

**Ofcom consultation on:-**

## **Low Power Licence-Exemption Limits Above 10GHz**

**Joint Response by the Radio Society of Great Britain,  
UK Microwave Group, Amsat-UK and BATC**

**October 30<sup>th</sup> 2008**



### **Introduction**

This response is a joint one to the above Ofcom consultation document from the Radio Society of Great Britain (RSGB, [www.rsgb.org.uk](http://www.rsgb.org.uk)) and its national affiliates who have microwave spectrum interests - Amsat-UK ([www.uk.amsat.org](http://www.uk.amsat.org)), UK Microwave Group (UKuG, [www.microwavers.org](http://www.microwavers.org)), and the British Amateur Television Club (BATC, [www.batc.org.uk](http://www.batc.org.uk)).

RSGB is recognised as one of the leading organisations in the world in the field of amateur radio. It collaborates with its fellow national societies via the International Amateur Radio Union (IARU) through IARU Region-1 ([www.iaru-r1.org](http://www.iaru-r1.org)).

Amateur radio is a science-based technical hobby that contributes to education, innovation, skills and emergency communications. It is enjoyed by over three million people worldwide. From a statutory point of view it is fully recognised by the International Telecommunication Union (ITU) as a Service and is listed in the ITU Radio Regulations as the Amateur Service and the Amateur-Satellite Service.

In 2007 RSGB made an input to the first stage of this exercise, the Licence Exemption Framework Review (LEFR). We have also made a number of submissions to the UWB regulatory process in Europe and the UK upon which this current consultation draws. An input was also recently made in July 2008 to the Ofcom Exemption Classes consultation for which a statement is currently awaited from Ofcom. We are also reviewing the current consultation for frequencies above 275GHz<sup>1</sup> where there is greater scope for innovation with low interference risks.

Having encountered serious issues with exempt devices in a number of bands where we are licensed, we continue to take a keen interest in this topic as there are clear and present risks to legitimate services associated with a policy of unfettered exemption.

We would be pleased to provide any additional information on request or participate in any future discussions, both with Ofcom or any other stakeholder who has an interest in this topic.

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*RSGB, Amsat-UK, UKuG & BATC, October 2008*

<sup>1</sup> 'Managing the spectrum above 275 GHz', <http://www.ofcom.org.uk/consult/condocs/275ghz/>

## General Position

We simply do not see why this entire approach is necessary as there is no proven demand for such an unprecedented range of spectrum to be exempted. General comments are:-

- We do not agree with Para-1.8 – There can be negative impacts, nor do we believe that this is an optimal way of promoting low-cost innovative developments of viable exempt devices.
- There are well-established bands such as at 24.05-24.25GHz, around 60GHz etc., where exemption with usefully higher powers can exist, capable of providing greater functionality at low cost.
- Only where the risks to licensed services are outweighed by the scope for spurring significant innovation, such as bands around and above 100GHz, (the topic of separate consultations) would such an approach seem justified, assisted by higher sky noise and atmospheric absorption levels.
- There is no explanation of how predominantly indoor use (as per standard UWB) could be confidently predicted or enforced.
- Ofcom does not appear to justify potential breaches of ITU RR5.340 in Passive bands.
- No unilateral UK action should be taken without detailed studies and full coordination with CEPT

The approach seems to ignore the alternative 'win-win' approach that was identified in LEFR of a modest number of designated new mm-wave bands. Within these, useful higher powers could provide a range of functions using simpler lower cost Tx/Rx designs, without the complexities associated with interference risks, mitigation techniques and degraded link margins/ranges.

## Questions & Answers

**Q1:** *Do you agree with this assessment of the services that do not need further analysis?*

The analysis is far too simplistic in naively extrapolating a complex UWB situation below 10GHz uniformly upwards over vast swathes of licensed spectrum, effectively redefining the entire noise floor.

As mentioned in Para 4.10, whilst it is true that the build standards for amateur equipment are high, this does not make their parameters equivalent to commercial/broadcasting services. Both Terrestrial and Satellite Amateur sources are typically limited to a few Watts Tx power at 24GHz falling to less than a watt at higher frequencies. Receiver bandwidths are far narrower (of the order of kHz) to significantly reduce the noise floor and extend ranges to many kilometres, thus leading to a weak signal flux scenario which is especially vulnerable to aggregated interference.

**Q2:** *Is this analysis of the risk of interference to broadcasting satellite receivers correct?*

Whilst we do not have a formal view, this appears to be a high risk area in terms of the receiver numbers and commercial/societal value of the services that may be impacted.

**Q3:** *Is this analysis of the risk of interference to radio-navigation and location correct?*

No comment.

**Q4:** *Is this approach to meteorological aids appropriate?*

No formal view, although we would highlight that amateur microwave operators regularly experience and benefit from enhanced long-range propagation conditions from rainfall scatter mechanisms in the 10-20GHz range which may need to be taken in account in sharing studies.

**Q5:** *Do you agree with the proposed licence-exemption limits set out above?*

No. There are considerable risks associated with such an approach (particularly if adopting the liberal  $-65+20\log(F/10.6)$  slope. This needs far more careful study than a simple extrapolation from 10.6GHz. We are also surprised with Ofcom's suggested treatment of bands covered by RR5.340 (Passive only).

However, should Ofcom persist with the approach in the consultation document, we would request that the tighter -85 ramp limit also be applied to the innovative and active Primary Amateur Services segments which have predominantly weak signal operation at 24-24.05GHz, 47-47.2GHz and 75.875-76GHz. Such tighter windows for these primary allocations would be easy to implement as some are immediately adjacent to other better protected bands in Tables 8.1/8.2.