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

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| In the Matter of Applications by | ) | |
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| XM RADIO LLC and | ) | Call Sign S2786 |
| SIRIUS XM RADIO INC. | ) | Call Signs E080168 & E990291 |
| | ) | |
| For Special Temporary Authority to | ) | |
| Perform Tests with XM-5 | ) | |

**REQUEST FOR SPECIAL TEMPORARY AUTHORITY**

XM Radio LLC ("XM Radio") and its parent company Sirius XM Radio Inc. ("Sirius XM" and with XM Radio, the "Sirius XM Parties"), respectfully request space station and earth station special temporary authority ("STA") for a period of up to 30 days commencing on October 10, 2011 to permit testing of the XM-5 space station at 85.15° W.L. using earth stations in Ellenwood, Georgia and Vernon, New Jersey. XM-5 is an in-orbit spare spacecraft launched in October 2010. The Sirius XM Parties seek authority to test the performance of XM-5 under two scenarios in which XM-5 might be needed to provide primary service. First, the parties propose to test how XM-5 would perform in the event the satellite needed to be activated in lieu of Sirius XM's FM-5 or of its nongeostationary HEO constellation. Second, they plan to assess the transmission performance of XM-5 in the satellite frequency bands used for the legacy XM Radio terrestrial repeaters. Grant of the requested authority will serve the public interest by permitting the Sirius XM Parties to better prepare for and respond to possible future circumstances that would require use of XM-5.

Specifically, the Sirius XM Parties request authority to operate the communications payloads of XM-5 at 85.15º W.L. and authority for the Sirius XM earth stations E080168 and E990291 to communicate with XM-5 for purposes of performing the tests. In

addition to the two Sirius XM earth stations, XM Radio's earth station E040204 will also be used for the planned tests. No STA is required for that facility because it is already authorized to communicate with XM-5 at 85.15º W.L.,[1] and the proposed operations will conform to the earth station's license terms.

XM-5 is authorized 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.[2] 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.[3] 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."[4]

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

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1 *See* File No. SES-MOD-20101022-01324, grant-stamped Jan. 4, 2011. Transmissions from earth station E040204 to XM-5 will conform to the terms of the E040204 license.

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

3 *See id.*

4 *Id.*, Attachment at ¶ 2.

performance characteristics.[5] Further tests were performed earlier this year to allow evaluation of XM-5's ability to provide substitute capacity in the event of an anomaly affecting XM-3.[6]

The Sirius XM Parties now propose to conduct further tests of XM-5's performance. The first set of tests will simulate the conditions that would apply in the event XM-5 was needed to restore capacity because of an anomaly affecting the FM-5 space station or the Sirius XM HEO constellation. For these tests, XM-5 will transmit at 2322.93 MHz. The uplink signals for this set of tests will be at 7062.29 MHz and originate from the Sirius XM earth stations in Ellenwood (Call Sign E080168) and Vernon (Call Sign E990291). The second set of tests will allow evaluation of the transmission performance of XM-5 in the satellite frequency bands used for the legacy XM Radio terrestrial repeaters. XM-5 will transmit at 2337.49 MHz and 2340.02 MHz. The uplink signals for this set of tests will be at 7056.89 MHz and 7059.42 MHz and will originate from the XM Radio earth station in Ellenwood (Call Sign E040204).

The proposed testing will not cause harmful interference to the operations of any other spacecraft. XM Radio operates the only satellites using 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 will also not result in harmful interference to regularly authorized terrestrial operations. The earth stations that will communicate with XM-5 have been

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[5] *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).

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

coordinated with terrestrial licensees for the frequencies and EIRP levels proposed for use here. The Sirius XM earth stations (Call Signs E080168 and E990291) were not specifically coordinated for operations with a geostationary satellite located at 85.15° W.L. However, these stations were coordinated for communications with the nongeostationary satellite fleet operated by Satellite CD Radio, involving a range of antenna orientations.[7] Sirius XM will not exceed the previously-coordinated parameters during the proposed testing.

Accordingly, no additional coordination should be required to permit temporary use of the E080168 and E990291 antennas during the brief period of the requested STA.[8] In addition, and in any event, the Sirius XM Parties 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 and Sirius XM hereby certify 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.

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[7] Furthermore, Call Sign E080168 is located at the same facility in Ellenwood as Call Sign E040204, and as noted above, that station has been fully coordinated with terrestrial licensees for the frequencies and EIRP levels proposed for use here.

[8] To the extent necessary, the Sirius XM Parties seek a waiver of Section 25.203(c) to permit temporary use of call signs E080168 and E990291 for operations with XM-5 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 antennas to be used have previously been coordinated with terrestrial licensees for the frequencies and power levels proposed and for operations with a nongeostationary satellite fleet.

For the foregoing reasons, XM Radio and Sirius XM respectfully request special temporary authority for a period of up to 30 days commencing on October 10, 2011 to conduct the tests described herein. Grant of the requested authority will serve the public interest by facilitating XM Radio's 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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