

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
DIRECTV Enterprises, LLC)	File Nos. SAT-LOA-20060908-00100
)	SAT-AMD-20080114-00014
)	SAT-AMD-20080321-00077
Application for Authorization to Launch and)	
Operate DIRECTV RB-2, a Satellite in the)	
17/24 GHz Broadcasting Satellite Service at the)	Call Sign: S2712
102.825° W.L. Orbital Location)	

SUPPLEMENT TO PETITION FOR RECONSIDERATION

Pursuant to Section 1.106 of the Commission’s rules,¹ Spectrum Five LLC (“Spectrum Five”) hereby supplements its pending Petition for Reconsideration (“Petition for Reconsideration”)² of the order granting DIRECTV Enterprises, LLC (“DIRECTV”) authority for a 17/24 GHz Broadcasting-Satellite Service (“BSS”) space station at the 102.825° W.L. orbital location (“nominal 103° W.L.”).³ Spectrum Five’s Petition showed that DIRECTV’s application did not comply with Section 25.208(w) of the Commission’s rules and should have

¹ 47 C.F.R. § 1.106. See *In the Matter of DIRECTV Enterprises, LLC Application for Authorization to Launch and Operate DIRECTV RB-2, a Satellite in the 17/24 GHz Broadcasting Satellite Service at the 102.825° W.L. Location*, Motion for Leave to File Supplement, File Nos. SAT-LOA-20060908-00100, SAT-AMD-2008114-00014, and SAT-AMD-20080321-00077, Call Sign: S2712.

² *In the Matter of DIRECTV Enterprises, LLC Application for Authorization to Launch and Operate DIRECTV RB-2, a Satellite in the 17/24 GHz Broadcasting Satellite Service at the 102.825° W.L. Location*, Petition for Reconsideration of Spectrum Five LLC, File Nos. SAT-LOA-20060908-00100, SAT-AMD-2008114-00014, and SAT-AMD-20080321-00077, Call Sign: S2712 (filed Aug. 27, 2009) (“Spectrum Five Petition”).

³ *In the Matter of DIRECTV Enterprises, LLC Application for Authorization to Launch and Operate DIRECTV RB-2, a Satellite in the 17/24 GHz Broadcasting Satellite Service at the 102.825° W.L. Location*, Order and Authorization, 24 FCC Rcd. 9393 (2009) (“DIRECTV Authorization Order”).

been returned as unacceptable for filing.⁴ DIRECTV has now filed a “modification application” that in effect *concedes* its original application did not comply with Section 25.208(w). As such, DIRECTV’s original application proposed a satellite with excessive power and, consistent with precedent, should have been dismissed.

I. DIRECTV’S APPLICATION DID NOT COMPLY WITH SECTION 25.208(W)

Under the Commission’s rules, all space stations authorized to provide service in the United States must meet Power Flux Density (“PFD”) limits as specified for their respective frequency bands.⁵ Section 25.208(w) of the Commission’s rules applicable to 17/24 GHz BSS space stations states:

[t]he power flux density at the Earth’s surface produced by emissions from a 17/24 GHz BSS space station operating in the 17.3-17.7 GHz band *for all conditions, including clear sky*, and for all methods of modulations shall not exceed the regional power flux density levels defined below.⁶

In its original application, DIRECTV erroneously relied on the existence of atmospheric loss to meet the power level required in the FCC’s rules. The relevant statement from DIRECTV’s application is provided below:

DIRECTV calculates the maximum power flux density/MHz on the Earth’s surface from this emission as: Max EIRP/channel minus spreading loss in direction of max gain *minus atmospheric attenuation* (at 17.5 GHz) minus bandwidth correction factor, or 63.0 dBW/36MHz – 162.4 (dB-m²) – 1.1 dB (atmospheric) – 10log(36) = -116.1 dBW/m²/MHz.⁷

⁴ 47 C.F.R. § 25.208(w).

⁵ DIRECTV Authorization Order at ¶ 10.

⁶ 47 C.F.R. § 25.208(w) (emphasis added).

⁷ *Application of DIRECTV Enterprises, LLC to Amend its Application for Authorization to*

As a result, DIRECTV's proposed satellite exceeds the specified PFD level during the "clear sky" conditions specified in the rules. Indeed, DIRECTV increased the power on its satellite to a level where it is higher than the rules allow except during those rare times when the most extreme weather conditions are present.

In December 8, 2008 ex parte presentation, DIRECTV removed some atmospheric attenuation due to clouds from its PFD calculation.⁸ This was not portrayed as an amendment to its application, which was not allowed at the stage it was submitted. Even so, DIRECTV continued to include atmospheric attenuation of 0.74 dB to attempt to show that its satellite met the power level required by the Commission:

DIRECTV calculated the maximum PFD on the Earth's surface from DIRECTV RB-2 as: Max EIRP/channel minus spreading loss in direction of max gain *minus atmospheric attenuation* (at 17.5 GHz) minus bandwidth correction factor, or 63.0- dBW/36 MHz – 162.4 (dB-m²) – 1.1 dB (atmospheric) – 10log(36) = -116.1 dBW/m²/MHz. Adjusting the atmospheric attenuation to account only for gaseous and scintillation effects (and not clouds) reduces that input from 1.1 dB to 0.74 dB.⁹

Now, DIRECTV has filed a modification application that no longer relies on atmospheric attenuation to meet the power level specified in Section 25.208(w):

(Continued . . .)

Launch and Operate DIRECTV RB-2, a Satellite in the 17/24 GHz Broadcasting Satellite Service at 103° W.L., Amendment to Application for Authorization to Launch and Operate DIRECTV RB-2, A Satellite in the 17/24 GHz Broadcasting Satellite Service, File No. SAT-AMD-20080114-00014, at 12 (filed Jan. 14, 2008) ("DIRECTV Amended Application").

⁸ See Letter from William M. Wiltshire to Marlene H. Dortch, FCC File No. SAT-AMD-20080114-00014 at 2-3 (Dec. 8, 2008) ("DIRECTV Dec. 8 Ex Parte").

⁹ *Id.* at 3. DIRECTV's originally included atmospheric attenuation of 1.1 dB to attempt to meet the FCC's required power level. DIRECTV Amended Application. at 8.

DIRECTV calculates the maximum power flux density/MHz on the Earth's surface from this emission as: Max EIRP/channel minus spreading loss in direction of max gain minus bandwidth correction factor, or $58.0 \text{ dBW}/36\text{MHz} - 162.4 \text{ (dB-m}^2) - 10\log(36) = -120 \text{ dBW/m}^2/\text{MHz}$.¹⁰

Tellingly, this calculation is exactly the same as the original amended application except that DIRECTV no longer includes atmospheric attenuation.¹¹ In other words, DIRECTV has finally, but belatedly, proposed a satellite that no longer exceeds the power specified in the FCC's rules.

II. BY FAILING TO COMPLY WITH SECTION 25.208(W), DIRECTV'S ORIGINAL APPLICATION REQUESTED AUTHORITY FOR A SATELLITE WITH EXCESSIVE POWER LEVELS

By violating Section 25.208(w) of the Commission's rules, DIRECTV's original application sought authority for what was clearly a "full-power" 17/24 satellite located in an "offset" position, which, by Commission rules, should have operated with reduced power and reduced interference protection. DIRECTV's "interference" analysis effectively first increased the satellite PFD over the allowed maximum for an offset position, and then subtracted atmospheric losses at a level (which exist less than 1% of the time) to bring the resulting residual value in line with the rules. In essence, DIRECTV's technical showing regarding interference compliance failed to be relevant to operating conditions that exist more than 99% of the time. To be more direct, the original methodology is invalid as it calculates power at the very point link failure occurs, or when customers are losing their signal – which of course is an event that does not occur under "clear skies." The benefit of such a methodology is that it boosts power and increases throughput, but at the expense of violating the Commission's power restrictions.

¹⁰ See *In the Matter of DIRECTV Enterprises, LLC for Minor Modification of the DIRECTV RB-2 Satellite in the 17/24 GHz Broadcasting Satellite Service at 103° W.L.*, Application for Minor Modification, File Nos. SAT-MOD-20110727-00136, Call Sign: S2712 at 1 (filed Jul. 27, 2011) ("DIRECTV Modification Application").

¹¹ *Id.* at 5. See also Attachment 1, 2.

DIRECTV simply did not provide a technical showing which demonstrated that it complied with the PFD limits set forth in Section 25.208(w) which require the showing to demonstrate compliance “for all conditions, including clear sky”

According to their new methodology:

DIRECTV calculates the maximum power flux density/MHz on the Earth’s surface from this emission as: Max EIRP/channel minus spreading loss in direction of max gain minus bandwidth correction factor, or $58.0 \text{ dBW}/36\text{MHz} - 162.4 \text{ (dB-m}^2) - 10\log(36) = -120 \text{ dBW/m}^2/\text{MHz}$.¹²

Using DIRECTV’s new methodology (which is the one used by all other 17/24 applicants in their original applications and does not include atmospheric loss) and DIRECTV’s original application design parameters, the maximum PFD level proposed for the satellite DIRECTV originally requested is calculated to be:

DIRECTV calculates the maximum power flux density/MHz on the Earth’s surface from this emission as: Max EIRP/channel minus spreading loss in direction of max gain minus bandwidth correction factor, or $63.0 \text{ dBW}/36\text{MHz} - 162.4 \text{ (dB-m}^2) - 10\log(36) = -115 \text{ dBW/m}^2/\text{MHz}$.¹³

Recognizing that -115 dBW/m²/MHz is the maximum PFD for a full power 17/24 satellite, DIRECTV has now explicitly confirmed that their original application did not incorporate the power reduction required for an “offset” satellite.

III. DIRECTV’S APPLICATION SHOULD HAVE BEEN DISMISSED

The new power calculation used in DIRECTV’s modification application unequivocally shows that DIRECTV’s original application for a 17/24 GHz satellite at the nominal 103° W.L.

¹² See DIRECTV Modification Application at 1.

¹³ See DIRECTV Modification Application at 1.

orbital location did not comply with the FCC's rules and should have been dismissed.¹⁴

Applications that do not comply with the Commission's rules are unacceptable for filing and must be returned to the applicant.¹⁵ Moreover, an application for a GSO-like satellite can only be granted if it complies "with all applicable rules, regulations, and policies."¹⁶ And, DIRECTV did not avail itself of the Commission's offer to all original applicants to modify their original applications to comply with the offset requirement.¹⁷ DIRECTV's attempt to extricate itself by submitting subsequent "additional information" to the Commission¹⁸ cannot modify its defective application after filing. Given DIRECTV's effective concession in its modification application that its prior satellite design did not comply with the power level specified in the Commission's rules, the Bureau should grant Spectrum Five's pending Petition for Reconsideration, reverse the order approving DIRECTV's application, and return DIRECTV's application as unacceptable for filing.¹⁹

¹⁴ See DIRECTV Modification Application.

¹⁵ 47 C.F.R. § 25.112(a)(2).

¹⁶ 47 C.F.R. § 25.156(a); see also 47 C.F.R. § 25.158(b)(3)(i) (applications can only be granted if "the Commission finds that the applications meets the standards of § 25.156(a)").

¹⁷ *Establishment of Policies and Service Rules for the Broadcasting-Satellite Service at the 17.3-17.7 GHz Frequency Band and at the 17.7-17.8 GHz Frequency Band Internationally, and at the 24.75-25.25 GHz Frequency Band for Fixed Satellite Services Providing Feeder Links to the Broadcasting-Satellite Service and for the Satellite Services Operating Bi-directionally in the 17.3-17.8 GHz Frequency Band*, Order on Reconsideration, 22 FCC Rcd 17951, 17962-64 (2007)

¹⁸ See DIRECTV Dec. 8 Ex Parte, *supra* note 8.

¹⁹ Spectrum Five's application for a 17/24 GHz satellite at nominal 103° W.L. would be next eligible for grant in the satellite processing queue.

Respectfully submitted,

Spectrum Five LLC

By: */s/ David Wilson*

David Wilson

President

SPECTRUM FIVE LLC

December 27, 2011

CERTIFICATE OF SERVICE

I, Pam Conley, hereby certify that on this 27th day of December, 2011, I caused to be delivered a true copy of the foregoing by first-class United States mail, postage prepaid, upon the following:

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