

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

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In the Matter of )  
)  
**ECHOSTAR CORPORATION** ) File No. SAT-LOA-20070105-00001  
) File No. SAT-AMD-20080114-00021  
Application for Modification of Authority to ) File No. SAT-MOD-2011\_\_\_\_-\_\_\_\_  
Construct, Launch, and Operate a Satellite at ) Call Sign S2723  
62.15° W.L. in the 17/24 BSS GHz Band )  

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**APPLICATION FOR MODIFICATION**

Pursuant to Sections 308 and 309 of the Communications Act of 1934, as amended,<sup>1</sup> Section 25.117(d) of the Commission’s rules,<sup>2</sup> and Condition 7 of its space station authorization,<sup>3</sup> EchoStar Corporation (“EchoStar”) respectfully submits this application to modify its authority to construct, launch, and operate a 17/24 GHz Broadcast-Satellite Service (“BSS”) satellite at the 62.15° W.L. orbital location to provide a revised post-mission disposal plan for its proposed satellite.<sup>4</sup> Under the revised plan, which is attached hereto, the satellite will be maneuvered to at

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<sup>1</sup> 47 U.S.C. §§ 308, 309.

<sup>2</sup> 47 C.F.R. § 25.117(d).

<sup>3</sup> Stamp Grant, File Nos. SAT-LOA-20070105-00001, SAT-AMD-20080114-00021 (granted Mar. 13, 2009), at Condition 7.

<sup>4</sup> EchoStar will amend this application soon to reflect additional technical changes to the satellite that resulted from the recently completed Critical Design Review. *See Confidential Letter from Pantelis Michalopoulos, Counsel for EchoStar Corporation, to Marlene H. Dortch, Secretary, FCC, filed in File Nos. SAT-LOA-20070105-00001, SAT-AMD-20080114-00021 (Mar. 14, 2011).*

least 300 km above the geostationary orbit.<sup>5</sup> This is 10 km greater than the minimum disposal orbit required under Section 25.283(a) of the Commission's rules.<sup>6</sup>

EchoStar has previously described in its application, which is hereby incorporated by reference, the public interest benefits from the construction, launch and operation of a 17/24 GHz BSS satellite at 62.15° W.L.<sup>7</sup> This modification request is in the public interest for the same reasons. Additionally, the revised post-mission disposal plan will ensure that the satellite is properly de-orbited at the end of its life, reducing the risk it will become a collision risk for operating satellites.

Respectfully submitted,

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<sup>5</sup> See Attachment.

<sup>6</sup> 47 C.F.R. § 25.283(a).

<sup>7</sup> See Stamp Grant, File No. SAT-LOA-20070105-00001 (granted Mar. 13, 2009), Narrative, at 12-14.

## ATTACHMENT

### Revised Post-Mission Disposal Plan

At the end of the operational life of the ECHOSTAR EX-5 satellite, EchoStar will maneuver the satellite to a disposal orbit with a minimum perigee of 300 km above the normal GSO operational orbit. This proposed disposal orbit altitude exceeds the minimum required by 47 C.F.R § 25.283, which is calculated below.

The input data required for the calculation are as follows:

Total Solar Pressure Area “A” = 110.5 m<sup>2</sup>

“M” = Dry Mass of Satellite = 2491 kg

“C<sub>R</sub>” = Solar Pressure Radiation Coefficient (worst case) = 1.24

Using the formula given in § 25.283, the Minimum Disposal Orbit Perigee Altitude is calculated as follows:

$$\begin{aligned} &= 36,021 \text{ km} + 1000 \times C_R \times A/m \\ &= 36,021 \text{ km} + 1000 \times 1.24 \times 110.5/2491 \\ &= 36,076 \text{ km} \\ &= 290 \text{ km above GSO (35,786 km)} \end{aligned}$$

While the minimum disposal orbit altitude required by § 25.283 is 290 km, EchoStar will reserve enough fuel to meet or exceed a minimum perigee disposal orbit of 300 km out of an abundance of caution. Thus, the designed disposal orbit of 300 km above GSO exceeds the required minimum by a margin of 10 km. Taking account of all fuel measurement uncertainties, performing the final orbit raising maneuvers will require approximately 11.6 kg of propellant, which will be reserved.