

Noise Budget and Link Calculation								
		Miami, FL			Miami, FL			
Signal Parameters	Unit	Clear Sky			Rain			
Information rate	Mbps	30.00	15.00	5.00	30.00	15.00	5.00	
Bandwidth Factor		1.20	1.20	1.20	1.20	1.20	1.20	
FEC rate	R-3/4 Turbo	0.75	0.75	0.75	0.75	0.75	0.75	
Signal Occupied Bandwidth	MHz	24.00	12.00	4.00	24.00	12.00	4.00	
Satellite Parameters								
Sat Longitude	deg E	-70.00	-70.00	-70.00	-70.00	-70.00	-70.00	
Nominal Orbital Separation	degs	4.00	4.00	4.00	4.00	4.00	4.00	
EIRP	dBW	60.00	56.99	52.22	60.00	56.99	52.22	
Up-Link								
					UPC			
E/S EIRP per Carrier	dBW	82.86	79.85	75.08	82.86	79.85	75.08	
Frequency	GHz	24.95	24.95	24.95	24.95	24.95	24.95	
TX Antenna Gain	dB	65.56	65.56	65.56	65.56	65.56	65.56	
TX Antenna diameter	m	9.00	9.00	9.00	9.00	9.00	9.00	
Delta SL(Sidelobe Level)	dB	0.00	0.00	0.00	0.00	0.00	0.00	
Tx Antenna input PSD	dBW/Hz	-56.50	-56.50	-56.50	-56.50	-56.50	-56.50	
Free Space Loss (EOC)	dB	212.79	212.79	212.79	212.79	212.79	212.79	
Atmospheric and other losses	dB	2.00	2.00	2.00	2.00	2.00	2.00	
Satellite G/T	dB/K	8.0	8.0	8.0	8.0	8.0	8.0	
C/N Thermal	dB	30.87	30.87	30.87	30.87	30.87	30.87	
C/I Adj. Satellite	dB	52.11	52.11	52.11	52.11	52.11	52.11	
C/I X-Pol	dB	30.00	30.00	30.00	30.00	30.00	30.00	
C/I U/L	dB	29.97	29.97	29.97	29.97	29.97	29.97	
C/(N+I) Up Link	dB	27.39	27.39	27.39	27.39	27.39	27.39	
Down-Link								
		Miami	Clear Sky			Rain		
EIRP density	dBW/Hz	-13.8	-13.8	-13.8	-13.8	-13.8	-13.8	
EIRP per carrier	dBW	60.00	56.99	52.22	60.00	56.99	52.22	
Frequency	GHz	17.50	17.50	17.50	17.50	17.50	17.50	
Free Space Loss + atmospheric loss 1 dB	dB	210.71	210.71	210.71	210.71	210.71	210.71	
Rain Fade	dB	0.00	0.00	0.00	7.00	7.00	7.00	
Rain-induced system noise temperature	K	0.00	0.00	0.00	232.14	232.14	232.14	
Rain induced Rx system temp increase	dB	0.00	0.00	0.00	3.35	3.35	3.35	
Earth Station Receive System G/T	dB/K	13.34	13.34	13.34	13.34	13.34	13.34	
RX Antenna Gain	dB	36.45	36.45	36.45	36.45	36.45	36.45	
RX Antenna diameter	m	0.45	0.45	0.45	0.45	0.45	0.45	
Delta SL(Sidelobe level)	dB	0.00	0.00	0.00	0.00	0.00	0.00	
Input Loss	dB	0.10	0.10	0.10	0.10	0.10	0.10	
Antenna Noise Temperature	K	45.00	45.00	45.00	45.00	45.00	45.00	
LNA Noise Temperature	K	155.00	155.00	155.00	155.00	155.00	155.00	
C/N Thermal including rain effect	dB	17.44	17.44	17.44	7.09	7.09	7.09	
C/I Adj-Sat	dB	22.51	22.51	22.51	22.51	22.51	22.51	
C/I Cross Pol	dB	30.00	30.00	30.00	30.00	30.00	30.00	
C/I Sat-Intmd	dB	30.00	17.00	17.00	30.00	17.00	17.00	
C/I D/L	dB	21.18	15.76	15.76	21.18	15.76	15.76	
C/(N+I) Down Link	dB	15.91	13.50	13.50	6.92	6.54	6.54	
Overall Link								
C/(N+I) total	dB	15.61	13.33	13.33	6.88	6.50	6.50	
C/I total	dB	20.64	15.59	15.59	20.64	15.59	15.59	
Required Eb/No	dB	3.25	3.25	3.25	3.25	3.25	3.25	
Required C/Ne	dB	4.22	4.22	4.22	4.22	4.22	4.22	
Link Margin	dB	11.39	9.11	9.11	2.67	2.28	2.28	