

June 4, 2012

BY ELECTRONIC FILING

Robert G. Nelson
Chief, Satellite Division
International Bureau
Federal Communications Commission
445 Twelfth Street, S.W.
Washington, DC 20554

Re: *IBFS File No. SAT-MOD-20120314-00042*

Dear Mr. Nelson:

As requested in your letter of May 2, 2012, DIRECTV Enterprises, LLC (“DIRECTV”) hereby provides predicted antenna off-axis gain data for its DIRECTV RB-2A 17/24 GHz BSS satellite. In the above referenced application filed on March 14, 2012, DIRECTV had requested a waiver of the requirement to file this data as required by Section 25.264(a) of the Commission’s rules on the grounds that the satellite had already been launched more than a year before the off-axis requirements were adopted. As has been correctly point out, the unavailability of the satellite makes actual testing impossible, but does not preclude the provision of data on predicted antenna performance.

Accordingly, in the attached Technical Appendix, DIRECTV submits such predictions for DIRECTV RB-2A in tabular format. As required, the data for each beam covers both polarizations (LHCP and RHCP) at three frequencies: 17305 MHz (*i.e.*, 5 MHz above the lower edge of the band); 17500 MHz (*i.e.*, at the band center frequency); and 17695 MHz (*i.e.*, 5 MHz below the upper edge of the band). Since DIRECTV does not plan any orientation bias for this spacecraft, it has provided predictions only over the range called for in the rule.¹

The predicted data shows that the maximum off-axis gain value for any beam is less than 0 dBi. Thus, assuming 0 dBi would be a conservative approach for purposes of analyzing potential interference. Table 1 of the above referenced application included that assumed value, and demonstrated that the satellite will not exceed the -117 dBW/m²/100 kHz power flux-density (“PFD”) coordination trigger with respect to any DBS satellite located more than 0.04° away.² That table is reproduced below for your convenience. Since DIRECTV RB-2A is licensed to

¹ See 47 C.F.R. § 25.264(a)(5) (requiring a greater angular measurement range if necessary to account for any planned spacecraft orientation bias or change in operating orientation relative to the reference coordinate system).

² See *id.*, § 25.264(b).

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operate at 102.765° W.L. and the nearest prior-filed U.S. DBS space station is DIRECTV 4S, located at 101.2° W.L. (*i.e.*, over 1.3° away, net of station keeping allowances), the spacecraft will not trigger the PFD threshold at any relevant location.

Max EIRP from Sched S (dBW/36 MHz)	55.6
Minimum Peak TX Antenna gain from Sched S (dBi)	47.2
Max power into antenna (dBW/36 MHz)	8.4
Max power density into antenna (dBW/100 kHz)	-17.2
Max off-axis predicted antenna gain (dBi)	0
Max off-axis EIRP density (dBW/100 kHz)	-17.2
Coordination trigger value (dBW/m ² /100 kHz)	-117
Req'd spreading loss to meet coord trigger (dB-m ²)	99.8
Req'd distance to achieve spreading loss (km)	27.7
Geocentric orbital separation equal to 27.7 km (deg)	0.04

Table 1. Orbital Separation Required to Meet Coordination Trigger

Should you have any questions, please do not hesitate to contact me.

Respectfully submitted,

/s/

William M. Wiltshire
Counsel for DIRECTV

Enclosures

cc: Mark Young

TECHNICAL APPENDIX