

Table 3 – Link Budget for High-Power Notification Forward Link to Handheld User Terminal (SCPC)

Representative Forward Link Budget		
UT Type		Handheld Terminal
Carrier Type		High Power Notification
<u>General Parameters</u>	Unit	
E/S elevation angle	deg	28.0
Minimum user elevation angle	deg	20.0
Uplink range	km	38792
Downlink range	km	39554
Uplink frequency	GHz	29.625
Downlink frequency	GHz	2.200
Bandwidth/carrier	kHz	8.0
<u>Uplink</u>		
Uplink E/S antenna diameter	m	11.0
Uplink E/S antenna peak gain	dBi	68.1
E/S antenna pointing error	dB	0.5
Clear-sky uplink EIRP	dBW	56.1
Rain faded uplink EIRP	dBW	72.9
Free space loss	dB	213.7
Rain attenuation	dB	16.8
Satellite antenna pointing error	dB	0.3
Satellite antenna receive system noise temp.	dB-K	30.9
Effective satellite antenna G/T	dB/K	24.8
Uplink C/N ₀	dBHz	95.3
Uplink C/IM ₀	dBHz	103.4
Uplink C/I _{0ASI}	dBHz	94.2
Uplink C/I _{0 Intra-system}	dBHz	199.0
Aggregate uplink C/I ₀	dBHz	94.2
<u>Downlink</u>		
Satellite EIRP/carrier	dBW	59.3
Free space loss	dB	191.2
Atmospheric loss	dB	0.1
User terminal antenna gain	dB	0.0
User terminal system noise temperature	dB-K	27.0
User terminal G/T	dB/K	-27.0
Downlink propagation margin	dB	26.7
Downlink C/N ₀	dBHz	42.9
Downlink C/IM ₀	dBHz	64.5
Downlink C/I _{0 Intra-system}	dBHz	199.0
Downlink C/I _{0 ext}	dBHz	52.9
Aggregate downlink C/I ₀	dBHz	52.9
<u>End-to-End Performance</u>		
End-to-end C/N ₀	dBHz	42.9
End-to-end aggregate C/I ₀	dBHz	52.9
End-to-end C/IM ₀	dBHz	64.5
Total aggregate C/(N ₀ +I ₀ +IM ₀)	dBHz	42.5
Total aggregate C/(N+I+IM)	dB	3.4
Required C/N	dB	3.4
System Margin	dB	0.0