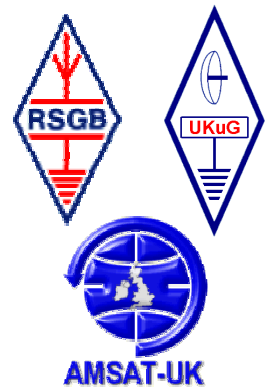


## CEPT DRAFT ECC DECISION (06)AA ON HARMONISED CONDITIONS FOR DEVICES USING UWB TECHNOLOGY IN BANDS BELOW 10.6 GHZ



### Joint response from the Radio Society of Great Britain, UK Microwave Group and Amsat-UK.

#### Introduction

This response is a joint one from the Radio Society of Great Britain (RSGB, [www.rsgb.org.uk](http://www.rsgb.org.uk)) and its affiliates UK Microwave Group (UKuG, [www.microwavers.org](http://www.microwavers.org)) and Amsat-UK ([www.uk.amsat.org](http://www.uk.amsat.org)).

Draft ECC Decision (06)AA [1] covers UWB transmissions principally in the 3.1-10.6GHz range. This range includes a number of allocations for the Amateur Service and Amateur Satellite Service (as defined by the ITU).

The UK Regulatory Authority, Ofcom, held a public consultation between January and March 2005, based at the time on a draft copy of ECC Report 64 [2]. Despite many representations from Amateurs, Industry and one other EU Regulatory Authority, Ofcom decided to largely ignore the concerns raised and the basis of interference assessments in ECC Report 64. We therefore do not consider Ofcom to be fully representative of the UK position.

We are aware of the extensive deliberations that have occurred in ECC TG3 and the ITU concerning UWB, and hold the firm belief that the FCC mask is wholly inadequate. We are also aware that since Report 64 was issued, the Bluetooth SIG has agreed to incorporate UWB, which is likely to greatly increase the numbers of mobile and outside devices.

We recognise that UWB short-range links will have a useful role, and observe that UWB vendors are exerting considerable pressure for their adoption. However we do not believe they should receive exceptional treatment. We stress that UWB must fully comply with the International Radio Regulations and that all such devices must operate on a non-protected, non-interference basis.

The decision correctly identifies bands in the 6-9GHz range for where UWB technology should ideally be located as exemplified by the sentence:-

“It should be noted that the ECC Decision intends to deliver a clear message that the band 6 to 9GHz is identified in Europe for long-term UWB operation without additional mitigation techniques.”

We do of course recognise that UWB operation in the 3-5GHz range may also be possible. In order to protect our services (notably in the 3.40-3.41GHz band where EU17 applies) we urge the adoption of the mask proposals without undue concessions to UWB proponents. We seek thorough consideration of any mitigation techniques before permitting the substantial relaxation as per Mask Note-1

In general we applaud the ECC Draft Decision and would urge its adoption subject to reservations we have at 3.4GHz and Outdoor Usage as detailed more fully below.

Our standpoint, reasoning and requests are laid out in more detail below.

## General Regulatory Considerations

Footnotes EU17 and EU23 to the European Frequency Tables state that CEPT administrations are requested wherever possible to maintain specified Amateur sub-bands in such a way as to facilitate the reception of Amateur and Amateur Satellite Service emissions with minimal power flux densities.

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

## Comments in regard to points in the Consultation

### UWB Definition

We are happy to see the suggested definition (which is consistent with that used in Report 64) to be incorporated

### Maximum mean e.i.r.p. density in the band 3.1–4.8GHz with DAA (Detect and Avoid)

We request that when evaluating DAA and other mitigation techniques, full consideration of EU17 is given regard to the band 3.40 to 3.41GHz where narrowband amateur weak signal flux activity is centred. A major concern is that amateur equipment spends high proportions of its time in receive mode - a 'hidden terminal' situation. This would be compounded should outdoor UWB usage rise.

### Maximum mean e.i.r.p. density in the band 6–9GHz

We are pleased that the mask stops at 9GHz before falling to much lower levels prior to our 10GHz band. We urge that this be adopted and ask that requests for relaxation to 10GHz and above are resisted.

### Phased approach in the band 4.2–4.8GHz

Whilst not an amateur band, we are in favour of a tight 2010 sunset date in order to send the right signal to UWB developers that the 6-9GHz band is preferred as a permanent solution for UWB. Some UWB equipment is already available for this higher band. This has parallels to the firm restrictions on 24GHz UWB Car Radar, which encourage 79GHz development.

### Indoor Usage

Ideally, we would prefer UWB to be limited to indoor use but recognise that this is difficult to enforce. The best approach may be to set explicit activity or duty cycle limits within UWB transceivers, which is relatively technology-neutral. The limits might for example then preclude low compression continuous hi-definition video streams outside of the original MPEG2/4 assumptions. Section-2 of the draft decision preamble echoes this concern but it needs to be incorporated into Considering and Decides.

### Outdoor Usage

The draft decision uses ECC Report 64 as its basis for below 3GHz, above 10GHz and for its assumption on outdoor devices. ECC Report 64 Section-2 states that 88% of Type-1 UWB devices are indoors and 10% outdoors (the other 2% being Type-II imagers, which are out of scope). Draft Decision 06(AA) which references Report 64 incorrectly quotes the indoor/outdoor ratio as 80% and 20% - a factor of two difference for outdoor devices. Report 64 also assumes a 5% UWB activity factor.

We therefore request that the following additional consideration be added to ECC/DEC/(06)AA:-

that ECC Report 64 used 88:10 as the basis for indoor/outdoor ratio, and that higher outside numbers or activity ratios would call this basis into question

### Market Penetration

We also highlight the following in the Considerations:-

- f) that by their nature UWB devices will operate in bands that have been allocated to radio services;
- g) that UWB devices shall not cause harmful interference to those radio Services;

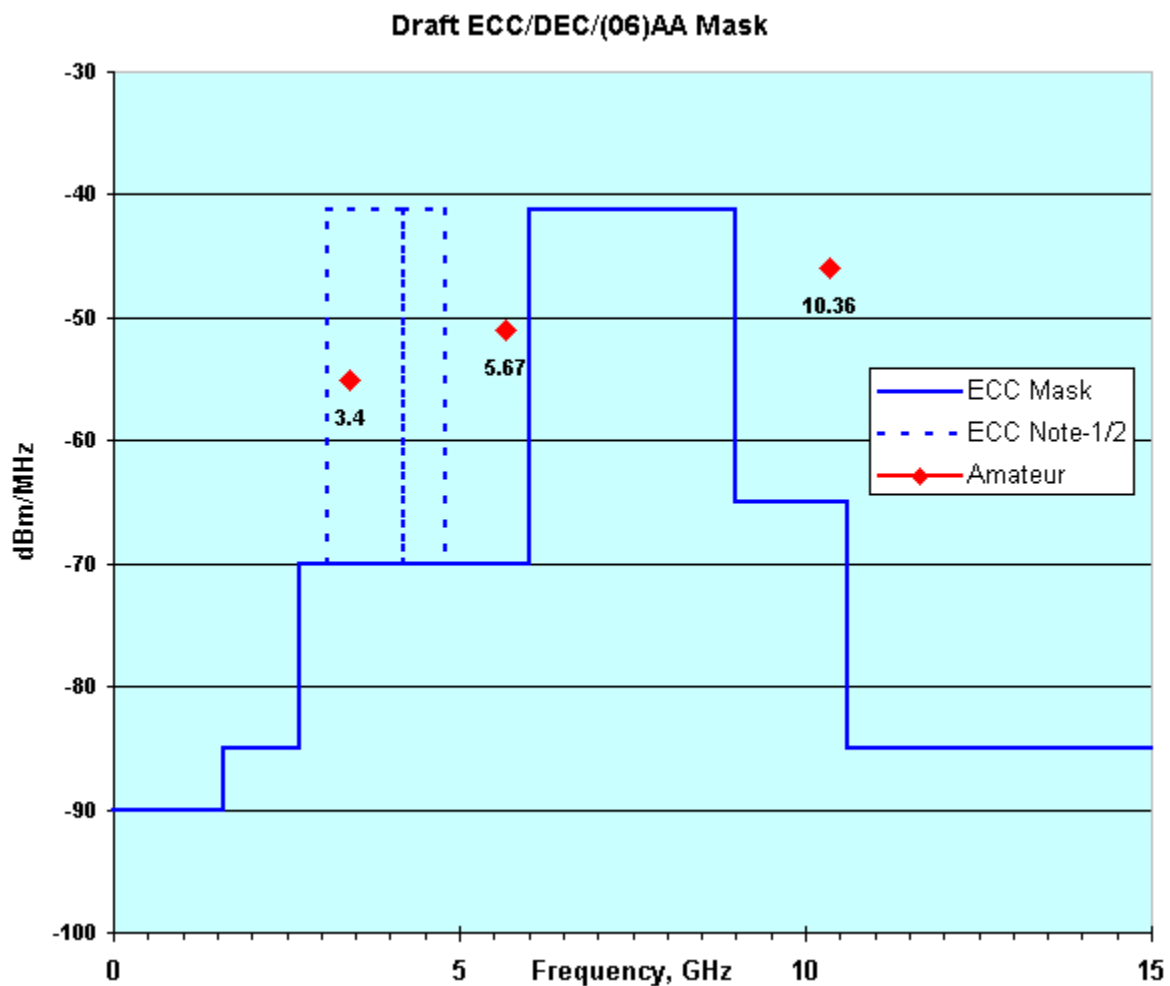
- z) that, in order to support procedures of review of ECC Decisions, administrations are encouraged to collect market data on the numbers and types of UWB devices being placed on national markets;
- dd) that, to avoid harmful interference, it is important to minimise the outdoor activity of UWB, but it is impractical to prevent the incidental outdoor use of handheld UWB devices;

Given f), g), and a relatively low level of outside usage assumed in Report 64, we contend that it is necessary to strengthen the capture of market data. Clauses z) and dd) are quite weak in this regard. The decision should incorporate a firmer commitment to gather data for regular reviews of market penetration and interference reports in the 'Decides' section.

We thank CEPT for this opportunity to comment. We would be pleased to provide additional information on request or participate in any future discussions.

Permission is granted for a copy of this response to be placed in the public domain

RSGB, UKuG & Amsat-UK, December 2005



The plot above is mask level specified in the Annex of the Draft Decision, compared to the protection levels that Report 64 determined are necessary for the Amateur Services

## Annex: Amateur Services Allocations

Band, MHz	Comment
3400-3475	EU17* applies to 3400-3410 where weak signal flux narrowband activity is centred
5650-5850	EU17* & EU23** apply to 5660-5670 and 5830-5850 The Amateur Satellite Service has allocations in this band
10000-10500	EU17* & EU23** apply to 10360-10370 and 10450-10500 The Amateur Satellite Service has allocations in this band

### Amateur Services Allocations within the 3.1-10.6GHz UWB Range

#### Notes to the European Allocation Tables

**\*EU17:** In the sub-bands 3400-3410MHz, 5660-5670MHz, 10.36-10.37GHz, 10.45-10.46GHz the amateur service operates on a secondary basis. In making assignments to other services, CEPT administrations are requested wherever possible to maintain these sub-bands in such a way as to facilitate the reception of amateur emissions with minimal power flux densities.

**\*\*EU23:** In the sub-bands 5660-5670MHz (earth to space), 5830-5850 MHz (space to earth) and 10.45 - 10.50GHz the amateur-satellite service additionally operates on a secondary and non-interference basis to other services. In making assignments to other services, CEPT administrations are requested wherever possible to maintain these allocations in such a way as to facilitate the reception of amateur emissions with minimal power flux densities.

#### References

- [1] CEPT Draft ECC Decision (06)AA, "On Harmonised Conditions for Devices Using UWB Technology in Bands Below 10.6GHz", November 2005
- [2] "The Protection Requirements of Radiocommunications Systems Below 10.6GHz from Generic UWB Applications", CEPT Report 64, Helsinki, February 2005