

## Representative Forward Link Budget

UT Type Carrier Type	Personal Accessory GMR	
<b><u>General Parameters</u></b>		
Gateway elevation angle	deg	42.0
Minimum user elevation angle	deg	20.0
Uplink frequency	GHz	29.625
Downlink frequency	GHz	2.200
Bandwidth/carrier	kHz	156.25
<b><u>Uplink</u></b>		
Uplink E/S antenna diameter	m	13.2
Uplink E/S antenna peak gain	dBi	69.6
E/S antenna pointing error	dB	0.5
Clear-sky uplink EIRP	dBW	45.5
Rain-faded uplink EIRP	dBW	62.5
Free space loss	dB	213.4
Atmospheric loss	dB	0.3
Rain attenuation	dB	17.0
Satellite antenna pointing error	dB	0.3
Satellite antenna receive system noise temp.	dB-K	32.1
Satellite receive antenna G/T	dB/K	17.0
Uplink C/N <sub>0</sub>	dBHz	77.2
Uplink C/IM <sub>0</sub>	dBHz	88.9
Uplink C/I <sub>0ASI</sub>	dBHz	84.2
Uplink C/I <sub>0 Intra-system</sub>	dBHz	74.6
<b><u>Downlink</u></b>		
Effective Satellite EIRP/carrier (-3 dB contour)	dBW	49.0
Free space loss	dB	191.2
Atmospheric loss	dB	0.1
User terminal antenna gain	dB	3.0
User terminal system noise temperature	dB-K	25.0
User terminal G/T	dB/K	-22.0
Downlink propagation margin	dB	8.8
Downlink C/N <sub>0</sub>	dBHz	55.5
Downlink C/IM <sub>0</sub>	dBHz	66.6
Downlink C/I <sub>0 Intra-system</sub>	dBHz	65.1
Downlink C/I <sub>0 External Interference</sub>	dBHz	65.5
<b><u>End-to-End Performance</u></b>		
End-to-end C/N <sub>0</sub>	dBHz	55.4
End-to-end aggregate C/I <sub>0</sub>	dBHz	62.0
End-to-end C/IM <sub>0</sub>	dBHz	66.6
Total aggregate C/(N <sub>0</sub> +I <sub>0</sub> +IM <sub>0</sub> )	dBHz	54.3
Total aggregate C/(N+I+IM)	dB	2.4
Required C/N	dB	2.4
System Margin	dB	0.0