

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)	10667.6	8925.3
E/S Elevation to SV	(°)	23.4	50.8
E/S Altitude	(m)	0.0	0.0
SV Beam Identifier	(#)	12	
Minutes Into Pass (Sample #15)	(Min)	6.8	
Telco Spot Beam Off-Angle	(°)	2.1	
Telco Spot Beam Diameter	(km)	631.5	
Maximum Roundtrip Latency	(msec)	130.7	
Modulation Parameters		Forward	Return
Enter Receiver	Type	DVB-S2	
Modem Overhead	(%)	4.3%	
Number of Carriers per Channel	(#)	703	
Available Bandwidth	(Hz)	216,000,000	
Channel Symbol Rate	(sps)	256,046	
Channel Modulation Type		QPSK	
Channel FEC Rate		0.25	
Channel Spectral Efficiency	(bits/Hz)	0.50	
Channel Throughput	(bps)	122,537.50	
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	(%)	99.500	
E/S Tx Atmospheric Losses	(dB)	-20.23	
E/S Tx Spreading Loss	(dB)	-151.55	
Satellite		Forward	Return
SV Number of Channels per HPA	(#)	1	
SV Rx G/T	(dB/K)	4.32	
SV Rx Power Per Tier	(dBW)	-138.05	
SV Rx Flux Density Per Tier	(dBW/m ²)	-91.97	
SV Tx OBO	(dB)	-3.80	
SV Tx Post-TWTA Losses	(dB)	-1.50	
SV Tx Antenna Gain	(dBi)	25.05	
SV Tx EIRP Per Channel/Carrier	(dBW)	9.41	
SV Tx Pointing Loss	(dB)	0.00	
Downlink		Forward	Return
E/S Rx Carrier Frequency	(MHz)	18220.00	
E/S Rx Spreading Loss	(dB)	-150.00	
E/S Rx RF Link Availability	(%)	99.500	
E/S Rx Atmospheric Losses	(dB)	-7.59	
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)	20.91	
E/S Rx Power Per Channel	(dBW)	-148.08	
E/S Rx Flux Density Per Channel	(dBW/m ²)	-148.68	
Total Link		Forward	Return
Carrier / Noise Bandwidth	(dB)	54.08	
Carrier / Noise Uplink	(dB)	7.99	
Carrier / Noise Downlink	(dB)	0.08	
Carrier / Intermodulation Im (C/Im)	(dB)	18.18	
(C/N) - Total Actual	(dB)	-0.73	
(C/N) - Total Required	(dB)	-1.15	
(E _b /N ₀) - Total Actual	(dB)	-26.19	
(E _b /N ₀) - Total Required	(dB)	-26.61	
Excess Margin	(dB)	0.42	
Fade Margin (to loss of link)	(dB)	0.42	