

Exhibit 4: Link Budgets (continued)

[C-Band Channel: Ranging and Back-up Command]

UPLINK BEAM INFORMATION		
Uplink Beam Name	Europe-Asia-Africa	Europe-Asia-Africa
Uplink Frequency (MHz)	6411	6315
Uplink Beam Polarization	Vertical	Horizontal
Uplink Relative Contour Level (dB)	-3	-3
Uplink Contour G/T (dB/K)	1.4	1.4
Uplink SFD (dBW/m ²)	-83.4	-71.7
DOWNLINK BEAM INFORMATION		
Downlink Beam Name	Europe-Asia-Africa	Europe-Asia-Africa
Downlink Frequency (MHz)	4186	4090
Downlink Beam Polarization	Horizontal	Vertical
Downlink Relative Contour Level (dB)	-2	-2
Downlink Contour EIRP (dBW)	38.3	38.3
ADJACENT SATELLITE 1		
Satellite 1 Orbital Location	48.75 E.L	48.75 E.L
Uplink Power Density (dBW/Hz)	-38.7	-38.7
Uplink Polarization Advantage (dB)	0	0
Downlink EIRP Density (dBW/Hz)	-36.5	-36.5
Downlink Polarization Advantage (dB)	0	0
ADJACENT SATELLITE 2		
Satellite 2 Orbital Location	52.75 E.L	52.75 E.L
Uplink Power Density (dBW/Hz)	-38.7	-38.7
Uplink Polarization Advantage (dB)	0	0
Downlink EIRP Density (dBW/Hz)	-36.5	-36.5
Downlink Polarization Advantage (dB)	0	0
CARRIER INFORMATION		
Carrier ID	Command	Ranging
Emission Designation	10M0G1D	1M00G1D
Information Rate (kbps)	4167	417
Carrier Modulation	BPSK	BPSK
Peak to Peak Bandwidth of EDS (MHz)	n/a	n/a
Code Rate	1/2	1/2
Occupied Bandwidth (kHz)	10000.0	1000.0
Allocated Bandwidth (kHz)	10000.0	1000.0
Minimum C/N (dB)	10	3.4
UPLINK EARTH STATION		
Earth Station Diameter (meters)	11.3	11.3
Earth Station Gain (dBi)	55.5	55.5
Earth Station Elevation Angle	20.0	20.0
DOWNLINK EARTH STATION		
Earth Station Diameter (meters)	11.3	11.3
Earth Station Gain (dBi)	51.7	51.7
Earth Station G/T (dB/K)	30.8	30.8
Earth Station Elevation Angle	20.0	20.0
UPLINK PERFORMANCE		
Uplink Earth Station EIRP (dBW)	72.0	65.0
Uplink Path Loss, Clear Sky (dB)	-200.5	-200.4
Uplink Rain Attenuation (dB)	0.0	0.0
Satellite G/T (dB/K)	1.4	1.4
Boltzman Constant (dBW/K-Hz)	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-70.0	-60.0
Uplink C/N (dB)	31.5	34.5
DOWNLINK PERFORMANCE		
Downlink EIRP per Carrier (dBW)	n/a	14.0
Antenna Pointing Error (dB)	n/a	-0.5
Downlink Path Loss, Clear Sky (dB)	n/a	-196.6
Downlink Rain Attenuation (dB)	n/a	0.0
Earth Station G/T (dB/K)	n/a	30.8
Boltzman Constant (dBW/K-Hz)	n/a	228.6
Carrier Noise Bandwidth (dB-Hz)	n/a	-60.0
Downlink C/N (dB)	n/a	16.3
COMPOSITE LINK PERFORMANCE		
C/N Uplink (dB)	31.5	34.5
C/N Downlink (dB)	n/a	16.3
C/I Intermodulation (dB)	n/a	n/a
C/I Uplink Co-Channel (dB)*	31.3	24.3
C/I Downlink Co-Channel (dB)*	n/a	24.3
C/I Uplink Adjacent Satellite 1 (dB)	19.7	22.6
C/I Downlink Adjacent Satellite 1 (dB)	n/a	20.5
C/I Uplink Adjacent Satellite 2 (dB)	19.7	22.6
C/I Downlink Adjacent Satellite 2 (dB)	n/a	21.4
C/(N+I) Composite (dB)	16.4	12.3
Required System Margin (dB)	-1.0	-1.0
Net C/(N+I) Composite (dB)	15.4	11.3
Minimum Required C/N (dB)	10.0	3.4
Excess Link Margin (dB)	5.4	8.1
Number of Carriers	1	1
Carrier Density Levels		
Uplink Power Density (dBW/Hz)	-53.5	-50.6
Downlink EIRP Density At Beam Peak	n/a	-44.0

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