Ofcom: Notice of proposal to make Wireless Telegraphy Exemption Regulations 2016

Re: Comments of EchoStar Mobile Limited

Dear Sir:

EchoStar Mobile Limited (EML) supports the goals of OFCOM in their Notice of Proposal to Make Wireless Telegraphy Exemption Regulations relating to User Terminals (2 GHz Proceeding). As OFCOM recognizes in this proceeding, EML is one of the two European-wide 2 GHz band mobile satellite service with a complementary ground component (MSS/CGC) licensees. EML has completed construction of its new advanced MSS satellite, EchoStar XXI, which is planned to be launched in late 2016. EchoStar XXI will bring advanced, innovative MSS services, throughout Europe, including to consumers in the United Kingdom, no matter where they are located. In the future, this MSS will be complemented with an advanced CGC service which will bring to UK customers advanced 5G services. As discussed below, with the imminent launch of EchoStar XXI, EML fully supports the completion of this consultation in early November to ensure that its devices are fully authorized in the U.K. marketplace.

EML supports OFCOM's proposal to treat 2 GHz MSS user terminals as license-exempt and the proposed technical parameters for 2 GHz MSS terminals, with the understanding that pan-European technical rules for 2 GHz MSS user terminals may be revisited in the future as new technologies are introduced into the market. This is consistent with the approach adopted by Ofcom for similar land mobile-satellite services in compliance with the Radio Equipment Directive. EML also supports the adoption of technical parameters for 2 GHz MSS user terminals on aircraft. However, EML is concerned about the proposed maximum EIRP and power density. Unlike the proposed standards for terrestrial 2 GHz MSS user terminals where OFCOM based its proposed power limits on ECC Report 197, here, with no apparent basis, OFCOM is proposing to base its required EIRP power limits using a more lenient standard (resulting in higher EIRP) that has not been studied through the pan-European process. Further detail of this is provided in Annex 1. The proposed EIRP power limits taken from ECC Report 197 are different than those in ECC Report 233, where compatibility studies for aeronautical CGC systems have been studied. The proposed maximum EIRP and power density of 45 dBm / 200 kHz bandwidth for altitudes at 1000 meters or above is 5 dBm / 200 kHz higher than ECC Report 233.[1] Further, the ECC Report 197 only studies MSS terminals transmitting to a satellite, with an MSS antenna height of 1 or 1.5m (see Table 5).

Furthermore, Inmarsat's proposed operations require different operating parameters and EIRP for the aeronautical terminals transmitting to the satellite, compared to the aeronautical terminals transmitting to Aeronautical CGC Ground Stations. Therefore, OFCOM should clarify paragraph 3.15 of the User Terminal Exemption Notice, that the 2 GHz MSS user terminals on-board an aircraft

would transmit (to the Satellite) in the 1980 to 2010 MHz band (Earth to space) and receive (from the Satellite) in the 2170 to 2200 MHz band (space to Earth). OFCOM should also clarify that the proposed maximum EIRP and power density in Table 2, are not for 2 GHz MSS user terminals on-board an aircraft, transmitting to terrestrial or Aeronautical CGC Ground Stations.

Separately, Inmarsat has not actively engaged in and completed coordination with EML's MSS system, as required under ITU and OFCOM licensing rules. Therefore, there is no evidence that the

[1] See ECC Report 233, Table 7: Aeronautical terminal parameters, transmitting to the Satellite

proposed EIRP power limits contained in the OFCOM proposal for user terminals on aircraft will protect the operations of EML or other adjacent or near-adjacent spectrum users. Accordingly, EML urges OFCOM not to adopt the same EIRP power limit for 2 GHz MSS user terminals and for MSS user terminals on aircraft.

EML's EchoStar XXI MSS satellite will be in operation shortly providing important services to consumers throughout the United Kingdom, no matter where they live. OFCOM's proposed regime for MSS user terminals ensures that consumers will be able to receive these services on a timely basis. However, EML urges OFCOM not to adopt the proposed EIRP power limits for 2 GHz MSS user terminals on aircraft until they can be confirmed through the European-wide standards process and/o r coordination with the EML MSS satellite system is completed.

ANNEX 1 - Table comparison of proposed values transmitting to a Satellite

- Above 1000 Meters

Report/Consultation	Reference	Maximum EIRP stated	Maximum EIRP conversion
Ofcom - User Terminal Exemption Notice Satellite user terminals on-board aircraft (**above** 1000 Meters)	ETSI EN 301 473 ECC Report 197, Table 5	**45** dBm/200 kHz	**15** dBW/200 kHz
ECC Report 233- Aero terminal **(above** 1000 meters) transmitting to the Satellite	ECC Report 233, Table 7	**40** dBM/200 kHz	**10** dBW/200 kHz
Above 1000 meters; Ofcom - User Terminal Exemption Notice adds 5 dBM/200 KHz to Maximum e.i.r.p and power density			

- Below 1000 Meters

Report/Consultation	Reference	Maximum EIRP stated	Maximum EIRP conversion
Ofcom - User Terminal Exemption Notice Satellite user terminals on-board aircraft (**below** 1000 Meters)	ETSI EN 301 473 ECC Report 197, Table 5	**24** dBm/200 kHz	**-6** dBW/200 kHz
ECC Report 233- Aero terminal **(below** 1000 meters) transmitting to the Satellite. (Scenario 3; 17 dB Attenuation)	ECC Report 233, Table 8	**23** dBM/200 kHz	**-7** dBW/200 kHz
Below 1000 meters; Ofcom - User Terminal Exemption Notice adds 1 dBM/200 KHz to Maximum e.i.r.p and power density			