

RADIO SOCIETY OF GREAT BRITAIN



CEPT DRAFT ECC RECOMMENDATION (05)07 RADIO FREQUENCY CHANNEL ARRANGEMENTS FOR FIXED SERVICE SYSTEMS OPERATING IN THE BANDS 71.0 – 76.0GHz AND 81.0-86.0GHz

Formal response from the Radio Society of Great Britain.

August 2005

Background

The Amateur Service and Amateur Satellite Service (as defined by the ITU) have been Primary users in parts of the “79GHz band” since WARC '79, including part of the 71-76GHz band considered here.

European Commission Decision (2004/545/EC) harmonised automobile UWB SRR in the “79GHz band” (over an instantaneous bandwidth of 77-81GHz). Automotive Long Range Radar (LRR) for Adaptive Cruise Control (ACC) already exists in the 76-77GHz band.

The International Amateur Radio Union (IARU) Region 1 (Europe, Middle East, Africa and Northern Asia) and the Radio Society of Great Britain (RSGB) have previously made successful representations to CEPT which resulted in the incorporation of Footnote EU35 into the European Frequency Tables, to mitigate harmful interference to the Amateur Services from Car SRR.

Footnote EU35, which amended 5.559A in the European Frequency Tables, permits 75.5 to 76.0GHz to continue to be available to the Amateur and Amateur Satellite Services on a Primary basis beyond 2006. Current use and future bandplanning by the Amateur Services is focussed on 75.5-76GHz, with higher frequencies not recommended for use.

We are therefore concerned that current and future investment of time, effort and materiel could be put at risk in our Primary Allocation by a rather subjective and arbitrary proposal for Fixed Links in the 71-76GHz range. Our standpoint, reasoning and requests are laid out in more detail below.

General Regulatory Considerations

RR footnote 5.149 states that “allocations in the 76 – 86GHz band should be made with due consideration for those services which use extremely weak signal-flux”. Whilst aimed primarily at the Radio Astronomy Service/Space Research, ***we believe that similar consideration must be given to both amateur services since they, too, employ extremely weak signal-flux levels.***

Footnote EU35, which amended 5.559A in the European Frequency Tables, permits 75.5 to 76.0GHz to continue to be available to the Amateur and Amateur Satellite Services on a Primary basis beyond 2006.

The UK Regulatory Authority, Ofcom, has stated that it will “take all necessary steps to permit the Amateur Service and the Amateur Satellite Service (to continue to use) 75.5 – 76.0GHz after 2006”.

Additional background regarding the Amateur Service position at these frequencies is provided in the Annex.

Specific Comments and Requests

We would respectfully request that the following information be taken into consideration by ECC Working Group "Spectrum Engineering" (WGSE) before finalising the draft document ECC/REC(05)07.

Firstly we highlight in bold the following in the Considerations:-

- a) that ITU Radio Regulations (RR) and European Common Frequency Allocation Table (CEPT/ERC Report 25) allocate the bands 71.0 – 76.0GHz and 81.0-86.0GHz on a primary basis to Fixed Service **as well as other co-primary services**;
- g) that the high frequency reuse achievable with the high gain, low size and high directional pencil-sized beam antennas **reduces the requirement for frequency planning techniques and offers the possibility of deregulated telecommunications environment** within CEPT countries for various low power, low cost and short range fixed wireless systems;

The proposition must be clearer – either the plan is for a Primary Fixed service, or it is for Licence-Exempt systems, as g) suggests. If the latter, then they must inherently be low-power, non-protected, non-interference in nature, with full rights afforded to all other services for protection. Consideration a) applies to Licensed Primary services only, including the Amateur Services. Thus, without further clarification, the draft document risks breaching long established conventions and other spectrum holders' rights whilst seeking to avoid necessary and thorough interference studies.

It should be noted that Amateur Stations in the UK even three years ago had contacts up to 80km range using modest powers and non-UK records are up to 180km, and Amateur technology continues to improve. This underlines our concern at the simplistic approach in g) to interference risks.

We therefore request that the following additional consideration be added to ECC/REC/(05)07:-

That the band 75.5-76GHz is allocated to the Amateur Service and Amateur Satellite services, which employ weak signal flux receivers, on a Primary basis as per footnote EU35 in the European Common Allocation Tables.

We also request that the following be added to the recommendations in ECC/REC/(05)07:-

That administrations make an early decision, in principle, on a harmonised basis as to whether the proposed services will be License-Exempt, to establish a firm remit for interference studies.

That administrations should seek to avoid allocating channels that may cause harmful interference to weak signal flux services including the Amateur and Amateur Satellite Primary Services in the 75.5-76.0GHz range

Should CEPT require any additional information we would be pleased to provide it, and participate in any future discussions.

RSGB August 2005

Annex: Previous CEPT Decisions in respect of the Amateur Services at 76GHz

On p3, paragraph h) of ECC/DEC/(04)03, it is stated that:-

“the use of SRR within the band 77-81 may be incompatible with the Radio Amateur Service which has been resolved by allowing the Amateur Service to remain in the 75.5-76GHz band after 2006 (see footnote 5.559A);”

This was a direct result of CEPT ECC Report 56. The Executive Summary on p2 of ECC Report 056 states:-

“However, it was agreed within CEPT to extend the timescale for Radio Amateur Service on a primary basis within the band 75.5-76GHz beyond 2006.” This modification was made in the update of the European Common Allocation Table, January 2004 (footnote 5.559A). This was done to compensate potential incompatibility problems with the Amateur (Satellite) Service that operates with a primary status in the 77.5-78GHz band.

Similarly on p4 of ECC Report 056 it states:-

“As for the Amateur (Satellite) Service, it was concluded that the use of 79GHz SRR systems might be incompatible. WGFm agreed consequently to extend the timescales given in footnote 5.559A, which permits Radio Amateur Service on a primary basis within band 75.5-76GHz beyond 2006. This change was included in the update of the European Common Allocation Table, January 2004.” This Frequency Management solution compensates for potential incompatibility problems with the Amateur (Satellite) Service that operates with a primary status in the 77.5-78GHz band

On the basis of EU35 being implemented, the RSGB and the UK Microwave Group adopted the pragmatic attitude that technology development in the 77-81GHz band for vehicle radar be ‘welcomed’. The logic for this was that it would assist migration from, and reduce interim use of, the 24GHz band for vehicle SRR (also, in part, an Amateur Primary band), whilst permitting Amateurs to continue operating and experimenting in their original 75.5-76GHz band.

Note: Papers by RSGB and IARU for the September 2005 IARU Conference in Davos focus on promoting activity at 75.5-76GHz and recommend avoiding activity in other allocations, particularly Secondary ones, accepting that 500MHz of interference-free bandwidth on a Primary basis is sufficient for all foreseen future needs of amateurs

Frequency, GHz	Allocation	Comment
75.5-76.0	Primary	Existing allocation, permitted for continued use beyond 2006 by EU35
76.0-77.5	Secondary	Subject to LRR/SRR interference
77.5-78.0	Primary	Subject to SRR interference
78.0-81.0	Secondary	Subject to SRR interference

Table-1: Amateur Service Allocations in the 75.5 – 81.0GHz bands

- [1] “ECC Decision of 19 March 2004 on the frequency band 77–81GHz to be designated for the use of Automotive Short Range Radars”, CEPT Electronic Communications Committee ECC/DEC/(04)03
- [2] “Compatibility of Automotive Collision Warning Short Range Radar Operating at 79GHz with Radiocommunication Services “, CEPT ECC Report 56, Stockholm, October 2004