

Link Parameters	Riverside, CA	Riverside, CA
	Gateway (clear-sky)	Gateway (faded downlink)
<b>Modulation Parameters:</b>		
Information Bit Rate (kbps)	880	880
FEC Rate	0.8869	0.8869
Modulation Type (BPSK/QPSK/8PSK/16APSK)	QPSK	QPSK
<b>Link Geometry:</b>		
Satellite Longitude (°East)	-65.0	-65.0
Tx E/S City Location (name)	Rio de Janeiro	Rio de Janeiro
Tx E/S Longitude (°East)	-43.3	-43.3
Tx E/S Latitude (°North)	-22.9	-22.9
Tx E/S Range to Satellite (km)	36,853	36,853
Tx E/S Elevation to Satellite (°)	53.7	53.7
Rx E/S City Location (name)	Riverside	Riverside
Rx E/S Longitude (°East)	-117.4	-117.4
Rx E/S Latitude (°North)	34.0	34.0
Rx E/S Range to Satellite (km)	39,321	39,321
Rx E/S Elevation to Satellite (°)	22.4	22.4
<b>Uplink (per carrier):</b>		
Carrier Frequency (MHz)	29,000	29,000
HPA Power Level (W)	0.50	0.50
HPA Power in dBW	-3.0	-3.0
Post-HPA Losses (dB)	0.2	0.2
Tx E/S Power to Antenna in dBW	-3.2	-3.2
PSD into Tx E/S Antenna (dBW/Hz)	-61.1	-61.1
Tx E/S Antenna Diameter (m)	0.74	0.74
Tx E/S Antenna Gain (dB)	44.8	44.8
Tx E/S EIRP per Carrier (dBW)	41.6	41.6
E/S Pointing Loss (dB)	0.25	0.25
Atmospheric Loss (dB)	0.58	0.58
Availability up (%)	95.00	95.00
Rain attenuation (dB)	3.3	3.3
Free Space Loss (dB)	213.0	213.0
<b>Satellite:</b>		
G/T towards Tx E/S (dB/K)	20.7	20.7
Output Back-Off (Aggregate across txpdr) (dB)	-4.7	-4.7
EIRP per Carrier towards Rx E/S (dBW)	23.2	23.2
EIRP SD (dBW/Hz)	-34.7	-34.7
<b>Downlink:</b>		
Carrier Frequency (MHz)	18,300	18,300
Atmospheric Loss (dB)	0.78	0.78
Availability down (%)	50.00	99.92
Rain attenuation (dB)	0.4	16.9
E/S Pointing Loss (dB)	0.25	0.25
Free Space Loss (dB)	209.6	209.6
Rx E/S Antenna Diameter (m)	13.2	13.2
Rx E/S Antenna Gain (dB)	65.8	65.8
Rx E/S G/T (clear-sky) (dB/K)	41.9	41.9
System (LNA+Sky) Noise Temp. (K)	250	250
Increase in Noise Temp due to rain (K)	72	320
<b>Total Link:</b>		
Carrier Noise Bandwidth (kHz)	612	612
(C/N) - Thermal Uplink (dB)	15.9	15.9
(C/N) - Thermal Downlink (dB)	24.7	8.2
(C/I) - Other Link Degradations (dB)	18.0	18.0
(C/N) - Total Actual (dB)	13.5	7.2
(C/N) - Total Required (dB)	6.5	6.5
Excess Margin (dB)	7.0	0.7