



International Amateur Radio Union Region 1



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Subject	Millimetre Wave Bands and WRC-19		
Society	RSGB	Country:	United Kingdom
Committee	C5	Paper Number	LA17_C5_30
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1. Introduction

The millimetre wave bands allocated to the Amateur and Amateur Satellite services continue to come under scrutiny during the preparatory studies for certain WRC-19 agenda items. In particular, Agenda Item 1.13 is expected to identify new frequency bands for mass market mobile broadband applications.

2. Background

WRC-19 Agenda item 1.13 seeks to identify new frequency bands for the development of International Mobile Telecommunications (IMT) in accordance with ITU-R Resolution 238. This resolution identifies a number of specific frequency ranges for ITU-R studies within the overall range from 24,25 GHz to 86 GHz. Specific bands that it encompasses or are adjacent to amateur bands include 24,25 – 27,5 GHz and 45,5 – 50,2 GHz.

The IMT technology under development that is expected to be deployed in these frequencies is a family known as IMT-2020 and more commonly referred to as '5G'.

IARU Region-1 has already submitted information to the CEPT Conference Preparatory Group (CPG) and this is reflected in the CEPT Brief on Agenda Item 1.13 that is currently under development. However more might be needed to remind administrations to keep the amateur service interests in mind as the studies conclude and the European common positions are developed ahead of WRC-19.

3. Key Points and Proposal

The two key bands from an amateur perspective are:

- 24 – 24,05 GHz – Primary allocation to the Amateur and Amateur Satellite services
- 47 – 47,2 GHz – Primary allocation to the Amateur and Amateur Satellite services

Neither of these relatively small bands is allocated to any other radio communication service on either a co-primary or secondary basis.

The band 24 – 24,05 GHz is not co-frequency with those identified in Resolution 238. However, the future 5G systems are expected to operate in very wide channels (e.g. 200 MHz) according to information from the standardisation bodies. So only 200 MHz above the top end of the amateur band, there could be many channels intensively used for 5G operation involving both base stations and user terminals.

Therefore, adjacent frequency compatibility between the proposed incoming 5G technologies and the primary amateur services in 24 – 24,05 GHz should be considered within the scope of the Resolution 238 studies. The protection of the amateur services should be addressed.

The band 47 – 47,2 GHz is co-frequency in certain bands identified in Resolution 238 and is therefore undoubtedly within the scope of the Resolution 238 studies.

The RSGB believes these bands are very important for the microwave interests in the amateur radio community as they sit at a transition point where system implementation takes a step from the more readily accessible lower frequencies, towards the more difficult higher frequencies.

They offer challenges that motivate the interest of the microwave communities and offer the potential for innovation and ground breaking activity. These bands can exploit compact high gain antennas and offer opportunities for long range DX by portable stations (>200 km at 47 GHz), as well as EME (moon bounce) activity.

Therefore, the amateur and amateur satellite services in these frequency ranges must be protected in accordance with their primary status.

4. Recommendations

- That IARU member societies fully engage with their national administrations to ensure they are fully aware of the radio amateur interest in their countries in the 24 GHz and 47 GHz bands.
- That IARU member societies ensure their national administrations actively support the protection of the amateur radio services in the 24 GHz and 47 GHz bands in the WRC-19 preparatory studies.
- That IARU member societies encourage their national interest groups to publicise and highlight their achievements in these frequency bands (including by webpages, social media, YouTube, etc.)