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

In the Matter of Applications by	)	
	)	
XM RADIO LLC	)	Call Signs S2786 & E040204
	)	
For Special Temporary Authority to Perform Tests with XM-5	)	

REQUEST FOR SPECIAL TEMPORARY AUTHORITY

XM Radio LLC ("XM Radio") respectfully requests space station and earth station special temporary authority ("STA") for a period of 30 days commencing on August 14, 2012, to permit testing of the XM-5 space station at 85.15° W.L. using an earth station in Ellenwood, Georgia. XM Radio seeks authority to test the performance of XM-5, an in-orbit spare spacecraft launched in October 2010, under a scenario in which XM-5 might be needed to provide primary service. Grant of the requested authority will serve the public interest by permitting XM Radio to better prepare for and respond to possible future circumstances that would require use of XM-5.

Specifically, XM Radio requests authority to operate the communications payloads of XM-5 at 85.15º W.L. and authority for XM Radio's earth station E040204 to communicate with XM-5 for purposes of performing the tests. The tests will allow XM Radio to assess the transmission performance of XM-5 in the satellite frequency bands used for the legacy XM Radio terrestrial repeaters.

The Commission authorized XM-5 to serve as an in-orbit spare for XM Radio's fleet of satellite digital audio radio service ("SDARS") spacecraft that provide a high-quality,

continuous, multi-channel audio service throughout the United States.[1] XM-5 is also equipped with frequencies allowing it to serve as back-up capacity for the SDARS services of XM Radio's affiliate, Satellite CD Radio LLC.[2] The XM-5 license authorizes activation of the satellite's communications payloads only "in the event of a service outage of the XM-3 (Call Sign: S2617), XM-4 (Call Sign: S2616), FM-1, FM-2, FM-3 (Call Sign: S2105), or FM-5 (Call Sign: S2710) space stations."[3]

Immediately following launch, XM Radio performed a series of in-orbit payload tests of XM-5 while the satellite was temporarily located at 80º W.L. to assess the spacecraft's performance characteristics.[4] Further tests were performed last year to allow evaluation of XM-5's ability to provide substitute capacity in the event of an anomaly affecting XM-3[5] or one affecting the FM-5 space station or the Sirius XM HEO constellation.[6] Tests were also performed to evaluate the transmission performance of XM-5 in the satellite frequency bands used for the legacy XM Radio terrestrial repeaters.[7]

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1 *See* File No. SAT-LOA-20090217-00025 (Call Sign S2786), grant-stamped Aug. 31, 2009.

2 *See id.*

3 *Id.*, Attachment at ¶ 2.

4 *See* File No. SAT-STA-20100917-00194, grant-stamped Oct. 22, 2010 (authorizing positioning of XM-5 at 80º W.L. and testing at that location).

5 *See* File Nos. SAT-STA-20110103-00001, grant-stamped Jan. 13, 2011 & SAT-STA-20110624-00121, grant-stamped July 14, 2011.

6 *See* File Nos. SAT-STA-20110919-00184, grant-stamped Oct. 6, 2011, & SAT-STA-20111104-00212, grant-stamped Nov. 9, 2011.

7 *See id.*

XM Radio now proposes to conduct further tests of XM-5's performance in the bands used for the terrestrial repeater network. The uplink signals for these tests will originate from the XM Radio earth station in Ellenwood (Call Sign E040204), which is authorized to communicate with XM-5. The frequencies, power levels, and other technical parameters of the satellite and earth station operations for the tests will be consistent with those set forth in the XM-5 and E040204 licenses with one exception: for one set of tests, the audio uplink signal from E040204 will be at 7055.89 MHz. That frequency is just below the range of frequencies in which E040204 is authorized to transmit audio content.[8]

The proposed testing will not cause harmful interference to the operations of any other spacecraft. XM Radio operates the only satellites authorized to use either S-band or X-band frequencies located within two degrees of 85.15° W.L. XM Radio does not share S-band spectrum with other satellite systems (except its affiliate, Satellite CD Radio), and the SDARS downlink frequencies are not subject to two degree spacing rules.

The proposed testing should also not result in harmful interference to regularly authorized terrestrial operations. The E040204 earth station has been coordinated with terrestrial licensees. As noted above, the E040204 license does not authorize transmission of an audio signal below 7056.8450 MHz, but transmission of a satellite command signal was coordinated and is authorized for frequencies in the 7042.6-7074.4 MHz range.[9] XM Radio will not exceed the previously-coordinated power density parameters during the proposed testing.

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[8] *See* File No. SES-MOD-20101022-01324, grant-stamped Jan. 4, 2011, at Section B (authorizing transmissions of audio content and ancillary data in the frequency range 7056.8450-7074.8690 MHz).

[9] *See id.* at Sections B and C.

Accordingly, no additional coordination should be required to permit earth station E040204 to temporarily use the 7055.89 MHz frequency for transmission of audio content during the brief period of the requested STA.[10] In addition, and in any event, XM Radio 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.

XM Radio 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, XM Radio respectfully requests special temporary authority for a period of 30 days commencing on August 14, 2012, to conduct the tests described herein. Grant of the requested authority will serve the public interest by facilitating XM Radio's

[10] To the extent necessary, XM Radio seeks a waiver of Section 25.203(c) to permit temporary use of the 7055.89 MHz frequency for station E040204 to transmit audio content as described herein without the requirement to conduct a prior coordination with terrestrial licensees or applicants. Grant of a waiver is justified here because it would not conflict with the underlying purpose of the rule's coordination requirement. *See PanAmSat Licensee Corp*., 17 FCC Rcd 10483, 10492 (Sat. Div. 2002) ("the Commission may grant a waiver of its rules in a particular case if the relief requested would not undermine the policy objective of the rule in question and would otherwise serve the public interest") (footnotes omitted). Here, the purpose of the rule is to avoid interference to terrestrial licensees, and that purpose is achieved because the antenna to be used has previously been coordinated with terrestrial licensees for the frequencies and power density levels proposed.

ability to evaluate the performance of the XM-5 space station and will not result in harmful interference to any other regularly authorized operations.

Respectfully submitted,

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