

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
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 (100% / 100% of Full Rate)	(bps)		122,537.50
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	(%)		99.700
E/S Tx Atmospheric Losses	(dB)		-21.60
E/S Tx Spreading Loss	(dB)		-150.00
Satellite		Forward	Return
SV Number of Channels per HPA	(#)		4
SV Rx G/T	(dB/K)		-3.47
SV Rx Power Per Tier	(dBW)		-145.16
SV Rx Flux Density Per Tier	(dBW/m <sup>2</sup> )		-91.29
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)		-151.55
E/S Rx RF Link Availability	(%)		99.700
E/S Rx Atmospheric Losses	(dB)		-13.16
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)		34.94
E/S Rx Power Per Channel	(dBW)		-143.45
E/S Rx Flux Density Per Channel	(dBW/m <sup>2</sup> )		-157.86
Total Link		Forward	Return
Carrier / Noise Bandwidth	(dB)		54.08
Carrier / Noise Uplink	(dB)		0.89
Carrier / Noise Downlink	(dB)		4.93
Carrier / Intermodulation Im (C/Im)	(dB)		22.34
(C/N) - Total Actual	(dB)		-0.69
(C/N) - Total Required	(dB)		-1.15
(E <sub>s</sub> /N <sub>c</sub> ) - Total Actual	(dB)		-26.15
(E <sub>s</sub> /N <sub>c</sub> ) - Total Required	(dB)		-26.61
<b>Excess Margin</b>	<b>(dB)</b>		<b>0.46</b>
<b>Fade Margin (to loss of link)</b>	<b>(dB)</b>		<b>0.46</b>