

Link Budget Creator - Rev 1.1: July 16, 2010		Tier 1	Tier 1
Ground Parameter		Teleport	Telco
Location		Sunset Beach RHCP, United States	Suva
Latitude	(°)	21.3	-18.1
Longitude (East)	(°)	201.9	178.4
E/S Range to SV	(km)	10078.1	8690.1
E/S Elevation to SV	(°)	31.0	56.4
E/S Altitude	(m)	0.0	0.0
SV Beam Identifier	(#)	12	
Minutes Into Pass (Sample #30)	(Min)	14.0	
Telco Spot Beam Off-Angle	(°)	1.3	
Telco Spot Beam Diameter	(km)	390.8	
Maximum Roundtrip Latency	(msec)	125.2	
Modulation Parameters		Forward	Return
Enter Receiver	Type	DVB-S2	
Modem Overhead	(%)	3.2%	
Number of Carriers per Channel	(#)	703	
Available Bandwidth	(Hz)	216,000,000	
Channel Symbol Rate	(sps)	256,046	
Channel Modulation Type		8PSK	
Channel FEC Rate		0.67	
Channel Spectral Efficiency	(bits/Hz)	2.00	
Channel Throughput	(bps)	495,616.63	
Uplink		Forward	Return
E/S Tx Channels per HPA	(#)	5	
E/S Tx Carrier Frequency	(MHz)	28020.00	
E/S Tx HPA Power Level	(W)	500.00	
E/S Tx OBO	(dB)	-3.00	
E/S Tx Post-HPA Losses	(dB)	-1.50	
E/S Tx Antenna Gain (7.3 meter)	(dB)	64.82	
E/S Tx EIRP Per Channel	(dBW)	51.85	
E/S Tx Pointing Loss	(dB)	-0.50	
E/S Tx RF Link Availability	(%)	99.000	
E/S Tx Atmospheric Losses	(dB)	-10.38	
E/S Tx Spreading Loss	(dB)	-151.06	
Satellite		Forward	Return
SV Number of Channels per HPA	(#)	1	
SV Rx G/T	(dB/K)	4.09	
SV Rx Power Per Tier	(dBW)	-127.94	
SV Rx Flux Density Per Tier	(dBW/m ²)	-81.63	
SV Tx OBO	(dB)	-3.80	
SV Tx Post-TWTA Losses	(dB)	-1.50	
SV Tx Antenna Gain	(dBi)	28.17	
SV Tx EIRP Per Channel/Carrier	(dBW)	12.53	
SV Tx Pointing Loss	(dB)	0.00	
Downlink		Forward	Return
E/S Rx Carrier Frequency	(MHz)	18220.00	
E/S Rx Spreading Loss	(dB)	-149.77	
E/S Rx RF Link Availability	(%)	95.000	
E/S Rx Atmospheric Losses	(dB)	-1.90	
E/S Rx Pointing Loss	(dB)	-0.50	
E/S Rx Antenna Gain (1.5 meter)	(dBi)	47.27	
E/S Rx Effective G/T	(dB/K)	22.38	
E/S Rx Power Per Channel	(dBW)	-139.04	
E/S Rx Flux Density Per Channel	(dBW/m ²)	-139.64	
Total Link		Forward	Return
Carrier / Noise Bandwidth	(dB)	54.08	
Carrier / Noise Uplink	(dB)	18.11	
Carrier / Noise Downlink	(dB)	10.59	
Carrier / Intermodulation Im (C/Im)	(dB)	18.18	
(C/N) - Total Actual	(dB)	9.17	
(C/N) - Total Required	(dB)	8.82	
(E _c /N ₀) - Total Actual	(dB)	-22.31	
(E _c /N ₀) - Total Required	(dB)	-22.66	
Excess Margin	(dB)	0.35	
Fade Margin (to loss of link)	(dB)	10.32	