

**Table A.13-2 – Uplink Link Budget for 65 cm antenna (102KG7W)**

Link Parameters	Clear Sky (- 3dB Contour)	Faded (-3 dB Contour)
<b>Carrier:</b>		
Uncoded Data Rate (kbps)	104	104
Modulation	QPSK	QPSK
FEC	0.69	0.69
Carrier Bandwidth (kHz)	102	102
<b>Link Geometry:</b>		
Elevation Angle (degrees)	30.0	30.0
Tx E/S Range to Satellite (km)	38,612	38,612
<b>Uplink:</b>		
Carrier Frequency (MHz)	29,800	29,800
Tx E/S Antenna Diameter (m)	0.65	0.65
Tx E/S Power to Antenna (W)	0.12	0.4
Tx E/S Antenna Gain (dB)	43.9	43.9
Tx E/S EIRP per Carrier (dBW)	34.7	39.9
Atmospheric and Other Losses (dB)	0.7	8.0
Free Space Loss (dB)	213.7	213.7
G/T towards Tx E/S (dB/K)	13.5	13.5
(Eb/No) - Thermal Uplink (dB)	10.7	8.6
(Eb/lo) - (Adjacent satellite interference) (dB)	16.0	16.0
(Eb/No+lo) - Total Actual (dB)	9.6	7.9
(Eb/No+lo) - Total Required (dB)	7.0	7.0
Excess Margin (dB)	2.6	0.9

99.6% availability