June 9, 2016

BY ELECTRONIC FILING

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

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

Dear Ms. Dortch:

On June 8, 2016, Jennifer A. Manner of EchoStar Satellite Operating Corporation, Hughes Network Systems, LLC and Alta Wireless, Inc., Kalpak Gude of OneWeb, Ltd., Will Lewis of O3b Limited, Chris Murphy of ViaSat, Inc., Giselle Creeser of Inmarsat Mobile Networks, Inc., Nancy Eskenazi of SES Americom, Inc., and Karis Hastings, counsel for SES Americom, Inc. (collectively, "industry participants"), met with Edward Smith of Chairman Wheeler's office.

In the meeting, industry participants discussed the attached presentation, which outlines ways the Commission can reach solutions for the equitable and efficient sharing of the 28 GHz band between Upper Microwave Flexible Use ("UMFU") and Fixed Satellite Service ("FSS") licensees. The industry participants explained that to preserve valuable satellite broadband services and allow growth to meet rising demand, the FCC's adopted rules must prevent harmful interference to satellite receivers; protect existing FSS earth stations; and allow reasonable deployment of new co-primary FSS earth stations. The industry participants also noted that auctions and secondary markets are not appropriate for satellite earth station licensing.

Pursuant to the Commission's rules, this notice is being filed in the above-referenced docket for inclusion in the public record.[1] Please contact me should you have any questions

Respectfully submitted,

/s/ Jennifer A. Manner

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cc: Edward Smith

[1] 47 C.F.R. § 1.1206(b)(2).

Solutions for Equitable and Efficient 28 GHz Band Sharing

Sharing between UMFU and FSS Is Achievable

- A balanced regulatory framework will promote nationwide availability of important broadband services and maintain efficient spectrum use

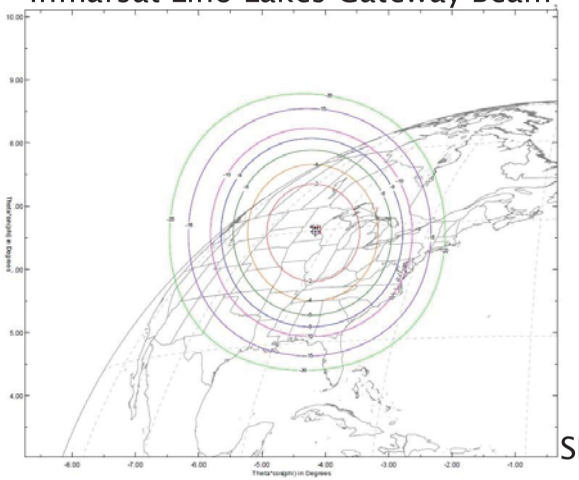
- To preserve valuable satellite broadband services and allow growth to meet rising demand, the FCC's rules must:
  - Prevent harmful interference to satellite receivers
  - Protect existing FSS earth stations
  - Allow reasonable deployment of new co-primary FSS earth stations

- These fair and measured requirements will ensure robust use of the 28 GHz band without compromising UMFU deployment

Protecting Satellite Receivers: The Issue

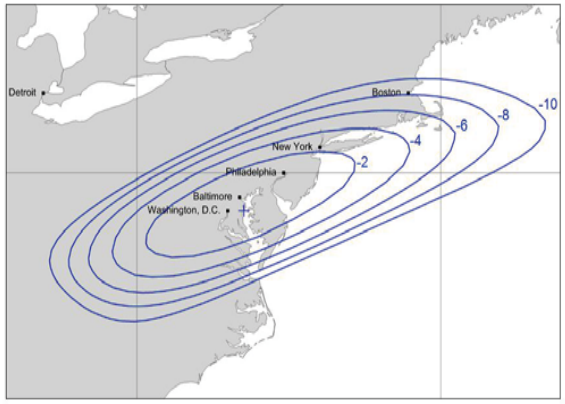
- Satellite receive beams vary in size/shape, and the satellite will receive transmissions from all UMFU operations within its receive beam

Inmarsat Lino Lakes Gateway Beam



ViaSat 1,2 Sample Uplink Beams

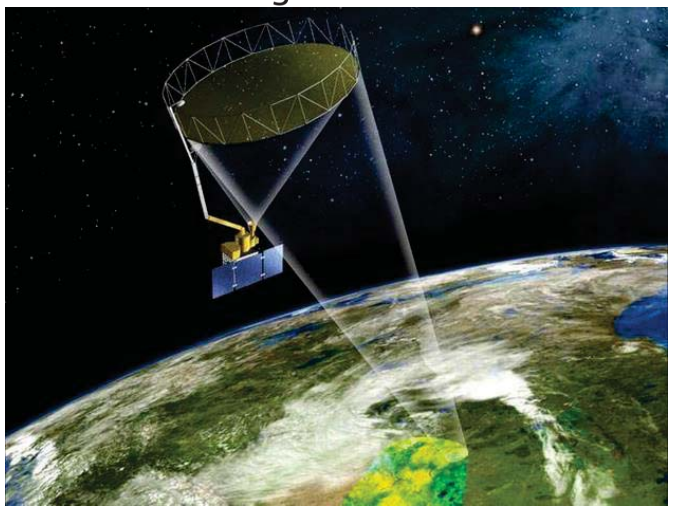
SES-15 East Coast Receive Beam



O3b Vernon, TX Gateway Beam

Satellite Receivers are Focused on the Earth

Satellites are always listening for earth station signals . . .



. . . and may see the U.S. even if they are not licensed to operate in the U.S.

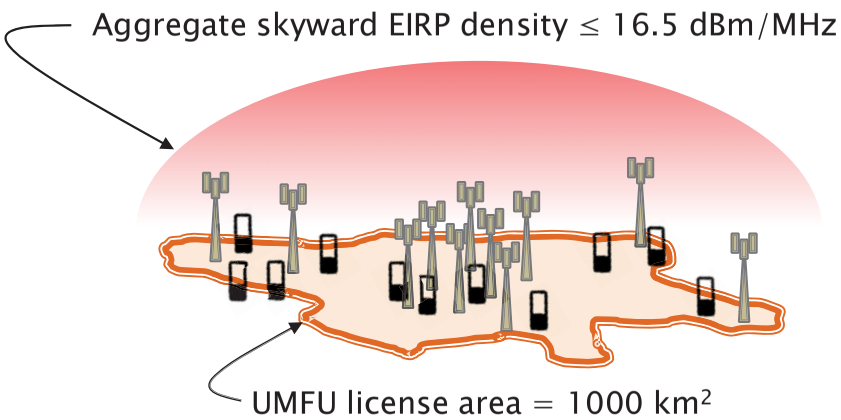
While some level of energy transmitted up from the earth is not problematic . . .

. . . too much energy can blind the satellite to wanted earth station signals

Protecting Satellite Receivers: The Solution

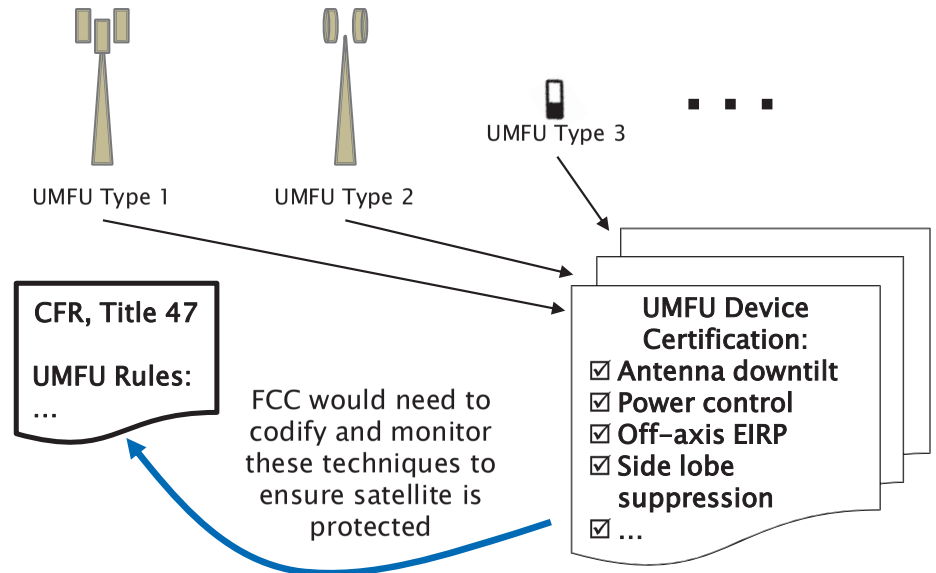
- The FCC must adopt reasonable restrictions on UMFU skyward emissions to ensure that satellite broadband service is not compromised

We urge the adoption of a reasonable UMFU skyward emission envelope



OR

The alternative is to manage and monitor the design of each UMFU device



Note: These techniques have been cited and used by the UMFU proponents in their compatibility analyses with FSS.

Grandfather as Co-Primary Existing Individually Licensed FSS Earth Stations

- FSS broadband operators have reasonably relied on domestic and international allocations and the FCC's 20-year-old band plan in deploying their networks
- To ensure broadband satellite service continuity, the FCC should grandfather, as co-primary, FSS earth stations licensed or applied for prior to UMFU auction and LMDS relicensing
- Licensees at these grandfathered earth stations should be allowed to add 28 GHz band antennas which are also afforded protection

Licensing New FSS Earth Stations

- To accommodate rising satellite broadband demand, FCC rules should allow deployment of new earth stations on a co-primary basis without arbitrary restrictions
- Census tracts outside UMFU target areas, but where infrastructure is available and technical requirements can be met, should be safe harbors for new earth stations
- FSS operators should be allowed to license new earth stations up to five years in advance of deployment
- Enabling co-primary FSS use of the 28 GHz band will not unduly burden UMFU operators

Auctions & Secondary Markets Are Not Appropriate for Earth Station Licensing

- Earth stations do not need rights to large geographic areas to operate effectively or avoid adversely affecting UMFU systems
- Auctions of county-sized or larger areas would not allow earth station operators to effectively compete for 28 GHz spectrum
- Spectrum usage requirements designed for terrestrial systems cannot be fairly applied to FSS networks
- Because FSS broadband operators are competitors to many potential UMFU licensees, these licensees are unlikely to lease spectrum to FSS earth station operators at all, much less on reasonable terms and conditions