

EXHIBIT 8: Galaxy-9 Link Budgets

UPLINK BEAM INFORMATION					
Uplink Beam Name	Conus	Conus	Conus	Conus	Conus
Uplink Frequency (MHz)	6185	6185	6185	6185	6185
Uplink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical
Uplink Relative Contour Level (dB)	-6	-6	-6	-6	-6
Uplink Contour G/T (dB/K)	-2.6	-2.6	-2.6	-2.6	-2.6
Uplink SED (dBW/m ²)	-85.7	-85.7	-83.7	-83.7	-83.7
DOWNLINK BEAM INFORMATION					
Downlink Beam Name	Conus	Conus	Conus	Conus	Conus
Downlink Frequency (MHz)	3960	3960	3960	3960	3960
Downlink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Downlink Relative Contour Level (dB)	-4	-4	-4	-4	-4
Downlink Contour EIRP (dBW)	36.8	36.8	36.8	36.8	36.8
ADIACENT SATELLITE 1					
Satellite 1 Orbital Location	72 WL	72 WL	72 WL	72 WL	72 WL
Uplink Power Density (dBW/Hz)	-47	-47	-47	-47	-47
Uplink Polarization Advantage (dB)	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-33.3	-33.3	-33.3	-33.3	-33.3
Downlink Polarization Advantage (dB)	0	0	0	0	0
ADIACENT SATELLITE 2					
Satellite 2 Orbital Location	76 WL	76 WL	76 WL	76 WL	76 WL
Uplink Power Density (dBW/Hz)	-47	-47	-47	-47	-47
Uplink Polarization Advantage (dB)	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-34	-34	-34	-34	-34
Downlink Polarization Advantage (dB)	0	0	0	0	0
CARRIER INFORMATION					
Carrier ID	1	2	3	4	5
Information Rate (kbns)	N/A	36863	6000	1544	64
Carrier Modulation	TV/FM	QPSK	QPSK	QPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	n/a	n/a	n/a	n/a
Code Rate	N/A	3/4 - RS	3/4 - RS	3/4-RS	1/2-RS
Occupied Bandwidth (kHz)	36000	30133	4154	1212.8	75.4
Allocated Bandwidth (kHz)	36000	36000	6875	1550	100
Minimum C/N _{min} (dB)	10.0	6.1	6.7	5.7	3.0
UPLINK EARTH STATION					
Earth Station Diameter (meters)	8.1	8.1	8.1	8.1	8.1
Earth Station Gain (dBi)	52.8	52.8	52.8	52.8	52.8
Earth Station Elevation Angle	20	20	20	20	20
DOWNLINK EARTH STATION					
Earth Station Diameter (meters)	4.5	3.5	3.5	3.5	3.0
Earth Station Gain (dBi)	43.9	41.1	41.1	41.1	39.7
Earth Station G/T, Clear Sky (dB/K)	23.6	21.0	21.0	21.0	19.2
Earth Station Elevation Angle	20	20	20	20	20
UPLINK PERFORMANCE					
Uplink Earth Station EIRP (dBW)	77.2	77.2	65.7	59.2	47.4
Uplink Path Loss, Clear Sky (dB)	-200.2	-200.2	-200.2	-200.2	-200.2
Satellite G/T (dB/K)	-2.6	-2.6	-2.6	-2.6	-2.6
Boltzman Constant (dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-75.6	-74.8	-66.2	-60.8	-48.8
Uplink C/N (dB)	27.4	28.2	25.3	24.2	24.4
DOWNLINK PERFORMANCE					
Downlink EIRP per Carrier (dBW)	36.8	36.8	26.7	20.2	8.4
Antenna Pointing Error (dB)	-0.5	-0.5	-0.5	-0.5	-0.5
Downlink Path Loss, Clear Sky (dB)	-196.4	-196.4	-196.4	-196.4	-196.4
Earth Station G/T (dB/K)	23.6	21.0	21.0	21.0	19.2
Boltzman Constant (dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-75.6	-74.8	-66.2	-60.8	-48.8
Downlink C/N (dB)	16.6	14.8	13.2	12.1	10.6
COMPOSITE LINK PERFORMANCE					
C/N Uplink (dB)	27.4	28.2	25.3	24.2	24.4
C/N Downlink (dB)	16.6	14.8	13.2	12.1	10.6
C/I Intermodulation (dB)	n/a	n/a	18.0	16.9	17.2
C/I Uplink Co-Channel (dB)*	27.0	27.0	28.7	28.7	28.8
C/I Downlink Co-Channel (dB)*	27.0	27.0	28.7	28.7	28.8
C/I Uplink Adjacent Satellite 1 (dB)	25.5	26.2	23.3	22.2	22.5
C/I Downlink Adjacent Satellite 1 (dB)	16.6	14.2	12.6	11.5	6.6
C/I Uplink Adjacent Satellite 2 (dB)	23.7	24.5	21.6	20.5	20.7
C/I Downlink Adjacent Satellite 2 (dB)	18.0	16.3	14.8	13.7	12.8
C/(N+I) Composite (dB)	11.4	9.7	7.7	6.7	4.0
Required System Margin (dB)	-1.0	-1.0	-1.0	-1.0	-1.0
Net C/(N+I) Composite (dB)	10.4	8.7	6.7	5.7	3.0
Minimum Required C/N (dB)	-10.0	-6.1	-6.7	-5.7	-3.0
Excess Link Margin (dB)	0.4	2.6	0.0	0.0	0.0
CARRIER DENSITY LEVELS					
Uplink Power Density (dBW/Hz)	-41.6	-50.4	-53.3	-54.4	-54.2
Downlink EIRP Density At Beam Peak	-25.2	-34.0	-35.5	-36.6	-36.4
Number of Carriers	1.0	1.0	3.6	15.8	239.1

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

EXHIBIT 8: Galaxy-9 Link Budgets (continued)

UPLINK BEAM INFORMATION					
Uplink Beam Name	Conus	Conus	Conus	Conus	Conus
Uplink Frequency (MHz)	6165	6165	6165	6165	6165
Uplink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Uplink Relative Contour Level (dB)	-6	-6	-6	-6	-6
Uplink Contour G/T (dB/K)	-1.3	-1.3	-1.3	-1.3	-1.3
Uplink SFD (dBW/m ²)	-87.0	-87.0	-87.0	-87.0	-87.0
DOWNLINK BEAM INFORMATION					
Downlink Beam Name	Conus	Conus	Conus	Conus	Conus
Downlink Frequency (MHz)	3940	3940	3940	3940	3940
Downlink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical
Downlink Relative Contour Level (dB)	-4	-4	-4	-4	-4
Downlink Contour EIRP (dBW)	38.0	38.0	38.0	38.0	38.0
ADIACENT SATELLITE 1					
Satellite 1 Orbital Location	72 WL	72 WL	72 WL	72 WL	72 WL
Uplink Power Density (dBW/Hz)	-47	-47	-47	-47	-47
Uplink Polarization Advantage (dB)	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-33.3	-33.3	-33.3	-33.3	-33.3
Downlink Polarization Advantage (dB)	0	0	0	0	0
ADIACENT SATELLITE 2					
Satellite 2 Orbital Location	76 WL	76 WL	76 WL	76 WL	76 WL
Uplink Power Density (dBW/Hz)	-47	-47	-47	-47	-47
Uplink Polarization Advantage (dB)	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-32.8	-32.8	-32.8	-32.8	-32.8
Downlink Polarization Advantage (dB)	0	0	0	0	0
CARRIER INFORMATION					
Carrier ID	1	2	3	4	5
Information Rate (kbps)	N/A	36863	6000	1544	64
Carrier Modulation	TV/FM	QPSK	QPSK	QPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	n/a	n/a	n/a	n/a
Code Rate	N/A	3/4 - RS	3/4 - RS	3/4-RS	1/2-RS
Occupied Bandwidth (kHz)	36000	30133	4154	1212.8	75.4
Allocated Bandwidth (kHz)	36000	36000	6875	1550	100
Minimum C/N _{min} (dB)	10.0	6.1	6.7	5.7	3.0
UPLINK EARTH STATION					
Earth Station Diameter (meters)	8.1	8.1	8.1	8.1	8.1
Earth Station Gain (dBi)	52.8	52.8	52.8	52.8	52.8
Earth Station Elevation Angle	20	20	20	20	20
DOWNLINK EARTH STATION					
Earth Station Diameter (meters)	4.5	3.0	3.5	3.5	3.0
Earth Station Gain (dBi)	43.9	39.7	41.1	41.1	39.7
Earth Station G/T _{clear sky} (dB/K)	23.6	19.2	21.0	21.0	19.2
Earth Station Elevation Angle	20	20	20	20	20
UPLINK PERFORMANCE					
Uplink Earth Station EIRP (dBW)	75.9	75.9	62.1	55.7	43.5
Uplink Path Loss _{clear sky} (dB)	-200.2	-200.2	-200.2	-200.2	-200.2
Satellite G/T (dB/K)	-1.3	-1.3	-1.3	-1.3	-1.3
Boltzman Constant (dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-75.6	-74.8	-66.2	-60.8	-48.8
Uplink C/N (dB)	27.4	28.2	23.0	21.9	21.9
DOWNLINK PERFORMANCE					
Downlink EIRP per Carrier (dBW)	38.0	38.0	27.6	21.2	9.0
Antenna Pointing Error (dB)	-0.5	-0.5	-0.5	-0.5	-0.5
Downlink Path Loss _{clear sky} (dB)	-196.3	-196.3	-196.3	-196.3	-196.3
Earth Station G/T (dB/K)	23.6	19.2	21.0	21.0	19.2
Boltzman Constant (dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-75.6	-74.8	-66.2	-60.8	-48.8
Downlink C/N (dB)	17.8	14.2	14.2		
COMPOSITE LINK PERFORMANCE					
C/N _{unlinked} (dB)	27.4	28.2	23.0	21.9	21.9
C/N _{downlink} (dB)	17.8	14.2	14.2	13.1	11.2
C/I Intermodulation (dB)	n/a	n/a	17.8	16.7	16.6
C/I Unlink Co-Channel (dB)*	27.0	27.0	28.4	28.4	28.2
C/I Downlink Co-Channel (dB)*	27.0	27.0	28.4	28.4	28.2
C/I Unlink Adjacent Satellite 1 (dB)	24.2	24.9	19.8	18.7	18.6
C/I Downlink Adjacent Satellite 1 (dB)	17.7	10.0	13.6	12.5	7.1
C/I Unlink Adjacent Satellite 2 (dB)	22.4	23.2	18.1	16.9	16.9
C/I Downlink Adjacent Satellite 2 (dB)	18.0	15.1	14.5	13.4	12.2
C/(N+I) Composite (dB)	11.9	7.4	7.7	6.7	4.0
Required System Margin (dB)	-1.0	-1.0	-1.0	-1.0	-1.0
Net C/(N+I) Composite (dB)	10.9	6.4	6.7	5.7	3.0
Minimum Required C/N (dB)	-10.9	-6.1	-6.7	-5.7	-3.0
Excess Link Margin (dB)	0.9	0.3	0.0	0.0	0.0
CARRIER DENSITY LEVELS					
Uplink Power Density (dBW/Hz)	-42.9	-51.7	-56.8	-57.9	-58.0
Downlink EIRP Density At Beam Peak	-24.0	-32.8	-34.6	-35.7	-35.8
Number of Carriers	1.0	1.0	3.8	16.7	273.4

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