

Representative Return Link Budget

UT Type Carrier Type	Handheld Terminal CDMA	
<u>General Parameters</u>		
Gateway elevation angle	deg	42.0
Minimum user elevation angle	deg	20.0
Uplink frequency	GHz	2.020
Downlink frequency	GHz	19.700
Bandwidth/carrier	kHz	1,250.0
<u>Uplink</u>		
Uplink EIRP	dBW	-1.0
Free space loss	dB	190.5
Atmospheric loss	dB	0.1
Uplink propagation margin	dB	5.5
Satellite receive antenna gain (-3 dB contour)	dBi	42.3
Satellite receive system noise temperature	dB-K	27.3
Satellite receive antenna G/T	dB/K	15.0
Uplink C/N ₀	dBHz	46.5
Uplink C/I ₀ Intra-system	dBHz	44.4
Uplink C/I ₀ External Interference	dBHz	56.5
<u>Downlink</u>		
Satellite EIRP (peak)	dBW	25.7
Free space loss	dB	209.8
Atmospheric loss	dB	0.4
Rain attenuation	dB	10.0
E/S antenna gain	dB	66.5
E/S antenna pointing error	dB	0.3
Nominal system noise temperature	dB-K	23.9
Nominal E/S G/T	dB/K	42.3
System noise temperature degradation in rain	dB	3.1
Rain-degraded system noise temperature	dB-K	27.0
Rain-degraded E/S G/T	dB/K	39.2
Downlink C/No	dBHz	73.0
Downlink C/IM ₀	dBHz	58.8
Downlink C/I ₀ Intra-system	dBHz	69.3
Downlink C/I ₀ ASI	dBHz	82.9
<u>End-to-End Performance</u>		
End-to-end C/N ₀	dBHz	46.5
End-to-end aggregate C/I ₀	dBHz	44.1
End-to-end C/IM ₀	dBHz	58.8
Total aggregate C/(N ₀ +I ₀ +IM ₀)	dBHz	42.0
Total aggregate C/(N+I+IM)	dB	-18.9
Required C/N	dB	-18.9
System Margin	dB	0.0