

## EXHIBIT 4B: Galaxy 4R Ku-Band Link Budgets

UPLINK BEAM INFORMATION						
Uplink Beam Name	Conus		Conus		Conus	
Uplink Frequency (MHz)	14250		14250		14250	
Uplink Beam Polarization	Vertical/Horizontal	Vertical/Horizontal	Vertical/Horizontal	Vertical/Horizontal	Vertical/Horizontal	Vertical/Horizontal
Uplink Relative Contour Level (dB)	-6		-6		-6	
Uplink Contour G/T (dB/K)	-1.6		-1.6		-1.6	
Uplink SFD (dBW/m <sup>2</sup> )	-78.4		-78.4		-78.4	
Uplink Innut Backoff (dB)	8.7		8.7		6.6	
Rain Rate (mm/hr)	42.0		42.0		42.0	
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	Conus		Conus		Conus	
Downlink Frequency (MHz)	11950		11950		11950	
Downlink Beam Polarization	Vertical/Horizontal	Vertical/Horizontal	Vertical/Horizontal	Vertical/Horizontal	Vertical/Horizontal	Vertical/Horizontal
Downlink Relative Contour Level (dB)	-4		-4		-4	
Downlink Contour EIRP (dBW)	43.9		43.9		43.9	
Downlink Output Backoff (dB)	4.9		4.9		3.1	
Rain Rate (mm/hr)	42.0		42.0		42.0	
ADJACENT SATELLITE 1						
Satellite 1 Orbital Location	74.85 WL		74.85 WL		74.85 WL	
Uplink Power Density (dBW/Hz)	-50		-50		-50	
Uplink Polarization Advantage (dB)	0		0		0	
Downlink EIRP Density (dBW/Hz)	-30		-30		-30	
Downlink Polarization Advantage (dB)	0		0		0	
ADJACENT SATELLITE 2						
Satellite 2 Orbital Location	78.85 WL		78.85 WL		78.85 WL	
Uplink Power Density (dBW/Hz)	-50		-50		-50	
Uplink Polarization Advantage (dB)	0		0		0	
Downlink EIRP Density (dBW/Hz)	-30		-30		-30	
Downlink Polarization Advantage (dB)	0		0		0	
CARRIER INFORMATION						
Carrier ID	36M0F3F		36M0F3F		30M1G7W	
Carrier Modulation	TV/FM		TV/FM		OPSK	
Peak to Peak Bandwidth of EDS (MHz)	4		4		n/a	
Information Rate (kbps)	n/a		n/a		36863	
Code Rate	n/a		n/a		3/4 - RS	
Occupied Bandwidth (kHz)	36000		36000		30133	
Allocated Bandwidth (kHz)	36000		36000		36000	
Minimum C/N, Clear Sky (dB)	10		10		6.1	
Minimum C/N, Rain (dB)	10		10		6.1	
UPLINK EARTH STATION						
Earth Station Diameter (meters)	7.0		7.0		7.0	
Earth Station Gain (dBi)	58.1		58.1		58.1	
Earth Station Elevation Angle	20		20		20	
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	6.1		6.1		2.4	
Earth Station Gain (dBi)	55.5		55.5		47.5	
Earth Station G/T (dB/K)	33.1		30.5		25.0	
Earth Station Elevation Angle	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)	75.8		75.8		77.9	
Uplink Path Loss, Clear Sky (dB)	-207.5		-207.5		-207.5	
Uplink Rain Attenuation (dB)	0.0		0.0		0.0	
Satellite G/T (dB/K)	-1.6		-1.6		-1.6	
Boltzman Constant (dBW/K-Hz)	228.6		228.6		228.6	
Carrier Noise Bandwidth (dB-Hz)	-75.6		-75.6		-74.8	
Uplink C/N (dB)	19.8		16.9		18.5	
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	39.0		36.0		40.8	
Antenna Pointing Error (dB)	-0.5		-0.5		-0.5	
Downlink Path Loss, Clear Sky (dB)	-205.9		-205.9		-205.9	
Downlink Rain Attenuation (dB)	0.0		0.0		0.0	
Earth Station G/T (dB/K)	33.1		30.5		25.0	
Boltzman Constant (dBW/K-Hz)	228.6		228.6		228.6	
Carrier Noise Bandwidth (dB-Hz)	-75.6		-75.6		-74.8	
Downlink C/N (dB)	18.7		15.7		9.2	
COMPOSITE LINK PERFORMANCE						
C/N Uplink (dB)	19.8		16.9		18.5	
C/N Downlink (dB)	18.7		15.7		9.2	
C/I Intermodulation (dB)	n/a		n/a		n/a	
C/I Uplink Co-Channel (dB)*	24.0		21.1		19.9	
C/I Downlink Co-Channel (dB)*	24.0		21.0		20.1	
C/I Uplink Adjacent Satellite 1 (dB)	26.2		23.3		25.0	
C/I Downlink Adjacent Satellite 1 (dB)	27.7		24.8		18.8	
C/I Uplink Adjacent Satellite 2 (dB)	26.2		23.3		25.0	
C/I Downlink Adjacent Satellite 2 (dB)	27.1		24.2		17.2	
C/(N+I) Composite (dB)	13.9		11.0		7.1	
Required System Margin (dB)	-1.0		-1.0		-1.0	
Net C/(N+I) Composite (dB)	12.9		10.0		6.1	
Minimum Required C/N (dB)	-10.0		-10.0		-6.1	
Excess Link Margin (dB)	2.9		0.0		0.0	
Number of Carriers	1		1		1	
Carrier Density Levels						
Uplink Power Density (dBW/Hz)	-48.3		-48.3		-55.0	
Downlink EIRP Density At Beam Peak	-23.0		-26.0		-30.0	

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

## EXHIBIT 4B: Galaxy 4R Ku-Band Link Budgets (continued)

## EXHIBIT 4B: Galaxy 4R Ku-Band Link Budgets (continued)

NK BEAM INFORMATION						
Unlink Beam Name	Conus	Conus	Conus	Conus	Conus	Conus
Unlink Frequency (MHz)	14250	14250	14250	14250	14250	14250
Unlink Beam Polarization	Vertical/Horizontal	Vertical/Horizontal	Vertical/Horizontal	Vertical/Horizontal	Vertical/Horizontal	Vertical/Horizontal
Unlink Relative Contour Level (dB)	-6	-6	-6	-6	-6	-6
Unlink Contour G/T (dB/K)	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6
Unlink SFD (dBW/m <sup>2</sup> )	-86.4	-86.4	-86.4	-86.4	-86.4	-86.4
Unlink Innut Backoff (dB)	8.0	8.0	8.0	8.0	8.0	8.0
Rain Rate (mm/hr)	42.0	42.0	42.0	42.0	42.0	42.0
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	Conus	Conus	Conus	Conus	Conus	Conus
Downlink Frequency (MHz)	11950	11950	11950	11950	11950	11950
Downlink Beam Polarization	Vertical/Horizontal	Vertical/Horizontal	Vertical/Horizontal	Vertical/Horizontal	Vertical/Horizontal	Vertical/Horizontal
Downlink Relative Contour Level (dB)	-4	-4	-4	-4	-4	-4
Downlink Contour EIRP (dBW)	43.9	43.9	43.9	43.9	43.9	43.9
Downlink Output Backoff (dB)	4.8	4.8	4.8	4.8	4.8	4.8
Rain Rate (mm/hr)	42.0	42.0	42.0	42.0	42.0	42.0
ADJACENT SATELLITE 1						
Satellite 1 Orbital Location	74.85 WL	74.85 WL	74.85 WL	74.85 WL	74.85 WL	74.85 WL
Unlink Power Density (dBW/Hz)	-50	-50	-50	-50	-50	-50
Unlink Polarization Advantage (dB)	0	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-30	-30	-30	-30	-30	-30
Downlink Polarization Advantage (dB)	0	0	0	0	0	0
ADJACENT SATELLITE 2						
Satellite 2 Orbital Location	78.85 WL	78.85 WL	78.85 WL	78.85 WL	78.85 WL	78.85 WL
Unlink Power Density (dBW/Hz)	-50	-50	-50	-50	-50	-50
Unlink Polarization Advantage (dB)	0	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-30	-30	-30	-30	-30	-30
Downlink Polarization Advantage (dB)	0	0	0	0	0	0
CARRIER INFORMATION						
Carrier ID	4M15G7W	4M15G7W	4M15G7W	1M21G7W	1M21G7W	1M21G7W
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
Information Rate (kbps)	6000	6000	6000	1544	1544	1544
Code Rate	3/4 - RS	3/4 - RS	3/4 - RS	3/4 - RS	3/4 - RS	3/4 - RS
Occupied Bandwidth (kHz)	4154	4154	4154	1212.8	1212.8	1212.8
Allocated Bandwidth (kHz)	6875	6875	6875	1550	1550	1550
Minimum C/N, Clear Sky (dB)	6.7	6.3	6.3	5.7	5.5	5.5
Minimum C/N, Rain (dB)	6.7	6.3	6.3	5.7	5.5	5.5
UPLINK EARTH STATION						
Earth Station Diameter (meters)	7.0	7.0	7.0	7.0	7.0	7.0
Earth Station Gain (dBi)	58.1	58.1	58.1	58.1	58.1	58.1
Earth Station Elevation Angle	20	20	20	20	20	20
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	3.0	3.0	3.0	2.4	2.4	2.4
Earth Station Gain (dBi)	49.2	49.2	49.2	47.5	47.5	47.5
Earth Station G/T (dB/K)	26.7	26.7	24.2	25.0	25.0	22.6
Earth Station Elevation Angle	20	20	20	20	20	20
LINK FADE TYPE						
	Clear Sky	Unlink Fade	Downlink Fade	Clear Sky	Unlink Fade	Downlink Fade
UPLINK PERFORMANCE						
Unlink Earth Station EIRP (dBW)	61.6	61.6	61.6	56.3	56.3	56.3
Unlink Path Loss, Clear Sky (dB)	-207.5	-207.5	-207.5	-207.5	-207.5	-207.5
Unlink Rain Attenuation (dB)	0.0	-2.8	0.0	0.0	-2.9	0.0
Satellite G/T (dB/K)	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6
Boltzman Constant (dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-66.2	-66.2	-66.2	-60.8	-60.8	-60.8
Unlink C/N (dB)	15.0	12.2	15.0	15.0	12.1	15.0
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	32.2	29.5	32.2	26.9	24.0	26.9
Antenna Pointing Error (dB)	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
Downlink Path Loss, Clear Sky (dB)	-205.9	-205.9	-205.9	-205.9	-205.9	-205.9
Downlink Rain Attenuation (dB)	0.0	0.0	-3.1	0.0	0.0	-2.8
Earth Station G/T (dB/K)	26.7	26.7	24.2	25.0	25.0	22.6
Boltzman Constant (dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-66.2	-66.2	-66.2	-60.8	-60.8	-60.8
Downlink C/N (dB)	14.9	12.2	9.3	13.2	10.3	8.0
COMPOSITE LINK PERFORMANCE						
C/N Unlink (dB)	15.0	12.2	15.0	15.0	12.1	15.0
C/N Downlink (dB)	14.9	12.2	9.3	13.2	10.3	8.0
C/I Intermodulation (dB)	23.7	22.3	23.7	23.7	21.2	23.7
C/I Unlink Co-Channel (dB)*	24.3	21.5	24.3	25.5	22.5	25.5
C/I Downlink Co-Channel (dB)*	24.3	21.6	24.3	25.5	22.6	25.5
C/I Unlink Adjacent Satellite 1 (dB)	21.4	18.6	21.4	21.5	18.6	21.5
C/I Downlink Adjacent Satellite 1 (dB)	24.4	21.6	24.4	22.8	19.9	22.8
C/I Unlink Adjacent Satellite 2 (dB)	21.4	18.6	21.4	21.5	18.6	21.5
C/I Downlink Adjacent Satellite 2 (dB)	23.1	20.4	23.1	21.3	18.4	21.3
C/(N+I) Composite (dB)	10.0	7.3	7.3	9.4	6.4	6.4
Required System Margin (dB)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Net C/(N+I) Composite (dB)	9.0	6.3	6.3	8.4	5.4	5.4
Minimum Required C/N (dB)	-6.7	-6.3	-6.3	-5.7	-5.4	-5.4
Excess Link Margin (dB)	2.3	0.0	0.0	2.7	0.0	0.0
Number of Carriers	4.9	4.9	4.9	16.5	16.5	16.5
Carrier Density Levels						
Unlink Power Density (dBW/Hz)	-62.7	-62.7	-62.7	-62.6	-62.6	-62.6
Downlink EIRP Density At Beam Peak	-30.0	-32.7	-30.0	-30.0	-32.8	-30.0

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

## EXHIBIT 4B: Galaxy 4R Ku-Band Link Budgets (continued)

<b>UPLINK BEAM INFORMATION</b>						
Uplink Beam Name	Conus		Conus		Conus	
Uplink Frequency (MHz)	14250		14250		14250	
Uplink Beam Polarization	Vertical/Horizontal	Vertical/Horizontal	Vertical/Horizontal	Vertical/Horizontal	Vertical/Horizontal	Vertical/Horizontal
Uplink Relative Contour Level (dB)	-6		-6		-6	
Uplink Contour G/T (dB/K)	-1.6		-1.6		-1.6	
Uplink SFD (dBW/m <sup>2</sup> )	-86.4		-86.4		-86.4	
Uplink Innut Backoff (dB)	8.0		8.0		8.0	
Rain Rate (mm/hr)	42.0		42.0		42.0	
<b>DOWNLINK BEAM INFORMATION</b>						
Downlink Beam Name	Conus		Conus		Conus	
Downlink Frequency (MHz)	11950		11950		11950	
Downlink Beam Polarization	Vertical/Horizontal	Vertical/Horizontal	Vertical/Horizontal	Vertical/Horizontal	Vertical/Horizontal	Vertical/Horizontal
Downlink Relative Contour Level (dB)	-4		-4		-4	
Downlink Contour EIRP (dBW)	43.9		43.9		43.9	
Downlink Output Backoff (dB)	4.8		4.8		4.8	
Rain Rate (mm/hr)	42.0		42.0		42.0	
<b>ADJACENT SATELLITE 1</b>						
Satellite 1 Orbital Location	74.85 WL		74.85 WL		74.85 WL	
Uplink Power Density (dBW/Hz)	-50		-50		-50	
Uplink Polarization Advantage (dB)	0		0		0	
Downlink EIRP Density (dBW/Hz)	-30		-30		-30	
Downlink Polarization Advantage (dB)	0		0		0	
<b>ADJACENT SATELLITE 2</b>						
Satellite 2 Orbital Location	78.85 WL		78.85 WL		78.85 WL	
Uplink Power Density (dBW/Hz)	-50		-50		-50	
Uplink Polarization Advantage (dB)	0		0		0	
Downlink EIRP Density (dBW/Hz)	-30		-30		-30	
Downlink Polarization Advantage (dB)	0		0		0	
<b>CARRIER INFORMATION</b>						
Carrier ID	1M23G7W		1M23G7W		75K4G7W	
Carrier Modulation	BPSK		BPSK		QPSK	
Peak to Peak Bandwidth of EDS (MHz)	n/a		n/a		n/a	
Information Rate (kbps)	512		512		64	
Code Rate	1/2		1/2		1/2 - RS	
Occupied Bandwidth (kHz)	1229		1229		75.4	
Allocated Bandwidth (kHz)	1450		1450		100	
Minimum C/N, Clear Sky (dB)	3.4		2.7		3.0	
Minimum C/N, Rain (dB)	3.4		2.7		3.0	
<b>UPLINK EARTH STATION</b>						
Earth Station Diameter (meters)	7.0		7.0		7.0	
Earth Station Gain (dBi)	58.1		58.1		58.1	
Earth Station Elevation Angle	20		20		20	
<b>DOWNLINK EARTH STATION</b>						
Earth Station Diameter (meters)	1.8		1.8		1.8	
Earth Station Gain (dBi)	44.8		44.8		44.8	
Earth Station G/T (dB/K)	22.3		20.0		22.3	
Earth Station Elevation Angle	20		20		20	
LINK FADE TYPE	Clear Sky	Uplink Fade	Downlink Fade	Clear Sky	Uplink Fade	Downlink Fade
<b>UPLINK PERFORMANCE</b>						
Uplink Earth Station EIRP (dBW)	55.5		55.5		43.5	
Uplink Path Loss, Clear Sky (dB)	-207.5		-207.5		-207.5	
Uplink Rain Attenuation (dB)	0.0		-3.2		0.0	
Satellite G/T (dB/K)	-1.6		-1.6		-1.6	
Boltzman Constant (dBW/K-Hz)	228.6		228.6		228.6	
Carrier Noise Bandwidth (dB-Hz)	-60.9		-60.9		-48.8	
Uplink C/N (dB)	14.1		14.1		14.2	
<b>DOWNLINK PERFORMANCE</b>						
Downlink EIRP per Carrier (dBW)	26.1		26.1		14.1	
Antenna Pointing Error (dB)	-0.5		-0.5		-0.5	
Downlink Path Loss, Clear Sky (dB)	-205.9		-205.9		-205.9	
Downlink Rain Attenuation (dB)	0.0		-2.5		0.0	
Earth Station G/T (dB/K)	22.3		20.0		22.3	
Boltzman Constant (dBW/K-Hz)	228.6		228.6		228.6	
Carrier Noise Bandwidth (dB-Hz)	-60.9		-60.9		-48.8	
Downlink C/N (dB)	9.6		4.8		6.6	
<b>COMPOSITE LINK PERFORMANCE</b>						
C/N Uplink (dB)	14.1		14.1		14.2	
C/N Downlink (dB)	9.6		4.8		6.6	
C/I Intermodulation (dB)	22.8		22.8		23.0	
C/I Uplink Co-Channel (dB)*	24.9		24.9		24.5	
C/I Downlink Co-Channel (dB)*	24.9		24.9		24.5	
C/I Uplink Adjacent Satellite 1 (dB)	20.6		20.6		20.7	
C/I Downlink Adjacent Satellite 1 (dB)	19.5		19.5		19.6	
C/I Uplink Adjacent Satellite 2 (dB)	20.6		20.6		20.7	
C/I Downlink Adjacent Satellite 2 (dB)	17.4		17.4		17.5	
C/(N+I) Composite (dB)	6.9		3.7		3.8	
Required System Margin (dB)	-1.0		-1.0		-1.0	
Net C/(N+I) Composite (dB)	5.9		2.7		2.8	
Minimum Required C/N (dB)	-3.4		-2.7		-2.8	
Excess Link Margin (dB)	2.5		0.0		0.0	
Number of Carriers	20.0		20.0		318.0	
<b>Carrier Density Levels</b>						
Uplink Power Density (dBW/Hz)	-63.5		-63.5		-63.4	
Downlink EIRP Density At Beam Peak	-30.8		-30.8		-30.7	

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

## EXHIBIT 4B: Galaxy 4R Ku-Band Link Budgets (continued)

<b>UPLINK BEAM INFORMATION</b>			
Uplink Beam Name	Conus	Conus	Conus
Uplink Frequency (MHz)	14250	14250	14250
Uplink Beam Polarization	Vertical/Horizontal	Vertical/Horizontal	Vertical/Horizontal
Uplink Relative Contour Level (dB)	-6	-6	-6
Uplink Contour G/T (dB/K)	-1.6	-1.6	-1.6
Uplink SED (dBW/m <sup>2</sup> )	-86.4	-86.4	-86.4
Uplink Innut Backoff (dB)	8.0	8.0	8.0
Rain Rate (mm/hr)	42.0	42.0	42.0
<b>DOWNLINK BEAM INFORMATION</b>			
Downlink Beam Name	Conus	Conus	Conus
Downlink Frequency (MHz)	11950	11950	11950
Downlink Beam Polarization	Vertical/Horizontal	Vertical/Horizontal	Vertical/Horizontal
Downlink Relative Contour Level (dB)	-4	-4	-4
Downlink Contour EIRP (dBW)	43.9	43.9	43.9
Downlink Output Backoff (dB)	4.8	4.8	4.8
Rain Rate (mm/hr)	42.0	42.0	42.0
<b>ADJACENT SATELLITE 1</b>			
Satellite 1 Orbital Location	74.85 WL	74.85 WL	74.85 WL
Uplink Power Density (dBW/Hz)	-50	-50	-50
Uplink Polarization Advantage (dB)	0	0	0
Downlink EIRP Density (dBW/Hz)	-30	-30	-30
Downlink Polarization Advantage (dB)	0	0	0
<b>ADJACENT SATELLITE 2</b>			
Satellite 2 Orbital Location	78.85 WL	78.85 WL	78.85 WL
Uplink Power Density (dBW/Hz)	-50	-50	-50
Uplink Polarization Advantage (dB)	0	0	0
Downlink EIRP Density (dBW/Hz)	-30	-30	-30
Downlink Polarization Advantage (dB)	0	0	0
<b>CARRIER INFORMATION</b>			
Carrier ID	307KG7W	307KG7W	307KG7W
Carrier Modulation	BPSK	BPSK	BPSK
Peak to Peak Bandwidth of EDS (MHz)	n/a	n/a	n/a
Information Rate (kbns)	128	128	128
Code Rate	1/2	1/2	1/2
Occupied Bandwidth (kHz)	307	307	307
Allocated Bandwidth (kHz)	400	400	400
Minimum C/N, Clear Sky (dB)	3.4	2.7	2.7
Minimum C/N, Rain (dB)	3.4	2.7	2.7
<b>UPLINK EARTH STATION</b>			
Earth Station Diameter (meters)	1.8	1.8	1.8
Earth Station Gain (dBi)	46.4	46.4	46.4
Earth Station Elevation Angle	20	20	20
<b>DOWNLINK EARTH STATION</b>			
Earth Station Diameter (meters)	7.0	7.0	7.0
Earth Station Gain (dBi)	57.0	57.0	57.0
Earth Station G/T (dB/K)	34.6	34.6	31.2
Earth Station Elevation Angle	20	20	20
<b>LINK FADE TYPE</b>			
	Clear Sky	Unlink Fade	Downlink Fade Fade
<b>UPLINK PERFORMANCE</b>			
Uplink Earth Station EIRP (dBW)	44.3	44.3	44.3
Uplink Path Loss, Clear Sky (dB)	-207.5	-207.5	-207.5
Uplink Rain Attenuation (dB)	0.0	-2.3	0.0
Satellite G/T (dB/K)	-1.6	-1.6	-1.6
Boltzman Constant (dBW/K-Hz)	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-54.9	-54.9	-54.9
Uplink C/N (dB)	9.0	6.7	9.0
<b>DOWNLINK PERFORMANCE</b>			
Downlink EIRP per Carrier (dBW)	14.9	12.6	14.9
Antenna Pointing Error (dB)	-0.5	-0.5	-0.5
Downlink Path Loss, Clear Sky (dB)	-205.9	-205.9	-205.9
Downlink Rain Attenuation (dB)	0.0	0.0	-6.3
Earth Station G/T (dB/K)	34.6	34.6	31.2
Boltzman Constant (dBW/K-Hz)	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-54.9	-54.9	-54.9
Downlink C/N (dB)	16.8	14.5	7.1
<b>COMPOSITE LINK PERFORMANCE</b>			
C/N Unlink (dB)	9.0	6.7	9.0
C/N Downlink (dB)	16.8	14.5	7.1
C/I Intermodulation (dB)	17.7	15.4	17.7
C/I Unlink Co-Channel (dB)*	19.3	17.0	19.3
C/I Downlink Co-Channel (dB)*	19.3	17.0	19.3
C/I Unlink Adjacent Satellite 1 (dB)	15.4	13.1	15.4
C/I Downlink Adjacent Satellite 1 (dB)	25.8	23.5	25.8
C/I Unlink Adjacent Satellite 2 (dB)	15.4	13.1	15.4
C/I Downlink Adjacent Satellite 2 (dB)	25.3	23.0	25.3
C/(N+I) Composite (dB)	6.0	3.7	3.7
Required System Margin (dB)	-1.0	-1.0	-1.0
Net C/(N+I) Composite (dB)	5.0	2.7	2.7
Minimum Required C/N (dB)	-3.4	-2.7	-2.7
Excess Link Margin (dB)	1.6	0.0	0.0
Number of Carriers	90	90	90
<b>Carrier Density Levels</b>			
Uplink Power Density (dBW/Hz)	-57.0	-57.0	-57.0
Downlink EIRP Density At Beam Peak	-36.0	-38.3	-36.0

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