

Table A.13-4. Representative Spot Forward Link Budget (36M5G7W)

Link Parameters		Clear Sky	Clear Sky
		High Downlink EIRP High Rain Rate Zone	Low Downlink EIRP Low Rain Rate Zone
Carrier			
Data Rate	(Mbps)	42	42
Modulation		QPSK	QPSK
FEC		0.691	0.691
Bandwidth	(dB-Hz)	75.6	75.6
Uplink			
Uplink Frequency	(MHz)	29,406	29,406
Tx E/S Antenna Diameter	(m)	8.10	8.10
Tx E/S Power to Antenna	(dBW)	5.0	5.0
Input Power Density	(dBW/Hz)	-70.6	-70.6
Tx E/S Antenna Gain	(dB)	62.9	62.9
Tx E/S EIRP per Carrier	(dBW)	67.9	67.9
Mispointing Error	(dB)	0.5	0.5
Atmospheric Losses	(dB)	0.5	0.5
Free Space Loss	(dB)	213.5	213.5
Satellite Antenna Gain (-3dB)	(dBi)	52.2	52.2
Satellite Antenna G/T (-3 dB)	(dB/K)	23.5	23.5
(C/I) Up - Intra-system	(dB)	21.0	21.0
Downlink			
Downlink Frequency	(MHz)	19,851	19,851
Downlink EIRP (-3 dB)	(dBW)	56.6	50.6
Beam Peak EIRP Density	(dBW/Hz)	-16.0	-22.0
Atmospheric Losses	(dB)	0.3	0.3
Free Space Loss	(dB)	210.1	210.1
Rx E/S Antenna Diameter	(m)	0.65	0.65
Antenna Mispointing Error	(dB)	0.30	0.30
Rx E/S Antenna Gain	(dB)	40.7	40.7
Rx E/S G/T	(dB/K)	19.5	19.5
System Noise Temp.	(K)	132	132
(C/I) Dn - Intra-system	(dB)	19.0	19.0
End-to-End			
(C/N) - Thermal Uplink	(dB)	29.9	29.9
(C/N) - Thermal Downlink	(dB)	18.4	12.4
(C/I) Up - ASI	(dB)	25.6	25.6
(C/I) Dn - ASI	(dB)	17.0	11.0
(C/N+I) - Total Actual	(dB)	12.3	7.9
(C/N+I) - Total Required	(dB)	5.1	5.1
System Margin	(dB)	7.2	2.8