Exhibit 2

Information Regarding Power Flux Density

Applicant: **Space Exploration Technologies Corp. (SpaceX)**

1. Power Flux Density at the Surface of the Earth in the Ku band (10.7-12.7GHz)

While this application for an experimental authorization is not made under Part 25, SpaceX has used Part 25 as the metric for PFD limits. The first set of limits, which applies across the 10.7-11.7 GHz band, is set forth in Section 25.208(b) as follows:

- -150 dB(W/m^2) in any 4 kHz band for angles of arrival between 0 and 5 degrees above the horizontal plane;
- -150+(δ-5)/2 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
- -140 dB(W/m^2) in any 4 kHz band for angles of arrival between 25 and 90 degrees above the horizontal plane.

The ITU PFD limits applicable to NGSO systems operating in the 10.7-11.7 GHz band, which are provided in Table 21-4 of the ITU Radio Regulations, are effectively the same as the Commission's PFD limits mentioned above, though stated in a different bandwidth (4 kHz vs. 1 MHz).

The proposed experimental satellites will transmit only for angles of arrival between 40° and 90° above the horizontal plane. Because the transmit power is dynamically adjustable, the transmit power is backed-off between slant and nadir depending on the angle of arrival to ensure compliance with the power flux density limits. In addition, SpaceX will implement GSO arc avoidance to protect from interference into GSO ground terminals. This will be accomplished by turning off the Ku-band transmit beam on the satellite and transmitting earth station whenever ϕ <12°. ϕ is the angle between the boresight of a GSO Earth station (assumed to be collocated with the SpaceX Earth Station) and the direction of the SpaceX satellite transmit beam. Furthermore, SpaceX will be demonstrating the use of advanced beam forming antenna technology to suppress sidelobe energy in the direction of the GSO arc, achieving an additional 10 dB of sidelobe rejection for an area approximately ±2 degrees around the GSO arc.

Figure 1 shows the spreading loss versus elevation for a 1125km orbit, and Figure 3 shows the spreading loss versus elevation for a 514km orbit. Table 1 shows the detailed PFD calculations at the surface of the Earth, at slant and nadir for that orbit, while Table 3 shows the same calculations for the insertion orbit of 514 km. Figure 2 shows PFD versus the elevation angle in both 4 kHz and 1 MHz bandwidth for the 1125 km orbit, and Figure 4 for 514 km. PFD is constant at any position between slant and nadir and is in compliance with the limits in 25.208(b).

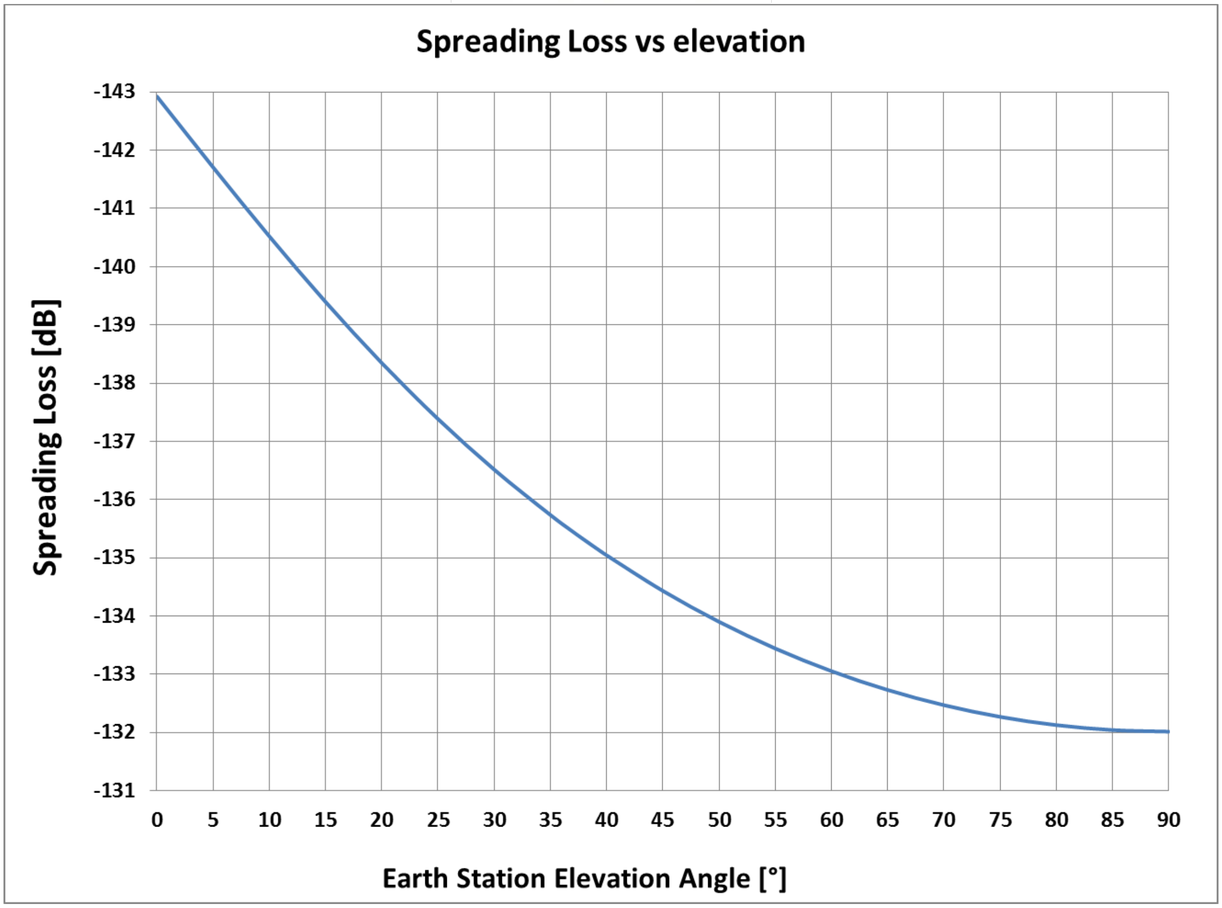


Figure 1. **Spreading loss versus elevation (1125km orbit)**

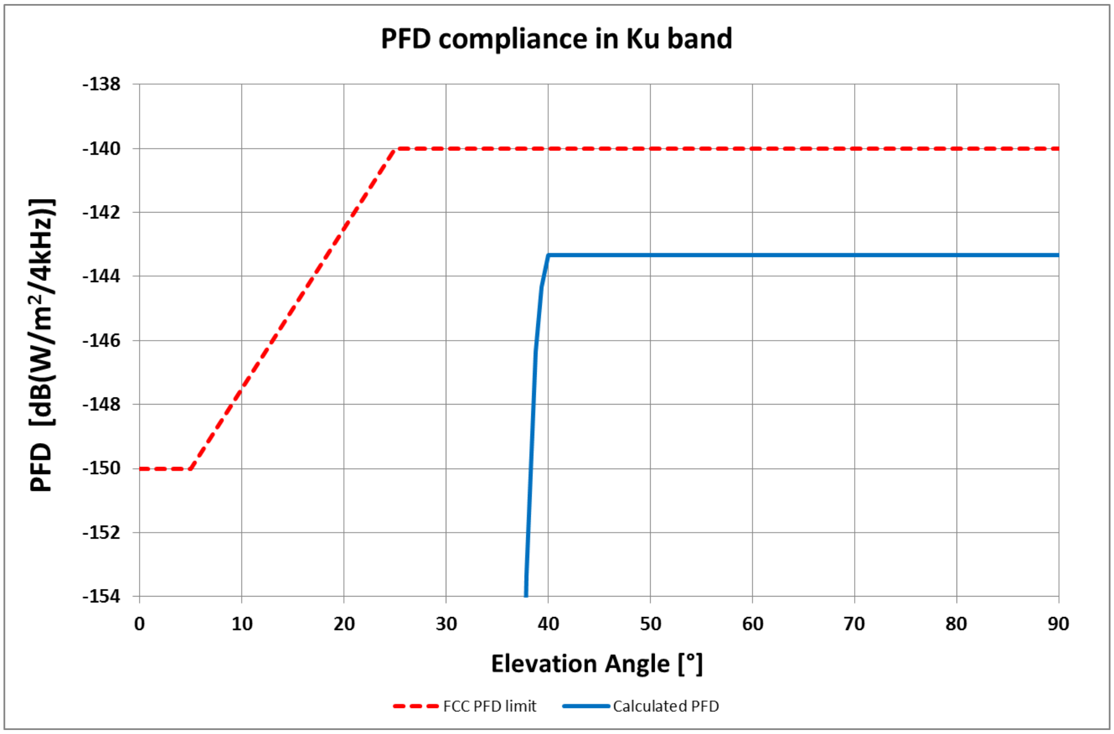
	@ Slant	**@ Nadir**
EIRP density [dBW/Hz]	-44.31	-47.34
EIRP in 4kHz [dBW]	-8.29	-11.32
EIRP in 1MHz [dBW]	15.69	12.66
Spreading loss [dB]	-135.04	-132.02
PFD in 4 kHz [dB(W/m^2)]	**-143.34**	**-143.34**
PFD in 1 MHz [dB(W/m^2)]	**-119.36**	**-119.36**

Table 1. **PFD at the surface of the Earth (at slant and nadir) produced by the Ku band broadband downlink transmissions (1125 km orbit)**

The EIRP density was derived using a maximum TX power at slant of 2.8 Watts in 240 MHz and the actual antenna gain vs. steering angle characteristics. The TX power is adjusted with the steering angle to ensure PFD at the surface of the Earth is kept constant. Table 2 provides the example derivation for the EIRP density at nadir, from the 1125 km orbital altitude.

Occupied Bandwidth [MHz]	240.00
Tx Out Power @ slant [W]	2.8
Tx Out Power [dBW]	4.47
Back off at nadir [dB]	5.03
Tx Antenna Gain @ nadir [dBi]	37.00
EIRP at nadir [dBW]	36.44
EIRP density @ nadir [dBW/Hz]	-47.36
EIRP in 4kHz @ nadir [dBW]	-11.34
Altitude [km]	1125.00
Spreading Loss [dB]	-132.02
PFD [dB(W/m^2)]	-143.35

Table 2. **Example derivation of the EIRP density at the surface of the Earth (at nadir) produced by the Ku band broadband downlink transmissions (1125 km orbit)**



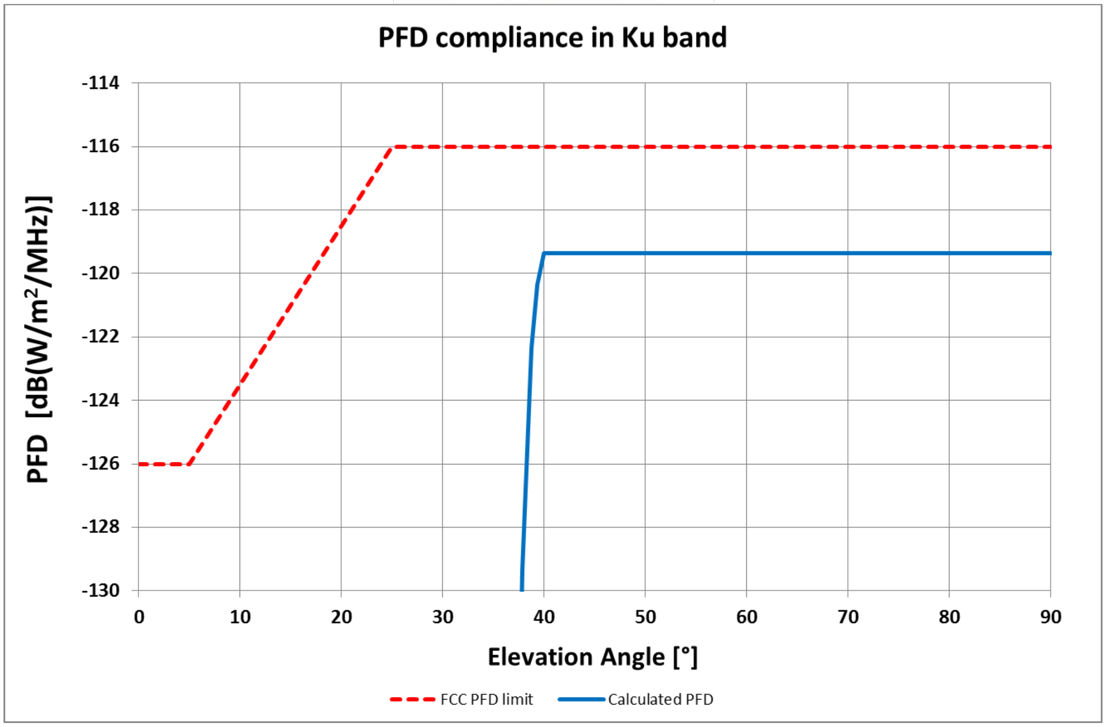


Figure 2. **PFD at the surface of the Earth produced by the Ku band downlink transmissions versus elevation angle (1125 km orbit).**

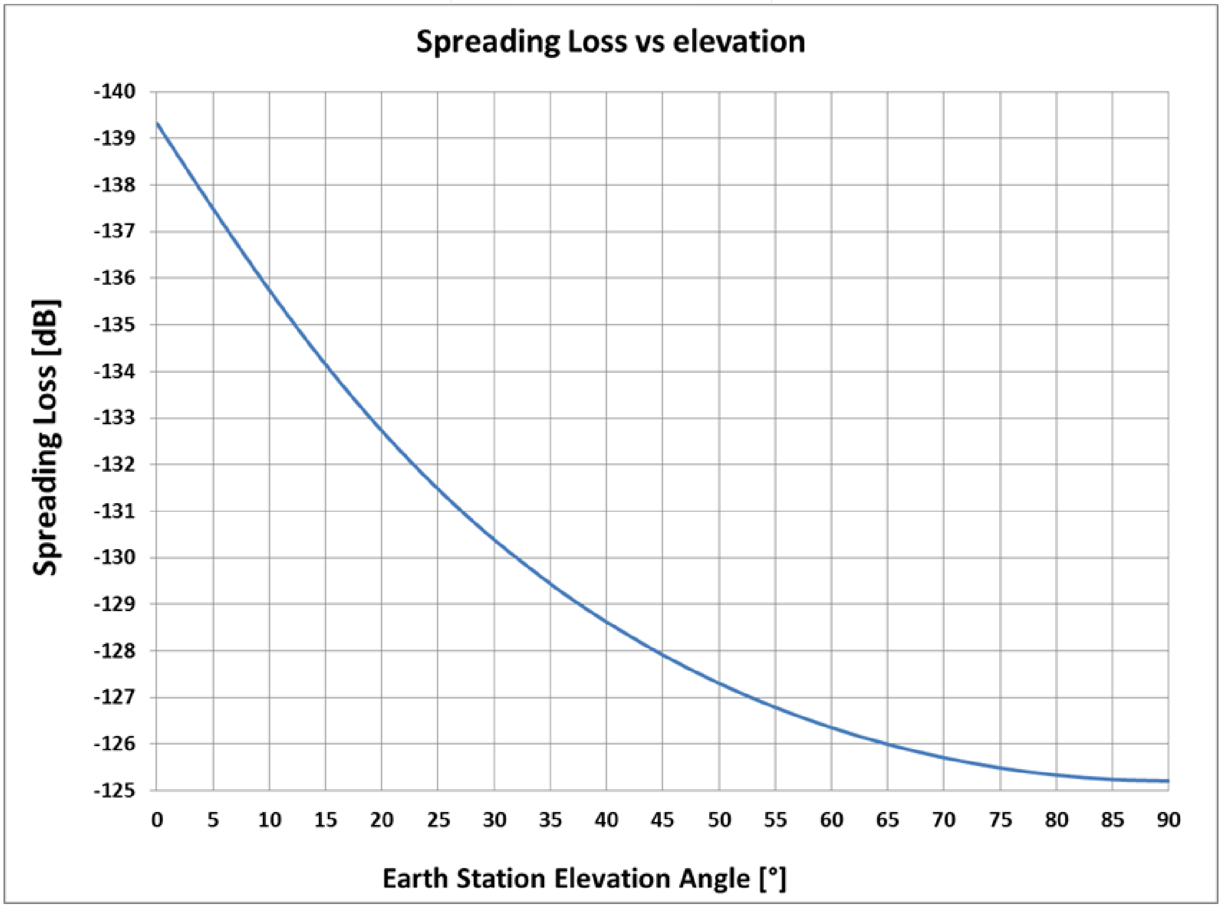


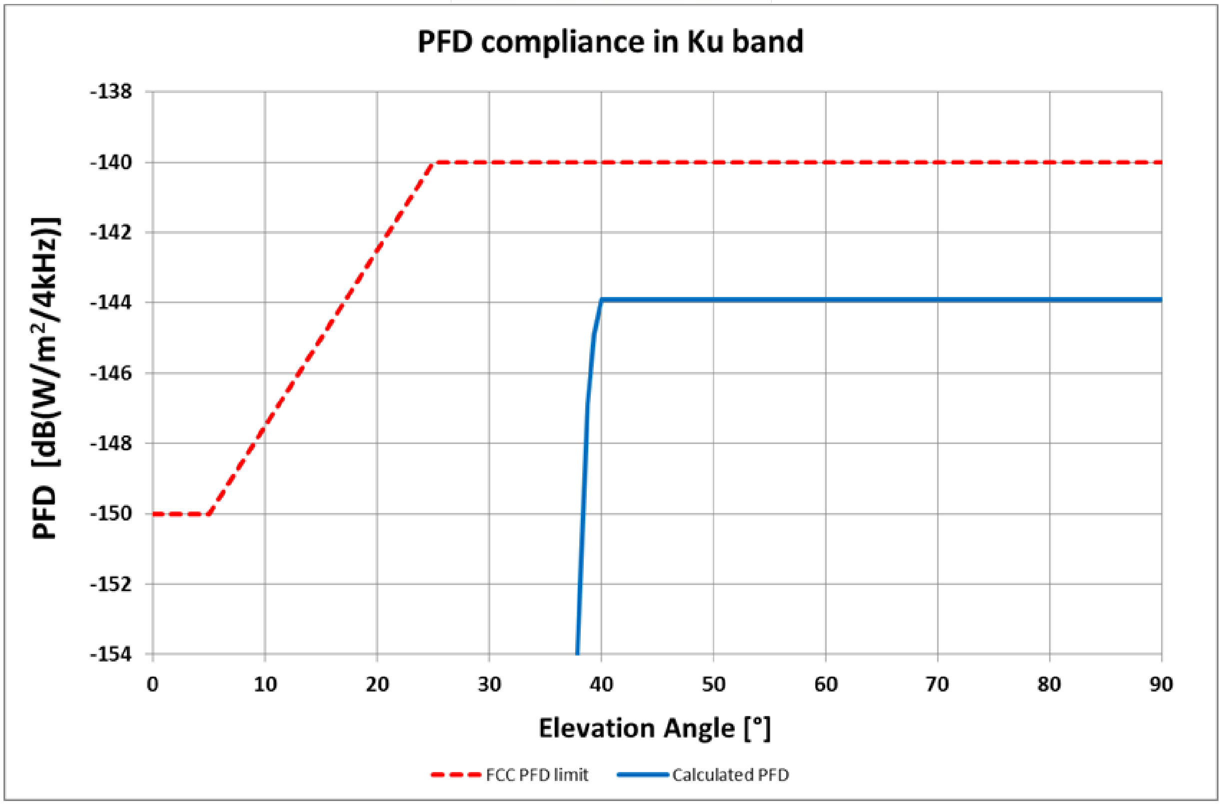
Figure 3. **Spreading loss versus elevation (514km orbit)**

	@ Slant	@ Nadir
EIRP density [dBW/Hz]	-51.3	-54.71
EIRP in 4kHz [dBW]	-15.28	-18.69
EIRP in 1MHz [dBW]	8.7	5.29
Spreading loss [dB]	-128.62	-125.21
PFD in 4 kHz [dB(W/m^2)]	**-143.90**	**-143.90**
PFD in 1 MHz [dB(W/m^2)]	**-119.92**	**-119.92**

***Table 3.* PFD at the surface of the Earth (at slant and nadir) produced by the Ku band downlink transmissions (514 km orbit)**

The Commission's rules do not include any PFD limits in the 11.7-12.2 GHz downlink frequency band. The ITU Radio Regulations do, however, include PFD limits across the 11.7-12.7 GHz band which are effectively 2 dB higher than the Commission's PFD limits in the 10.7-11.7 GHz band.[1] Accordingly, given that the SpaceX System complies with the limits in Section 25.208(b), it will also comply with these ITU PFD limits across the entire 11.7-12.7 GHz band.

1 *See* ITU Radio Regs., Table 21-4.



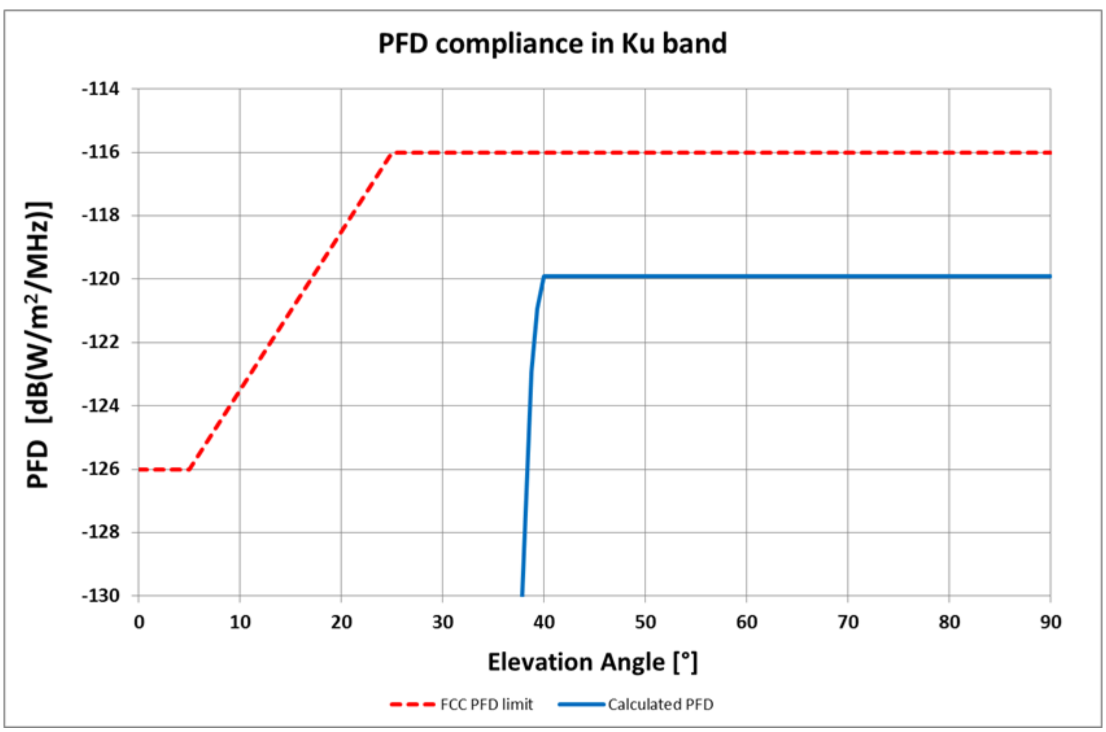


Figure 4. **PFD at the surface of the Earth produced by the Ku band downlink transmissions versus elevation angle (514 km orbit).**

The SpaceX Ku-band telemetry antenna pattern has a peak gain of 7.33 dBi (shown in Exhibit 5). SpaceX will use different power levels depending on bandwidth mode and altitude to ensure it complies with PFD limits. Applicable power levels for each case and corresponding PFDs are shown below.

	Case 1: 41.4 MHz @ 514 km	**Case 2: 1.35 MHz @ 514 km**	**Case 3: 675 kHz @ 514 km**	**Case 4: 67 kHz @ 514 km**
Occupied Bandwidth [MHz]:	**41.4**	**1.35**	**0.675**	**0.067**
Tx Out Power (After Losses) [W]:	**3.500**	**1.800**	**0.900**	**0.090**
Tx Out Power [dBW]:	5.44	2.55	-0.46	-10.46
EIRP [W]:	18.93	9.73	4.87	0.49
EIRP [dBW]:	12.77	9.88	6.87	-3.13
EIRP density [dBW/Hz]	-63.40	-51.42	-51.42	-51.39
EIRP in 4 kHz [dBW]	-27.38	-15.40	-15.40	-15.37
ERP (EIRP minus 2.15 dB) [dBW]:	10.62	7.73	4.72	-5.28
ERP [W]:	11.54	5.93	2.97	0.30
ERP density [dBW/Hz]:	-65.55	-53.57	-53.57	-53.54
Spreading Loss @ 514 km [dB]	-125.21	-125.21	-125.21	-125.21
PFD @ 514 km [dB(W/m^2)/4 kHz]	-152.59	-140.61	-140.61	-140.58

Table 4. **PFD at the surface of the Earth produced by the Ku band telemetry transmissions (514 km orbit)**

	Case 1: 41.4 MHz @ 1125 km	Case 2: 1.35 MHz @ 1125 km	Case 3: 675 kHz @ 1125 km	Case 4: 67 kHz @ 1125 km
Occupied Bandwidth [MHz]:	**41.4**	**1.35**	**0.675**	**0.067**
Tx Out Power (After Losses) [W]:	**3.500**	**3.500**	**3.500**	**0.450**
Tx Out Power [dBW]:	5.44	5.44	5.44	-3.47
EIRP [W]:	18.93	18.93	18.93	2.43
EIRP [dBW]:	12.77	12.77	12.77	3.86
EIRP density [dBW/Hz]	-63.40	-48.53	-45.52	-44.40
EIRP in 4 kHz [dBW]	-27.38	-12.51	-9.50	-8.38
ERP (EIRP minus 2.15 dB) [dBW]:	10.62	10.62	10.62	1.71
ERP [W]:	11.54	11.54	11.54	1.48
ERP density [dBW/Hz]:	-65.55	-50.68	-47.67	-46.55
Spreading Loss @ 1125 km [dB]	-132.02	-132.02	-132.02	-132.02
PFD @ 1125 km [dB(W/m^2)/4 kHz]	-159.39	-144.53	-141.52	-140.39

Table 5. **PFD at the surface of the Earth produced by the Ku band telemetry transmissions (1125 km orbit)**

Therefore, all the Ku-band downlink transmissions from the SpaceX satellite comply with all relevant Commission and ITU PFD limits.

2. Equivalent Power Flux Density at the Geostationary Satellite Orbit in the Ku band (12.75-14.5GHz)

Section *25.208(k) Power flux density limits* states that:

In the 12.75-13.15 GHz, 13.2125-13.25 GHz and 13.75-14.5 GHz bands, the equivalent power flux-density, in the Earth-to-space direction ($EPFD_{up}$), produced at any point on the geostationary satellite orbit (GSO) by the emissions from all co-frequency earth stations in a non-geostationary satellite orbit Fixed-Satellite Service (NGSO FSS) system, for all conditions and for all methods of modulation, shall not exceed the following limits for the specified percentages of time limits:

Limits to the $EPFD_{up}$ Radiated by NGSO FSS Systems in Certain Frequency Bands

Frequency band (GHz) for International Allocations	$EPFD_{up}$ dB(W/m^2)	Percentage of time during which $EPFD_{up}$ may not be exceeded	Reference bandwidth (kHz)	Reference antenna beamwidth and reference radiation pattern[1]
12.5-12.75; 12.75-13.25; 13.75-14.5	−160	100	40	4° ITU-R S.672-4, Ls=−20

[1]For the case of Ls = −10, the values a = 1.83 and b = 6.32 should be used in the equations in the Annex of Recommendation ITU-R S.672-4 for single-feed circular beams. In all cases of Ls, the parabolic main beam equation should start at zero.

Note to paragraph (k): These limits relate to the uplink equivalent power flux density, which would be obtained under free-space propagation conditions, for all conditions and for all methods of modulation.

The calculations below (Table 6) show that $EPFD_{up}$ produced by the transmissions from the three types of proposed broadband Earth stations (ES-A, B, C, and D) never exceed the limit in Section 25.208(k). Note that the earth station transmitter is turned off whenever (1) there is no experimental satellite in view at an elevation angle of at least 40 degrees, and (2) the direction of the SpaceX earth station transmit beam and the GSO arc is separated by less than 12°. In addition, the sidelobes of the broadband antenna patterns are at least 30dB down from the main lobe.

	ES-A	ES-B	ES-C	ES-D
GSO altitude [km]	35786	35786	35786	35786
EIRP @ nadir [dBW]	37.5	41.5	40.5	56
EIRP density @ nadir [dBW/Hz]	-43.29	-39.29	-40.29	-24.79
EIRP in 40kHz [dB(W/m^2)]	2.73	6.73	5.73	21.23
Sidelobe level towards GSO arc [dB]	-30	-30	-30	-40
Spreading loss [dB]	-162.07	-162.07	-162.07	-162.07
EPFD_up [dB(W/m^2)]	-189.34	-185.34	-186.34	-180.84

Table 6. **$EPFD_{up}$ for the proposed Ku-band broadband transmit earth stations**

The calculations below (Table 7) show that $EPFD_{up}$ produced by the transmissions from the Ku-band command Earth stations never exceed the limit in Section 25.208(k). Note that the earth station transmitter is turned off whenever the direction of the SpaceX command earth station transmit beam and the GSO arc is separated by less than 7°. In addition, the sidelobes of the command antenna patterns are at least 49dB down from the main lobe.

	SpaceX Command Low Rate	SpaceX Command Medium Rate	SpaceX Command High Rate
GSO altitude [km]	35786	35786	35786
EIRP @ nadir [dBW]	65	70.82	70.82
EIRP density @ nadir [dBW/Hz]	0.69	-0.48	-5.36
EIRP in 40kHz [dB(W/m^2)]	46.71	45.54	40.66
Sidelobe level towards GSO arc [dB]	-49	-49	-49
Spreading loss [dB]	-162.07	-162.07	-162.07
EPFD_up [dB(W/m^2)]	-164.36	-165.53	-170.40

Table 7. **$EPFD_{up}$ for the proposed Ku-band command earth stations**

3. Power Flux Density at the Surface of the Earth in the Ka band (18.3-18.8GHz)

Section *25.208(c)* Power flux density limits states that:

In the 17.7-17.8 GHz, 18.3-18.8 GHz, 19.3-19.7 GHz, 22.55-23.00 GHz, 23.00-23.55 GHz, and 24.45-24.75 GHz frequency bands, the power flux density at the Earth's surface produced by emissions from a space station for all conditions for all methods of modulation shall not exceed the following values:

(1)−115 dB (W/m 2) in any 1 MHz band for angles of arrival between 0 and 5 degrees above the horizontal plane.

(2) −115 0.5 (δ−5) dB(W/ m2) in any 1 MHz band for angles of arrival δ (in degrees) between 5 and 25 above the horizontal plane.

(3) −105 dB(W/ m2) in any 1 MHz 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 assumed free-space propagation conditions. As shown in Table 8 below, the PFDs at the Earth's surface produced by the satellite data and telemetry transmissions satisfy the PFD limits in the ITU Radio Regulations for all angles of arrival. In addition, the transmit power for the TT&C data transmitters is adjustable on orbit. This capability supports SpaceX's ability to manage the satellites' PFD levels during all phases of the mission. Note these calculations are done for the worst case occupied bandwidth. Calculations conservatively assume that the signals from the two omnidirectional antennas on satellite add up in phase at the surface of the Earth and the gain of both antennas is +3dB. Also, the minimum spreading loss is used corresponding to a 90 degree elevation angle (all other elevations will result in lower PFD levels).

	1125 km	**514 km**
EIRP density [dBW/Hz]	-67.37	-67.37
EIRP in 1MHz [dBW]	-7.37	-7.37
Spreading loss [dB]	-132.02	-125.21
PFD in 1 MHz [dB(W/m^2)]	**-139.39**	**-132.58**

Table 8. **PFD at the surface of the Earth for the satellite's transmission in the Ka band**

4. Power Flux Density at the Surface of the Earth in the band 8025-8400 MHz

Section 25.208 of the Commission rules does not contain power flux density ("PFD") limits at the Earth's surface produced by emissions from NGSO space stations operating in the 8025-8400 MHz band. However, Table 21-4 of the ITU Radio Regulations states that the PFD at the Earth's surface produced by emissions from an NGSO space station (Earth Exploration Satellite Service ("EESS")) in the 8025-8400 MHz band, including emissions from a reflecting satellite, for all conditions and for all methods of modulation, shall 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(d -5) dB(W/m2) in any 4 kHz band for angles of arrival (in degrees) between 5 and 25 degrees above the horizontal plane;
- –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 assumed free-space propagation conditions. As shown in Figures 6 and 7, and Tables 9 and 10 below, the PFDs at the Earth's surface produced by the satellite data and telemetry transmissions satisfy the PFD limits in the ITU Radio Regulations for all angles of arrival. In addition, the transmit power for the TT&C data transmitters is adjustable on orbit. This capability supports SpaceX's ability to manage the satellites' PFD levels during all phases of the mission. Note these calculations are done for the worst case occupied bandwidth. Also, calculations conservatively assume that the signals from the two omnidirectional antennas on satellite add up in phase at the surface of the Earth and the gain of both antennas is +8.3dB (gain of each is less than or equal to 4.15dB).

Occupied Bandwidth [MHz]	**2.90**	**1.16**	**0.58**
Amplifier Output Power [W]	**20.00**	**8.00**	**4.00**
Amplifier Output Power [dBW]	**13.01**	**9.03**	**6.02**
Tx out circuit loss [dB]	**1.00**	**1.00**	**1.00**
Tx Antenna Gain (total for both antennas) [dBi]	**4.15**	**4.15**	**4.15**
EIRP [dBW]	**16.16**	**12.18**	**9.17**
EIRP density [dBW/Hz]	**-48.46**	**-48.46**	**-48.46**
EIRP in 4kHz [dBW]	**-12.44**	**-12.44**	**-12.44**

Table 9. **PFD at the surface of the Earth produced by the satellite telemetry downlinks when at 1125 km**

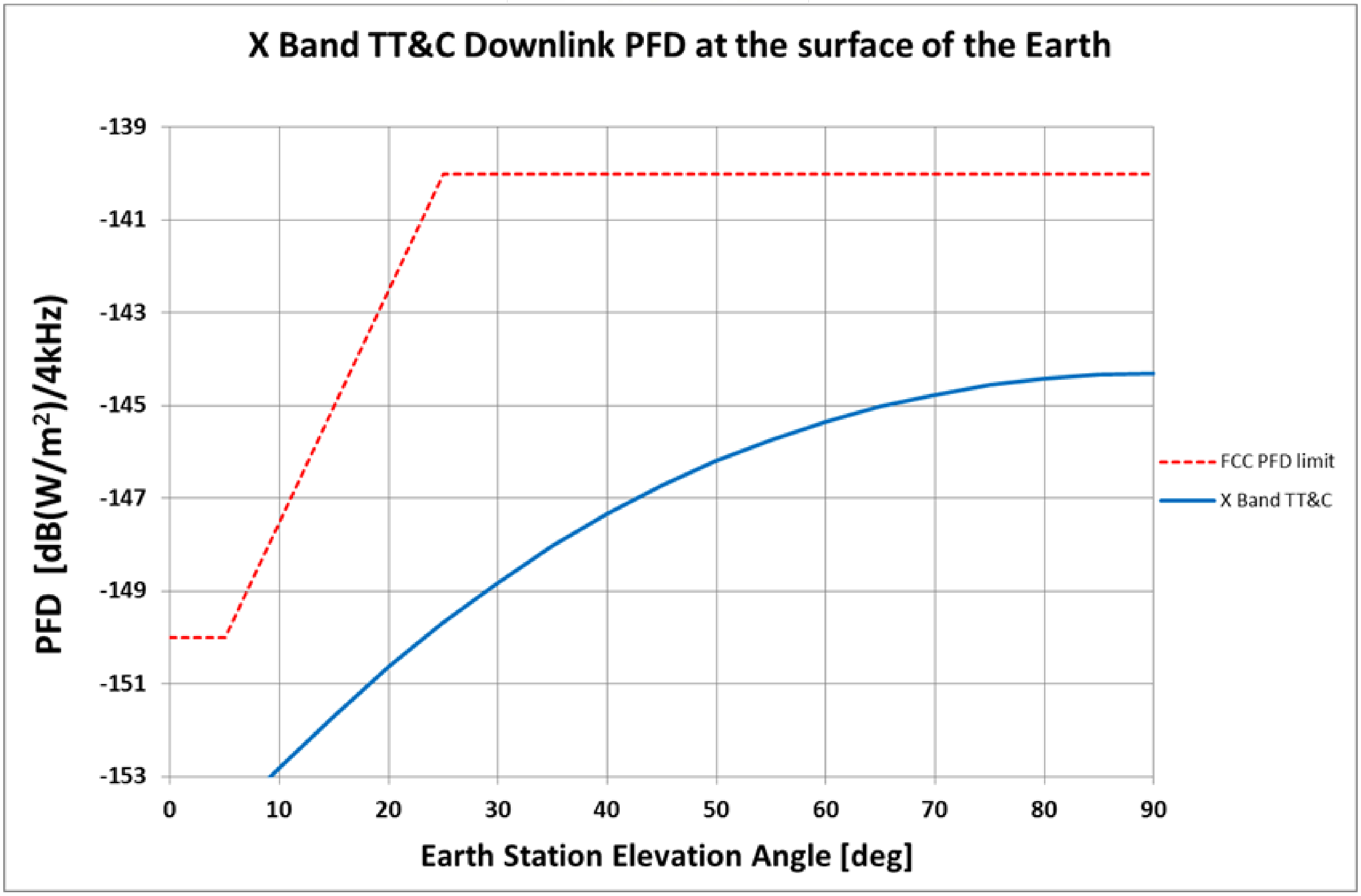


Figure 6. **PFD at the surface of the Earth produced by the satellite telemetry downlinks when at 1125 km**

Occupied Bandwidth [MHz]	**2.90**	**1.16**	**0.58**
Amplifier Output Power [W]	**5.00**	**2.00**	**1.00**
Amplifier Output Power [dBW]	**6.99**	**3.01**	**0.00**
Tx out circuit loss [dB]	**1.00**	**1.00**	**1.00**
Tx Antenna Gain (total for both antennas) [dBi]	**4.15**	**4.15**	**4.15**
EIRP [dBW]	**10.14**	**6.16**	**3.15**
EIRP density [dBW/Hz]	**-54.48**	**-54.48**	**-54.48**
EIRP in 4kHz [dBW/4kHz]	**-18.46**	**-18.46**	**-18.46**

Table 10. **PFD at the surface of the Earth produced by the satellite telemetry downlinks when at 514 km**

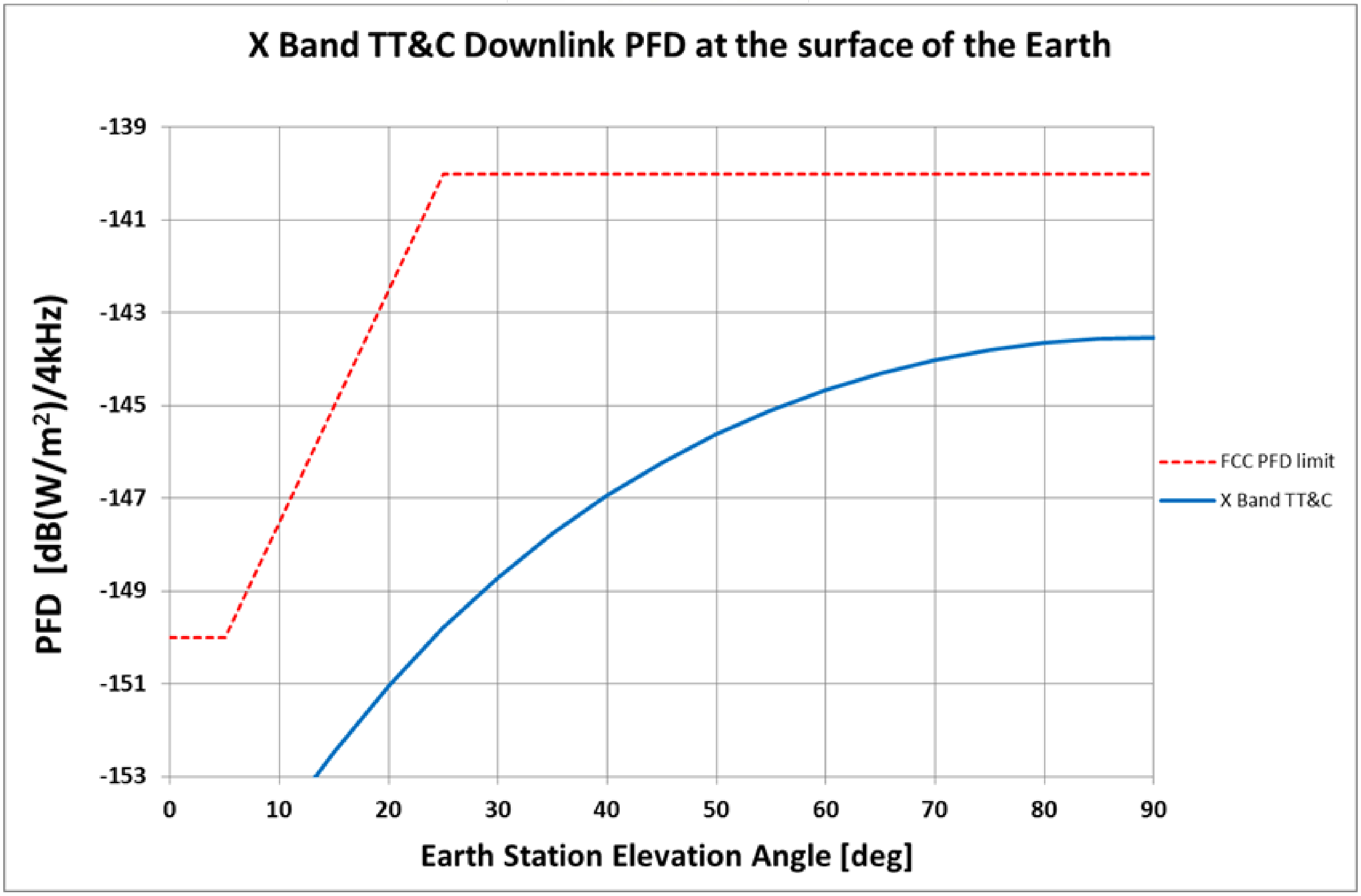


Figure 7. **PFD at the surface of the Earth produced by the satellite telemetry downlinks when at 514 km**

5. Power Flux Density at the Geostationary Satellite Orbit (X-Band)

ITU Radio Regulations No. 22.5 specifies that in the frequency band 8025-8400 MHz, 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 the geostationary satellite orbit ("GSO") by any EESS space station shall not exceed –174 dB(W/m^2) in any 4 kHz band. The calculation below shows that the PFD produced by the transmissions from the proposed satellite does not exceed the limit in No. 22.5, even in the worst possible hypothetical case.

The calculations for the PFD at the GSO produced by the satellite transmission are shown in Table 11 below. Note these calculations are done for all occupied bandwidths. Additionally, the calculations are provided for the 1125 km orbit, for the more stringent case of maximum power and minimum distance to GSO.

Occupied Bandwidth [MHz]	2.90	1.16	0.58
Amplifier Output Power [W]	20.00	8.00	4.00
Amplifier Output Power [dBW]	13.01	9.03	6.02
Tx out circuit loss [dB]	1.00	1.00	1.00
Tx Antenna Gain (total for both antennas) [dBi]	4.15	4.15	4.15
EIRP [dBW]	16.16	12.18	9.17
EIRP density [dBW/Hz]	-48.46	-48.46	-48.46
EIRP in 4kHz [dBW/4kHz]	-12.44	-12.44	-12.44
Min Distance to GSO [km]	34661.00	34661.00	34661.00
Min Spreading Loss [dB]	-161.79	-161.79	-161.79
Max PFD in 4kHz at GSO arc [dB(W/m^2)/4kHz]	**-174.23**	**-174.23**	**-174.23**

Table 11. **PFD at the GSO produced by the satellite Telemetry Downlinks in the X-Band**

6. Potential Interference to the GSO Fixed Satellite Service (FSS) in the band 10.7-12.2 GHz

In the Ku downlink band (10.7 – 12.2 GHz), MicroSat will implement GSO arc avoidance to protect against interference into GSO ground terminals. This will be accomplished by limiting Ku transmit power and, in some cases, cessation of Ku downlink emissions. Compliance with $EPFD_{down}$ is ensured as follows:

1. Turn off the transmit beam on satellite whenever ϕ <12°. ϕ is the angle between the boresight of a GSO Earth station (assumed to be collocated with the SpaceX Earth Station) and the direction of the SpaceX satellite transmit beam. This ensures the -160dB(W/m2)/40kHz limit is never exceeded.
2. The sidelobes of the antenna patterns are at least 30dB down. This ensures that a sidelobe that happens to align with the boresight of the GSO receive station will not cause EPFD exceeding -160dB(W/m2)/40kHz.

Because the transmit power is adjustable on orbit, SpaceX has the ability to manage the satellite's $EPFD_{down}$ levels during all phases of the mission, as needed.

6.1 Potential Interference to the GSO Uplinks in the band 2025-2110 MHz

In the S-band uplink (2025 – 2100 MHz), MicroSat will implement GEO arc avoidance to protect against interference into GSO satellites. This will be accomplished by reducing S-band transmit power and, in some cases, cessation of S-band uplink emissions to assure compliance with the EIRP limits specified in the ITU Radio Regulations No. 21.2 & 21.4.

6.2 Potential Interference to EESS systems operating in the band 8025-8400 MHz

Interference between the SpaceX satellites and those of other systems operating in the X-band is very unlikely because EESS systems operating in the 8025-8400 MHz band normally transmit only in short periods of time while visible from the dedicated receiving earth stations. For the interference to happen, satellites belonging to different systems would have to travel through the antenna beam of the receiving earth station and transmit at the same time. In such a very unlikely event, the interference can still be avoided by coordinating the satellite transmissions so that they do not occur simultaneously.

6.3 Potential Interference to the Fixed Service and the FSS in the band 8025-8400 MHz

As demonstrated above, the SpaceX satellite transmissions will meet the limits specified by the ITU for protection of the Fixed Service in the 8025-8400 MHz band, as well as the geostationary FSS satellites using this band for their uplinks.