



RSGB Spectrum Forum Microwave Manager Report Nov 2022

The Microwave Manager (RSGB MM) is responsible for looking after the amateur radio interests in the bands above 1 GHz and assists the RSGB on liaison activities with Ofcom. The RSGB MM volunteer also continues to assist the IARU to actively participate in the wider international regulatory developments that can impact our microwave bands regionally and chairs the IARU Region 1 Spectrum and Regulatory Liaison Committee.

Actions Arising: (From the 2021 Spectrum Forum Minutes) – None.

Summary:

During 2022 a full microwave contest calendar including portable operations has been possible for both RSGB events and those organized by special interest groups. Round tables and rallies have also made a welcome return.

A review of the RSGB UKAC 23cm and SHF events (2.3 GHz to 10GHz) shows that the number of operators active at least once during these 12 annual events over the last 4 years:

Year	1.3 GHz	2.3 GHz	3.4 GHz	5.7 GHz	10 GHz
2021	268	75	34	25	39
2020	269	71	36	23	36
2019	267	68	27	25	36
2018	213	62	22	29	41

Number of individual call signs in the RSGB UKAC results

Activity in the higher bands at 24GHz and above has continued at a low level and remained largely steady.

Year	24 GHz	47 GHz	76 GHz	122 GHz	134 GHz	248 GHz
2021	10	7	6	7	2	2
2020	11	5	4	4	0	0
2019	12	4	4	0	0	0
2018	8	5	4	2	2	2

Number of individual call signs in the UK Microwave Group contest results

It is somewhat disappointing that despite the 2021 surge of interest in the VK3CV 122 GHz boards, the amount of on-air activity has remained low despite the encouragement from the microwave community. Flexible contest activity periods have been organised and the new distance records



are there to be challenged. It is a constant struggle to encourage newcomers onto the GHz bands. Many of the call signs in the data above are largely the same “suspects” especially in bands at 24 GHz and above.

Experimentation with digi-modes up into the microwave bands has continued, enabling interesting contacts to be made particularly in the area of EME operation using stations less well equipped than previously thought necessary even in the 10 GHz band and in some cases the 24 GHz band.

Amateur TV stations have also been experimenting in the GHz bands with experiments continuing to take place in bands as high as 76 GHz.

The QO-100 satellite continues to encourage newcomers to involve themselves in 2.4 GHz and 10 GHz projects for operating through the narrowband and DATV transponders.

Both the UK Microwave Group and the BATC special interest groups continue to support activity in the microwave bands, organizing on-air activities, providing forums and web-based resources to encourage participation.

As ever, more activity in all the bands would be welcome as the commercial interests in using those frequencies are not diminishing. There are several proposals underway to introduce sensors and scanners in the very high bands at 76 GHz and above.

The focus on the amateur services in the 23cm band and the potential for ongoing coexistence with radio navigation satellite systems (e.g. Galileo) is intensifying as international WRC23 preparatory work matures.

Detailed Comments:

1) 23cm and the “Galileo issue”

The situation here has been developing over the last year as the WRC-23 preparatory processes begin to mature. ITU-R studies regarding coexistence between the amateur and amateur satellite services and the Galileo RNSS system have been finalised (although work continues in the European body CEPT). The ITU-R will now focus on developing the technical, operational or regulatory measures required to ensure the protection of the global “Primary” RNSS services in the band. The IARU is actively engaged in the work in CEPT and ITU-R with a goal to minimise the impact on amateur activities. (More detailed information can be found here:

<https://rsqb.org/main/news/special-focus/wrc-23/>).

2) Other WRC related items

Here is a reminder of the other WRC related agenda items that could impact the amateur allocations above 1.3 GHz.

- Agenda item 1.14 will review the range 231.5 – 252 GHz and the existing or possible new primary frequency allocations to Earth Exploration Satellite Service.

- Under agenda item 1.2, the bands 3300 - 3400 MHz and 10 -10.5 GHz are under consideration amongst others for mobile cellular services in Region 2 (the Americas).
- Under agenda item 1.18, mobile satellite service spectrum in the bands 3300-3315 MHz and 3385-3400 MHz are under consideration for Region 2.
- Under agenda item 10, new topics will be proposed for the WRC27 agenda and the RSGB/IARU is on the lookout for new items that may affect bands allocated to the amateur services.

Even though some of these items may not directly address amateur service frequencies, (or our region) they do fall in band or in adjacent bands and could result in wider pressure on our allocations in the future. E.g. the band 3400 to 3410 MHz could find itself sandwiched between mobile broadband internet (5G) spectrum bands.

(See <https://www.iaru.org/spectrum/iaru-and-itu/wrc-23/>)

Microwave Bands Round-up

1.3 GHz:

As mentioned above, work is continuing to study spectrum coexistence between the amateur services and radio-navigation satellite services in the band 1 240 – 1 300 MHz. In ITU-R the initial technical studies are complete and work continues to develop guidance measures to protect the RNSS. The outcome will eventually influence how we can use the band.

Interference to amateur operation in the 1 296MHz portion of the band has been causing difficulties for some stations in parts of the Midlands. Enquiries with Ofcom established that the signals were legitimate but Ofcom seemed unwilling to enter into any discussion on how this might be mitigated for the amateur users. The problem continues at the time of writing.

2.3 GHz / 3.4 GHz/ 5.7 GHz/ 10 GHz:

No changes affecting our use of these bands in the past year. However the 3.4 GHz band continues to be in a weak position due to the proximity of 5G cellular spectrum extending up from 3400 MHz.

24 GHz / 47 GHz / 77 GHz / 122 GHz:

No changes in these bands in the last year but interest in applications for automotive radars and short range device security scanners continues in and around the 77 GHz band. There are studies underway in CEPT on these new applications. So far no impact on the use of these high frequency bands but some applications may wish to “prioritise” their use.

134 GHz and 241 GHz:

No changes from the amateur perspective, and the availability in the UK of ‘Spectrum Access: EHF’ licences across three bands (116-122 GHz, 174.8-182 GHz and 185-190 GHz) continues. These will be reviewed in 2024.



>275 GHz:

The NoV process remains open for >275 GHz access. Possible new studies in ITU-R for new primary allocations for radiolocation systems and an identification for radiolocation applications in the frequency range 275-700 GHz for millimetre and sub-millimetre wave imaging systems may result from preliminary agenda item 2.1 for WRC-27.

Barry Lewis G4SJH, RSGB Microwave Manager

November 2022