

Aprize Satellite Inc.
Exhibit A to FCC Form 442 Application

Frequency Band Requested: 2200 MHz to 2310 MHz.

Bandwidth Required: 400 KHz

Emission Designator: 400K0F3D

Space Station Class: ET (Space Station in Space Operation Service)

Antenna Pattern: See Figure 1

Link Margin: See Figure 2

Power Flux Density: Within ITU limits. See Figure 3

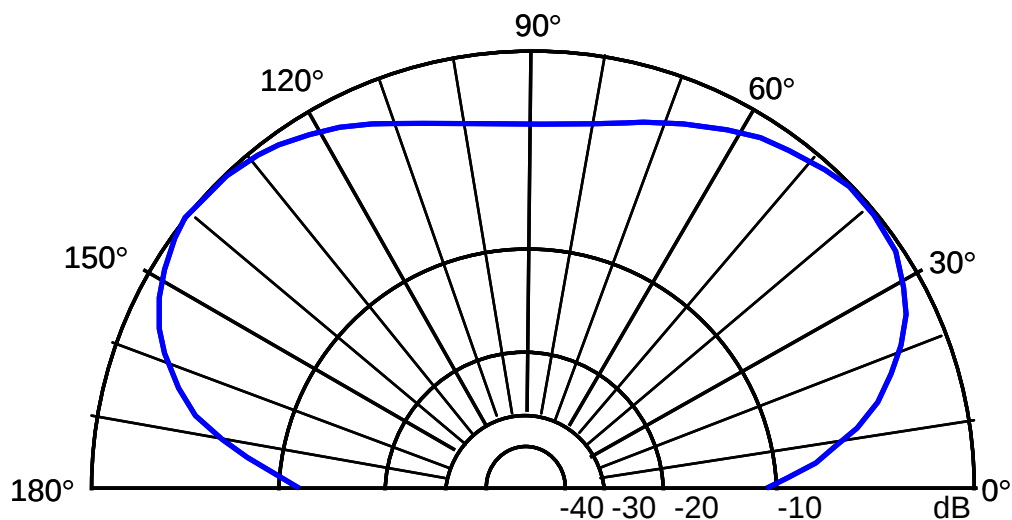


Figure 1: Space Station S-Band Transmit/Receive Antenna

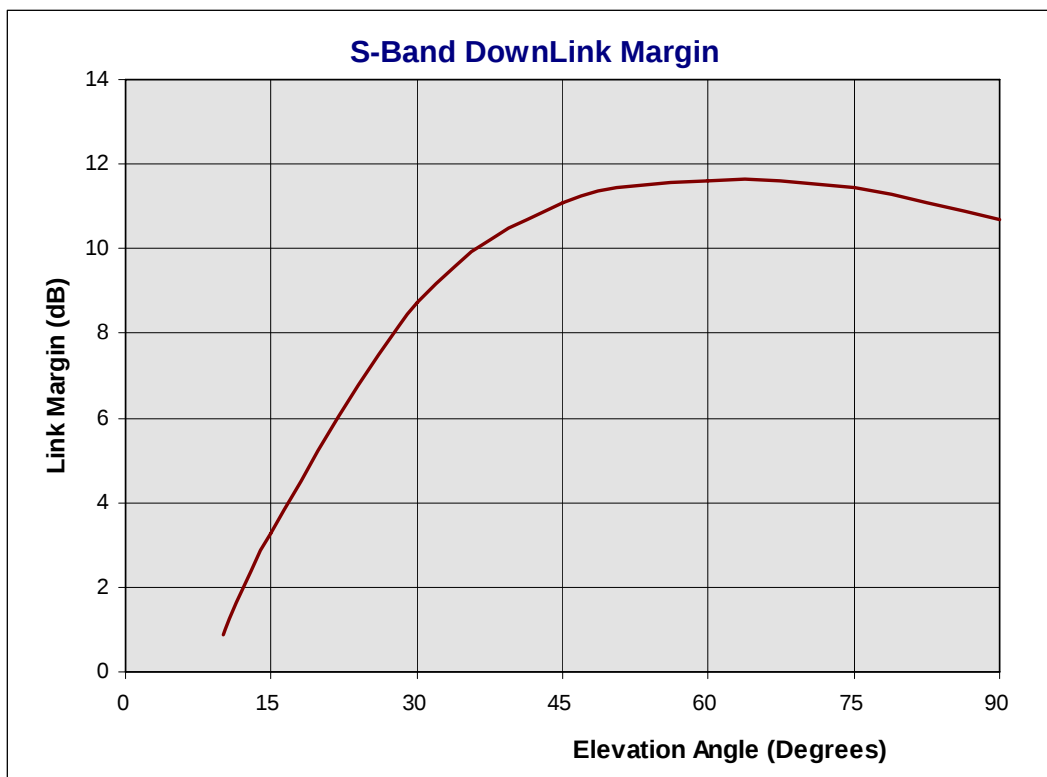


Figure 2: S-Band Downlink Margin

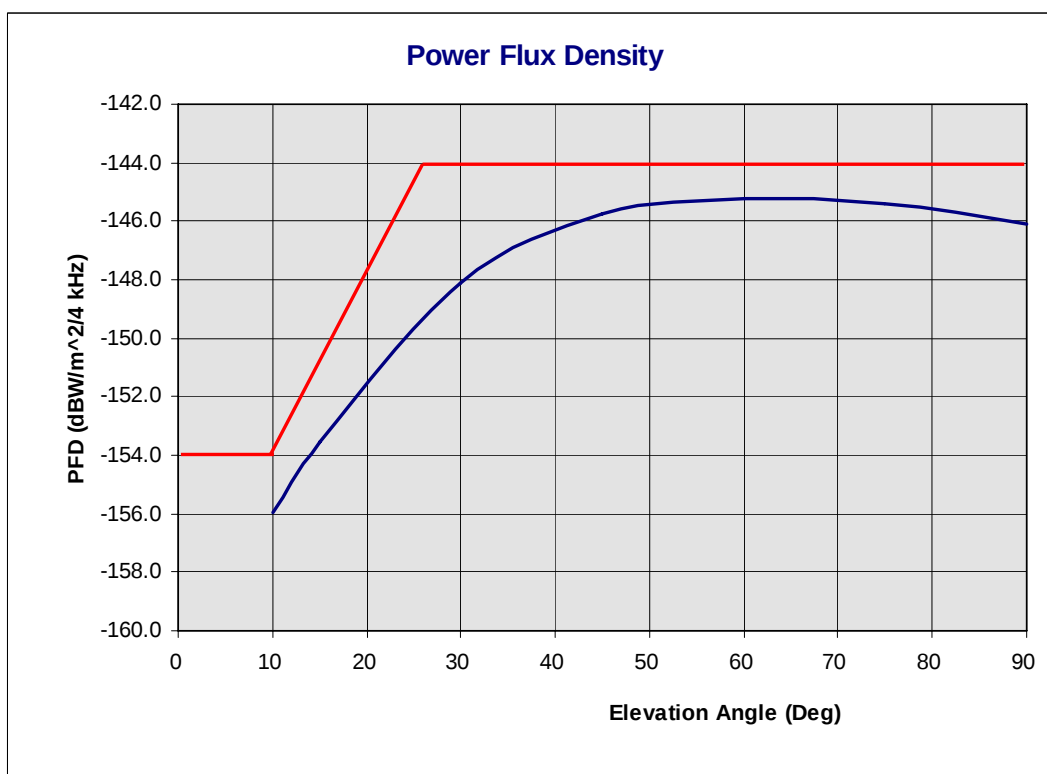


Figure 3: Power Flux Density Calculation Vs. Elevation Angle

Aprize S-Band Downlink Budget							
ELEVATION ANGLE TO SATELLITE (Deg)	10	15	30	45	60	75	90
ORBITAL ALTITUDE (km)	680	680	680	680	680	680	680
EARTH'S RADIUS (km)	6378	6378	6378	6378	6378	6378	6378
SATELLITE COVERAGE HALF ANGLE TO HORIZON (Deg)	65	65	65	65	65	65	65
SLANT RANGE TO SATELLITE (Km)	2112	1793	1205	919	773	702	680
SURFACE DISTANCE BETWEEN RECEIVER AND SSP	1908	1581	946	588	349	164	0

Satellite Transmitter							
SATELLITE DOWNLINK FREQUENCY (MHz)	2305.0	2305.0	2305.0	2305.0	2305.0	2305.0	2305.0
TRANSMITTER OUTPUT POWER (Watts)	1.5	1.5	1.5	1.5	1.5	1.5	1.5
TRANSMITTER OUTPUT POWER (dBw)	1.8	1.8	1.8	1.8	1.8	1.8	1.8
TRANSMISSION LINE LOSS (dB)	0.5	0.5	0.5	0.5	0.5	0.5	0.5
POLARIZATION LOSS (dB)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
SATELLITE TRANSMIT ANTENNA GAIN (dB)	-3.0	-2.0	0.0	0.0	-1.0	-2.0	-3.0
SATELLITE DOWNLINK EIRP (Watts)	0.5	0.7	1.1	1.1	0.8	0.7	0.5
SATELLITE DOWNLINK EIRP (dBw)	-2.7	-1.7	0.3	0.3	-0.7	-1.7	-2.7

Ground Receiver	10	15	30	45	60	75	90
FREE SPACE LOSS (dB)	166.1	164.7	161.3	158.9	157.4	156.6	156.3
ISOTROPIC POWER AT MOBILE ANTENNA (dBw)	-168.9	-166.5	-161.0	-158.7	-158.2	-158.3	-159.0
GROUND ANTENNA GAIN (dB)	33.0	33.0	33.0	33.0	33.0	33.0	33.0
POLARIZATION LOSS (dB)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
TRANSMISSION LINE LOSS (dB)	0.5	0.5	0.5	0.5	0.5	0.5	0.5
SYSTEM NOISE TEMPERATURE (K)	575	575	575	575	575	575	575
FRONT END GAIN (Ant Gain-Losses) (dB)	31.5	31.5	31.5	31.5	31.5	31.5	31.5
FRONT END G/T (dB/K)	3.9	3.9	3.9	3.9	3.9	3.9	3.9
BOLTZMAN'S CONSTANT (dB)	-228.6	-228.6	-228.6	-228.6	-228.6	-228.6	-228.6
DOWNLINK C/No (dB-Hz)	63.6	66.0	71.5	73.8	74.3	74.2	73.5
DATA RATE (bps)	150,000	150,000	150,000	150,000	150,000	150,000	150,000
Eb/No (dB)	11.9	14.3	19.7	22.1	22.6	22.4	21.7
Eb/No REQUIRED FOR GMSK BER of 10^{-5} (dB)	11.0	11.0	11.0	11.0	11.0	11.0	11.0
DOWNLINK MARGIN (dB)	0.9	3.3	8.7	11.1	11.6	11.4	10.7

Figure 4: S-Band Downlink Budget Calculation