

**TELEMETRY (Faded)**

<b>PARAMETER</b>	<b>UNITS</b>	<b>SPOT</b>	<b>OMNI</b>
Frequency (Worst Case for Tx Ant)	GHz	11.7	11.7
Range	km	39,347	39,347
Telemetry EIRP	dBW	17.5	7.5
Range loss	dB/m <sup>2</sup>	-162.9	-162.9
Rain Fade	dB	-1.2	-1.2
Scintillation	dB	-0.2	-0.2
Co-polarization Inclined Orbit Mismatch	dB	-0.1	-0.1
Tracking Gain	dB	-0.1	-0.1
Isotropic gain	dB	-42.6	-42.6
Clear Sky GW Antenna G/T	dB/°K	33.8	33.8
G/T Degradation Due to Fade	dB	-1.2	-1.2
Boltzmann's Constant	dBW/Hz·°K	228.6	228.6
Received C/No	dB·Hz	71.6	61.6
Received C/Io	dB·Hz	71.6	61.6
Received C/(No+Io)	dB·Hz	68.6	58.6
Data Rate	kbps	4	1
TM Mod Index	radians	0.9	0.9
Data Rate	dB·Hz	36	30
Mod loss	dB	3.9	3.9
Implementation loss	dB	3	3
Theoretical Eb/No (BER 1E-6)	dB·Hz	10.8	10.8
Required C/No	dB·Hz	53.7	48
Faded Margin	dB	14.9	10.6

**COMMAND (Faded)**

<b>PARAMETER</b>	<b>UNITS</b>	<b>SPOT</b>	<b>OMNI</b>
Frequency (Worst Case)	GHz	14.0	14.5
Range	km	39.347	39.347
Uplink EIRP	dBW	68	83
Range loss	dB/m <sup>2</sup>	-162.9	-162.9
Rain Fade	dB	-2	-2
Scintillation	dB	-0.2	-0.2
Co-polarization Inclined Orbit Mismatch	dB	-0.1	-0.1
Tracking Gain	dB	-0.3	-0.3
PFD	dBW/m <sup>2</sup>	-97.5	-82.5
Required PFD	dBW/m <sup>2</sup>	-100	-85
Link Margin	dB	2.5	2.5