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December 15, 2003

BY ELECTRONIC FILING

Ms. Marlene Dortch, Secretary
Office of the Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20054

Re: *Request for Clarification of MVDDS Power Limitation Established in Section 101.147 of the Commission's Rules (ET Docket No. 98-206)*

Dear Ms. Dortch:

In April 2002, the Commission adopted service rules for the Multichannel Video Distribution and Data Service ("MVDDS"), which will share the Direct Broadcast Satellite ("DBS") service downlink band (12.2-12.7 GHz), allegedly on a non-interference basis.¹ Among the MVDDS rules adopted to attempt to protect DBS operations from harmful interference was Section 101.147(p), which establishes a maximum power limit of 14 dBm per 24 MHz effective isotropic radiated power ("EIRP").² Although this rule appears to establish a definitive upper bound on MVDDS transmission power in the DBS downlink band, the text does not absolutely foreclose a reading that would allow MVDDS operators to operate at *double* this power level by using signals with two different polarizations. Such a dramatic increase in power would create significantly greater levels of interference into customers' DBS systems than anticipated by the Commission at the time it adopted this MVDDS service rule to protect DBS subscribers. In order to remove all doubt that such an interpretation would be erroneous, DIRECTV, Inc. ("DIRECTV") requests that the Commission clarify that the power limitation set forth in Section

¹ *Amendment of Parts 2 and 25 of the Commission's Rules to Permit Operation of NGSO FSS Systems Co-Frequency with GSO and Terrestrial Systems in the Ku-Band Frequency Range*, 17 FCC Rcd. 9614 (2002) ("MVDDS Service Rules Order"). DIRECTV notes that it has a pending petition for review in the United States Court of Appeals for the D.C. Circuit challenging the Commission's threshold decision to permit the use of the DBS downlink band for MVDDS service. This request for clarification is without prejudice to the merits of that petition.

² *See* 47 C.F.R. § 101.147.

101.147(p) applies to the total power of all MVDDS transmissions in a given 24 MHz band, regardless of polarization.³

In evaluating appropriate measures to attempt to protect DBS subscribers, the Commission drew heavily from the report prepared by the MITRE Corporation setting forth a technical analysis of the potential for harmful interference from MVDDS transmitters.⁴ The MITRE Report details the results of numerous simulations and test measurements that were based upon the assumption that all MVDDS transmitters would operate with “the currently planned exclusive use of horizontal polarization.”⁵ Based on this model, the MITRE Report recommended a presumptive EIRP limit of 14 dBm absent further study of particularized interference conditions.⁶

In the *MVDDS Service Rules Order*, the Commission adopted this recommendation.⁷ As implemented in Section 101.147(p), this power limitation is stated as follows:

MVDDS can be on a common carrier and/or non-common carrier basis and can use channels of any desired bandwidth up to the maximum of 500 MHz provided that the EIRP does not exceed 14 dBm per 24 megahertz.

It could be argued that this formulation is narrower than the more categorical statements in the order that MVDDS operators must “operate with a maximum power limit of 14 dBm per 24 MHz” EIRP,⁸ since it could be interpreted to apply the limit to individual channels (rather than the sum of all transmissions) over a given bandwidth. If such an interpretation were adopted, and if transmissions using different polarizations were deemed to be different “channels,” then an MVDDS operator could, for example, transmit two channels (one with horizontal and one with vertical polarization) and thereby increase the interference into circularly polarized DBS systems by 3 dB – in other words, doubling the interference to DBS subscribers’ systems.

³ In seeking this clarification, DIRECTV does not intend in any way to interfere with the MVDDS auction scheduled for January 14, 2004.

⁴ See The MITRE Corporation, “Analysis of Potential MVDDS Interference to DBS in the 12.2-12.7 GHz Band,” (April 2001) (“MITRE Report”) (attached to Public Notice, DA 01-933 (April 23, 2001)).

⁵ *Id.* at 4-1.

⁶ *Id.* at 6-5 (“If the license application requests an EIRP value greater than 14 dBm, a study of the impact of rain scatter would be required”). See also *id.* at 2-8 (“It appears that, as long as the MVDDS transmitter has an EIRP no greater than 14 dBm, then regions of interference on the ground will be relatively small.”).

⁷ *MVDDS Service Rules Order*, 17 FCC Rcd. at 9691 ¶ 198.

⁸ *Id.* at 9618.

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All evidence indicates that the Commission did not intend for such an interpretation to apply to this rule. The MITRE Report developed mathematical formulae for a model that would take polarization into account.⁹ Those formulae demonstrate that a second signal with a different polarization would add to the total EIRP and thus increase interference levels to DBS subscribers' systems. In other words, the MITRE Report analysis was based on a model with only a single polarization for MVDDS transmissions and shows that adding transmissions with a different polarization would increase interference. By adopting the 14 dBm per 24 MHz EIRP limitation recommended as a result of that analysis, the Commission implicitly (and arguably explicitly) adopted the conclusion that the total power output of MVDDS transmissions should not exceed that power level over that bandwidth.

The Commission adopted an EIRP limitation in order to attempt to protect DBS subscribers' systems against harmful interference. It established its maximum power level based on a methodology that assumed that MVDDS transmissions use only a single polarization over a given bandwidth. If MVDDS operators are allowed to violate that assumption, they could double the harmful interference in the band and deny DBS subscribers the protection the Commission intended to afford to them. Accordingly, DIRECTV requests that the Commission clarify that the 14 dBm EIRP limitation set forth in Section 101.147(p) applies to the total power of all MVDDS transmissions in a given 24 MHz band, regardless of polarization.

Respectfully submitted,

/s/

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⁹ MITRE Report at 4-16 through 4-22.