

## C-Band Global Uplink/Global Downlink

<b>UPLINK BEAM INFORMATION</b>					
Uplink Beam Name	GLOBAL	GLOBAL	GLOBAL	GLOBAL	GLOBAL
Uplink Frequency (GHz)	6.175	6.175	6.175	6.175	6.175
Uplink Beam Polarization	CIRCULAR	CIRCULAR	CIRCULAR	CIRCULAR	CIRCULAR
Uplink Relative Contour Level (dB)	-4	-4	-4	-4	-4
Uplink Contour G/T (dB/K)	-11	-11	-11	-11	-11
Uplink SFD (dBW/m2)	-84.3	-89.3	-81.3	-81.3	-89.3
Rain Rate (mm/hr)	42	42	42	42	42
<b>DOWNLINK BEAM INFORMATION</b>					
Downlink Beam Name	GLOBAL	GLOBAL	GLOBAL	GLOBAL	GLOBAL
Downlink Frequency (GHz)	3.95	3.95	3.95	3.95	3.95
Downlink Beam Polarization	CIRCULAR	CIRCULAR	CIRCULAR	CIRCULAR	CIRCULAR
Downlink Relative Contour Level (dB)	-4	-4	-4	-4	-4
Downlink Contour EIRP (dBW)	27.6	27.6	27.6	27.6	27.6
Rain Rate (mm/hr)	42	42	42	42	42
<b>ADJACENT SATELLITE 1</b>					
Satellite 1 Orbital Location	30.9E	30.9E	30.9E	30.9E	30.9E
Uplink Power Density (dBW/Hz)	-38.7	-38.7	-38.7	-38.7	-38.7
Uplink Polarization Advantage (dB)	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-32.0	-32.0	-32.0	-32.0	-32.0
Downlink Polarization Advantage (dB)	0	0	0	0	0
<b>ADJACENT SATELLITE 2</b>					
Satellite 1 Orbital Location	34.9E	34.9E	34.9E	34.9E	34.9E
Uplink Power Density (dBW/Hz)	-38.7	-38.7	-38.7	-38.7	-38.7
Uplink Polarization Advantage (dB)	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-32.0	-32.0	-32.0	-32.0	-32.0
Downlink Polarization Advantage (dB)	0	0	0	0	0
<b>CARRIER INFORMATION</b>					
Carrier ID	36M0F3F	36M0G7W	10M3G7W	100KG7W	41M0G7W
Carrier Modulation	TV/FM	QPSK	QPSK	QPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	N/A	N/A	N/A	N/A
Information Rate(kbps)	N/A	24575	6000	64	31490
Code Rate	N/A	1/2x188/204	1/2x188/204	1/2x239/256	1/2x188/204
Occupied Bandwidth(kHz)	36000	30133	6771.1	75.4	34170.0
Allocated Bandwidth(kHz)	36000	36000	10300	100	41000
Minimum C/N, Clear Sky (dB)	10	3.36	3.87	2.99	3.4
Minimum C/N, Rain (dB)	10	3.36	3.57	2.79	3.4
<b>UPLINK EARTH STATION</b>					
Earth Station Diameter (meters)	13.0	6.1	2.4	2.4	7.0
Earth Station Gain (dBi)	56.4	49.4	41.9	41.9	51.0
Earth Station Elevation Angle	20	20	20	20	20
<b>DOWNLINK EARTH STATION</b>					
Earth Station Diameter (meters)	15.2	7.0	11.0	11.0	8.1
Earth Station Gain (dBi)	55.0	47.5	51.9	51.9	49.3
Earth Station G/T (dB/K)	34.5	26.6	31.0	31.0	28.4
Earth Station Elevation Angle	20	20	20	20	20
<b>LINK FADE TYPE</b>					
Link Fade Type	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky
<b>UPLINK PERFORMANCE</b>					
Uplink Earth Station EIRP (dBW)	80.6	73.6	66.6	46.5	73.6
Uplink Path Loss, Clear Sky (dB)	-200.2	-200.2	-200.2	-200.2	-200.2
Uplink Rain Attenuation	0.0	0.0	0.0	0.0	0.0
Satellite G/T(dB/K)	-11.0	-11.0	-11.0	-11.0	-11.0
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-75.6	-74.8	-68.3	-48.8	-75.3
Uplink C/N(dB)	22.4	16.2	15.7	15.1	15.7
<b>DOWNLINK PERFORMANCE</b>					
Downlink EIRP per Carrier (dBW)	27.6	27.6	17.5	-2.6	27.6
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
Downlink Rain Attenuation	0.0	0.0	0.0	0.0	0.0
Earth Station G/T (dB/K)	34.5	26.6	31.0	31.0	28.4
Boltzman Constant(dBW / K - Hz)	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-75.6	-74.8	-68.3	-48.8	-75.3
Downlink C / N(dB)	18.3	11.2	12.0	11.4	12.5
<b>COMPOSITE LINK PERFORMANCE</b>					
C/N Uplink (dB)	22.4	16.2	15.7	15.1	15.7
C/N Downlink (dB)	18.3	11.2	12.0	11.4	12.5
C/I Intermodulation (dB)	N/A	N/A	18.9	18.3	N/A
C/I Uplink Co-Channel (dB)*	27.6	27.6	27.0	27.0	27.6
C/I Downlink Co-Channel (dB)*	27.6	27.6	27.0	27.0	27.6
C/I Uplink Adjacent Satellite 1 (dB)	21.7	15.5	15.0	14.4	15.0
C/I Downlink Adjacent Satellite 1 (dB)	17.2	10.0	11.1	10.5	11.4
C/I Uplink Adjacent Satellite 2 (dB)	21.7	15.5	15.0	14.4	15.0
C/I Downlink Adjacent Satellite 2 (dB)	17.9	11.6	12.1	11.6	12.7
C/(N+I) Composite (dB)	11.4	4.8	5.1	4.5	5.6
Required System Margin (dB)	-1.0	-1.0	-1.0	-1.0	-1.0
Net C/(N+I) Composite (dB)	10.4	3.8	4.1	3.5	4.6
Minimum Required C/N (dB)	-10.0	-3.4	-3.9	-3.0	-3.4
Excess Link Margin (dB)	0.4	0.4	0.2	0.5	1.2
Number of Carriers	1	1	4	410	1
<b>CARRIER DENSITY LEVELS</b>					
Uplink Power Density (dBW/Hz)	-51.4	-50.6	-43.6	-44.2	-52.7
Downlink EIRP Density At Beam Peak (dBW/Hz)	-44	-43.2	-46.8	-47.4	-43.7

## C-Band Global Uplink/C-Band Spot Downlink

<b>UPLINK BEAM INFORMATION</b>					
Uplink Beam Name	GLOBAL	GLOBAL	GLOBAL	GLOBAL	GLOBAL
Uplink Frequency (GHz)	6.175	6.175	6.175	6.175	6.175
Uplink Beam Polarization	CIRCULAR	CIRCULAR	CIRCULAR	CIRCULAR	CIRCULAR
Uplink Relative Contour Level (dB)	-4	-4	-4	-4	-4
Uplink Contour G/T (dB/K)	-11	-11	-11	-11	-11
Uplink SFD (dBW/m2)	-84.3	-89.3	-84.3	-84.3	-89.3
Rain Rate (mm/hr)	42	42	42	42	42
<b>DOWNLINK BEAM INFORMATION</b>					
Downlink Beam Name	CSPOT	CSPOT	CSPOT	CSPOT	CSPOT
Downlink Frequency (GHz)	3.95	3.95	3.95	3.95	3.95
Downlink Beam Polarization	CIRCULAR	CIRCULAR	CIRCULAR	CIRCULAR	CIRCULAR
Downlink Relative Contour Level (dB)	-4	-4	-4	-4	-4
Downlink Contour EIRP (dBW)	34.6	34.6	34.6	34.6	34.6
Rain Rate (mm/hr)	42	42	42	42	42
<b>ADJACENT SATELLITE 1</b>					
Satellite 1 Orbital Location	30.9E	30.9E	30.9E	30.9E	30.9E
Uplink Power Density (dBW/Hz)	-38.7	-38.7	-38.7	-38.7	-38.7
Uplink Polarization Advantage (dB)	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-32.0	-32.0	-32.0	-32.0	-32.0
Downlink Polarization Advantage (dB)	0	0	0	0	0
<b>ADJACENT SATELLITE 2</b>					
Satellite 1 Orbital Location	34.9E	34.9E	34.9E	34.9E	34.9E
Uplink Power Density (dBW/Hz)	-38.7	-38.7	-38.7	-38.7	-38.7
Uplink Polarization Advantage (dB)	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-32.0	-32.0	-32.0	-32.0	-32.0
Downlink Polarization Advantage (dB)	0	0	0	0	0
<b>CARRIER INFORMATION</b>					
Carrier ID	36M0F3F	36M0G7W	10M3G7W	100KG7W	41M0G7W
Carrier Modulation	TV/FM	QPSK	QPSK	QPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	N/A	N/A	N/A	N/A
Information Rate(kbps)	N/A	24575	6000	64	31490
Code Rate	N/A	1/2x188/204	1/2x188/204	1/2x239/256	1/2x188/204
Occupied Bandwidth(kHz)	36000	30133	6771.1	75.4	34170.0
Allocated Bandwidth(kHz)	36000	36000	10300	100	41000
Minimum C/N, Clear Sky (dB)	10	3.36	3.87	2.99	3.4
Minimum C/N, Rain (dB)	10	3.36	3.57	2.79	3.4
<b>UPLINK EARTH STATION</b>					
Earth Station Diameter (meters)	11.0	6.1	2.4	2.4	7.0
Earth Station Gain (dBi)	55.4	49.4	41.9	41.9	51.0
Earth Station Elevation Angle	20	20	20	20	20
<b>DOWNLINK EARTH STATION</b>					
Earth Station Diameter (meters)	8.1	3.5	6.1	6.1	3.7
Earth Station Gain (dBi)	49.3	41.1	46.5	46.5	41.2
Earth Station G/T (dB/K)	28.4	21.0	26.2	26.2	20.9
Earth Station Elevation Angle	20	20	20	20	20
<b>LINK FADE TYPE</b>					
	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky
<b>UPLINK PERFORMANCE</b>					
Uplink Earth Station EIRP (dBW)	78.6	73.6	64.1	44.0	73.6
Uplink Path Loss, Clear Sky (dB)	-200.2	-200.2	-200.2	-200.2	-200.2
Uplink Rain Attenuation	0.0	0.0	0.0	0.0	0.0
Satellite G/T(dB/K)	-11.0	-11.0	-11.0	-11.0	-11.0
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-75.6	-74.8	-68.3	-48.8	-75.3
Uplink C/N(dB)	20.4	16.2	13.2	12.6	15.7
<b>DOWNLINK PERFORMANCE</b>					
Downlink EIRP per Carrier (dBW)	34.6	34.6	25.1	4.9	34.6
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
Downlink Rain Attenuation	0.0	0.0	0.0	0.0	0.0
Earth Station G/T (dB/K)	28.4	21.0	26.2	26.2	20.9
Boltzman Constant(dBW / K - Hz)	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-75.6	-74.8	-68.3	-48.8	-75.3
Downlink C / N(dB)	19.2	12.6	14.7	14.2	12.0
<b>COMPOSITE LINK PERFORMANCE</b>					
C/N Uplink (dB)	20.4	16.2	13.2	12.6	15.7
C/N Downlink (dB)	19.2	12.6	14.7	14.2	12.0
C/I Intermodulation (dB)	N/A	N/A	17.4	16.8	N/A
C/I Uplink Co-Channel (dB)*	27.6	27.6	27.0	27.0	27.0
C/I Downlink Co-Channel (dB)*	27.6	27.6	27.0	27.0	27.0
C/I Uplink Adjacent Satellite 1 (dB)	19.7	15.5	12.5	11.9	15.0
C/I Downlink Adjacent Satellite 1 (dB)	18.1	8.1	12.8	12.2	9.3
C/I Uplink Adjacent Satellite 2 (dB)	19.7	15.5	12.5	11.9	15.0
C/I Downlink Adjacent Satellite 2 (dB)	19.5	12.9	14.6	14.1	12.4
C/(N+I) Composite (dB)	11.4	4.6	5.2	4.6	4.8
Required System Margin (dB)	-1.0	-1.0	-1.0	-1.0	-1.0
Net C/(N+I) Composite (dB)	10.4	3.6	4.2	3.6	3.8
Minimum Required C/N (dB)	-10.0	-3.4	-3.9	-3.0	-3.4
Excess Link Margin (dB)	0.4	0.2	0.3	0.6	0.4
Number of Carriers	1	1	4	410	1
<b>CARRIER DENSITY LEVELS</b>					
Uplink Power Density (dBW/Hz)	-52.4	-50.6	-46.1	-46.7	-52.7
Downlink EIRP Density At Beam Peak (dBW/Hz)	-37.0	-36.2	-39.3	-39.8	-36.7

## C-Band Global Uplink/Hemi Downlink

<b>UPLINK BEAM INFORMATION</b>				
Uplink Beam Name	GLOBAL	GLOBAL	GLOBAL	GLOBAL
Uplink Frequency (GHz)	6.175	6.175	6.175	6.175
Uplink Beam Polarization	CIRCULAR	CIRCULAR	CIRCULAR	CIRCULAR
Uplink Relative Contour Level (dB)	-4	-4	-4	-4
Uplink Contour G/T (dB/K)	-11	-11	-11	-11
Uplink SFD (dBW/m2)	-83.3	-89.3	-83.3	-83.3
Rain Rate (mm/hr)	42	42	42	42
<b>DOWNLINK BEAM INFORMATION</b>				
Downlink Beam Name	HEMI	HEMI	HEMI	HEMI
Downlink Frequency (GHz)	3.95	3.95	3.95	3.95
Downlink Beam Polarization	CIRCULAR	CIRCULAR	CIRCULAR	CIRCULAR
Downlink Relative Contour Level (dB)	-6	-6	-6	-6
Downlink Contour EIRP (dBW)	31.5	31.5	31.5	31.5
Rain Rate (mm/hr)	42	42	42	42
<b>ADJACENT SATELLITE 1</b>				
Satellite 1 Orbital Location	30.9E	30.9E	30.9E	30.9E
Uplink Power Density (dBW/Hz)	-38.7	-38.7	-38.7	-38.7
Uplink Polarization Advantage (dB)	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-32.0	-32.0	-32.0	-32.0
Downlink Polarization Advantage (dB)	0	0	0	0
<b>ADJACENT SATELLITE 2</b>				
Satellite 1 Orbital Location	34.9E	34.9E	34.9E	34.9E
Uplink Power Density (dBW/Hz)	-38.7	-38.7	-38.7	-38.7
Uplink Polarization Advantage (dB)	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-32.0	-32.0	-32.0	-32.0
Downlink Polarization Advantage (dB)	0	0	0	0
<b>CARRIER INFORMATION</b>				
Carrier ID	36M0F3F	36M0G7W	10M3G7W	100KG7W
Carrier Modulation	TV/FM	QPSK	QPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	N/A	N/A	N/A
Information Rate(kbps)	N/A	24575	6000	64
Code Rate	N/A	1/2x188/204	1/2x188/204	1/2x239/256
Occupied Bandwidth(kHz)	36000	30133	6771.1	75.4
Allocated Bandwidth(kHz)	36000	36000	10300	100
Minimum C/N, Clear Sky (dB)	10	3.36	3.87	2.99
Minimum C/N, Rain (dB)	10	3.36	3.57	2.79
<b>UPLINK EARTH STATION</b>				
Earth Station Diameter (meters)	13.0	7.0	2.4	2.4
Earth Station Gain (dBi)	56.4	51.0	41.9	41.9
Earth Station Elevation Angle	20	20	20	20
<b>DOWNLINK EARTH STATION</b>				
Earth Station Diameter (meters)	11.0	4.5	8.1	8.1
Earth Station Gain (dBi)	51.9	43.9	49.3	49.3
Earth Station G/T (dB/K)	31.0	23.6	28.4	28.4
Earth Station Elevation Angle	20	20	20	20
<b>LINK FADE TYPE</b>				
	Clear Sky	Clear Sky	Clear Sky	Clear Sky
<b>UPLINK PERFORMANCE</b>				
Uplink Earth Station EIRP (dBW)	79.6	73.6	65.8	45
Uplink Path Loss, Clear Sky (dB)	-200.2	-200.2	-200.2	-200.2
Uplink Rain Attenuation	0.0	0.0	0.0	0.0
Satellite G/T(dB/K)	-11.0	-11.0	-11.0	-11.0
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-75.6	-74.8	-68.3	-48.8
Uplink C/N(dB)	21.4	16.2	14.9	13.7
<b>DOWNLINK PERFORMANCE</b>				
Downlink EIRP per Carrier (dBW)	31.5	31.5	21.7	0.9
Antenna Pointing Error (dB)	-0.5	-0.5	-0.5	-0.5
Downlink Path Loss, Clear Sky (dB)	-196.3	-196.3	-196.3	-196.3
Downlink Rain Attenuation	0.0	0.0	0.0	0.0
Earth Station G/T (dB/K)	31.0	23.6	28.4	28.4
Boltzman Constant(dBW / K - Hz)	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-75.6	-74.8	-68.3	-48.8
Downlink C / N(dB)	18.7	12.1	13.6	12.3
<b>COMPOSITE LINK PERFORMANCE</b>				
C/N Uplink (dB)	21.4	16.2	14.9	13.7
C/N Downlink (dB)	18.7	12.1	13.6	12.3
C/I Intermodulation (dB)	N/A	N/A	22.1	20.9
C/I Uplink Co-Channel (dB)*	27.0	27.0	27.7	27.0
C/I Downlink Co-Channel (dB)*	27.0	27.0	27.7	27.0
C/I Uplink Adjacent Satellite 1 (dB)	20.7	15.5	14.2	13
C/I Downlink Adjacent Satellite 1 (dB)	17.8	9.8	12.5	11.2
C/I Uplink Adjacent Satellite 2 (dB)	20.7	15.5	14.2	13
C/I Downlink Adjacent Satellite 2 (dB)	18.8	12.3	13.8	12.6
C/(N+I) Composite (dB)	11.5	5.1	5.9	4.6
Required System Margin (dB)	-1.0	-1.0	-1.0	-1.0
Net C/(N+I) Composite (dB)	10.5	4.1	4.9	3.6
Minimum Required C/N (dB)	-10.0	-3.4	-3.9	-3.0
Excess Link Margin (dB)	0.5	0.7	1.0	0.6
Number of Carriers	1	1	3	360
<b>CARRIER DENSITY LEVELS</b>				
Uplink Power Density (dBW/Hz)	-52.4	-52.2	-44.4	-45.6
Downlink EIRP Density At Beam Peak (dBW/Hz)	-38.1	-37.3	-40.6	-41.9

## C-Band Spot Uplink/C-Band Spot Downlink

<b>UPLINK BEAM INFORMATION</b>					
Uplink Beam Name	CSPOT	CSPOT	CSPOT	CSPOT	CSPOT
Uplink Frequency (GHz)	6.175	6.175	6.175	6.175	6.175
Uplink Beam Polarization	CIRCULAR	CIRCULAR	CIRCULAR	CIRCULAR	CIRCULAR
Uplink Relative Contour Level (dB)	-4	-4	-4	-4	-4
Uplink Contour G/T (dB/K)	-1	-1	-1	-1	-1
Uplink SFD (dBW/m2)	-88.3	-92.3	-87.3	-87.3	-92.3
Rain Rate (mm/hr)	42	42	42	42	42
<b>DOWNLINK BEAM INFORMATION</b>					
Downlink Beam Name	CSPOT	CSPOT	CSPOT	CSPOT	CSPOT
Downlink Frequency (GHz)	3.95	3.95	3.95	3.95	3.95
Downlink Beam Polarization	CIRCULAR	CIRCULAR	CIRCULAR	CIRCULAR	CIRCULAR
Downlink Relative Contour Level (dB)	-4	-4	-4	-4	-4
Downlink Contour EIRP (dBW)	34.6	34.6	34.6	34.6	34.6
Rain Rate (mm/hr)	42	42	42	42	43
<b>ADJACENT SATELLITE 1</b>					
Satellite 1 Orbital Location	30.9E	30.9E	30.9E	30.9E	30.9E
Uplink Power Density (dBW/Hz)	-38.7	-38.7	-38.7	-38.7	-38.7
Uplink Polarization Advantage (dB)	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-32.0	-32.0	-32.0	-32.0	-32.0
Downlink Polarization Advantage (dB)	0	0	0	0	0
<b>ADJACENT SATELLITE 2</b>					
Satellite 1 Orbital Location	34.9E	34.9E	34.9E	34.9E	34.9E
Uplink Power Density (dBW/Hz)	-38.7	-38.7	-38.7	-38.7	-38.7
Uplink Polarization Advantage (dB)	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-32.0	-32.0	-32.0	-32.0	-32.0
Downlink Polarization Advantage (dB)	0	0	0	0	0
<b>CARRIER INFORMATION</b>					
Carrier ID	36M0F3F	36M0G7W	10M3G7W	100KG7W	41M0G7W
Carrier Modulation	TV/FM	QPSK	QPSK	QPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	N/A	N/A	N/A	N/A
Information Rate(kbps)	N/A	24575	6000	64	31490
Code Rate	N/A	1/2x188/204	1/2x188/204	1/2x239/256	1/2x188/204
Occupied Bandwidth(kHz)	36000	30133	6771.1	75.4	34170.0
Allocated Bandwidth(kHz)	36000	36000	10300	100	41000
Minimum C/N, Clear Sky (dB)	10	3.36	3.87	2.99	3.4
Minimum C/N, Rain (dB)	10	3.36	3.57	2.79	3.4
<b>UPLINK EARTH STATION</b>					
Earth Station Diameter (meters)	7.0	4.5	2.4	2.4	5.0
Earth Station Gain (dBi)	51	46.5	41.9	41.9	47.5
Earth Station Elevation Angle	20	20	20	20	20
<b>DOWNLINK EARTH STATION</b>					
Earth Station Diameter (meters)	13.1	3.7	9.2	9.2	4.5
Earth Station Gain (dBi)	53.5	41.2	50.3	50.3	43.9
Earth Station G/T (dB/K)	33.0	20.9	29.4	29.4	23.6
Earth Station Elevation Angle	20	20	20	20	20
<b>LINK FADE TYPE</b>					
	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky
<b>UPLINK PERFORMANCE</b>					
Uplink Earth Station EIRP (dBW)	74.6	70.6	61.1	41.0	70.6
Uplink Path Loss, Clear Sky (dB)	-200.2	-200.2	-200.2	-200.2	-200.2
Uplink Rain Attenuation	0.0	0.0	0.0	0.0	0.0
Satellite G/T(dB/K)	-1.0	-1.0	-1.0	-1.0	-1.0
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-75.6	-74.8	-68.3	-48.8	-75.3
Uplink C/N(dB)	26.4	23.2	20.2	19.6	22.7
<b>DOWNLINK PERFORMANCE</b>					
Downlink EIRP per Carrier (dBW)	34.6	34.6	25.1	4.9	34.6
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
Downlink Rain Attenuation	0.0	0.0	0.0	0.0	0.0
Earth Station G/T (dB/K)	33.0	20.9	29.4	29.4	23.6
Boltzman Constant(dBW / K - Hz)	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-75.6	-74.8	-68.3	-48.8	-75.3
Downlink C / N(dB)	23.8	12.5	17.9	17.4	14.7
<b>COMPOSITE LINK PERFORMANCE</b>					
C/N Uplink (dB)	26.4	23.2	20.2	19.6	22.7
C/N Downlink (dB)	23.8	12.5	17.9	17.4	14.7
C/I Intermodulation (dB)	N/A	N/A	17.4	16.8	N/A
C/I Uplink Co-Channel (dB)*	27.6	27.6	27.0	27.0	27.0
C/I Downlink Co-Channel (dB)*	27.6	27.6	27.0	27.0	27.0
C/I Uplink Adjacent Satellite 1 (dB)	15.7	12.5	9.5	8.9	12.0
C/I Downlink Adjacent Satellite 1 (dB)	22.6	9.9	16.9	16.3	12.3
C/I Uplink Adjacent Satellite 2 (dB)	15.7	12.5	9.5	8.9	12.0
C/I Downlink Adjacent Satellite 2 (dB)	23.4	12.9	18.2	17.6	14.8
C/(N+I) Composite (dB)	11.4	4.8	5.1	4.5	5.8
Required System Margin (dB)	-1.0	-1.0	-1.0	-1.0	-1.0
Net C/(N+I) Composite (dB)	10.4	3.8	4.1	3.5	4.8
Minimum Required C/N (dB)	-10.0	-3.4	-3.9	-3.0	-3.4
Excess Link Margin (dB)	0.4	0.4	0.2	0.5	1.4
Number of Carriers	1	1	4	410	1
<b>CARRIER DENSITY LEVELS</b>					
Uplink Power Density (dBW/Hz)	-52.0	-50.7	-49.1	-49.7	-52.2
Downlink EIRP Density At Beam Peak (dBW/Hz)	-37.0	-36.2	-39.3	-39.8	-36.7

## C-Band Spot Uplink/Global Downlink

<b>UPLINK BEAM INFORMATION</b>					
Uplink Beam Name	CSPOT	CSPOT	CSPOT	CSPOT	CSPOT
Uplink Frequency (GHz)	6.175	6.175	6.175	6.175	6.175
Uplink Beam Polarization	CIRCULAR	CIRCULAR	CIRCULAR	CIRCULAR	CIRCULAR
Uplink Relative Contour Level (dB)	-4	-4	-4	-4	-4
Uplink Contour G/T (dB/K)	-1	-1	-1	-1	-1
Uplink SFD (dBW/m2)	-85.3	-92.3	-86.3	-86.3	-92.3
Rain Rate (mm/hr)	42	42	42	42	42
<b>DOWNLINK BEAM INFORMATION</b>					
Downlink Beam Name	GLOBAL	GLOBAL	GLOBAL	GLOBAL	GLOBAL
Downlink Frequency (GHz)	3.95	3.95	3.95	3.95	3.95
Downlink Beam Polarization	CIRCULAR	CIRCULAR	CIRCULAR	CIRCULAR	CIRCULAR
Downlink Relative Contour Level (dB)	-4	-4	-4	-4	-4
Downlink Contour EIRP (dBW)	27.6	27.6	27.6	27.6	27.6
Rain Rate (mm/hr)	42	42	42	42	43
<b>ADJACENT SATELLITE 1</b>					
Satellite 1 Orbital Location	30.9E	30.9E	30.9E	30.9E	30.9E
Uplink Power Density (dBW/Hz)	-38.7	-38.7	-38.7	-38.7	-38.7
Uplink Polarization Advantage (dB)	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-32.0	-32.0	-32.0	-32.0	-32.0
Downlink Polarization Advantage (dB)	0	0	0	0	0
<b>ADJACENT SATELLITE 2</b>					
Satellite 1 Orbital Location	34.9E	34.9E	34.9E	34.9E	34.9E
Uplink Power Density (dBW/Hz)	-38.7	-38.7	-38.7	-38.7	-38.7
Uplink Polarization Advantage (dB)	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-32.0	-32.0	-32.0	-32.0	-32.0
Downlink Polarization Advantage (dB)	0	0	0	0	0
<b>CARRIER INFORMATION</b>					
Carrier ID	36M0F3F	36M0G7W	10M3G7W	100KG7W	41M0G7W
Carrier Modulation	TV/FM	QPSK	QPSK	QPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	N/A	N/A	N/A	N/A
Information Rate(kbps)	N/A	24575	6000	64	31490
Code Rate	N/A	1/2x188/204	1/2x188/204	1/2x239/256	1/2x188/204
Occupied Bandwidth(kHz)	36000	30133	6771.1	75.4	34170.0
Allocated Bandwidth(kHz)	36000	36000	10300	100	41000
Minimum C/N, Clear Sky (dB)	10	3.36	3.87	2.99	3.4
Minimum C/N, Rain (dB)	10	3.36	3.57	2.79	3.4
<b>UPLINK EARTH STATION</b>					
Earth Station Diameter (meters)	10.0	4.6	2.4	2.4	4.6
Earth Station Gain (dBi)	54.1	46.9	41.9	41.9	46.9
Earth Station Elevation Angle	20	20	20	20	20
<b>DOWNLINK EARTH STATION</b>					
Earth Station Diameter (meters)	18.3	8.1	18.3	15.2	8.1
Earth Station Gain (dBi)	56	49.3	56.0	55.0	49.3
Earth Station G/T (dB/K)	35.5	28.4	35.5	34.5	28.4
Earth Station Elevation Angle	20	20	20	20	20
<b>LINK FADE TYPE</b>					
	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky
<b>UPLINK PERFORMANCE</b>					
Uplink Earth Station EIRP (dBW)	77.6	70.6	61.6	41.5	70.6
Uplink Path Loss, Clear Sky (dB)	-200.2	-200.2	-200.2	-200.2	-200.2
Uplink Rain Attenuation	0.0	0.0	0.0	0.0	0.0
Satellite G/T(dB/K)	-1.0	-1.0	-1.0	-1.0	-1.0
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-75.6	-74.8	-68.3	-48.8	-75.3
Uplink C/N(dB)	29.4	23.2	20.7	20.1	22.7
<b>DOWNLINK PERFORMANCE</b>					
Downlink EIRP per Carrier (dBW)	27.6	27.6	17.5	-2.6	27.6
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
Downlink Rain Attenuation	0.0	0.0	0.0	0.0	0.0
Earth Station G/T (dB/K)	35.5	28.4	35.5	34.5	28.4
Boltzman Constant(dBW / K - Hz)	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-75.6	-74.8	-68.3	-48.8	-75.3
Downlink C / N(dB)	19.3	13.0	16.5	14.9	12.5
<b>COMPOSITE LINK PERFORMANCE</b>					
C/N Uplink (dB)	29.4	23.2	20.7	20.1	22.7
C/N Downlink (dB)	19.3	13.0	16.5	14.9	12.5
C/I Intermodulation (dB)	N/A	N/A	18.9	18.3	N/A
C/I Uplink Co-Channel (dB)*	27.6	27.6	27.0	27.0	27.0
C/I Downlink Co-Channel (dB)*	27.6	27.6	27.0	27.0	27.0
C/I Uplink Adjacent Satellite 1 (dB)	18.7	12.5	10.0	9.4	12.0
C/I Downlink Adjacent Satellite 1 (dB)	18.2	11.9	15.4	13.8	11.4
C/I Uplink Adjacent Satellite 2 (dB)	18.7	12.5	10.0	9.4	12.0
C/I Downlink Adjacent Satellite 2 (dB)	18.8	13.3	16.0	14.5	12.7
C/(N+I) Composite (dB)	11.5	5.5	5.2	4.3	5.0
Required System Margin (dB)	-1.0	-1.0	-1.0	-1.0	-1.0
Net C/(N+I) Composite (dB)	10.5	4.5	4.2	3.3	4.0
Minimum Required C/N (dB)	-10.0	-3.4	-3.9	-3.0	-3.4
Excess Link Margin (dB)	0.5	1.1	0.3	0.3	0.6
Number of Carriers	1	1	4	410	1
<b>CARRIER DENSITY LEVELS</b>					
Uplink Power Density (dBW/Hz)	-52.1	-51.1	-48.6	-49.2	-51.6
Downlink EIRP Density At Beam Peak (dBW/Hz)	-44.0	-43.2	-46.8	-47.4	-43.7

## C-Band Spot Uplink/Hemi Downlink

<b>UPLINK BEAM INFORMATION</b>				
Uplink Beam Name	CSPOT	CSPOT	CSPOT	CSPOT
Uplink Frequency (GHz)	6.175	6.175	6.175	6.175
Uplink Beam Polarization	CIRCULAR	CIRCULAR	CIRCULAR	CIRCULAR
Uplink Relative Contour Level (dB)	-4	-4	-4	-4
Uplink Contour G/T (dB/K)	-1	-1	-1	-1
Uplink SFD (dBW/m2)	-87.3	-92.3	-88.3	-88.3
Rain Rate (mm/hr)	42	42	42	42
<b>DOWNLINK BEAM INFORMATION</b>				
Downlink Beam Name	HEMI	HEMI	HEMI	HEMI
Downlink Frequency (GHz)	3.95	3.95	3.95	3.95
Downlink Beam Polarization	CIRCULAR	CIRCULAR	CIRCULAR	CIRCULAR
Downlink Relative Contour Level (dB)	-6	-6	-6	-6
Downlink Contour EIRP (dBW)	31.5	31.5	31.5	31.5
Rain Rate (mm/hr)	42	42	42	42
<b>ADJACENT SATELLITE 1</b>				
Satellite 1 Orbital Location	30.9E	30.9E	30.9E	30.9E
Uplink Power Density (dBW/Hz)	-38.7	-38.7	-38.7	-38.7
Uplink Polarization Advantage (dB)	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-32.0	-32.0	-32.0	-32.0
Downlink Polarization Advantage (dB)	0	0	0	0
<b>ADJACENT SATELLITE 2</b>				
Satellite 1 Orbital Location	34.9E	34.9E	34.9E	34.9E
Uplink Power Density (dBW/Hz)	-38.7	-38.7	-38.7	-38.7
Uplink Polarization Advantage (dB)	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-32.0	-32.0	-32.0	-32.0
Downlink Polarization Advantage (dB)	0	0	0	0
<b>CARRIER INFORMATION</b>				
Carrier ID	36M0F3F	36M0G7W	10M3G7W	100KG7W
Carrier Modulation	TV/FM	QPSK	QPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	N/A	N/A	N/A
Information Rate(kbps)	N/A	24575	6000	64
Code Rate	N/A	1/2x188/204	1/2x188/204	1/2x239/256
Occupied Bandwidth(kHz)	36000	30133	6771.1	75.4
Allocated Bandwidth(kHz)	36000	36000	10300	100
Minimum C/N, Clear Sky (dB)	10	3.36	3.87	2.99
Minimum C/N, Rain (dB)	10	3.36	3.57	2.79
<b>UPLINK EARTH STATION</b>				
Earth Station Diameter (meters)	8.1	4.5	2.4	2.4
Earth Station Gain (dBi)	52.8	46.5	41.9	41.9
Earth Station Elevation Angle	20	20	20	20
<b>DOWNLINK EARTH STATION</b>				
Earth Station Diameter (meters)	18.3	4.5	9.2	13.1
Earth Station Gain (dBi)	56.0	43.9	50.3	53.5
Earth Station G/T (dB/K)	35.5	23.6	29.4	33.0
Earth Station Elevation Angle	20	20	20	20
<b>LINK FADE TYPE</b>				
	Clear Sky	Clear Sky	Clear Sky	Clear Sky
<b>UPLINK PERFORMANCE</b>				
Uplink Earth Station EIRP (dBW)	75.6	70.6	61.3	40.5
Uplink Path Loss, Clear Sky (dB)	-200.2	-200.2	-200.2	-200.2
Uplink Rain Attenuation	0.0	0.0	0.0	0.0
Satellite G/T(dB/K)	-1.0	-1.0	-1.0	-1.0
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-75.6	-74.8	-68.3	-48.8
Uplink C/N(dB)	27.4	23.2	20.4	19.2
<b>DOWNLINK PERFORMANCE</b>				
Downlink EIRP per Carrier (dBW)	31.5	31.5	23.2	2.4
Antenna Pointing Error (dB)	-0.5	-0.5	-0.5	-0.5
Downlink Path Loss, Clear Sky (dB)	-196.3	-196.3	-196.3	-196.3
Downlink Rain Attenuation	0.0	0.0	0.0	0.0
Earth Station G/T (dB/K)	35.5	23.6	29.4	33.0
Boltzman Constant(dBW / K - Hz)	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-75.6	-74.8	-68.3	-48.8
Downlink C / N(dB)	23.2	12.1	16.1	18.4
<b>COMPOSITE LINK PERFORMANCE</b>				
C/N Uplink (dB)	27.4	23.2	20.4	19.2
C/N Downlink (dB)	23.2	12.1	16.1	18.4
C/I Intermodulation (dB)	N/A	N/A	18.1	16.8
C/I Uplink Co-Channel (dB)*	27.0	27.0	27.7	27.0
C/I Downlink Co-Channel (dB)*	27.0	27.0	27.7	27.0
C/I Uplink Adjacent Satellite 1 (dB)	16.7	12.5	9.7	8.5
C/I Downlink Adjacent Satellite 1 (dB)	22.1	9.8	15.1	17.2
C/I Uplink Adjacent Satellite 2 (dB)	16.7	12.5	9.7	8.5
C/I Downlink Adjacent Satellite 2 (dB)	22.7	12.3	16.3	18.0
C/(N+I) Composite (dB)	11.9	4.6	4.9	4.3
Required System Margin (dB)	-1.0	-1.0	-1.0	-1.0
Net C/(N+I) Composite (dB)	10.9	3.6	3.9	3.3
Minimum Required C/N (dB)	-10.0	-3.4	-3.9	-3.0
Excess Link Margin (dB)	0.9	0.2	0.0	0.3
Number of Carriers	1	1	3	360
<b>CARRIER DENSITY LEVELS</b>				
Uplink Power Density (dBW/Hz)	-52.8	-50.7	-48.9	-50.1
Downlink EIRP Density At Beam Peak (dBW/Hz)	-38.1	-37.3	-39.1	-40.4

## C-Band Hemi Uplink/Hemi Downlink

<b>UPLINK BEAM INFORMATION</b>					
Uplink Beam Name	HEMI	HEMI	HEMI	HEMI	HEMI
Uplink Frequency (GHz)	6.175	6.175	6.175	6.175	6.175
Uplink Beam Polarization	CIRCULAR	CIRCULAR	CIRCULAR	CIRCULAR	CIRCULAR
Uplink Relative Contour Level (dB)	-6	-6	-6	-6	-6
Uplink Contour G/T (dB/K)	-7.5	-7.5	-7.5	-7.5	-7.5
Uplink SFD (dBW/m2)	-86.0	-88.0	-81.0	-81.0	-89.0
Rain Rate (mm/hr)	42	42	42	42	42
<b>DOWNLINK BEAM INFORMATION</b>					
Downlink Beam Name	HEMI	HEMI	HEMI	HEMI	HEMI
Downlink Frequency (GHz)	3.95	3.95	3.95	3.95	3.95
Downlink Beam Polarization	CIRCULAR	CIRCULAR	CIRCULAR	CIRCULAR	CIRCULAR
Downlink Relative Contour Level (dB)	-6	-6	-6	-6	-6
Downlink Contour EIRP (dBW)	31.5	31.5	31.5	31.5	31.5
Rain Rate (mm/hr)	42	42	42	42	43
<b>ADJACENT SATELLITE 1</b>					
Satellite 1 Orbital Location	30.9E	30.9E	30.9E	30.9E	30.9E
Uplink Power Density (dBW/Hz)	-38.7	-38.7	-38.7	-38.7	-38.7
Uplink Polarization Advantage (dB)	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-38.0	-38.0	-38.0	-38.0	-38.0
Downlink Polarization Advantage (dB)	0	0	0	0	0
<b>ADJACENT SATELLITE 2</b>					
Satellite 1 Orbital Location	34.9E	34.9E	34.9E	34.9E	34.9E
Uplink Power Density (dBW/Hz)	-38.7	-38.7	-38.7	-38.7	-38.7
Uplink Polarization Advantage (dB)	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-38.0	-38.0	-38.0	-38.0	-38.0
Downlink Polarization Advantage (dB)	0	0	0	0	0
<b>CARRIER INFORMATION</b>					
Carrier ID	36M0F3F	36M0G7W	10M3G7W	100KG7W	77M0G7W
Carrier Modulation	TV/FM	QPSK	QPSK	QPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	N/A	N/A	N/A	N/A
Information Rate(kbps)	N/A	24575	6000	64	52563
Code Rate	N/A	1/2x188/204	1/2x188/204	1/2x239/256	1/2x188/204
Occupied Bandwidth(kHz)	36000	30133	6771.1	75.4	64451
Allocated Bandwidth(kHz)	36000	36000	10300	100	77000
Minimum C/N, Clear Sky (dB)	10	3.36	3.87	2.99	3.36
Minimum C/N, Rain (dB)	10	3.36	3.57	2.79	3.36
<b>UPLINK EARTH STATION</b>					
Earth Station Diameter (meters)	9.0	4.5	2.4	2.4	7.0
Earth Station Gain (dBi)	53.4	46.5	41.9	41.9	51.0
Earth Station Elevation Angle	20	20	20	20	20
<b>DOWNLINK EARTH STATION</b>					
Earth Station Diameter (meters)	13.1	7.0	13.1	13.1	6.1
Earth Station Gain (dBi)	53.5	47.5	53.5	53.5	46.5
Earth Station G/T (dB/K)	33.0	26.6	33.0	33.0	26.2
Earth Station Elevation Angle	20	20	20	20	20
<b>LINK FADE TYPE</b>					
	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky
<b>UPLINK PERFORMANCE</b>					
Uplink Earth Station EIRP (dBW)	76.9	69.9	63.4	43.0	73.9
Uplink Path Loss, Clear Sky (dB)	-200.2	-200.2	-200.2	-200.2	-200.2
Uplink Rain Attenuation	0.0	0.0	0.0	0.0	0.0
Satellite G/T(dB/K)	-7.5	-7.5	-7.5	-7.5	-7.5
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-75.6	-74.8	-68.3	-48.8	-78.1
Uplink C/N(dB)	22.2	16.0	16.0	15.1	16.7
<b>DOWNLINK PERFORMANCE</b>					
Downlink EIRP per Carrier (dBW)	31.5	28.7	18.0	-2.4	31.5
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
Downlink Rain Attenuation	0.0	0.0	0.0	0.0	0.0
Earth Station G/T (dB/K)	33.0	26.6	33.0	33.0	26.2
Boltzman Constant(dBW / K - Hz)	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-75.6	-74.8	-68.3	-48.8	-78.1
Downlink C / N(dB)	20.7	12.3	14.5	13.6	11.4
<b>COMPOSITE LINK PERFORMANCE</b>					
C/N Uplink (dB)	22.2	16.0	16.0	15.1	16.7
C/N Downlink (dB)	20.7	12.3	14.5	13.6	11.4
C/I Intermodulation (dB)	N/A	N/A	21.8	20.9	N/A
C/I Uplink Co-Channel (dB)*	30.3	30.3	27.3	27.0	27.0
C/I Downlink Co-Channel (dB)*	30.3	30.3	27.3	27.0	27.0
C/I Uplink Adjacent Satellite 1 (dB)	16.0	9.8	9.8	9.0	10.5
C/I Downlink Adjacent Satellite 1 (dB)	25.5	17.1	19.3	18.4	15.4
C/I Uplink Adjacent Satellite 2 (dB)	16.0	9.8	9.8	9.0	10.5
C/I Downlink Adjacent Satellite 2 (dB)	26.3	18.7	20.1	19.2	17.3
C/(N+I) Composite (dB)	11.5	4.8	5.2	4.4	4.9
Required System Margin (dB)	-1.0	-1.0	-1.0	-1.0	-1.0
Net C/(N+I) Composite (dB)	10.5	3.8	4.2	3.4	3.9
Minimum Required C/N (dB)	-10.0	-3.4	-3.9	-3.0	-3.4
Excess Link Margin (dB)	0.5	0.4	0.3	0.4	0.5
Number of Carriers	1	1	7	770	1
<b>CARRIER DENSITY LEVELS</b>					
Uplink Power Density (dBW/Hz)	-52.1	-51.4	-46.8	-47.6	-55.2
Downlink EIRP Density At Beam Peak (dBW/Hz)	-38.1	-40.1	-44.3	-45.2	-40.6

## C-Band Hemi Uplink/Zone Downlink

<b>UPLINK BEAM INFORMATION</b>					
Uplink Beam Name	HEMI	HEMI	HEMI	HEMI	HEMI
Uplink Frequency (GHz)	6.175	6.175	6.175	6.175	6.175
Uplink Beam Polarization	CIRCULAR	CIRCULAR	CIRCULAR	CIRCULAR	CIRCULAR
Uplink Relative Contour Level (dB)	-6	-6	-6	-6	-6
Uplink Contour G/T (dB/K)	-7.5	-7.5	-7.5	-7.5	-7.5
Uplink SFD (dBW/m2)	-73.0	-83.0	-81.0	-81.0	-89.0
Rain Rate (mm/hr)	42	42	42	42	42
<b>DOWNLINK BEAM INFORMATION</b>					
Downlink Beam Name	ZONE	ZONE	ZONE	ZONE	ZONE
Downlink Frequency (GHz)	3.95	3.95	3.95	3.95	3.95
Downlink Beam Polarization	CIRCULAR	CIRCULAR	CIRCULAR	CIRCULAR	CIRCULAR
Downlink Relative Contour Level (dB)	-6	-6	-6	-6	-6
Downlink Contour EIRP (dBW)	30.9	30.9	30.9	30.9	30.9
Rain Rate (mm/hr)	42	42	42	42	43
<b>ADJACENT SATELLITE 1</b>					
Satellite 1 Orbital Location	30.9E	30.9E	30.9E	30.9E	30.9E
Uplink Power Density (dBW/Hz)	-38.7	-38.7	-38.7	-38.7	-38.7
Uplink Polarization Advantage (dB)	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-38.0	-38.0	-38.0	-38.0	-38.0
Downlink Polarization Advantage (dB)	0	0	0	0	0
<b>ADJACENT SATELLITE 2</b>					
Satellite 1 Orbital Location	34.9E	34.9E	34.9E	34.9E	34.9E
Uplink Power Density (dBW/Hz)	-38.7	-38.7	-38.7	-38.7	-38.7
Uplink Polarization Advantage (dB)	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-38.0	-38.0	-38.0	-38.0	-38.0
Downlink Polarization Advantage (dB)	0	0	0	0	0
<b>CARRIER INFORMATION</b>					
Carrier ID	36M0F3F	36M0G7W	10M3G7W	100KG7W	77M0G7W
Carrier Modulation	TV/FM	QPSK	QPSK	QPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	N/A	N/A	N/A	N/A
Information Rate(kbps)	N/A	24575	6000	64	52563
Code Rate	N/A	1/2x188/204	1/2x188/204	1/2x239/256	1/2x188/204
Occupied Bandwidth(kHz)	36000	30133	6771.1	75.4	64451
Allocated Bandwidth(kHz)	36000	36000	10300	100	77000
Minimum C/N, Clear Sky (dB)	10	3.36	3.87	2.99	3.36
Minimum C/N, Rain (dB)	10	3.36	3.57	2.79	3.36
<b>UPLINK EARTH STATION</b>					
Earth Station Diameter (meters)	11.0	4.5	2.4	2.4	7.0
Earth Station Gain (dBi)	55.4	46.5	41.9	41.9	51.0
Earth Station Elevation Angle	20	20	20	20	20
<b>DOWNLINK EARTH STATION</b>					
Earth Station Diameter (meters)	18.3	13.1	13.1	13.1	6.1
Earth Station Gain (dBi)	56.0	53.5	53.5	53.5	46.5
Earth Station G/T (dB/K)	35.5	33.0	33.0	33.0	26.2
Earth Station Elevation Angle	20	20	20	20	20
<b>LINK FADE TYPE</b>					
	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky
<b>UPLINK PERFORMANCE</b>					
Uplink Earth Station EIRP (dBW)	79.4	69.4	63.4	43.0	73.9
Uplink Path Loss, Clear Sky (dB)	-200.2	-200.2	-200.2	-200.2	-200.2
Uplink Rain Attenuation	0.0	0.0	0.0	0.0	0.0
Satellite G/T(dB/K)	-7.5	-7.5	-7.5	-7.5	-7.5
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-75.6	-74.8	-68.3	-48.8	-78.1
Uplink C/N(dB)	24.7	15.5	16.0	15.1	16.7
<b>DOWNLINK PERFORMANCE</b>					
Downlink EIRP per Carrier (dBW)	25.3	25.3	17.4	-3.0	30.9
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
Downlink Rain Attenuation	0.0	0.0	0.0	0.0	0.0
Earth Station G/T (dB/K)	35.5	33.0	33.0	33.0	26.2
Boltzman Constant(dBW / K - Hz)	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-75.6	-74.8	-68.3	-48.8	-78.1
Downlink C / N(dB)	17.0	15.3	13.9	13.0	10.8
<b>COMPOSITE LINK PERFORMANCE</b>					
C/N Uplink (dB)	24.7	15.5	16.0	15.1	16.7
C/N Downlink (dB)	17.0	15.3	13.9	13.0	10.8
C/I Intermodulation (dB)	N/A	N/A	21.8	20.9	N/A
C/I Uplink Co-Channel (dB)*	27.3	27.3	27.3	27.0	27.0
C/I Downlink Co-Channel (dB)*	27.3	27.3	27.3	27.0	27.0
C/I Uplink Adjacent Satellite 1 (dB)	18.5	9.3	9.8	9.0	10.5
C/I Downlink Adjacent Satellite 1 (dB)	21.9	20.1	18.7	17.8	14.8
C/I Uplink Adjacent Satellite 2 (dB)	18.5	9.3	9.8	9.0	10.5
C/I Downlink Adjacent Satellite 2 (dB)	22.6	20.9	19.5	18.6	16.7
C/(N+I) Composite (dB)	11.7	5.0	5.1	4.2	4.7
Required System Margin (dB)	-1.0	-1.0	-1.0	-1.0	-1.0
Net C/(N+I) Composite (dB)	10.7	4.0	4.1	3.2	3.7
Minimum Required C/N (dB)	-10.0	-3.4	-3.9	-3.0	-3.4
Excess Link Margin (dB)	0.7	0.6	0.2	0.2	0.3
Number of Carriers	2	2	7	770	1
<b>CARRIER DENSITY LEVELS</b>					
Uplink Power Density (dBW/Hz)	-51.6	-51.9	-46.8	-47.6	-55.2
Downlink EIRP Density At Beam Peak (dBW/Hz)	-44.3	-43.5	-44.9	-45.8	-41.2



## C-Band Hemi Uplink/Global Downlink

<b>UPLINK BEAM INFORMATION</b>				
Uplink Beam Name	HEMI	HEMI	HEMI	HEMI
Uplink Frequency (GHz)	6.175	6.175	6.175	6.175
Uplink Beam Polarization	CIRCULAR	CIRCULAR	CIRCULAR	CIRCULAR
Uplink Relative Contour Level (dB)	-6	-6	-6	-6
Uplink Contour G/T (dB/K)	-7.5	-7.5	-7.5	-7.5
Uplink SFD (dBW/m2)	-83.0	-89.0	-84.0	-84.0
Rain Rate (mm/hr)	42	42	42	42
<b>DOWNLINK BEAM INFORMATION</b>				
Downlink Beam Name	GLOBAL	GLOBAL	GLOBAL	GLOBAL
Downlink Frequency (GHz)	3.95	3.95	3.95	3.95
Downlink Beam Polarization	CIRCULAR	CIRCULAR	CIRCULAR	CIRCULAR
Downlink Relative Contour Level (dB)	-4	-4	-4	-4
Downlink Contour EIRP (dBW)	27.6	27.6	27.6	27.6
Rain Rate (mm/hr)	42	42	42	42
<b>ADJACENT SATELLITE 1</b>				
Satellite 1 Orbital Location	30.9E	30.9E	30.9E	30.9E
Uplink Power Density (dBW/Hz)	-38.7	-38.7	-38.7	-38.7
Uplink Polarization Advantage (dB)	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-32.0	-32.0	-32.0	-32.0
Downlink Polarization Advantage (dB)	0	0	0	0
<b>ADJACENT SATELLITE 2</b>				
Satellite 1 Orbital Location	34.9E	34.9E	34.9E	34.9E
Uplink Power Density (dBW/Hz)	-38.7	-38.7	-38.7	-38.7
Uplink Polarization Advantage (dB)	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-32.0	-32.0	-32.0	-32.0
Downlink Polarization Advantage (dB)	0	0	0	0
<b>CARRIER INFORMATION</b>				
Carrier ID	36M0F3F	36M0G7W	10M3G7W	100KG7W
Carrier Modulation	TV/FM	QPSK	QPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	N/A	N/A	N/A
Information Rate(kbps)	N/A	24575	6000	64
Code Rate	N/A	1/2x188/204	1/2x188/204	1/2x239/256
Occupied Bandwidth(kHz)	36000	30133	6771.1	75.4
Allocated Bandwidth(kHz)	36000	36000	10300	100
Minimum C/N, Clear Sky (dB)	10	3.36	3.87	2.99
Minimum C/N, Rain (dB)	10	3.36	3.57	2.79
<b>UPLINK EARTH STATION</b>				
Earth Station Diameter (meters)	13.0	7.0	2.4	2.4
Earth Station Gain (dBi)	56.4	51.0	41.9	41.9
Earth Station Elevation Angle	20	20	20	20
<b>DOWNLINK EARTH STATION</b>				
Earth Station Diameter (meters)	18.3	7.0	13.1	13.1
Earth Station Gain (dBi)	56.0	47.5	53.5	53.5
Earth Station G/T (dB/K)	35.5	26.6	33.0	33.0
Earth Station Elevation Angle	20	20	20	20
<b>LINK FADE TYPE</b>				
	Clear Sky	Clear Sky	Clear Sky	Clear Sky
<b>UPLINK PERFORMANCE</b>				
Uplink Earth Station EIRP (dBW)	79.9	73.9	65.1	44.3
Uplink Path Loss, Clear Sky (dB)	-200.2	-200.2	-200.2	-200.2
Uplink Rain Attenuation	0.0	0.0	0.0	0.0
Satellite G/T(dB/K)	-7.5	-7.5	-7.5	-7.5
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-75.6	-74.8	-68.3	-48.8
Uplink C/N(dB)	25.2	20.0	17.7	16.5
<b>DOWNLINK PERFORMANCE</b>				
Downlink EIRP per Carrier (dBW)	27.6	27.6	18.8	-2.0
Antenna Pointing Error (dB)	-0.5	-0.5	-0.5	-0.5
Downlink Path Loss, Clear Sky (dB)	-196.3	-196.3	-196.3	-196.3
Downlink Rain Attenuation	0.0	0.0	0.0	0.0
Earth Station G/T (dB/K)	35.5	26.6	33.0	33.0
Boltzman Constant(dBW / K - Hz)	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-75.6	-74.8	-68.3	-48.8
Downlink C / N(dB)	19.3	11.2	15.3	14.0
<b>COMPOSITE LINK PERFORMANCE</b>				
C/N Uplink (dB)	25.2	20.0	17.7	16.5
C/N Downlink (dB)	19.3	11.2	15.3	14.0
C/I Intermodulation (dB)	N/A	N/A	19.6	18.3
C/I Uplink Co-Channel (dB)*	27.0	27.0	27.7	27.0
C/I Downlink Co-Channel (dB)*	27.0	27.0	27.7	27.0
C/I Uplink Adjacent Satellite 1 (dB)	19.0	13.8	11.5	10.3
C/I Downlink Adjacent Satellite 1 (dB)	18.2	10.0	14.0	12.8
C/I Uplink Adjacent Satellite 2 (dB)	19.0	13.8	11.5	10.3
C/I Downlink Adjacent Satellite 2 (dB)	18.8	11.6	14.9	13.6
C/(N+I) Composite (dB)	11.4	4.7	5.6	4.4
Required System Margin (dB)	-1.0	-1.0	-1.0	-1.0
Net C/(N+I) Composite (dB)	10.4	3.7	4.6	3.4
Minimum Required C/N (dB)	-10.0	-3.4	-3.9	-3.0
Excess Link Margin (dB)	0.4	0.3	0.7	0.4
Number of Carriers	1	1	3	360
<b>CARRIER DENSITY LEVELS</b>				
Uplink Power Density (dBW/Hz)	-52.1	-51.9	-45.1	-46.3
Downlink EIRP Density At Beam Peak (dBW/Hz)	-44.0	-43.2	-45.5	-46.8

## C-Band Hemi Uplink/C-Band Spot Downlink

<b>UPLINK BEAM INFORMATION</b>				
Uplink Beam Name	HEMI	HEMI	HEMI	HEMI
Uplink Frequency (GHz)	6.175	6.175	6.175	6.175
Uplink Beam Polarization	CIRCULAR	CIRCULAR	CIRCULAR	CIRCULAR
Uplink Relative Contour Level (dB)	-6	-6	-6	-6
Uplink Contour G/T (dB/K)	-7.5	-7.5	-7.5	-7.5
Uplink SFD (dBW/m2)	-85.0	-89.0	-84.0	-84.0
Rain Rate (mm/hr)	42	42	42	42
<b>DOWNLINK BEAM INFORMATION</b>				
Downlink Beam Name	CSPOT	CSPOT	CSPOT	CSPOT
Downlink Frequency (GHz)	3.95	3.95	3.95	3.95
Downlink Beam Polarization	CIRCULAR	CIRCULAR	CIRCULAR	CIRCULAR
Downlink Relative Contour Level (dB)	-4	-4	-4	-4
Downlink Contour EIRP (dBW)	34.6	34.6	34.6	34.6
Rain Rate (mm/hr)	42	42	42	42
<b>ADJACENT SATELLITE 1</b>				
Satellite 1 Orbital Location	30.9E	30.9E	30.9E	30.9E
Uplink Power Density (dBW/Hz)	-38.7	-38.7	-38.7	-38.7
Uplink Polarization Advantage (dB)	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-32.0	-32.0	-32.0	-32.0
Downlink Polarization Advantage (dB)	0	0	0	0
<b>ADJACENT SATELLITE 2</b>				
Satellite 1 Orbital Location	34.9E	34.9E	34.9E	34.9E
Uplink Power Density (dBW/Hz)	-38.7	-38.7	-38.7	-38.7
Uplink Polarization Advantage (dB)	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-32.0	-32.0	-32.0	-32.0
Downlink Polarization Advantage (dB)	0	0	0	0
<b>CARRIER INFORMATION</b>				
Carrier ID	36M0F3F	36M0G7W	10M3G7W	100KG7W
Carrier Modulation	TV/FM	QPSK	QPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	N/A	N/A	N/A
Information Rate(kbps)	N/A	24575	6000	64
Code Rate	N/A	1/2x188/204	1/2x188/204	1/2x239/256
Occupied Bandwidth(kHz)	36000	30133	6771.1	75.4
Allocated Bandwidth(kHz)	36000	36000	10300	100
Minimum C/N, Clear Sky (dB)	10	3.36	3.87	2.99
Minimum C/N, Rain (dB)	10	3.36	3.57	2.79
<b>UPLINK EARTH STATION</b>				
Earth Station Diameter (meters)	10.0	7.0	2.4	2.4
Earth Station Gain (dBi)	54.1	51	41.9	41.9
Earth Station Elevation Angle	20	20	20	20
<b>DOWNLINK EARTH STATION</b>				
Earth Station Diameter (meters)	11.0	3.7	6.1	6.1
Earth Station Gain (dBi)	51.9	41.2	46.5	46.5
Earth Station G/T (dB/K)	31.0	20.9	26.2	26.2
Earth Station Elevation Angle	20	20	20	20
<b>LINK FADE TYPE</b>				
	Clear Sky	Clear Sky	Clear Sky	Clear Sky
<b>UPLINK PERFORMANCE</b>				
Uplink Earth Station EIRP (dBW)	77.9	73.9	65.6	44.8
Uplink Path Loss, Clear Sky (dB)	-200.2	-200.2	-200.2	-200.2
Uplink Rain Attenuation	0.0	0.0	0.0	0.0
Satellite G/T(dB/K)	-7.5	-7.5	-7.5	-7.5
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-75.6	-74.8	-68.3	-48.8
Uplink C/N(dB)	23.2	20.0	18.2	17.0
<b>DOWNLINK PERFORMANCE</b>				
Downlink EIRP per Carrier (dBW)	34.6	34.6	26.3	5.5
Antenna Pointing Error (dB)	-0.5	-0.5	-0.5	-0.5
Downlink Path Loss, Clear Sky (dB)	-196.3	-196.3	-196.3	-196.3
Downlink Rain Attenuation	0.0	0.0	0.0	0.0
Earth Station G/T (dB/K)	31.0	20.9	26.2	26.2
Boltzman Constant(dBW / K - Hz)	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-75.6	-74.8	-68.3	-48.8
Downlink C / N(dB)	21.8	12.5	16.0	14.7
<b>COMPOSITE LINK PERFORMANCE</b>				
C/N Uplink (dB)	23.2	20.0	18.2	17.0
C/N Downlink (dB)	21.8	12.5	16.0	14.7
C/I Intermodulation (dB)	N/A	N/A	18.1	16.8
C/I Uplink Co-Channel (dB)*	27.0	27.0	27.7	27.0
C/I Downlink Co-Channel (dB)*	27.0	27.0	27.7	27.0
C/I Uplink Adjacent Satellite 1 (dB)	17.0	13.8	12.0	10.8
C/I Downlink Adjacent Satellite 1 (dB)	20.9	9.9	14.0	12.8
C/I Uplink Adjacent Satellite 2 (dB)	17.0	13.8	12.0	10.8
C/I Downlink Adjacent Satellite 2 (dB)	21.9	12.9	15.9	14.6
C/(N+I) Composite (dB)	11.6	5.1	6.0	4.8
Required System Margin (dB)	-1.0	-1.0	-1.0	-1.0
Net C/(N+I) Composite (dB)	10.6	4.1	5.0	3.8
Minimum Required C/N (dB)	-10.0	-3.4	-3.9	-3.0
Excess Link Margin (dB)	0.6	0.7	1.1	0.8
Number of Carriers	1	1	3	360
<b>CARRIER DENSITY LEVELS</b>				
Uplink Power Density (dBW/Hz)	-51.8	-51.9	-44.6	-45.8
Downlink EIRP Density At Beam Peak (dBW/Hz)	-37.0	-36.2	-38.0	-39.3

## C-Band Zone Uplink/Zone Downlink

<b>UPLINK BEAM INFORMATION</b>					
Uplink Beam Name	ZONE	ZONE	ZONE	ZONE	ZONE
Uplink Frequency (GHz)	6.175	6.175	6.175	6.175	6.175
Uplink Beam Polarization	CIRCULAR	CIRCULAR	CIRCULAR	CIRCULAR	CIRCULAR
Uplink Relative Contour Level (dB)	-6	-6	-6	-6	-6
Uplink Contour G/T (dB/K)	-5.6	-5.6	-5.6	-5.6	-5.6
Uplink SFD (dBW/m2)	-73.9	-80.9	-80.9	-80.9	-86.9
Rain Rate (mm/hr)	42	42	42	42	42
<b>DOWNLINK BEAM INFORMATION</b>					
Downlink Beam Name	ZONE	ZONE	ZONE	ZONE	ZONE
Downlink Frequency (GHz)	3.95	3.95	3.95	3.95	3.95
Downlink Beam Polarization	CIRCULAR	CIRCULAR	CIRCULAR	CIRCULAR	CIRCULAR
Downlink Relative Contour Level (dB)	-6	-6	-6	-6	-6
Downlink Contour EIRP (dBW)	30.9	30.9	30.9	30.9	30.9
Rain Rate (mm/hr)	42	42	42	42	42
<b>ADJACENT SATELLITE 1</b>					
Satellite 1 Orbital Location	30.9E	30.9E	30.9E	30.9E	30.9E
Uplink Power Density (dBW/Hz)	-38.7	-38.7	-38.7	-38.7	-38.7
Uplink Polarization Advantage (dB)	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-38.0	-38.0	-38.0	-38.0	-38.0
Downlink Polarization Advantage (dB)	0	0	0	0	0
<b>ADJACENT SATELLITE 2</b>					
Satellite 1 Orbital Location	34.9E	34.9E	34.9E	34.9E	34.9E
Uplink Power Density (dBW/Hz)	-38.7	-38.7	-38.7	-38.7	-38.7
Uplink Polarization Advantage (dB)	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-38.0	-38.0	-38.0	-38.0	-38.0
Downlink Polarization Advantage (dB)	0	0	0	0	0
<b>CARRIER INFORMATION</b>					
Carrier ID	36M0F3F	36M0G7W	10M3G7W	100KG7W	77M0G7W
Carrier Modulation	TV/FM	QPSK	QPSK	QPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	N/A	N/A	N/A	N/A
Information Rate(kbps)	N/A	24575	6000	64	52563
Code Rate	N/A	1/2x188/204	1/2x188/204	1/2x239/256	1/2x188/204
Occupied Bandwidth(kHz)	36000	30133	6771.1	75.4	64451
Allocated Bandwidth(kHz)	36000	36000	10300	100	77000
Minimum C/N, Clear Sky (dB)	10	3.36	3.87	2.99	3.36
Minimum C/N, Rain (dB)	10	3.36	3.57	2.79	3.36
<b>UPLINK EARTH STATION</b>					
Earth Station Diameter (meters)	11.0	4.5	2.4	2.4	15.2
Earth Station Gain (dBi)	55.4	46.5	41.9	41.9	58.4
Earth Station Elevation Angle	20	20	20	20	20
<b>DOWNLINK EARTH STATION</b>					
Earth Station Diameter (meters)	18.3	13.1	15.2	15.2	6.1
Earth Station Gain (dBi)	56.0	53.5	55.0	55.0	46.5
Earth Station G/T (dB/K)	35.5	33.0	34.5	34.5	26.2
Earth Station Elevation Angle	20	20	20	20	20
<b>LINK FADE TYPE</b>					
LINK FADE TYPE	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky
<b>UPLINK PERFORMANCE</b>					
Uplink Earth Station EIRP (dBW)	78.5	69.5	63.5	43.1	76.0
Uplink Path Loss, Clear Sky (dB)	-200.2	-200.2	-200.2	-200.2	-200.2
Uplink Rain Attenuation	0.0	0.0	0.0	0.0	0.0
Satellite G/T(dB/K)	-5.6	-5.6	-5.6	-5.6	-5.6
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-75.6	-74.8	-68.3	-48.8	-78.1
Uplink C/N(dB)	25.7	17.5	18.0	17.1	20.7
<b>DOWNLINK PERFORMANCE</b>					
Downlink EIRP per Carrier (dBW)	25.3	25.3	17.4	-3.0	30.9
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
Downlink Rain Attenuation	0.0	0.0	0.0	0.0	0.0
Earth Station G/T (dB/K)	35.5	33.0	34.5	34.5	26.2
Boltzman Constant(dBW / K - Hz)	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-75.6	-74.8	-68.3	-48.8	-78.1
Downlink C / N(dB)	17.0	15.3	15.4	14.5	10.8
<b>COMPOSITE LINK PERFORMANCE</b>					
C/N Uplink (dB)	25.7	17.5	18.0	17.1	20.7
C/N Downlink (dB)	17.0	15.3	15.4	14.5	10.8
C/I Intermodulation (dB)	N/A	N/A	21.8	20.9	N/A
C/I Uplink Co-Channel (dB)*	27.3	27.3	27.3	27.0	27.0
C/I Downlink Co-Channel (dB)*	27.3	27.3	27.3	27.0	27.0
C/I Uplink Adjacent Satellite 1 (dB)	17.6	9.4	9.9	9.1	12.6
C/I Downlink Adjacent Satellite 1 (dB)	21.9	20.1	20.2	19.4	14.8
C/I Uplink Adjacent Satellite 2 (dB)	17.6	9.4	9.9	9.1	12.6
C/I Downlink Adjacent Satellite 2 (dB)	22.6	20.9	21.0	20.1	16.7
C/(N+I) Composite (dB)	11.4	5.2	5.6	4.7	5.9
Required System Margin (dB)	-1.0	-1.0	-1.0	-1.0	-1.0
Net C/(N+I) Composite (dB)	10.4	4.2	4.6	3.7	4.9
Minimum Required C/N (dB)	-10.0	-3.4	-3.9	-3.0	-3.4
Excess Link Margin (dB)	0.4	0.8	0.7	0.7	1.5
Number of Carriers	2	2	7	770	1
<b>CARRIER DENSITY LEVELS</b>					
Uplink Power Density (dBW/Hz)	-52.5	-51.8	-46.7	-47.5	-60.5
Downlink EIRP Density At Beam Peak (dBW/Hz)	-44.3	-43.5	-44.9	-45.8	-41.2

## C-Band Zone Uplink/Hemi Downlink

<b>UPLINK BEAM INFORMATION</b>					
Uplink Beam Name	ZONE	ZONE	ZONE	ZONE	ZONE
Uplink Frequency (GHz)	6.175	6.175	6.175	6.175	6.175
Uplink Beam Polarization	CIRCULAR	CIRCULAR	CIRCULAR	CIRCULAR	CIRCULAR
Uplink Relative Contour Level (dB)	-6	-6	-6	-6	-6
Uplink Contour G/T (dB/K)	-5.6	-5.6	-5.6	-5.6	-5.6
Uplink SFD (dBW/m2)	-73.9	-82.9	-80.9	-80.9	-86.9
Rain Rate (mm/hr)	42	42	42	42	42
<b>DOWNLINK BEAM INFORMATION</b>					
Downlink Beam Name	HEMI	HEMI	HEMI	HEMI	HEMI
Downlink Frequency (GHz)	3.95	3.95	3.95	3.95	3.95
Downlink Beam Polarization	CIRCULAR	CIRCULAR	CIRCULAR	CIRCULAR	CIRCULAR
Downlink Relative Contour Level (dB)	-6	-6	-6	-6	-6
Downlink Contour EIRP (dBW)	31.5	31.5	31.5	31.5	31.5
Rain Rate (mm/hr)	42	42	42	42	42
<b>ADJACENT SATELLITE 1</b>					
Satellite 1 Orbital Location	30.9E	30.9E	30.9E	30.9E	30.9E
Uplink Power Density (dBW/Hz)	-38.7	-38.7	-38.7	-38.7	-38.7
Uplink Polarization Advantage (dB)	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-38.0	-38.0	-38.0	-38.0	-38.0
Downlink Polarization Advantage (dB)	0	0	0	0	0
<b>ADJACENT SATELLITE 2</b>					
Satellite 1 Orbital Location	34.9E	34.9E	34.9E	34.9E	34.9E
Uplink Power Density (dBW/Hz)	-38.7	-38.7	-38.7	-38.7	-38.7
Uplink Polarization Advantage (dB)	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-38.0	-38.0	-38.0	-38.0	-38.0
Downlink Polarization Advantage (dB)	0	0	0	0	0
<b>CARRIER INFORMATION</b>					
Carrier ID	36M0F3F	36M0G7W	10M3G7W	100KG7W	77M0G7W
Carrier Modulation	TV/FM	QPSK	QPSK	QPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	N/A	N/A	N/A	N/A
Information Rate(kbps)	N/A	24575	6000	64	52563
Code Rate	N/A	1/2x188/204	1/2x188/204	1/2x239/256	1/2x188/204
Occupied Bandwidth(kHz)	36000	30133	6771.1	75.4	64451
Allocated Bandwidth(kHz)	36000	36000	10300	100	77000
Minimum C/N, Clear Sky (dB)	10	3.36	3.87	2.99	3.36
Minimum C/N, Rain (dB)	10	3.36	3.57	2.79	3.36
<b>UPLINK EARTH STATION</b>					
Earth Station Diameter (meters)	10.0	4.5	2.4	2.4	8.1
Earth Station Gain (dBi)	54.1	46.5	41.9	41.9	52.8
Earth Station Elevation Angle	20	20	20	20	20
<b>DOWNLINK EARTH STATION</b>					
Earth Station Diameter (meters)	18.3	11.0	11.0	13.1	4.5
Earth Station Gain (dBi)	56.0	51.9	51.9	53.5	43.9
Earth Station G/T (dB/K)	35.5	31.0	31.0	33.0	23.6
Earth Station Elevation Angle	20	20	20	20	20
<b>LINK FADE TYPE</b>					
	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky
<b>UPLINK PERFORMANCE</b>					
Uplink Earth Station EIRP (dBW)	78.5	69.5	63.5	43.1	76.0
Uplink Path Loss, Clear Sky (dB)	-200.2	-200.2	-200.2	-200.2	-200.2
Uplink Rain Attenuation	0.0	0.0	0.0	0.0	0.0
Satellite G/T(dB/K)	-5.6	-5.6	-5.6	-5.6	-5.6
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-75.6	-74.8	-68.3	-48.8	-78.1
Uplink C/N(dB)	25.7	17.5	18.0	17.1	20.7
<b>DOWNLINK PERFORMANCE</b>					
Downlink EIRP per Carrier (dBW)	25.9	25.9	18.0	-2.4	31.5
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
Downlink Rain Attenuation	0.0	0.0	0.0	0.0	0.0
Earth Station G/T (dB/K)	35.5	31.0	31.0	33.0	23.6
Boltzman Constant(dBW / K - Hz)	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-75.6	-74.8	-68.3	-48.8	-78.1
Downlink C / N(dB)	17.6	13.9	12.5	13.6	8.8
<b>COMPOSITE LINK PERFORMANCE</b>					
C/N Uplink (dB)	25.7	17.5	18.0	17.1	20.7
C/N Downlink (dB)	17.6	13.9	12.5	13.6	8.8
C/I Intermodulation (dB)	N/A	N/A	21.8	20.9	N/A
C/I Uplink Co-Channel (dB)*	27.3	27.3	27.3	27.0	27.0
C/I Downlink Co-Channel (dB)*	27.3	27.3	27.3	27.0	27.0
C/I Uplink Adjacent Satellite 1 (dB)	17.6	9.4	9.9	9.1	12.6
C/I Downlink Adjacent Satellite 1 (dB)	22.5	19.0	17.6	18.4	12.5
C/I Uplink Adjacent Satellite 2 (dB)	17.6	9.4	9.9	9.1	12.6
C/I Downlink Adjacent Satellite 2 (dB)	23.2	20.0	18.6	19.2	15.0
C/(N+I) Composite (dB)	11.6	5.0	5.0	4.6	4.7
Required System Margin (dB)	-1.0	-1.0	-1.0	-1.0	-1.0
Net C/(N+I) Composite (dB)	10.6	4.0	4.0	3.6	3.7
Minimum Required C/N (dB)	-10.0	-3.4	-3.9	-3.0	-3.4
Excess Link Margin (dB)	0.6	0.6	0.1	0.6	0.3
Number of Carriers	2	2	7	770	1
<b>CARRIER DENSITY LEVELS</b>					
Uplink Power Density (dBW/Hz)	-51.2	-51.8	-46.7	-47.5	-54.9
Downlink EIRP Density At Beam Peak (dBW/Hz)	-43.7	-42.9	-44.3	-45.2	-40.6