

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

In the Matter of Application by)	
)	
SIRIUS XM RADIO INC.)	Call Sign S3033
)	
For Special Temporary Authority to)	
Perform In-Orbit Testing of SXM-7)	

REQUEST FOR SPECIAL TEMPORARY AUTHORITY

Sirius XM Radio Inc. (“Sirius XM”) respectfully requests special temporary authority (“STA”) for a period of 30 days commencing ten days after launch of the SXM-7 satellite digital audio radio service (“SDARS”) replacement satellite, currently scheduled for November 6, 2020, to permit in-orbit testing (“IOT”) of the spacecraft at 120.5° W.L. +/- 0.1 degrees. Specifically, Sirius XM seeks STA to: (1) perform IOT using the SDARS frequencies at 2320-2345 MHz; (2) test the satellite’s ability to operate in the Wireless Communications Service (“WCS”) spectrum immediately adjacent to the SDARS band (*i.e.*, the WCS C Block spectrum at 2315-2320 MHz and the D Block spectrum at 2345-2350 MHz); and (3) drift SXM-7 from 120.5° W.L. to the satellite’s assigned orbital location, 85.15° W.L., following completion of IOT. Grant of the requested STA will serve the public interest by allowing Sirius XM to evaluate the performance of SXM-7 prior to placing the satellite in service.

Sirius XM holds a Commission license to launch and operate SXM-7 to replace XM-3 at 85.15° W.L.¹ The SXM-7 License authorized Sirius XM to test the satellite’s SDARS payload at 120.0° W.L. with an east-west stationkeeping tolerance of +/- 0.1 degrees and to drift the satellite

¹ See Sirius XM Radio Inc., Call Sign S3033, File No. SAT-RPL-20180430-00033, granted Oct. 3, 2018 (the “SXM-7 License”).

thereafter to 85.15° W.L.² However, after the Commission granted the SXM-7 License, the satellite manufacturer asked to change the IOT orbital position to 120.5° W.L. Sirius XM seeks STA to accommodate this slight change in the testing location.³

Sirius XM also seeks to expand the scope of SXM-7 IOT to include transmissions in the WCS C and D Block spectrum. The satellite's design characteristics enable operations in the WCS frequencies adjacent to the SDARS band, and Sirius XM proposes to perform testing to confirm the satellite's performance using these bands. AT&T Mobility Spectrum LLC and other affiliated entities (collectively, "AT&T") are licensed to provide WCS in these frequencies, but Commission rules also permit the spectrum's use for SDARS. Specifically, Section 27.2(c) states that SDARS "may be provided using the 2310-2320 and 2345-2360 MHz bands . . . in a manner consistent with part 25 of this chapter."⁴ Sirius XM has requested AT&T's consent for the planned operations to evaluate the performance of SXM-7 in the C and D Block frequencies.

Apart from the change in orbital location and the addition of the WCS C and D Block spectrum, the planned SXM-7 IOT will conform to the specifications in the SXM-7 License. The uplink signals for the testing will originate from earth stations that are authorized to communicate with SXM-7 and will use the licensed SDARS feeder link spectrum in the 7025-7075 MHz X-band. The downlink signals will be focused on Hawaii and will be received by earth stations there on an unprotected basis.

² See *id.*, Attachment to Grant at 2, ¶¶ 7 and 8 & n.1.

³ In order to minimize interruptions to the payload testing operations due to stationkeeping maneuvers, Sirius XM requests that the Commission waive Section 25.210(j) of the rules to permit Sirius XM to maintain SXM-7 with a +/- 0.1 degree stationkeeping tolerance during IOT, as it did in the SXM-7 License. See *id.*, Attachment to Grant at 2 n.1.

⁴ 47 C.F.R. § 27.2(c).

Testing SXM-7 in these frequencies will not adversely affect any other party. As discussed above, AT&T is the licensee of the WCS C Block and WCS D Block bands, and Sirius XM has advised AT&T of its plans and requested AT&T's consent for the proposed transmissions. Affiliates of Sirius XM operate the only satellites authorized to use either S-band or X-band frequencies located within two degrees of 85.15° W.L. Sirius XM does not share S-band spectrum with other satellite systems (except its affiliates, XM Radio LLC and Satellite CD Radio LLC), and these frequencies are not subject to two degree spacing rules. Because IOT will occur before SXM-7 is brought into service as a replacement satellite, the planned testing will not affect Sirius XM's service to subscribers.

The proposed testing also will not result in harmful interference to regularly authorized terrestrial operations. The uplink earth stations that will be used for the testing have been coordinated with terrestrial licensees. Sirius XM will not exceed the previously-coordinated power density parameters during the proposed testing. In addition, and in any event, Sirius XM will conduct all testing on a non-harmful interference basis, and will cease transmissions promptly in the event any harmful interference is caused by such operations.

Once testing is complete, Sirius will drift SXM-7 from 120.5° W.L. to the satellite's assigned orbital location, 85.15° W.L. using telemetry, tracking and command frequencies in the SDARS bands. The drift of the spacecraft will be coordinated with other satellite operators consistent with industry practice.

Sirius XM hereby certifies that no party to this application is subject to a denial of federal benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. § 862.

For the foregoing reasons, Sirius XM respectfully requests special temporary authority for a period of 30 days commencing ten days after launch of SXM-7 to conduct IOT and relocate

the spacecraft as described herein. Grant of the requested authority will serve the public interest by facilitating Sirius XM's ability to evaluate the performance of the SXM-7 space station prior to commencing service and will not result in harmful interference to any other regularly authorized operations.

Respectfully submitted,

Sirius XM Radio Inc.

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