

Table A.13-2. Representative Regional Return Link Budget (248KG7W)

Link Parameters	Clear Sky High Downlink EIRP High Rain Rate Zone	Clear Sky Low Downlink EIRP Low Rain Rate Zone
Carrier		
Data Rate (Mbps)	0.286	0.286
Modulation	QPSK	QPSK
FEC	0.691	0.691
Bandwidth (dB-Hz)	54.0	54.0
Uplink		
Uplink Frequency (MHz)	29,795	29,795
Tx E/S Antenna Diameter (m)	0.65	0.65
Tx E/S Power to Antenna (dBW)	-3.5	-3.5
Input Power Density (dBW/Hz)	-57.5	-57.5
Tx E/S Antenna Gain (dB)	44.3	44.3
Tx E/S EIRP per Carrier (dBW)	40.8	40.8
Mispointing Error (dB)	0.3	0.3
Atmospheric Losses (dB)	0.5	0.5
Free Space Loss (dB)	213.6	213.6
Satellite Antenna Gain (-3dB) (dBi)	40.1	40.1
Satellite Antenna G/T (-3 dB) (dB/K)	10.9	10.9
(C/I) Up - Intra-system (dB)	27.5	27.5
Downlink		
Downlink Frequency (MHz)	18,395	18,395
Downlink EIRP (-3 dB) (dBW)	26.6	20.6
Beam Peak EIRP Density (dBW/Hz)	-24.4	-30.4
Atmospheric Losses (dB)	0.3	0.3
Free Space Loss (dB)	209.4	209.4
Rx E/S Antenna Diameter (m)	8.10	8.10
Antenna Mispointing Error (dB)	0.50	0.50
Rx E/S Antenna Gain (dB)	61.4	61.4
Rx E/S G/T (dB/K)	37.7	37.7
System Noise Temp. (K)	232	232
(C/I) Dn - Intra-system (dB)	22.0	22.0
End-to-End		
(C/N) - Thermal Uplink (dB)	11.9	11.9
(C/N) - Thermal Downlink (dB)	28.7	22.7
(C/I) Up - ASI (dB)	20.2	20.2
(C/I) Dn - ASI (dB)	32.8	26.8
(C/N+I) - Total Actual (dB)	10.8	10.5
(C/N+I) - Total Required (dB)	5.1	5.1
System Margin (dB)	5.7	5.4