

**L3HARRIS TECHNOLOGIES, INC.  
EXPERIMENTAL STA APPLICATION  
FILE NO. 0025-EX-CN-2020**

**EXHIBIT 1 - DESCRIPTION OF EXPERIMENT**

L3Harris Technologies, Inc. ("L3Harris") hereby requests an experimental authorization to operate an experimental X-band ground terminal located in Malabar, Florida<sup>1</sup> to support communications with a LEO earth observation satellite. The proposed ground terminal will provide Telemetry Tracking & Command data to the LEO satellite and will receive Thematic Mapper and sensor data from the LEO satellite, and will be used in connection with a U.S. Government contract. However, as the contract is sensitive, L3Harris has not provided the contract number on the application, especially as the contract number may not be necessary for Commission review. However, to the extent the Commission seeks additional information about the contract, please contact L3Harris.

L3Harris has successfully pre-coordinated operations from the experimental X-band ground terminal with both the US Air Force and US Navy for a current special temporary authorization (call sign WP9XLE) that mirrors the current request. However, as these operations appear likely to be required past that STA's current April expiration date, L3Harris is now requesting this authorization. Accordingly, L3Harris has notified its contacts with the US Air Force and US Navy regarding the proposed application for longer operations.

Operations under this experimental license will be subject to the following conditions as issued pursuant to the pre-coordination:

**Conditions for L3Harris:**

- Maximum transmit power into the antenna: -11.6 dBW
- Antenna gain= 49 dBi
- Maximum transmit EIRP: 37.4 dBW
- Bandwidth= 15.625 MHz
- Uplink Transmission Restrictions:
  - Terminal will not transmit when pointed within +/- 5 degrees of the GSO belt
  - Terminal will not transmit when pointed within 1 degree of the following specific victim GSO satellites with inclinations greater than 5 degrees:

NORAD Catalog Number	GSO Longitude	Inclination
27875	42.5W	5.3
27691	130W	6.1
23628	104E	11.1
26575	134E	7.4
26052	180	7.9
25019	112W	9.9
26695	34W	9.7
25639	6E	10.7
20776	33E	14

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<sup>1</sup> L3Harris was granted Special Temporary Authority ("STA") to operate the experimental X-band ground terminal on October 15, 2019 under FCC File No. 1742-EX-ST-2019 (Call Sign: WP9XLE). This STA has an expiration date of April 6, 2020.

- The above uplink EIRP restriction of 37.4 dBW applies at all times (e.g., even if the pointing angle between the main beam of the subject terminal and the victim GSO satellite is greater than 1 degree).
- These conditions only apply for a transmit earth station with a main beam gain of 49 dBi (4.2m aperture). Other antenna configurations will require additional coordination.

The terminal will consist of a Comtech T242XR, 4.2M carbon fiber parabolic reflector, with a circularly polarized feed, mounted on an XY positioner capable of pointing at any elevation 10 degrees above the horizon at any azimuth.

L3Harris will not cause harmful interference to any stations operating in accordance with the Table of Frequency Allocations and will use its best efforts to avoid and mitigate any issues that may arise.

Because the equipment is technically incapable of providing station identification, L3Harris respectfully requests a waiver of the station identification provisions of Section 5.115 of the Commission's rules, 47 C.F.R. § 5.115.

All network traffic will be simulated traffic only, solely for evaluation purposes and not for the purpose of providing network data communications services to user stations.

L3Harris submits that a grant of this experimental license request is necessary and in the public interest as it is anticipated that it will lead to commercial sensor improvements for earth sensing.

The **stop buzzer contact** for this project is Kim Singleton – Satellite Operations Manager (Mobile: 321-446-2262), and an alternative stop buzzer contact is Rod Nelson - Chief Engineer (Mobile: 321-544-6477), e-mail: gnelso03@L3harris.com.