EXHIBIT A

REFLECT ORBITAL, INC. TECHNICAL ANNEX FOR EARENDIL-1

I. SCOPE AND PURPOSE

This exhibit contains the information required by section 25.114 and other relevant provisions of the Commission's Part 25 rules that Reflect Orbital cannot fully capture in the Form 312, Schedule S.

II. GENERAL DESCRIPTION

A. Spacecraft Overview

The EARENDIL-1 satellite measures 840.05 mm x 856.7 mm x 400 mm in its stowed configuration and is manufactured by Reflect Orbital using commercial-off-the-shelf components.[1] The satellite is designed to deploy and test the capabilities of a novel solar light reflector, measuring 18 m x 18 m when fully deployed. The spacecraft includes on-board propulsion for purposes of orbit raising to the operational orbit, collision avoidance during the operational mission, and performing active deorbit at end of mission.

B. Orbital Information

Reflect Orbital has manifested EARENDIL-1 on a SpaceX rideshare mission, currently scheduled to launch no earlier than April 24, 2026.

	Value	Accuracy
Inclination Angle (deg)	88.0	+/- 2.0
Deployment Apogee and Perigee (km)	510	+/- 20 km
Operational Apogee and Perigee (km)	625	+/- 25 km
MLTAN (Insertion Orbit)	11:00	+ 60 minutes

Table 1: EARENDIL-1 Expected Orbital Parameters

[1] A complete technical description of the satellite is included in the Orbital Debris Assessment Report ("ODAR"), attached as Exhibit B.

C. Radiofrequency and Earth Station Parameters

Table 2 and Table 3 capture the expected radiofrequency and earth station parameters. The center frequencies provided in Schedule S and Table 2 below are representative channels and will be confirmed through coordination with co-frequency Federal operators.

Beam ID	**TUA**	**TS**	**RS**	**TX**
Description	UHF space-to-Earth	S-band space-to-Earth	S-band Earth-to-space	X-band space-to-Earth
Frequency Band (MHz)	401-402	2200-2290	2025-2110	8450-8500
Carrier Frequencies (MHz)	401.3194 401.5194 401.7194	2215.996 2226.004	2040.346 2047.654	8495
Bandwidth	25 kHz	1.16 MHz 576 kHz 288 kHz	1.16 MHz 576 kHz 288 kHz	5.19 MHz 2.60 MHz
Transmit Power (dBW)	-5.0	-3.0	20	1.0
Transmit Antenna Gain (dBi)	5.0	5.0	32.2 – 37.5	7.0
EIRP (dBW)	0.0	2.0	52.2 – 57.5	8.0
Polarization	Linear	RHCP	RHCP	RHCP
Receive Antenna Gain (dBi)	16.2 – 16.9	23.5 – 38.2	5.0	47 – 51.3
Receive Noise Temp. (K)	200 – 309	126 – 200	580	48 – 140

Table 2: Radiofrequency Parameters

Location	Latitude	Longitude	Uplink	Downlink
Svalbard	78.23	15.41	S-band	S-band X-band
Troll	-72.00	2.53	S-band	S-band X-band
Mingenew	-29.01	115.34	S-band	S-band X-band
Awarua	-46.53	168.38	S-band	S-band X-band
Hartebeesthoek	-25.89	27.71	S-band	S-band X-band
Punta Arenas-K	-52.94	-70.87	S-band	S-band X-band
Blondous-1	65.65	-20.25	S-band	S-band X-band
Blondous-2	65.65	-20.25	S-band	S-band X-band
Blondous-3	65.65	-20.24	S-band	S-band X-band
Punta Arenas-L	-52.94	-70.87	S-band	S-band X-band
Pretoria-L	-25.86	28.45	S-band	S-band X-band
Deadhorse	70.21	-148.41	S-band	UHF X-band
Pitea-1	65.34	21.43	S-band	UHF S-band X-band
Pretoria-R	-25.86	28.45	S-band	UHF S-band X-band
El Segundo	33.92	-118.42	S-band	UHF X-band

Location	Latitude	Longitude	Uplink	Downlink
Denver	39.59	-104.88	S-band	UHF X-band
Umea	63.85	20.21	S-band	UHF S-band X-band
Fairbanks	64.82	-147.72	S-band	UHF X-band
Pitea-2	65.34	21.43	S-band	S-band X-band
Boden	65.80	21.68	S-band	S-band X-band

Table 3: Earth Station Parameters

III. FREQUENCY TOLERANCE

The frequency tolerance requirements of section 25.202(e) will be met.

IV. OUT-OF-BAND EMISSIONS

The out-of-band emission limits of section 25.202(f)(1), (2), and (3) will be met.

V. FREQUENCY REUSE

Reflect Orbital does not operate in any frequency bands where section 25.210(f) frequency reuse requirements apply.

VI. CESSATION OF EMISSIONS

All downlink transmissions can be turned on and off by ground station telecommand to cease satellite emissions, as section 25.207 requires.

VII. POWER LIMITS

The satellite will satisfy relevant in-band and out-of-band power limits.

A. In-Band Power

No power limits exist for the 401-402 MHz (space-to-Earth) or 2025-2110 MHz (Earth-to-space) band in either the Commission or ITU rules. Commission rules also do not specify power limits in the 2200-2290 MHz or 8450-8500 MHz bands (space-to-Earth), but ITU Radio

Regulations Table 21-4 imposes power flux-density ("PFD") limits in each band.[2] As described below, Reflect Orbital will operate in conformance with ITU PFD limits in all bands where such limits have been adopted. In all bands subject to this Application, Reflect Orbital will employ the radiofrequency-interference mitigation procedures described in the Legal Narrative and, when appropriate, coordinate with other authorized co-frequency and adjacent band operators to avoid harmful interference.

In the 2200-2290 MHz band (space-to-Earth), ITU Radio Regulations Table 21-4 provides that space station PFD emissions in this frequency range at the Earth's surface shall not exceed the following values:

- -154 dB(W/m^2) in any 4 kHz band for angles of arrival between 0 and 5 degrees above the horizontal plane;
- -154 + 0.5 (δ -5) dB(W/m^2) in any 4 kHz band for angles of arrival δ (in degrees) between 5 and 25 degrees above the horizontal plane; and
- -144 dB(W/m^2) in any 4 kHz band for angles of arrival between 25 and 90 degrees above the horizontal plane.

Figure 1 illustrates the PFD from EARENDIL-1 at the surface of the Earth in the 2200-2290 MHz bands.

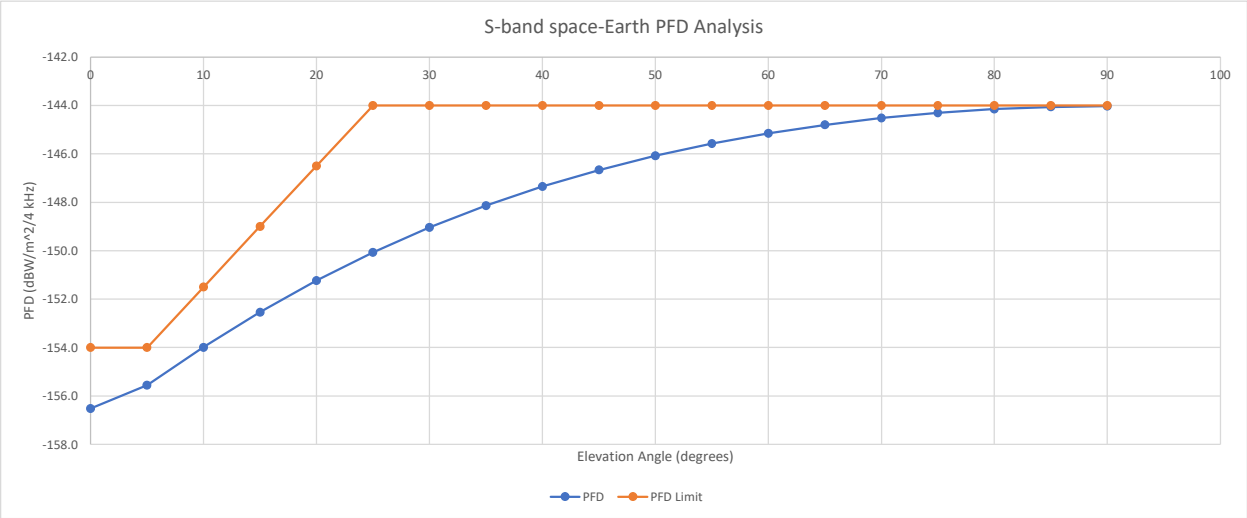

Figure 1: 2200-2290 MHz PFD Analysis

In the 8450-8500 MHz band, ITU Radio Regulations Table 21-4 provides space station PFD emissions in this frequency range at the Earth's surface shall not exceed the following values:

- -150 dB(W/m^2) in any 4 kHz band for angles of arrival between 0 and 5 degrees above the horizontal plane;
- -150 + 0.5 (δ -5) dB(W/m^2) in any 4 kHz band for angles of arrival δ (in degrees)

[2] *See* ITU Radio Regulations Table 21-4.

between 5 and 25 degrees above the horizontal plane; and

- -140 dB(W/m^2) in any 4 kHz band for angles of arrival between 25 and 90 degrees above the horizontal plane.

Figure 2 illustrates the PFD from EARENDIL-1 at the surface of the Earth in the 8450-8500 MHz band.

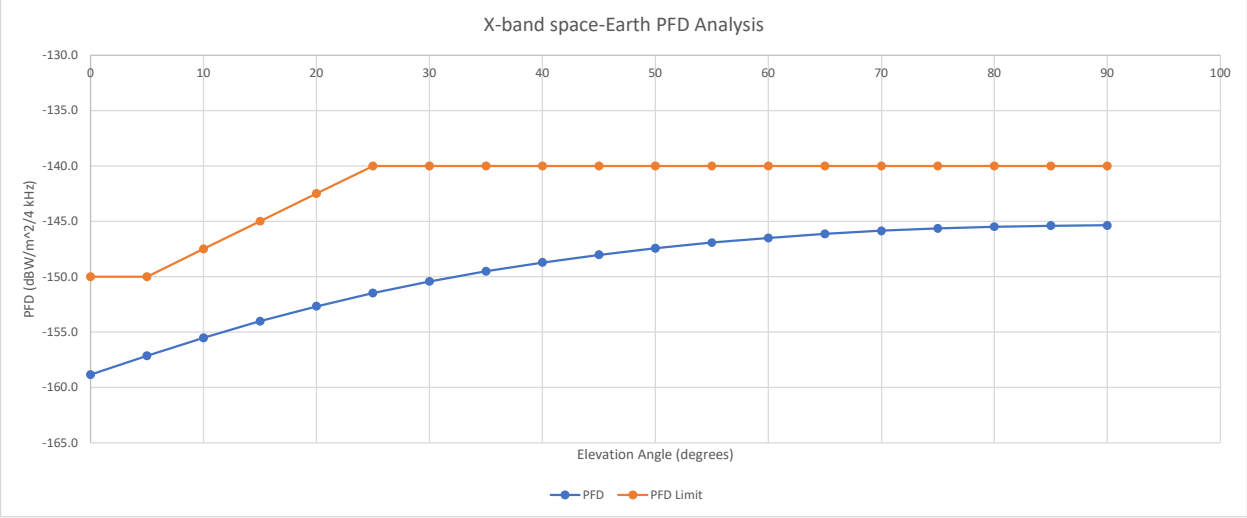

Figure 2: 8450-8500 MHz PFD Analysis

B. Out-of-Band Power

To safeguard SRS (deep space) operations in bands adjacent to 8450-8500 MHz, the U.S. federal agencies require compliance with ITU out-of-band-emissions limits.[3] Reflect Orbital will use a combination of baseband digital filtering and hardware radiofrequency filtering to ensure that its out-of-band emissions will not cause interference to authorized services in adjacent bands.

VIII. FEDERAL COORDINATION

Reflect Orbital is committed to coordinating its proposed operations and frequency usage to safeguard federal operations, and is concurrently engaging with government stakeholders, including NTIA, NOAA, NASA, and the U.S. Air Force and Space Force to coordinate its activities for this mission.

IX. SATELLITE ANTENNA GAIN CONTOUR PLOTS

Representative antenna gain contour plots are included in the Schedule S for the 625 km operational orbit altitude using a representative earth station in Denver, Colorado for most beams and Pretoria, South Africa for the S-band downlink beam (since EARENDIL-1 will not communicate in this band within the United States or its possessions).

[3] *See* Rec. ITU-R SA.1157 at Table 5; Rec. ITU-R SA.1014 at Table 3.

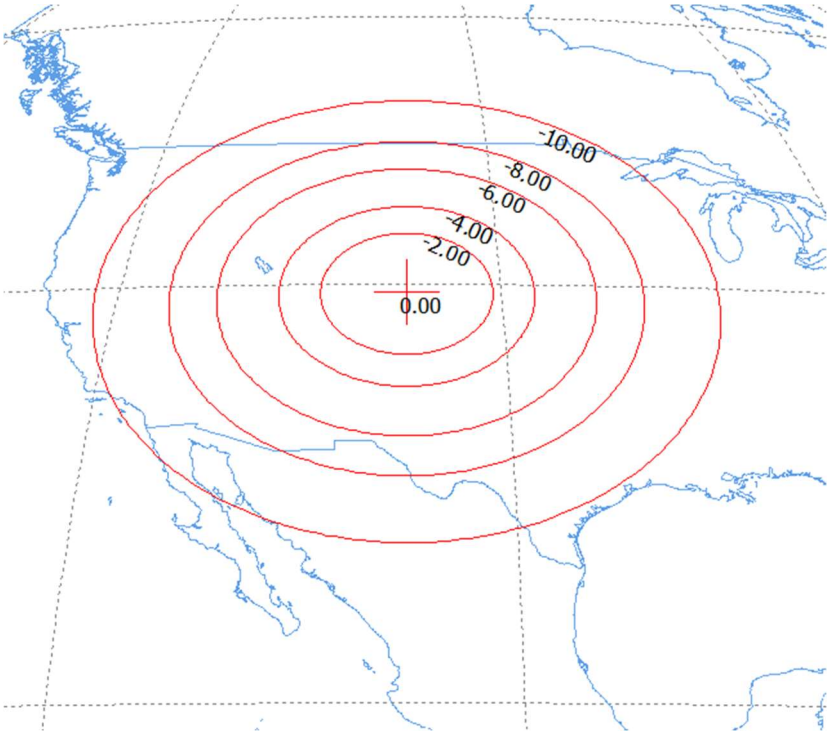

Figure 3: RS (S-band Earth-space) Antenna Beam Projection over Denver, Colorado, USA

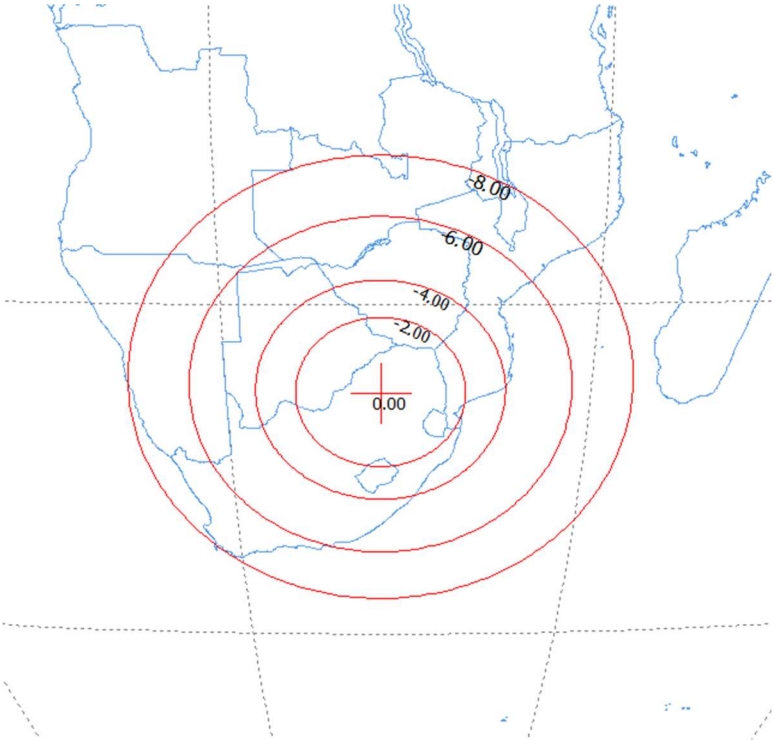

Figure 4: TS (S-band space-Earth) Antenna Beam Projection over Pretoria, South Africa

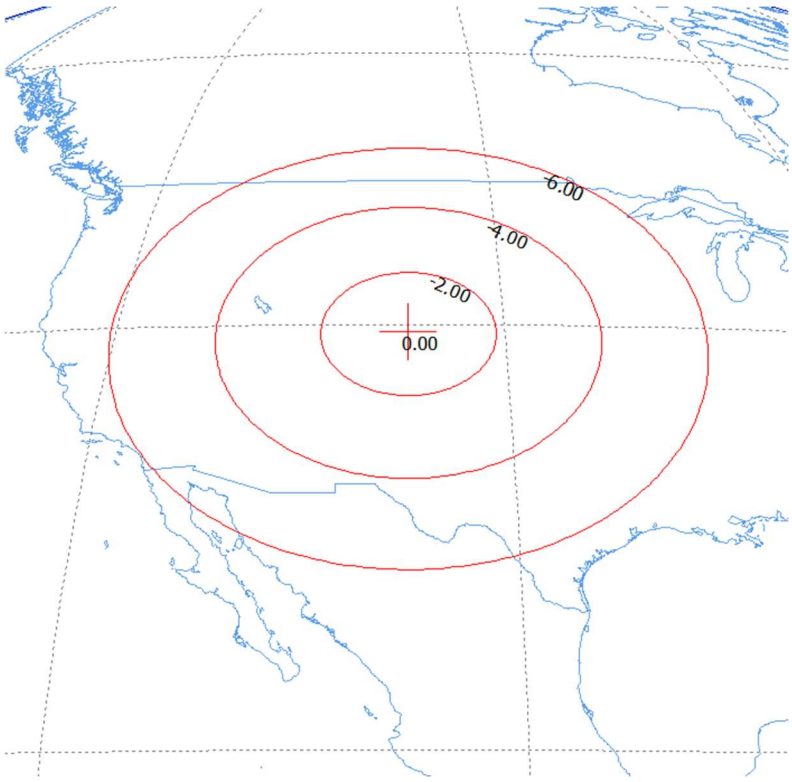

Figure 5: TX1 (X-band space-Earth) Antenna Beam Projection over Denver, Colorado, USA

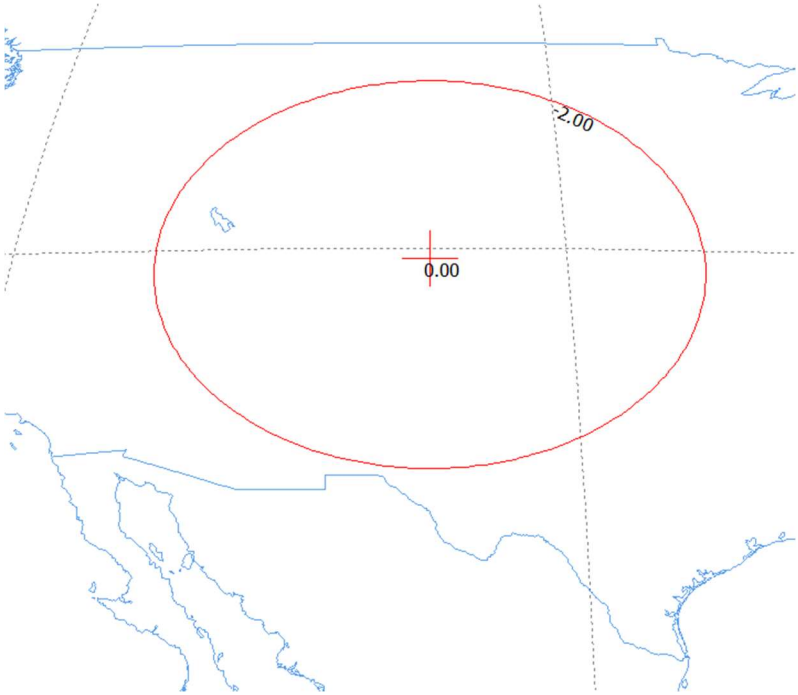

Figure 6: TUA (UHF space-Earth) Antenna Beam Projection over Denver, Colorado, USA

ATTACHMENT (ENGINEERING CERTIFICATION)

I hereby certify that I am the technically qualified person responsible for preparation of the engineering information contained in this application, that I am familiar with Part 25 of the Commission's rules, that I have either prepared or reviewed the engineering information submitted in this application, and that it is complete and accurate to the best of my knowledge and belief.

/s/ David C Morse, Ph.D.

David C. Morse
Avaliant, LLC
dave.morse@avaliant.com
425-246-3080

July 31, 2025