

Link Budget Creator - Rev 1.1: July 15, 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	(°)		0.2
Telco Spot Beam Diameter	(km)		60.1
Maximum Roundtrip Latency	(msec)		125.2
Modulation Parameters		Forward	Return
Enter Receiver	Type	DVB-S2	
Available Bandwidth	(Hz)	216,000,000	
Channel Symbol Rate	(sps)	180,000,000	
Channel Modulation Type		QPSK	
Channel FEC Rate		0.67	
Channel Spectral Efficiency	(bits/Hz)	1.33	
Channel Throughput	(bps)	232,341,806.38	
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)	-4.00	
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)	79.32	
E/S Tx Pointing Loss	(dB)	-0.50	
E/S Tx RF Link Availability	(%)	99.700	
E/S Tx Atmospheric Losses	(dB)	-19.98	
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)	-138.54	
SV Rx Flux Density Per Tier	(dBW/m ²)	-92.23	
SV Tx OBO	(dB)	-3.80	
SV Tx Post-TWTA Losses	(dB)	-1.50	
SV Tx Antenna Gain	(dBi)	30.76	
SV Tx EIRP Per Channel/Carrier	(dBW)	43.59	
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	(%)	99.700	
E/S Rx Atmospheric Losses	(dB)	-9.88	
E/S Rx Pointing Loss	(dB)	-0.50	
E/S Rx Antenna Gain (4 meter)	(dBi)	55.22	
E/S Rx Effective G/T	(dB/K)	29.24	
E/S Rx Power Per Channel	(dBW)	-108.02	
E/S Rx Flux Density Per Channel	(dBW/m ²)	-116.57	
Total Link		Forward	Return
Carrier / Noise Bandwidth	(dB)	82.55	
Carrier / Noise Uplink	(dB)	7.50	
Carrier / Noise Downlink	(dB)	12.05	
Carrier / Intermodulation Im (C/Im)	(dB)	23.53	
(C/N) - Total Actual	(dB)	6.06	
(C/N) - Total Required	(dB)	5.30	
(E _b /N ₀) - Total Actual	(dB)	4.81	
(E _b /N ₀) - Total Required	(dB)	4.05	
Excess Margin	(dB)	0.76	
Fade Margin (to loss of link)	(dB)	7.21	