

Table D-16 GMR-3G Return Link Budget – Home Gateway

160 kbps Data – Terminal G/T=-17 dB/K

Parameter	Units	
Traffic type		Data
Burst type		PNB(5 3)
Throughput	kbps	160
Modulation		PI/4 QPSK
FEC/Code rate		Turbo/.83
Es/No	dB	7.20
Implementation margin	dB	0.60
Burst duration	ms	5.00
Symbol rate	ksps	117.00
Occupied bandwidth	kHz	312.50
MT Uplink C/No		
MT EIRP	dBW	11.00
Frequency	GHz	1.640
Path loss	dB	188.80
Fade and blocking loss	dB	5.00
Satellite G/T	dB/K	20.60
Polarization mismatch loss	dB	0.00
C/No, uplink	dBHz	66.40
MT Uplink C/Io		
C/I, co-channel	dB	22.50
Number of co-frequency beams		24
Adjacent beam loading	%	50.00
Duty Cycle	dB	0.00
C/I, co-channel	dB	11.71
C/I, adjacent channel	dB	17.58
C/I, calibration signal	dB	26.42
C/I, pointing beacon	dB	20.42
C/Io, uplink	dBHz	65.11

Parameter	Units	
Gateway Downlink C/No		
Downlink bandwidth	MHz	480
Number of data carriers per Gateway		273
Satellite EIRP per Gateway	dBW	51.50
Satellite EIRP per carrier, net	dBW	17.43
Frequency	GHz	11.450
Path loss	dB	205.25
Atmospheric loss	dB	6.95
Gateway G/T	dB/K	37.90
G/T degradation	dB	2.80
C/No, downlink	dBHz	68.93
Gateway Downlink C/Io		
C/I (across 480 MHz)	dB	14.85
C/Io, downlink	dBHz	67.59
Total Link		
Uplink C/(No+Io)	dBHz	62.70
Downlink C/(No+Io)	dBHz	65.20
C/(No+Io)	dBHz	60.76
Received Es/(No+Io)	dB	10.08
Polarization diversity gain	dB	0.00
Satellite diversity gain	dB	3.00
Es/(No+Io)	dB	13.08
Required Es/(No+Io)	dB	7.80
Margin	dB	5.28