

### MSAT Beacon Link Budget

<b>PARAMETER</b>	<b>UNITS</b>	<b>SPOT</b>
Frequency	GHz	10.7
Range	km	39,347
AFC EIRP	dBW	10
Range loss	dB/m <sup>2</sup>	-162.9
Rain Fade	dB	-1.2
Scintillation	dB	-0.2
Co-polarization Inclined Orbit Mismatch	dB	-0.1
Tracking Gain	dB	-0.1
Isotropic gain	dB	-42.6
Clear Sky GW Antenna G/T	dB/°K	33.8
G/T Degradation Due to Fade	dB	-1.2
Boltzmann's Constant	dBW/Hz·°K	228.6
Received C/No	dB·Hz	64.1
Received C/Io	dB·Hz	64.1
Received C/(No+Io)	dB·Hz	61.1
Implementation loss	dB	3
Theoretical Eb/No (BER 1E-6)	dB·Hz	10.8
Required C/No	dB·Hz	53.7
Faded Margin	dB	7.4