

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)	10879.7	9036.1
E/S Elevation to SV	(°)	20.9	48.4
E/S Altitude	(m)	0.0	0.0
SV Beam Identifier	(#)		12
Minutes Into Pass (Sample #10)	(Min)		4.4
Telco Spot Beam Off-Angle	(°)		1.3
Telco Spot Beam Diameter	(km)		390.8
Maximum Roundtrip Latency	(msec)		132.9
Modulation Parameters		Forward	Return
Enter Receiver	Type		DVB-S2
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 (100% / 100% of Full Rate)	(bps)		495,616.63
Uplink		Forward	Return
E/S Tx Channels per HPA	(#)		1
E/S Tx Carrier Frequency	(MHz)		28020.00
E/S Tx HPA Power Level	(W)		3.00
E/S Tx OBO	(dB)		-3.00
E/S Tx Post-HPA Losses	(dB)		-0.43
E/S Tx Antenna Gain (1.5 meter)	(dB)		51.01
E/S Tx EIRP Per Channel	(dBW)		52.35
E/S Tx Pointing Loss	(dB)		-0.50
E/S Tx RF Link Availability	(%)		95.000
E/S Tx Atmospheric Losses	(dB)		-4.46
E/S Tx Spreading Loss	(dB)		-150.11
Satellite		Forward	Return
SV Number of Channels per HPA	(#)		4
SV Rx G/T	(dB/K)		1.07
SV Rx Power Per Tier	(dBW)		-123.59
SV Rx Flux Density Per Tier	(dBW/m <sup>2</sup> )		-74.25
SV Tx OBO	(dB)		-5.80
SV Tx Post-TWTA Losses	(dB)		-1.50
SV Tx Antenna Gain	(dBi)		31.01
SV Tx EIRP Per Channel/Carrier	(dBW)		7.35
SV Tx Pointing Loss	(dB)		0.00
Downlink		Forward	Return
E/S Rx Carrier Frequency	(MHz)		18220.00
E/S Rx Spreading Loss	(dB)		-151.72
E/S Rx RF Link Availability	(%)		99.000
E/S Rx Atmospheric Losses	(dB)		-7.73
E/S Rx Pointing Loss	(dB)		-0.50
E/S Rx Antenna Gain ( 7.3 meter)	(dBi)		61.08
E/S Rx Effective G/T	(dB/K)		35.74
E/S Rx Power Per Channel	(dBW)		-138.19
E/S Rx Flux Density Per Channel	(dBW/m <sup>2</sup> )		-152.60
Total Link		Forward	Return
Carrier / Noise Bandwidth	(dB)		54.08
Carrier / Noise Uplink	(dB)		22.46
Carrier / Noise Downlink	(dB)		10.99
Carrier / Intermodulation Im (C/Im)	(dB)		22.34
(C/N) - Total Actual	(dB)		9.62
(C/N) - Total Required	(dB)		8.82
(E <sub>v</sub> /N <sub>c</sub> ) - Total Actual	(dB)		-21.86
(E <sub>v</sub> /N <sub>c</sub> ) - Total Required	(dB)		-22.66
<b>Excess Margin</b>	(dB)		<b>0.80</b>
<b>Fade Margin (to loss of link)</b>	(dB)		<b>10.77</b>