

## EXHIBIT 10: GALAXY-12 LINK BUDGETS

UPLINK BEAM INFORMATION				
Uplink Beam Name	CONUS	CONUS	CONUS	CONUS
Uplink Frequency (MHz)	6185	6185	6185	6185
Uplink Beam Polarization	Vertical / Horizontal	Vertical / Horizontal	Vertical / Horizontal	Vertical / Horizontal
Uplink Relative Contour Level (dB)	4	4	4	4
Uplink Contour G/T (dB/K)	-0.5	-0.5	-0.5	-0.5
Uplink SFD (dBW/m <sup>2</sup> )	-88.5	-88.5	-85.5	-85.5
DOWNLINK BEAM INFORMATION				
Downlink Beam Name	CONUS	CONUS	CONUS	CONUS
Downlink Frequency (MHz)	3960	3960	3960	3960
Downlink Beam Polarization	Horizontal / Vertical	Horizontal / Vertical	Horizontal / Vertical	Horizontal / Vertical
Downlink Relative Contour Level (dB)	2	2	2	2
Downlink Contour EIRP (dBW)	42.2	42.2	42.2	42.2
ADIACENT SATELLITE 1				
Satellite 1 Orbital Location	123 WL	123 WL	123 WL	123 WL
Uplink Power Density (dBW/Hz)	-45	-45	-45	-45
Uplink Polarization Advantage (dB)	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-29.9	-29.9	-29.9	-29.9
Downlink Polarization Advantage (dB)	0	0	0	0
ADIACENT SATELLITE 2				
Satellite 2 Orbital Location	127 WL	127 WL	127 WL	127 WL
Uplink Power Density (dBW/Hz)	-45	-45	-45	-45
Uplink Polarization Advantage (dB)	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-30.4	-30.4	-30.4	-30.4
Downlink Polarization Advantage (dB)	0	0	0	0
CARRIER INFORMATION				
Carrier ID	36M0F3F	30M1G7W	5M57G7W	77K0G7W
Information Rate (kbps)	n/a	36863	6000	64
Carrier Modulation	TV/FM	QPSK	QPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	n/a	n/a	n/a
Code Rate	n/a	3/4xRS	3/4	1/2
Occupied Bandwidth (kHz)	36000	30133	5565	77
Allocated Bandwidth (kHz)	36000	36000	6000	100
Minimum C/N, Rain (dB)	10	6.1	6.8	6.8
UPLINK EARTH STATION				
Earth Station Diameter (meters)	7	7	7	7
Earth Station Gain (dBi)	51	51	51	51
Earth Station Elevation Angle	20	20	20	20
DOWNLINK EARTH STATION				
Earth Station Diameter (meters)	3.5	3.0	3.5	3
Earth Station Gain (dBi)	41.1	39.7	41.1	39.7
Earth Station G/T, Clear Sky (dB/K)	21	19.2	21.0	19.2
Earth Station Elevation Angle	20	20	20	20
UPLINK PERFORMANCE				
Uplink Earth Station EIRP (dBW)	74.4	74.4	64.6	48.3
Uplink Path Loss, Clear Sky (dB)	-200.2	-200.2	-200.2	-200.2
Satellite G/T (dB/K)	-0.5	-0.5	-0.5	-0.5
Boltzman Constant (dBW/K-Hz)	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-75.6	-74.8	67.5	-48.9
Uplink C/N (dB)	26.7	27.5	25.0	27.3
DOWNLINK PERFORMANCE				
Downlink EIRP per Carrier (dBW)	42.2	42.2	30.9	14.6
Antenna Pointing Error (dB)	-0.5	-0.5	-0.5	-0.5
Downlink Path Loss, Clear Sky (dB)	-196.4	-196.4	-196.4	-196.4
Earth Station G/T, Clear Sky (dB/K)	21.0	19.2	21.0	19.2
Boltzman Constant (dBW/K-Hz)	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-75.6	-74.8	-67.5	-48.9
Downlink C/N (dB)	19.4	18.4	16.2	16.7
COMPOSITE LINK PERFORMANCE				
C/N Uplink (dB)	26.7	27.5	25.0	27.3
C/N Downlink (dB)	19.4	18.4	16.2	16.7
C/I Intermodulation (dB)	n/a	n/a	17.5	19.8
C/I Uplink Co-Channel (dB)*	27.0	27.0	27.0	28.5
C/I Downlink Co-Channel (dB)*	27.0	27.0	27.0	28.5
C/I Uplink Adjacent Satellite 1 (dB)	23.2	24.0	21.5	23.8
C/I Downlink Adjacent Satellite 1 (dB)	16.0	12.7	12.8	11.0
C/I Uplink Adjacent Satellite 2 (dB)	20.3	21.1	18.6	20.9
C/I Downlink Adjacent Satellite 2 (dB)	16.9	16.0	13.6	14.3
C/(N+I) Composite (dB)	11.1	9.5	7.8	7.8
Required System Margin (dB)	-1.0	-1.0	-1.0	-1.0
Net C/(N+I) Composite (dB)	10.1	8.5	6.8	6.8
Minimum Required C/N (dB)	-10.0	-6.1	-6.8	-6.8
Excess Link Margin (dB)	0.1	2.4	0.0	0.0
Carrier Density Levels				
Uplink Power Density (dBW/Hz)	-42.6	-51.4	-53.9	-51.6
Downlink EIRP Density At Beam Peak (dBW/Hz)	-21.8	-30.6	-34.6	-32.3

\* Note: The C/I level is adjusted depending on the signal level and transponder mode of operation.