

EXHIBIT C

Technical Narrative

TABLE OF CONTENTS

I.	Scope	1
II.	General Description of Overall Facilities	1
III.	Spacecraft Description	2
IV.	Operations and Services	3
	A. Orbital Parameters	3
	B. Orbital Debris	4
	C. Earth Stations	4
V.	Frequency Plan	6
VI.	Frequency Tolerance	8
VII.	Out-of-Band Emissions	8
	A. Section 25.202(f)(1), (2) and (3), and ITU-R SM 1541	9
	B. Recommendation ITU-R SM.329	11
VIII.	Cessation of Emissions	13
IX.	Power Flux Density (“PFD”) Analysis	13
	A. PFD at the surface of the Earth in the 8025–8400 MHz band	13
	B. PFD at the surface of the Earth in the 8400–8450 MHz Deep Space Research Band	15
	C. PFD at Geostationary Orbit in the 8025–8400 MHz Band	18
	D. Compliance Margin: 19 dB	19
	E. Compliance Margin: 23.7 dB	19
X.	Coordination with U.S. Government Systems	19
XI.	Satellite Antenna Characteristics and Radiation Patterns	19
	A. S-band TCU1 and HSU1 Receiver Antennas	19
	B. X-band TCD1 and TCD2 Transmitter Antennas	20
	C. X-band HSD1 Transmitter Antenna	21
XII.	Predicted Gain Contours	22
	A. Wide beam Tx and Rx Antenna Footprint (TCU1, HSU1, TCD1, TCD2, HSD1)	22
XIII.	Engineering Certification	23

I. Scope

This Technical Narrative contains technical and other information regarding PlanetiQ's GNOMES system.

II. General Description of Overall Facilities

PlanetiQ plans to perform system commissioning at the relevant injection altitude. The commissioning period is expected to be less than 1 month. After commissioning, the GNOMES satellite will maneuver to 575+/-25 km circular orbit, where the satellite will commence service.

Because data latency is vital for the value of atmospheric measurements, frequent data downloads to the ground are necessary. Occultation observation data from the GNOMES system will be downlinked via X-band radio during scheduled ground station passes. The high-speed downlink supports scalable data rates, with a nominal operational rate of approximately 20 Mbps and the capability to support higher data rates of up to 100 Mbps, if required. Commanding and software updates will be uplinked via S-band radio from ground stations at data rates of up to 990 kbps. PlanetiQ is applying for center frequencies listed in the table below and are subject to frequency coordination with federal spectrum managers and, thus, may change. All frequencies are active during ground station passes:

Frequency Band	Center Frequency (MHz)	Bandwidth (kHz)	Data Rate(s)
2025-2110 MHz	2062.20 (TT&C uplink)	280	100 kbit/s
2025-2110 MHz	2062.65 (high speed uplink)	620	990 kbit/s

Uplink Parameters

Frequency Band	Center Frequency	Bandwidth (MHz)	Data Rate(s)
8025-8400 MHz	8385.00 (TT&C downlink)	2.80	500 kbit/s
8025-8400 MHz	8390.00 (TT&C downlink)	2.80	500 kbit/s

8025-8400 MHz	8175.00 (high speed downlink)	48.0	19-100 Mbit/s
---------------	-------------------------------	------	---------------

Downlink Parameters

The Pyxis-RO instruments are designed to receive the publicly available GNSS signals from the GPS (L1 at 1575.42 MHz and L2 at 1227.6 MHz), Galileo (E1 at 1575.42 and E5 at 1207.14 MHz), GLONASS (FDMA signals centered at L1 at 1602 MHz and L2 at 1246 MHz), and BeiDou (B1 at 1575.42 MHz and B2 at 1207.14 MHz) constellations, as shown in Table 1:

	GPS	GLONASS	Galileo	BeiDou
1 st frequency	L1C/A	L1OF	E1	B1C
2 nd frequency	L2C	L2OF	E5b	B2a

Table 1: *RO signal source for each constellation*

Dual-frequency measurements from the occulting satellite are necessary to resolve the ionospheric contribution to the signal path delay. Additionally, the reception of multiple GNSS signals will allow PlanetiQ to cross-check and validate the accuracy of its data observations. Observations of GNSS signal Doppler frequency and carrier phase amplitude will be collected and stored on board before periodic transfer to the ground for further processing. Linking the observations to post-processed orbital geometry information will identify the bending angle unique to each occultation event, which is then translated to a vertical refractivity profile at a given location. The use of post-processed orbits also ensures that the weather products are not derived from spoofed or inaccurate signals, including from the foreign GNSS satellites. The Pyxis-RO payload is a passive receiving instrument and does not transmit radiofrequency emissions.

III. Spacecraft Description

GNOMES-10 and GNOMES-11 are microsatellite-style satellites designed to fit in a SpaceX ½ plate volume. Once separated from the launch vehicle, the satellites will deploy the

solar panel and specialized Pyxis-RO antennas. The spacecraft is three-axis stabilized and nadir following:

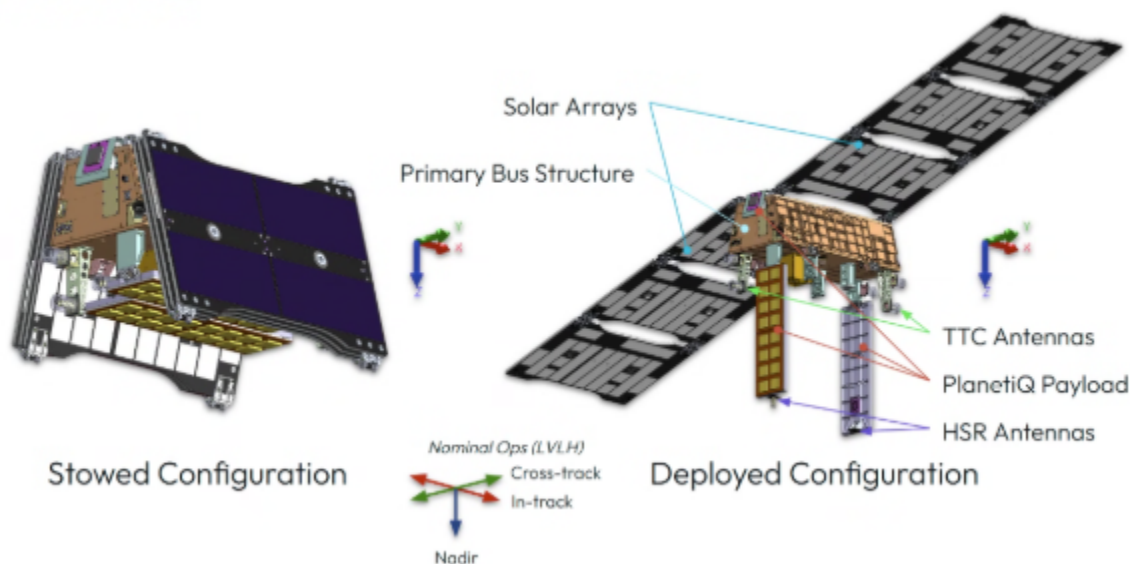


Figure 1: *Spacecraft Overview*

IV. Operations and Services

A. Orbital Parameters

The GNOMES-10 spacecraft is expected to be launched into the Transporter-18 orbit listed in Table 2 below. The RAAN is an estimate and the final value will be provided when the information is released by the launch provider closer to launch:

Orbit	Spacecraft	Altitude	Inclination	RAA N	Period	LTDN
1	GNOMES-10	510 +/- 20 km	97.6° +/- 0.5 degrees	157.6	96 m	Current estimate 22:30:00

Table 2: *GNOMES-10 Orbital Parameters*

The GNOMES-11 spacecraft is expected to be launched into the Bandwagon-5 orbit listed in Table 3 below. The RAAN is an estimate and the final value will be provided when the information is released by the launch provider closer to launch:

Orbit	Spacecraft	Apogee	Perigee	Inclination	RAA N	Period
-------	------------	--------	---------	-------------	----------	--------

2	GNOMES-11	500-600 km +/- 20 km	500-600 km +/- 20 km	53° +/- 0.1 degrees	160	96 m
---	-----------	-------------------------	----------------------	---------------------	-----	------

Table 3: GNOMES-11 Orbital Parameters

Note that, because the precise RAAN and LTDN are influenced by the precise timing of the launch, it is not possible to provide an accurate value at the time of filing. The LTDN value provided above is merely one possible value for this parameter. PlanetiQ will provide a final RAAN/LTDN closer to the time of launch.

After commissioning, the GNOMES spacecraft will maneuver to their nominal orbital altitude at 575 +/-25 km circular, where they will commence service. Propulsion will be used to maintain the satellite's nominal operating altitude. At EOL, there will be a propulsion maneuver from nominal operating altitude to 380 km and deorbiting due to drag will occur. PlanetiQ will continue to provide service down to an altitude of 350 km.

B. Orbital Debris

An Orbital Debris Assessment Report ("ODAR") for the GNOMES system has been completed in compliance with NASA-STD-8719.14, Appendix A, which is attached as a separate exhibit. As discussed in the submitted ODAR, the GNOMES system is compliant with all applicable orbital debris requirements in Section 25.114(d)(14).

C. Earth Stations

GNOMES-10 will rely on several KSAT and Leaf Earth stations for commanding, telemetry, and payload data downlink. The locations of the ground stations are shown in Table 4 below:

Location		Frequency Band	Lat. (N)	Long. (E)
Fairbanks	US	X/S-band	64.82	-147.72
Svalbard	Norway	X/S-band	78.23	15.41

Location		Frequency Band	Lat. (N)	Long. (E)
Punta Arenas	Chile	X/S-band	-52.94	-70.87
Hartebeesthoek	South Africa	X/S-band	-25.89	27.71
Awarua	New Zealand	X/S-band	-46.53	168.38
Hawaii	US	X/S-band	20.82	-156.45
Jeju	South Korea	X/S-band	33.39	126.32
Mingenew	Australia	X/S-band	-29.01	115.34
Puertollano	Spain	X/S-band	38.67	-4.16
Santa Maria	Azores	X/S-band	37.00	-25.14
Awarua	New Zealand	X/S-band	-46.53	168.38
Sofia	Bulgaria	X/S-band	42.48	23.45
Unst	UK	X/S-band	60.75	-0.86
Anchorage	US	X/S-band	62.33	-150.03
Peterborough	Australia	X/S-band	-32.96	138.85
Nangetty	Australia	X/S-band	-29.01	115.34
Blonduos	Iceland	X/S-band	65.65	-20.25
Baku	Azerbaijan	X/S-band	40.47	49.49
Ripailles	Mauritius	X/S-band	-20.14	57.69
Jeju	South Korea	X/S-band	33.39	126.32
Pretoria	South Africa	X/S-band	-25.86	28.45
La Paz	Mexico	X/S-band	24.10	-110.39
Longovilo	Chile	X/S-band	-33.96	-71.40
Las Cruces	US	X/S-band	32.27	-106.91

Table 4: Earth X/S Band Stations

GNOMES-11 will rely on several earth KSAT, and Leaf Space stations for commanding, telemetry, and payload data downlink. The locations of the ground stations are shown in Table 5(a) below:

Location		Frequency Band	Lat. (N)	Long. (E)
Punta Arenas	Chile	X/S-band	-52.94	-70.87
Hartebeesthoek	South Africa	X/S-band	-25.89	27.71
Awarua	New Zealand	X/S-band	-46.53	168.38
Hawaii	US	X/S-band	20.82	-156.45
Jeju	South Korea	X/S-band	33.39	126.32

Location		Frequency Band	Lat. (N)	Long. (E)
Mingenew	Australia	X/S-band	-29.01	115.34
Puertollano	Spain	X/S-band	38.67	-4.16
Santa Maria	Azores	X/S-band	37.00	-25.14
Awarua	New Zealand	X/S-band	-46.53	168.38
Sofia	Bulgaria	X/S-band	42.48	23.45
Peterborough	Australia	X/S-band	-32.96	138.85
Nangetty	Australia	X/S-band	-29.01	115.34
Baku	Azerbaijan	X/S-band	40.47	49.49
Ripailles	Mauritius	X/S-band	-20.14	57.69
Jeju	South Korea	X/S-band	33.39	126.32
Pretoria	South Africa	X/S-band	-25.86	28.45
La Paz	Mexico	X/S-band	24.10	-110.39
Longovilo	Chile	X/S-band	-33.96	-71.40
Las Cruces	US	X/S-band	32.27	-106.91

Table 5(a): Earth X/S Band Stations

U.S. earth stations will be authorized pursuant to Part 25 of the Commission's Rules.

Earth stations located outside the United States will operate pursuant to authorization from their respective national administrations and subject to coordination with U.S. federal operators, as required.

V. Frequency Plan

The GNOMES system will carry data communications equipment to support Telemetry, Tracking, and Command (TT&C) operations as well as downlink of payload data via a High-Speed Radio (HSR) transmitter. The GNOMES system will use an S-band (2025-2110 MHz) uplink for TT&C commanding operations, and an X-band (8025-8400 MHz) downlink for TT&C telemetry and payload data.

Both bands are allocated on a primary basis for these operations: 2025-2110 MHz is allocated on a primary basis for both the Space Operations Service and EESS (Earth-to-space) and the 8025-8400 MHz band is allocated on a primary basis to EESS (space-to-Earth).

TT&C operations may be conducted from any of the earth station sites listed in Table 3.

The specific commanding and telemetry channels are listed in Schedule S and reproduced in the Table below.

The GNOMES system satellites also include a Safe Mode which may be triggered by certain anomalous events. In Safe Mode, the satellites will transmit short transmission bursts with satellite status data at a rate of about 0.25s of transmission activity every 30s (< 1% of duty-cycle). The transmission waveform parameters of the beacon are the same as the nominal TT&CX-band downlink: same carrier frequencies, same power levels, and same bandwidths. The Safe Mode beacon can be disabled from mission control. Details on the TT&C and HSR frequencies and channels are provided in Table 6 below:

Usage	Channel ID	Link Direction	Modulation (std, opt)	Band
TT&C Uplink (+/- Velocity side)	TCU1	Earth-to-space	OQPSK	EESS S-band 2025-2110 MHz
High-Speed data Uplink (Nadir)	HSU1	Earth-to-space	8-PSK	EESS S-band 2025-2110 MHz
TT&C Downlink (+ Velocity side)	TCD1	Space-to-Earth	OQPSK	EESS X-band 8025-8400 MHz
TT&C Downlink (-Velocity side)	TCD2	Space-to-earth	OQPSK	EESS X-band 8025-8400 MHz
High Speed data Downlink (Nadir Side)	HSD1	Space-to-Earth	DVB-S2	EESS X-band 8025-8400 MHz

Channel ID	Bandwidth	Center Frequency	Polarization	Ant. Gain
------------	-----------	------------------	--------------	-----------

TCU1	280 kHz	2062.20 MHz	RHCP	2.0 dBi
HSD1	620 kHz	2062.65 MHz	RHCP	2.0 dBi

Channel ID	Bandwidth	Center Frequency	Polarization	Ant. Gain
TCD1	2.80 MHz	8385.00 MHz	RHCP	2.0 dBi
TCD2	2.80 MHz	8390.00 MHz	RHCP	2.0 dBi
HSD1	48.0 MHz	8175.00 MHz	RHCP	2.0 dBi

Table 6: Antenna Parameters

Contact details for the control center are provided below:

Micah Hemness
Systems Engineer
Space Sciences & Engineering LLC, d/b/a PlanetiQ
15000 West 6th Avenue, Suite 202
Golden, CO, 80401
Telephone: 720-280-6147

VI. Frequency Tolerance

The GNOMES system will comply with the frequency tolerance requirements of Section 25.202(e). The frequency tolerance specification for the GNOMES satellites emissions are expected to be better than 2 ppm.

VII. Out-of-Band Emissions

The out-of-band emission limits of Section 47 CFR 25.202(f)(1), (2), and (3) will be met, as well as the limits specified by the following ITU recommendations:

- A. Recommendation ITU-R SM.1541 (revision 7, 09/2024): Unwanted emissions in the out-of-band domain (annex 2 and annex 5); <https://www.itu.int/rec/R-REC-SM.1541>
- B. Recommendation ITU-R SM.329 (revision 13, 09/2024): Unwanted emissions in the spurious domain (category A limits); <https://www.itu.int/rec/R-REC-SM.329>

C. Recommendation ITU-R SA-1157 (revision 1, 03/2006): Protection criteria for deep-space research (Section IX); <https://www.itu.int/rec/R-REC-SA.1157/>. See Section IX below.

A. Section 25.202(f)(1), (2) and (3), and ITU-R SM 1541

As illustrated via the transmitter output spectrum in the figures provided below, the GNOMES system will comply with the out-of-band emission (“OOBE”) limit masks of 47 C.F.R. § 25.202(f)(1), (2) and (3), as well as Recommendation ITU-R SM.1541:

Out-of-band emissions for HSD1

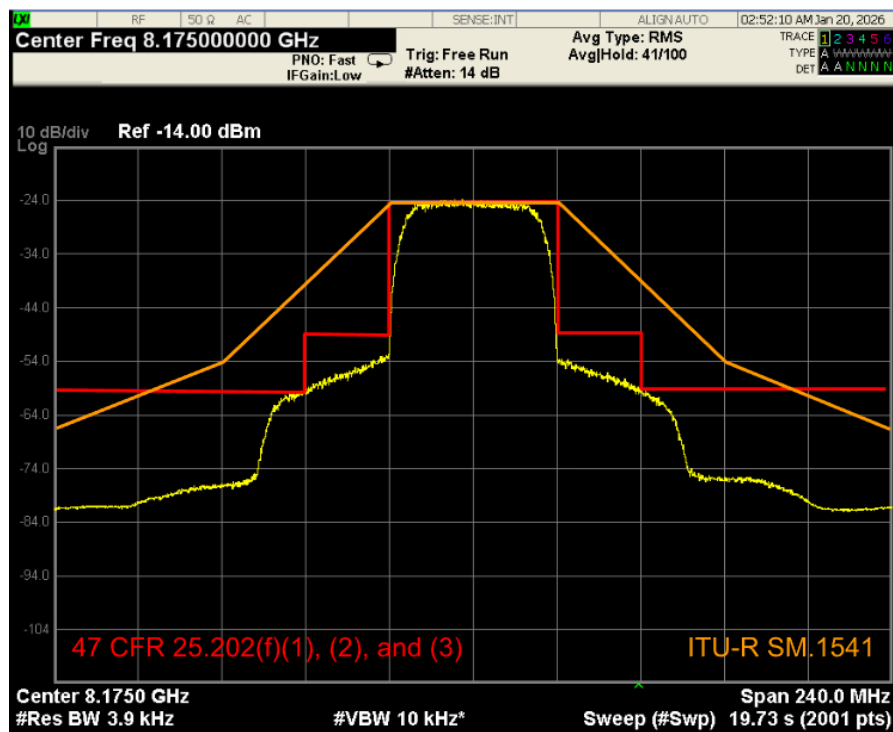
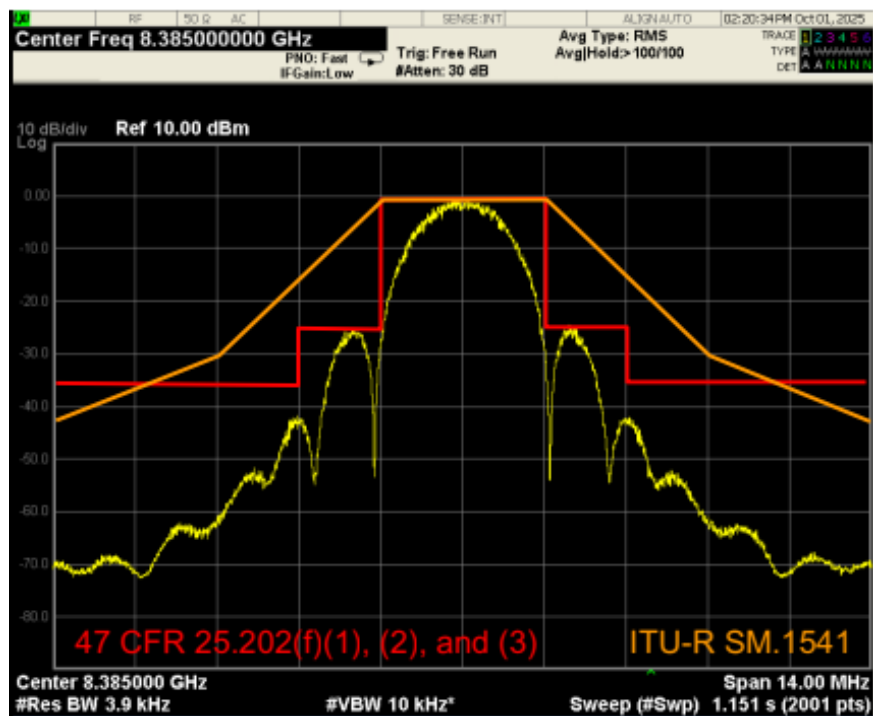


Figure 2: HSD1 47CFR25.202(f)(1), (2) and (3), and SM.1541 mask compliance

Out-of-band emissions for TCD1



Out-of-band emissions for TCD2

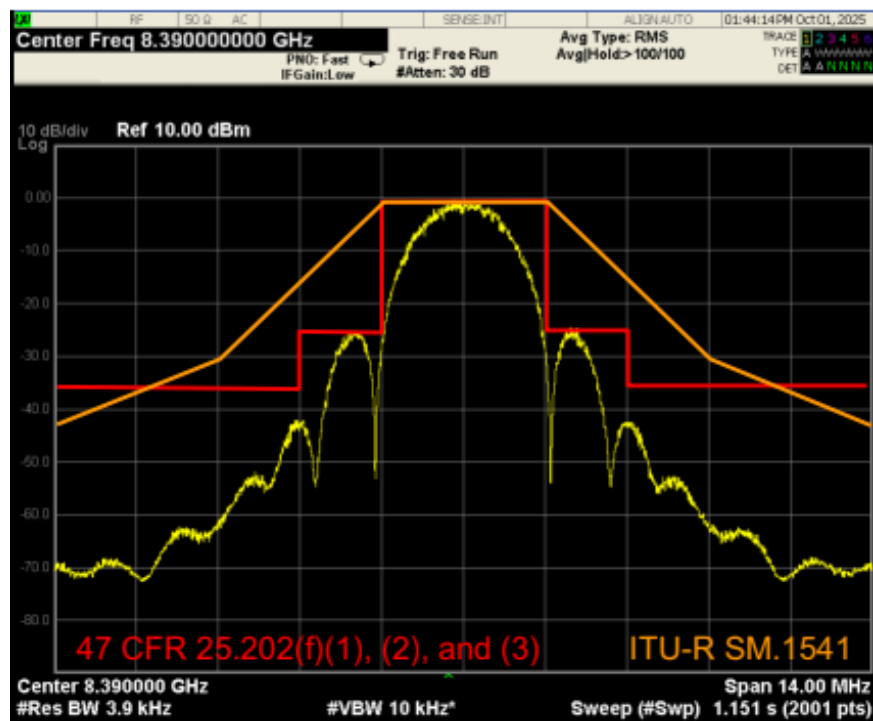
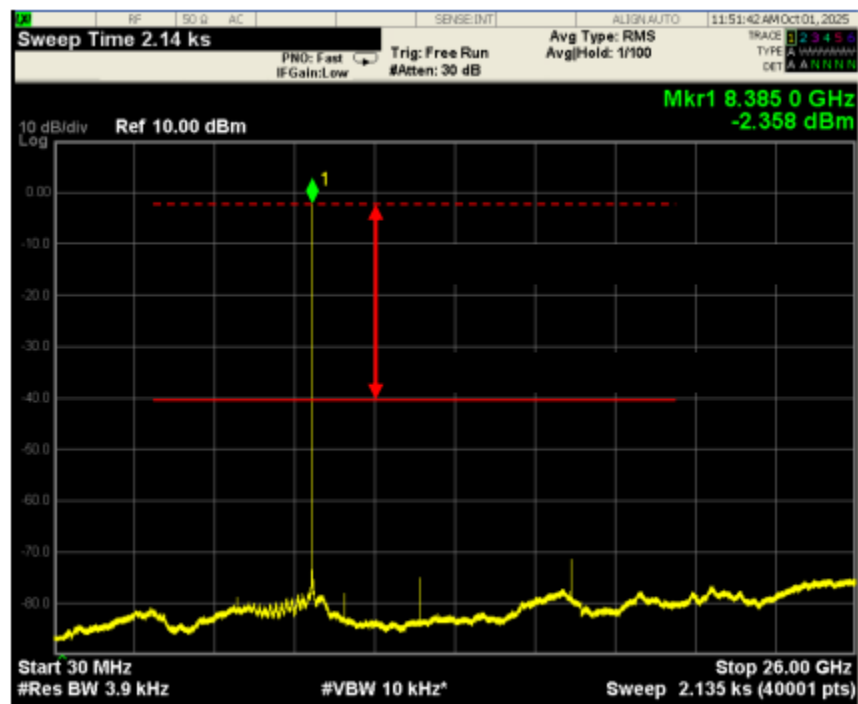


Figure 3: TCD1 and TCD2 47CFR25.202(f)(1), (2) and (3), and SM.1541 mask compliance

B. Recommendation ITU-R SM.329

As demonstrated below, PlanetiQ will comply with the limits on spurious emissions in Recommendation ITU-R SM.329. The spurious-domain emission limits follow Category A of Recommendation ITU-R SM.329 for Space services (space stations). The limit is $43 + 10 \log P$, or 60 dBc, whichever is less stringent, where P is the mean power level applied to the antenna (the recommended reference bandwidth is 4 kHz, the closest allowed by the measuring signal analyzer is 3.9 kHz).



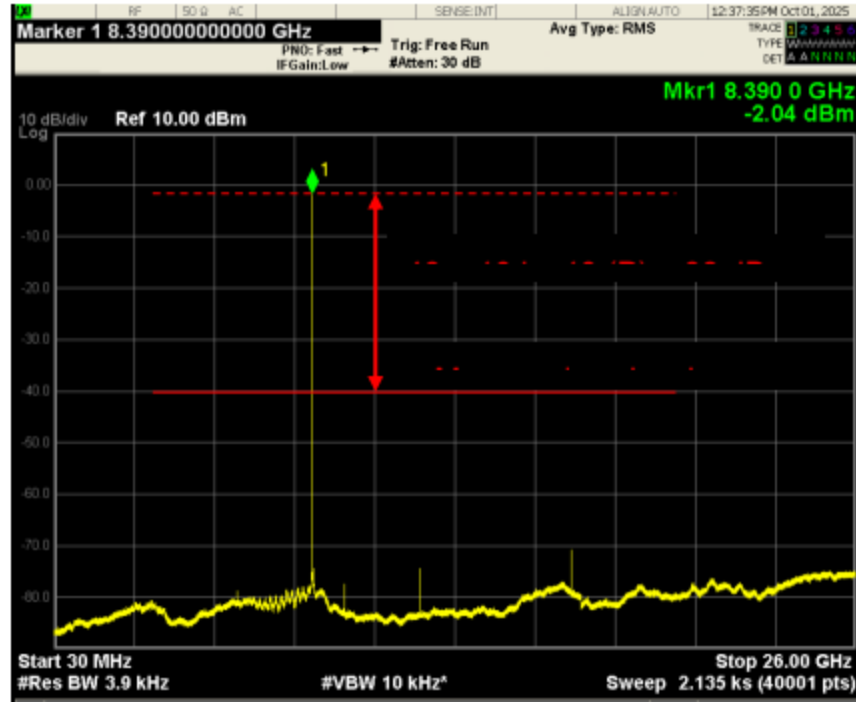


Figure 4: TCD1 and TCD2 SM.329 mask compliance. Average power level at the antenna port is $10\log_{10}(P) = -5$ dBW. Marker 1 identifies the in-band transmission centered on 8385 MHz (TCD1) or 8390 MHz (TCD2).

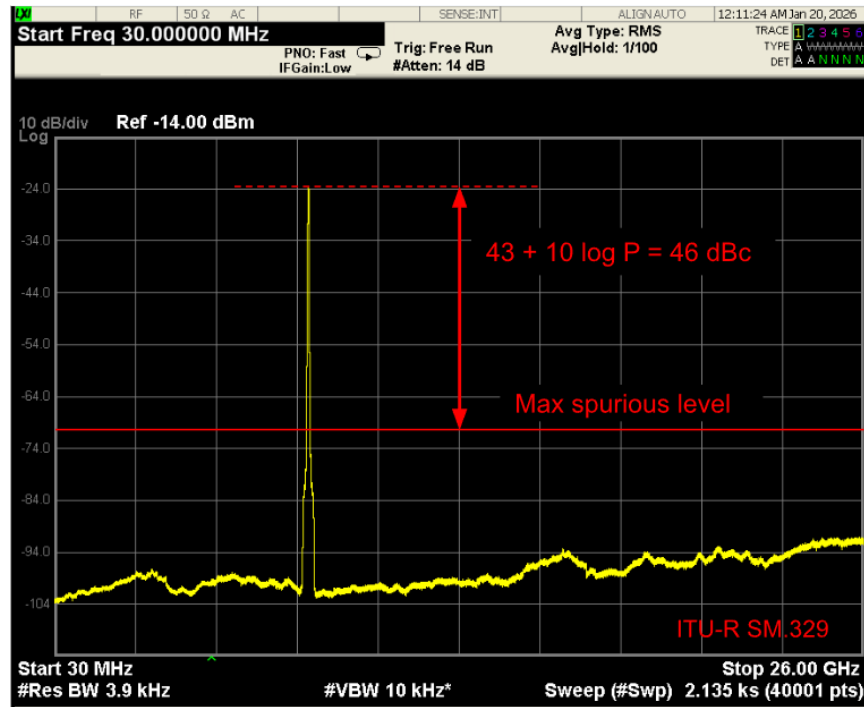


Figure 5: HSD1 SM.329 mask compliance. Average power level at the antenna port is $10\log_{10}(P) = +3$ dBW. Marker 1 identifies the in-band transmission centered on 8175 MHz.

VIII. Cessation of Emissions

All transmissions can be turned on and off by ground commands, thereby achieving cessation of emissions for the GNOMES system, consistent with the requirement of 47 C.F.R. § 25.207.

IX. Power Flux Density (“PFD”) Analysis

This section provides the required PFD analyses for the maximum operational orbit of 600 km. To the extent the GNOMES system transmits at lower altitudes—such as during the deorbit process—it will reduce power as needed to maintain compliance.

PlanetiQ intends to utilize the GNOMES system for communications services (including TT&C functions) from the point at which the satellite is placed into its operational orbit until it reaches an altitude of 350 km. PlanetiQ will maintain the satellite’s PFD at levels within the applicable ITU limits by reducing satellite transmitter power on a graduated basis as the satellite nears the Earth.

A. PFD at the surface of the Earth in the 8025–8400 MHz band

Table 21-4 of Article 21 of the ITU Radio Regulations establishes 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° above the horizontal plane;
- $-150 + 0.5(\delta - 5)$ dB(W/m²) in any 4 kHz band for angles of arrival δ (in degrees) between 5° and 25° above the horizontal plane; and

- -140 dB(W/m²) in any 4 kHz band for angles of arrival between 25° and 90° above the horizontal plane. These limits relate to the PFD that would be obtained under free-space propagation conditions. As shown in the following plots, the PFDs at the Earth's surface produced by the satellite's transmissions satisfy the PFD limits in the ITU Radio Regulations for all angles of arrival:

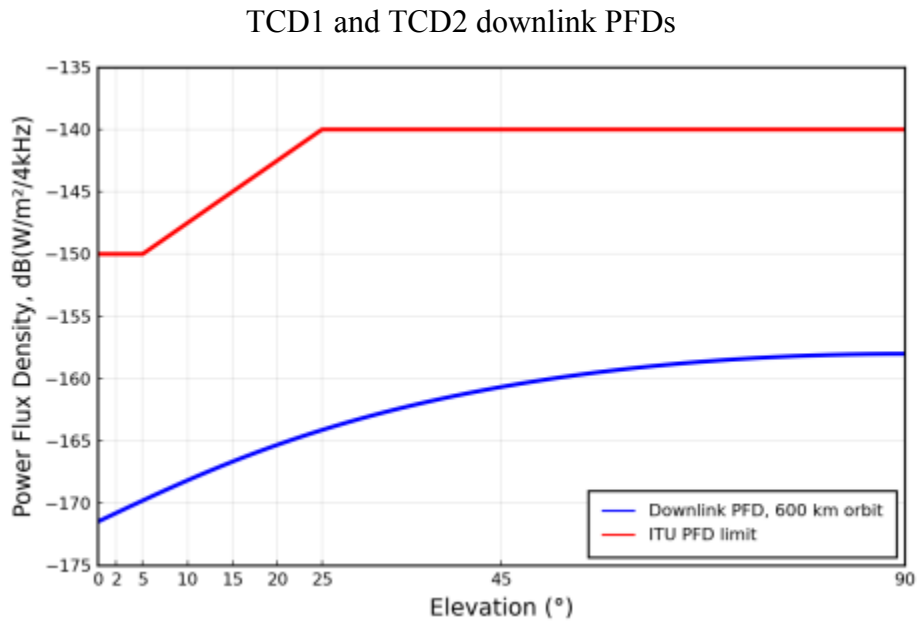


Figure 6: *TCD1 and TCD2 Downlink PFDs*

The PFD margin shown above is about 17.5 dB, which is more than sufficient to offset any increased PFD due to lower spreading losses when the spacecraft operates at altitudes lower than 600 km. At the 350 km minimum transmission altitude, which will occur during deorbit, reduced losses would increase PFD on the earth's surface by only 3.5 dB:

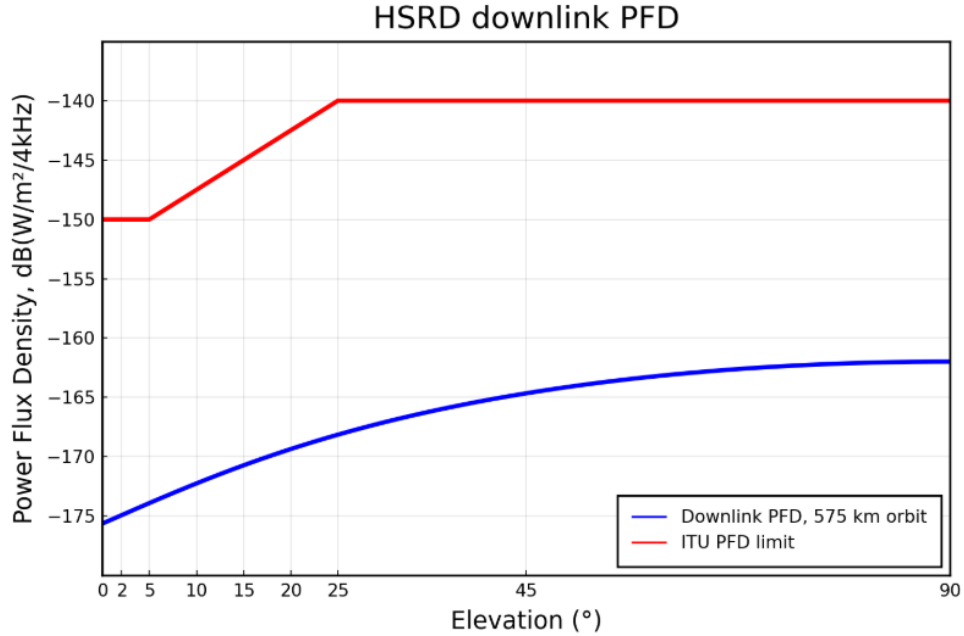


Figure 7: HSD1 Downlink PFD

The PFD margin shown above is about 25.0 dB, which is more than sufficient to offset any increased PFD due to lower spreading losses when the spacecraft operates at altitudes lower than 600 km. At the 350 km minimum transmission altitude, which will occur during deorbit, reduced losses would increase PFD on the earth’s surface by only 3.5 dB.

B. 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/m²/Hz) in the 8400–8450 MHz band to protect ground receivers in the deep-space research band (“DSR”). The GNOMES system uses a combination of baseband digital filtering (root-raised cosine) and transmitter output bandpass filtering to achieve the ITU recommended protection level for the 8400–8450 MHz band. The maximum PFD levels generated by the GNOMES system are listed in the table below. These values conservatively assume that the spacecraft antennas are pointing at a DSR ground station at the minimum slant range, transmitting with nominal power and bandwidth values (on-beam, in-band PFD levels):

ID	Center Freq. (MHz)	BW (MHz)	EIRP (dBW)	Nomina l Altitude (km)	On-beam, in-band Earth PFD (dB(W/Hz/m^2))	OOB suppression for DSR compliance (dB)
TCD1/2	8385/8390	2.8	-3.0	575	-193.7	61.4
HSD1	8175	48.0	5.0	575	-198.0	57.1

Table 7: PFD Analysis

The PFD in dB(W/Hz/m2) is computed as:

$EIRP \text{ in dBW} - 10\log_{10}(\text{Bandwidth in Hz}) - 10\log_{10}(4\pi * (\text{Altitude in m})^2)$. The following spectrum analyzer captures illustrate how the spectrum of the transmitting beams complies with the DSR protection requirements:

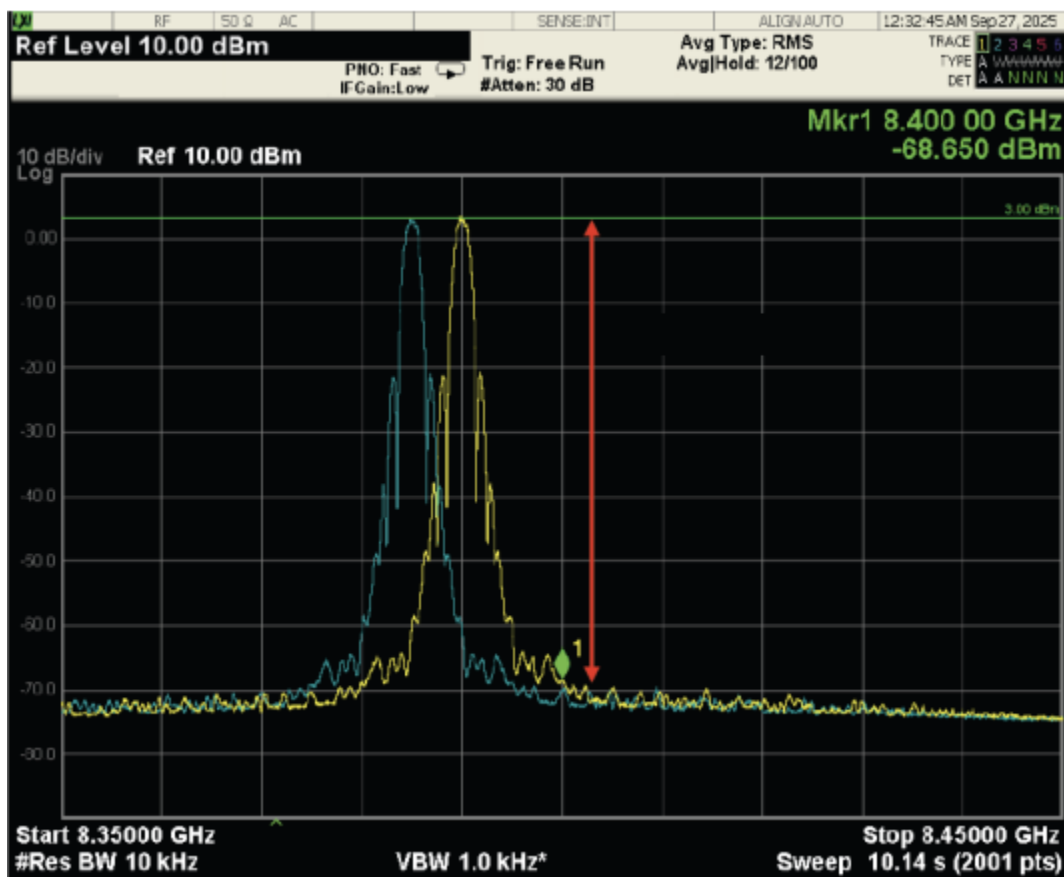


Figure 8: TCD1 and TCD2 Deep-Space Research Band Compliance

Notes:

1. TCD1 and TCD2 beam spectrum are shown, centered at 8385.0 MHz and 8390.0 MHz, respectively;
2. Marker #1 is at 8400 MHz (horizontal division 5, center of the grid). The 8400 MHz to 8450 MHz range spans the five rightmost horizontal divisions. Its indicated level is -68.6 dBm (in a 100 kHz bandwidth);
3. The horizontal green display line indicates the peak power density of both TCD1 and TCD2 beams. Their indicated level is 3.0 dBm (in a 100 kHz bandwidth).
4. The minimum required out-of-band suppression for TCD1 and TCD2 to meet the DSR protection criteria is 61.4 dB. The suppression indicated in the spectrum capture above is $3.0 - (-68.6) = 71.6$ dB, therefore meeting the protection criteria:

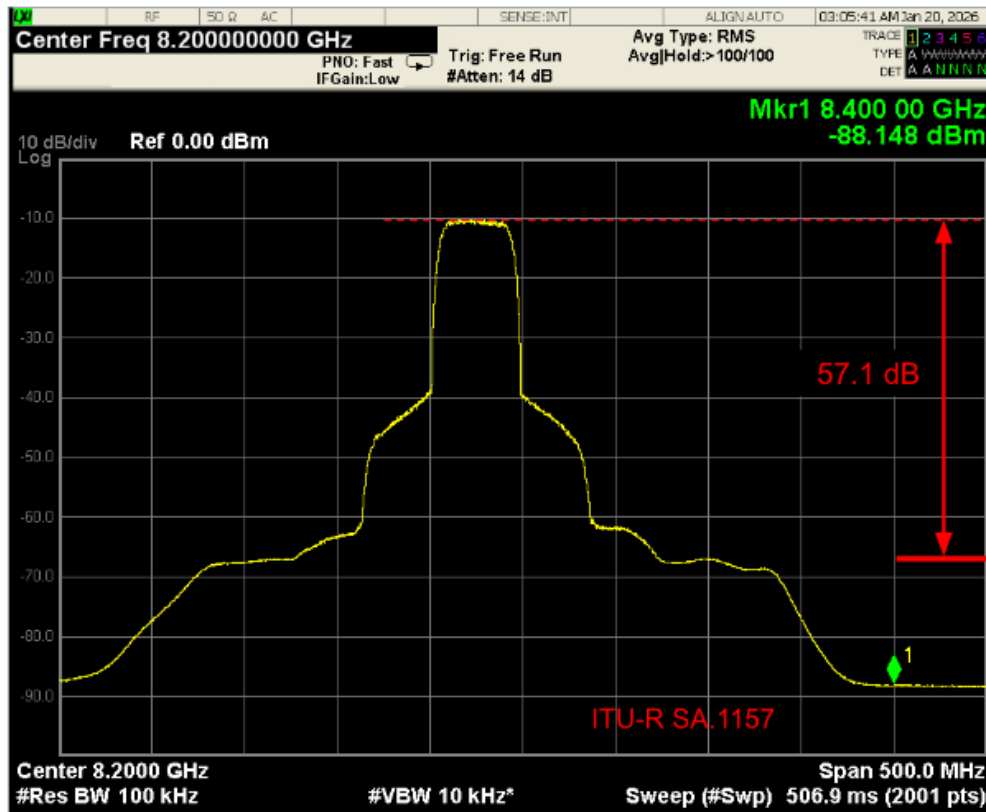


Figure 9: HSD1 Deep-Space Research Band Compliance

Notes:

1. HSD1 beam spectrum is shown, centered at 8175.0 MHz
2. Marker #1 is at 8400 MHz (horizontal grid division 9). The 8400 MHz to 8450 MHz range spans the last horizontal division. Its indicated level is -88.148 dBm (in a 100 kHz bandwidth);
3. The horizontal green display line indicates the peak power density of the HSD1 beam. The indicated level is -10.0 dBm (in a 100 kHz bandwidth);
4. The minimum required out-of-band suppression of the HSD1 to meet the DSR protection criteria is 57.1 dB. The suppression indicated in the spectrum capture above is $-10.0 - (-88.1) = 78.1$ dB, therefore meeting the protection criteria.

This margin will allow DSN protection at much lower orbit altitudes. In cases where the GNOMES system would not otherwise meet the DSR protection criteria due to reduced propagation loss at lower-than nominal orbital altitudes, PlanetiQ will reduce EIRP at the satellite to ensure that these protection criteria are always met.

C. PFD at Geostationary Orbit 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), the maximum PFD produced at the geostationary satellite orbit (“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 satellites does not exceed ITU limits even in a worst-case analysis at the highest possible operational altitude. The PFD at the GSO produced by a GNOMES-10 satellite transmission is:

$$\text{PFD [dB(W/m}^2\text{ / 4 kHz)]} = \text{EIRP [dBW]} - 71 - 20\log_{10}(D) - 10\log_{10}(BW) - 24, \text{ where:}$$

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

The minimum distance between a GNOMES system satellite and the GSO is:

$$35,786 - 600 = 35186 \text{ km.}$$

Under a hypothetical assumption that the satellite antenna is radiating at its peak EIRP directly towards the GSO, the PFD and the geosynchronous orbit is:

TCD1 and TCD2 beams:

$$-3 \text{ dBW} - 71 - 20\log_{10}(35,186) - 10\log_{10}(2.8) - 24 = -193.4 \text{ dB(W/m}^2\text{/4 kHz)}$$

D. Compliance Margin: 19 dB

HSD1 beam:

$$5 \text{ dBW} - 71 - 20\log_{10}(35,186) - 10\log_{10}(48) - 24 = -197.7 \text{ dB(W/m}^2\text{/4 kHz)}$$

E. Compliance Margin: 23.7 dB

At lower altitudes, the margins above will increase due to the increase in distance to the geostationary orbit.

X. Coordination with U.S. Government Systems

There are a variety of federal allocations in the bands used by the GNOMES system. PlanetiQ recognizes that its use of the S- and X- band must be compatible with these federal uses. PlanetiQ will coordinate with interested federal users to ensure that such interference does not occur.

XI. Satellite Antenna Characteristics and Radiation Patterns

The following provides a summary of the radio frequency parameters and radiation patterns for each satellite antenna, including their radiation patterns:

A. S-band TCU1 and HSU1 Receiver Antennas

1. Antenna Characteristics

- Type: Quadrifilar Helical
- Frequency: 2025–2110 MHz
- Gain: 2.0 dBi, RHCP
- 3-dB beamwidth: 160°
- Location: Both Velocity and Anti-Velocity for TCU1, one on nadir for HSU1:

2. Antenna Radiation Pattern

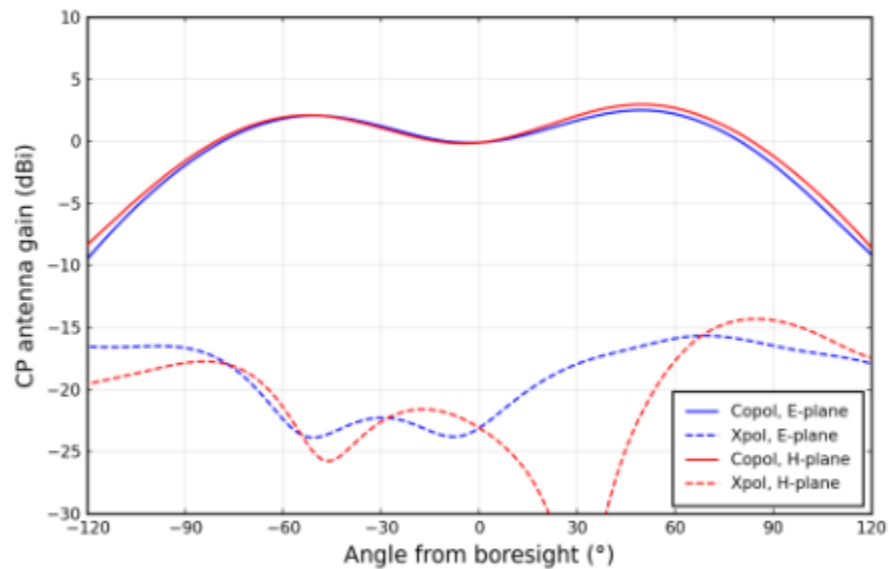


Figure 10: *TT&C S-band Receiver Antenna Pattern*

B. X-band TCD1 and TCD2 Transmitter Antennas

1. Antenna Characteristics

- Type: Quadrifilar Helical
- Frequency: 8025–8400 MHz
- Gain: 2.0 dBi, RHCP
- 3-dB beamwidth: 160°

- Location: On both Velocity and Anti-Velocity sides

2. Antenna Radiation Pattern

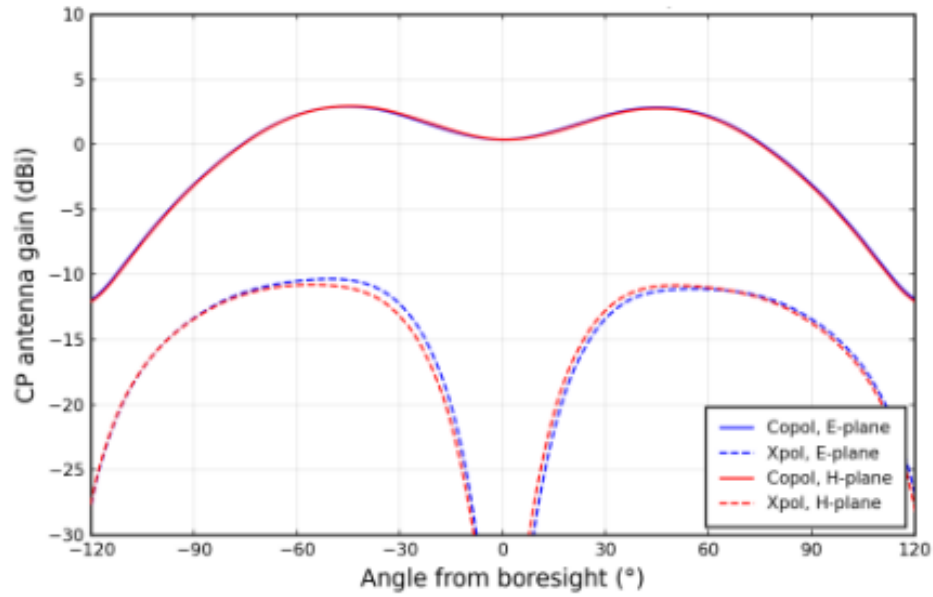


Figure 11: *TT&C X-band Transmitter Antenna Pattern*

C. X-band HSD1 Transmitter Antenna

1. Antenna Characteristics

- Type: Quadrifilar Helical
- Frequency: 8025–8400 MHz
- Gain: 2.0 dBi, RHCP
- 3-dB beamwidth: 160
- Location: On the nadir side

2. Antenna Radiation Patterns

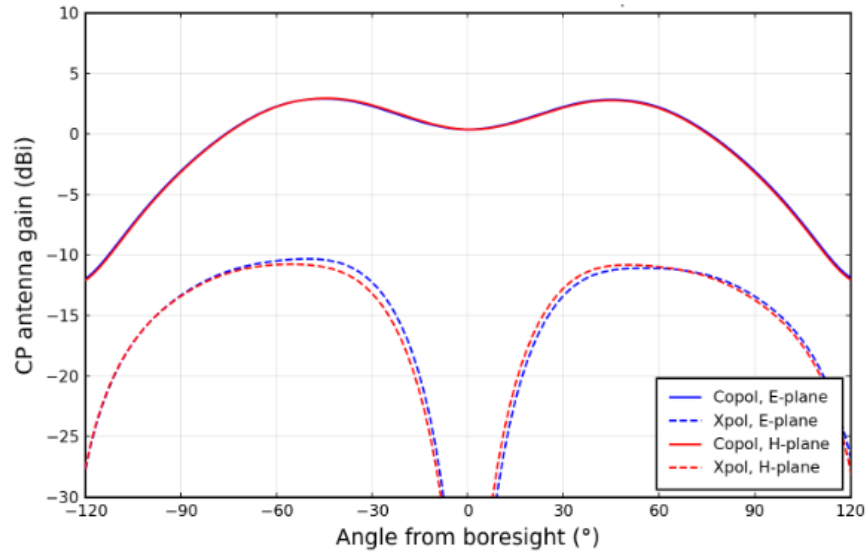


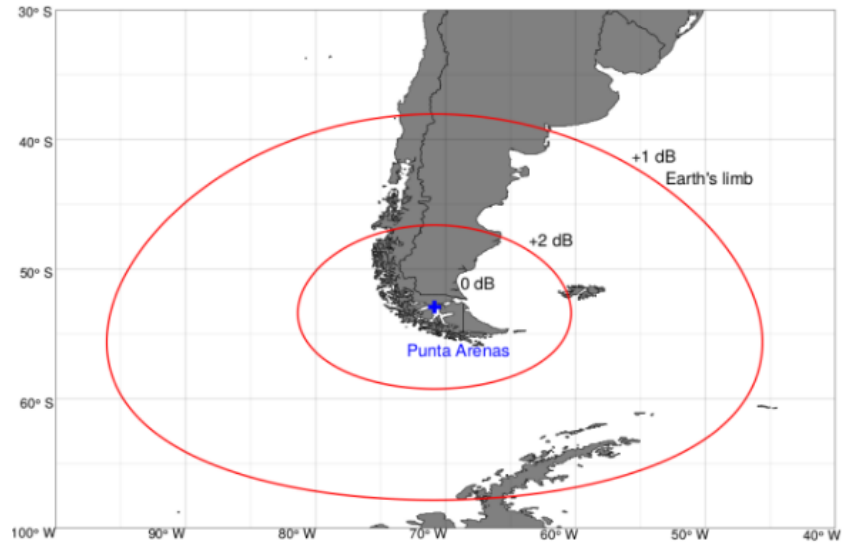
Figure 12: *HSD1 X-band Transmitter Antenna Patterns*

XII. Predicted Gain Contours

Consistent with 47 C.F.R. § 25.114(c)(4)(vi)(B), below, PlanetiQ provides predicted antenna gain contours depicted on the surface of the earth at the anticipated initial earth station locations.

A. Wide beam Tx and Rx Antenna Footprint (TCU1, HSU1, TCD1, TCD2, HSD1)

The visible contours shown are for the +1dB and +2 dB antenna gain at a representative Earth station. Other contours for antenna gain lower than 1 dB cannot be displayed since they would be located beyond the Earth's limb.



XIII. 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/ Micah Hemness

Micah Hemness
Systems Engineer
PlanetiQ

March 04, 2026