Exhibit C – Technical Appendix

This Technical Appendix contains updated technical information regarding Planet's planned Pelican fleet of non-geostationary orbit (NGSO) satellites, as required by Section 25.114 and other sections of the Part 25 rules. The updated Schedule S and the prior-filed Technical Appendices along with the amended sections 3, 5, 10, and 14 below should be used as the complete information package with respect to the license updates sought in the modification.[1] If not specifically mentioned below or in the Narrative, other aspects of Pelican operations remain as described in Planet's original Pelican license application and/or the subsequent modifications (some of which remain pending).[2]

3. Orbital Parameters for First 10 Pelicans[3]

The first two Pelican satellites have been launched and operate in SSO at an inclination of 96-97 degrees. After commissioning, the satellites will enter a low thrust spiral from their insertion orbit (between approximately 520-525 km) to their operational altitudes of 350 km +/- 25 km for Pelican 1 and, if approved in response to this modification, of 440 km +/- 25 km for Pelican 2. Of the next eight Pelican satellites, Planet expects that four will operate in SSO at an inclination of 96-97 degrees (depending on altitude) and four will operate in an inclined orbit of 53 degrees +/- 2 degrees, with an expected commissioning altitude between 250 km and 535 km, and then a transfer of up to 6 months to their final operational altitude of 440 km +/- 25 km. This nominal plan is outlined in Table 1 below and in the Schedule S. To provide for additional launch options, Planet requests the flexibility to launch up to six of the first ten Pelican satellites to either SSO or an inclined orbit of 53 degrees.

These ten Pelican spacecraft will reside in orbits with the crossing times driven by their respective launches' primary customers and satellites launched together will be located in a single orbital plane equally phased. Planet intends to maintain spacing to maximize coverage for any satellites that are launched in the same plane based on launch availability. Table 1 below indicates orbital parameters including phasing based on the most likely plan as of writing. The deployment and commissioning campaign for Pelican satellites may require lowering or raising from an insertion orbit dictated by the launch vehicle, which could extend as high as 535 km and as low as 250 km,[4] where the difference in altitude between launch insertion and operation will be mediated by the Pelican satellite's onboard propulsion system. Planet requests the flexibility to operate with +/- 25 km variation in the

[1] Planet has requested a waiver of certain Schedule S requirements. *See* Modification Application Narrative at 8.
[2] *See* ICFS File No. SAT-MOD-20220421-00042 (filed Apr. 21, 2022); ICFS File No. SAT-MOD-20231031-00269 (filed Oct. 31, 2023); ICFS File No. SAT-MOD-20240723-00157 (filed July 23, 2024); ICFS File No. SAT-MOD-20240830-00196 (filed Aug. 30, 2024).
[3] Planet provides here the orbital information for Pelican 1, as well as the updated orbital information for Pelicans 2-10, for which it is seeking authorization in this modification to operate at a higher nominal altitude and at either SSO or an inclination of 53 degrees. As previously discussed with the Commission, Planet will provide an updated orbital debris assessment report along with a modification to add the remaining 22 satellites currently planned for the constellation (as well as replacements over the course of the license term).
[4] Planet will reduce transmitter power on the satellite radios as needed to stay within the relevant power flux density limits while moving from insertion orbits to operational orbits. Edge case radio frequency analysis for the 550 km and 250 km cases was provided in Section 16 of Planet's initial Pelican technical appendix. *See* Exhibit C Technical Appendix, ICFS File No. SAT-MOD-20220421-00042 (filed Apr. 21, 2022).

350 km (Pelican 1) or 440 km (Pelicans 2-10) proposed operational altitude for standard operational reasons, including scheduled orbit altitude maintenance, ground track management, and collision avoidance. In terms of the satellite's active service arc, all satellites are expected to be operational and have the capacity to operate during their entire orbital period. Table 1 below, and Schedule S, provide details on the orbital parameters assuming a nominal case of six Pelicans in SSO orbits and four Pelicans in 53 degree orbits, but as Planet notes above, it requests authorization to operate up to six satellites in either SSO or 53 degree inclined orbits.

Table 1. Nominal Orbital Parameters[5]

Satellite	Orbit Epoch (utc)	Inclination (deg)	Orbital Period (s)	Perigee altitude (km)	Apogee altitude (km)	Argument of Perigee (deg)	Active Service Arc Begin Angle (deg)	Active Service Arc End Angle (deg)	RAAN (deg)	Initial Phase Angle (deg)	Mean Anomaly (deg)
Pelican SSO 1 (Plane 1)	2026-06-21 T12:00:00Z	96.85	5492.29	350	350	0	-90.00	90.00	180.00	0	0
Pelican SSO 2 (Plane 2)	2026-06-21 T12:00:00Z	97.17	5602.86	440	440	0	-90.00	90.00	165.00	0	0
Pelican SSO 3 (Plane 3)	2026-06-21 T12:00:00Z	97.17	5602.86	440	440	0	-90.00	90.00	180.00	0	0
Pelican SSO 4 (Plane 3)	2026-06-21 T12:00:00Z	97.17	5602.86	440	440	0	-90.00	90.00	180.00	180	180
Pelican SSO 5 (Plane 4)	2026-06-21 T12:00:00Z	97.17	5602.86	440	440	0	-90.00	90.00	195.00	0	0
Pelican SSO 6 (Plane 4)	2026-06-21 T12:00:00Z	97.17	5602.86	440	440	0	-90.00	90.00	195.00	180	180
Pelican Inclined 1 (Plane 5)	2026-06-21 T12:00:00Z	53	5602.86	440	440	0	-53.00	53.00	0.00	0	0
Pelican Inclined 2 (Plane 5)	2026-06-21 T12:00:00Z	53	5602.86	440	440	0	-53.00	53.00	0.00	90	90
Pelican Inclined 3 (Plane 5)	2026-06-21 T12:00:00Z	53	5602.86	440	440	0	-53.00	53.00	0.00	180	180

[5] The table represents inclination and period for a nominal altitude of 350 km for Pelican 1 and a nominal altitude of 440 km for Pelicans 2-10. These values will vary across the range of altitudes/inclinations requested.

Satellite	Orbit Epoch (utc)	Inclination (deg)	Orbital Period (s)	Perigee altitude (km)	Apogee altitude (km)	Argument of Perigee (deg)	Active Service Arc Begin Angle (deg)	Active Service Arc End Angle (deg)	RAAN (deg)	Initial Phase Angle (deg)	Mean Anomaly (deg)
Pelican Inclined 4 (Plane 5)	2026-06-21 T12:00:00Z	53	5602.86	440	440	0	-53.00	53.00	0.00	270	270

Planet may utilize both U.S. and foreign launch opportunities as either primary or secondary payloads. Planet often takes advantage of “last minute” launch opportunities, or launch opportunities where the exact orbit is not known until very close to the launch date. To simplify the regulatory process, Planet agrees only to launch within the requested parameter ranges and presents analysis for worst-case scenarios within those ranges.

5. Frequency Plan

The spacecraft will operate in all the frequencies previously listed in Planet’s Pelican application and modifications (and represented in the Schedule S), with the addition of the L-band frequencies listed below, as a customer of Inmarsat.

Table 2. Spacecraft Frequencies (L-band)

Usage	Link Direction	Frequency
Inmarsat L-band inter-satellite link for rapid insight downlink	Transmit (LEO to GEO)	1626.5-1660.5 MHz
Inmarsat L-band inter-satellite confirmation link	Receive (GEO to LEO)	1525-1559 MHz

5.6 L-band (Intersatellite Link)

The Inmarsat ISL payload concurrently receives MSS L-band data signals in the 1525-1559 MHz band from authorized and coordinated Inmarsat satellites and transmits in the 1626.5-1660.5 MHz band. The channels for the service are spaced every 200 kHz (beginning with a center frequency of 1525.1 MHz for the receive frequency and 1626.6 MHz for the transmit frequency) and the specific channels for operation will be selected by Inmarsat. The channel listed in the Schedule S is a single channel representative of the large number of potentially available channels due to how difficult such a large set of channels is for the Schedule S system to manage.

10. Power Flux Density (PFD) Analysis

This section provides required PFD analyses for the updated target operational orbit of 440 km for Pelicans 2-10. The impact to PFD of edge-case commissioning orbits of 250 km and 550 km was previously considered in Section 16 of Planet's initial Pelican technical appendix.[6]

10.1 PFD at the Surface of the Earth in the 8025-8400 MHz band

Section 25.208 of the Commission's rules does not contain limits on PFD at the Earth's surface produced by emissions from NGSO EESS space stations operating in the 8025–8400 MHz band.[7] However, Table 21-4 of the ITU Radio Regulations states that the PFD at the Earth's surface produced by emissions from an EESS space station in the 8025–8400 MHz band, including emissions from a reflecting satellite, for all conditions and for all methods of modulation, must not exceed the following values:

- -150 dB(W/m²) 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/m²) in any 4 kHz band for angles of arrival δ (in degrees) between 5 and 25 degrees above the horizontal plane; and
- -140 dB(W/m²) in any 4 kHz band for angles of arrival between 25 and 90 degrees above the horizontal plane.

These limits relate to the PFD that would be obtained under free-space propagation conditions. As shown in Figure 1 below, the PFDs at the Earth's surface produced by the Pelican satellite's data transmissions satisfy the PFD limits in the ITU Radio Regulations for all angles of arrival. In addition, the transmit power for the payload data transmitters is adjustable on orbit. This capability supports Planet's ability to manage the satellites' PFD levels during all phases of the mission, i.e., for all commissioning and operational altitudes.

[6] *See* Exhibit C, Technical Appendix, ICFS File No. SAT-MOD-20220421-00042 (filed Apr. 21, 2022).
[7] 47 C.F.R. § 25.208.

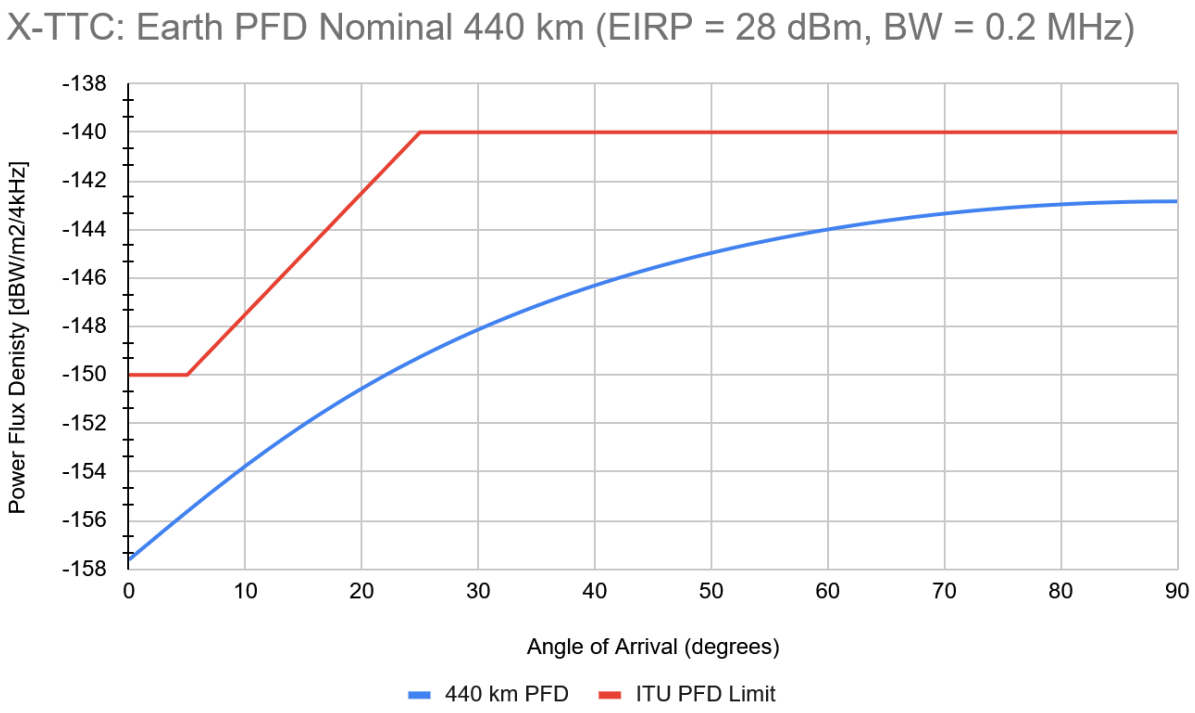

Figure 1. X-Band TT&C Maximum PFD at Earth's Surface for Nominal 440 km Operational Orbit

10.2 PFD at the Surface of the Earth in the 8400-8450 MHz Deep Space Research Band

Recommendation ITU-R SA-1157 specifies a maximum allowable interference power spectral flux-density level at the Earth's surface of -255.1 dB(W/(m²Hz)) to protect ground receivers in the deep-space research band (DSN) of 8400–8450 MHz. As previously described in Planet's Pelican technical appendices, Planet uses a combination of baseband digital filtering (using an alpha roll-off factor of 0.5) and RF layer bandpass filtering to achieve the ITU recommended protection level for the 8400-8450 MHz band.

10.3 PFD at the Geostationary Satellite Orbit (GSO) in the 8025-8400 MHz Band

ITU Radio Regulation No. 22.5 specifies that in the 8025–8400 MHz frequency band, which the EESS using non-geostationary satellites shares with the fixed-satellite service (Earth-to-space) or the meteorological-satellite service (Earth-to-space), the maximum PFD produced at GSO by any EESS space station shall not exceed -174 dB(W/m²) in any 4 kHz band. The calculation below shows that the PFD produced by transmissions from the proposed Pelican EESS satellites does not exceed ITU limits even in a worst-case, hypothetical analysis.

The PFD at the GSO produced by the Pelican transmission is:

$$PFD\ [dB(W/m^2\ /\ 4\ kHz)] = EIRP\ [dBW] - 71 - 20log10(D) - 10log10(BW) - 24]$$

where:

- EIRP is the maximum EIRP of the transmission, in dBW;
- D is distance between the Pelican satellite and the GSO, in km; and
- BW is the symbol bandwidth of the transmission, in MHz.

The distance between a Pelican satellite and the GSO is:

- 35,786 - 440 = 35,346 km for the Pelican satellite orbit altitude of 440 km.

Under a worst-case and unlikely assumption that the Pelican satellite antenna is radiating at its peak EIRP directly toward the GSO, the data downlink transmission with a peak EIRP = -2.0 dBW[8] and a bandwidth = 0.2 MHz produces a PFD at the GSO of:

- -2.0 dBW - 71 - 20log10(35,436) - 10log10(0.2) - 24 = -181.0 dB(W/m²) in any 4 kHz band for the Pelican satellite orbit altitude of 440 km.

10.4 PFD at the Surface of the Earth in the 25500 – 27000 MHz band

Section 25.208(p)[9] of the Commission's rules requires that PFD at the Earth's surface produced by emissions from a space station in the EESS in the band 25500–27000 MHz, for all conditions and for all methods of modulation, must not exceed the following values:

- -115 dB(W/m^2) in any 1 MHz band for angles of arrival between 0 and 5 degrees above the horizontal plane;
- -115 + 0.5(δ -5) dB(W/m^2) in any 1 MHz band for angles of arrival (δ measured in degrees) between 5 and 25 degrees above the horizontal plane; and
- -105 dB(W/m^2) in any 1 MHz band for angles of arrival between 25 and 90 degrees above the horizontal plane;

Where δ is the angle between the boresight of the victim antenna and the horizontal plane. The PFD in a reference bandwidth of 1.0 MHz may be calculated using the relationship:

$$PFD\ [dB(W/m^2)/1\ MHz)] = EIRP(dBW) - 71.0 - 20log_{10}(D) - 10log_{10}(BW)$$

Where:

- EIRP is the maximum EIRP of the transmission, in dBW;
- D is the distance in km between the satellite and the victim antenna (or surface area of interest); and
- BW is the symbol bandwidth of the transmission, in MHz.

These limits refer to the PFD that would be obtained under assumed free-space propagation conditions only (no excess path loss of any kind is assumed). This corresponds to worst-case conditions

[8] The peak EIRP of the Pelican X-band transmitter is -2 dBW. Due to limitations in the Schedule S form, Planet entered a placeholder value of 0 dBW as the maximum transmit EIRP in the Schedule S. *See* Modification Application Narrative at 8 (requesting waiver of section 25.114(c) of the Commission's rules, which requires certain information to be filed in the Schedule S).

[9] 47 C.F.R. § 25.208(p).

for our system as excess path loss at Ka-band millimeter wave frequencies for space systems never approaches zero under any practical link conditions, at any elevation angle.

PFD levels at the Earth's surface in the 25500 to 27000 MHz band are shown in Figure 2, below. In addition to the PFD for nominal 16 channel per polarization operation, the PFD for 3 channel per polarization operation is also shown. This configuration would be utilized if there was an off-nominal situation that required additional channel power for link closure.

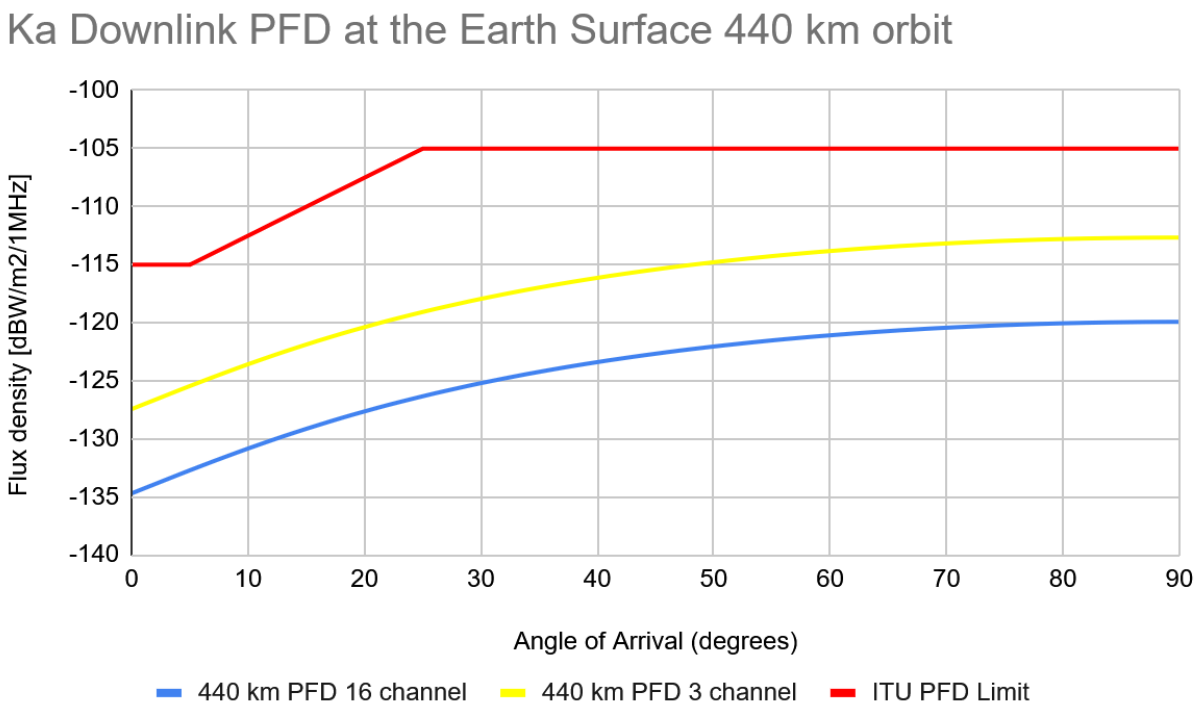

Figure 2. Ka-band Downlink Maximum PFD at Earth's Surface for Nominal 440 km Operational Orbit

10.5 PFD at the Surface of the Earth in C-band

As specified in ITU SF.358-5, the maximum permissible PFD at the Earth's surface at 6 GHz to protect terrestrial radio-relay systems is given by the mask in Figure 3 (shown as the red line). Planet will only use the transmit antenna when it is pointed to the GSO satellite, and to comply with the ground PFD requirements, we restrict the usage to situations where the look angle from the satellite to the GSO satellite is 3 or more degrees above the local horizontal plane. (For a ground terminal, this would be equivalent to a 3 degree minimum elevation angle). Because of the curvature of the earth, the minimum angle from the antenna boresight to the earth's surface is 23.7 degrees, reducing the power seen at the Earth's surface.

The results are shown in Figure 3, with the red line being the ITU mask and the blue line being the worst-case incident radiation power flux density under the stated operating conditions. The results are compliant with the recommendation and hence should not produce interference in ground systems.

In most cases the satellite is expected to be pointed at a higher elevation angle when transmitting, making this a conservative estimate.

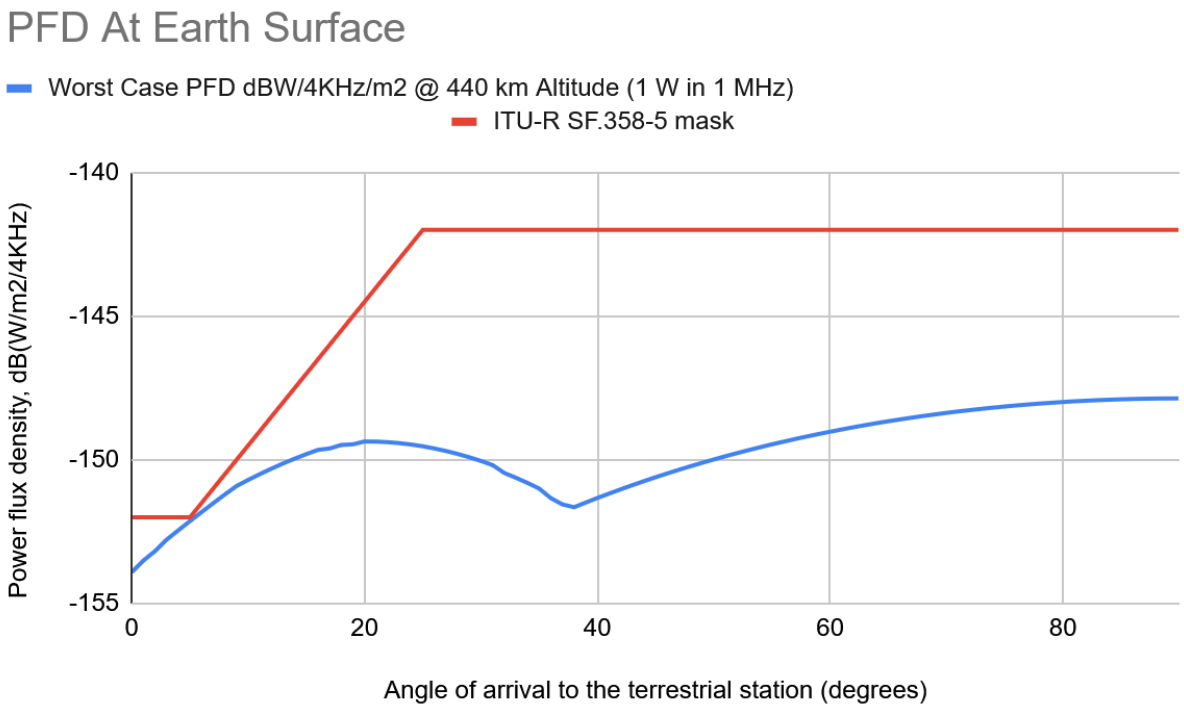

Figure 3. Maximum PFD at the Earth's Surface from the NGSO C-band Antenna for 440 km orbit

14. Satellite Antennas

Schedule S, within the FCC Form 312 portion of this Application, describes in detail the technical characteristics of the proposed beams. The following provides a summary of the proposed radio frequency and parameters for the Pelican L-band antenna.

14.6 L-band Antenna

The antenna pattern for the reception of the L-band data signals from Inmarsat satellites is illustrated in Figure 4, below. The L-band data signal RX beam is Zenith pointing and has a maximum gain of 9.0 dBi.

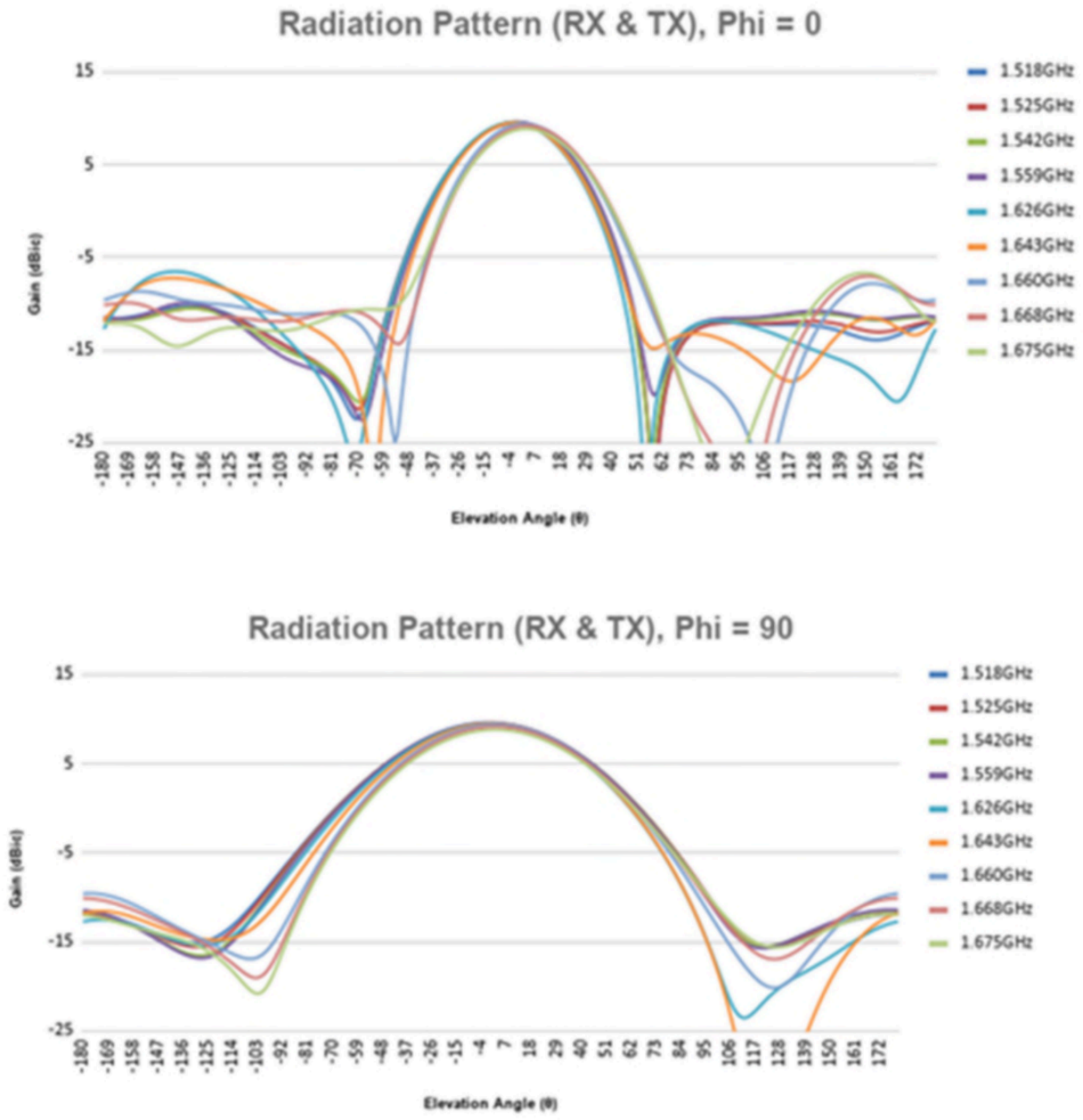

Figure 4. L-Band Antenna Transmit/Receive Patterns

Technical Certificate

I, David Nemeth, hereby certify, under penalty of perjury, that I am the technically qualified person responsible for the preparation of the engineering information contained in the technical portions of the foregoing application and the related attachments, that I am familiar with Part 25 of the Commission's rules, and that the technical information is complete and accurate to the best of my knowledge and belief.

/s/ David Nemeth

David Nemeth

Satcom Systems Architect

Date: May 27, 2025

Planet Labs PBC