

NARRATIVE STATEMENT

Pursuant to Sections 5.51 and 5.61 of the Commission's rules, 47 C.F.R. §§ 5.51, 5.61 (2007), Sirius XM Radio Inc. ("Sirius XM") respectfully requests special temporary authority ("STA") for a four-month period, from **June 15 through October 15, 2009**, to test and operate prototype transmitting equipment in the Wireless Communications Services ("WCS") bands (2305-2320 MHz and 2345-2360 MHz) near its offices in Ashburn, Virginia.

Grant of this application would serve to supplement the existing experimental license granted to Sirius Satellite Radio Inc. ("Sirius") under call sign WE2XSS authorizing similar operations at six other locations. *See* File No. 0139-EX-PL-2008. Sirius XM has elected to file an STA request for the proposed test at Ashburn rather than to seek a modification of its current license because the operations at Ashburn are expected to be completed before October 15.

The following information is provided in support of this request:

I. Purpose of Experimentation and Justification

Sirius XM is licensed to provide SDARS in the United States and offers high-quality radio programming to millions of subscribers nationwide. It delivers its service primarily through the use of three non-geostationary satellites. In addition to these satellites, and as contemplated by the international and domestic table of frequencies,¹ Sirius XM also uses a network of approximately 130 terrestrial repeaters to ensure consistent service throughout the United States. Currently, those repeaters are operated under Special Temporary Authority issued by the International Bureau and there are no rules that specifically govern the operation of satellite radio terrestrial repeaters.

In December 2007, the Commission released a Notice of Proposed Rulemaking seeking "additional comment on the appropriate rules and policies for licensing [SDARS] terrestrial repeaters" and considering "changes to the rules governing WCS licensees."² In particular, the Commission sought comment on (1) a proposal by Sirius XM to adopt a

¹ *See* 47 C.F.R. § 2.106 n. 5.396, n. US327.

² *See Amendment of Part 27 of the Commission's Rules to Govern Operation of Wireless Communications Services in the 2.3 GHz Band; Establishment of Rules and Policies for the Digital Audio Radio Satellite Service in the 2310-2360 MHz Frequency Band*, WT Dkt No. 07-293, IB Dkt. No 95-91, GEN Dkt. No. 90-357, RM No. 8610, *Notice of Proposed Rulemaking and Second Further Notice of Proposed Rulemaking*, 22 FCC Rcd 22123 (rel. Dec. 18, 2007) ("Notice").

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ground based emission limit for SDARS and WCS operations and (2) a proposal by the WCS licensees to allow 2000 kW average EIRP terrestrial repeater and WCS base station operations and 20 watt average power WCS subscriber station operations.³

Sirius has filed comments and reply comments in response to the Commission's Notice and, as requested by the Commission, has provided considerable data to support its filings.⁴ Other parties, including the WCS Coalition, have also provided the Commission with data, much of which contradicts data collected by Sirius. These continued tests are intended to narrow and resolve the significant differences in measured results critical to the resolution of the Notice, including, but not limited to, path loss, strong signal performance, out of band emissions performance, and noise floor.

The equipment that Sirius XM proposes to operate pursuant to this STA will emulate the operation of a 20 W WiMax uplink device in the WCS bands. Sirius XM will test the impact of overload and intermodulation interference and out-of-band emissions from such devices on Sirius XM satellite radio receivers. Using the related license issued under call sign WE2XSS, Sirius will continue to undertake these experiments in a number of different geographic areas to emulate "real-world" scenarios in which a satellite radio receiver might come into proximity with WCS uplink devices. Conducting these tests will allow Sirius XM to collect additional data and to determine how different variables, such as WCS subscriber station power, spectral proximity, and separation distance, affect the reception of satellite radio signals by customers of both SDARS licensees.

Sirius XM submits that the public interest, necessity and convenience are served by grant of this STA. The Commission has requested comment on these issues and has requested that parties submit technical showings to support those comments. Sirius XM has provided its initial comments, but requires additional time to undertake experiments that further examine the relationship between operations in these adjacent bands and evaluate the data presented by the WCS Coalition in its recent filings.

³ See *id.* ¶¶ 15-25.

⁴ See, e.g., *id.* ¶ 23 (requesting that "[a]ll comments...be supported with technical analysis and a realistic assessment of the impact on all relevant services.")

II. Technical Specifications

Location:

44675 Cape Ct., Ashburn, VA
NL 39-01-03; WL 77-27-20 (NAD 83)

The tests will be conducted from temporary fixed and mobile locations centered at and within a 3 km radius of the above-referenced coordinates.

Frequencies:

2305-2320 MHz
2345-2360 MHz

Tests will be conducted in 5 MHz channels of the WCS A, B, C and D blocks. Each test channel will require 5 MHz of bandwidth. Specifically, the proposed channelization is as follows:

A: 2305-2310 MHz, 2350-2355 MHz
B: 2310-2315 MHz, 2355-2360 MHz
C: 2315-2320 MHz
D: 2345-2350 MHz

Frequency stability will be compliant with Section 27.54 of the Commission's rules, 47 C.F.R. § 27.54 (2007).

Emissions:

The equipment will be operated to transmit in two signal formats.

Signal Format #1:

Continuous Wave (CW)
Emission designator: 10K0N0N

Signal Format #2:

WiMax 802.16e
Type of modulation: BPSK, 4QAM, 16QAM, 64QAM
Type of multiplexing: OFDM
Maximum transmitter duty cycle in normal use, 65%, 100% during test

Emission Designator: 5M0W7W

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Test Equipment:

The equipment used in this experiment is prototypical and is designed specifically to generate representative signals in the WCS band for the purpose of testing potential interference to SDARS receivers. The transmitter equipment will comply with Section 27.53 of the Commission's rules governing out-of-band emission limits on WCS equipment. 47 C.F.R. § 27.53 (2007). The test transmissions will be produced using an Agilent Signal Generator, Model E4438C.

Antenna Information

<u>Configuration:</u>	The transmit antenna will have an omnidirectional gain pattern with an associated nominal gain of 0 dBi.
<u>Height:</u>	The antenna will be operated at a height not to exceed 19.685 feet (6 meters).
<u>Beamwidth:</u>	Omnidirectional
<u>Maximum Power:</u>	80 Watts Peak transmitter power output (TPO)
<u>Maximum ERP:</u>	12.2 Watts Peak (20 Watts EIRP peak power, consistent with Section 27.50(a)(2)) of the Commission's rules).

III. Interference Safeguards

Sirius XM recognizes that the proposed operation must not cause harmful interference to authorized facilities. Sirius XM is not aware of any WCS operations in Ashburn, however. In addition, it will conduct the tests at relatively low power, for limited periods, and only at the location identified in this STA. Thus, Sirius XM does not anticipate any interference will occur to authorized facilities. Nevertheless, should interference occur, Sirius XM will immediately resolve the interference and, if necessary, discontinue operation. Any party that believes it is experiencing interference from these operations should contact Sirius XM at (646) 313-2076.

IV. Conclusion

The grant of this experimental STA would serve the public interest, convenience, and necessity by allowing Sirius XM to collect data that is essential for the Commission to establish rules for WCS and satellite radio operations.