

Narrative for FCC Blanket License Application for the 1.05m 20W Fixed User Terminal Earth Stations of the Telesat Lightspeed Satellite Constellation

1. Introduction

As explained in a Petition for Declaratory Ruling to access the U.S. market, which was granted,¹ and a pending modification application, as amended,² the LEO constellation operated by Telesat,³ known as Telesat Lightspeed, will serve the public interest by providing access to an innovative and technologically advanced Ka-band NGSO broadband system, enhancing competition with existing and future GSO and NGSO satellite services, and increasing the service options available in the United States. Constellation deployment will occur in phases. The first phase will provide global coverage with 156 satellites, following which additional satellites will be deployed as demand warrants. Network Operation Centre (NOC) and Satellite Operation Centre (SOC) for Telesat Lightspeed satellite network are currently being built in Canada. Landing Stations (Gateways) are being built in Canada, Australia and Europe, and more Landing Stations will be built, including in the United States, in line with the start of services target date.

This document, along with the accompanying FCC Form 312, Main Form and Schedule B, and associated exhibits, are submitted to the FCC in order to seek a blanket license for one fixed earth station terminal type that will be used to communicate with the Telesat Lightspeed satellite constellation.⁴ Telesat submitted a blanket license application for a

¹ Telesat Canada, Petition for Declaratory Ruling to Grant Access to the U.S. Market for Telesat's NGSO Constellation ("PDR"), Call Sign S2976, IBFS File No. SAT-PDR-20161115-00108 (filed Nov. 15, 2016). *See also*, *Telesat Canada Petition for Declaratory Ruling to Grant Access to the U.S. Market for Telesat's NGSO Constellation*, Order and Declaratory Ruling, 32 FCC Rcd 9663 (2017).

² *Public Notice*, Space Station Applications Accepted for Filing, Call Sign S2976, SAT-MPL-20200526-00053, SAT-APL-20210104-00002, and SAT-APL-20220616-00059, Report No. SAT-01648 (rel. Jul. 15, 2022). *See also*, *Public Notice*, Space Station Applications Accepted for Filing, Call Sign S2976, SATMPL-20231026-00263, Report No. SAT-01775 (rel. Nov. 17, 2023); *Public Notice*, Space Station Applications Accepted for Filing, Call Sign S2976, SAT-APL-20231026-00264, Report No. SAT-01903 (rel. Mar. 21, 2025); *and see* Telesat LEO U.S. Inc., Call sign S2976, File No. SAT-APL-20260202-00075 (filed Feb. 4, 2026).

³ Telesat LEO U.S. Inc., which is an indirect, wholly-owned subsidiary of Telesat Corporation, holds the U.S. market access grant for the Telesat Lightspeed constellation and is the blanket license applicant herein. For simplicity, Telesat LEO U.S. Inc., its predecessors-in-interest, and its sister and parent companies are referred to in this narrative as "Telesat."

⁴ Because the Commission does not require applications in the Ka-band to specify a maximum number of customer terminals, a value of "0" has been used in the accompanying Form 312, Schedule B. This value is entered merely to satisfy ICFS form-validation and is not intended to establish a maximum number of units that Telesat may deploy. *See Comprehensive Review of Licensing and Operating Rules for Satellite Services*, Second Report and Order, 30 FCC Rcd 14713, 14806 ¶ 291 (2015).

1.05m 3W user terminal referred to as Intellian LS100L in February 2026.⁵ The earth station of this application uses the same antenna reflector size as the above-mentioned earth station. The main difference is the BUC size, which was 3W in the previous application whereas it is 20W in this application. Further details are provided in the following sections.

The grant of this application will enable Telesat to deploy Telesat Lightspeed services throughout the United States. To achieve this, Telesat will partner with mobile network operators, internet service providers and others that will furnish services to end users. Telesat's partners will offer a wide range of affordable service plans, as well as last-mile connectivity and installation to individual homes, businesses and institutions. The partners will use the Telesat Lightspeed constellation to provide broadband high-speed low-latency communication services for a wide range of applications, including community internet aggregation, health, education, enterprise, government, mobile backhaul, and fixed wireless backhaul.

As required by Section §25.115 of the FCC rules, the technical information not covered by FCC Form 312, Main Form and Schedule B, is provided in this document and associated exhibits.

2. Frequency Bands

The earth station operating frequency bands for which the blanket license is being sought are listed in Table 1.

Table 1: Frequency bands

Lower Frequency Limit (GHz)	Upper Frequency Limit (GHz)	Direction
18.3	18.6	Space-to-Earth (Downlink)
18.8	19.3	Space-to-Earth (Downlink)
19.7	20.2	Space-to-Earth (Downlink)
28.35	29.1	Earth-to-Space (Uplink)
29.5	30.0	Earth-to-Space (Uplink)

3. Earth Station Technical Parameters

The earth station type for which a blanket license is sought is a dual parabolic earth station manufactured by Intellian, referred to as LS100H. The LS100H is a fixed user terminal with two 105 cm reflector antennas (dual parabolic) ensuring seamless and uninterrupted connectivity during LEO satellite handovers. The technical parameters for this earth station are provided in Table 2 and in Schedule B of FCC Form 312.

⁵ FCC File Number SES-LIC-20251216-00165, Call Sign E260071, Date Filed: 2026-02-19, Accepted for Filing PN Date: 2026-05-13.

Table 2: Earth station technical parameters

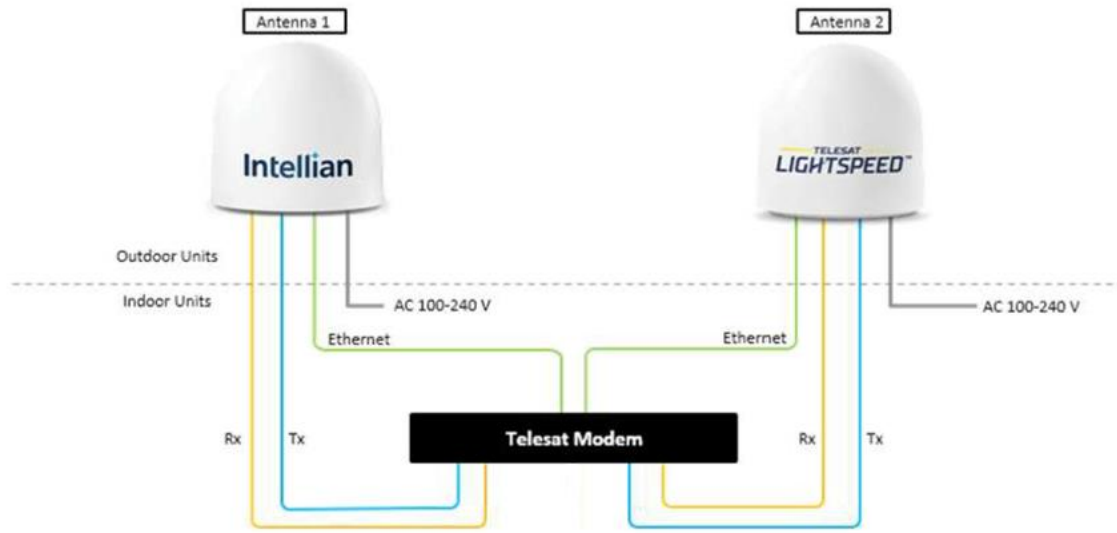
<i>Earth Station Name</i>	LS100H
<i>Manufacturer</i>	Intellian
<i>Type</i>	Dual parabolic (two reflector antennas)
<i>Reflector Diameter</i>	105 cm
<i>Operating Azimuth Range</i>	0° to 360°
<i>Operating Elevation Range</i>	20° to 90°
<i>Antenna TX Gain at 29.7 GHz (including the radome loss)</i>	47.7 dBi
<i>Antenna RX Gain at 19.9 GHz (including the radome loss)</i>	44.0 dBi
<i>HPBW at 29.7 GHz</i>	0.7°
<i>HPBW at 19.9 GHz</i>	1.0°
<i>BUC size</i>	20 W
<i>Max EIRP</i>	60.1 dBW
<i>Max EIRP Density</i>	-23.0 dB(W/Hz)
<i>G/T</i>	19.5 dB/K
<i>Polarization</i>	Circular (LHCP, RHCP)

The LS100H terminal consists of dual reflector antennas for continuous connection with LEO satellites. The tracking technology used in the antenna system makes the secondary antenna track a rising satellite before the primary antenna loses a falling satellite.⁶

⁶ Although both antennas will be tracking LEO satellites, only one antenna will be transmitting at any given time.

Figure 1 shows the dual parabolic earth station schematic diagram. As shown in Figure 1 the antennas are equipped with radome. Each antenna aperture has its own RF chain, ensuring full functionality. This architecture guarantees uninterrupted service during satellite handovers, delivering robust connectivity for high-performance applications.

Figure 1: Dual parabolic antenna system of the LS100H earth station



The uplink carrier bandwidths for this earth station are listed in Table 3, and the downlink carrier bandwidths are listed in Table 4.

Table 3

Uplink carrier bandwidths [MHz]
7.8125
15.625
31.25
62.5
125
250

Table 4

Downlink carrier bandwidths [MHz]
50
62.5
125
250
400
500

4. Remote Control

Telesat will ensure the proper operation and maintenance of all earth stations covered by this blanket license application and Telesat will ensure that the operation of these earth stations will comply with the FCC rules. The user terminals will be remotely controlled from Telesat Network Operation Centre at the address and phone number shown below:

Telesat Network Operation Centre
98 Rue Lois, Gatineau,
QC, Canada J8Y 3R7
Phone : 1-888-662-8728

At Telesat Network Operation Centre there will be trained operators available 24 hours a day, 7 days a week, with authority and ability to control the earth stations and to cease transmissions from the earth stations if required. It is noted that the proper operation of the user terminals is primarily assured through automation by the software which is embedded within the Telesat user terminals. Additionally, Telesat staff at the Network Operation Centre will monitor and control all active elements of the Telesat Lightspeed network, including the user terminals. The user terminals can be shut down remotely in the event that an anomaly is detected or harmful interference is reported.

5. Certifications

This section provides the certifications required by Section 25.115 and other FCC rules.

Telesat certifies that the operation of its earth stations under the requested blanket license will be consistent with the technical parameters of the Telesat Lightspeed constellation, and associated conditions, as provided in the FCC grant of U.S. market access and the modification application, as amended.⁷

Telesat certifies to comply with all applicable equivalent power flux density (“EPFD”) limits of Article 22 of the ITU Radio Regulation. Specifically, Telesat certifies that the earth stations for which this application seeks a blanket license will operate in the United States in compliance with the uplink EPFD limits of Article 22 of the ITU Radio Regulations, including provision 22.5D and Table 22-2 of the ITU Radio Regulations.⁸ Telesat also certifies to comply with the aggregate EPFD requirements of Resolution 76 of the ITU Radio Regulations.

As shown earlier in Table 1, the transmitting frequency bands of the earth station in this application consist of the bands 28.35-29.1 GHz and 29.5-30 GHz. In Article 22 of the ITU Radio Regulations there are uplink EPFD limits for the frequency bands 28.35-28.6 GHz and 29.5-30 GHz, and the Telesat Lightspeed system will comply with those EPFD limits. For the band 28.6-29.1 GHz, as stated in footnote NG165 of the FCC Table of

⁷ See nn. 1 and 2 above.

⁸ ITU Radio Regulations Articles, Edition of 2024.

Frequency Allocations, there are no EPFD limits, and “geostationary-satellite networks in the fixed-satellite service shall not cause harmful interference to, or claim protection from, non-geostationary-satellite systems in the fixed-satellite service”.

Telesat certifies that before any earth station communicates with any satellite pursuant to the requested blanket license, Telesat will complete coordination with NTIA in the frequency bands 18.3-18.6 GHz, 18.8-19.3 GHz, and 19.7-20.2 GHz, as required by §25.115(k)(2) and footnote US334 of the FCC Table of Frequency Allocations.

Telesat also understands that as stated in footnote US139 of the FCC Table of Frequency Allocations, fixed stations authorized in the band 18.3-19.3 GHz under the provisions of Sections 74.502(c), 74.602(g), 78.18(a)(4), and 101.147(r) of the rules may be in operations consistent with the provisions of those sections.

Telesat certifies that its operation will be consistent with footnote NG62 of FCC Table of Frequency Allocations.

Telesat certifies that the operation of its earth stations will comply with all relevant FCC requirements.

6. Conclusion

This application demonstrates that the operation of the earth stations under the proposed blanket license will comply with the Commission’s rules. Furthermore, the same public interest considerations that supported grant of the Telesat Lightspeed space station market access application also support granting this blanket license application. Telesat therefore respectfully requests expeditious grant of this application, which will enable the Telesat Lightspeed system to provide high-speed, low latency communication services to customers in the United States.