

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 Orbit Phase ("LEOP") period of operation, ranging, and propulsion monitoring for the Turksat-5B satellite.

Turksat-5B is a communications satellite for Turksat, a Turkish satellite operator, built by Airbus Defense and Space. Turksat submitted the relevant ITU filings (under TURKSAT-42E-B & TURKSAT-BSS-T-42E) via the Turkish administration.

Turksat-5B will provide broadband services over a wide coverage area, including Turkey, the Middle East, and large regions of Africa. The spacecraft is destined for in-service operation at 42.0° E.L., and is currently scheduled for launch in mid-December 2021, aboard a Falcon 9 rocket, from Cape Canaveral, Florida. Accordingly, Lockheed Martin requests authority to begin communications on December 15, 2021, in preparation for the start of LEOP.¹

1. Requested STA Operations

The LEOP TT&C and ranging signals will be transmitted partly in the standard Ku-band for which Lockheed Martin already has authority under Call Sign E7541. As to the instant request for STA, Lockheed Martin seeks herein authority to communicate with Turksat-5B as a point of communication on one extended Ku-band frequency, which falls outside of the currently authorized Ku-band transmit frequencies for the earth station. In all other respects, operation of the earth station will be consistent with the parameters set forth under the existing permanent authority.

In order to demonstrate compliance with FCC Report and Order 96-377 regarding operations in the extended Ku-band, Lockheed Martin submits herewith an analysis that states that the proposed operations pose no risk of interference either to U.S. Navy shipboard radar operations or to NASA TDRSS links.

Lockheed Martin has been asked to provide extended support for the completion of the LEOP mission. Accordingly, Lockheed Martin is requesting that the duration of this STA be a total of thirty (30) days. Further, a request for extension of the instant STA request for an additional one hundred eighty (180) days is being filed concurrently to cover the entire period required to complete LEOP and the in-orbit testing being conducted by the launch provider.

¹ The proposed test transmissions would occur over a period of approximately two to three days. During these tests, the earth station would not be communicating with any satellite; instead, the transmissions will be made with the antenna at zenith to verify RF functionality.

Lockheed Martin designates Michael Usarzewicz to be the contact person that will be available whenever transmission to Turksat-5B 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 Turksat-5B satellite serve the public interest. Lockheed Martin understands that the Turksat-5B satellite will provide broadband services over a wide coverage area of the Middle East, including host country Turkey.

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 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 Turksat-5B 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 Turksat-5B satellite, for a term of 30 days, commencing December 15, 2021.

TECHNICAL DETAILS OF SPECIAL TEMPORARY AUTHORITY

Satellite Characteristics

Satellite: Turksat-5B
Orbital Location: 42.0° E.L.
Manufacturer: Airbus Defense and Space
Launch Vehicle: Falcon 9

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Earth Station Characteristics

Antenna: 14.2-m TIW Systems
Antenna Location: 40°38' 39.1" N / 075° 11' 27.8" W

Telecommand Uplink Frequencies:

13999.00 MHz (LHCP/RHCP)
14001.00 MHz (LHCP/RHCP)
14499.50 MHz (LHCP/RHCP)

Telemetry Downlink Frequencies:

11703.50 MHz (LHCP/RHCP)
11704.50 MHz (LHCP/RHCP)
11452.60 MHz (LHCP/RHCP)

Antenna Gain: 63.5 dBi @ 14 GHz
Antenna Power: 19.1 dBW (into the flange)
Maximum EIRP: 83.0 dBW for all carriers
EIRP Density: 23.0 dBW/4kHz
Uplink Emission: 800KF2D
Downlink Emission: 300KG2D