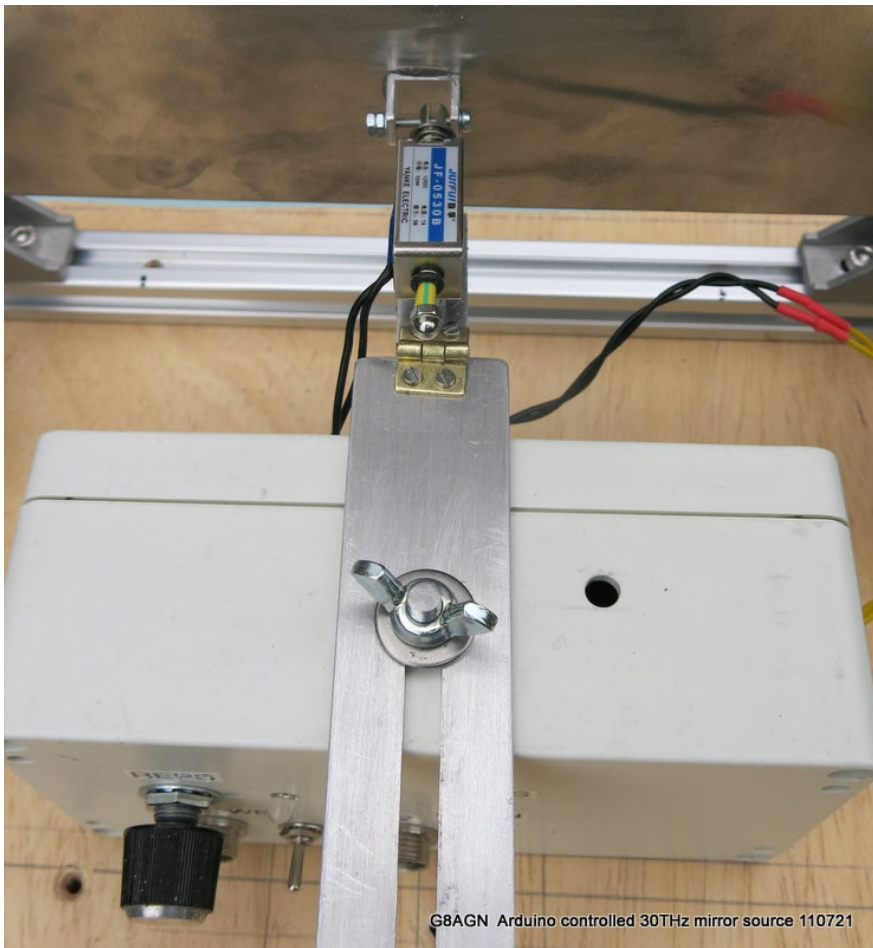


Photo 1 General arrangement – side view



G8AGN Arduino controlled 30THz mirror source 110721

Photo 2 – Close up view of mirror actuator and coarse boresight elevation adjuster



G8AGN Arduino controlled 30THz mirror source 110721

Photo 3 – Front panel of control box.
The REPS knob controls the number of times that a message is sent

Tests at Finningley

As planned, Bob G4APV/P and Barry G8AGN/P carried out some more 30THz testing on Saturday 17 July 2021 at the Finningley Amateur Radio club site. We were trying out the new Arduino-controlled 30THz heliograph which uses reflected 30THz radiation from the Sun to send QRSS signals. Successful tests were carried out over distances up to 130m, this being the maximum possible at the FARS site but at that range, received signals were still at least 2 degrees C above background noise and QRSS1 (1 second dot time) was 599. The other part of the testing was to explore techniques for precise alignment between the 30THz source and receiver. The main conclusion was that this is possible with practice but realignment was found necessary about every 2 minutes due to the movement of the Sun which meant that the 30THz signal from the mirror moved outside the receiver dish antenna beamwidth! This problem should be solvable with an azimuth slow motion drive on the heliograph source.

73

Barry, G8AGN

New 24 GHz Loan Transverter

Barry Lewis G4SJH – July 2021

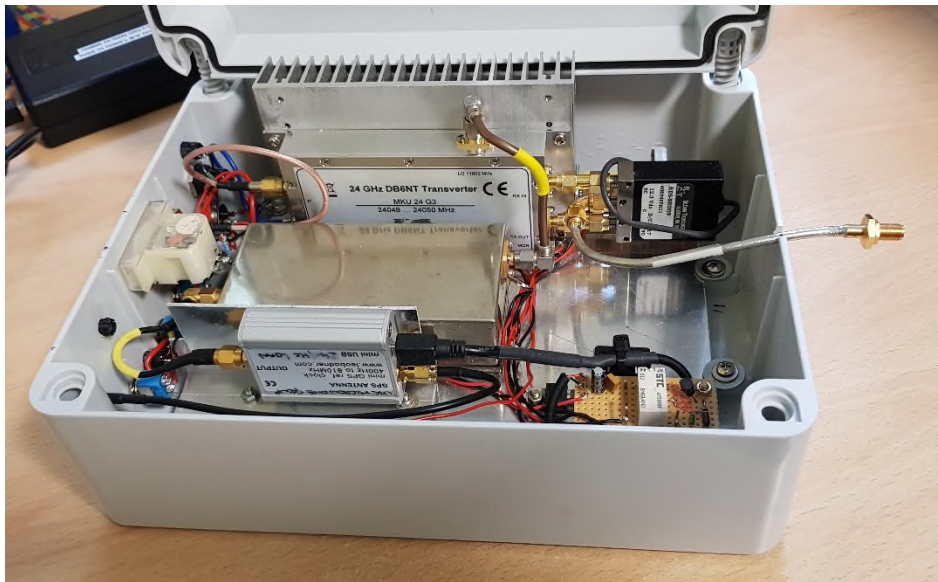
The UK Microwave Group committee agreed to fund a new/replacement 24GHz band loan transverter using up-to-date modules to provide upgraded performance. The transverter unit has been completed and only requires the user to provide a 144MHz transceiver and a 13.8v power supply. It provides around 2W out at 24GHz for an input 144MHz drive of 2.5W which is a considerable improvement over the 10mW maximum output power from the existing loan equipment. Frequency accuracy is assured through the use of a Leo Bodnar GPS stabilised reference clock. The unit is relatively light and housed in a weather-proof enclosure. The RF antenna connection is made by SMA connector and a 3.5mm mono jack provides a PTT line.



The unit is based around the Kuhne electronic MKU 24 G3 Transverter without any additional low noise amplifier and relatively easy QSO's have been made with stations over 120km.

At the time of writing there is no dedicated antenna and further work is underway to integrate the unit with a relatively inexpensive SatTV offset dish.

The unit will added to the loan equipment list and available for loan through the usual route.



The unit has been tested in the field during at least two activity sessions this year and subjected to relatively harsh conditions on Walbury Hill (where it always seems to be windy and is usually raining!). It is very easy to use and quick to set up on a tripod.



Here it has been coupled to the existing loan equipment antenna.



This time with a 60cm prime focus dish.

Scatterpoint activity report

Activity News: June/July 2021



By John G4BAO

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

From Nick G0HIK

While on the Mull of Kintyre on holiday in June, I did a number of SOTA activations both on QO100 and terrestrial modes on 23/13 and 6cms. From a high spot above Campbeltown IO75FK, on 23cms (10w 30 ele) and worked Dave G6HEF in IO84HG, Bootle Cumbria. We exchanged 5/1 both ways. I next tried A/S with Phil G3TCU IO91QE, Although I heard his signals several times, he could not copy me. From the same location I tried with M0KPW IO84JE on 6cms ATV using Drone modules, we have worked nearly 200kms with these in the past, but no signals this time. Maybe partly due to the extensive rain and mist over the path.

There is quite a lot of 13cms SOTA Activity based around the Northwest England and S.W. Scotland areas. A lot of it is coordinated via the GM13 IO. Groups forum.

Jack GM4COX and Andrew G(M)4VFL were activating SOTA summits. While I didn't manage to work Jack he did work Andrew for a Summit to summit contact.

After the holidays I went to a local high spot IO84IH and worked Andrew on both his summits (IO75VA and IO75VB) in S.W. Scotland at distances of 100 and 103km I was running barefoot SG-Labs and 25 ele Horn fed Tonna It was nice to work G7KSE IO84EM (SG-Labs & PCB aerial) for the first time and his 2 nd QSO on the band. We now have 5 13cm's SOTA Activators/Chasers in this part of Cumbria.

Later in the month I did a number of SOTA activations in the Lake District IO84ML working both QO100 and terrestrial stations down in to Wales, including John MW1FGQ, who is new to the the GHz bands. I also worked Ian GW8OGI/P who had his SG-Labs and 19DBi Plate aerial out for the first time. He was at sea level on the North Wales coast a distance of 200kms and we exchanged 5/9 +.

Next, operating with Chris M0KPW from IO84IH, we worked 6cm ATV with a group from the Wirral club who were at IO83JJ. Distance was 103Kms and we exchanged P4/5 pictures using drone modules.

On the 22nd I went portable to IO84KD for the UKAC activity session, operating on 13cm with 2 watts and 25 ele Tonna Horn fed, and 9cm 2 watts and 80cm dish. I made contacts 300 kms on 13cm with only 2 watts.

Towards the end of the moth we did a number of other QO100 and 23/13cm activations from the Lakeland Mountains working, amongst others GM4VFL/P in Southern Scotland for a Summit to Summit (S2S)contact on 23 and 13 cm, Brian G4ZRP on the Wirral using just the SG-Labs 2 watts and the supplied PCB aerial. Brian just uses a hand portable with a Bow tie aerial and is usually a great signal up to the Lake District.

July so far has produced QSOs from Lords Seat Whinlatter forest IO84JP with GM4VFL/P, GM4COX/P, 2E0MIX and G7KSE. We all managed 13cm QSOs with each other.

From Neil G4DBN

The evening of 28th June brought a nice tropo duct over to Scandinavia on 10GHz. I first heard DB0GHZ on Helgoland JO34WE, then OZ1UHF rose out of the noise up so S9, along with SK6MHI (918 km), SK6YH (919 km) and SK6WW (1091 km). I worked OZ9PP on CW then SSB, and OZ1FF, both very good signals, but despite extensive tries, failed to

make it with, Michael SA6BUN at 1078 km, who was only 20km from SK6WW. Michael is 140 m lower so that might have been the issue. The path from me to OZ/SM is obstructed by the Yorkshire Wolds, 135 m high, 24 km to the east. The paths to the SM beacons were skewed south by up to 4 degrees, but DB0GHZ was on a true heading. Keith GM4ODA/P has been active from Shetland again and produced a nice signal here on 10GHz from IO99IV over a 687km path. Keith's CQ resulted in a nice easy CW contact at 529 for a new square. The tropo seemed to stop at the Wash, as G4ZTR (JO01) was unable make a QSO.

John G4BAO

I've now got the GB3PV TV repeater at Cambridge JO02af back on the air with a BATC digital upgrade. With a huge amount of help from Dave G8GKQ and Noel G8GTZ, I have rebuilt the driver and receiver using the BATC Portsdown TX and a Lime SDR and the Ryde RX. I have interconnected them with/to the existing RF system and the video and logic switching. Its output is on 1316MHz and runs around 4 Watts at the base of the tower at 1Ms/sec FEC2/3 to an Alford Slot antenna. The receiver is on 1249MHz and can accept 2,1,0.5 and 0.33 Ms/s signals with any FEC. It's a huge signal here and I can access it with just a few Watts using my existing 44el 1296MHz Yagi which is not very resonant at 1316! Reports to me please. john@g4bao.com.

From Dave G1EHF - new GB3GCT 10 GHz beacon

The beacon is finally on-air now that access to the Greenham Control Tower of the former RAF/USAAF airbase is possible again. GB3GCT is kindly hosted by the Newbury and District ARS, and they have been both enthusiastic and helpful with getting the beacon installed. Details of the beacon are:



Antenna with protective radome

Callsign – GB3GCT

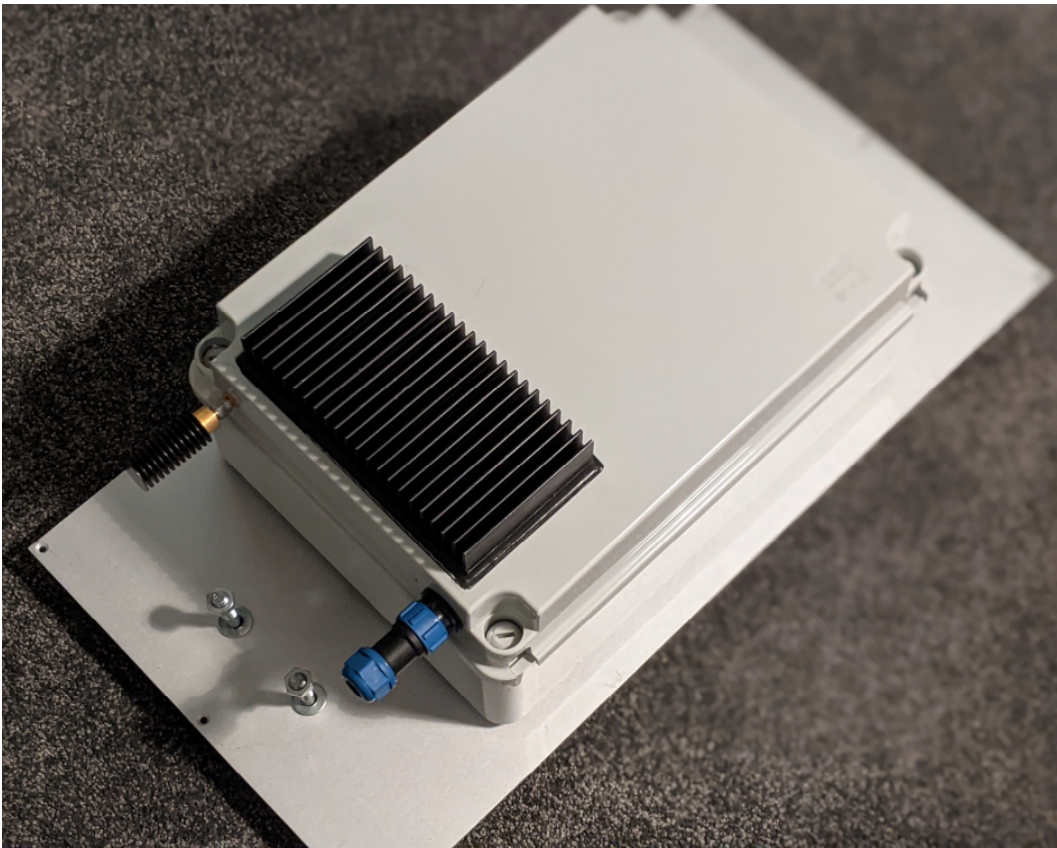
Locator – IO91IJ51

Frequency – 10368.935 MHz

Modulation – Callsign sent by PI4 digital modulation, followed by callsign and locator by 400 Hz FSK Morse code and then 20 seconds of plain carrier. The full cycle takes 60 seconds.

Output power – ~10 Watts e.r.p.

The beacon driver is based on an Analog Devices ADF4159 synthesiser, controlled by an Arduino Pro Mini. Two GPS receivers are used, one within a Leo Bodnar frequency reference for the beacon and the other to provide the timing for the PI4 modulation. A modified commercial amplifier produces just over 1 Watt of RF which is fed into a 2 x 12 slot waveguide antenna, kindly machined by Neil G4DBN. All the RF hardware is housed in the head-unit and only the +15 Volt supply and shut-down control resides in the ground-level radio room.



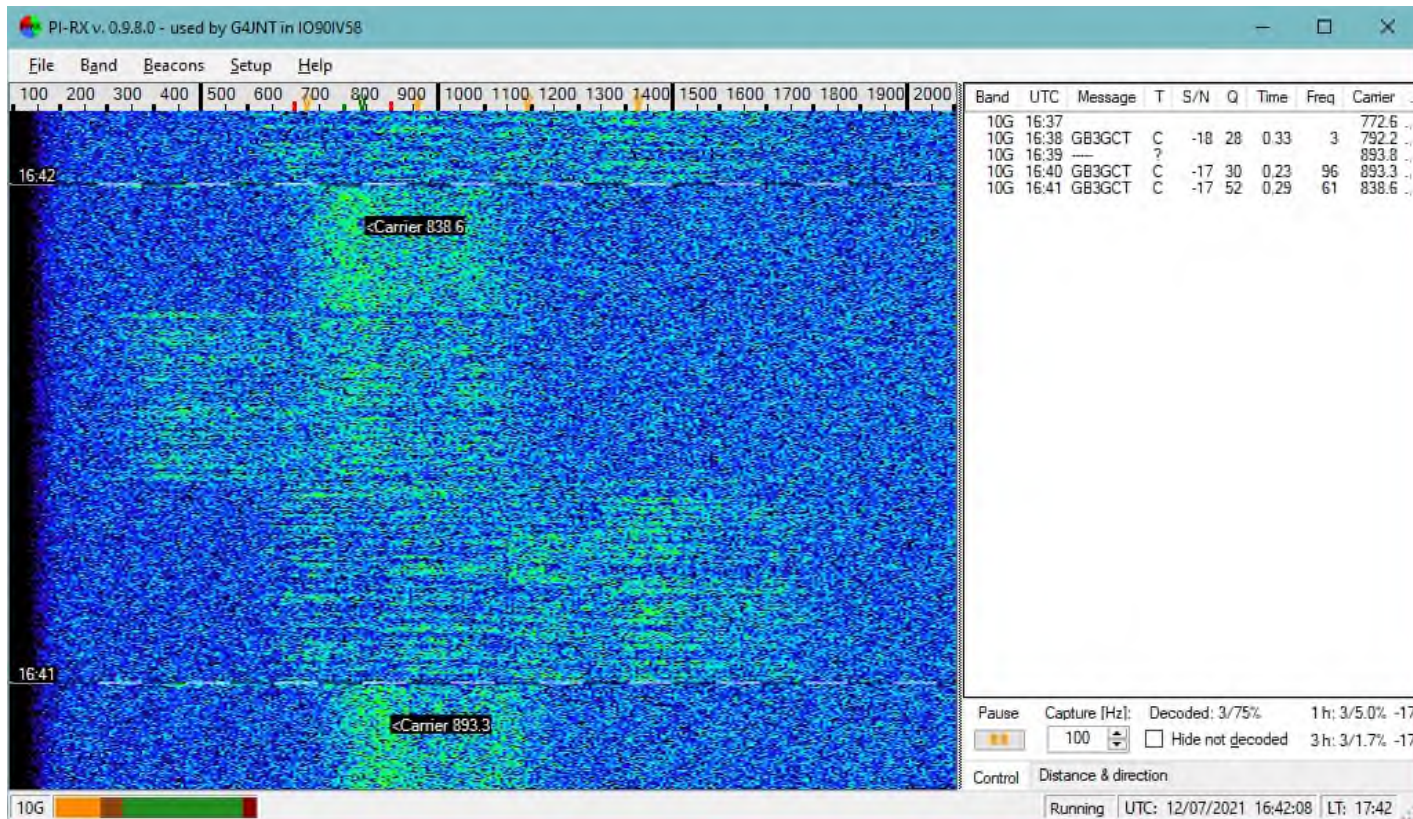
Head-unit



Antenna installed.

From Andy G4JNT

I copied the new beacon using a 19dBi horn pointing through a window at a huge storm cell to the east. GB3GCT is 50k due north of me and there are substantial hills in the way. Note how in spite of over 200Hz of spreading due to the rain scatter, PI-4 with its wide spaced tones still decodes OK. JT4G with its even-wider tone spacing is even better in rain scatter conditions.

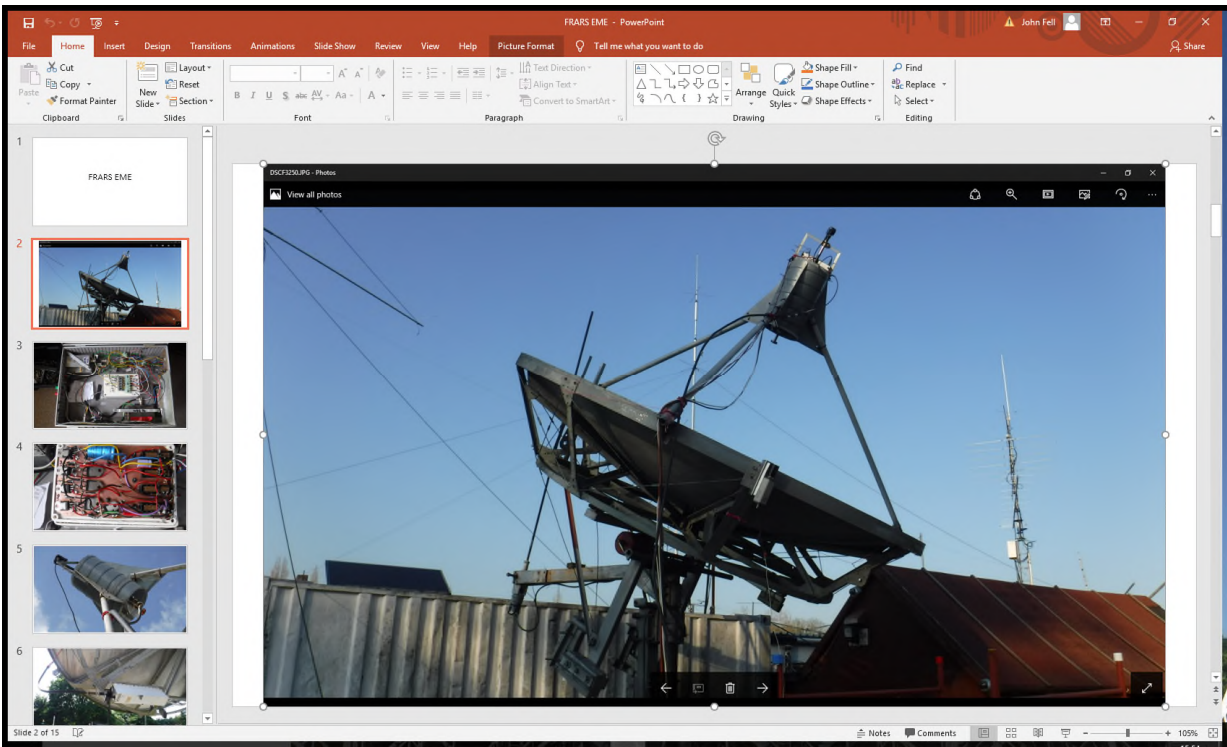


From John G0API

Along with G3YGF and M5AHQ I have finally been allowed to work on the G4RFR EME system after 18 months of exclusion due to the pandemic.

A full operation test was done on Friday 11th June with the system consisting of, a 3.7m, 0.43 F/d prime focus dish, Super VE4MA feed, 160W TWT output via 3m of EW90 guide (sub-0.5dB loss). The receiver is a modified Octagon 25MHz LNB down converted to 144 and 28MHz.

The system is fully auto tracking using inhouse developed software and hardware to control AZ/EL axis stepper motors - resolution to within 0.25 degrees in both planes. Override control via mobile phone for safety and docking. The system uses an IC746 fully controlled under WSJT and able to operate in all modes with or without CFOM and auto Doppler.



With the Moon at near Apogee (-1.9dB) on 11th June we had 1.5dB surface noise and 13.5dB Sun. Our echoes were at up to +22dB/n in 6Hz RBW, readable SSB with low spreading. The Moon Beacon DL0SHF was peaking at around +18dB on the SDR-IQ RX.

Re: EME - john.g0api@gmail.com

mail.google.com/mail/u/0/#inbox/jgtWvPDvNqKHLBPmZMTpWnKtGNPxsMBVwzfcvSDGWpxvXybbLWistXRXbVzQPjdCSzDPMT7projector=1&messagePartId=0.5

Apps Andy Talbot - G4INT BBC NEWS News F... UKuG - Beaconsport... rain UK - rain Irelan... Inbox - john.g0api... Find QTH locator or... Flightradar24.com... BBC Weather Wim...

IW2FZR DSCF3238.JPG Single-Period Decodes

UTC	dB	DT	Freq	Message	UTC	dB	DT	Freq	Message
1554	-4	2.7	1008	CQ DL0SHF J054 q0	1646	Tx	993	993	CQ G4RFR IO90
1702	-13	1.0	2023	CQ IW2FZR JN46 q0	1648	Tx	993	993	CQ G4RFR IO90
1706	-12	1.0	1018	CQ IW2FZR JN46 q0	1706	-12	1.0	1018	CQ IW2FZR JN46 q0
1708	-12	1.1	1016	CQ IW2FZR JN46 q3	1707	Tx	993	993	IW2FZR G4RFR IO90
1712	-13	0.5	1013	CQ IW2FZR JN46 q3	1708	-12	1.1	1016	CQ IW2FZR JN46 q3
					1709	Tx	993	993	IW2FZR G4RFR IO90
					1711	Tx	993	993	IW2FZR G4RFR IO90
					1712	-13	0.5	1013	CQ IW2FZR JN46 q3
					1713	Tx	993	993	IW2FZR G4RFR IO90

Log QSO Stop Monitor Erase Clear Avg Decode Enable Tx Halt Tx Tune

3cm 10,368.207 034 Tx even/1st

DX Call IW2FZR DX Grid JN46 F Tol 50

Az: 117 861 km Rx 1018 Hz Submode I

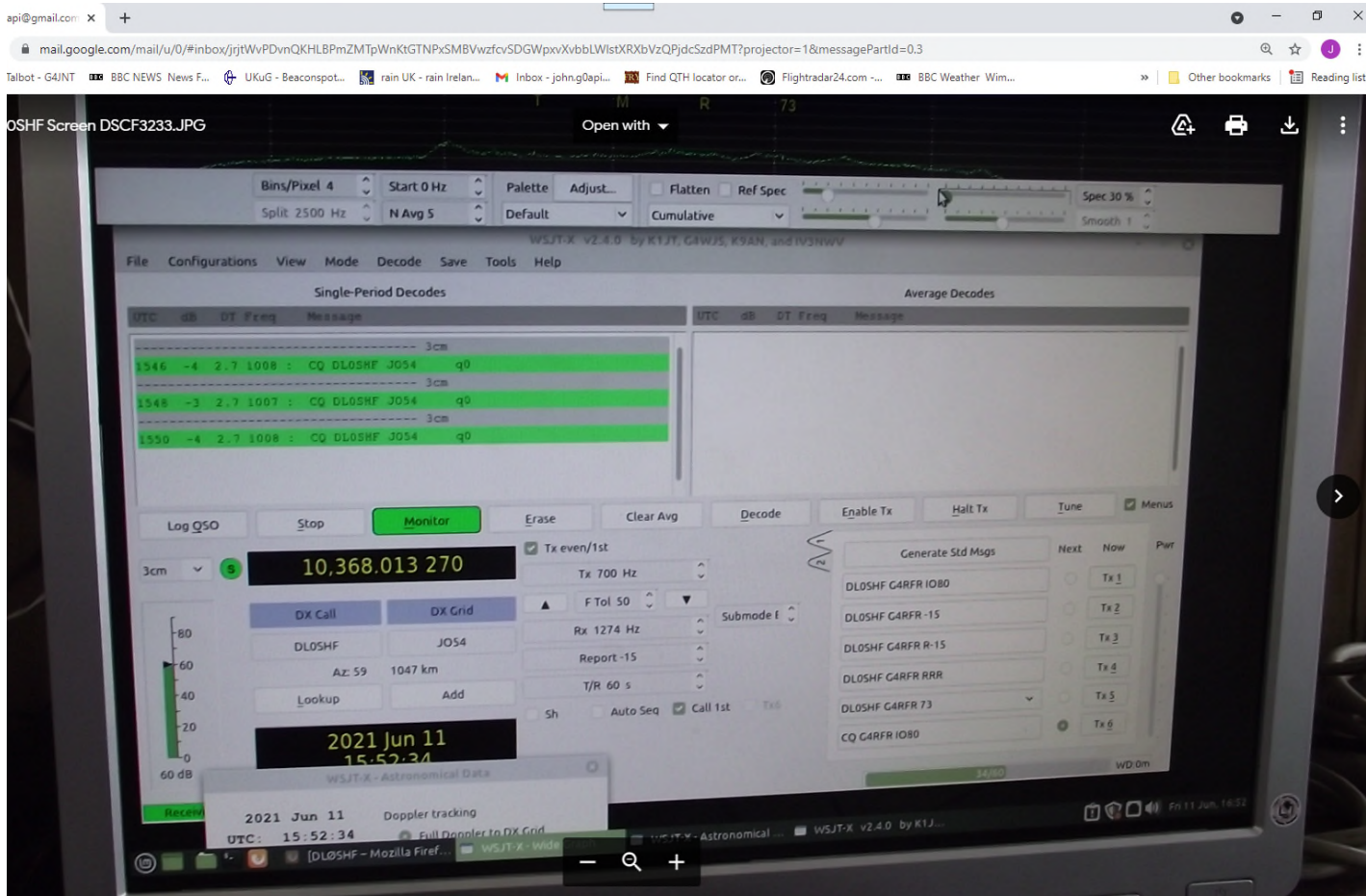
Lookup Add Report -12 T/R 60 s

Sh Auto Seq Call 1st

2021 Jun 11 17:13:47 WSJT-X - Astronomical Data

2021 Jun 11 17:13:47 Doppler tracking Full Doppler to DX Grid

Tx IW2FZR G4RFR IO90 EME Q65 Q65-60E WSJT-X v2.6.0 by K1J



From Roger G8CUB



Chris G0FDZ and I had ventured to Combe Gibbet for the millimetre contest in June. Trying with John G8ACE/P on 122GHz, no signals received. Water vapour is a great attenuator at this frequency! The mist kept playing with us, receding out to a couple of km, then coming back in again. In the end Chris G0FDZ and I could only have a short range contact along the track on 122 / 134GHz.



Finally moving to a farm entrance at IO91GD37. The picture shows, receiving a 241GHz signal from G8ACE/P who was at Stockbridge. The S5 on the S-meter was the key-up signal level. (no signal was S0). Showing the high level of noise present with FSK keying. A factor of the high multiplication to get to 241GHz. The key-down level was S8 on the meter. For some reason I gave John a rather mean 559. A true report would have been something like 587. The nominal IF frequency was 432.800, thus a 11.5kHz frequency error between us. Not unreasonable at 241.020GHz. Distance was about 4.5km.

Contests

June 5.7GHz Contest 2021

Winner Dave G1EHF/P thought the activity level was reasonable, but others felt differently. Runner up was G6ZME/P (Telford & DARS) operated by G3UKV. Best DX recorded was the QSO from M0GHZ to G3XDY at 246km. No continental stations appeared in the logs this time.

73

John G3XDY

UKuG Contest Manager

5.7GHz Contest June 2021

Pos	Callsign	Locator	QSOs	Score	ODX Call	ODX Kms
1	G1EHF/P	IO91GI	10	852	G3XDY	200
2	G6ZME/P	IO82QL	7	792	G1EHF/P	149
3	M0GHZ	IO81VK	7	755	G3XDY	246
4	G4LDR	IO91EC	6	542	G6ZME/P	168
5	G1DFL/P	IO91LO	6	406	G6ZME/P	146
6	G4BRK	IO91HP	6	404	G6ZME/P	127

June 10GHz Contest 2021

Activity was rather low for this event, and conditions not very inspiring, with only a little rain scatter around in one or two places to help.

Barry G4SJH/P wins the Restricted section, with Pete G1DFL/P in runner up spot.

In the Open section John G4ZTR prevailed with a good lead over runner up Telford & DARS G3ZME/P.

Best DX was recorded by G3ZME/P with F6DKW at 535km.

73

John G3XDY

UKuG Contest Manager

10GHz Contest June 2021

Open Section

Pos	Callsign	Locator	QSOs	Score	ODX Call	ODX Kms
1	G4ZTR	JO01KW	18	3728	F6DKW	365
2	G3ZME/P	IO82QL	16	2849	F6DKW	535
3	G4LDR	IO91EC	14	2521	G4KUX	395
4	G4KUX	IO94BP	7	1854	G4LDR	395
5	M0GHZ	IO81VK	8	1399	F6DKW	433
6	GW4MBS/P	IO71XW	6	1260	G4KUX	334
7	G4DBN	IO93NR	4	803	GW4MBS/P	292
8	G4BAO	JO02CG	5	604	G3ZME/P	194
9	G4BXD	IO82UJ	4	355	G4ZTR	222
10	G3YJR	IO93FJ	3	325	G4KUX	141

Restricted Section

Pos	Callsign	Locator	QSOs	Score	ODX Call	ODX Kms
1	G4SJH/P	IO91GI	9	1403	F6DKW	389
2	G1DFL/P	IO91LO	4	339	G3ZME/P	146

5.7/10GHz Championship Tables

Positions after two sessions, best three count to the total

5.7GHz

Pos	Callsign	30/05/2020	27/06/2020	TOTAL
1	G6ZME/P	1000	930	1930
2	G1EHF/P	633	1000	1633
3	M0GHZ	628	886	1514
4	G4LDR	692	636	1328
5	G4BRK	544	474	1018
6	G4CLA	737	0	737
7	G7LRQ	688	0	688
8	GW4HQX/P	578	0	578
9	G1DFL/P	44	477	521
10	G0WUS	64	0	64

10GHz Open

Pos	Callsign	30/05/2020	27/06/2020	TOTAL
1	G4ZTR	801	1000	1801
2	G3ZME/P	1000	764	1764
3	G4LDR	423	676	1099
4	G4KUX	532	497	1029
5	M0GHZ	397	375	772
6	G4CLA	709	0	709
7	GW4MBS/P	339	338	677
8	G4DBN	341	215	556
9	GW3TKH/P	428	0	428
10	G4BXD	184	95	279
11	G1PPA/P	264	0	264
12	G4BAO	0	162	162
13	G0HIK/P	147	0	147
14	G3YJR	0	87	87
15	GM4DIJ/P	16	0	16

10GHz Restricted

Pos	Callsign	30/05/2020	27/06/2020	TOTAL
1	G4SJH/P	1000	1000	2000
2	G1DFL/P	771	242	1013
3	GW4HQX/P	698	0	698
4	G0WUS	301	0	301

June 122GHz – 248GHz Contest 2021

This year there are now two events on these three highest mm-wave bands. The weather was not kind for the first event, with just three stations taking part, and two entries submitted.

Congratulations go to Roger G8CUB/P as winner on the two lower bands, and to John G8ACE who shared the honours with Roger on 248GHz.

73

John G3XDY

UKuG Contest Manager

120GHz Contest June 2021

Pos	Callsign	Locator	QSOs	Score	ODX Call	ODX kms
1	G8CUB/P	IO91GI15	2	6	G8ACE/P	5
2	G8ACE/P	IO91GC68	1	5	G8CUB/P	5

134GHz Contest June 2021

Pos	Callsign	Locator	QSOs	Score	ODX Call	ODX kms
1	G8CUB/P	IO91GI15	2	6	G8ACE/P	5
2	G8ACE/P	IO91GC68	1	5	G8CUB/P	5

248GHz Contest June 2021

Pos	Callsign	Locator	QSOs	Score	ODX Call	ODX kms
1=	G8ACE/P	IO91GC68	1	5	G8CUB/P	5
1=	G8CUB/P	IO91GD37	1	5	G8ACE/P	5

UKuG MICROWAVE CONTEST CALENDAR 2021

Dates, 2021	Time UTC	Contest name	Certificates
11-Jul	0900 – 1700	2nd 24GHz Contest	
11-Jul	0900 – 1700	2nd 47GHz Contest	
11-Jul	0900 – 1700	2nd 76GHz Contest	
25-Jul	0600 - 1800	3rd 5.7GHz Contest	F, P,L
25-Jul	0600 - 1800	3rd 10GHz Contest	F, P,L
29-Aug	0600 - 1800	4th 5.7GHz Contest	F, P,L
29-Aug	0600 - 1800	4th 10GHz Contest	F, P,L
12-Sep	0900 - 1700	3rd 24GHz Contest & 24GHz Trophy	
12-Sep	0900 - 1700	3rd 47GHz Contest	
12-Sep	0900 – 1700	3rd 76GHz Contest	
26-Sep	0600 - 1800	5th 5.7GHz Contest	F, P,L
26-Sep	0600 - 1800	5th 10GHz Contest	F, P,L
10-Oct	0900 - 1700	122-248 GHz	
17-Oct	0900 - 1700	4th 24GHz Contest	
17-Oct	0900 - 1700	4th 47GHz Contest	
17-Oct	0900 – 1700	4th 76GHz Contest	
15-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)

Editors Comments

Thanks to the contributors this month. I have made this the June / July edition, as it is getting slightly out of Sync. The lack of social events leaves a hole in Scatterpoint. I again invite you to contribute, in terms of articles, what you have been working on etc.

Poor conditions during contests have been a feature this year. Microwave contacts during VHF NFD being way down on normal. With high-pressure dominating, as I write. Let us hope for some good conditions.....

European Microwave Week (EuMW)

European Microwave Week (EuMW) organizers are pleased to announce that they are going forward with their next in-person event at the EXCEL London Convention and Conference Center.

In order to give more time for the pandemic to become contained worldwide, the dates for this live, in-person event will now be 13-18 February 2022.

Info from Paul Bicknell

2021 Contest Calendar

Jul	VHF NFD (1.3GHz)	Arranged by RSGB	3-Jul to 4-Jul	1400 - 1400	RSGB Contest
Jul	24GHz/47GHz/76GHz		11-Jul	0900-1700	
Jul	1.3GHz Activity Contest	Arranged by RSGB	20-Jul	1900 - 2130	RSGB Contest
Jul	5.7GHz/10GHz	F, P,L	25-Jul	0600-1800	
Jul	2.3GHz+ Activity Contest	Arranged by RSGB	27-Jul	1830 - 2130	RSGB Contest
Aug	1.3GHz Activity Contest	Arranged by RSGB	17-Aug	1900 - 2130	RSGB Contest
Aug	2.3GHz+ Activity Contest	Arranged by RSGB	24-Aug	1830 - 2130	RSGB Contest
Aug	5.7GHz/10GHz	F, P,L	29-Aug	0600-1800	
Sep	24GHz/47GHz/76GHz		12-Sep	0900-1700	
Sep	1.3GHz Activity Contest	Arranged by RSGB	21-Sep	1900 - 2130	RSGB Contest
Sep	5.7GHz/10GHz	F, P,L	26-Sep	0600-1800	
Sep	2.3GHz+ Activity Contest	Arranged by RSGB	28-Sep	1830 - 2130	RSGB Contest
Oct	1.3 & 2.3GHz Trophies	Arranged by RSGB	3-Oct	1400 - 2200	RSGB Contest
Oct	432MHz & up	Arranged by RSGB	3 to 4-Oct	1400 - 1400	IARU/RSG B Contest
Oct	122-248GHz		10-Oct	0900-1700	
Oct	24GHz/47GHz/76GHz		17-Oct	0900-1700	
Oct	1.3GHz Activity Contest	Arranged by RSGB	19-Oct	1900 - 2130	RSGB Contest
Oct	ARRL Microwave EME	Arranged by ARRL	23 to 24-Oct	0000 - 2359	ARRL EME 2.3GHz & Up
Oct	2.3GHz+ Activity Contest	Arranged by RSGB	26-Oct	1830 - 2130	RSGB Contest
Nov	Low band 1.3/2.3/3.4GHz 5	F, P,L	14-Nov	1000 - 1400	
Nov	1.3GHz Activity Contest	Arranged by RSGB	16-Nov	2000 - 2230	RSGB Contest
Nov	ARRL EME 50-1296MHz	Arranged by ARRL	20 to 21-Nov	0000 - 2359	ARRL EME Contest
Nov	2.3GHz+ Activity Contest	Arranged by RSGB	23-Nov	1930 - 2230	RSGB Contest
Dec	ARRL EME 50-1296MHz	Arranged by ARRL	18 to 19-Dec	0000 - 2359	ARRL EME Contest
Dec	1.3GHz Activity Contest	Arranged by RSGB	21-Dec	2000 - 2230	RSGB Contest

EVENTS 2021

Events may be subject to cancellation due to the Coronavirus
For latest information consult <https://microwavers.org>

2021

August 19-22	EME 2021, Prague - Now 12-14 August 2022	www.eme2020.cz
August 21-22	BATV Convention, Midland Air Museum, Coventry	www.batc.org.uk
September 24-25	National Hamfest - Postponed until 2022	www.nationalhamfest.org.uk
October 10-15	European Microwave Week, London, Excel - Postponed until 2022	www.eumweek.com
October 17-21	IARU-R1 Conference, Part-2 Novi Sad	conf.iaru-r1.org

2022

February 13-18	European Microwave Week, London, Excel	www.eumweek.com
May 20-22	Hamvention, Dayton	www.hamvention.org
June 24-26	Ham Radio, Friedrichshafen	www.hamradio-friedrichshafen.de
August 12-14	EME 2022, Prague	www.eme2020.cz
September 25-30	European Microwave Week, Milan, Italy	www.eumweek.com

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73 Martyn Vincent G3UKV