

November 8, 2017

VIA ECFS

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: Ex Parte
Use of Spectrum Bands Above 24 GHz for Mobile Radio Services, et al.
GN Docket No. 14-177, IB Docket Nos. 15-256, 97-95, RM-11664, WT
Docket No. 10-112

Dear Ms. Dortch:

Space Exploration Technologies Corp. (SpaceX) hereby submits the following information for consideration by the Federal Communications Commission (Commission) in connection with the pending petitions for reconsideration in the above-captioned proceeding.

In May 2016, a group of the leading wireless industry stakeholders comprised of AT&T, Verizon, T-Mobile, Nokia, and Samsung (together, the Wireless Companies) submitted coexistence simulations in support of their proposed power flux density (PFD) limit.¹ The Wireless Companies found that, based on their simulations using a reasonable protection margin of -6 dB and the 3GPP criteria to establish the cell edge, the PFD at which fixed satellite service (FSS) earth station transmissions could coexist with the “edge” of an Upper Microwave Flexible Use Service (UMFUS) system was -77.6 dBm/m²/MHz at 10 meters above ground level.² The Commission later incorporated this PFD limit into its rules governing the deployment of FSS gateway earth stations in the 28 GHz band, using the -77.6 dBm/m²/MHz limit to define for all intents and purposes the “border” between an FSS earth station contour and UMFUS operations in a given license area, subject to other requirements on the FSS earth station operator.³

¹ See Letter from Stacey Black, Assistant Vice President – Federal Regulatory, AT&T Services Inc., Prakash Moorut, Spectrum Lead, North America, Nokia, Steve Sharkey, Vice President Government Affairs, Engineering & Technology Policy, T-Mobile USA, Inc., Sanyogita Shamsunder, Director, Network Planning, Verizon, Robert Kubik, Director, Public Policy, Engineering and Technology, Samsung Electronics America, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 14-177, IB Docket No. 15-256 (filed May 6, 2016).

² *Id.* at 4.

³ See 47 C.F.R. § 25.136.

SpaceX agrees with the Wireless Companies and the Commission that the protection limit proposed is a reasonable definition of the point at which FSS transmissions become transparent to and thus do not encumber UMFUS operations. SpaceX further supports the $-77.6 \text{ dBm/m}^2/\text{MHz}$ PFD limit and the underlying -6 dB I/N protection margin proposed by the Wireless Companies. As a result, SpaceX urges the Commission to clarify that those FSS operators whose deployments do not encumber UMFUS services as defined by this industry-proposed standard will be granted the flexibility necessary to locate their earth stations. This clarification and the resulting flexibility will be critical to ensuring that FSS operators will be able to create the efficient and ubiquitous ground networks needed to support the provision of satellite-based broadband services to rural, unserved, and underserved consumers throughout America.

SpaceX encourages the Commission to clarify that 28 GHz satellite earth station operators may obtain a waiver of the Commission's Section 25.136 rules and the constraints on the location of gateway earth stations they contain, upon a showing that the contour of that gateway earth station is deployed on private property and operates within the $-77.6 \text{ dBm/m}^2/\text{MHz}$ limit at its property line, or otherwise does not "cover" any population in the relevant UMFUS license area.⁴ This waiver showing would demonstrate that the subject earth station would not limit the UMFUS licensee(s) in the area from serving any portion of the license area population, which concern underlies the Section 25.136 gateway earth station siting limitations. In keeping with this, the Commission should further clarify that, pursuant to such a waiver, the Ka-band satellite earth station would not count toward any broader Ka-band earth station siting limits, including those based on population coverage numbers of gateways located a given county or license area.

Pursuant to the Commission's rules, this submission is being filed in the above-referenced docket for inclusion in the public record. Please contact me should you have any questions.

Respectfully submitted,



Patricia Cooper
Vice President for Satellite Government
Affairs
Space Exploration Technologies Corp.

⁴ *Id.*