

**Description of Operations and Public Interest Statement**

Pursuant to 47 CFR 25.120 of the Commission's Rules, Lockheed Martin Corporation ("Lockheed Martin") hereby requests Special Temporary Authority ("STA") for a period of thirty (30) days to operate its Carpentersville, New Jersey fixed earth station (Call Sign E7541) to provide telemetry, tracking, and control ("TT&C") functions during the Launch and Early Operations Phase ("LEOP") period of operation, ranging, and propulsion monitoring for the Sirius-XM ("SXM") 8 satellite, which is authorized by the Federal Communications Commission.<sup>1</sup>

SXM 8 is destined for in-service operation at 85.15° W.L. as a replacement for the XM 3 satellite. It is currently scheduled for launch in early June 2021, aboard a SpaceX Falcon 9 rocket, from Cape Canaveral Air Force Station, Florida. Accordingly, Lockheed Martin requests authority to begin communications on May 31, 2021, in preparation for the start of LEOP operations.

Because of the time sensitivity of this request, Lockheed Martin respectfully requests expedited treatment to ensure that authority is in place in anticipation of a timely launch.

**1. Requested STA Operations**

The LEOP TT&C and ranging signals will be transmitted in the standard C-band for which Lockheed Martin has authority under Call Sign E7541. As to the instant request for STA, Lockheed Martin seeks herein authority to communicate with SXM 8 as a point of communication on two C-band frequencies that fall outside of the currently authorized transmit frequencies for the earth station.

The proposed TT&C operations in support of the SXM 8 launch will be on a strictly non-harmful interference, non-protected basis. When no commands are being sent, a CW carrier that is within the emission of the licensed operation would be present. In the case of an anomaly, extraordinary measures, such as increasing power, may be necessary; if such measures are required during this STA period, Lockheed Martin will notify the FCC within seven (7) business days that such measures were needed.

Lockheed Martin incorporates by reference the radiation hazard study that was included with its most recent filings at the FCC. In addition, Lockheed Martin is submitting herewith a frequency coordination notification prepared by Comsearch.

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<sup>1</sup> FCC Call Sign S3034 (File No. SAT-RPL-20180430-00034), granted Oct. 5, 2018.

Lockheed Martin designates Michael Usarzewicz to be the contact person that will be available whenever transmission to SXM 8 is to occur through the subject earth station. Mr. Usarzewicz can be reached at the following phone numbers:

(609) 865-2658 (cellular)  
(908) 859-4050 (earth station desk)

**2. Grant of the Requested Authority Will Serve the Public Interest**

Lockheed Martin believes that the limited operations it proposes in support of the launch of the SXM 8 satellite serve the public interest. Lockheed Martin understands that the SXM 8 satellite will provide to provide satellite radio programming to consumers across North America.

Lockheed Martin's Carpentersville earth station will be part of a global network of control and ranging facilities that will be used solely to position the satellite as it progresses from transfer orbit to its final location and to calibrate electric propulsion. No end user service will be provided within the United States at any time. The safe and orderly use of the entire geostationary orbital resource and protection of the hundreds of satellites licensed by the U.S. and other countries that operate there depends in no small part on ensuring that the SXM 8 satellite is controlled while over North America en route to its final geostationary orbital position. In this regard, Lockheed Martin's earth station thus will serve a vital function.

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Lockheed Martin requests authority to operate its Carpentersville, NJ earth station antenna to provide critical TT&C and ranging services during the LEOP mission of the SXM 8 satellite, for a term of 30 days, commencing May 31, 2021.

**TECHNICAL DETAILS OF SPECIAL TEMPORARY AUTHORITY**

**Satellite Characteristics**

**Satellite:** SXM 8  
**Orbital Location:** 85.15° W.L.  
**Manufacturer:** Maxar  
**Launch Vehicle:** SpaceX Falcon 9

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**Earth Station Characteristics**

**Antenna:** 14.2-m TIW Systems  
**Antenna Location:** 40°38' 41" N / 075° 11' 28" W

**Telecommand Uplink Frequencies:**  
6422.5 MHz (LHCP)  
6424.5 MHz (LHCP)

**Telemetry Downlink Frequencies:**  
4196.5 MHz (RHCP)  
4198.0 MHz (RHCP)

**Antenna Gain:** 57.5 dBi @ 6 GHz  
**Antenna Power:** 34.0 dBW (into the flange)  
**Maximum EIRP:** 91.5 dBW for all carriers  
**EIRP Density:** 19.0 dBW/4kHz  
**Uplink Emission:** 1M00F2D  
**Downlink Emission:** 1M00F8X