APPLICATION FOR MODIFICATION AND REQUEST FOR WAIVER

DIRECTV Enterprises, LLC ("DIRECTV") has been authorized to operate a 17/24 GHz BSS space station, known as DIRECTV RB-2A, at the 102.765° W.L. orbital location.[1] The payload corresponding to that authorization was launched on the DIRECTV 12 satellite, which began operations at the 102.765° W.L. slot on April 26, 2010 and remains there today.

More than a year after the launch of this satellite, the Commission completed a rulemaking in which it adopted a series of technical rules and informational requirements for 17/24 GHz BSS systems to mitigate space path interference from 17/24 GHz BSS transmitting antennas into the receiving antennas on DBS satellites operating in the same band at nearby locations.[2] Current authorization holders are required to submit a conforming modification to their authorization to submit materials necessary to comply with all of the new information requirements adopted in that proceeding.[3] Each of these requirements is addressed in turn below.

Sections 25.264(a) and (c). These provisions require a 17/24 GHz BSS licensee to provide predicted transmitting antenna off-axis gain information for each transmitting antenna in the 17.3-17.8 GHz frequency band, and to confirm those predictions with actual measured data. DIRECTV did not perform the off-axis gain predictions and measurements

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1 *See* Grant Stamp, IBFS File No. SAT-LOA-20090807-00085 (Jan. 8, 2010).

2 *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*, 26 FCC Rcd. 8927 (2011) ("*17/24 GHz BSS Second R&O*").

3 *See 17/24 GHz BSS Second R&O*, ¶ 64. The order also provides that no fee is required for modifications filed solely to comply with this requirement. *See id.*, ¶ 66.

now called for under the Commission's rules prior to launch of the DIRECTV RB-2A payload. Now that the satellite is in space, there is no practicable way to provide the requested information. Accordingly, for the reasons set forth below, DIRECTV requests a waiver of Sections 25.264 (a) and (c).

Sections 25.264(b) and (d). These provisions require a 17/24 GHz BSS licensee to provide power flux density ("PFD") calculations based upon the predicted and measured off-axis antenna gain information discussed above to demonstrate that such PFD levels do not exceed the coordination trigger of -117 dBW/m^2/100 kHz PFD coordination trigger with respect to any DBS satellite authorized or operating at nearby orbital locations. As noted above, DIRECTV does not have the predicted or measured off-axis gain information necessary to determine the actual PFD levels resulting from DIRECTV RB-2A's operations. Nevertheless, using a conservative assumption for the far off-axis gain value, it can be readily demonstrated that operation of this 17/24 GHz BSS payload will not exceed the PFD coordination trigger with respect to any DBS satellite.

The DIRECTV RB-2A payload on the DIRECTV 12 satellite consists of multiple transmit spot beams, all with the same peak satellite EIRP level. The worst case scenario for off-axis interference from this satellite is that involving the spot beam with the lowest peak gain, as this spot beam will have the highest power level input to the antenna. Accordingly, for purposes of the PFD calculation, DIRECTV will use the DIRECTV RB-2A spot beam with the lowest peak gain, and will also conservatively assume a maximum far off-axis gain of 0 dBi. The peak spot beam EIRP is 55.6 dBW/36 MHz. Using these figures and assumptions, the calculations for determining the worst case PFD value at nearby orbital locations is set forth in Table 1 below. As demonstrated in that table, even in a worst case

scenario, DIRECTV RB-2A complies with the coordination trigger value for any location more than 0.04° away. Since DIRECTV RB-2A is licensed to 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 55.9 km (deg)	0.04

Table 1. Orbital Separation Required to Meet Coordination Trigger

Section 25.264(h). The orbital eccentricity value for the DIRECTV RB-2A spacecraft is approximately 0.00015, such that the maximum and minimum altitudes of each spacecraft remain within the requirements established by the Commission.[4] The spacecraft is maintained in a non-inclined orbit, and DIRECTV does not plan any orientation bias or change in operating orientation relative to the reference coordinate system for this spacecraft.

WAIVER REQUEST

To the extent necessary, DIRECTV hereby requests a waiver of Section 25.264 of the Commission's rules in light of the fact that DIRECTV RB-2A is already in orbit.

[4] *See* 47 C.F.R. § 25.264(h)(2) (establishing maximum orbital eccentricity of 0.00047 for 17/24 GHz BSS satellites).

The Commission may waive its rules for good cause shown.[5] A rule may be waived where the particular facts make strict compliance inconsistent with the public interest.[6] In making this determination, the Commission may take into account considerations of hardship, equity, or more effective implementation of overall policy on an individual basis.[7] Waiver of the Commission's rules is therefore appropriate if special circumstances warrant a deviation from the general rule, and such deviation would better serve the public interest than would strict adherence to the general rule.[8] The criteria justifying a waiver are clearly present in this case.

As discussed above, DIRECTV RB-2A was launched well before the Commission had established the contours of its off-axis gain informational requirements. Now that the satellite is in orbit, there is no practical way to generate measured data required under Section 25.264(c), which is also a critical input into the PFD calculation required under Section 25.264(d). Nonetheless, as shown above, even assuming a worst-case operational scenario, DIRECTV RB-2A does not exceed the coordination trigger value for any location more than 0.04° away, and therefore would not be expected to affect any DBS satellite operating outside that very minimal spacing. DIRECTV RB-2A is located at the nominal 103° W.L. orbital location. The nearest prior-filed DBS satellites (DIRECTV 4S, 8, and 9S) are also operated by DIRECTV, at the nominal 101° W.L. orbital location. Thus, even if the orbital separation were not far more than necessary to remain under the coordination trigger,

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5 47 C.F.R. § 1.3; *see also WAIT Radio v. FCC*, 418 F.2d 1153, 1159 (D.C. Cir. 1969), *cert. denied*, 409 U.S. 1027 (1972).

6 *See Northeast Cellular Tel. Co. v. FCC*, 897 F.2d 1164, 1166 (D.C. Cir. 1990).

7 *WAIT Radio*, 418 F.2d at 1159; *Northeast Cellular*, 897 F.2d at 1166.

8 *NetworkIP v. FCC*, 548 F.3d 116, 125-28 (D.C. Cir. 2008); *Northeast Cellular*, 897 F.2d at 1166.

DIRECTV would be the only DBS operator potentially affected by the DIRECTV RB-2A payload's operations. DIRECTV has experienced no such interference, nor any other DBS operator reported any such interference. In these particular circumstances, granting a waiver applicable solely at this location[9] would serve the public interest and have no material effect on the operations of any DBS satellite.

For the foregoing reasons, DIRECTV requests that its authorization for the DIRECTV RB-2A space station be modified to include the information submitted herein, and that it be granted a waiver of Section 25.264 of the Commission's rules to the extent necessary.

Respectfully submitted,

DIRECTV ENTERPRISES, LLC

By: \s\
Romulo Pontual
Executive Vice President and
Chief Technology Officer

[9] DIRECTV understands that any waiver issued in this proceeding would apply only at the nominal 103° W.L. location, and that it would need to make an additional showing should it ever seek to relocate the payload to another orbital location where it could potentially affect other DBS spacecraft.

ENGINEERING CERTIFICATION

The undersigned hereby certifies to the Federal Communications Commission as follows:

(i) I am the technically qualified person responsible for the engineering information contained in the foregoing Application,

(ii) I am familiar with Part 25 of the Commission's Rules, and

(iii) I have either prepared or reviewed the engineering information contained in the foregoing Application, and it is complete and accurate to the best of my knowledge and belief.

Signed:

/s/
Jack Wengryniuk

March 13, 2012
Date