

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

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

OPPOSITION TO APPLICATION FOR REVIEW

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SUMMARY

Though not easy to discern through the heated rhetoric used by Spectrum Five, this proceeding involves a disagreement about how to quantify a single parameter in a newly adopted technical analysis required of an applicant for a 17/24 GHz BSS space station authorization. Specifically, while every other power flux-density (“PFD”) limitation contained in Section 25.208 of the Commission’s rules explicitly applies under free space conditions (*i.e.*, in the absence of any atmospheric effects), the PFD limitation applicable to 17/24 GHz BSS systems applies under “clear sky” conditions. Although the Commission stated at the time it adopted the rule in question that “clear sky” included “atmospheric attenuation due to gasses and water vapor,” it has never specified the format or content required to demonstrate compliance under clear sky conditions.

This lack of specificity has led not only to disagreement between DIRECTV and Spectrum Five, but also to each party changing its own positions on the issue. For example, after taking the position in one of its own 17/24 GHz BSS applications that “atmospheric loss (which is always present as a link attenuation) provides an additional margin for this [PFD] calculation,” Spectrum Five subsequently asserted in this proceeding that a PFD calculation submitted by DIRECTV in one of its 17/24 GHz BSS applications could include no atmospheric effects, before switching back to admit that some effects can be considered (though the precise methodology for quantifying those effects has varied in Spectrum Five’s filings). For its part, DIRECTV initially included atmospheric effects in its PFD calculations, but later revised that analysis to remove the effect of clouds, an element unlikely to be found in clear sky conditions. Ultimately, the

difference in PFD calculated by DIRECTV and Spectrum Five amounted to *at most* less than one half of one dB – and likely much less.

The International Bureau has now resolved the issue, providing authoritative guidance for future applicants on the extent to which atmospheric effects may be included in “clear sky” PFD calculations. It also imposed a condition on the authorization issued to DIRECTV to ensure that the DIRECTV RB-2 satellite would operate within the limitations imposed by the Commission’s rules as interpreted by the Bureau. A similar scenario has played out in countless other proceedings, where a bureau must interpret and apply a new Commission requirement and condition authorizations as appropriate to ensure compliance going forward. Moreover, because DIRECTV modified its authorization last year to implement a new downlink beam pattern that includes a maximum power level 5 dB lower than previously authorized, Spectrum Five’s alleged concerns that DIRECTV will operate an “overpowered” satellite that will give it a competitive advantage and cause harmful interference to adjacent systems has been rendered moot.

Nonetheless, Spectrum Five continues to argue that (1) the Bureau’s failure to dismiss DIRECTV’s application as defective violates the first-come, first served procedures, (2) the Bureau mischaracterized the PFD showing in DIRECTV’s application, and (3) the Bureau adopted a condition that was totally ineffectual, thus authorizing DIRECTV to operate a satellite at excessive power levels. Spectrum Five is wrong on each and every count.

First, DIRECTV’s application was “substantially complete” when filed, as it included all information required by the Commission’s rules, including a PFD calculation

showing compliance with applicable limits. Nothing more is required. The fact that Spectrum Five quibbled with a single parameter in one aspect of that application does not warrant dismissal. Such an approach would improperly conflate the standard for accepting an application with an evaluation on the merits.

Second, the Bureau did not mischaracterize DIRECTV's PFD showing. It first determined that the DIRECTV RB-2 satellite could operate within the hard limits on PFD established in Section 25.208(w) – a conclusion that even Spectrum Five does not now challenge. Second, it confirmed DIRECTV's conclusion that, because it would operate with less than four-degree spacing from an adjacent "on grid" 17/24 GHz BSS orbital location, the satellite would have to operate at a PFD level approximately 0.5 dB below the limits set in Section 25.208(w). DIRECTV's application makes clear that the satellite has the capability to operate at lower power levels. The Bureau did no more than specify the levels at which the satellite must operate in order to remain compliant with its rules. As it had with other authorizations for offset 17/24 GHz BSS space stations, the Bureau conditioned DIRECTV's license to require the DIRECTV RB-2 space station to operate within the lower power levels determined using a methodology specified by the Bureau. Contrary to Spectrum Five's contention, the Bureau fully understood and properly characterized DIRECTV's PFD submission.

Third, the condition imposed on DIRECTV will ensure compliance with the Commission's technical rules. That condition requires DIRECTV not to exceed the lower of the PFD level calculated pursuant to a specified formula or the PFD level stated in DIRECTV's application, and further specifies that DIRECTV "shall meet the reduced PFD limits under all atmospheric conditions." In its discussion of this condition,

Spectrum Five strategically omits that last aspect of the requirement in an effort to create a potential ambiguity where none exists. The Commission should not be misled; the condition imposed by the Bureau will ensure that DIRECTV's satellite operates at appropriate power levels.

Spectrum Five has failed to raise any basis for overturning the Bureau's licensing and reconsideration orders in this proceeding. Accordingly, the Commission should dismiss the Application for Review.

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OPPOSITION TO APPLICATION FOR REVIEW

DIRECTV Enterprises, LLC (“DIRECTV”) hereby opposes the Application for Review filed by Spectrum Five LLC (“Spectrum Five”)¹ seeking review of the International Bureau’s decisions authorizing DIRECTV to launch and operate a 17/24 GHz BSS satellite at the nominal 103° W.L. orbital location and denying reconsideration of that authorization.² As demonstrated below, the Bureau (1) correctly concluded that DIRECTV’s application was substantially complete and complied with the Commission’s rules in every respect, (2) properly evaluated the technical showings presented by DIRECTV, and (3) resolved a disagreement relating to the proper methodology for calculating “clear sky” power flux-density (“PFD”) levels by imposing a condition that established a methodology for performing such calculations and set the results as an

¹ Application for Review (filed July 2, 2012) (“S5 Application”).

² See *DIRECTV Enterprises, LLC*, 24 FCC Rcd. 9393 (Int’l Bur. 2009) (“*Authorization Order*”); *DIRECTV Enterprises, LLC and Spectrum Five LLC*, DA 12-861 (Int’l Bur., rel. May 31, 2012) (“*Recon Order*”).

upper bound on DIRECTV's operations that even Spectrum Five should view as satisfactory. Accordingly, the Commission should deny the Application for Review and put an end to Spectrum Five's long-running attempt to manufacture an issue for the sole purpose of gaining an advantage in the Commission's satellite processing queue.

I. BACKGROUND

At this point, the record includes a comprehensive discussion of the facts of this case, so we present herein only the briefest summary of the most relevant aspects. In 1997, DIRECTV was the first to file space station applications in the 17/24 GHz BSS band.³ In 2007, the Commission adopted service rules that, among other things, (1) established a four-degree spacing regime, (2) fixed PFD limits for various regions of the country, and (3) imposed a requirement for operating at reduced power if a satellite was located off the grid of positions established in Appendix F of the order.⁴ As required under the new rules, DIRECTV amended one of its long-pending applications to propose operation of the DIRECTV RB-2 satellite at the 102.825° W.L. orbital location, slightly offset from the 103° W.L. "on-grid" location.⁵

In its application, DIRECTV included calculations demonstrating that its proposed system would comply with the limitations on PFD levels at the Earth's surface imposed in Section 25.208(w) of the Commission's rules. As required under Section

³ See IBFS File Nos. SAT-LOA-19970605-00049, -00050, and -00051.

⁴ See *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*, 22 FCC Rcd. 8842 (2007), *sua sponte reconsideration*, 22 FCC Rcd. 17951 (2007).

⁵ See IBFS File No. SAT-AMD-20080114-00014 (the "DIRECTV RB-2 Application").

25.140(b)(4)(iii) of the Commission's rules, the application also provided a showing with respect to the reduced power required due to its proposed 0.175° offset from the "on-grid" location established in Appendix F. Those calculations involved only four inputs, including a 1.1 dB adjustment for clear sky atmospheric attenuation.⁶ The application also clearly shows that the satellite has the capability to decrease power by up to 20 dB in 0.5 dB or 1 dB increments.⁷

The Bureau accepted the application for filing and placed it on public notice.⁸ No party timely filed any comments or petitions in response to this public notice. Over four months later, in *its own* application for authority to serve the U.S. market from a 17/24 GHz BSS system licensed by the Netherlands from the same nominal orbital location,⁹ Spectrum Five criticized DIRECTV's methodology for calculating PFD levels. Specifically, Spectrum Five asserted that, because Section 25.208(w) specifies that PFD limits are to be calculated under "clear sky" conditions, "consideration of atmospheric loss in calculating PFD limits is directly contrary to the Commission's rules."¹⁰ Since DIRECTV included not only free space path losses but also certain atmospheric effects in its PFD calculation, Spectrum Five argued that DIRECTV's satellite could potentially exceed the PFD limit by a very small amount (approximately 0.5 dB) some fraction of the

⁶ *Id.*, Narrative at 12.

⁷ *Id.* Narrative at 7.

⁸ Public Notice, Rep. No. SAT-00535 (rel. July 2, 2008).

⁹ *See* Petition for Declaratory Ruling to Serve the U.S. Market from the 103.15 W.L. Orbital Location in the 17/24 GHz Broadcasting Satellite Service Band, FCC File No. SAT-LOI-20081119-00217.

¹⁰ *Id.* at 9.

time.¹¹ This, argued Spectrum Five, rendered the application defective and subject to dismissal.

In a responsive *ex parte* filing,¹² DIRECTV demonstrated that “clear sky” conditions must include *some* atmospheric effects; though the Commission has stated that precipitation may not be considered, it has never specified what additional factors may be appropriate to include in a clear sky calculation. Nonetheless, upon further review, DIRECTV conceded that inclusion of a factor for cloud-based attenuation in the PFD calculation may not have been appropriate. It demonstrated that, even adjusting its PFD calculation to remove this factor, its proposed satellite would still comply with the limitations established in Section 25.208(w) and the reduction required for operations at an offset location under Section 25.140.¹³

In response, Spectrum Five filed an *ex parte* submission in which it abandoned its prior position and conceded the validity of including atmospheric effects in a “clear sky” PFD calculation.¹⁴ Nonetheless, it continued to challenge the manner in which DIRECTV had accounted for atmospheric effects, arguing that in order to capture “clear sky” conditions, the PFD calculation “must include the lowest-temperature, lowest-humidity conditions which could be experienced,” since those are the conditions under which atmospheric attenuation is at its lowest.¹⁵ Using the lowest values found in Miami

¹¹ *Id.* at 8.

¹² *See* Letter from William M. Wiltshire to Marlene H. Dortch, FCC File No. SAT-AMD-20080114-00014 (Dec. 8, 2008).

¹³ *Id.* at 3.

¹⁴ *See* Letter from Howard W. Waltzman to Marlene H. Dortch, File Nos. SAT-AMD-20080321-00077, *et al.* (Jan. 12, 2009).

¹⁵ *Id.* at 3 n.7.

during December 2008, Spectrum Five calculated that “the atmospheric loss would have varied between 0.21 and 0.25 dB,” meaning that DIRECTV would “produce excessive interference of 0.37 dB (~ 7.5%).”¹⁶

The International Bureau granted the DIRECTV RB-2 Application. It concluded that DIRECTV’s application was substantially complete when filed, as it included all required information.¹⁷ The Bureau also found that DIRECTV had provided a sufficient demonstration that its proposed space station would comply with the PFD limits set forth in Section 25.208(w) under “clear sky” conditions, even if adjusted to use lower levels of atmospheric attenuation than Spectrum Five believes appropriate.¹⁸ With respect to the PFD allowable at the slightly offset location sought by DIRECTV under Section 25.140(b)(4)(iii), the Bureau confirmed DIRECTV’s determination that a power reduction of approximately 0.5 dB below the limits in Section 25.208(w) would be required.¹⁹ In order to address Spectrum Five’s concerns and assure that the DIRECTV RB-2 satellite operated within that lower power limit, the Bureau also imposed a condition that clarified the methodology for calculating maximum power allowable at such locations, and specifically required that PFD compliance be determined “under all atmospheric conditions.”²⁰

¹⁶ *Id.* at 3 nn. 5 and 7.

¹⁷ *See Authorization Order*, ¶¶ 19-25.

¹⁸ *Id.*, ¶¶ 16-18 and n. 52.

¹⁹ *Id.*, ¶¶ 29-31.

²⁰ *Id.*, ¶ 34.

On reconsideration, the Bureau summarily affirmed its conclusion that DIRECTV had satisfied the procedural requirements for filing a “substantially complete” application.²¹ It then rejected Spectrum Five’s argument that the authorized space station would be “over-powered by 0.44 dB,” explaining that the argument incorrectly conflated the hard limit on PFD established in Section 25.208(w) with the variable reduction in power required for offset operations under Section 25.140(b)(4)(iii).²² Lastly, it rejected Spectrum Five’s contention that the authorized space station would cause additional interference to adjacent satellites, explaining its calculation of the reduced power required at the offset orbital location chosen by DIRECTV and the condition imposed to require the DIRECTV RB-2 space station to limit PFD to the power levels determined thereby.²³

II. DISCUSSION

In its Application, Spectrum Five claims that (1) the Bureau’s failure to dismiss DIRECTV’s application as defective violates the first-come, first served procedures, (2) the Bureau mischaracterized DIRECTV’s showing with respect to power reduction required at its offset orbital location, and (3) the Bureau adopted a condition that was totally ineffectual, thus authorizing DIRECTV to operate a satellite at excessive power levels. As demonstrated below, Spectrum Five is wrong on each and every count.

²¹ *Recon Order*, ¶ 13.

²² *Id.*, ¶¶ 14-15.

²³ *Id.*, ¶ 16.

A. The Bureau Correctly Concluded That the DIRECTV RB-2 Application Was “Substantially Complete” and Therefore Acceptable for Processing

Spectrum Five asserts that, because DIRECTV’s application did not demonstrate compliance with all applicable rules, the Bureau’s willingness to process it was a violation of the Commission’s first-come, first-served procedures.²⁴ As the Bureau correctly found, this assertion is erroneous.

Spectrum Five cannot contend that DIRECTV (1) did not provide a PFD analysis, (2) did not disclose that atmospheric attenuation was part of that analysis, or (3) did not conclude based on that analysis that the proposed space station would comply with applicable PFD limits. All of those facts are patently true and beyond dispute.²⁵ Instead, Spectrum Five quibbles with a single parameter in that PFD analysis and argues that the failure to use the methodology it favors requires dismissal.

Yet even if Spectrum Five were correct about the proper methodology for calculating PFD in “clear sky” conditions, it is surely incorrect that DIRECTV’s failure to comply with Spectrum Five’s proposed methodology renders the application not “substantially complete.” As the Bureau found, this argument “conflate[s] the completeness review with the substantive review of an application on the merits.”²⁶ The substantial completeness requirement is designed to achieve a different set of objectives – all of which were achieved in this case. First, the requirement is intended to discourage speculation and to ensure that licensees are ready and willing to proceed with their

²⁴ See S5 Application at 12-14.

²⁵ See DIRECTV RB-2 Application, Narrative at 12.

²⁶ *Authorization Order*, ¶ 23.

satellite construction plans.²⁷ DIRECTV has been a driving force behind development of the 17/24 GHz BSS service in general for over a decade, and has already begun construction of the DIRECTV RB-2 satellite authorized in this proceeding.²⁸ Clearly, it has established its *bona fide* intent to put this spectrum to productive use.

Second, the requirement is designed to “ensure that a full and complete application is filed that appropriately allows for public comment on the merits of the application and provides the Commission staff with sufficient information to make a decision on the application’s merits.”²⁹ The DIRECTV RB-2 Application forthrightly stated that its PFD showing included a 1.1 dB reduction based on atmospheric effects. This was demonstrably sufficient to inform the Commission and the public of DIRECTV’s methodology – as shown by the fact that it attracted public comment in the form of a challenge from Spectrum Five, albeit over 4 months after the comment period had closed.

The Commission *has* dismissed applications where a party completely failed to provide an analysis called for under the Commission’s rules³⁰ or provided conflicting or confusing information.³¹ But this case does not fall into either of those categories. Rather, it is a case involving a slight disagreement about the appropriate methodology to

²⁷ See *id.*, ¶ 20.

²⁸ DIRECTV will submit its showing of compliance with the “commence construction” milestone for this authorization on or about July 27, 2012.

²⁹ See *Authorization Order*, ¶ 23.

³⁰ See, e.g., *EchoStar Satellite LLC*, 21 FCC Rcd. 4060, ¶ 14 (Int’l Bur. 2006) (dismissing application that “did not submit a technical analysis at all” or otherwise attempt to demonstrate that its proposed space station could comply with a Commission requirement for operations in the band).

³¹ See, e.g., *EchoStar Satellite LLC*, 19 FCC Rcd. 24953, ¶¶ 11-12 (Int’l Bur. 2004) (application dismissed as defective due to inconsistent frequency requests and failure to submit information on antenna beam connectivity).

demonstrate compliance with a new technical standard. In such a case, the Bureau will typically condition grant of the application based on its resolution of the dispute, as it did in this case.³²

The recent grant of another 17/24 GHz BSS application demonstrates this principle.³³ Intelsat North America LLC (“Intelsat”) filed an application that included the interference analysis required for offset operations under Section 25.140(b) of the Commission’s rules. Intelsat’s analysis relied upon the geocentric angular separation between orbital locations to determine the PFD reduction required to accommodate its off-grid orbital location. The Bureau found that, because receiving antennas will be located on the Earth’s surface rather than its core, topocentric angular separations should be used in making the PFD reduction calculations. Use of the geocentric angular separation would systematically result in a smaller PFD reduction, and therefore a correspondingly higher PFD allowance.³⁴ Although Intelsat did not submit any revised calculations, the Bureau staff had sufficient information to perform its own PFD analysis using topocentric angles. Accordingly, the Bureau conditioned Intelsat’s license on a reduction in PFD corresponding to the result of the methodology it had developed and specified.³⁵

³² See, e.g., *Boeing Co.*, 16 FCC Rcd. 22645, ¶17 (Int’l Bur., OET 2001) (granting authority to operate transmit and receive mobile Earth stations aboard aircraft in the 14.0-14.5 GHz uplink band and the 11.7-12.2 GHz downlink band, subject to conditions specified in documents submitted to ITU).

³³ See *Intelsat North America LLC*, 24 FCC Rcd. 7058 (Int’l Bur. 2009).

³⁴ *Id.*, ¶ 10 (“For the analysis required under Section 25.224, a calculation using topocentric angular separation will always result in a larger angle, and therefore a greater PFD reduction, than the same calculation using a geocentric angular separation”).

³⁵ *Id.*, ¶ 11.

As the Bureau pointed out in the *Authorization Order*, the change in PFD methodology imposed on Intelsat “did not undermine the prior determination that Intelsat’s application was substantially complete when filed nor did it require dismissal or denial of the application.”³⁶ Rather, because Intelsat’s application had provided a PFD showing as required under Section 25.140(b), the staff was able to evaluate that showing and modify it as necessary to implement what the Bureau determined to be a more appropriate methodology. Similarly, in this case, DIRECTV provided a PFD showing, and both the staff and Spectrum Five have had ample opportunity to evaluate that showing. Even if the Commission were to conclude at this point that some adjustment to that methodology is more appropriate, there would be no reason to dismiss or deny DIRECTV’s application rather than conditioning the authorization as the Bureau did to make the necessary adjustment.

Certainly, there is no legal basis for Spectrum Five’s assertion that atmospheric effects *must* be determined using its approach, the most recent iteration of which yields 0.13 dB of atmospheric attenuation in South Florida. Spectrum Five can point to no instance in which the Commission had applied the term “clear sky” in the way Spectrum Five now contends is absolutely compelled. Moreover, as DIRECTV has pointed out, Spectrum Five itself has taken different positions on whether any atmospheric effects may be considered, and if so, how to quantify those effects.³⁷ Indeed, before making any of its filings with respect to the 103° W.L. orbital location at issue in this proceeding,

³⁶ *Authorization Order*, ¶ 24.

³⁷ See Letter from William M. Wiltshire to Marlene H. Dortch, File Nos. SAT-AMD-20080114-00013 and -00014, at 2-3 (Feb. 19, 2009) (Spectrum Five varied from demanding no atmospheric losses to conceding 0.25 dB of loss).

Spectrum Five filed a request for authorization to provide 17/24 GHz BSS service from the nominal 119° W.L. orbital location in which its PFD showing recognized that “atmospheric loss (which is always present as a link attenuation) provides additional margin for this calculation,” and included the assertion that “[t]he atmospheric loss in the South Florida area where this maximum occurs *is at least 0.35 dB.*”³⁸

DIRECTV’s application included all information and technical showings required under the Commission’s rules. Spectrum Five obviously disagrees with one aspect of an analysis submitted in that application, but it cannot deny that the analysis was submitted and provided sufficient information for interested parties and the Commission to consider its merits. Moreover, given its evolving views on this matter, Spectrum Five’s contention throughout this proceeding that DIRECTV’s application should have been dismissed for failure to quantify atmospheric effects in a manner consistent with one of the various methodologies proffered by Spectrum Five (including one that even Spectrum Five now concedes to be wrong) is the worst sort of regulatory gamesmanship. Accordingly, the Bureau correctly found the application substantially complete and processed it in accordance with the Commission’s first-come, first-serve procedures.

B. The Bureau Did Not Mischaracterize DIRECTV’s Showing With Respect to Power Reduction for Offset Operations

Spectrum Five next contends that the Bureau mischaracterized the portion of DIRECTV’s application in which it discussed compliance with the reduction in power required under Section 25.140(b)(4)(iii). The issue arises with respect to the following portion of the *Recon Order*:

³⁸ See IBFS File No. SAT-LOI-20080910-00178, Technical Narrative at 15 (filed Sep. 10, 2008) (emphasis added).

In this regard, the Bureau noted that DIRECTV had provided an interference analysis pursuant to Section 25.140(b)(4)(iii) of the Commission's rules, in which DIRECTV calculated that its proposed offset operations would create the potential for up to 0.5 dB more interference to co-frequency adjacent space stations, and proposed to reduce its power to result in lower PFD.³⁹

Spectrum Five takes issue with the Bureau's statement that DIRECTV "proposed to reduce its power to result in lower PFD."⁴⁰

DIRECTV's interference analysis began by noting that the proposed 0.175° offset spacing would result in 0.5 dB less discrimination with respect to the next closest on-grid location, and thus would reduce maximum power allowable under Section 25.140(b)(4)(iii) by approximately that amount.⁴¹ DIRECTV thus recognized that it would have to operate within a reduced power level below the limit allowed under Section 25.208(w), and proceeded to demonstrate its ability to comply.

In its *Authorization Order*, the Bureau confirmed both the methodology used by DIRECTV to determine the required power reduction and the amount of reduction actually calculated (though with some minor refinements). It then conditioned DIRECTV's authorization "on a reduction in PFD corresponding to the methodology described above."⁴²

Thus, the question of how the Bureau characterized DIRECTV's application is a red herring. It simply does not matter whether DIRECTV's application is best described as having "proposed" to operate at reduced PFD levels or merely acknowledging its

³⁹ *Recon Order*, ¶ 16.

⁴⁰ S5 Application at 8.

⁴¹ DIRECTV RB-2 Application at 12-13.

⁴² *Authorization Order*, ¶¶30- 31.

obligation to do so. Regardless, the Commission imposed a condition requiring that it do so. This, and DIRECTV's ability to comply with the condition, are the only legally relevant points here. Moreover, as revealed in its application, the DIRECTV RB-2 satellite as originally proposed had the capability to make the necessary adjustments in the power level to comply with such a condition,⁴³ and DIRECTV has since modified its authorization to reduce maximum power levels by 5 dB (*i.e.*, an order of magnitude more than the 0.5 dB at issue in this proceeding).

C. The Bureau Imposed An Appropriate Condition to Address Spectrum Five's PFD-Related Concerns

Last, Spectrum Five contends that because the Bureau failed to address the methodological error in DIRECTV's PFD calculation, it "has effectively authorized DIRECTV to operate a full-power satellite at an offset location, in direct violation of the Commission's rules."⁴⁴ This, it asserts, would give DIRECTV an "unfair advantage" over all other 17/24 GHz BSS operators by allowing it to use a satellite with "excess transmit power" that could also result in harmful interference to adjacent systems.⁴⁵ Spectrum Five's assertions are erroneous, both legally and factually.

As a legal matter, the condition imposed on DIRECTV directly addresses Spectrum Five's concern and will limit the operations of the DIRECTV RB-2 satellite to power levels consistent with the Commission's rules. The Bureau carefully specified a methodology for calculating PFD to determine compliance with the condition. As

⁴³ See DIRECTV RB-2 Application, Narrative at 7 (discussing satellite capability of lowering its power by at least 20 dB in 1.0 increments (in fixed mode) and by at least 15 dB in 0.5 dB increments in ALC mode).

⁴⁴ S5 Application at 7.

⁴⁵ *Id.* at 4.

characterized by Spectrum Five, “the ‘condition’ permits DIRECTV to operate at ‘the lower of this calculated power or the power levels stated in its application”⁴⁶ From this, Spectrum Five concludes that DIRECTV would be free to operate at the power level stated in its application so long as it was lower than the calculated value when atmospheric attenuation is taken into account.

However, Spectrum Five’s partial quotation of this sentence from the order attempts to create an ambiguity where none in fact exists. The complete sentence, including the portion strategically omitted by Spectrum Five, reads as follows:

The PFD levels of DIRECTV Enterprises, LLC’s space station transmissions shall not exceed the lower of this calculated power or the power levels stated in its application, ***and shall meet the reduced PFD limits under all atmospheric conditions.***⁴⁷

Thus, even if Spectrum Five’s strained construction of the first portion of this condition were correct, the portion it omitted makes clear that any method used to determine compliant PFD levels must hold under *all* atmospheric conditions. This point is further corroborated by the Bureau’s recognition on reconsideration that, “to ensure that DIRECTV’s offset location operations do not cause any additional interference to a satellite operating at an adjacent Appendix F location, the Bureau imposed a license condition limiting DIRECTV RB-2’s operating power to between 0.47 and 0.51 dB less than full power, the precise amount depending on the surface location on Earth of a given measurement point.”⁴⁸

⁴⁶ S5 Application at 12.

⁴⁷ *Authorization Order*, ¶ 34 (emphasis added).

⁴⁸ *Recon Order*, ¶ 7.

As a practical matter, Spectrum Five’s concern that DIRECTV will operate an “overpowered” satellite that will give it a competitive advantage over other 17/24 GHz BSS operators or cause harmful interference to adjacent systems is both wrong and moot. First, as even Spectrum Five does not dispute, DIRECTV RB-2 will operate at no greater power than could any other 17/24 GHz BSS system under Section 25.208(w). Second, as part of a redesign of its downlink beam, DIRECTV sought and received authority to modify its satellite last year. That modification included a reduction in maximum EIRP of 5 dB⁴⁹ – many times the 0.44 dB⁵⁰ advantage that Spectrum Five believes DIRECTV would enjoy. Third, in this case, the adjacent satellite location potentially affected by DIRECTV’s offset operations is also licensed to DIRECTV,⁵¹ so any “harmful interference” would be borne by DIRECTV alone.

More broadly, while Spectrum Five is correct that the Commission’s PFD limits are designed to ensure that “no satellite would operate with excessive, interference causing power” and that the “defined limits are absolutely vital to the creation of a ‘level playing-field’ for all operators,”⁵² that does not mean that power levels will be absolutely homogeneous for all 17/24 GHz BSS systems. Indeed, the 0.44 dB advantage DIRECTV would allegedly enjoy is far less than PFD differences that will occur between adjacent systems simply as a result of different operators’ beam designs. For example, Spectrum

⁴⁹ See Grant Stamp, IBFS File No. SAT-MOD-20110727-00136 (rel. Oct. 26, 2011) (reducing peak EIRP over CONUS from 63 dBW/36 MHz to 58 dBW/36 MHz).

⁵⁰ Indeed, using the atmospheric loss of “at least 0.35 dB” that Spectrum Five asserted in its own 17/24 GHz BSS application, this figure would be cut to no more than 0.22 dB.

⁵¹ See Grant Stamp, IBFS File Nos. SAT-LOA-20060908-00099, SAT-AMD-20080114-00013, and SAT-AMD-20080321-00076 (rel. July 28, 2009) (granting authority for 17/24 GHz BSS operations at the nominal 99° W.L. orbital location).

⁵² S5 Application at 4.

Five applied for a 17/24 GHz BSS system at 118.4° W.L. orbital location, and Pegasus Development DBS Corporation (“Pegasus”) applied for authority to operate such a system at the adjacent 115.0° W.L. location.⁵³ Neither operator included atmospheric losses in its showing of compliance with the applicable PFD limits.⁵⁴ Figure 1 below shows the PFD contours of the CONUS beams proposed by Pegasus (on the left) and Spectrum Five.⁵⁵ As can be seen in the comparison, the PFD of Spectrum Five’s beam decreases to -119.6 dBW/m²/MHz along approximately the same contour where Pegasus’s PFD decreases to just -117.3 dBW/m²/MHz. Accordingly, for much of the eastern half of the country (including all of the Northeast and Midwest), Pegasus would

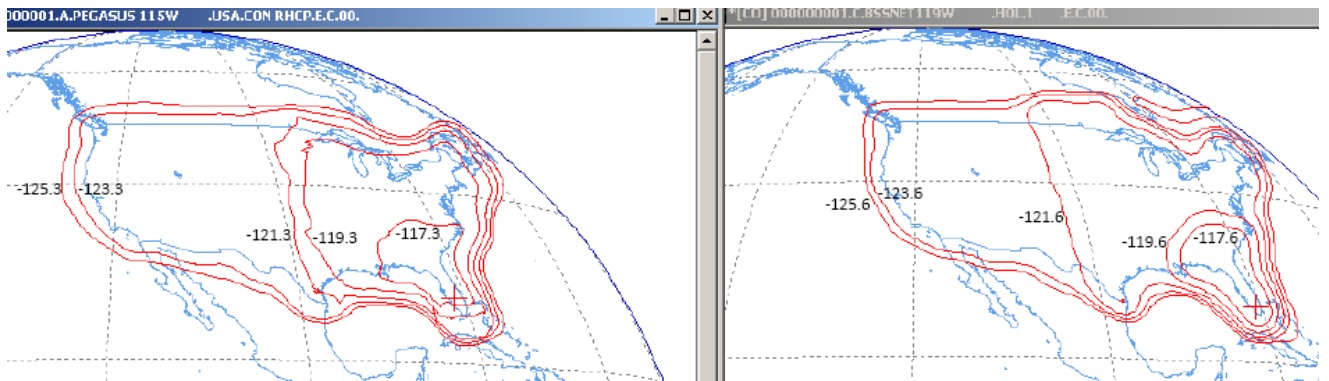


Figure 1. PFD Contour Plots for Pegasus and Spectrum Five CONUS Beams

enjoy as much as a 2 dB PFD advantage (*i.e.*, a 58.5% power advantage) over Spectrum Five. Conversely, because Spectrum Five also proposes to use high-power spot beams, it

⁵³ See IBFS File Nos. SAT-LOI-20081113-00216 (“Spectrum Five 118.4W App”); SAT-AMD-20080114-00023 (“Pegasus 115 App”).

⁵⁴ See Spectrum Five 118.4W App, Technical Narrative at 17-18; Pegasus 115 App, Narrative at 9.

⁵⁵ Figures 1 and 2 were generated using the antenna beam gain contour information submitted in GXT format by Pegasus and Spectrum Five with their applications. All contours other than -2, -4, -6, -8, -10 have been removed and the PFD values inserted to simplify the comparison.

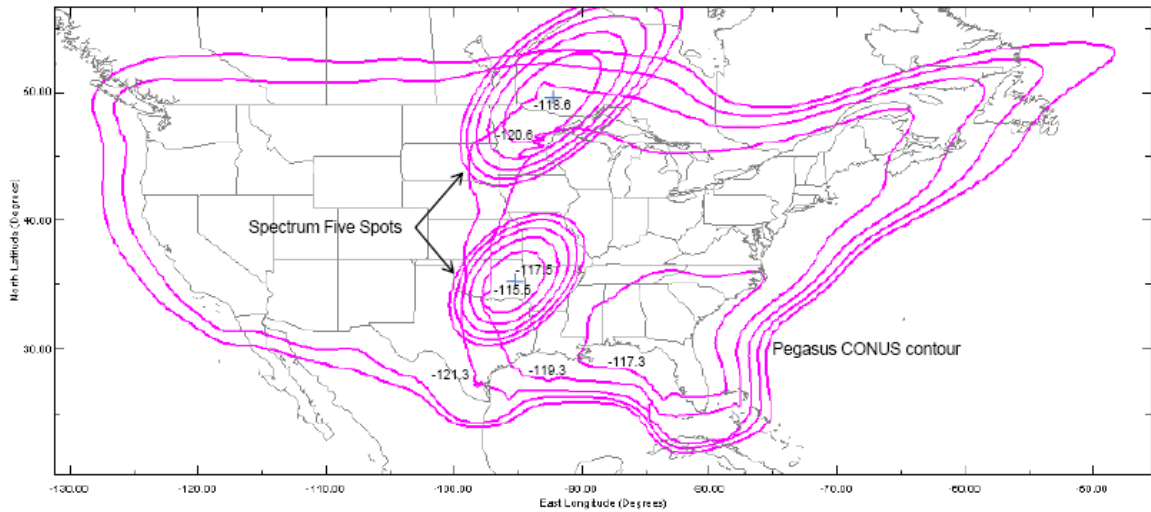


Figure 2. Comparison of Spectrum Five Spot Beam and Pegasus CONUS Beam

would enjoy a nearly 3 dB PFD advantage (*i.e.*, a 100% power advantage) over Pegasus’s CONUS beam in certain areas as illustrated by the sample beams shown in Figure 2.

These disparities, which are far greater than the (at most) 0.44 dB (*i.e.*, 10.7%) at issue in this proceeding, result solely from the choices made by the applicants in designing their systems – yet neither operator objected that the other would cause harmful interference or would have an unfair competitive advantage. If 2 dB or 3 dB of power differential is not sufficient to raise these concerns, then Spectrum Five’s assertion that 0.44 dB is sufficient to do so is patently frivolous.

III. CONCLUSION

Spectrum Five has failed to raise any basis for overturning the Bureau’s licensing and reconsideration orders in this proceeding. Accordingly, the Commission should dismiss the Application for Review on all counts.

Respectfully submitted,

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July 17, 2012

CERTIFICATE OF SERVICE

I hereby certify that, on this 17th day of July, 2012, a copy of the foregoing
Opposition to Application for Review was served by hand delivery upon:

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