An Amateur Radio publication for the Microwave Enthusiast

scatterpoint

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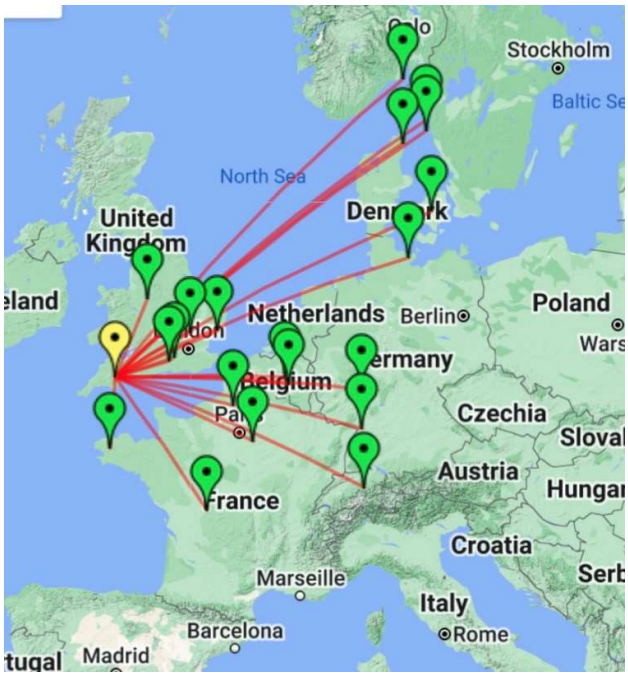
In This Issue

Bovine QRM at G8GTZ/P 122/134GHz



Beacons heard by Dave G4GLT 1.3GHz in January

UK Microwave Group

Subscription Information

The following subscription rates apply

UK £6.00 US $9.00 Europe €9.00

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

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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 76GHz 122GHz

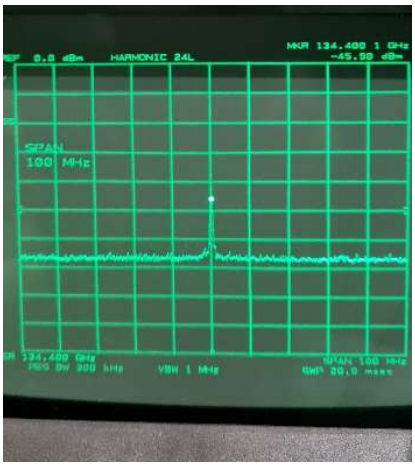
Updating VK3CV 122GHz_003 board to 134 GHz

Lehane Kellett G8KMH g8kmh@mm-wave.com

Introduction

The availability of the newer Indie radar chip (TRA_120_045), that covers 122GHz and 134GHz, has sparked interest in a number of people who have the existing 122GHz setup using the TRA_120_002. Whilst a new VK3CV design has been produced, availability and price are still uncertain. To that end it was decided to attempt to upgrade an existing board. As shown, with some success!

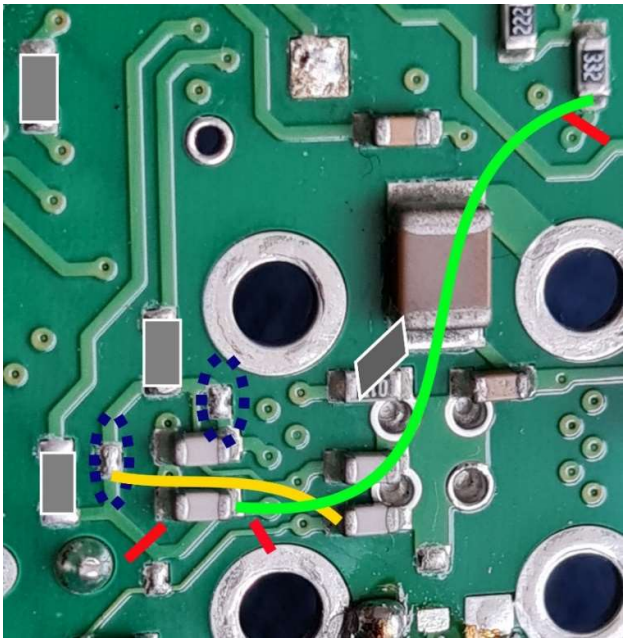
Whilst the changes aren't major, familiarity with SMD devices and the appropriate tools is required.



Changes

Pin differences of TRA_120_xxx

Pin #	002	045	PIC (045)	Action
18	VT0	Icntl	RD0	Populate R33 and make link in yellow
19	VT1	VT	None	See below
20	VT2	HPEN	RD1	Populate R34 1K / Remove LK2
21	VT3	PWR	RD2	Populate R35 1K / Remove LK3



Remove LK2 and LK3. Leave LK1 as this is now carrying the FM Mod to pin 19.

Cut PCB tracks in 3 places. This isolates around pin 18 and 19. There is a link in the mid layer which necessitates the cut at R53. Take care in making the track cuts as this is a 4 layer board.

Populate R33, R34, R35 – as shown.

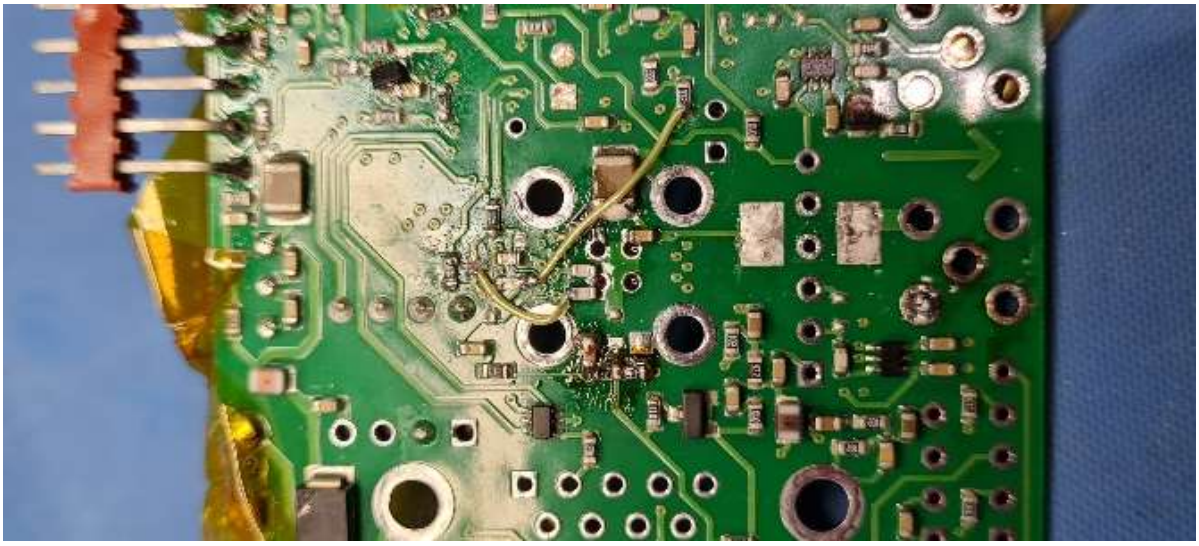
Add an insulated link wire (shown in green) from the end of R53 to pin 19. This is the VCO control signal VT.

Add an insulated link wire (shown in yellow) from the end of LK2/R33 to pin 18. This is the ICntl signal.

It may be easier to do this after removing the TRA_120_002 to allow ohmmeter checks.

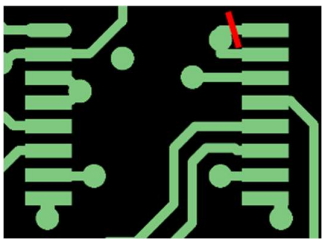
DIVEN has changed to require +3V3 instead of 0V. The same applies to RXEN but the change is handled in the firmware.

R2 requires changing to c.1K and one end connecting to +3V3 on the end of C1/C2.

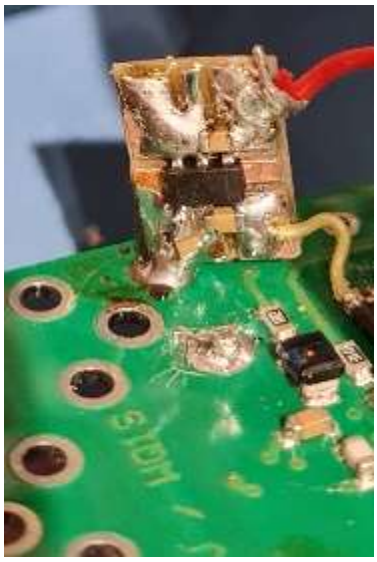


Other hardware changes

TRA_120_002 removed and TRA_120_045 put in place. Experience in rework of QFN packages is needed. As a minimum a hot air gun and preferably also a pre-heat hotplate and holder for the board. Appropriate flux and solder are also required. There are several good YouTube videos on the replacement/rework of QFN devices.
Add MIC803-30D2VC3 for supervisory PIC control (optional but worthwhile). Dead bug construction. Remove C21 and fit IC. Centre pin to top end C20. Other to C21 pads. Device correct orientation, not upside down.
PIC pin RD3 on 122GHz board is associated with reference tuning digital FSK. RD3 is I/Q switching on 134GHz board. Assuming an external IQ board, the PTT External output (RD7) is switched in the release code (see later) by the modified firmware but will need an external pull up to 3V3 (this is already fitted on the GM4ISM board-simply link the PTT output to the in connection on the I/Q board)
The ICSP header will need to be populated to allow the PIC to be reprogrammed (it is possible to use a set of inline contacts pressed against board, instead of soldering).



In order to reach 134-135 GHz, the tuning voltage (Vt) to the TRA_120_045 needs to be able to reach 4.5/4.6V. The unmodified board can only reach 3.3V. Pin 16(Vp) of the ADF4153a needs *very carefully* lifting (or, better, remove the chip and cut the track to the via, shown left, and replace) and supplying with 4.5V – an ultra-low noise LDO fixed regulator, TPS79147DBVT, was used here, mounted 'dead bug' style nearby with three capacitors (2x10uF and 1x 0.1uf Ceramics) and fed from +5V. An etched PCB would be better and prettier!



Software changes

Base code is 122GHz_003. Current is 134GHz_003_045_KMH_TST (test functionality, allows 134GHz operation but I/Q switching is as 122GHz board and channels 8-F can only be 134GHz). Release will be 134GHz_003_KMH_YYYYMMDD
Made changes for band switch operation to be 122/134GHz. Toggle ICntl(RD0) as required. Note: ICntl is 0V is 134GHz, 3.3V is 122GHz
EEPROM usage changes with this(release version).
Changed operation of VT lines to match new chip.
Amended to switch band based on switch channel 8-F(test version only), EEPROM bit (release version only).
Amended to switch I/Q based on EEPROM bit(release version).
Amended RS232 buffer size to cater for EEPROM update(test and release).
Amended EEPROM update to cater for channel to be included(test and release).
Add commands I and Q to override the EEPROM setting, reverts to EEPROM version upon channel change/reset/power down.

PLL/EEPROM

The PLL device is different from the 134GHz VK3CV model and therefore the register loading and EEPROM layouts are different.

In the release version of the firmware the top three bits of the MSB of R1 are used to indicate as follows:

BIT 7 (bit 23 of R1) – BAND. 0=122, 1=134

BIT 6 (bit 22 of R1)- I/Q. 0=I, 1=Q

BIT 5 (bit 21 of R1) – SIMPLEX. 0= DUPLEX, 1 = SIMPLEX, reduce TX power by 3dB (Note: This is currently not implemented pending testing).

BIT 4 to BIT 0 – Remainder of R1. Bits 5 to 7 all set to zero before programming the PLL (AND 01FH).

Example (release version):

134.4 GHz TX (VCO 2.1GHz), 134.5444 GHz RX (IF 144.444), I/Q mode (H), Duplex. Switch A

ADF4153 INT 105, FRAC 0, MOD 3200

EEPROM R1 11010000 01110010 00000001 = 0D0H 072H 001H (R1 PLL 010H 072H 001H)

EEPROM and PLL R0 00011010 01000000 00000000 = 01AH 040H 000H

And for the RX location:

EEPROM R1 11010000 01110010 00000001 = 0D0H 072H 001H (R1 PLL 010H 072H 001H)

EEPROM and PLL R0 00011010 01000000 01011100 = 01AH 02CH 05CH

In the test version if the switch is set to 8 and above then the 134GHz band is selected on the 045 chip, so locations are reserved from 8-F for 134GHz, irrespective of the PLL frequency. In the release version then this dependency between switch position and band is removed – all channels could be 122GHz or 134GHz.

The EEPROM can be programmed via the RS232 port. The format is changed from the original 122GHz version as it allows any of the 0-F locations to be programmed. See the section later.

RF CHANNEL TABLE (FACTORY DEFAULTS – UK Version)

CH	A/B	RX	TX (LO)	IF	LO	H/L	Band	qsy	R0	R1
0	A	122500.4000	122356.0000	144.400	1911.81250	L	L	8	17CEC4	105901
1	B	122356.0000	122500.4000	144.400	1914.06875	H	L	9	17E32C	107201
2	A	122250.4000	122394.8000	144.400	1912.41875	H	L	A	17DF0C	107201
3	B	122394.8000	122250.4000	144.400	1910.16250	L	L	B	17D968	107201
4	A	122806.0000	122621.6000	144.400	1916.58750	L	L	C	17E978	107201
5	B	122621.6000	122806.0000	144.400	1918.84375	H	L	D	17EF1C	107201
6	A	122400.0000	122255.6000	144.000	1910.24375	L	L	E	17D99C	107201
7	B	122255.6000	122400.0000	144.000	1912.50000	H	L	F	17DF40	107201
8	A	134100.0000	134244.4000	144.400	2097.56875	H	H	0	1A2BEC	147201
9	B	134244.4000	134100.0000	144.400	2095.31250	L	H	1	1A1324	145901
A	A	135100.0000	134955.6000	144.400	2108.68125	L	H	2	1A55B4	147201
B	B	134955.6000	135100.0000	144.400	2110.93750	H	H	3	1A4DAC	145901
C	A	134928.0000	134783.6000	144.400	2105.99375	L	H	4	1A4EFC	147201
D	B	134783.6000	134928.0000	144.400	2108.25000	H	H	5	1A4048	144141
E	A	134400.0000	134255.6000	144.400	2097.74375	L	H	6	1A2C5C	147201
F	B	134255.6000	134400.0000	144.400	2100.00000	H	H	7	1A4000	144321

EEPROM Serial Command

Syntax Exxccccccccccccccccccccccc<Enter> (E+26 bytes of data are required)

"E" = character to start command

xx = channel number 00 – 0F

ccccccccccccccccccccccc = 24 characters of hexadecimal channel frequency data (0-9, A-F only, No spaces)

<Enter> = Enter Key = Execute command

Example COMMAND ? >_ E0E1072011A40000172011A2C5C<enter>

And for the reverse channel (F):

COMMAND ? >_ E0F1072011A2C5C1072011A4000<enter>

Release PIC software will include the high order bits for band (R1 register high 3 bits are always zeros in this application), I/Q switch and reduced tx power.

Command I
Switches the output to I on the external I/Q board.

Command Q
Switches the output to Q on the external I/Q board.

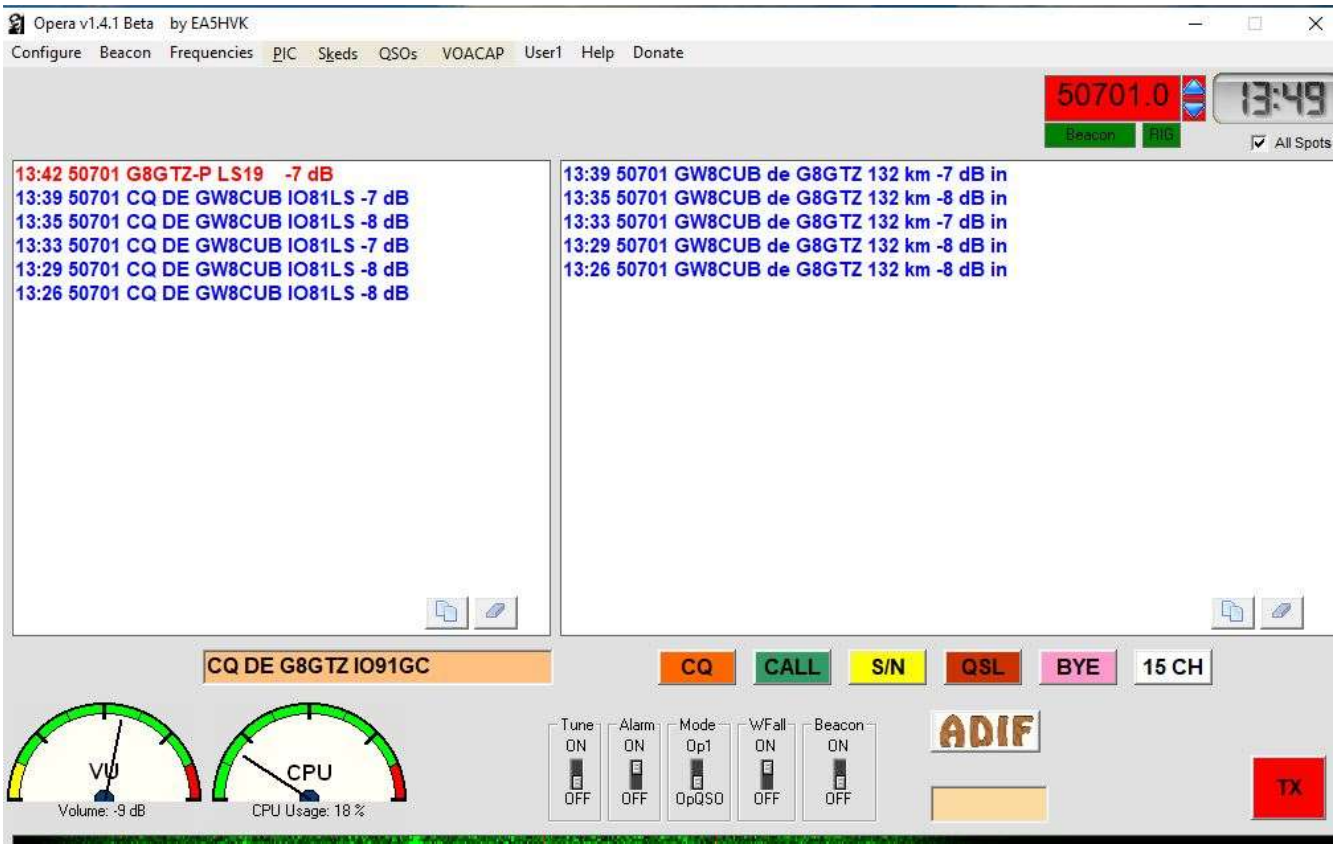
Conclusion
With some care it is possible to upgrade the board to 134GHz and extend its capabilities. Assuming the right SMD rework equipment then the time to do the modifications is about 3-4 hours. However the PLL limits the phase noise of the system and it cannot match that of the newer design with the ultra-low noise ADF41513.

I have a very small number of the Indie chips available for those currently active on 122GHz and looking to do the upgrade. Included is the LDO regulator and one of the new version VK3CV_007 bare PCB's, should you wish to go down that route in future. To complete the upgrade you'll need 4 x 1K 0603, 2 x 10uF X7R 0603 and 1 x 0.1uF X7R 0603
The test version of the PIC code is available by e-mail and the release version will be made more widely available.
Of course, this would not have been possible without the original work of the VK team.

Adventures on 122 & 134GHz

Roger G8CUB

Taking advantage of good dry predicted weather. Intrepid millimetre adventures set out Monday 15th January. Having ironed out equipment issues on a test day, the previous Tuesday – Umm…
G8GTZ/P went to Coaley Peak IO81UR40, with Neil G4LDR. Roger GW8CUB/P travelled to the Blorenge IO81LS19.



Opera received from GW8CUB/P. Typically -7 or -8 dB. Some of the limitations of Opera can be seen here. You cannot use /P, so -P is sent. Also with the locator restricted to 6 digits, the 5th & 6th were sent again with the last two digits. As Noel still had the Stockbridge locator stored. The screen on the right is showing the distance to Stockbridge, not IO81UR.

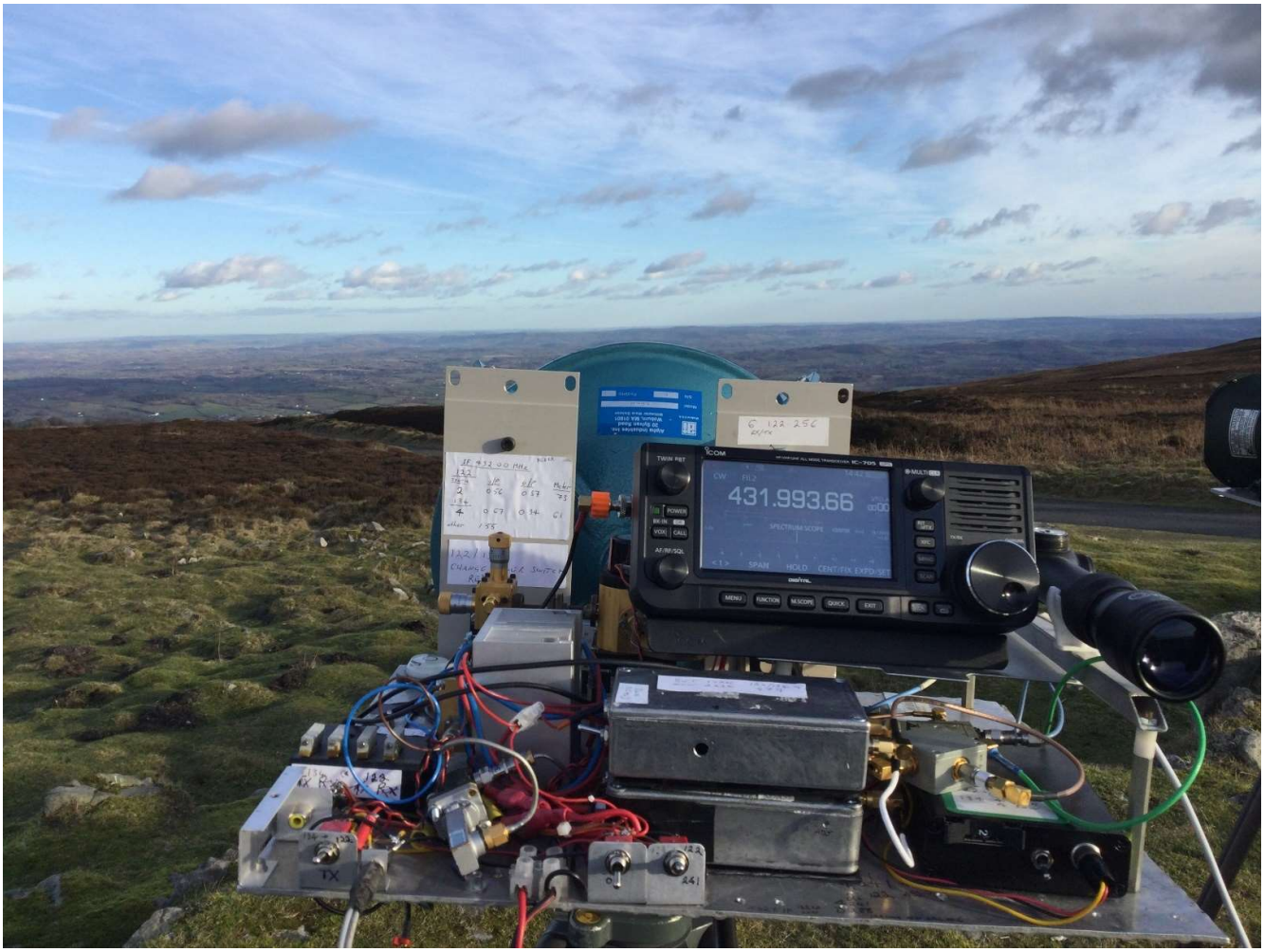
G8CUB/P received readable FM from Noel, and reported 55 on 122. The FM on 134 was almost fully quieting at 57.

The two way FM/Opera on 122GHz at 54km was a slight increase in the UK record. It was only a one way contact on 134GHz, due to a malfunctioning receiver (Roger's) at Noel's end. Predicted path loss, was around 212dB

Later Noel moved to Birdlip IO81WU70. By this time it was nearing 4pm. G8CUB/P received signals from G8GTZ/P at 66km. 122GHz was too weak for FM. 134GHz was just readable. However conditions were going down. The 122GHz signal showed deep fades. Even the 70cm talkback was becoming scratchy on low power. It did however show that the path would work with the right conditions, in the future.

Equipment set up at Coaley Peak car park. Lehane G8KMH, Noel G8GTZ, Neil G4LDR with a visit from Pete G4HQX.

The cows did not seem to appreciate the intricacies of millimetre communication!



Roger GW8CUB/P at the Blorenge Foxhunter carpark IO81LS19.
The transverter / FM Tx, is dual band 122/134G. The verniers on the doubler, need adjusting when changing bands. Tx power circa 4mW.
It was good to have visits from Keith GW3TKH, and David G4ASR. The weather was cold, but no wind made it bearable.

Initial signal received on 134GHz

122GHz 2mW signal from Noel on the left. Just to the right of centre, is the signal from Neil G4LDR's 'VK' system.

New Product

Luis, EA5DOM, from IM98. Mediterranean Spanish coast

Would like to share Maxicom project info with you all, which I believe will be very interesting for many operators using Yaesu radios as IF for their transverters. Maxicom has been developed in less than a year by Julio, EB4CUV (software) and myself in hardware and enclosure

This is basically a CAT display for Yaesu FT817/818/857/897. It is not only a nice colour touch screen (inspired in IC705/905, same front size)

Full details will be in the next Scatterpoint. In the mean-time details below may be of interest.

This are Dropbox links to the current user and Kit assembly manuals in English

https://www.dropbox.com/scl/fi/zpif3o7rbs9sbfkpm8b2k/Instructions-Manual-English-5CV8xx.pdf?rlkey=v55kz4nm9diglktvrt6ux3a2p&dl=0

https://www.dropbox.com/scl/fi/i1rjlxxtg8fd50yqlv6ti/Assembly-Manual-for-Kit-MAXICOM-5CV8xx-English-Ver1.pdf?rlkey=t2nofgd86ns5gmcj4tjof11f5&dl=0

Activity News December 2023

From John G4BAO

On the 19th of December I managed to get on for an hour in the last 23cm UKAC of the year. I worked G4ZTR, JO01KW, G8DOH IO92FA, G0WZV JO01KV, G0HEL/P IO81WG, M0UHF IO91IP, G4CLA IO92JL, G4YTL IO82MB, and G4LPP/P IO93RD, all on SSB. Right at the end of the contest I "surprised" GM4CXM IO75TW by calling and working him on Aircraft scatter SSB for an ODX of 505km. On 23cm I run around 200Watts to a 44element Wimo Yagi at 10m AGL and a post- filtered G4DDK VLNA23 with a sub-0.4dB Noise figure.
Other than that, my focus has been on Winter rebuilds of some of my systems. I now have the 24GHz EME system "ready to go" after completing the phase 1 Arduino Nano firmware for the TWT that does control, monitoring and sequencing. A stage 2 controller PCB with added optional Bluetooth and Wi-Fi hardware to do remote monitoring is on its way from PCBWay in China as I write this, so more changes to the controller firmware are afoot. Recently, I've also been doing a lot of work on combining a pair of "retired commercial" 15Watt 10.7 – 11.7GHz SSPA units for 10GHz EME use. Despite them using different device lineups and one being made by Matra Marconi and the other by Microwave Amplifiers of Bristol, with some careful setting up I've combined them with Wilkinson hybrids and I'm getting 27 Watts out of the pair. I've also learned a lot about amplifier combining on the way and will write up my findings and the results on the UKuG Wiki in due course.

From Sam, G4DDK

Highlight from here was getting back on 9cm EME and achieving the first ever 3.4GHz QSO between the UK and the Philippines when I worked DU3T on 18/12/23 at 1926 via Q65 digimode. I also worked PE1CKK, PA0PLY and DL4DTU in the same session.
The rebuilt GB3MHZ 10GHz beacon is back on test at my home QTH JO02PA90. Power output is now 1.5W on 10368.830MHz and it is sending callsign and the Martlesham locator. The antenna is completely clear of the garage roof at just over 4m AGL and can "see" the many cranes at Felixstowe docks so there might be some reflections from these. Any reports gratefully received, on Beaconspot. EIRP about 20W. Hopefully the beacon will soon be back on its permanent site on the Martlesham tower.

From David G4FKI

The new Bedford 24GHz beacon GB3BED on 24048.830 is now at its full height of 30m AGL in IO92SD. Reports have already been received from G4BAO and G8DKK, and while not on "24/7", John G4BAO usually leaves his WebSDR's dish pointing at it so you can monitor it via his QTH over an obstructed path if you don't have 24GHz yet yourself. URL for the WebSDR is 24ghzwebsdr.ddns.net:8073.

From Dave G4GLT

On the 17th of December, with the home barometer at just below 1040 millibars, and high pressure in the Bay of Biscay, spreading across western France, it was heartening to start hearing the more distant French beacons again on 10GHz from my portable site. From around 0700Z F5BUU was worked in JN02TW, F5DYD (JN03KG), F4CKV (JN16NL) very strong, F6DKW (JN18CS) very strong, F6DRO (JN03TJ), EA1IW (IN73WK), and F2CT (IN93GJ).
The good conditions persisted on the 18th of December and contacts were had with F5BUU, F6DRO, F5DYD and M0GHZ (IO81VK). The wind was so strong that people could hear it in my microphone. As well as hearing ED1ZBE strongly, a
new beacon EA1EK (was heard on 10368.895MHz. I was asked during some of the more difficult contacts to call alternate minutes which is something I plan to be set up for, as it would seem a useful ploy. It would appear that a mobile phone is accurate enough for this.
On 24th December around 1120Z ED1ZBE was very strong and EA1EK (IN73WJ)
was heard. I might add that this was a frontal enhancement and was where mist was replaced by sunshine for 5 minutes, then changed to driving horizontal rain, which is where I packed up and left. Wishing everyone a peaceful, happy and productive 2024.

From Ross G6GVI

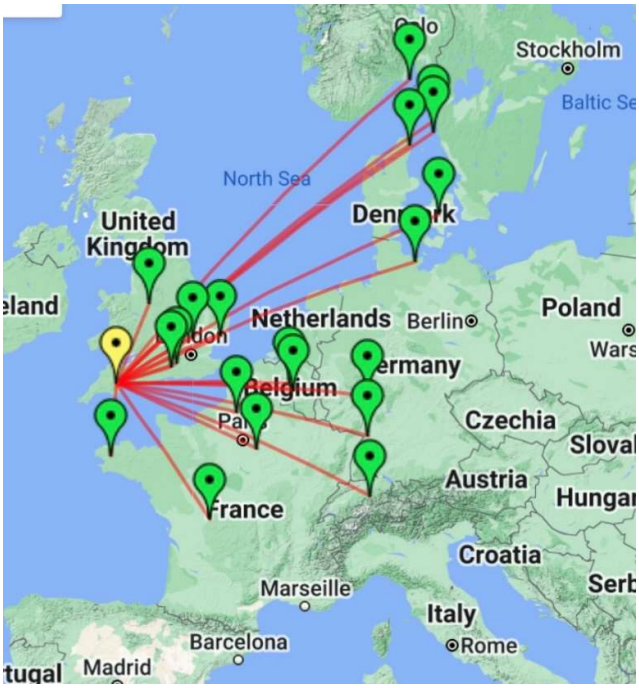
2023 has been my busiest-ever year on SHF, with nearly a thousand QSOs across 23, 13 & 9cm - and most of these operating very modest power (<20W on 23, just 2W on 13 and only 0.3W on 9) from my home QTH near the bottom of a valley. I recently worked out my antenna's "Height Above Average Terrain" and it came out at minus 20 metres! Although all my 13cm contacts take place around the SHF UKAC evenings, the majority of my 23cm activity has actually been outside the contest sessions. This includes weekly SSB nets at noon on Saturdays (with G3OHH, G8DOH & G4HWA, around 1296.2) and our perennial Wednesday evening FM nets on 1297.5. We've been running those Wednesday nets since February 2019 (celebrating our 250th session recently) and in addition to the half-dozen regulars, we've had 32 other stations call in over the years. We mostly use horizontal beam antennas and usually find a combination of headings (employing reflections and side-lobes) to enable an "all-heard" net. But perhaps the most remarkable aspect is that after hundreds of hours of chat, we've not run out of things to talk about yet! And I know one station who was spurred to progress from his Foundation to Intermediate Licence so that he could get the most out of his IC9700 and join in our activities on 23cm. I've also enjoyed numerous portable contacts on 23cm FM, using my Alinco DJG7 handie (running just 1W) from the slopes of nearby Winter Hill. I know that if I get up there around ten in the morning, I'll have an excellent chance of catching G4NOY and M0JVW, neither of whom I can reach from home. They have an FM simplex net (vertically polarised) most days, sometimes switching over to the GB3SE repeater, which is handy when I'm on the East side of the hill. In addition to Jeremy and John, I've contacted 45 other stations from up there over the last five years, almost all of them simplex. One of the delights of our FM operation on 23cm is the opportunity to put some neglected old gear back on the air. My home station includes a 1980s-vintage IC120 (a 1W FM set), which still works really well (aided by an SG Labs amplifier unit at the masthead) and an IC1271 multimode. I've also heard a variety of other old Icom, Kenwood and even Yaesu gear, mostly dating from the last century!
I'm hoping for more of the same in 2024 - just ten hours into the New Year I was already up on the hill and joining in the net!

From Kev ZB2GI

Operation on QO-100 SSB from the GARS club station, Coaling Island, (which incidentally is not an Island at all but is an area of reclaimed land in the British Overseas Territory of Gibraltar!) Kev worked 9A2GA (JN75), DG3SBJ (JN48), DG3SBJ (JN48), DJ3KS (JO30), DK1MI (JN49), DK8BO (JO43), DL1EAL (JO31), DL5ANS (JO50), DL8FBH (JO40), EA2AA (IN83), EA2AZW (IN82), EA3CJ (JN01), F1FOO (JN05), F4EGG (JN34), F4EPU (JO10), F6EQD (JN05), F9OE (IN78), G3MXH (JO02), G4TRW (IO80), GB3RS (IO91) RSGB National Radio Centre Bletchley Park, HA3GB (JN86), HB9AOF (JN36), HB9AOF (JN36), IK4JQQ (JN54), PE1GJV (JO33), PE1NIL (JO21), PY4LI (GG68), R3LO (KO64), YT7IM (JN96).
The QO-100 set up consisted of TX: Yaesu FT817, DX Patrol up-converter with a 2w power amplifier connected to POTY mounted on a 60cm dish. RX: LNB with TXCO fed via a basis tee, connected to an RTL_SDR dongle running on SDR Console with the Beacon lock Feature activated.

From Dave G4GLT

Report on 1296MHz for 12th/13th January 2024.
During a recent conversation with Maurice (F6DKW), he recommended listening on 1296MHz as guide to what is going on higher in frequency.
So I set up with a single long yagi on a mast at a height of about 5 metres.
The rotator was not brought with me, so I was changing the bearing by hand.
The conditions at my portable location at IO80DO were 0-1 degree C with a significant wind chill. There was a very large area of high pressure centred over the UK with the home barometer just below 1040. The wind direction was East North-Easterly.
Having spent time on 1296MHz during contests I knew what flat conditions were like. So I was very pleasantly surprised to start hearing
Scandinavian beacons. One of the first that I heard was LA1UHG in JO59FB (at 1305km) which was strong.
Also heard were SK6UHI, SK6MHI, OZ1UHF, OZ7IGY, and DB0VC.
On the second day as the propagation moved round towards Germany and France I heard DB0MOT, DB0UX, and HB9BBD. I was able to have a CW QSO on 1296MHz with F6DRO in JN03TJ at approx. 900km with 25watts my end and 75watts at his. I had never entered anything before on Beaconspot for 1296MHz and the map below shows my beacon loggings for the two days.



So what did I think about the band? Well, I had a lot of fun and though in this instance it did not act as an indication of 10GHz paths to Scandinavia or Germany, I feel that I may well continue listening on 1296MHz, as before I was ignorant to what was really going on. I am not sure that I will be listening on 5.7GHz as well because where I go the amount of Wifi interference is colossal and works against weak signals.

There was some 10GHz propagation on the second day, and F8DLS, F6DKW and F4CKV were all strong, however signals were very weak indeed on the longer distances to the south of France. I have noticed before that when cold high pressure sits over the UK it may not particularly favour 10GHz.

As regards the extent of the conditions on these two days, it is of note that F6DKW heard OY6BEC on 1296MHz at a distance of 1586 km. Also of note was that OK0EKL on 1296MHz on Klinovec Mountain was heard by G3LTF at 1020 km.

So all in all, despite the freezing cold, I found that it is a very interesting and fun band to be on.

Dave would welcome comments on his findings.

Microwave Meetings 2024

Next on the calendar – MicroMeet in Madrid

Editors Comment

It was very sad to hear of two silent keys this month. Martyn G3UKV for me was that distant signal, always a challenge, but very rewarding to work on 24GHz. Martyn will be sorely missed. His untimely death being a great shock to everyone.
I understand that he was operating on the 80m Microwave net, less than 24 hours before he succumbed to a heart attack. Very sad indeed.
Roger G4BEL was another operator that I had worked many times on 24GHz. Always willing to come on the band, if he was available.
It is an unwanted reminder, that none of us are getting any younger. May we operate, and take to the hilltops when required, while we can.

Due to a number of technical issues, and failed equipment. Several articles are held over to next month.

G3UKV Funeral

Martyn Vincent's (G3UKV) funeral is on 2nd February. It is at 2pm St. Bartholomew's Church, Longdon upon Tern, Telford. This is just off the B5063, behind the village hall.
Info from Paul G8AQA Chairman UKuG

122GHz Contest

Next Sunday 4th February is the new annual 122GHz contest.
So we are all on the same wavelength (literally) nominal frequencies are:
122.400 GHz
122.256 GHz

An understanding of the VK switching is desired. Especially when working non-VK stations.
The use of Opera, probably for the first time in a contest, will present its own challenges.
It is necessary to send callsigns and a serial number to make a valid qso.
Also remember to publish intended activity beforehand, and to use 8 digit locators.

A detailed Millimetre band plan will be in the next issue.

November 2023 Lowband Contest Results

The final Low Band event of 2023 saw rather poor weather conditions in many places, although activity on 1.3GHz held up well, it was reduced on the higher bands.

Once again M0HNA/P took the leading position on 1296MHz with a single band entry, John G4ZTR was the runner up. John G3SQQ takes the award for the leading low power station again. Best DX was the contact from M0GHZ (IO81) to DC1EHG (JO32) at 681km.

There were only two entries on 2300MHz this time, with Neil G4LDR leading G8CUL. Best DX was the G4LDR to G3XDY QSO at 223km.

On 2320MHz G4ZTR fought a close battle with G8CUL for the lead. Best DX was from G8CUL (IO91) to DL5EBS (JO31) at 578km.

John G4ZTR won 3400MHz, the runner up was David M0GHZ. Best DX was from G4ZTR to PE1CKK at 298km. M0GHZ was the leading low power entrant.

Certificates go to the following band leaders, runners-up and leading low power stations.

1296MHz M0HNA/P, G4ZTR, G3SQQ
2300MHz G4LDR, G8CUL
2320MHz G4ZTR, G8CUL
3400MHz G4ZTR, M0GHZ

John G3XDY
UKuG Contest Manager

1296MHz Contest November 2023

Pos	Callsign	Locator	QSOs	Score	ODX Call	ODX Kms
1	M0HNA/P	IO91GI	39	11088	DF2VJ	637
2	G4ZTR	JO01KW	27	8107	EI8KN	559
3	G8CUL	IO91JO	29	8036	DC1EHG	609
4	M0GHZ	IO81VK	17	4009	DC1EHG	681
5	GW4JQP	IO71KR	14	3571	G3XDY	437
6	GD8EXI	IO74PC	11	3462	G3XDY	456
7	G3SQQ	IO93JC	13	2361	PA0T	534
8	EI8KN	IO62IE	5	2132	G3XDY	581
9	G3UKV	IO82RR	13	1953	G3XDY	265
10	G3DCT	IO84JE	6	1712	G3XDY	378
11	G6GVI	IO83SN	11	1708	G3XDY	298
12	G3YJR	IO93FJ	7	1135	G3XDY	238
13	G4LDR	IO91EC	8	1129	GW4JQP	253
14	PE1EWR	JO11SL	3	867	M0HNA/P	347
15	G8AIM	IO92FH	6	758	G3XDY	190

2300MHz Contest November 2023

Pos	Callsign	Locator	QSOs	Score	ODX Call	ODX Kms
1	G4LDR	IO91EC	2	286	G3XDY	223
2	G8CUL	IO91JO	2	237	G3XDY	174

2320MHz Contest November 2023

Pos	Callsign	Locator	QSOs	Score	ODX Call	ODX Kms
1	G4ZTR	JO01KW	10	2004	DL5EBS	437
2	G8CUL	IO91JO	10	1980	DL5EBS	578
3	G3SQQ	IO93JC	6	1127	G4LDR	225
4	M0GHZ	IO81VK	7	1045	G3XDY	246
5	G3UKV	IO82RR	6	898	G3XDY	265
6	G8AIM	IO92FH	3	444	G3XDY	190
7	GW4MBS	IO71XW	0	0		0

3400MHz Contest November 2023

Pos	Callsign	Locator	QSOs	Score	ODX Call	ODX Kms
1	G4ZTR	JO01KW	6	1062	PE1CKK	298
2	M0GHZ	IO81VK	5	701	G3XDY	246
3	G4LDR	IO91EC	4	538	G3XDY	223
4	G8CUL	IO91JO	4	458	G3XDY	174
5	G8AIM	IO92FH	2	279	G4ZTR	171

Low Band Championship 2023

Entry levels are similar to those in the past two years, with most activity focussed on 1.3GHz, with 2.32 and 3.4GHz almost level pegging and just a handful on 2.30GHz.

As usual the contest manager's crystal ball failed to provide any good tropo enhancements this year, almost all the best DX was achieved by aircraft scatter.

1.3GHz

The Combe Gibberlets (M0HNA/P) won three of the four sessions they entered to take top place, and are therefore winners of the G4EAT Memorial Trophy. Runner up is John G4ZTR with one session win and two second places.

2.30GHz

M0HNA/P entered three sessions and won two of them this year on the way to the overall win. Mike G8CUL won one session and runner up two others to take the overall runner up position on this band.

2.32GHz

There was a close competition for the top of this section, with the top three separated by only 7%. M0HNA/P won one session and were runners up in two others to take the championship win, ahead of David M0GHZ who had two session wins and a third place . John G4ZTR was close behind with one session win and two runners up spots.

3.4GHz

John G4ZTR won this band with three session wins gaining maximum points. David M0GHZ was runner up with two session wins and a runners up slot.

Overall

Once again the Combe Gibberlets group have won the overall championship by a good margin, but they have not swept the board as in previous years, missing out on top spot on 3.4GHz. As last year the overall runner up is Mike G8CUL.
Congratulations to the winners and runners up mentioned above.
73
John G3XDY
UKuG Contest Manager

2023 Lowband Contest Overall Results

After five sessions, best three count to final score

1.3 GHz

Pos	Call	05/03/2023	02/04/2023	07/05/2023	04/06/2023	12/11/2023	Total
1	M0HNA/P	0	576	1,000	1,000	1,000	3,000
2	G4ZTR	813	1000	0	687	731	2,544
3	G3DCT(/P)	1000	927	0	441	154	2,368
4	G8CUL	973	0	537	472	725	2,235
5	G7LRQ (G7L)	0	667	812	607	0	2,086
6	M0GHZ	873	677	288	266	362	1,912
7	GW4JQP	531	674	354	267	322	1,559
8	G3SQQ	407	530	0	322	213	1,259
9	G4LDR	0	441	314	489	102	1,244
10	GM4DIJ(/P)	255	599	332	0	0	1,186
11	G4KUX	0	861	0	0	0	861
12	G3UKV	321	295	0	0	176	792
13	G6GVI	342	275	155	162	154	779
14	GI6ATZ	0	739	0	0	0	739
15	EI8KN	0	395	0	0	192	587
16	G8SEI	0	542	0	0	0	542
17	G8DOH	0	508	0	0	0	508
18	G4EPA	0	446	0	0	0	446
19	G4GFI	0	208	152	76	0	436
20	G4LPP	0	0	416	0	0	416
21	G4BRK	0	0	0	371	0	371
22	G8AIM	0	221	65	0	68	354
23	G3YJR	232	0	0	0	102	334
24	GD8EXI	0	0	0	0	312	312
25	G4KZY/P	0	0	300	0	0	300
26	GM4BYF	0	0	0	216	0	216
27	GM8IEM	0	171	0	0	0	171
28	G4CSD	0	163	0	0	0	163
29	PE1EWR	0	0	0	0	78	78
30	G8HGN	0	0	0	63	0	63
31	G8TZJ	0	33	0	0	0	33

2.30 GHz

Pos	Call	05/03/2023	02/04/2023	07/05/2023	04/06/2023	12/11/2023	Total
1	M0HNA/P	0	1000	1,000	862	0	2,862
2	G8CUL	1000	0	784	387	829	2,613
3	G4LDR	0	0	117	971	1,000	2,088
4	G3DCT/P	0	0	0	1000	0	1,000

2.32 GHz

Pos	Call	05/03/2023	02/04/2023	07/05/2023	04/06/2023	12/11/2023	Total
1	M0HNA/P	812	637	977	1000	0	2,789
2	M0GHZ	1000	590	1000	619	521	2,619
3	G4ZTR	599	899	0	689	1000	2,588
4	G8CUL	646	0	468	579	988	2,213
5	G3DCT/P	475	1000	0	609	0	2,084
6	G7LRQ (G7L)	0	550	961	520	0	2,031
7	G3SQQ	429	613	0	404	562	1,604
8	G4LDR	238	414	448	610	0	1,472
9	G4BRK	0	491	425	442	0	1,358
10	G3UKV	173	513	0	0	448	1,134
11	G8AIM	0	279	303	0	222	804
12	G4KZY/P	0	0	569	0	0	569
13	GM4DIJ/P	0	314	198	0	0	512
14	G8SEI	0	325	0	0	0	325

3.4 GHz

Pos	Call	05/03/2023	02/04/2023	07/05/2023	04/06/2023	12/11/2023	Total
1	G4ZTR	1000	736	0	1,000	1,000	3,000
2	M0GHZ	575	1000	1,000	727	660	2,727
3	M0HNA/P	631	811	852	833	0	2,496
4	G4LDR	590	609	308	741	507	1,940
5	G8CUL	535	0	665	707	431	1,907
6	G7LRQ (G7L)	0	0	647	636	0	1,283
7	GW3TKH/P	525	0	0	653	0	1,178
8	G4BRK	0	312	198	579	0	1,089
9	GW4HQX/P	461	0	0	271	0	732
10	G3DCT/P	0	0	0	653	0	653
11	G3UKV	477	0	0	0	0	477
12	G1DFL/P	270	0	0	0	0	270
13	G8AIM	0	0	0	0	263	263

Overall

Pos	Call	1296MHz	2300MHz	2320MHz	3400MHz	Total
1	M0HNA/P	3000	2862	2789	2496	11147
2	G8CUL	2235	2613	2213	1907	8968
3	G4ZTR	2544	0	2588	3000	8132
4	M0GHZ	1912	0	2619	2727	7258
5	G4LDR	1244	2088	1472	1940	6744
6	G3DCT(/P) G7LRQ	2368	1000	2084	653	6105
7	(G7L)	2086	0	2031	1283	5400
8	G3SQQ	1259	0	1604	0	2863
9	G4BRK	371	0	1358	1089	2818
10	G3UKV	792	0	1134	477	2403
11	GM4DIJ/P	1186	0	512	0	1698
12	GW4JQP	1559	0	0	0	1559
13	G8AIM	354	0	804	263	1421
14	GW3TKH/P	0	0	0	1178	1178
15	G4KZY/P	300	0	569	0	869
16	G8SEI	542	0	325	0	867
17	G4KUX	861	0	0	0	861
18	G6GVI	779	0	0	0	779
19	GI6ATZ	739	0	0	0	739
20	GW4HQX/P	0	0	0	732	732
21	EI8KN	587	0	0	0	587
22	G8DOH	508	0	0	0	508
23	G4EPA	446	0	0	0	446
24	G4GFI	436	0	0	0	436
25	G4LPP	416	0	0	0	416
26	G3YJR	334	0	0	0	334
27	GD8EXI	312	0	0	0	312
28	G1DFL/P	0	0	0	270	270
29	GM4BYF	216	0	0	0	216
30	GM8IEM	171	0	0	0	171
31	G4CSD	163	0	0	0	163
32	PE1EWR	78	0	0	0	78
33	G8HGN	63	0	0	0	63
34	G8TZJ	33	0	0	0	33

UKuG MICROWAVE CONTESTS – 2024

Aims and comments:
Some changes have been made at the request of mm-wave operators to the 2024 events:

1. A new 122GHz event has been added on the first Sunday in February
2. Revised dates for the 24/47/76GHz cumulatives to align them with internationally coordinated dates such as the first weekends in May and October.
3. A new standalone 24GHz Trophy Contest in mid-August, separate from the cumulative events that result in the award of the G0RRJ Trophy for 24GHz.

The low band event dates will be similar to last year, with the March, May and June sessions running on IARU coordinated dates. Stations wishing to take part on 2300MHz are reminded that they must be in possession of the relevant Notice of Variation, and to take part on 2320MHz that they should register their station with Ofcom by emailing pssramateurs@ofcom.org.uk to provide the following information:

1. Name
2. Address
3. Call sign
4. Location of use
5. Frequency range used
6. Type of use
7. Regularity of use (e.g. evenings and weekends; 24/7; occasional)
8. Transmit power (i.e. EIRP) .

The high band events will continue on 5.7 and 10GHz, the dates will continue to be on the last Sunday of May, June, July, August and September. The sessions will run between 0600 to 1800 UTC, with operators able to choose any 8 hour slot (or two slots with at least a 1 hour gap). As in previous years the overall table and trophies will be determined using the best three scores made by each station across the five events. The high band events usually coincide with the French Journée d'activité dates.

Microwavers outside the UK are most welcome to join in our contests. There is already a core of French, Dutch and Belgian stations that appear regularly in our summer contests. We would like many more to do the same!

THE RULES listed below are final and binding for 2024.

The following contests are scheduled for 2024:

- Low Microwave Bands - 1.3GHz/2.30GHz/2.32GHz/3.4GHz (5 contest days). An overall championship will be decided on the best three scores out of five.
- 5.7GHz (5 contest days with 3 to count for the championship), on the same days as the 10GHz contests.
- 10GHz (5 contest days with 3 to count for the championship), on the same days as the 5.7GHz contests.
- 24GHz G0RRJ Memorial Trophy Contests (4 contest days with 3 to count for the championship).
- 24GHz Trophy awarded to the leading station in the 24GHz Trophy contest in August.
- 47GHz Trophy (4 contest days with 3 to count for the championship)
- 76GHz (4 contest days with 3 to count for the championship)
- 122GHz and up held on up to 6 days per year with at least 2 weeks elapsed between activity dates for any individual station. Logs to be submitted by email at the end of June and end of December.

The full contest program and rules are published in the February 2024 issue of the Scatterpoint Microwave Newsletter and are also available on the Internet on the UKuG website at http://www.microwavers.org

General Rules (applicable to all events)

The Contests are open to all comers (you do not have to be an RSGB or UK Microwave Group member). Stations located outside the UK (G, GW, GM, GI, GD, GU, GJ) may enter a contest, and will be tabulated within the overall results tables, but will not be eligible for UK Microwave Group awards.

Contestants are expected to enter in the true spirit of the event and to adhere strictly to any equipment or power restrictions that apply to the particular contest.

Operators may enter as home station or portable (either mixed or separately in the championships) unless specified in the rules for a specific event. In multi-band contests, single-band entries are always acceptable.

Stations: Entrants must not change their location or callsign during the contest, unless the Rover rule is invoked. In multi-band events, all stations forming one entry must be located within a circle of 1000m radius. An operator may reside outside the station's area ("remote station"), connected to the station via a "remote control terminal". In such a case, the Locator for the contest is the Locator of the station's position. An operator may only operate one single station, regardless if it is locally or remotely operated, during the same event.

Contacts: Only one scoring contact may be made with a given station on each band, regardless of suffix (/P, /M, etc) during an individual contest or cumulative activity period, unless the station worked is a Rover when each QSO from a different location may be counted. When operating as a Rover, a maximum of one scoring QSO can be made with any given station from each location visited. Contacts made using repeaters or satellites will not count for points. Contacts with callsigns appearing as operators on any of the cover sheets forming an entry will not count for points or multipliers.

Scoring: Contacts are scored on the basis of 1 point per kilometre (rounded up to the nearest kilometre) for full, two-way microwave contacts and at half points for one-way (i.e. crossband) contacts. Any contacts made by EME are scored at 1 point per kilometre up to 1000km, and will be scored at 1000 points above that distance.

Exchanges: Contest exchanges on the microwave bands consist of RS(T) + serial number (starting at 001). In addition, the six (or eight) figure QTH Locator must be exchanged either via the microwave band or on the talkback medium. In multiband contests, the serial number will start at 001 for each band (i.e. a common sequence across the bands is NOT to be used). No points will be lost if a non-competing station cannot provide an IARU locator, serial number, or any other information that may be required. However, the receiving operator must receive and record sufficient information to be able to calculate the score.

Talkback: Talkback can be used to assist in setting up a QSO, but note that the contest exchange must be made via the microwave band. It is not permissible to use the talkback as a means of checking the report or serial number – they must be copied via microwaves – and after the QSO is complete, care should be taken to avoid accidentally repeating the exchange via talkback. There is no restriction on the talkback methods that can be used – other amateur band, internet, phone, etc. In setting up the QSO, it is also permissible to send back received audio to the other station, for example to help with antenna alignment. An exception is that our contests do allow one way (cross-band) QSOs for half points, and in this case, the other band can be used by one of the stations.

Log entries must be submitted via the online log portal at http://microwave.rsgbcc.org/cgi-bin/vhfenter.pl. When uploading electronic logs, the format should be one of the following: ASCII text, RSGB Standard Format, Cabrillo, SDV and G0GJV log outputs, and IARU REG1TEST format (preferred). Paper logs may be entered using the online log editor at http://microwave.rsgbcc.org/cgi-bin/cover.pl. Entries must be submitted no later than 7 days after the conclusion of the contest session. Rover stations should list which contacts were made from each location in their logs.

Awards: Certificates will be awarded to overall contest winners and individual section leaders and their runners up. Additional Certificates of Merit will be awarded to stations in certain categories, as indicated in the rules for each event. With these, as with the logs, the adjudicator's decision is final.

Special Rules: Applicable if called up for the specific contest:

Rover Concept: The 'Rover' concept is to encourage lightweight, low power portable activity. This allows the location of the station to be moved as many times as desired and by a minimum of 5 linear kilometres, at any time during the contest period. From each new location, stations worked from any of the previous locations during the event may be worked again, both stations involved in the contact gaining points. The serial number, however, will not revert to 001 each time a move is made but will carry on consecutively from the previous contact.

Low Band Microwave Contest Rules

First introduced in 2004, these contests aim to encourage operation on the lower microwave bands. There are five of these events, in March, April, May, June, and November. The March, May and June events are timed to overlap with UHF/SHF events in some other IARU Region 1 countries. The times for the November event are shortened to make portable operation more practical.

1. The General Rules listed above apply except as modified by these rules.
2. There are five contests, one each in March, April, May, June and November. The March, April and June events run from 1000 to 1600 UTC. The May event runs from 0800 to 1400 UTC to coincide with the RSGB UHF Contest. The November event is from 1000 to 1400 UTC.
3. Entrants in the May event need not start serial numbers from 001 if they are also participating in the RSGB UHF Contest.
4. Operation may take place on the following bands: 1240-1325MHz, 2300 – 2302MHz, 2310 – 2350MHz, 3400 – 3410MHz. The same station may be contacted for points on each of the four bands.
5. Each event will be scored and tabulated separately. There is an annual championship determined by taking the best three normalized scores from each entrant across the five events for each band. The overall champion will be declared based on the normalized championship scores from each band.
6. For each session, certificates will be awarded to the leading entry plus runner-up on each band, the overall leading entry and runner-up across the four bands, plus for each band the leading stations in each of the following categories: home station, portable station, station running less than 10 watts output. Championship certificates will be awarded to the winners and runners up for each band, and to the overall championship winner and runner up.

5.7GHz Contest Rules

The 5.7GHz and 10GHz contests are being run concurrently to grow activity on 5.7GHz. Although they are on the same days, they are completely separate contests. Any band or both bands can be used on any of the 5 days.

1. The general rules shown above apply.
2. There are five, monthly, events from May to September inclusive, and the events run from 0600 to 1800 UTC on a Sunday. Entrants can operate for a period of up to eight hours during each event, either as a single period or two separate periods with a minimum off time of 1 hour between.
3. Moving location during the contest is allowed - the Rover concept is applicable.
4. Certificates will be awarded to the leading station and runner-up, and to the leading fixed, portable and low power (<1W) stations.
5. The G3KEU Memorial Trophy will be awarded to the leading entry in the championship, determined from the best three normalized scores during the series of events.

10GHz Contest Rules

The 5.7GHz and 10GHz contests are being run concurrently to grow activity on 5.7GHz. Although they are on the same days, they are completely separate contests. Any band or both bands can be used on any of the 5 days.

1. The general rules shown above apply.
2. There are five, monthly, events from May to September inclusive, and the events run from 0600 to 1800 UTC on a Sunday. Entrants can operate for a period of up to eight hours during each event, either as a single period or two separate periods with a minimum off time of 1 hour between.
3. Contestants may submit logs for any one of the following sections:

Open

No power or antenna restrictions (other than those laid down in the amateur licence).
The 'Rover' concept does not apply to this section.

Restricted

10GHz transmit output not to exceed 1.0 watt to the antenna.
Moving location during the contest is allowed - the Rover concept is applicable.

4. Certificates will be awarded to the leading station and runner-up in each section, and to the leading portable and fixed stations.
5. The 10GHz championship will be determined based on the best three normalized scores from each entrant over the five sessions. In addition to winners and runners-up certificates for each section, the following certificates/trophies will be awarded:

- Leading entry in the Open section - The G3RPE Memorial Trophy
- Leading entry in the Restricted section - The G3JMB Memorial Trophy
- Certificates to the leading home station and portable station in each section.

24GHz G0RRJ Contest Rules

The 24GHz G0RRJ Contest will take place over four sessions, coincident with 47/76GHz events.

1. The general rules shown above apply. Eight character locators must be used in this contest.
2. There are four events from May to October inclusive, and the events run from 0900 to 1700 UTC on a Sunday.
3. Moving location during the contest is allowed - the Rover concept is applicable. Please provide a list of which contacts took place from each locator used (this can be in the soapbox area of the log).
4. Certificates will be awarded to the leading station and runner-up in each section, plus the leading home and portable stations.
5. The G0RRJ Memorial Trophy will be awarded to the leading entry in the championship, determined from the best three normalized scores during the series of events.

24GHz Trophy Rules

1. The general rules shown above apply. Eight character locators must be used in this contest.
2. The contest will run from 0900 to 1700 UTC on a Sunday in August.
3. Moving location during the contest is allowed - the Rover concept is applicable. Please provide a list of which contacts took place from each locator used (this can be in the soapbox area of the log).
4. Certificates will be awarded to the leading station and runner-up, and the winner will receive the 24GHz Trophy.

47GHz Contest Rules

The 47GHz contest will take place over four sessions, coincident with 24/76GHz events.

1. The General Rules listed above apply. Eight character locators must be used in this contest.
2. The contest will run from 0900 to 1700 UTC on a Sunday.
3. Moving location during the contest is allowed - the Rover concept is applicable. Please provide a list of which contacts took place from each locator used (this can be in the soapbox area of the log).
4. Certificates will be awarded to the leading station and runner-up.
5. The 47GHz Trophy will be awarded to the leading entry in the championship, determined from the best three normalized scores during the series of events.

76GHz Contest Rules

The 76GHz contest will take place over four sessions, coincident with 24/47GHz events.

1. The General Rules listed above apply. Eight character locators must be used in this contest.
2. The contest will run from 0900 to 1700 UTC on a Sunday.
3. Moving location during the contest is allowed - the Rover concept is applicable. Please provide a list of which contacts took place from each locator used (this can be in the soapbox area of the log).
4. Certificates will be awarded to the leading station and runner-up.

122GHz Contest Rules

The 122GHz contest will take place on the first Sunday in February.

1. The General Rules listed above apply. Eight character locators must be used in this contest.
2. Moving location during the contest is allowed - the Rover concept is applicable. Please provide a list of which contacts took place from each locator used (this can be in the soapbox area of the log).
4. Entrants should publish details of planned activity in time for others to join in. Posting in the UKMicrowaves io group is recommended.
5. Certificates will be awarded to the leading station, and to the runner-up if there are more than five entrants.

122GHz – 248GHz Contest Rules

The 122GHz – 248GHz contest will take place in two phases, one in the period January to June, the second from July to December. Entrants can choose up to three dates in each half year to operate, coordinating with others to find common dates to take advantage of good conditions. Each day used must be separated by at least two weeks from preceding or following activity dates.

1. The General Rules listed above apply. Eight character locators must be used in this contest.
2. Moving location during the contest is allowed - the Rover concept is applicable. Please provide a list of which contacts took place from each locator used (this can be in the soapbox area of the log).
3. The overall score will be determined by adding together the normalized scores from all bands entered.
4. Entrants should publish details of planned activity in time for others to join in. Posting in the UKMicrowaves io group is recommended.
5. Entries should be submitted by email to g3xdy@btinternet.com by 8th July for the January – June period, and by 8th January for the July – December period
6. Certificates will be awarded to the leading stations in each period, and to runners-up if there are more than five entrants.

Other Microwave Contests

The first weekend of May sees the RSGB 432MHz -248GHz Multiband Contest staged in parallel with the RSGB UHF/SHF Contest. The 10GHz Trophy is run in parallel by the RSGB VHF Contest Committee on the Sunday of that weekend.

BATC run the UK section of the IARU ATV contest on the second weekend in June, plus other ATV events, see http://www.batc.org.uk/contests/contest_news.html

The first weekend in July is RSGB VHF National Field Day which includes 1.3GHz as one of the bands.

The first weekend of October sees the RSGB 432MHz -248GHz Multiband Contest staged in parallel with the Region 1 IARU UHF/SHF Contest. The 1.3GHz Trophy and the 2.3GHz Trophy are run in parallel by the RSGB VHF Contest Committee on the Saturday.

The RSGB runs cumulative UK Activity Contests on 1.3GHz on the third Tuesday from 2000-2230 local time, and on 2.3GHz – 10GHz on the fourth Tuesday of every month, from 1930 – 2230 local time.

UKuG MICROWAVE CONTEST CALENDAR 2024

Dates, 2024	Time UTC	Contest name
4-Feb	0900 – 1700	122GHz Contest
3-Mar	1000 - 1600	1st Low band 1.3/2.3/3.4GHz
7-Apr	1000 - 1600	2nd Low band 1.3/2.3/3.4GHz
5-May	0800 - 1400	3rd Low band 1.3/2.3/3.4GHz
5-May	0900 – 1700	1st 24GHz Contest
5-May	0900 – 1700	1st 47GHz Contest
5-May	0900 – 1700	1st 76GHz Contest
26-May	0600 - 1800	1st 5.7GHz Contest
26-May	0600 - 1800	1st 10GHz Contest
2-Jun	1000 - 1600	4th Low band 1.3/2.3/3.4GHz
30-Jun	0600 - 1800	2nd 5.7GHz Contest
30-Jun	0600 - 1800	2nd 10GHz Contest
14-Jul	0900 – 1700	2nd 24GHz Contest
14-Jul	0900 – 1700	2nd 47GHz Contest
14-Jul	0900 – 1700	2nd 76GHz Contest
28 -Jul	0600 - 1800	3rd 5.7GHz Contest
28 -Jul	0600 - 1800	3rd 10GHz Contest
18-Aug	0900 – 1700	24GHz Trophy Contest
25-Aug	0600 - 1800	4th 5.7GHz Contest
25-Aug	0600 - 1800	4th 10GHz Contest
15-Sep	0900 - 1700	3rd 24GHz Contest
15-Sep	0900 - 1700	3rd 47GHz Contest
15-Sep	0900 - 1700	3rd 76GHz Contest
29 -Sep	0600 - 1800	5th 5.7GHz Contest
29 -Sep	0600 - 1800	5th 10GHz Contest
6 -Oct	0900 - 1700	4th 24GHz Contest
6 -Oct	0900 - 1700	4th 47GHz Contest
6 -Oct	0900 - 1700	4th 76GHz Contest
10 -Nov	1000 - 1400	5th Low band 1.3/2.3/3.4GHz

UKuG MICROWAVE CONTEST CALENDAR 2024

Month	Contest name	Organiser	Date 2024	Time GMT	Notes
Jan	1.3GHz Activity Contest	*Arranged by RSGB*	16-Jan	2000 - 2230	RSGB Contest
Jan	2.3GHz+ Activity Contest	*Arranged by RSGB*	23-Jan	1930 - 2230	RSGB Contest
Feb	122GHz Contest	UKuG	4-Feb	0900 - 1700	New event
Feb	1.3GHz Activity Contest	*Arranged by RSGB*	20-Feb	2000 - 2230	RSGB Contest
Feb	2.3GHz+ Activity Contest	*Arranged by RSGB*	27-Feb	1930 - 2230	RSGB Contest
Mar	Low Band 1296/2300/2320/3400MHz	UKuG	3-Mar	1000 - 1600	First 4 hours coincide with IARU event
Mar	REF/DUBUS EME 3.4GHz	*Arranged by REF/DUBUS*	17-Mar	0000 - 2400	REF/DUBUS EME 3.4GHz
Mar	1.3GHz Activity Contest	*Arranged by RSGB*	19-Mar	2000 - 2230	RSGB Contest
Mar	2.3GHz+ Activity Contest	*Arranged by RSGB*	26-Mar	1930 - 2230	RSGB Contest
Apr	Low Band 1296/2300/2320/3400MHz	UKuG	7-Apr	0900 - 1500	
Apr	REF/DUBUS EME 2.3GHz	*Arranged by REF/DUBUS*	14-Apr	0000 - 2400	REF/DUBUS EME 2.3GHz
Apr	1.3GHz Activity Contest	*Arranged by RSGB*	16-Apr	1900 - 2130	RSGB Contest
Apr	2.3GHz+ Activity Contest	*Arranged by RSGB*	23-Apr	1830 - 2130	RSGB Contest
May	*432MHz & up*	*Arranged by RSGB*	4-May to 5-May	1400 -1400	RSGB Contest
May	*10GHz Trophy*	*Arranged by RSGB*	5-May	0800 - 1400	Sunday, to coincide with IARU
May	Low Band 1296/2300/2320/3400MHz	UKuG	5-May	0800 - 1400	Aligned with IARU event
May	24GHz/47/76GHz	UKuG	5-May	0900-1700	Aligned with IARU event
May	REF/DUBUS EME 1.2GHz	*Arranged by REF/DUBUS*	11-May to 12-May	0000 - 2400	REF/DUBUS EME 1.2GHz
May	1.3GHz Activity Contest	*Arranged by RSGB*	21-May	1900 - 2130	RSGB Contest
May	5.7GHz/10GHz	UKuG	26-May	0600-1800	
May	2.3GHz+ Activity Contest	*Arranged by RSGB*	28-May	1830 - 2130	RSGB Contest
Jun	Low Band 1296/2300/2320/3400MHz	UKuG	2-Jun	0900 - 1500	Aligned with some Eu events
Jun	REF/DUBUS EME 24GHz	*Arranged by REF/DUBUS*	8-Jun	0000 - 2400	REF/DUBUS EME 24GHz
Jun	REF/DUBUS EME 10GHz	*Arranged by REF/DUBUS*	9-Jun	0000 - 2400	REF/DUBUS EME 10GHz
Jun	1.3GHz Activity Contest	*Arranged by RSGB*	18-Jun	1900 - 2130	RSGB Contest
Jun	2.3GHz+ Activity Contest	*Arranged by RSGB*	25-Jun	1830 - 2130	RSGB Contest
Jun	5.7GHz/10GHz	UKuG	30-Jun	0600-1800	
Jul	VHF NFD (1.3GHz)	*Arranged by RSGB*	6-Jul to 7-Jul	1400 - 1400	RSGB Contest
Jul	24GHz/47/76GHz	UKuG	15-Jul	0900-1700	
Jul	1.3GHz Activity Contest	*Arranged by RSGB*	16-Jul	1900 - 2130	RSGB Contest
Jul	2.3GHz+ Activity Contest	*Arranged by RSGB*	23-Jul	1830 - 2130	RSGB Contest
Jul	5.7GHz/10GHz	UKuG	28-Jul	0600-1800	
Jul	REF/DUBUS EME 5.7GHz	*Arranged by REF/DUBUS*	28-Jul	0000 - 2400	REF/DUBUS EME 5.7GHz
Aug	24GHz Trophy Contest	UKuG	18-Aug	0900 - 1700	New event
Aug	1.3GHz Activity Contest	*Arranged by RSGB*	20-Aug	1900 - 2130	RSGB Contest
Aug	2.3GHz+ Activity Contest	*Arranged by RSGB*	27-Aug	1830 - 2130	RSGB Contest
Aug	ARRL Microwave EME	*Arranged by ARRL*	24-Aug to 25 -Aug	0000 - 2359	ARRL EME 2.3GHz & Up
Aug	5.7GHz/10GHz	UKuG	25-Aug	0600-1800	
Sep	24GHz/47/76GHz	UKuG	15-Sep	0900-1700	
Sep	1.3GHz Activity Contest	*Arranged by RSGB*	17-Sep	1900 - 2130	RSGB Contest
Sep	ARRL Microwave EME	*Arranged by ARRL*	21-Sep to 22-Sep	0000 - 2359	ARRL EME 2.3GHz & Up
Sep	2.3GHz+ Activity Contest	*Arranged by RSGB*	24-Sep	1830 - 2130	RSGB Contest
Sep	5.7GHz/10GHz	UKuG	29-Sep	0600-1800	
Oct	*432MHz & up*	*Arranged by RSGB*	5-Oct to 6-Oct	1400 - 1400	IARU/RSGB Contest
Oct	*1.3 & 2.3GHz Trophies*	*Arranged by RSGB*	5-Oct	1400 - 2200	RSGB Contest
Oct	24GHz/47/76GHz	UKuG	6-Oct	0900-1700	
Oct	1.3GHz Activity Contest	*Arranged by RSGB*	15-Oct	1900 - 2130	RSGB Contest
Oct	ARRL EME 50-1296MHz	*Arranged by ARRL*	19-Oct to 20-Oct	0000 - 2359	ARRL EME Contest
Oct	2.3GHz+ Activity Contest	*Arranged by RSGB*	22-Oct	1830 - 2130	RSGB Contest
Nov	Low Band 1296/2300/2320/3400MHz	UKuG	10-Nov	1000 - 1400	
Nov	ARRL EME 50-1296MHz	*Arranged by ARRL*	16-Nov to 17-Nov	0000 - 2359	ARRL EME Contest
Nov	1.3GHz Activity Contest	*Arranged by RSGB*	19-Nov	2000 - 2230	RSGB Contest
Nov	2.3GHz+ Activity Contest	*Arranged by RSGB*	26-Nov	1930 - 2230	RSGB Contest
Dec	1.3GHz Activity Contest	*Arranged by RSGB*	17-Dec	2000 - 2230	RSGB Contest

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

Added 24GHz and 122GHz events, rescheduled 24/47/76GHz events for 2024

EVENTS 2024

February 16-17	MicroMeet 2024, Spain	www.micromeet.es
March 30	Blomard 2024, France	ref03blog.wordpress.com/blomard-2024-vhf-uhf-shf/
April 14	Martlesham Roundtable / AGM, Ipswich	
May 17-19	Hamvention, Dayton Ohio	www.hamvention.org
June 28-30	Ham Radio, Friedrichshafen	www.hamradio-friedrichafen.de
August 9-11	20th EME Conference, Ewing NJ, USA	EME2024Trenton.org
September 22-27	European Microwave Week, Paris	https://www.eumweek.com
October 3-5	Microwave Update, Vancouver, Canada	microwaveupdate.org