

EXHIBIT 1 : JCSAT-1B (150° EL) LINK BUDGETS (CONTINUED)

UPLINK BEAM INFORMATION						
Uplink Beam Name	ASIA	ASIA	ASIA	ASIA	ASIA	ASIA
Uplink Frequency (MHz)	14000 - 14500	14000 - 14500	14000 - 14500	14000 - 14500	14000 - 14500	14000 - 14500
Uplink Beam Polarization	HORIZONTAL	HORIZONTAL	HORIZONTAL	HORIZONTAL	HORIZONTAL	HORIZONTAL
Uplink Relative Contour Level (dB)	2.4	2.4	2.4	1.3	1.3	1.3
Uplink Contour G/T (dB/K)	2.0	2.0	2.0	3.1	3.1	3.1
Uplink SFD (dBW/m ²)	-91.6	-91.6	-91.6	-87.7	-87.7	-87.7
Rain Rate (mm/hr)	45.7	45.7	45.7	40.4	40.4	40.4
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	HAWAII	HAWAII	HAWAII	HAWAII	HAWAII	HAWAII
Downlink Frequency (MHz)	12000 - 12200	12000 - 12200	12000 - 12200	12000 - 12200	12000 - 12200	12000 - 12200
Downlink Beam Polarization	VERTICAL	VERTICAL	VERTICAL	VERTICAL	VERTICAL	VERTICAL
Downlink Relative Contour Level (dB)	0.5	0.5	0.5	0.5	0.5	0.5
Downlink Contour EIRP (dBW)	57.4	57.4	57.4	57.4	57.4	57.4
Rain Rate (mm/hr)	40.4	40.4	40.4	40.4	40.4	40.4
ADJACENT SATELLITE 1						
Satellite 1 Orbital Location	148 EL	148 EL	148 EL	148 EL	148 EL	148 EL
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Uplink Polarization Advantage (dB)	0	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-16.90	-16.90	-16.90	-16.90	-16.90	-16.90
Downlink Polarization Advantage (dB)	0	0	0	0	0	0
ADJACENT SATELLITE 2						
Satellite 2 Orbital Location	152 EL	152 EL	152 EL	152 EL	152 EL	152 EL
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Uplink Polarization Advantage (dB)	0	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-16.90	-16.90	-16.90	-16.90	-16.90	-16.90
Downlink Polarization Advantage (dB)	0	0	0	0	0	0
CARRIER INFORMATION						
Carrier ID	520KG7W	520KG7W	520KG7W	520KG7W	520KG7W	520KG7W
Information Rate (kbps)	512	512	512	512	512	512
Carrier Modulation	QPSK	QPSK	QPSK	QPSK	QPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	n/a	n/a	n/a	n/a	n/a	n/a
Code Rate	3/4 x RS201/219	3/4 x RS201/219	3/4 x RS201/219	3/4 x RS201/219	3/4 x RS201/219	3/4 x RS201/219
Occupied Bandwidth (kHz)	372	372	372	372	372	372
Allocated Bandwidth (kHz)	520	520	520	520	520	520
Minimum C/N, Clear Sky (dB)	7.0	7.0	7.0	7.0	7.0	7.0
Minimum C/N, Rain (dB)	7.0	7.0	7.0	7.0	7.0	7.0
UPLINK EARTH STATION						
Earth Station Diameter (meters)	2.4	2.4	2.4	2.4	2.4	2.4
Earth Station Gain (dBi)	49.1	49.1	49.1	49.1	49.1	49.1
Earth Station Elevation Angle	20	20	20	20	20	20
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	2.4	2.4	2.4	2.4	2.4	2.4
Earth Station Gain (dBi)	47.8	47.8	47.8	47.8	47.8	47.8
Earth Station G/T, Clear Sky (dB/K)	26.3	26.3	26.3	26.3	26.3	26.3
Earth Station Elevation Angle	20	20	20	20	20	20
LINK FADE TYPE						
	Clear Sky	Uplink Fade	Downlink Fade	Clear Sky	Uplink Fade	Downlink Fade
UPLINK PERFORMANCE						
Uplink Earth Station EIRP (dBW)	48.2	48.2	48.2	48.8	48.8	48.8
Uplink Path Loss, Clear Sky (dB)	-207.4	-207.4	-207.4	-207.4	-207.4	-207.4
Uplink Rain Attenuation (dB)	0.0	-2.5	0.0	0.0	-2.3	0.0
Satellite G/T (dB/K)	2.0	2.0	2.0	3.1	3.1	3.1
Boltzman Constant (dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-55.7	-55.7	-55.7	-55.7	-55.7	-55.7
Uplink C/N (dB)	15.7	13.2	15.7	17.5	15.2	17.5
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	36.8	34.3	36.8	33.5	31.2	33.5
Antenna Pointing Error (dB)	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
Downlink Path Loss, Clear Sky (dB)	-206.0	-206.0	-206.0	-206.0	-206.0	-206.0
Downlink Rain Attenuation (dB)	0.0	0.0	-13.4	0.0	0.0	-10.1
Earth Station G/T, Clear Sky (dB/K)	26.3	26.3	21.6	26.3	26.3	21.8
Boltzman Constant (dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-55.7	-55.7	-55.7	-55.7	-55.7	-55.7
Downlink C/N (dB)	29.5	27.0	11.5	26.2	23.9	11.7
COMPOSITE LINK PERFORMANCE						
C/N Uplink (dB)	15.7	13.2	15.7	17.5	15.2	17.5
C/N Downlink (dB)	29.5	27.0	11.5	26.2	23.9	11.7
C/I Intermodulation (dB)	19.5	17.1	19.5	16.3	14.0	16.3
C/I Uplink Co-Channel (dB)*	28.3	25.8	28.3	25.0	22.7	25.0
C/I Downlink Co-Channel (dB)*	28.3	25.8	28.3	25.0	22.7	25.0
C/I Uplink Adjacent Satellite 1 (dB)	17.1	14.6	17.1	18.8	16.5	18.8
C/I Downlink Adjacent Satellite 1 (dB)	23.3	20.8	23.3	20.0	17.7	20.0
C/I Uplink Adjacent Satellite 2 (dB)	17.1	14.6	17.1	18.8	16.5	18.8
C/I Downlink Adjacent Satellite 2 (dB)	24.8	22.3	24.8	21.6	19.3	21.6
C/(N+I) Composite (dB)	10.5	8.0	8.0	10.3	8.0	8.0
Required System Margin (dB)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Net C/(N+I) Composite (dB)	9.5	7.0	7.0	9.3	7.0	7.0
Minimum Required C/N (dB)	-7.0	7.0	7.0	-7.0	7.0	7.0
Excess Link Margin (dB)	2.5	0.0	0.0	2.3	0.0	0.0
Carrier Density Levels						
Uplink Power Density (dBW/Hz)	-56.6	-56.6	-56.6	-56.0	-56.0	-56.0
Downlink EIRP Density At Beam Peak (dBW/Hz)	-18.4	-20.9	-18.4	-21.7	-24.0	-21.7

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

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UPLINK BEAM INFORMATION			
Uplink Beam Name	HAWAII	HAWAII	HAWAII
Uplink Frequency (MHz)	14000 - 14500	14000 - 14500	14000 - 14500
Uplink Beam Polarization	HORIZONTAL	HORIZONTAL	HORIZONTAL
Uplink Relative Contour Level (dB)	1.2	1.2	1.2
Uplink Contour G/T (dB/K)	2.5	2.5	2.5
Uplink SFD (dBW/m ²)	-88.8	-88.8	-88.8
Rain Rate (mm/hr)	40.4	40.4	40.4
DOWNLINK BEAM INFORMATION			
Downlink Beam Name	HAWAII	HAWAII	HAWAII
Downlink Frequency (MHz)	12000 - 12200	12000 - 12200	12000 - 12200
Downlink Beam Polarization	VERTICAL	VERTICAL	VERTICAL
Downlink Relative Contour Level (dB)	0.5	0.5	0.5
Downlink Contour EIRP (dBW)	57.4	57.4	57.4
Rain Rate (mm/hr)	40.4	40.4	40.4
ADJACENT SATELLITE 1			
Satellite 1 Orbital Location	148 EL	148 EL	148 EL
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0
Uplink Polarization Advantage (dB)	0	0	0
Downlink EIRP Density (dBW/Hz)	-16.90	-16.90	-16.90
Downlink Polarization Advantage (dB)	0	0	0
ADJACENT SATELLITE 2			
Satellite 2 Orbital Location	152 EL	152 EL	152 EL
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0
Uplink Polarization Advantage (dB)	0	0	0
Downlink EIRP Density (dBW/Hz)	-16.90	-16.90	-16.90
Downlink Polarization Advantage (dB)	0	0	0
CARRIER INFORMATION			
Carrier ID	520KG7W	520KG7W	520KG7W
Information Rate (kbps)	512	512	512
Carrier Modulation	QPSK	QPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	n/a	n/a	n/a
Code Rate	3/4 x RS201/219	3/4 x RS201/219	3/4 x RS201/219
Occupied Bandwidth (kHz)	372	372	372
Allocated Bandwidth (kHz)	520	520	520
Minimum C/N, Clear Sky (dB)	7.0	7.0	7.0
Minimum C/N, Rain (dB)	7.0	7.0	7.0
UPLINK EARTH STATION			
Earth Station Diameter (meters)	2.4	2.4	2.4
Earth Station Gain (dBi)	49.1	49.1	49.1
Earth Station Elevation Angle	20	20	20
DOWNLINK EARTH STATION			
Earth Station Diameter (meters)	2.4	2.4	2.4
Earth Station Gain (dBi)	47.8	47.8	47.8
Earth Station G/T, Clear Sky (dB/K)	26.3	26.3	26.3
Earth Station Elevation Angle	20	20	20
LINK FADE TYPE			
	Clear Sky	Uplink Fade	Downlink Fade
UPLINK PERFORMANCE			
Uplink Earth Station EIRP (dBW)	48.4	48.4	48.4
Uplink Path Loss, Clear Sky (dB)	-207.4	-207.4	-207.4
Uplink Rain Attenuation (dB)	0.0	-2.3	0.0
Satellite G/T (dB/K)	2.5	2.5	2.5
Boltzman Constant (dBW/K-Hz)	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-55.7	-55.7	-55.7
Uplink C/N (dB)	16.4	14.1	16.4
DOWNLINK PERFORMANCE			
Downlink EIRP per Carrier (dBW)	34.2	31.9	34.2
Antenna Pointing Error (dB)	-0.5	-0.5	-0.5
Downlink Path Loss, Clear Sky (dB)	-206.0	-206.0	-206.0
Downlink Rain Attenuation (dB)	0.0	0.0	-10.6
Earth Station G/T, Clear Sky (dB/K)	26.3	26.3	21.8
Boltzman Constant (dBW/K-Hz)	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-55.7	-55.7	-55.7
Downlink C/N (dB)	26.9	24.6	11.7
COMPOSITE LINK PERFORMANCE			
C/N Uplink (dB)	16.4	14.1	16.4
C/N Downlink (dB)	26.9	24.6	11.7
C/I Intermodulation (dB)	16.9	14.7	16.9
C/I Uplink Co-Channel (dB)*	25.7	23.4	25.7
C/I Downlink Co-Channel (dB)*	25.7	23.4	25.7
C/I Uplink Adjacent Satellite 1 (dB)	18.5	16.2	18.5
C/I Downlink Adjacent Satellite 1 (dB)	20.7	18.4	20.7
C/I Uplink Adjacent Satellite 2 (dB)	18.5	16.2	18.5
C/I Downlink Adjacent Satellite 2 (dB)	22.2	19.9	22.2
C/(N+I) Composite (dB)	10.3	8.0	8.0
Required System Margin (dB)	-1.0	-1.0	-1.0
Net C/(N+I) Composite (dB)	9.3	7.0	7.0
Minimum Required C/N (dB)	-7.0	7.0	7.0
Excess Link Margin (dB)	2.3	0.0	0.0
Carrier Density Levels			
Uplink Power Density (dBW/Hz)	-56.4	-56.4	-56.4
Downlink EIRP Density At Beam Peak (dBW/Hz)	-21.0	-23.3	-21.0

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