



Exhibit 6 – Revision 1

Redbook Reference Designations

Applicant: **Space Exploration Technologies Corp.**



1) The type of satellite, geostationary or nongeostationary, (XAL and/or RAL).

- Both of the satellites are non-geostationary.
- SpaceX is designating the X-band downlink transmitter/receiver as “01”, the S-band uplink transmitter/receiver as “02”, and the Ku-band (command only: 13.85 – 14 GHz) uplink transmitter/receiver as “03.”

- XAL01 NONGEOSTATIONARY
- XAL02 REDMOND
- XAL03 BREWSTER
- RAL01 REDMOND
- RAL02 NONGEOSTATIONARY
- RAL03 NONGEOSTATIONARY

a. If any satellites are geostationary, report its latitude as 000000N (XLA and/or RLA) and report its longitude (XLG and/or RLG).

- Latitude (left blank per 9-25 of Redbook): XLA01
- Longitude (left blank per 9-26 of Redbook): XLG01
- Latitude: XLA02 474002N
- Longitude: XLG02 1220540W
- Latitude: XLA03 480850N
- Longitude: XLG03 1194149W
- Latitude: RLA01 474002N
- Longitude: RLG01 1220540W
- Latitude (left blank per 9-25 of Redbook): RLA02
- Longitude (left blank per 9-26 of Redbook): RLG02
- Latitude (left blank per 9-25 of Redbook): RLA03
- Longitude (left blank per 9-26 of Redbook): RLG03

b. If any satellites are nongeostationary, report its inclination angle, apogee in kilometers, perigee in kilometers, orbital period in hours and fractions of Hours in decimal, the number of satellites in the system, then T01.

The satellites will operate from a 1125 km x 1125 km orbit at an inclination of 97.44°. The orbital period is 107.801 minutes, equivalent to 1.797 hours.

In the above format, this corresponds to:

- REM01 *ORB,97.7IN01125AP01125PE001.78H02NRT01

2) The satellite transmitter antenna gain and beamwidth (XAD).

In X-band, the antenna is omni-directional, hence the inclusion of 360° as its beamwidth.

- XAD01 03G360B

For additional information, please see patterns submitted in Exhibits 4 and 5.

3) The satellite transmitter antenna azimuth (XAZ), narrowbeam, NB, earth coverage, EC, example, XAZ01 EC or leave blank for space-to-space operations.



The X-band downlink utilizes an omni-directional antenna:

- XAZ01 EC

4) The earth station receiver antenna gain, beamwidth, azimuthal range, the site elevation above mean sea level in meters and the antenna height above terrain in meters (RAD), example assuming nongeostationary, RAD01 16G030B000-360A00357H006.

In X-band, this data is also shown in Exhibit 1 and in Form 442. The receive antenna gain is 47 dBi, the full beamwidth is 0.7°, the azimuthal range is 360°, the site elevation above mean sea level is 22 meters, and the antenna height above terrain is 15 meters.

- RAD01 47G0.7B000360A00022H015

5) The earth station receiver antenna azimuth (RAZ), the minimum angle of Elevation, V00 to V90.

In the X band, the minimum elevation is 0°:

- RAZ01 V00

6) The S note (S945 - This assignment supports a Cubesat or Nanosat satellite whose name is recorded in circuit remarks field).

The satellites are best described as MicroSat's, so SpaceX suggests:

- *AGN, MicroSat1AB

7) The transmitter antenna orientation (XAP), and the receiver antenna orientation (RAP)

- For X-band downlink transmit: XAP01 T
- For X-band receive: RAP01 T
- For S-band uplink transmit: XAP02 L
- For S-band receive: RAP02 L
- For Ku-band uplink transmit: XAP03 L
- For Ku-band receive: RAP03 L

8) Transmitter and receiver parameters are needed for both space and earth stations (downlink data is only needed for the X-band frequencies and uplink data is necessary for the 2077.5-2105.5 MHz band and 13.85 – 14 GHz band)

X-band downlink (transmitter on satellite; receiver in Redmond)

- Location: XAL01 NONGEOSTATIONARY
- Latitude (left blank per 9-25 of Redbook): XLA01
- Longitude (left blank per 9-26 of Redbook): XLG01
- Polarization: XAP01 T
- Orientation: XAZ01 EC
- Dimensions (omni-directional): XAD01 03G360B
- Location: RAL01 REDMOND
- Latitude: RLA01 474002N
- Longitude: RLG01 1220540W
- Polarization: RAP01 T



- Orientation: RAZ01 V00
- Dimensions: RAD01 47G0.7B000-360A00022H015

S-band uplink (transmitter in Redmond; receiver in orbit)

- Location: XAL02 REDMOND
- Latitude: XLA02 474002N
- Longitude: XLG02 1220540W
- Polarization: XAP02 L
- Orientation: XAZ02 V00
- Dimensions: XAD02 35G2.7B000-360A00022H015
- Location: RAL02 NONGEOSTATIONARY
- Latitude (left blank per 9-25 of Redbook): RLA02
- Longitude (left blank per 9-26 of Redbook): RLG02
- Polarization: RAP02 L
- Orientation: RAZ02 EC
- Dimensions (omni-directional): RAD02 03G360B

Ku-band command uplink (transmitter in Brewster; receiver in orbit)

- Location: XAL03 BREWSTER
- Latitude: XLA03 480850N
- Longitude: XLG03 1194149W
- Polarization: XAP03 L
- Orientation: XAZ03 V00
- Dimensions: XAD03 56G0.2B000-360A00380H002
- Location: RAL03 NONGEOSTATIONARY
- Latitude (left blank per 9-25 of Redbook): RLA03
- Longitude (left blank per 9-26 of Redbook): RLG03
- Polarization: RAP03 L
- Orientation: RAZ03 EC
- Dimensions (omni-directional): RAD03 03G360B