

About AMSAT-UK

AMSAT-UK represents the interests of Radio Amateurs who design, build and operate satellites under the regulations of the Amateur Satellite Service.

Our members carry out innovative experimental work with satellite communications using frequencies allocated to the Amateur Satellite Service between 7 MHz and 76 GHz.

Since the launch of the first Amateur Radio Satellite in 1961, over 60 satellites have been designed and built by Radio Amateurs from various countries. Currently there are over 15 operational satellites in orbit operating in the Amateur Satellite Service, including an Amateur Radio Station on board the International Space station, a facility supported by AMSAT-UK members.

Radio Amateurs are currently constructing their first Interplanetary Vehicle, a Mars Orbiter scheduled for launch in 2009. This will use the Amateur Satellite 2.4 GHz and 10.45 GHz allocations. It will send data back to Earth for reception and analysis by Radio Amateurs.

Further information on AMSAT UK is available at www.uk.amsat.org and about amateur satellites generally at the AMSAT North America web site at www.amsat.org

Question 1: Have all the possible victims of interference been correctly identified and quantified as far as possible?:

No. Once high power equipment is available for 2450-2483MHz it is inevitable that people will modify it to operate in the 2400-2450 MHz segment to extend the range of their WiFi systems. As far as we can tell there is no mechanism for policing this section of the band.

The segment 2400-2450 MHz is allocated to the Amateur Satellite Service. This service employs extremely weak signal-flux levels and is sensitive to any increase in the noise floor. Not only would we suffer from modified high power equipment being illegally operated in 2400-2450 MHz it is also likely that existing users of 2450-2483 would migrate down below 2450 MHz in an attempt to avoid the high power stations. This would raise the noise floor and jeopardise the reception of low-level Amateur Satellite signals.

The Amateur Radio Mars Orbiter P5A currently under development will make use of the Amateur Satellite Services 2.4 GHz allocation for vital communication links. A number of other Amateur Satellites that will use this band are at an advanced stage of construction.

The segment 5830-5850 MHz is allocated to the Amateur Satellite Service for Space-To-Earth communications. The deployment of high power systems at 5.8 GHz would significantly raise the noise floor and obliterate the weak Amateur Satellite signals.

Amateurs are currently working on an innovative digital satellite communications system that will utilise the 5 GHz allocation. These proposals will jeopardise this valuable pioneering work.

Question 2: Have the costs and benefits been correctly captured? In particular, are the costs of interference to WLANs appropriately assessed?:

No comment.

Question 3: Are there any other mechanisms that could be used to restrict device operation to appropriate areas? Of the schemes set out which should be preferred?:

Location aware devices would appear to be the best option used in conjunction with Transmit Power Control (TPC) to automatically reduce the transmitted power to the minimum necessary to maintain the link.

Question 4: Should we move from specifying radiated power to specifying conducted power?:

No.

Question 5: For 2.4GHz which of these options do you favour? Are there other viable options that should be considered? Or should regulations be left unchanged?:

The regulations should be left unchanged.

Question 6: For 5GHz should Ofcom increase the power to 4W EIRP at 5.8GHz in accordance with ECC Recommendation and as set out in the draft IR2007? Should Ofcom open the database for public access to facilitate coordination?:

No, the power level at 5.8 GHz should not be increased
The database should be open to public access.

Additional:

C-C Rider 5 GHz digital Amateur Satellite communications system

http://www.amsat.org/amsat-new/eagle/EaglePedia/index.php/C-C_Rider_Introduction

P3E and P5A Mars Orbiter Amateur Satellites

http://www.amsat-dl.org/pic/gallery2/main.php?g2_view=core.DownloadItem&g2_itemId=6497