Exhibit C – Honeybee-00 Technical Annex

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I. SCOPE AND PURPOSE

This exhibit provides additional technical information regarding the Honeybee-00 non-geostationary orbit ("NGSO") satellite.

II. FREQUENCY PLAN

The following tables summarize Honeybee-00's radiofrequency and earth station characteristics.

Table 1: Frequency Plan (continued overleaf)

Beam ID	UDA	UUA	SDA	SUA	XDA	XDB
Description	UHF Downlink (Space-to-Earth)	UHF Uplink (Earth-to-Space)	S-band Downlink (Space-to-Earth)	S-band Uplink (Earth-to-Space)	X-band Downlink (Space-to-Earth)	X-band Downlink (Space-to-Earth)
Frequency Band (MHz)[1]	400.15-401.00	402-403	2200-2290	2025-2110	8025-8400	8025-8400
Center Frequency[2]	400.65	402.2	2240.0	2100.0	8050	8050
Bandwidth	20 kHz	6.00 kHz	4 MHz	1 MHz	13.5 MHz	40.5 MHz
Transmit Power (dBW)	0.8	-9.2	-1.5	20	-2	-0.3
Transmit Antenna Gain (dBi)	0	16.2	7	40	17	17
EIRP (dBW)	0.8	7	5.5	60	15	16.7
Polarization	Linear	Linear	RHCP	RHCP	RHCP	RHCP
Receive Antenna G/T (dB/K)	-19	-20.3	12.6	-20.7	25.5	25.5

[1] Honeybee-00 will also receive Global Positioning System signals (specifically, GPS L1 (1575.42 MHz), L2 (1227.60 MHz), and L5 (1575.42 MHz)) for on-orbit determination.

[2] The precise center frequency will be within the identified allocation but has not been finalized because coordination has not been completed.

III. ORBITAL PARAMETERS

The Honeybee-00 satellite is expected to be launched on the SpaceX Transporter mission or other rideshare after October 2025. The target orbit altitude for deployment is 500 km circular with a ±20 km orbit altitude error range and an inclination of 97.6 +/-1 degrees.

IV. COMMUNICATIONS LINKS

The TT&C subsystem provides communications during on-station operations, as well as during spacecraft emergencies. The S-band telecommand transmissions are received by the spacecraft during on-station, transfer orbit, and emergency operations. Pursuant to Section 25.114(c)(4)(vi)(A) of the Commission's rules, contours for these beams are provided in Section **XI**, below, as well as in the associated files included in Schedule S. S-band command channels have a bandwidth of 1 MHz and command channel information is provided above in Table 1.

The S-band downlink channel has a bandwidth of up to 4 MHz, as identified in Table 1, and will transmit up to 20 times per day across all ground stations. Pursuant to Section 25.114(c)(4)(vi)(A) of the Commission's rules, contours for these beams are provided in Section **XI**, below.

The X-band downlink is used for payload downlink. There are two X-band channels which have bandwidths of 13.5 MHz and 40.5 MHz, as identified in Table 1.

The ground stations are listed in Exhibit **D**.

The specific S-band and X-band channels are identified in the Schedule S and reproduced in Table 1 above for convenience. The satellite will use a sufficiently unique telemetry marker at deployment to ensure that its telemetry stream can be unambiguously identified.

V. FREQUENCY TOLERANCE

The frequency tolerance requirements of Section 25.202(e) that the carrier frequency of each space station transmitter be maintained within 0.002% of the reference frequency will be met.

VI. OUT OF BAND EMISSIONS

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

VII. FREQUENCY REUSE

The Honeybee-00 satellite does not operate in any frequency bands where Section 25.210(f) applies.

VIII. CESSATION OF TRANSMISSIONS AND STOP BUZZER

Honeybee-00 will be capable of immediately ceasing operations in compliance with the requirements of 47 C.F.R. § 25.207. The stop buzzer contact information for this mission is as follows:

Eiji Yafuso
Chief Science Officer
2301, Rosecrans Ave, Suite 4150
El Segundo, CA 90245
Eyafuso@Pixxel.space
+1 424 675 4375

IX. FREQUENCY ANALYSIS

Interference between Honeybee-00 and other systems is unlikely. EESS systems normally communicate only in short periods of time while visible from the dedicated earth stations (typically less than 10 minutes for a single pass). For interference to occur, either another operator's satellite would have to travel through the antenna beam of Honeybee-00's serving earth station, or the Honeybee-00 satellite would have to pass through the antenna beam of the other operator's serving earth station and both systems would need to transmit at the same time on overlapping frequencies. In such a very unlikely event, interference avoidance is possible by coordinating the communications so that they do not occur simultaneously in the time, frequency, and geographic dimensions. Pixxel commits to such coordination in the S and X frequency bands.

With respect to the UHF bands, those frequencies will only be used infrequently for backup TT&C and image tasking purposes. The UHF beacon transmits one packet every ten seconds (transmit time <1 ms), for a duty cycle of <0.1%.

A. In-Band Power Limit Analysis

i. Downlink: 2240.0 MHz

PFD limits are specified in ITU Radio Regulations Table 21-4. Pixxel calculated the maximum PFD levels for the Honeybee-00 transmissions and determined that the downlink PFD levels of the Honeybee-00 carriers do not exceed the ITU limits. Figure **2** illustrates the PFD analysis results for the Honeybee-00 spacecraft downlinking in its maximum EIRP spectral density configuration (-149.1 dBW/m^2/4kHz) at a 480-km, the lowest bound of the nominal operating altitude (500+/- 20km). At lower altitudes, Honeybee-00 will decrease the transmit power, as necessary, to stay within the limit.

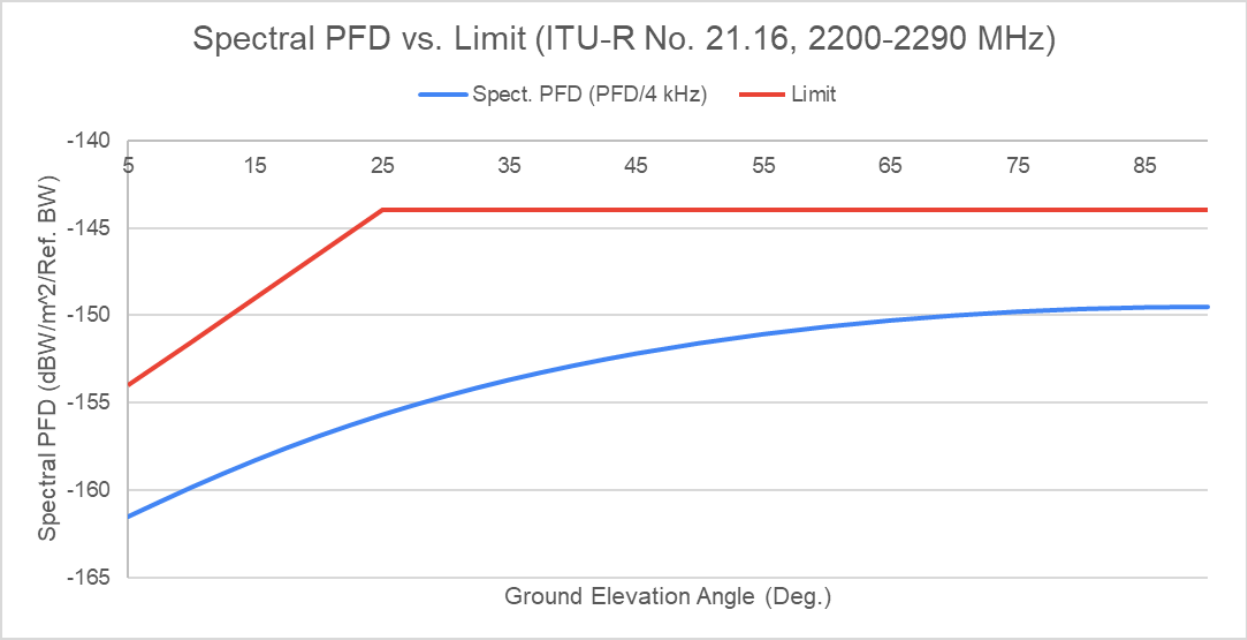

Figure 2: S-Band Spectral PFD vs Limit at 480 km

ii. Downlink: 8075 MHz

In this band, PFD limits apply at the Earth's surface and geostationary orbit ("GSO") arc.

PFD at Earth's surface. PFD limits are specified in ITU Radio Regulations Table 21-4. Pixxel calculated the maximum PFD levels for the Honeybee-00 transmissions and determined that the downlink PFD levels of the Honeybee-00 carriers do not exceed the ITU limits. Figures **3** and **4** illustrate the X-band downlink PFD analysis results using its maximum EIRP spectral density configuration (-141.9 dBW/m^2/4kHz) at a nominal operating altitude of 480 km and a worst-case bandwidth of 13.5 MHz. At lower altitudes, Honeybee-00 will decrease the transmit power, as necessary, to stay within the limit. These are provided for the primary and secondary radio.

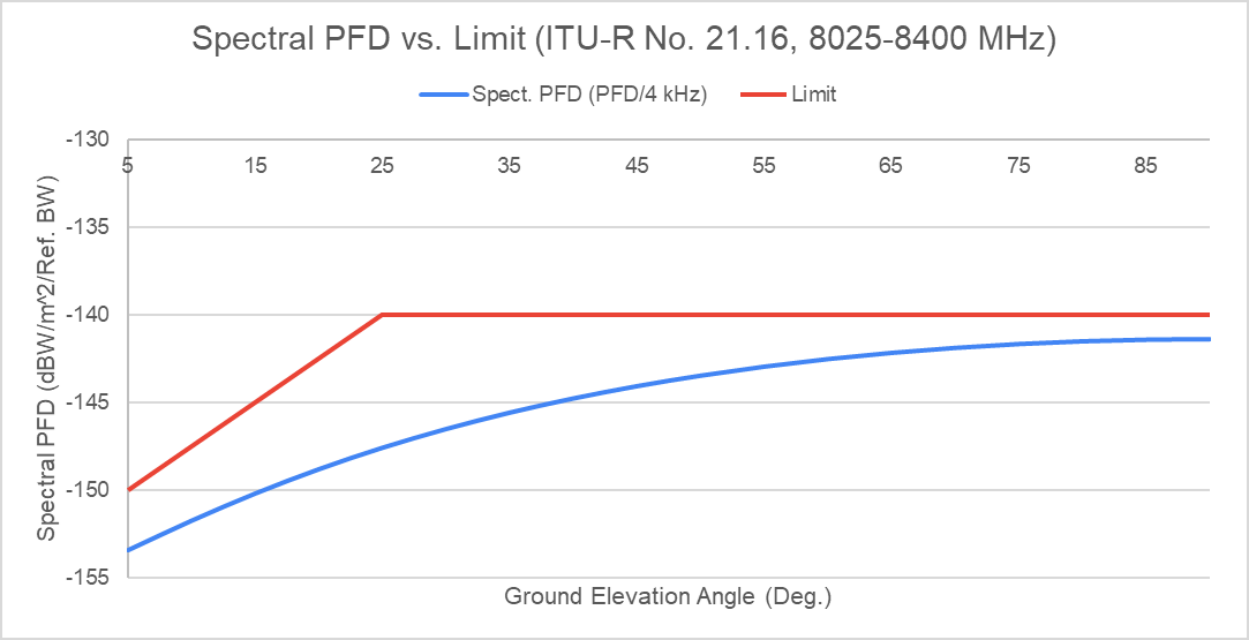

Figure 3: X-Band Spectral PFD vs Limit Secondary X-Band Radio at 480 km

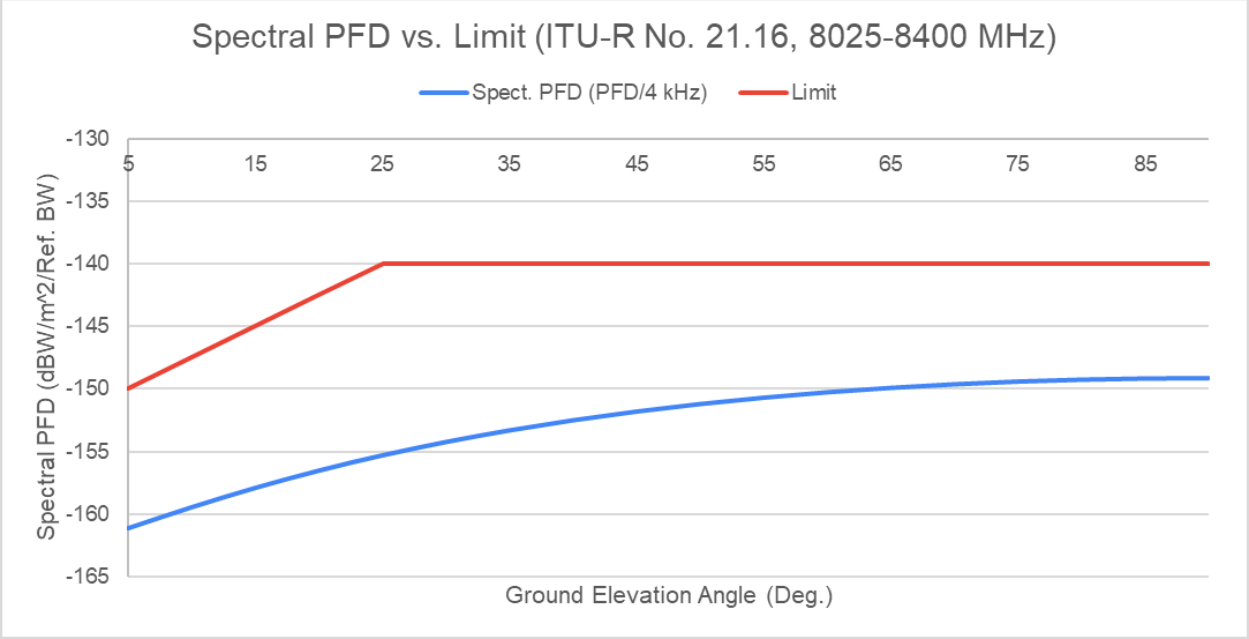

Figure 4: X-Band Spectral PFD vs Limit Primary X-Band Radio at 480 km

PFD at GSO arc. ITU Radio Regulations No. 22.5 specifies that in the 8025-8400 MHz band the maximum PFD produced at the GSO by any EESS space station shall not exceed -174 dbW/m^2/4 kHz. The calculation below shows that Honeybee-00's PFD would not exceed that limit even in the worst hypothetical case. At the highest potential orbit altitude of 520 km, the distance to the geostationary orbit would be 35,181 km. At this orbital distance, for an antenna pointed toward the GSO arc having a conservative maximum EIRP of 17 dBW (2dB higher than the expected EIRP) using a worst case 13.5-megahertz bandwidth, the maximum PFD at the GSO arc would be approximately -180.1 dBW/m^2/4 kHz.[3]

B. Compliance with ITU-R SA.1157

International power spectral density limits protect deep space ground receivers that may operate adjacent to the 2200-2290 MHz and 8025-8400 MHz bands. ITU-R Recommendation SA.1157 specifies the spacecraft power spectral flux density falling within the deep space network band shall be less than -257 dBW/m^2/Hz in 2290-2300 MHz and -255.1 dB(W/m^2/Hz) in 8400-8450 MHz.

At the requested S-Band transmit frequency of 2240.0 MHz and a maximum bandwidth of 5 MHz, the measured PSD at the lower edge of the DSN band (2290 MHz) was measured to be -114 dBm/Hz. Taking a worst-case scenario with an altitude of 480 km where the S-band antenna is pointed boresight to a DSN ground station, the PSD at the lower edge of the DSN band (2290 MHz) at the Earth's surface is calculated to be -262.5 dBm/Hz, giving Honeybee-00 a 5.5 dB margin in complying with ITU-R SA.1157. At lower altitudes, Pixxel will decrease power to maintain compliance with requirements.

[3] This operation mode is atypical because the NGSO antenna will point toward Earth in normal operation. The 40.5-megahertz XDB beam will have a lower PFD and the analysis for the XDA beam encompasses this use.

$$PSD_{at\ DSN\ Band} = -114\ dBm/Hz$$
$$Tx\ System\ Gain = 2.5\ dB$$
$$FSPL\ at\ 480\ kM\ with\ 0dBi\ Antenna\ Factor = -153\ \text{dB}$$
$$PSD_{at\ DSN\ Band\ at\ Earth\ Surface} = -262.5\ dBm/Hz$$

At the requested X-Band transmit frequency of 8050 MHz and a maximum bandwidth of 40.5 MHz, the measured PSD at the lower edge of the DSN band (8400 MHz) was measured to be 104.7 dBm/Hz. Taking a scenario with an altitude of 480 km where the X-band antenna is pointed boresight to a DSN ground station, the PSD at the lower edge of the DSN band (8400 MHz) at the Earth's surface is calculated to be 255.2 dBm/Hz, complying with ITU-R SA.1157.

$$PSD_{at\ DSN\ Band} = -104.7\ dBm/Hz$$
$$Tx\ System\ Gain = 14\ dB$$
$$FSPL\ at\ 480\ kM\ with\ 0dBi\ Antenna\ Factor = -164.4\text{dB}$$
$$PSD_{at\ DSN\ Band\ at\ Earth\ Surface} = -255.2\ dBm/Hz$$

C. Compliance with ITU-R. SA 1810

Honeybee-00 will meet many of the recommendations identified in ITU-R. SA 1810:

(Recommendations 1 and 4) The Honeybee-00 satellite operates only in a non-broadcast mode and will only transmit on the EO 8025-8400 MHz band when explicitly commanded and when over an appropriately licensed ground station.

(Recommendation 3) The Honeybee-00 satellite will use a high gain (17 dBi) patch array antenna with a half-power beamwidth of approximately 12-degrees.

(Recommendation 5) PSK modulations were selected for the X-Band beams for the Honeybee-00 mission, which are bandwidth efficient. Additionally, the steepest digital roll-off will be selected during radio configuration to further restrict used bandwidth.

(Recommendation 7) The Honeybee-00 primary X-Band radio complies with the worst-case PFD on the Earth's surface of -149.6 dBm/m^2/4kHz. The secondary X-Band radio does not meet this recommendation (worst case PFD on the Earth's surface of –141.9 dBm/m^2/4kHz) but the Honeybee-00 mission does not intend to use this radio during nominal spacecraft operations and will use this radio only in the event of an unrecoverable failure of the primary X-Band radio.

(Recommendations 8 and 9) The Honeybee-00 spacecraft does not use isoflux or non-directional antennas in the X-Band spectrum.

(Recommendation 10) In addition to the steps taken to adhere to the recommendations listed above, Pixxel intends to use a frequency channel at the lower end of the 8025-8400 MHz band to maximize frequency separation to the protected DSN band at 8400-8450 MHz.

X. SATELLITE ANTENNAS

The TT&C S-band uplink employs a patch receive antenna. The relevant technical parameters are identified below in Table **2**. An antenna pattern for the antenna in the vicinity of the planned uplink carriers, 2025-2110 MHz, is shown in Figure **6**.

The TT&C S-band downlink employs a patch receive antenna. The relevant technical parameters are identified below in Table **3**. An antenna pattern for the antenna in the vicinity of the planned downlink carriers, 2200-2290 MHz, is shown in Figure **7**. A projection of the TT&C S-band downlink antenna contours, pointed towards Nadir, is illustrated in Figure **9**.

The X-band downlink Endurosat antenna has a max gain of 17 dBi. Pixxel uses these two antennas for X band, both working on the same frequency range of 8025-8400 MHz. The relevant technical parameters are identified below in Table **5**. The antenna patterns for the downlink X-band antennas are shown in Figures **5.** A projection of the X-band downlink antenna contours, pointed towards Nadir, is illustrated in Figure **8**.

The beacon, TT&C and EESS UHF-band up/downlink employs a monopole antenna. The relevant technical parameters are identified below in Table **4**. A projection of the UHF-band downlink antenna contours, pointed towards Nadir, is illustrated in Figure **10**. The UHF antenna is monopole and hence no pattern plot is included.

Table 2: S Band Uplink Antenna Parameters

Parameters	**Description**
Frequency Band	2025-2110MHz
VSWR	≤ 1.5:1
Peak Gain	5.0±0.1dBic
Half-Power Beamwidth (HPBW)	91±1 degree
Polarization	Right-Handed Circular (RHCP)

Table 3: S Band Downlink Antenna Parameters

Parameters	**Description**
Frequency Band	2200-2290MHz
VSWR	≤ 1.5:1
Peak Gain	5±0.1dBic
Half-Power Beamwidth (HPBW)	92±1 degree
Polarization	Right-Handed Circular (RHCP)

Table 4: UHF Uplink/Downlink Antenna Parameters

Parameters	**Description**
Frequency Band	400 - 403 MHz
VSWR	≤ 1.5:1

Peak Gain	2.0±0.1dBi
Half-Power Beamwidth (HPBW)	120±1 degree
Polarization	Linear

Table 5: X-Band Downlink Antenna Parameters

Parameters	**Description**
Frequency Band	8025-8400 MHz
VSWR	≤ 1.5:1
Peak Gain	17±0.1dBi
Half-Power Beamwidth (HPBW)	16±1 degree
Polarization	Right-Handed Circular (RHCP)

Space station transmitting antenna radiation patterns:

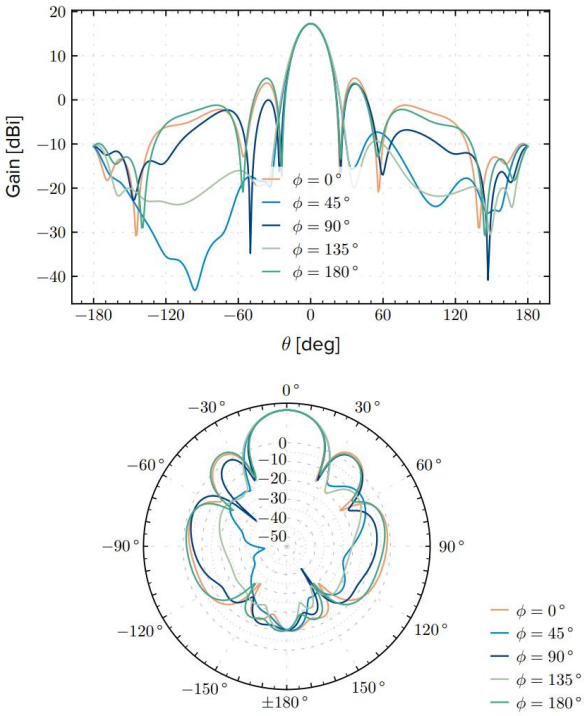

Figure 5: X-Band Transmit (Downlink) Antenna pattern, plotted in rectangular and polar coordinates

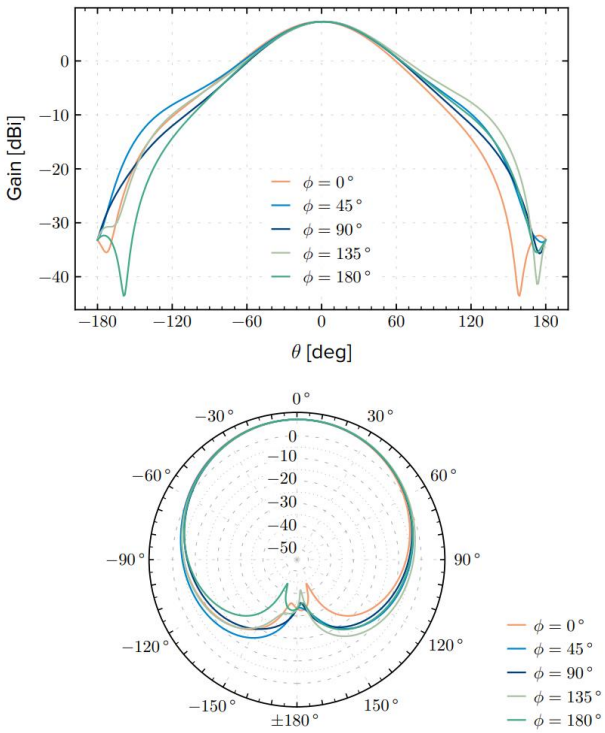

Figure 6: S-Band Receive (Uplink) Antenna pattern, plotted in rectangular and polar coordinates

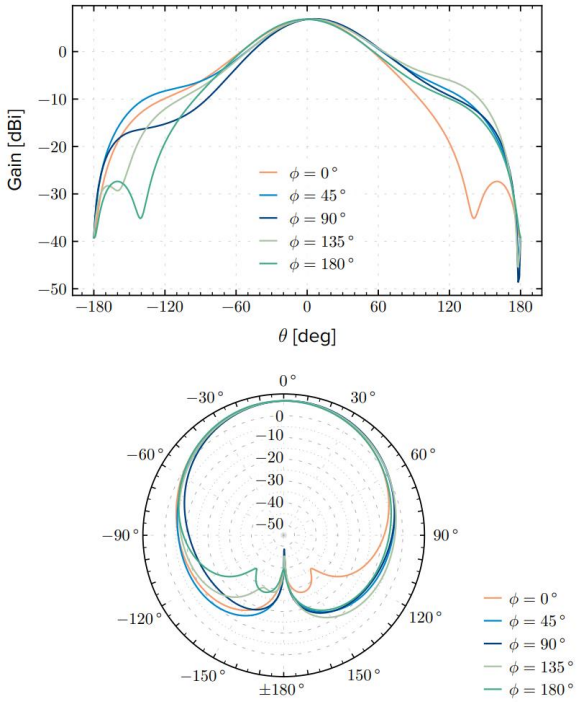

Figure 7: S-Band Transmit (Downlink) Antenna pattern, plotted in rectangular and polar coordinates

The antenna projections provided below and in the accompanying Schedule S reflect the beam projection towards Nadir from an NGSO satellite with an orbital altitude of 500 km. For certain contour maps, the missing contours are beyond the horizon and, accordingly, are not depicted in the images.

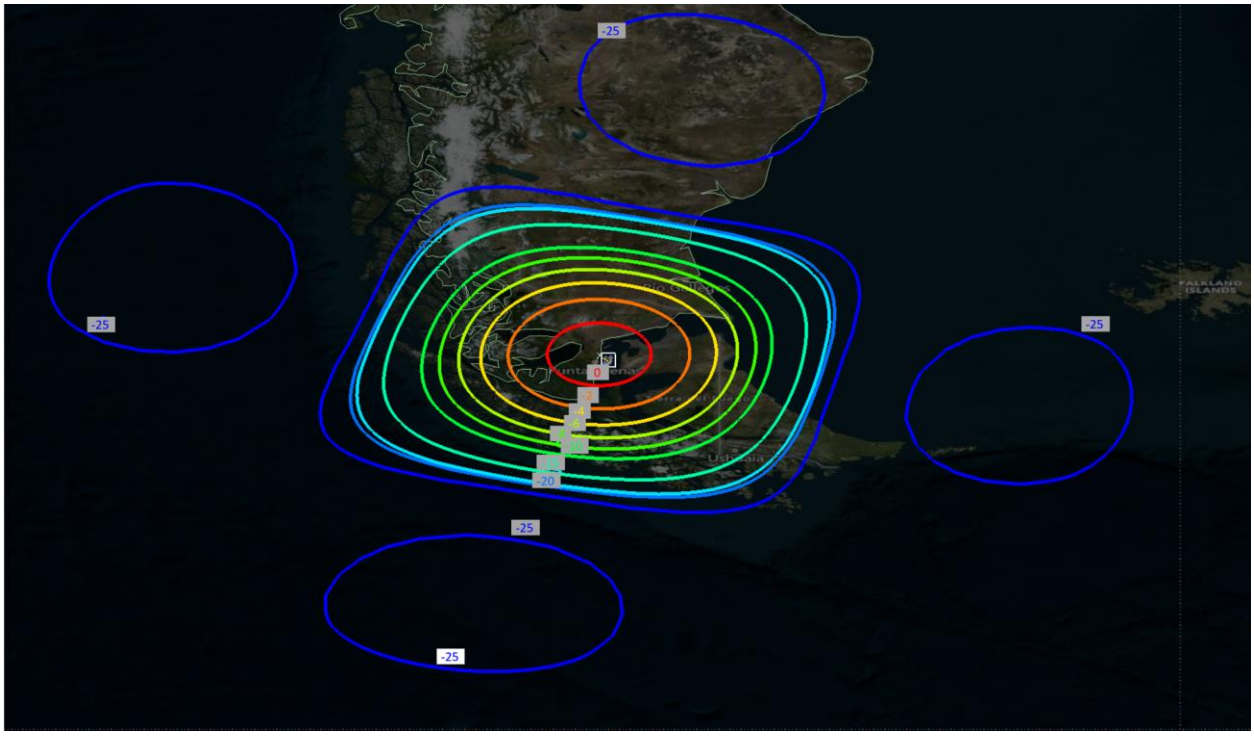

Figure 8: Projection of Nadir X-band Downlink Beam (XDA and XDB) over Punta Arenas, Chile.

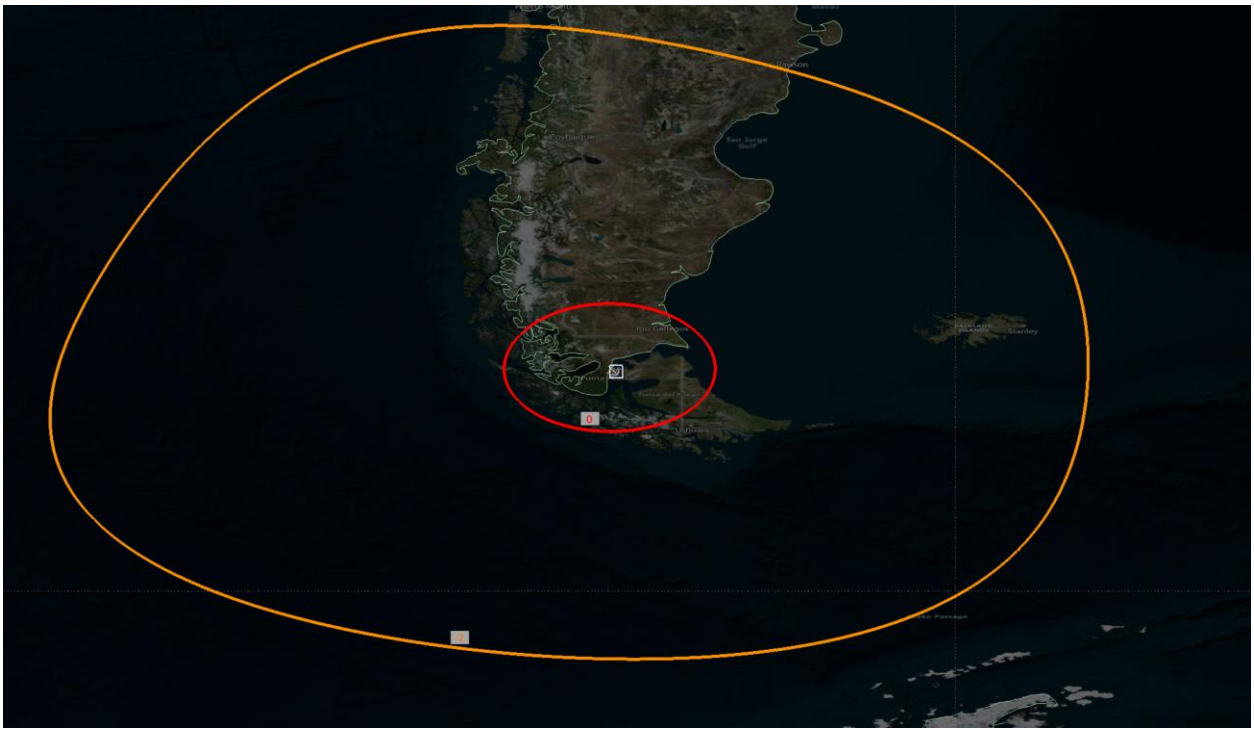

Figure 9: Projection of Nadir S-band Uplink and Downlink Beam (SDA) over Punta Arenas, Chile. Note: S-Band antenna gain contours at -4 dB below max gain are beyond the horizon and, accordingly, are not shown in the images.

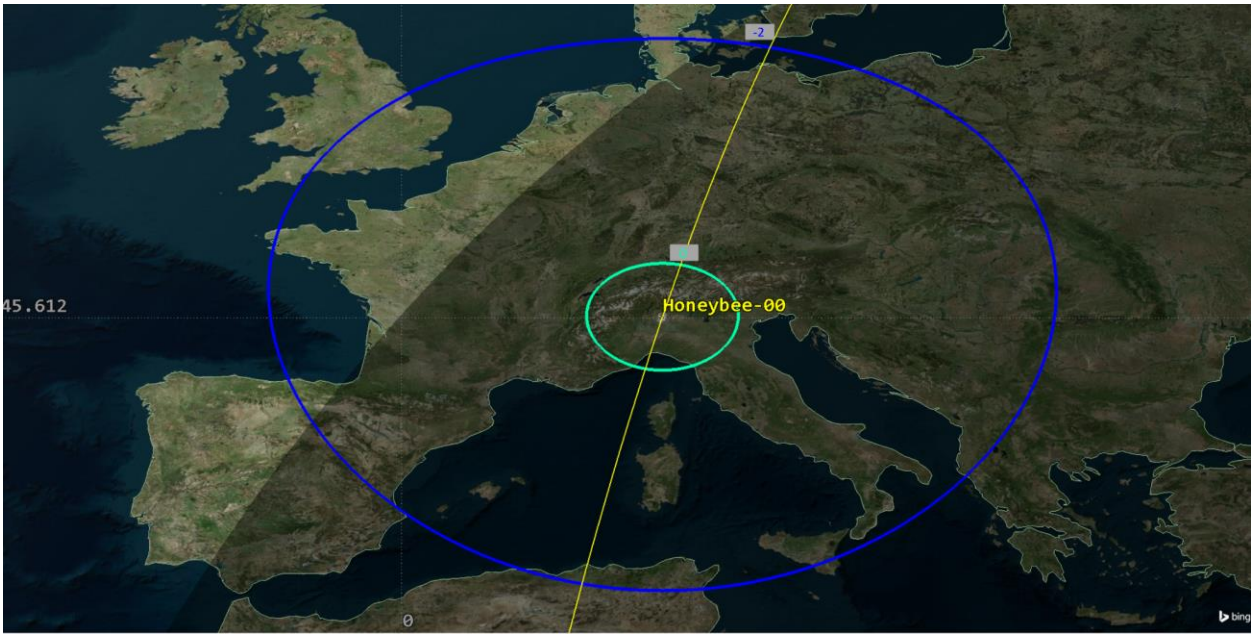

Figure 10: Projection of Nadir UHF Uplink and Downlink Beam (UDA) over Lomazzo, Italy. Note: UHF antennae gain contours at -4 dB below max gain are beyond the horizon and, accordingly, are not shown in the images.

XI. EARTH STATION

The ground stations are listed in Exhibit D. The characteristics of the specific earth stations are summarized in Tables 7, 8 and 9.

Table 7: KSAT Antenna Characteristics

	S-band (TX)	**S-band (RX)**	**X-band (RX)**	**X-band (RX)**
Reflector Size	3.7m	3.7m	5m	3.7m
Downlink Band	NA	2220-2290 MHz	8025-8400 MHz	8025-8400 MHz
G/T (20-deg elevation)	NA	12.6 dB/K	30.3 dB/K	25.5 dB/K
Polarization	LHCP/RHCP	LHCP/RHCP	LHCP/RHCP	LHCP/RHCP

Uplink Band	2025-2110 MHz	NA	NA	NA
EIRP	44.8dBW	NA	NA	NA

Table 8: Leaf Space Antenna Characteristics

	UHF (Tx)	**UHF (Rx)**	**S-band (TX)**	**S-band (RX)**	**X-band (RX)**
Reflector Size	NA	NA	3.7m	3.7m	3.7m
Downlink Band	NA	400.15-401	NA	2220-2290 MHz	8025-8400 MHz
G/T (20-deg elevation)	NA	-19 dB/K	NA	12.53 dB/K	24.65 dB/K
Polarization	Linear	Linear	LHCP/RHCP	LHCP/RHCP	LHCP/RHCP
Uplink Band	402-403	NA	2025-2110 MHz	NA	NA
EIRP	7 dBW	NA	50 dBW	NA	NA

Table 9: AnySignal Space Antenna Characteristics

	UHF (Tx)	**UHF (Rx)**	**S-band (TX)**	**S-band (RX)**	**X-band (RX)**
Reflector Size	NA	NA	3.7m	3.7m	3.7m
Downlink Band	NA	400.15-400.1	NA	2220-2290 MHz	8025-8400 MHz
G/T (20-deg elevation)	NA	-19 dB/K	NA	12.53 dB/K	24.65 dB/K

Polarization	Linear	Linear	LHCP/RHCP	LHCP/RHCP	LHCP/RHCP
Uplink Band	402-403	NA	2025-2110 MHz	NA	NA
EIRP	7 dBW	NA	50 dBW	NA	NA

XII. ORBITAL DEBRIS RISK MITIGATION PLAN

Pixxel has completed an orbital debris assessment report ("ODAR") for Honeybee-00. *See* Exhibit B. The following subsections provide a summary and show compliance with 47 C.F.R. § 25.114(d)(14).

A. Spacecraft Hardware Design

Pixxel confirms that Honeybee-00 will not undergo any planned release of debris during its normal operations. In addition, all separation and deployment mechanisms, and any other potential debris source, will be retained by the spacecraft. Pixxel has also assessed the probability of Honeybee-00 becoming a source of debris by collision with small debris or meteoroids of less than one centimeter in diameter that could cause loss of control and prevent post-mission disposal.

B. Minimizing Accidental Explosions

Pixxel is designing its spacecraft in a manner that limits the probability of accidental explosion. Pixxel has assessed the possibility of accidental explosions during and after completion of mission operations through failure mode verification analysis. As part of the satellite manufacturing process, Pixxel has taken steps to ensure that debris generation will not result from the conversion of energy sources onboard Honeybee-00 into energy that fragments the satellite. All sources of stored energy onboard the spacecraft will have been depleted or

safely contained when no longer required for mission operations or post-mission disposal.

C. Safe Flight Profile

Pixxel has assessed and limited the probability of Honeybee-00 becoming a debris source by accidental collisions with large debris or other operational spacecraft. Pixxel will work closely with its launch provider to ensure that the satellite is deployed in such a way to minimize the potential for in-plane collision. The attached ODAR shows the NASA DAS simulation outputs and appropriate analyses.

Pixxel will track Honeybee-00 passively using its GPS receiver and register the satellite with the 18th Space Control Squadron or successor entity. Pixxel will engage with operators of constellations and other space stations in the same orbit to ensure safe and coordinated space operations. Pixxel will provide all relevant agencies, the 18th Space Control Squadron or successor entity engaged in space situational awareness, and other operators with any information they need to assess risks and ensure safe flight profiles (particularly for inhabitable space stations, as necessary), as well as contact information for Pixxel personnel at its headquarters. If Pixxel receives a conjunction warning, Pixxel will coordinate with the other satellite operator, including sharing ephemeris data and other appropriate operational information.

D. Post-Mission Disposal

The attached ODAR provides the reentry risk analysis calculated using NASA DAS.