

Table D-8 GMSA Broadband Return Link – Home Gateway

460 kbps Broadband Data Channel - Terminal G/T=-15 dB/K

Parameter	Units	
Carrier Bandwidth	KHz	1228.8
Data Rate	kbps	460.8
Broadband channel reuse scheme		3
Number of beams		170
Uplink L-band C/N		
Terminal EIRP	dBW	15.0
Power Control Range	dB	12.0
L-Band Free-Space Loss	dB	-188.4
G/T	dB/K	20.6
Boltzmann's constant	dBW/Hz·K	-228.6
Bandwidth		60.9
C/N	dB	2.9
Co-channel Co-Beam Broadband Channel Interference		
Average number of co-channel users		0.0
C/I		99.0
Co-channel Adjacent-Beam Broadband Channel Interference		
Average number of co-channel users per beam		1.0
Total C/I		1.0
Downlink Ku-Band Feederlink C/N		
Frequency	GHz	11.5
Ku-Band EIRP per gateway	dBW	51.5
Return downlink bandwidth per gateway	MHz	480
Simultaneous User Transmissions		7500
L-Band EIRP (for Power Robbing)	dBW	32.0
Satellite (L-Band) G/T	dB/°K	20.6
U/L Propagation Losses	dB	-188.8
Boltzmann's Constant	dBW/K-Hz	-228.6
Satellite EIRP per gateway per user	dBW	12.1
Ku-Band Free-Space Loss	dB	-215.2
Gateway Equipment Ku-Band G/T	dB/°K	37.9
Boltzmann's Constant	dBW/K-Hz	-228.6
C/N	dB	2.5
Downlink Ku-Band Feederlink Interference		
Effective C/I (across 480 MHz)	dB	14.5
Interference psd	dBW -Hz	-49.8
Effective C/I per carrier	dB	1.0
Total Link		
C/(I+N)	dB	-4.2
Processing Gain	dB	4.3
Effective Eb/No	dB	0.0
Satellite Diversity Rx Gain	dB	2.5
Required Eb/No	dB	3.1
Margin	dB	10.0