Engineering Statement

Intelsat License LLC ("Intelsat") proposes to operate its Galaxy 11 spacecraft at 55.6° W.L. From that location, the spacecraft will provide service to the Southern United States, Mexico, Central America, the Caribbean and South America. The spacecraft will utilize the Ku-band frequencies of 13750 – 14500 MHz, 10950 – 11200 MHz and 11700 – 12200 MHz at this orbital location.

In March 2011, the Commission authorized Galaxy 11 to operate at 55.5° W.L. (see FCC File Number: SAT-MOD-20101102-00229). In October 2012, Intelsat proposed to modify the Galaxy 11 authorization to permit operation of the spacecraft at 44.8° W.L. (see FCC File Number: SAT-MOD-20121018-00184). This proposal is currently pending before the Commission. However, as a result of the launch failure of the Intelsat 27, Intelsat now requests interim authority to operate Galaxy 11 at 55.6° W.L. prior to its permanent relocation to 44.8° W.L. It is noted that Intelsat is currently operating the satellite at 55.6° W.L. pursuant to special temporary authority (SAT-STA-20130829-00109) collocated with Intelsat 805, which operates at 55.5° W.L. (SAT-MOD-20020919-00178).

This engineering statement provides the following technical information for Galaxy 11 at 55.6° W.L.: 1)Frequency Bands, 2) Antenna Beam Diagrams, 3) Power Flux Density Levels 4) Link Budgets and Interference Analysis, 5) Adjacent Satellite Link Analysis, 6) Orbital Debris Mitigation Plan, 7) TC&R Control Earth Stations, and 8) Schedule S Submission details. In all other respects, the Galaxy 11 characteristics are the same those as described in SAT-AMD-19990615-00067, as updated in SAT-MOD-20080225-00051 and SAT-MOD-20101102-00229.

1) Frequency Bands

Galaxy 11 will utilize the Ku-band frequencies of 13750 – 14500 MHz, 10950 – 11200 MHz and 11700 – 12200 MHz from this orbital location. Galaxy 11 also includes C-Band frequencies 3700 – 4200 MHz and 5925 – 6425 MHz that Intelsat does not plan to use at the 55.6° W.L. orbital location. The satellite Ku-band frequency plan is provided in Exhibit 1.

With regard to operation in the 13750 – 14000 MHz frequency band, footnotes US 356 and US 357 of the United States Table of Frequency

Allocations, as contained in Section 2.106 of the Commission's rules, specify an number technical conditions on transmissions of FSS Earth stations located in the United States or its territories. Galaxy 11 utilizes the 13750 – 14000 MHz frequency band both domestically and internationally. In those cases where the transmitting Earth station operates from within the United States or its territories, Intelsat shall comply with the conditions specified in footnotes US 356 and US 357.

2) Antenna Beam Diagrams

The Galaxy 11 beam gain contours are included in Exhibit 2. It is noted however, as done for the previous Galaxy 11 modification, that the antenna gain patterns in the Schedule S for the Galaxy 11 back-up TC&R using the bicone and pipe antennas and the ULPC global horn antenna are not in .gxt format.

With respect to the command and telemetry bicone antenna, two antenna gain diagrams have been provided for each. Diagram "a" shows the variation in the gain of the antenna at three elevation angles (-20º, 0º and +20º) referenced to the antenna axis with the azimuth varying from -180º and +180º. Diagram "b" shows the variation in the gain of the antenna at a representative azimuth of 0° referenced to the antenna axis with the elevation angle varying from -180º and +180º. During emergency conditions, the bicone antenna would be used since its field of view is +/- 20º and the Earth disk is only +/- 8.4º. From the diagrams, it is evident that the coverage of the bicone antenna is relatively flat over the entire Earth. Specifically, as shown in Diagram "a", the gain of the bicone antenna varies by less than 4 dB at any given elevation angle (within ±20°) as the azimuth angle varies from -180° to +180°. Similarly, as shown in Diagram "b", at a given azimuth, the gain of the bicone antenna changes by less than 3 dB as the elevation angle varies by ±20° about the antenna's peak gain points.

With regard to the pipe and ULPC antennas, the antenna gain patterns show the variation in the gain of the antenna at 0° elevation angle, referenced to the (horizontal) plane on the center axis of the antenna aperture, with the azimuth varying from -180º and +180º – generally referred to as the "azimuth cut". Given that the pipe and ULPC antennas are horn antennas having symmetrical gain performance about the center axis of the antenna aperture, the gain variation shown in the gain patterns is also representative of the case where the azimuth angle of the antenna is 0°, referenced to the

(vertical) plane located at the center axis of the antenna aperture, with the elevation varying from -180° and +180° – generally referred to as the "elevation cut".

The fields of view of the pipe antennas (±40º) and that of the ULPC antennas (±10º) envelope the Earth disk (±8.4º). From antenna gain patterns it is evident that the coverage of the pipe and ULPC antennas is relatively flat over the entire Earth and that the variation in gain will be typically less than 5 dB within the antennas' field of view.

The gain diagrams associated with the TC&R bicone and pipe antennas and the ULPC global horn antenna, were not prepared in accordance with the parameters specified in Section 25.114(d)(3) of the Commission's rules due to the fact that the satellite manufacturer does not provide the patterns in the required form. Given the specificity of the situation, it is our understanding that the provided gain patterns, together with the descriptive characterization given in the previous paragraphs, fulfill the requirements of Section 25.114(d)(3). However, should the Commission disagree, Intelsat respectfully requests a waiver of the requirements of Section 25.114(d)(3) of the FCC's rules with respect to the presentation of these antenna patterns.

3) Power Flux Density Levels

The power flux density ("PFD") limits for space stations are specified in Section 25.208 of the Commission's rules. With respect to the 11700 – 12200 MHz band, neither Section 25.208 of the rules nor Article 21 of the Radio Regulations specifies any PFD limits for geo-stationary FSS satellites. However, Section 25.208 (b) does specify PFD limits for the 10950 – 11200 MHz frequency band.

For the 10950 – 11200 MHz band, the PFD level was calculated for a 27 MHz digital carrier (with an occupied bandwidth of 22600 kHz) and a 24 MHz TV/FM analog carrier. These carriers typically produce high power flux densities at the earth's surface. The PFD levels were also calculated for the Galaxy 11 ULPC carriers. As shown in Exhibit 3, in the band 10950 – 11200 MHz, the downlink PFD levels of Galaxy 11 carriers would not exceed the limits specified in Section 25.208 (b) of the FCC's rules.

4) Link Budgets and Interference Analysis

Link analysis for Galaxy 11 was conducted for a number of representative carriers. For the analyses, it was assumed that the nearest satellites to Galaxy 11 were a hypothetical satellite operating from 53.6° W.L. and a hypothetical satellite operating from 57.6° W.L. The hypothetical satellites were assumed to have the same operational parameters as Galaxy 11. The beam peak performance for each Galaxy 11 beam is provided below:

Schedule S Beam Name	Frequency Plan Beam Name	Frequency Band (MHz)	Polarization	Beam Peak G/T (dB/K)	Beam SFD Range @ Peak G/T (dBW/m^2)	Beam Peak EIRP (dBW)
KHUL	North	14000-14500	Horizontal	6.3	-99.8 to -83.8	n/a
KVUL	North	14000-14500	Vertical	4.8	-98.3 to -82.3	n/a
KHDL	North	11700-12200	Horizontal	n/a	n/a	49.7
KVDL	North	11700-12200	Vertical	n/a	n/a	49.7
BHUL	S. America	14000-14250	Horizontal	5.7	-98.3 to -82.3	n/a
BVUL	S. America	14000-14250	Vertical	6.3	-99.9 to -83.9	n/a
EHUL	Extended Ku N. America	13750-14000	Horizontal	5.2	-94.3 to -78.3	n/a
EVUL	Extended Ku N. America	13750-14000	Vertical	5.2	-94.2 to -78.2	n/a
BHDL	S. America	10950-11200	Horizontal	n/a	n/a	52.7
BVDL	S. America	10950-11200	Vertical	n/a	n/a	51.9
EHDL	Extended Ku N. America	10950-11200	Horizontal	n/a	n/a	50.9
EVDL	Extended Ku N. America	10950-11200	Vertical	n/a	n/a	51.2

The uplink power density of the emissions to each of the hypothetical satellites was assumed to be -50 dBW/Hz, the maximum level specified in Sections 25.212(c) of the Commission's rules for digital Ku-band carriers. The downlink EIRP density of the emissions from each of the hypothetical satellites was assumed to be -26 dBW/Hz, the maximum level specified in Section 25.212(c) of the Commission's rules.[1]

Other assumptions made for the link budget analysis were as follows:

a. In the plane of the geostationary satellite orbit, all transmitting and receiving earth station antennas have off-axis co-polar gains that are compliant with the limits specified in Section 25.209(a)(1) or (a)(2) of the Commission's rules, depending on the frequency band under consideration.
b. All transmitting and receiving earth stations have a cross-polarization isolation value of at least 30 dB within their main beam lobe.
c. Rain attenuation predictions are derived using Recommendation ITU-R 618.
d. Increase in noise temperature of the receiving earth station due to rain is taken into account.
e. For the cases where the transponder operates in a multi-carrier mode, the effects due to intermodulation interference are taken into account.

The impact of the TV/FM carriers from the adjacent satellites on the transmissions of Galaxy 11 was not considered. This is due to the fact that TV/FM carriers are known to be high-density carriers with most of the energy contained within the near vicinity of the carrier center frequency. Operation of sensitive narrow-band carriers is typically precluded within these high power density areas of the TV/FM carrier. Accordingly, placement and operation of TV/FM carriers are normally achieved through internal coordination and/or coordination discussions with the adjacent satellite operators, whichever may be the case, rather than through C/I calculations – since the results of such calculations would show that narrow-

[1] This downlink EIRP density level was applied at the Galaxy 11 relative gain contour for which the link analysis was conducted.

band carriers typically could not operate on a co-frequency basis with TV/FM carriers.

The results of the analysis are given in Exhibit 4 and demonstrate that operation of the Galaxy 11 satellite from 55.6º W.L. would permit the intended services to achieve their respective performance objectives while maintaining sufficient link margin. Additionally, the EIRP density levels of the carriers listed in Exhibit 4 comply with the limits contained in Sections 25.212(c) and 25.212(d) of the Commission's rules.

5) Adjacent Satellite Link Analysis

The impact of the Galaxy 11 emissions on the transmissions of the hypothetical satellite operating from 53.6° W.L. and the hypothetical satellite operating from 57.6° W.L. were analyzed. The hypothetical satellites were assumed to have the same operational parameters as Galaxy 11.

Link analysis for the hypothetical satellite operating from 53.6° W.L. and the hypothetical satellite operating from 57.6° W.L. was conducted for a number of representative carriers. For the analyses, it was assumed that the nearest satellites to the hypothetical satellite operating from 53.6° W.L. were a hypothetical satellite operating from 51.6° W.L. and Galaxy 11 operating from 55.6° W.L; and it was assumed that the nearest satellites to the hypothetical satellite operating from 57.6° W.L. were Galaxy 11 operating from 55.6° W.L. and a hypothetical satellite operating from 59.6° W.L.[2] The hypothetical satellites were assumed to have the same operational parameters as Galaxy 11.

The uplink power density of the emissions to each of the hypothetical satellites was assumed to be -50 dBW/Hz, the maximum level specified in Sections 25.212(c) of the Commission's rules for digital Ku-band carriers. The maximum downlink EIRP density of the emissions from each of the hypothetical satellites was assumed to be -26 dBW/Hz, the maximum level specified in Section 25.212(c) of the Commission's rules.

[2] The operation of Intelsat 23, located at 53° W.L., and Intelsat 21, located at 58° W.L., was not considered given that these satellites are located very close to the hypothetical satellites located at 53.6° W.L. and 57.6° W.L, respectively. For the purposes of the interference analysis, the interference impact due to these satellites was not considered.

The results of the link analysis for the hypothetical satellite operating from 53.6° W.L. and the hypothetical satellite operating from 57.6° W.L. are provided in Exhibit 5 and Exhibit 6, respectively. The Galaxy 11 transmissions will be limited to those levels contained in Sections 25.212(c), as applicable, unless higher levels are coordinated with affected adjacent satellite operators. In any case, pursuant to the results in Exhibits 5 and 6, the uplink power density of the Galaxy 11 digital carriers operating in the 13750 – 14500 MHz band will not exceed -45 dBW/Hz, Within the 10950 – 11200 MHz and 11700 – 12200 MHz bands the downlink EIRP density of the Galaxy 11 digital carriers will not exceed -20 dBW/Hz.

6) Orbital Debris Mitigation Plan

Intelsat is proactive in ensuring safe operation and disposal of this and all spacecraft under its control. The four elements of debris mitigation are addressed below.

a. Spacecraft Hardware Design

The spacecraft is designed such that no debris will be released during normal operations. Intelsat has assessed the probability of collision with meteoroids and other small debris (<1 cm diameter) and has taken the following steps to limit the effects of such collisions: (1) critical spacecraft components are located inside the protective body of the spacecraft and properly shielded; and (2) all spacecraft subsystems have redundant components to ensure no single-point failures. The spacecraft does not use any subsystems for end-of-life disposal that are not used for normal operations.

b. Minimizing Accidental Explosions

Intelsat has assessed the probability of accidental explosions during and after completion of mission operations. The spacecraft is designed in a manner to minimize the potential for such explosions. Propellant tanks and thrusters are isolated using redundant valves and electrical power systems are shielded in accordance with standard industry practices. At the completion of the mission and upon disposal of the spacecraft, Intelsat will ensure that all active units are turned off and propellant tanks are depleted. However, due to the design of Galaxy 11, Intelsat will not be able to vent all pressurized systems. Accordingly, Intelsat respectfully requests a waiver of

Sections 25.114(d)(14)(ii) and 25.283(c). Galaxy 11 was designed and constructed prior to the adoption of the orbital debris mitigation rules by the FCC. Given that Galaxy 11 is an operating spacecraft and its design cannot be changed, Intelsat believes that a waiver of section 25.114(d)(14)(ii) and 25.283(c) is justified.

c. Safe Flight Profiles

Intelsat has assessed and limited the probability of the space station becoming a source of debris as a result of collisions with large debris or other operational space stations. Galaxy 11 will not be located at the same orbital location as another satellite or at an orbital location that has an overlapping station-keeping volume with another satellite.

Intelsat is not aware of any other FCC licensed system, or any other system applied for and under consideration by the FCC, having an overlapping station-keeping volume with Galaxy 11. Intelsat is also not aware of any system with an overlapping station-keeping volume with Galaxy 11 that is the subject of an ITU filing and that is either in orbit or progressing towards launch.

d. Post Mission Disposal

At the end of the mission, Intelsat expects to dispose of the spacecraft by moving it to a planned minimum altitude of 300 kilometers (perigee) above the geostationary arc.[3] Nevertheless, as the Commission is aware, because there is no mechanism for precisely calculating the amount of fuel left on the spacecraft once it is in orbit, it is possible that the spacecraft will not meet the planned minimum de-orbit altitude.

In its Second Report and Order in IB Docket 02-54 (FCC Document Number: 04-130), the FCC declared that satellites launched prior to March 18, 2002, such as Galaxy 11, would be designated as grandfathered satellites not subject to a specific disposal altitude. Therefore, the Galaxy 11 planned disposal orbit complies with the FCC's rules.

[3] Intelsat has reserved 7.2 kilograms of Xenon for this purpose. The propulsion model uncertainty has been taken into account in these calculations. The Xenon reserve is higher than previously stated due to updated thruster data provided by the satellite manufacturer.

7) TC&R Control Earth Stations

Intelsat will conduct TC&R operations through one or more of the following earth stations: Atlanta, Georgia or Castle Rock, Colorado. Washington D.C.

8) Schedule S Submission

Intelsat is providing with its application a Schedule S for the operations of Galaxy 11 from 55.6º W.L. The beam gain contour .gxt files have been included in in the Schedule S. It is noted however, as done for the previous Galaxy 11 modification, that the antenna gain patterns for the Galaxy 11 back-up TC&R using the bicone and pipe antennas and the ULPC global horn antenna are provided in the Schedule S form and included in column "e" (instead of column "f") of section S8 of the Schedule S, since they are not in .gxt format.

Although Intelsat does not intend to utilize the C-band portion of the Galaxy 11 communication payload, the C-band related information, with the exception of the typical emissions characteristics, has been included in the Schedule S for the sake of completeness.

Certification Statement

I hereby certify that I am a technically qualified person and am familiar with Part 25 of the Commission's rules and regulations. The contents of this engineering statement were prepared by me or under my direct supervision and to the best of my knowledge are complete and accurate.

/s/ Roya Shambayati	April 9, 2014
Roya Shambayati Intelsat Director, Spectrum Strategy	Date

EXHIBIT 1: Galaxy 11 Frequency Assignments

Uplink Transponder Designation	Uplink Beam Name	Uplink Polarization	Uplink Center Frequency (MHz)	Downlink Transponder Designation	Downlink Beam Name	Downlink Polarization	Downlink Center Frequency (MHz)	Channel Bandwidth (MHz)	Maximum Transponder Gain (dB)
1K	KVUL	VERTICAL	14020	1K	KHDL	HORIZONTAL	11720	36	128.3
3K	KVUL	VERTICAL	14060	3K	KHDL	HORIZONTAL	11760	36	128.3
5K	KVUL	VERTICAL	14100	5K	KHDL	HORIZONTAL	11800	36	128.3
7K	KVUL	VERTICAL	14140	7K	KHDL	HORIZONTAL	11840	36	128.3
9K	KVUL	VERTICAL	14180	9K	KHDL	HORIZONTAL	11880	36	128.3
11K	KVUL	VERTICAL	14220	11K	KHDL	HORIZONTAL	11920	36	128.3
13K	KVUL	VERTICAL	14260	13K	KHDL	HORIZONTAL	11960	36	128.3
15K	KVUL	VERTICAL	14300	15K	KHDL	HORIZONTAL	12000	36	128.3
17K	KVUL	VERTICAL	14340	17K	KHDL	HORIZONTAL	12040	36	128.3
19K	KVUL	VERTICAL	14380	19K	KHDL	HORIZONTAL	12080	36	128.3
21K	KVUL	VERTICAL	14420	21K	KHDL	HORIZONTAL	12120	36	128.3
23K	KVUL	VERTICAL	14460	23K	KHDL	HORIZONTAL	12160	36	128.3
2K	KHUL	HORIZONTAL	14040	2K	KVDL	VERTICAL	11740	36	128.8
4K	KHUL	HORIZONTAL	14080	4K	KVDL	VERTICAL	11780	36	128.8
6K	KHUL	HORIZONTAL	14120	6K	KVDL	VERTICAL	11820	36	128.8
8K	KHUL	HORIZONTAL	14160	8K	KVDL	VERTICAL	11860	36	128.8
10K	KHUL	HORIZONTAL	14200	10K	KVDL	VERTICAL	11900	36	128.8
12K	KHUL	HORIZONTAL	14240	12K	KVDL	VERTICAL	11940	36	128.8
14K	KHUL	HORIZONTAL	14280	14K	KVDL	VERTICAL	11980	36	128.8
16K	KHUL	HORIZONTAL	14320	16K	KVDL	VERTICAL	12020	36	128.8
18K	KHUL	HORIZONTAL	14360	18K	KVDL	VERTICAL	12060	36	128.8
20K	KHUL	HORIZONTAL	14400	20K	KVDL	VERTICAL	12100	36	128.8
22K	KHUL	HORIZONTAL	14440	22K	KVDL	VERTICAL	12140	36	128.8
24K	KHUL	HORIZONTAL	14480	24K	KVDL	VERTICAL	12180	36	128.8
				ULPC 1	UPCC	HORIZONTAL	12195	0.025	N/A
COMMAND 1	CMDC	VERTICAL	14498.5					1.000	N/A
COMMAND 2	CMDB	HORIZONTAL	14498.5					1.000	N/A
COMMAND 3	CMDP	LEFT HAND CIRCULAR	14000.5					1.000	N/A
				TELEMETRY 1	TLMC	VERTICAL	11701	0.500	N/A
				TELEMETRY 2	TLMC	VERTICAL	11702	0.500	N/A
				TELEMETRY 3	TLMB	VERTICAL	11701	0.500	N/A
				TELEMETRY 4	TLMB	VERTICAL	11702	0.500	N/A
				TELEMETRY 5	TLMP	LEFT HAND CIRCULAR	11701	0.500	N/A
				TELEMETRY 6	TLMP	LEFT HAND CIRCULAR	11702	0.500	N/A

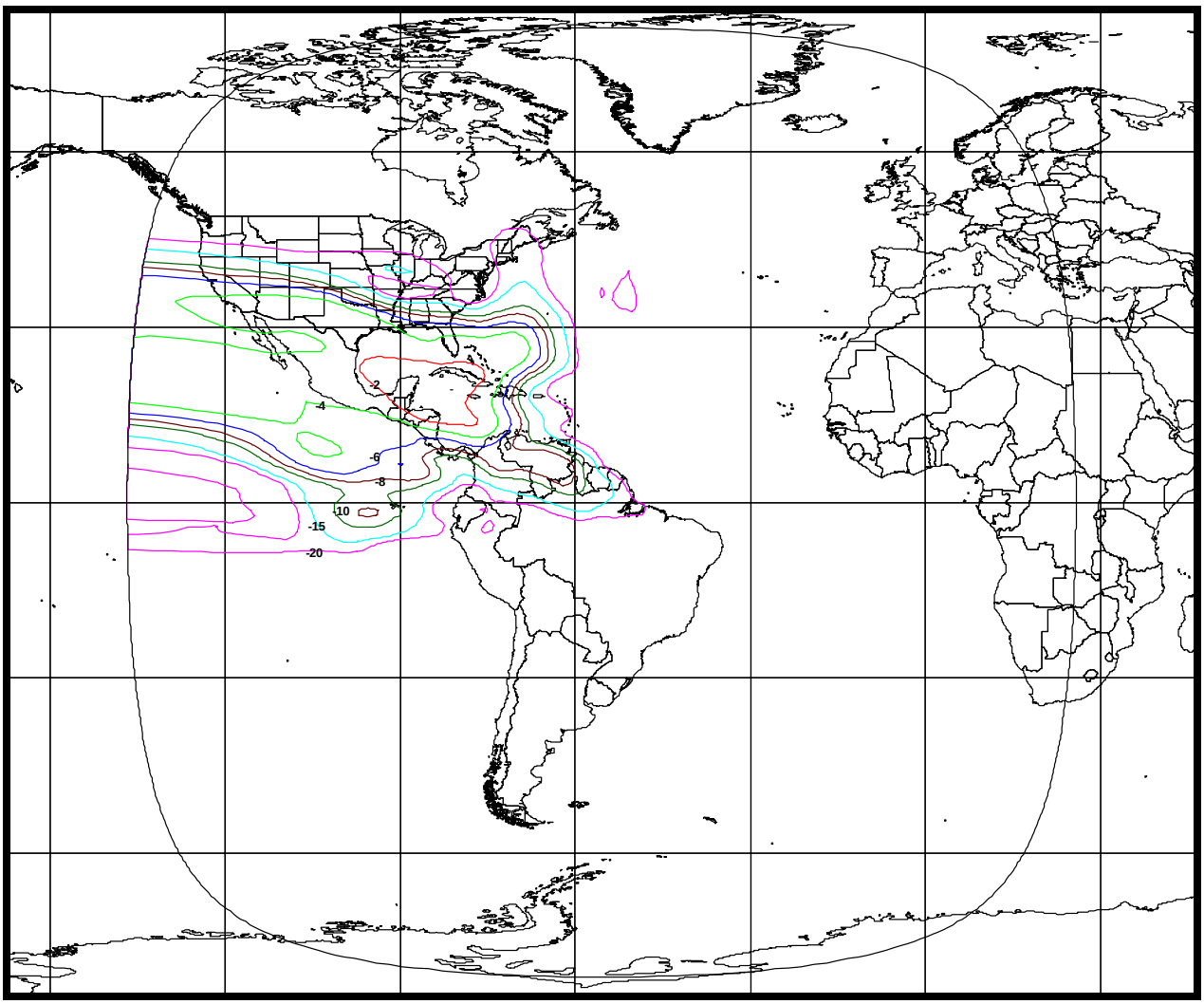
Uplink Transponder Designation	Uplink Beam Name	Uplink Polarization	Uplink Center Frequency (MHz)	Downlink Transponder Designation	Downlink Beam Name	Downlink Polarization	Downlink Center Frequency (MHz)	Channel Bandwidth (MHz)	Maximum Transponder Gain (dB)
1EK	EHUL	HORIZONTAL	13764	1EK	EVDL	VERTICAL	10964	27	126.8
					BVDL				127.1
3EK	EHUL	HORIZONTAL	13794	3EK	EVDL	VERTICAL	10994	27	126.8
					BVDL				127.1
5EK	EHUL	HORIZONTAL	13824	5EK	EVDL	VERTICAL	11024	27	126.8
					BVDL				127.1
7EK	EHUL	HORIZONTAL	13854	7EK	EVDL	VERTICAL	11054	27	126.8
					BVDL				127.1
9EK	EHUL	HORIZONTAL	13884	9EK	EVDL	VERTICAL	11084	27	126.8
					BVDL				127.1
11EK	EHUL	HORIZONTAL	13914	11EK	EVDL	VERTICAL	11114	27	126.8
					BVDL				127.1
13EK	EHUL	HORIZONTAL	13944	13EK	EVDL	VERTICAL	11144	27	126.8
					BVDL				127.1
15EK	EHUL	HORIZONTAL	13974	15EK	EVDL	VERTICAL	11174	27	126.8
					BVDL				127.1
2EK	EVUL	VERTICAL	13776	2EK	EHDL	HORIZONTAL	10976	27	126.9
					BHDL				127.1
4EK	EVUL	VERTICAL	13806	4EK	EHDL	HORIZONTAL	11006	27	126.9
					BHDL				127.1
6EK	EVUL	VERTICAL	13836	6EK	EHDL	HORIZONTAL	11036	27	126.9
					BHDL				127.1
8EK	EVUL	VERTICAL	13866	8EK	EHDL	HORIZONTAL	11066	27	126.9
					BHDL				127.1
10EK	EVUL	VERTICAL	13896	10EK	EHDL	HORIZONTAL	11096	27	126.9
					BHDL				127.1
12EK	EVUL	VERTICAL	13926	12EK	EHDL	HORIZONTAL	11126	27	126.9
					BHDL				127.1
14EK	EVUL	VERTICAL	13956	14EK	EHDL	HORIZONTAL	11156	27	126.9
					BHDL				127.1
16EK	EVUL	VERTICAL	13986	16EK	EHDL	HORIZONTAL	11186	27	126.9
					BHDL				127.1

Uplink Transponder Designation	Uplink Beam Name	Uplink Polarization	Uplink Center Frequency (MHz)	Downlink Transponder Designation	Downlink Beam Name	Downlink Polarization	Downlink Center Frequency (MHz)	Channel Bandwidth (MHz)	Maximum Transponder Gain (dB)
1EK	BHUL	HORIZONTAL	14014	1EK	EVDL	VERTICAL	10964	27	130.4
					BVDL				130.7
3EK	BHUL	HORIZONTAL	14044	3EK	EVDL	VERTICAL	10994	27	130.4
					BVDL				130.7
5EK	BHUL	HORIZONTAL	14074	5EK	EVDL	VERTICAL	11024	27	130.4
					BVDL				130.7
7EK	BHUL	HORIZONTAL	14104	7EK	EVDL	VERTICAL	11054	27	130.4
					BVDL				130.7
9EK	BHUL	HORIZONTAL	14134	9EK	EVDL	VERTICAL	11084	27	130.4
					BVDL				130.7
11EK	BHUL	HORIZONTAL	14164	11EK	EVDL	VERTICAL	11114	27	130.4
					BVDL				130.7
13EK	BHUL	HORIZONTAL	14194	13EK	EVDL	VERTICAL	11144	27	130.4
					BVDL				130.7
15EK	BHUL	HORIZONTAL	14224	15EK	EVDL	VERTICAL	11174	27	130.4
					BVDL				130.7
2EK	BVUL	VERTICAL	14026	2EK	EHDL	HORIZONTAL	10976	27	131.7
					BHDL				131.9
4EK	BVUL	VERTICAL	14056	4EK	EHDL	HORIZONTAL	11006	27	131.7
					BHDL				131.9
6EK	BVUL	VERTICAL	14086	6EK	EHDL	HORIZONTAL	11036	27	131.7
					BHDL				131.9
8EK	BVUL	VERTICAL	14116	8EK	EHDL	HORIZONTAL	11066	27	131.7
					BHDL				131.9
10EK	BVUL	VERTICAL	14146	10EK	EHDL	HORIZONTAL	11096	27	131.7
					BHDL				131.9
12EK	BVUL	VERTICAL	14176	12EK	EHDL	HORIZONTAL	11126	27	131.7
					BHDL				131.9
14EK	BVUL	VERTICAL	14206	14EK	EHDL	HORIZONTAL	11156	27	131.7
					BHDL				131.9
16EK	BVUL	VERTICAL	14236	16EK	EHDL	HORIZONTAL	11186	27	131.7
					BHDL				131.9
				ULPC 2	UPGH	HORIZONTAL	10951	0.025	N/A
				ULPC 3	UPGV	VERTICAL	10951	0.025	N/A

EXHIBIT 2: Beam Diagrams

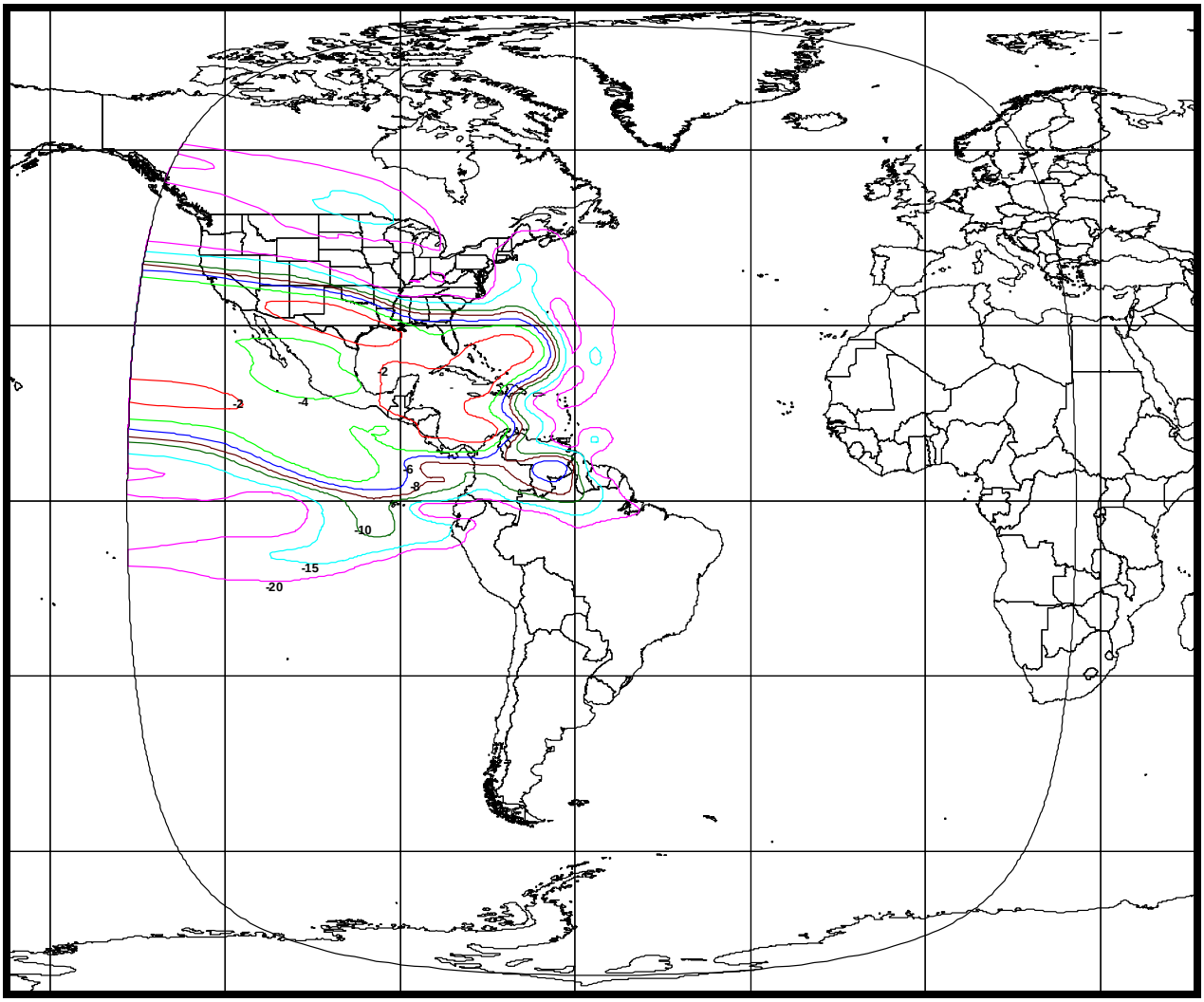
Ku-Band North America Receive Beam
(Beam ID: KHUL)

Polarization: Horizontal
Peak Antenna Gain: 33.3 dBi
Peak G/T: 6.3 dB/K
Saturated Flux Density @ Peak G/T: -99.8 to -83.8 dBW/m^2



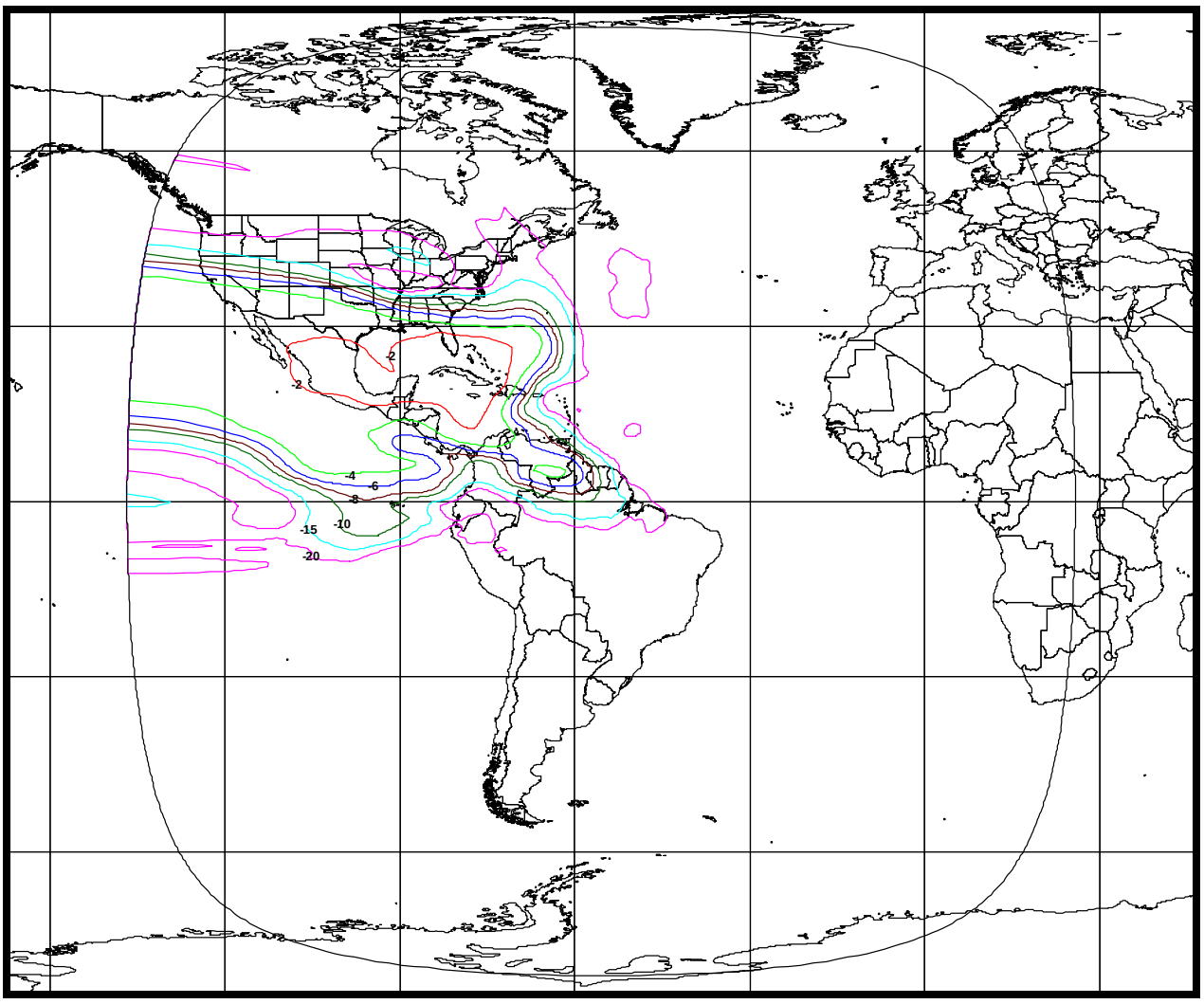
Ku-Band North America Receive Beam
(Beam ID: KVUL)

Polarization: Vertical
Peak Antenna Gain: 32.0 dBi
Peak G/T: 4.8 dB/K
Saturated Flux Density @ Peak G/T: -98.3 to -82.3 dBW/m^2



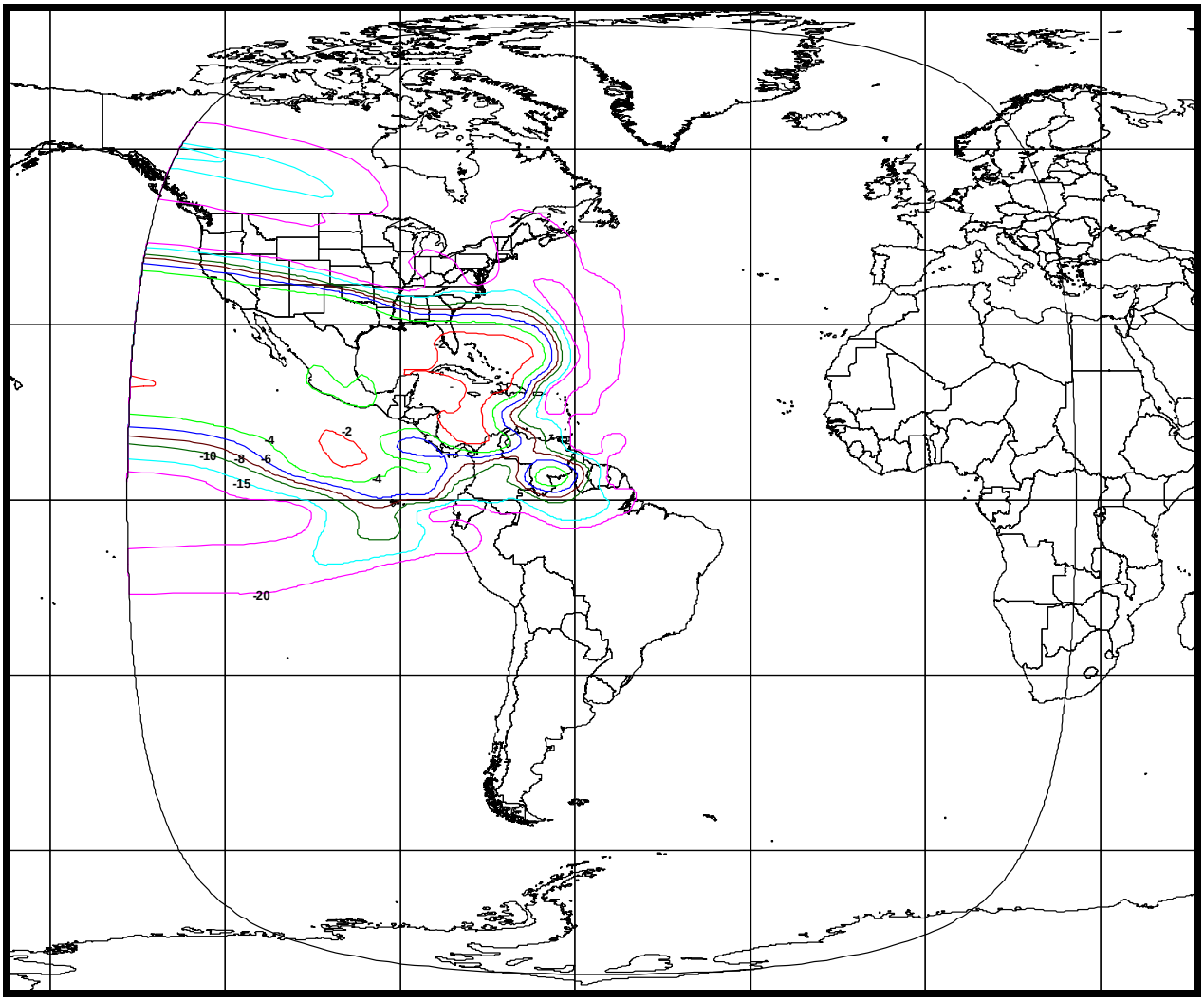
Ku-Band North America Transmit Beam
(Beam ID: KHDL)

Polarization: Horizontal
Peak Antenna Gain: 32.2 dBi
Peak EIRP: 49.7 dBW



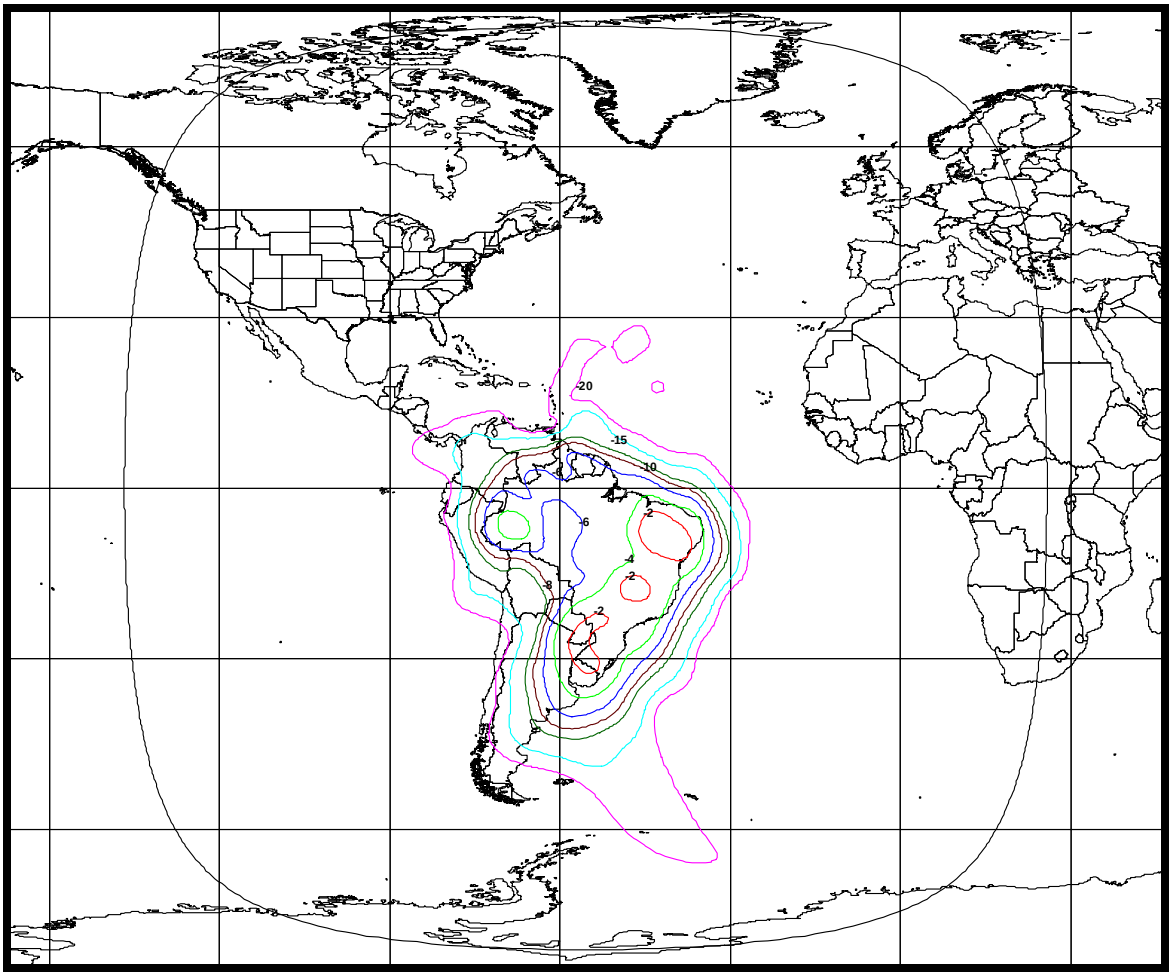
Ku-Band North America Transmit Beam
(Beam ID: KVDL)

Polarization: Vertical
Peak Antenna Gain: 31.9 dBi
Peak EIRP: 49.7 dBW



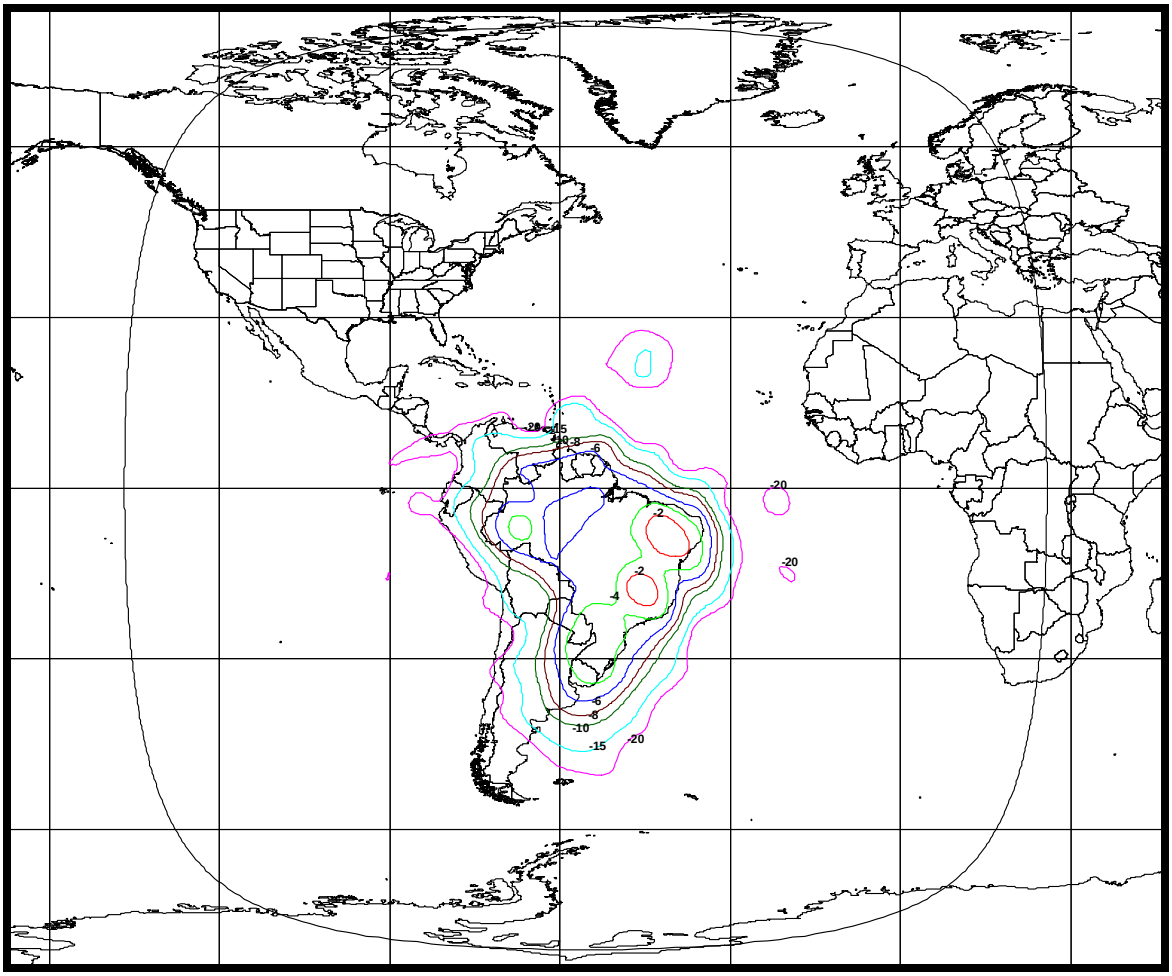
Ku-Band South America Receive Beam
(Beam ID: BHUL)

Polarization: Horizontal
Peak Antenna Gain: 32.6 dBi
Peak G/T: 5.7 dB/K
Saturated Flux Density @ Peak G/T: -98.3 to -82.3 dBW/m^2



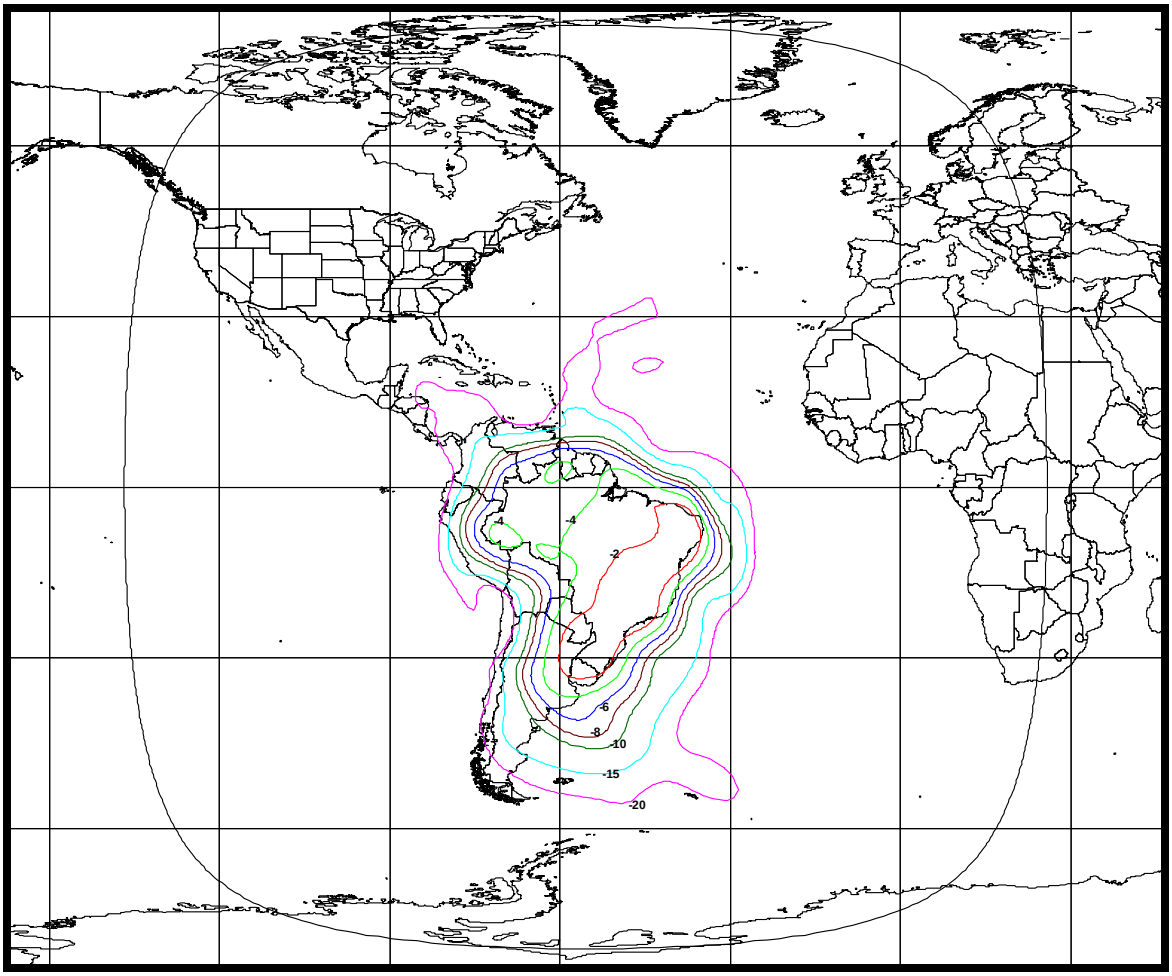
Ku-Band South America Receive Beam
(Beam ID: BVUL)

Polarization: Vertical
Peak Antenna Gain: 33.3 dBi
Peak G/T: 6.3 dB/K
Saturated Flux Density @ Peak G/T: -99.9 to -83.9 dBW/m^2



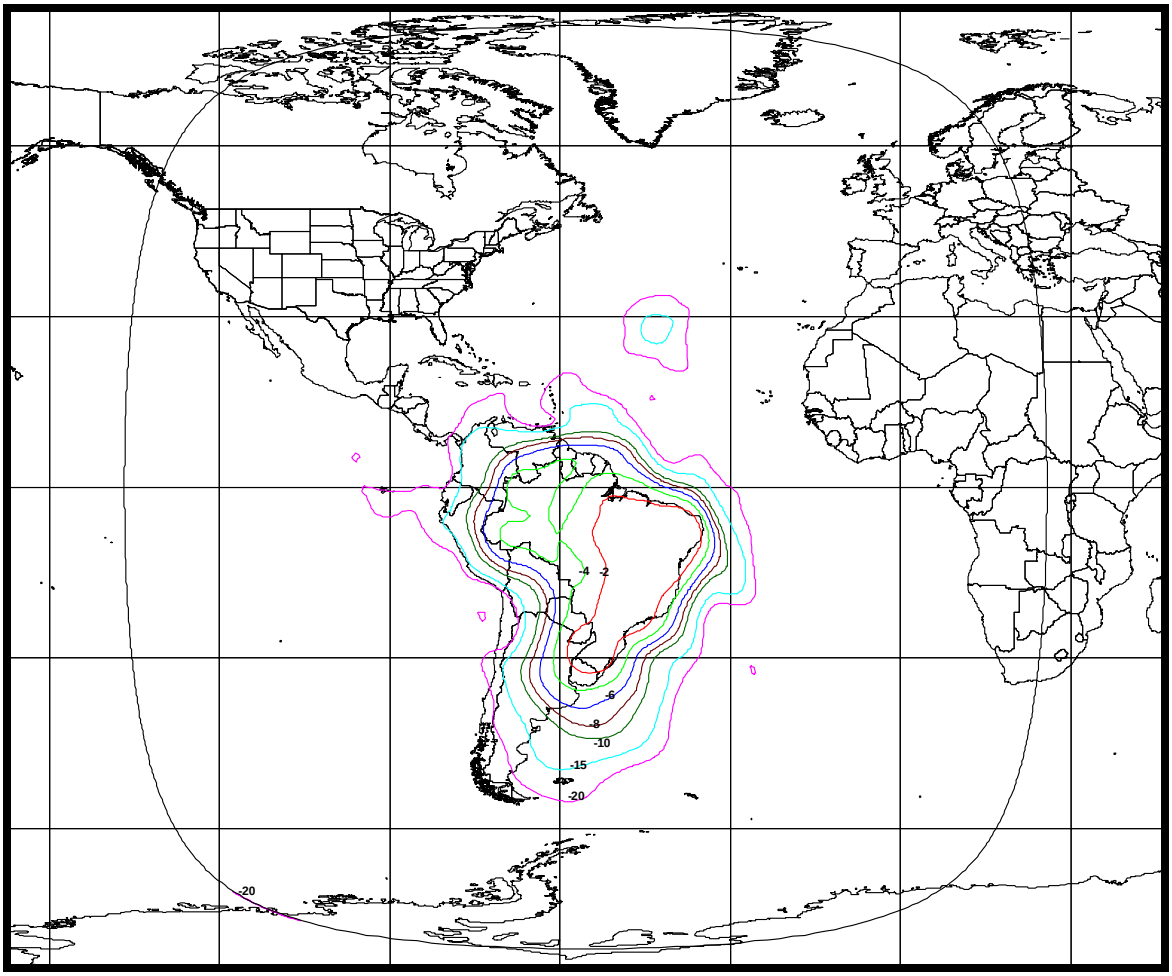
Extended Ku-Band South America Transmit Beam
(Beam ID: BHDL)

Polarization: Horizontal
Peak Antenna Gain: 31.6 dBi
Peak EIRP: 52.7 dBW



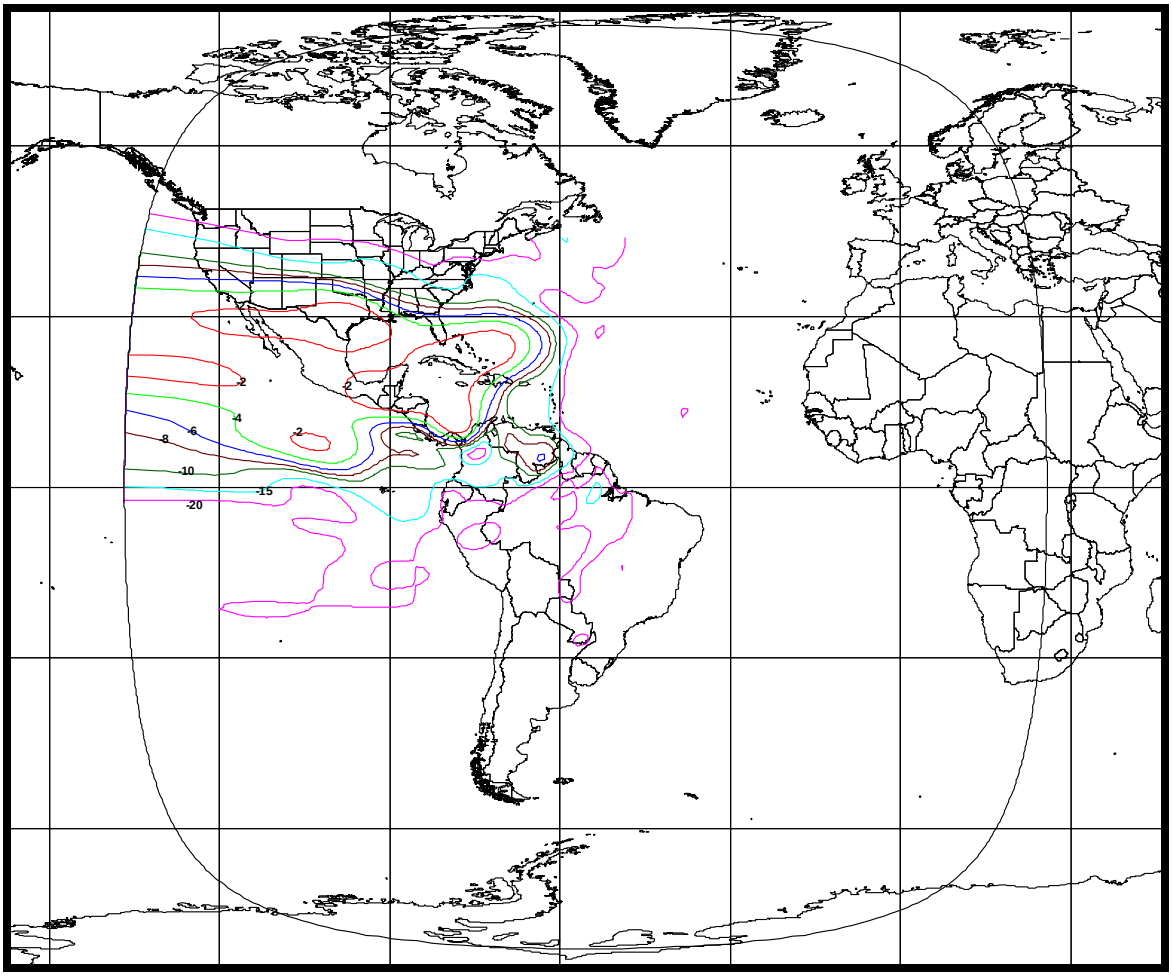
Extended Ku-Band South America Transmit Beam
(Beam ID: BVDL)

Polarization: Vertical
Peak Antenna Gain: 31.3 dBi
Peak EIRP: 51.9 dBW



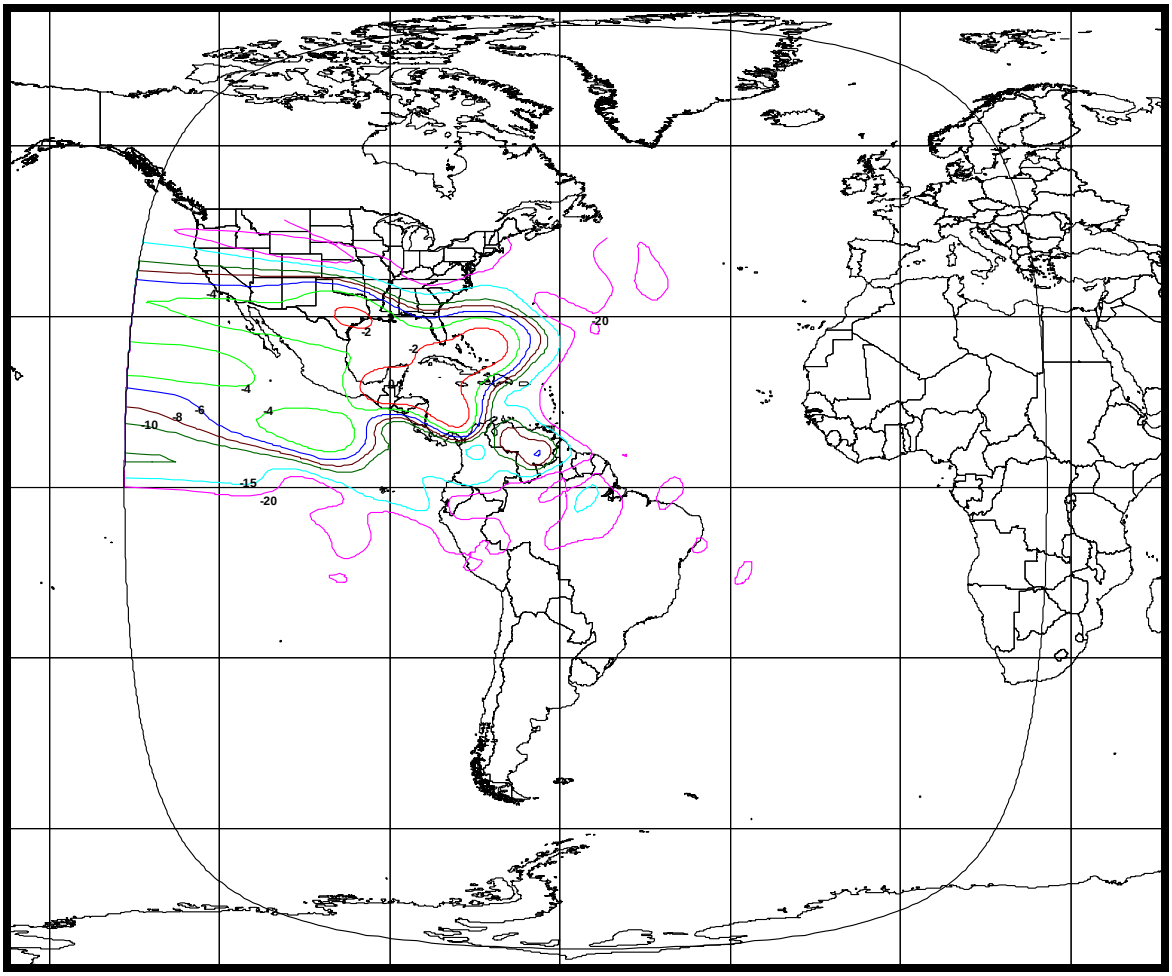
Extended Ku-Band North America Receive Beam
(Beam ID: EHUL)

Polarization: Horizontal
Peak Antenna Gain: 32.1 dBi
Peak G/T: 5.2 dB/K
Saturated Flux Density @ Peak G/T: -94.3 to -78.3 dBW/m^2



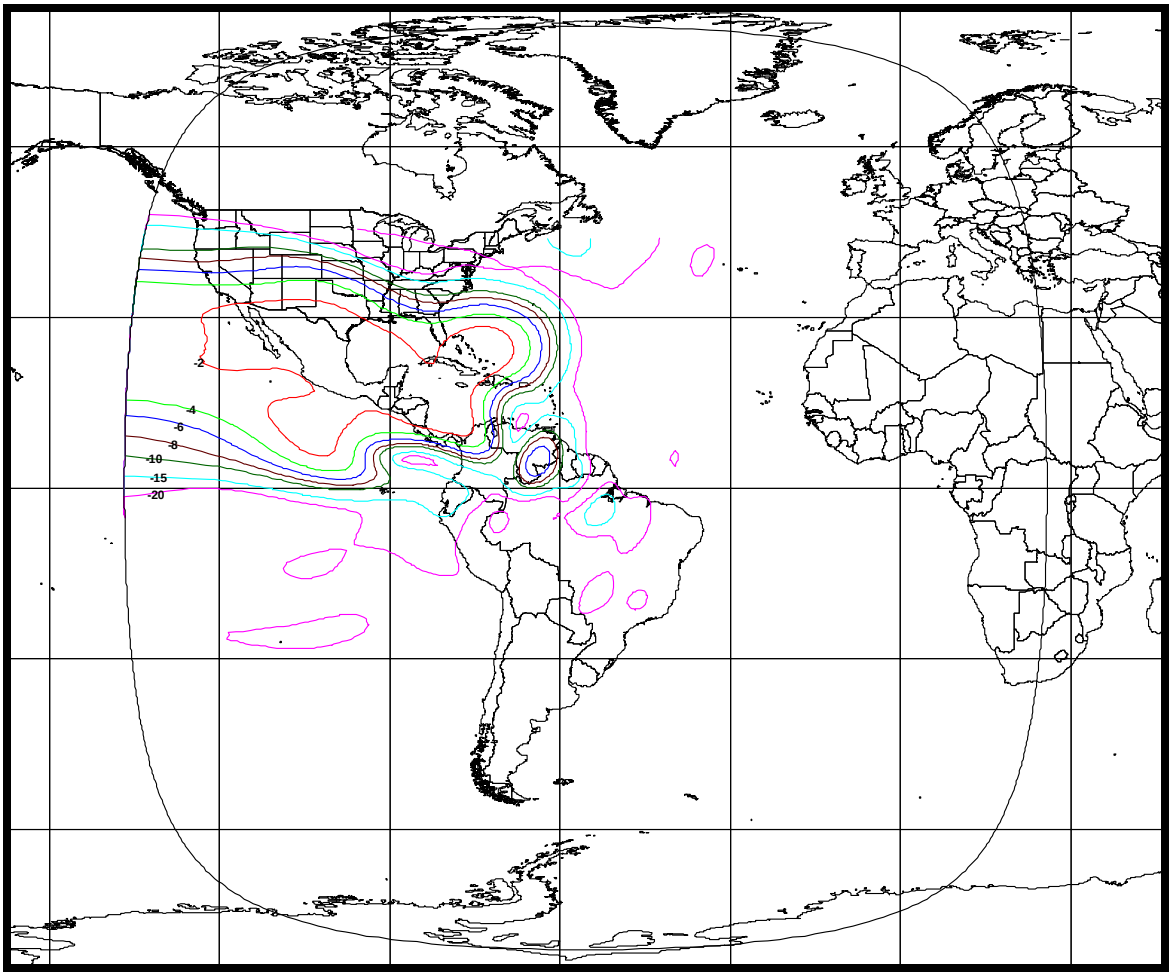
Extended Ku-Band North America Receive Beam
(Beam ID: EVUL)

Polarization: Vertical
Peak Antenna Gain: 32.3 dBi
Peak G/T: 5.2 dB/K
Saturated Flux Density @ Peak G/T: -94.2 to -78.2 dBW/m^2



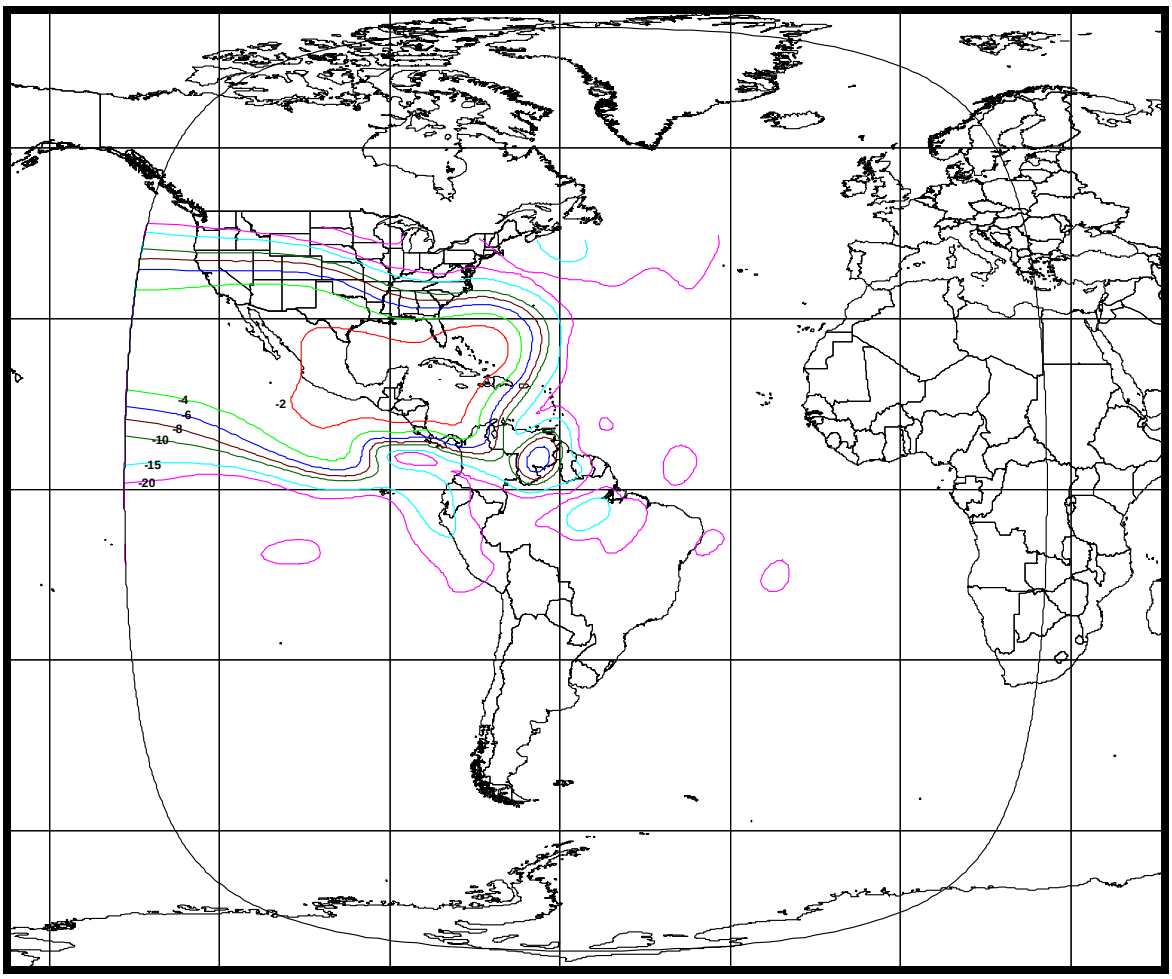
Extended Ku-Band North America Transmit Beam
(Beam ID: EHDL)

Polarization: Horizontal
Peak Antenna Gain: 31.4 dBi
Peak EIRP: 50.9 dBW



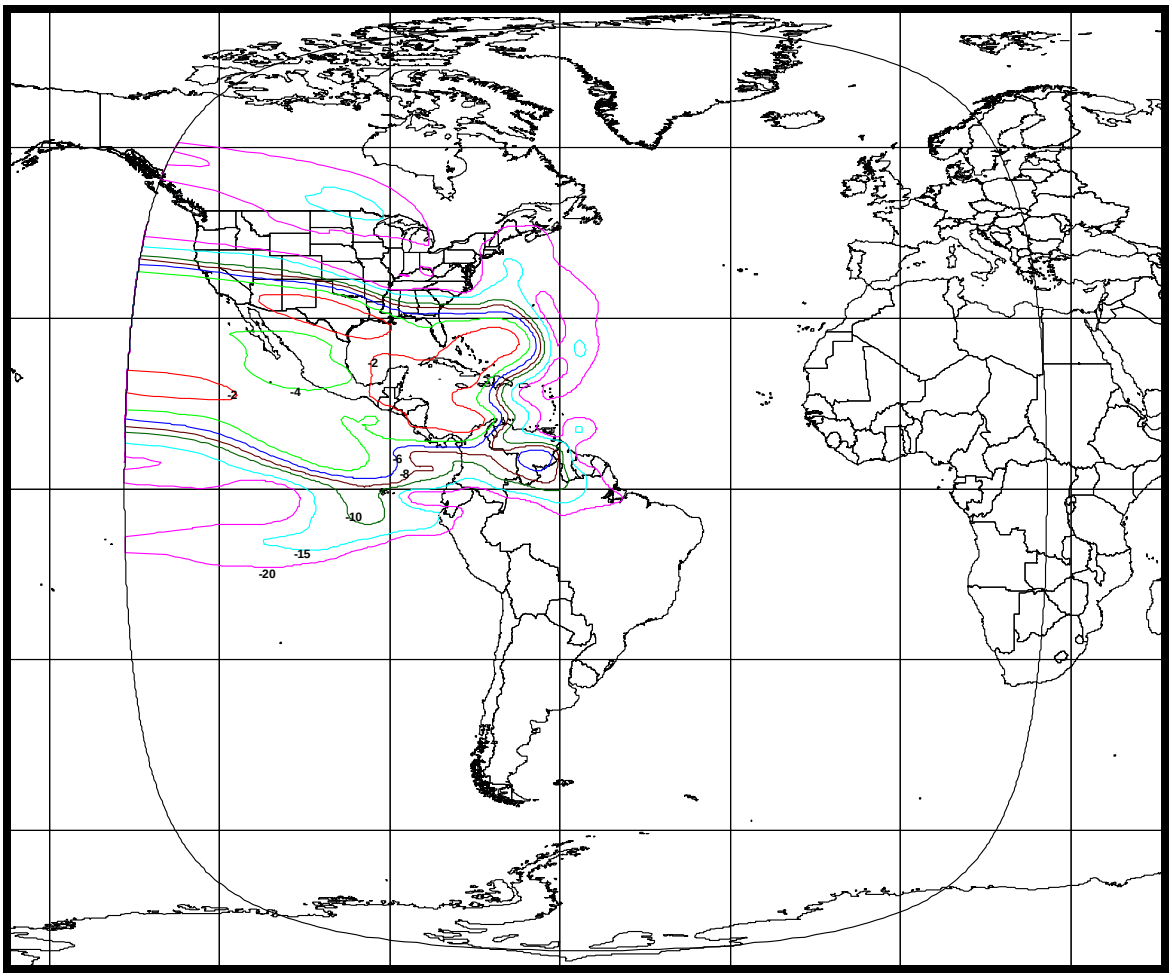
Extended Ku-Band North America Transmit Beam
(Beam ID: EVDL)

Polarization: Vertical
Peak Antenna Gain: 31.7 dBi
Peak EIRP: 51.2 dBW



On-Station Command Receive Beam
(Communication Antenna)
(Beam ID: CMDC)

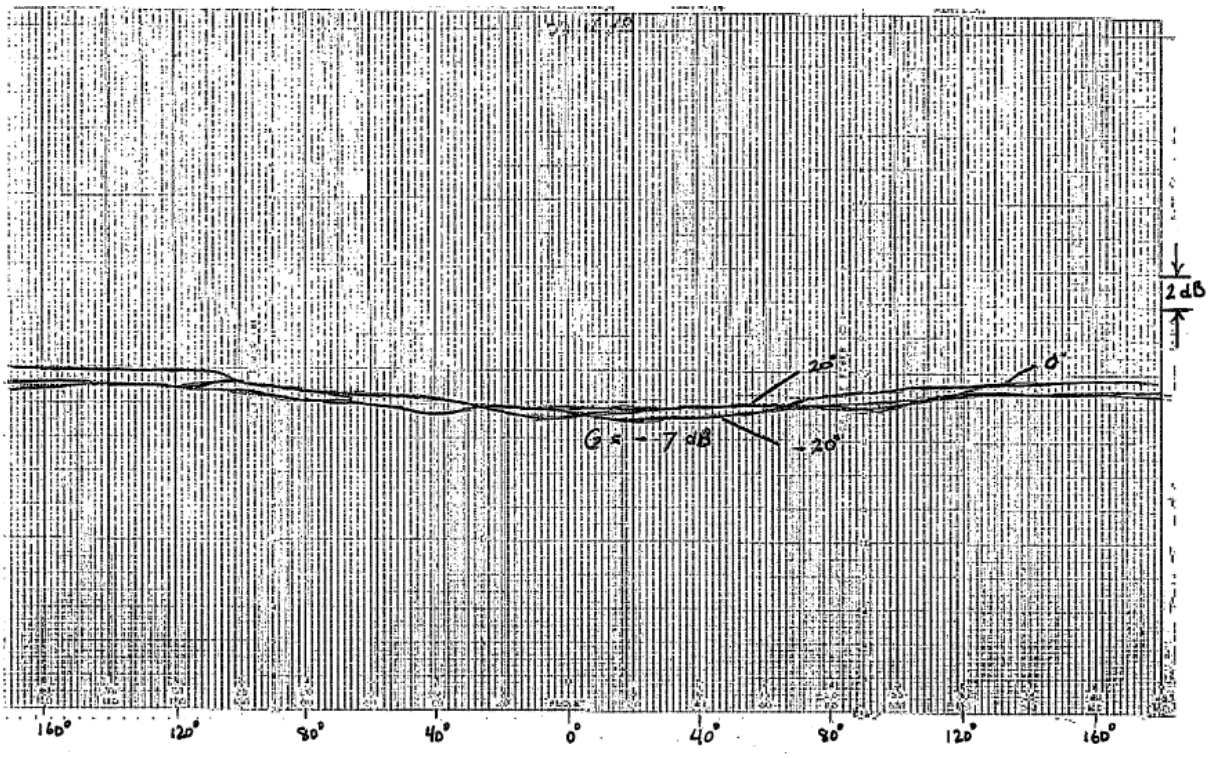
Polarization: Vertical
Peak Antenna Gain: 32 dBi
Peak G/T: -3.0 dB/K
Command Threshold @ Peak G/T: -119.6 dBW/m^2



Back-Up Command Receive Beam
(Bicone Antenna)
(Beam ID: CMDB)

Polarization: Horizontal
Peak Antenna Gain: 2.2 dBi
Peak G/T: -30.8 dB/K
Command Threshold @ Peak G/T: -91.8 dBW/m^2

(a) Azimuth Cut Antenna Gain Pattern

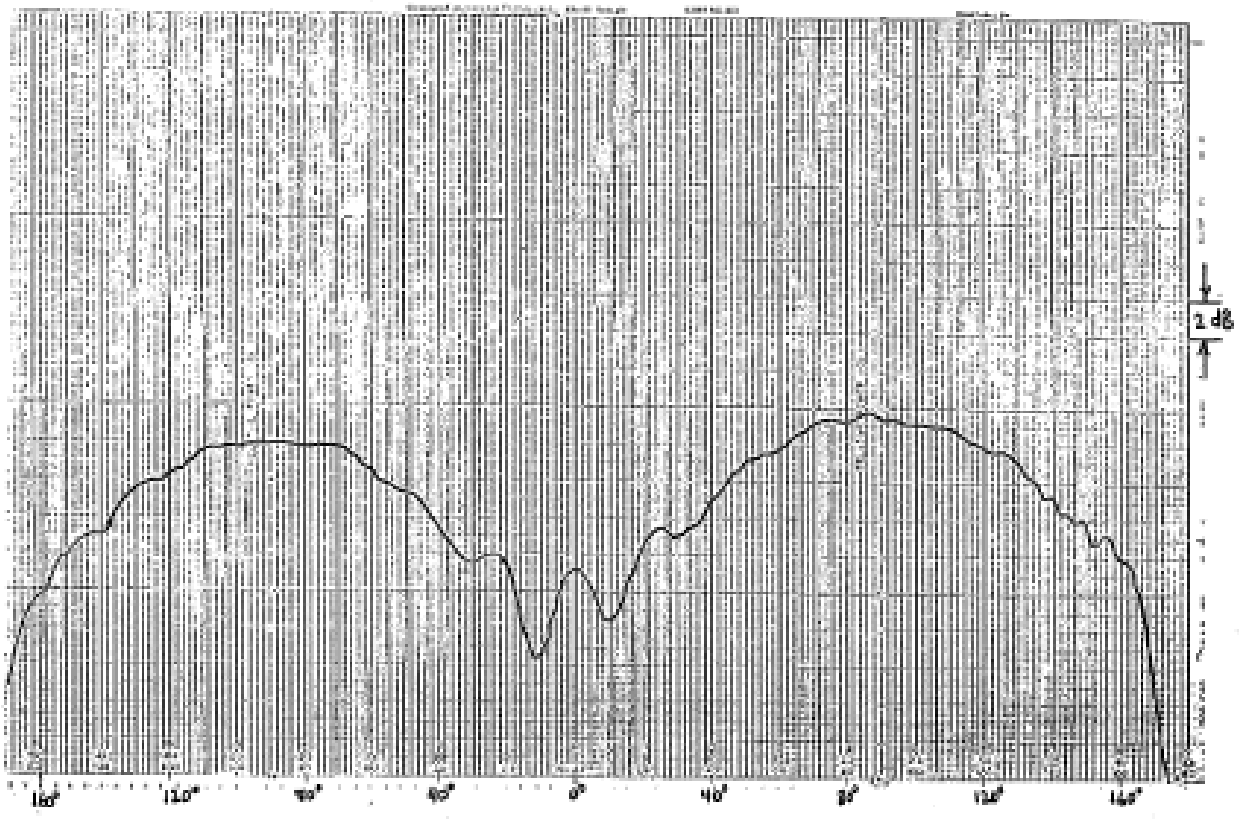


Notes:
1) Gain variation in azimuth shown for elevation angles of 0° and ±20°.
2) The x-axis represents the azimuth angle and spans from -180° to +180°. Each major axis division line represents 20° of azimuth.
3) The y-axis represents the antenna gain. Each major axis division line represents 2 dB of gain.

Back-Up Command Receive Beam (continued)
(Bicone Antenna)
(Beam ID: CMDB)

Polarization: Horizontal
Peak Antenna Gain: 2.2 dBi
Peak G/T: -30.8 dB/K
Command Threshold @ Peak G/T: -91.8 dBW/m^2

(b) Elevation Cut Antenna Gain Pattern

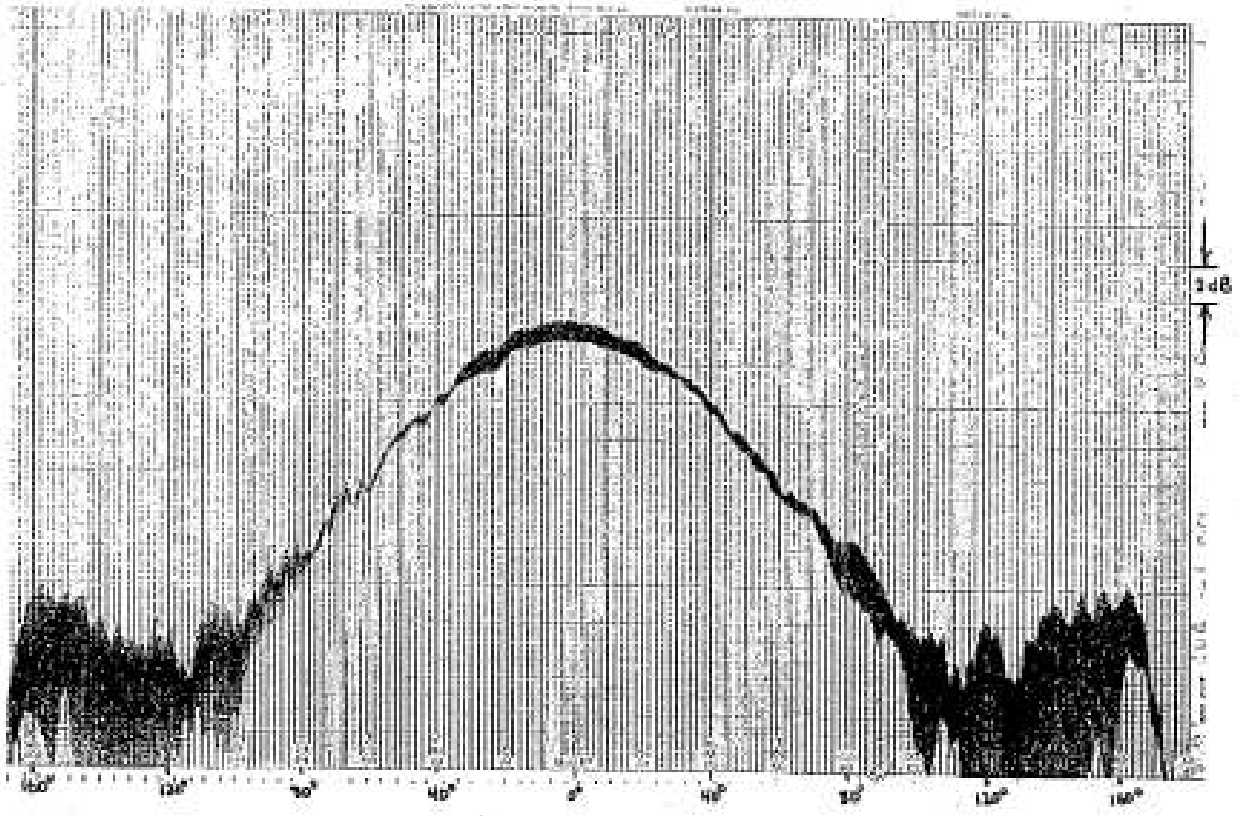


Notes:
1) Gain variation in elevation shown for the azimuth angle of 0°.
2) The x-axis represents the elevation angle and spans from -180° to +180°. Each major axis division line represents 20° of elevation.
3) The y-axis represents the antenna gain. Each major axis division line represents 2 dB of gain.

Back-Up Command Receive Beam
(Pipe Antenna)
(Beam ID: CMDP)

Polarization: Left Hand Circular
Peak Antenna Gain: 3.8 dBi
Peak G/T: -28.7 dB/K
Command Threshold @ Peak G/T: -94.3 dBW/m^2

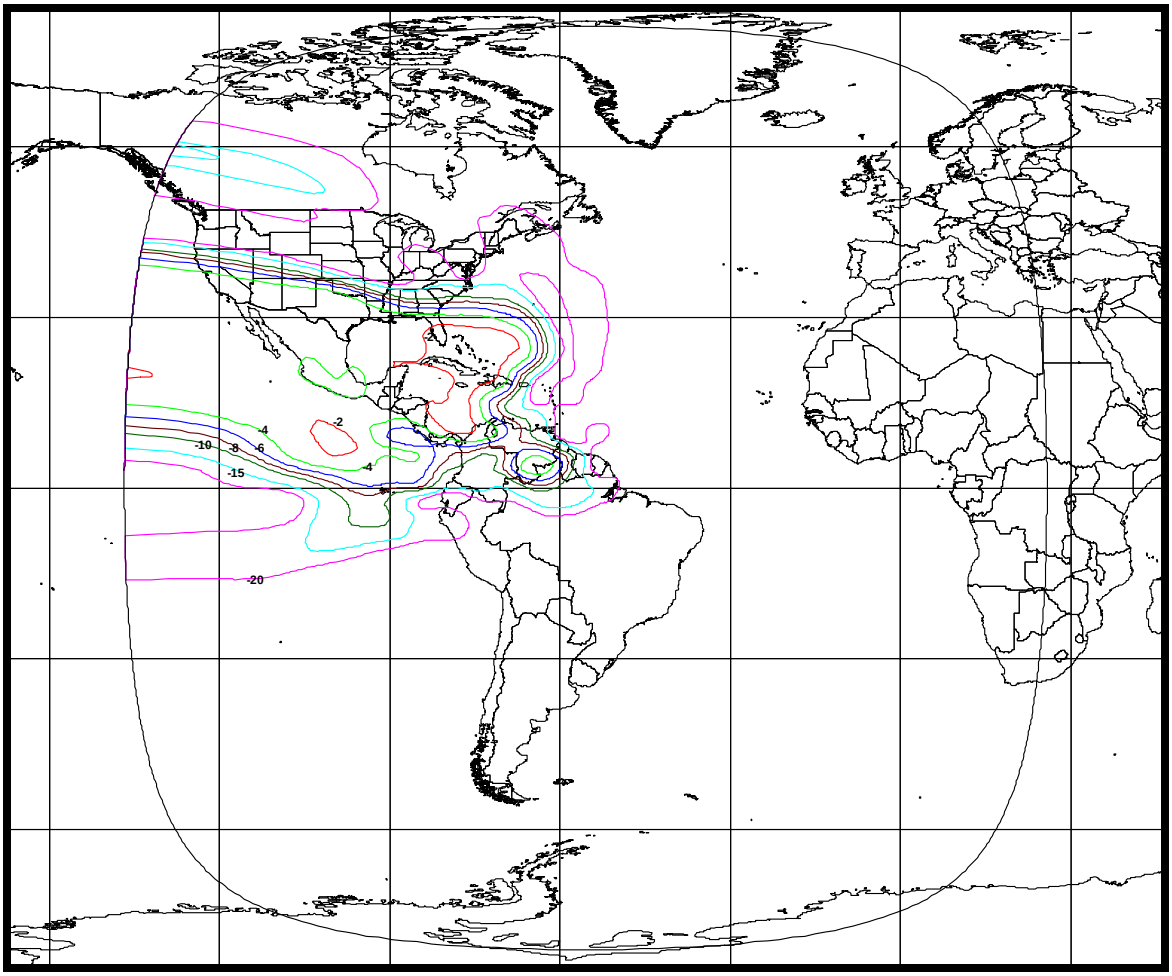
Azimuth Cut Antenna Gain Pattern



Notes:
1) Gain variation in azimuth shown for elevation angle of 0°.
2) The x-axis represents the azimuth angle and spans from -180° to +180°. Each major axis division line represents 20° of azimuth.
3) The y-axis represents the antenna gain. Each major axis division line represents 2 dB of gain.

On-Station Telemetry Transmit Beam
(Communication Antenna)
(Beam ID: TLMC)

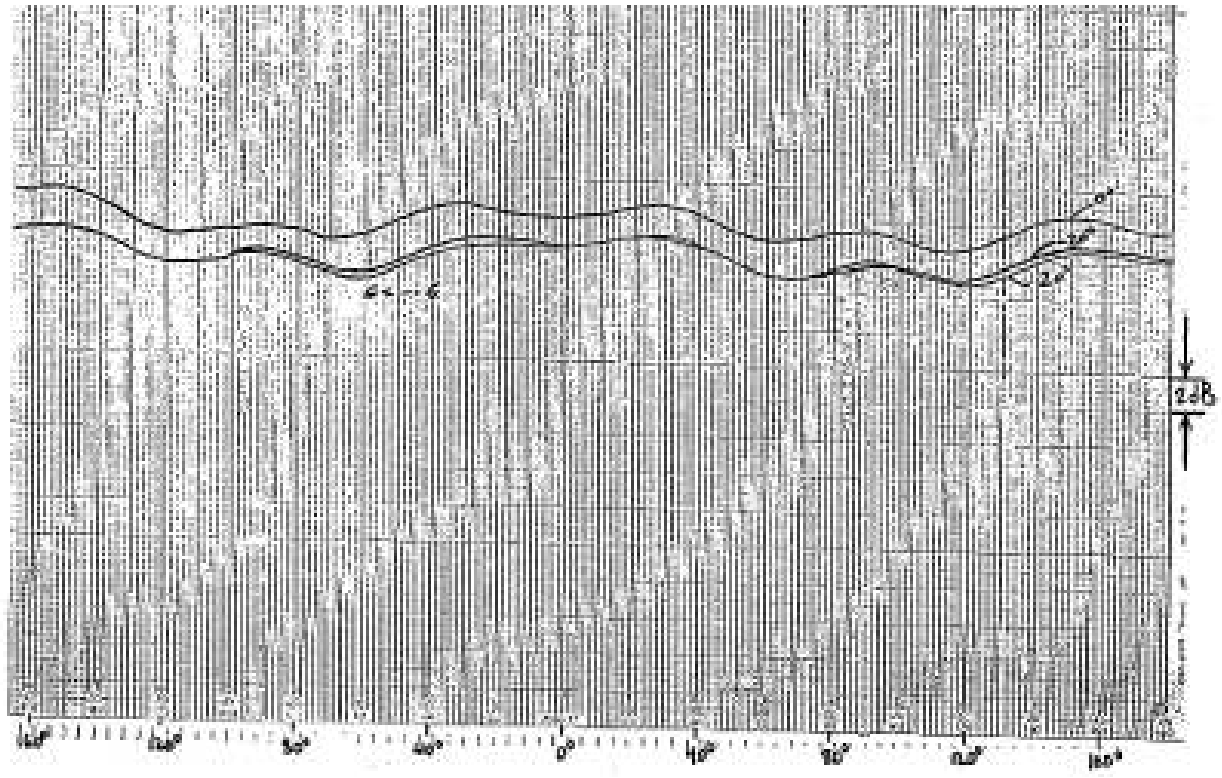
Polarization: Vertical
Peak Antenna Gain: 31.9 dBi
Peak EIRP: 15.3 dBW



Back-Up Telemetry Transmit Beam
(Bicone Antenna)
(Beam ID: TLMB)

Polarization: Vertical
Peak Antenna Gain: 2.7 dBi
Peak EIRP: 11.6 dBW

(a) Azimuth Cut Antenna Gain Pattern

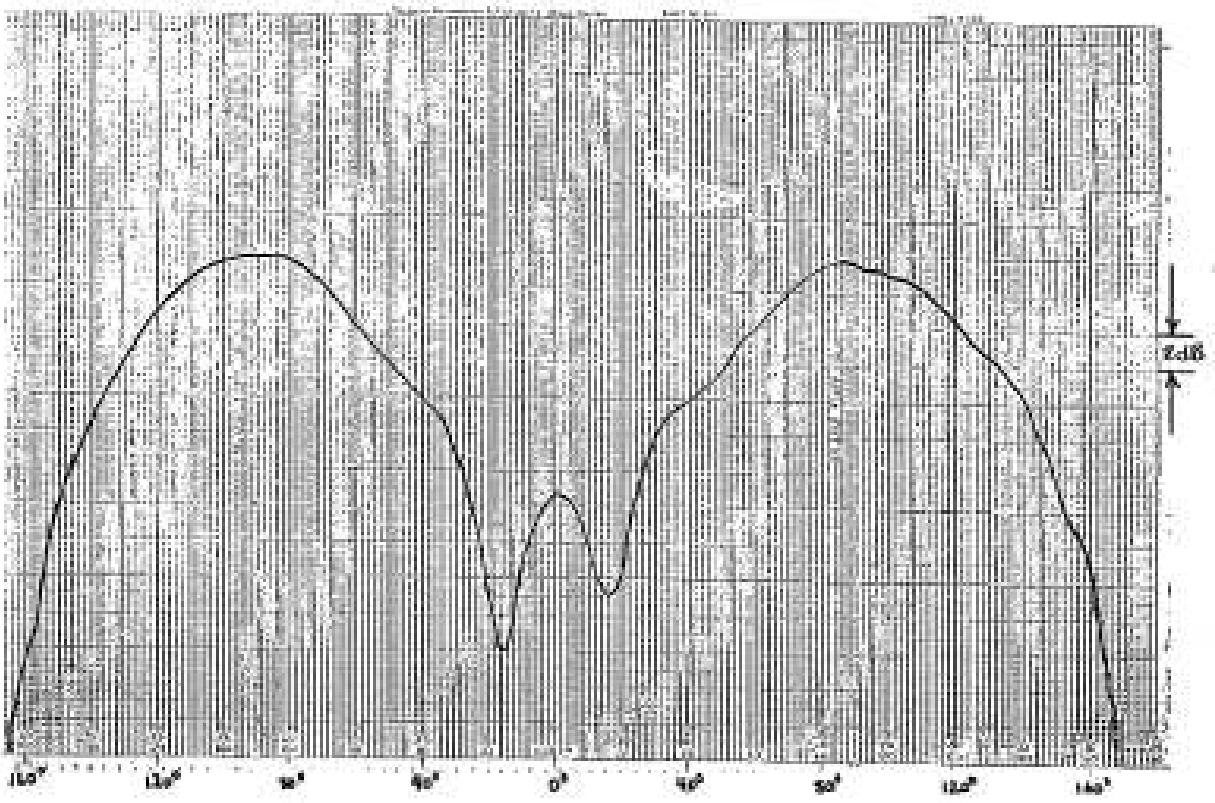


Notes:
1) Gain variation in azimuth shown for elevation angles of 0° and ±20°.
2) The x-axis represents the azimuth angle and spans from -180° to +180°. Each major axis division line represents 20° of azimuth.
3) The y-axis represents the antenna gain. Each major axis division line represents 2 dB of gain.

Back-Up Telemetry Transmit Beam (continued)
(Bicone Antenna)
(Beam ID: TLMB)

Polarization: Vertical
Peak Antenna Gain: 2.7 dBi
Peak EIRP: 11.6 dBW

(b) Elevation Cut Antenna Gain Pattern

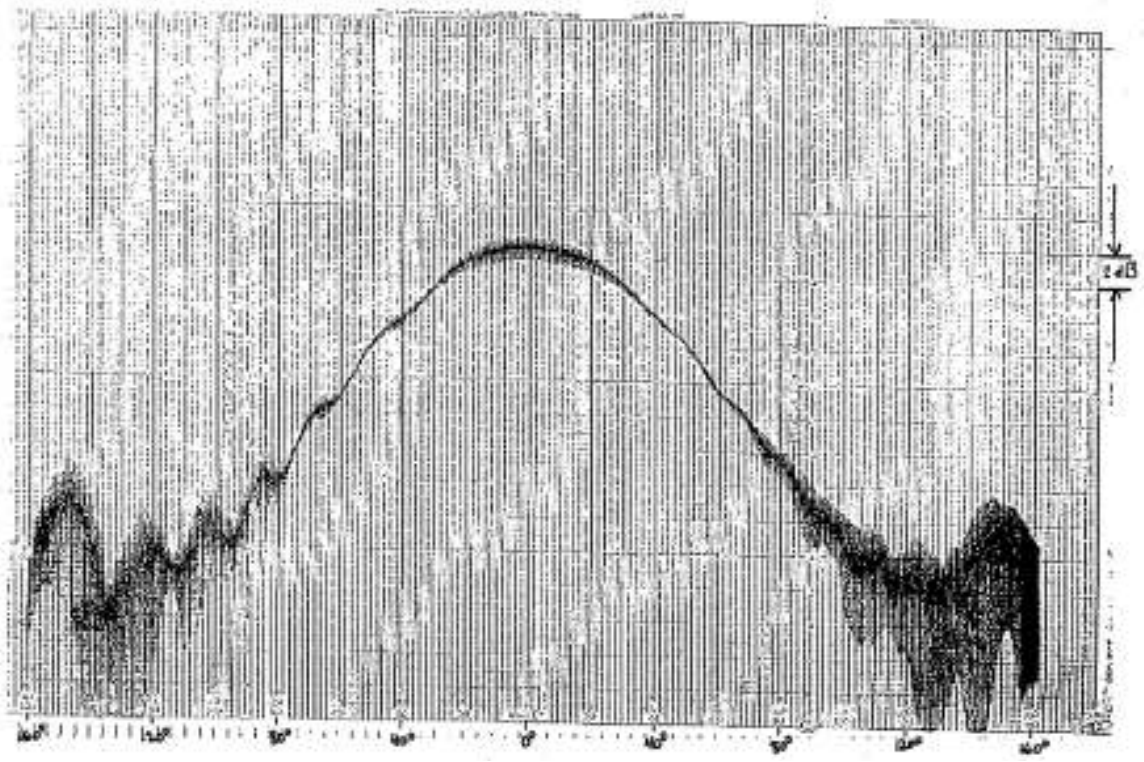


Notes:
1) Gain variation in elevation shown for the azimuth angle of 0°.
2) The x-axis represents the elevation angle and spans from -180° to +180°. Each major axis division line represents 20° of elevation.
3) The y-axis represents the antenna gain. Each major axis division line represents 2 dB of gain.

Back-Up Telemetry Transmit Beam
(Pipe Antenna)
(Beam ID: TLMP)

Polarization: Left Hand Circular
Peak Antenna Gain: 5.3 dBi
Peak EIRP: 11.6 dBW

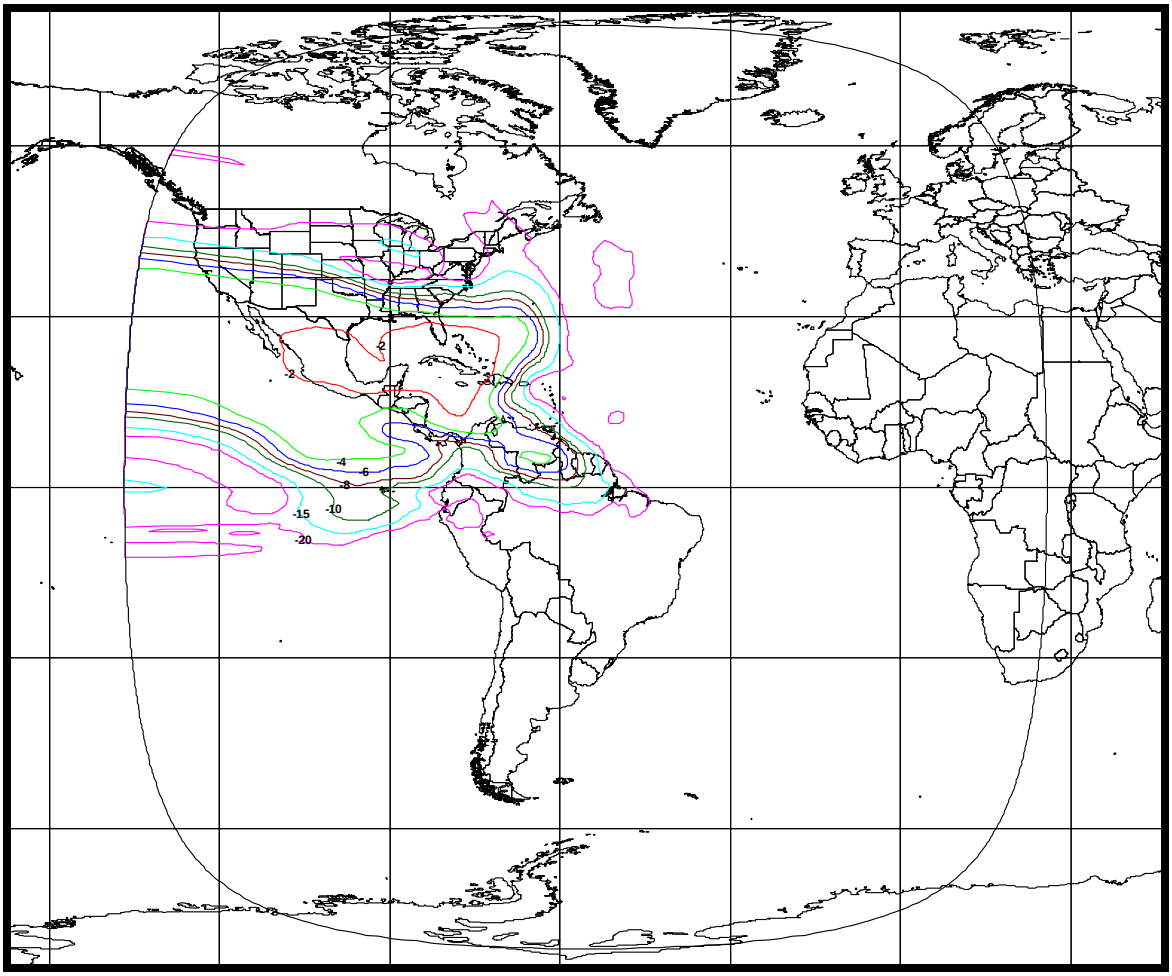
Azimuth Cut Antenna Gain Pattern



Notes:
1) Gain variation in azimuth shown for elevation angle of 0°.
2) The x-axis represents the azimuth angle and spans from -180° to +180°. Each major axis division line represents 20° of azimuth.
3) The y-axis represents the antenna gain. Each major axis division line represents 2 dB of gain.

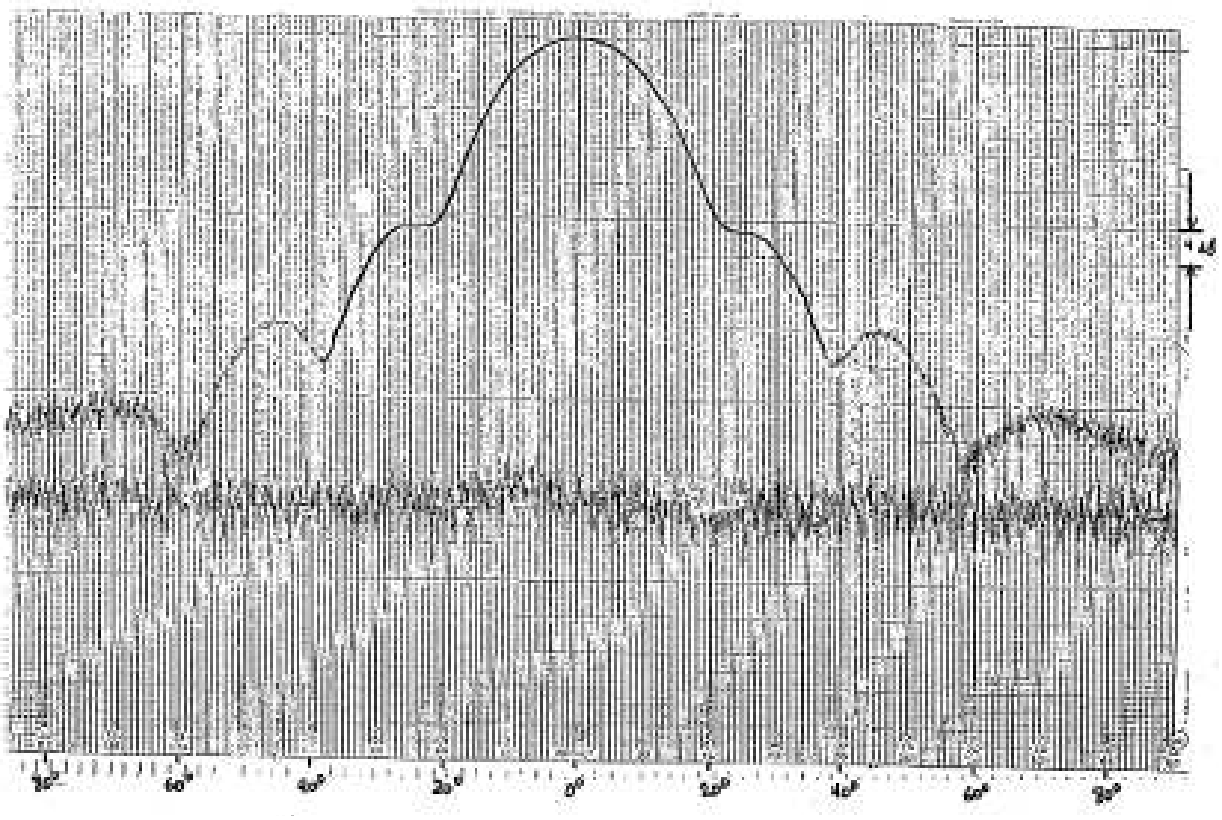
ULPC Transmit Beam
(Communication Antenna)
(Beam ID: UPCC)

Polarization: Horizontal
Peak Antenna Gain: 32.2 dBi
Peak EIRP: 25.3 dBW



ULPC Transmit Beam
(Global Antenna)
(Beam ID: UPGH)

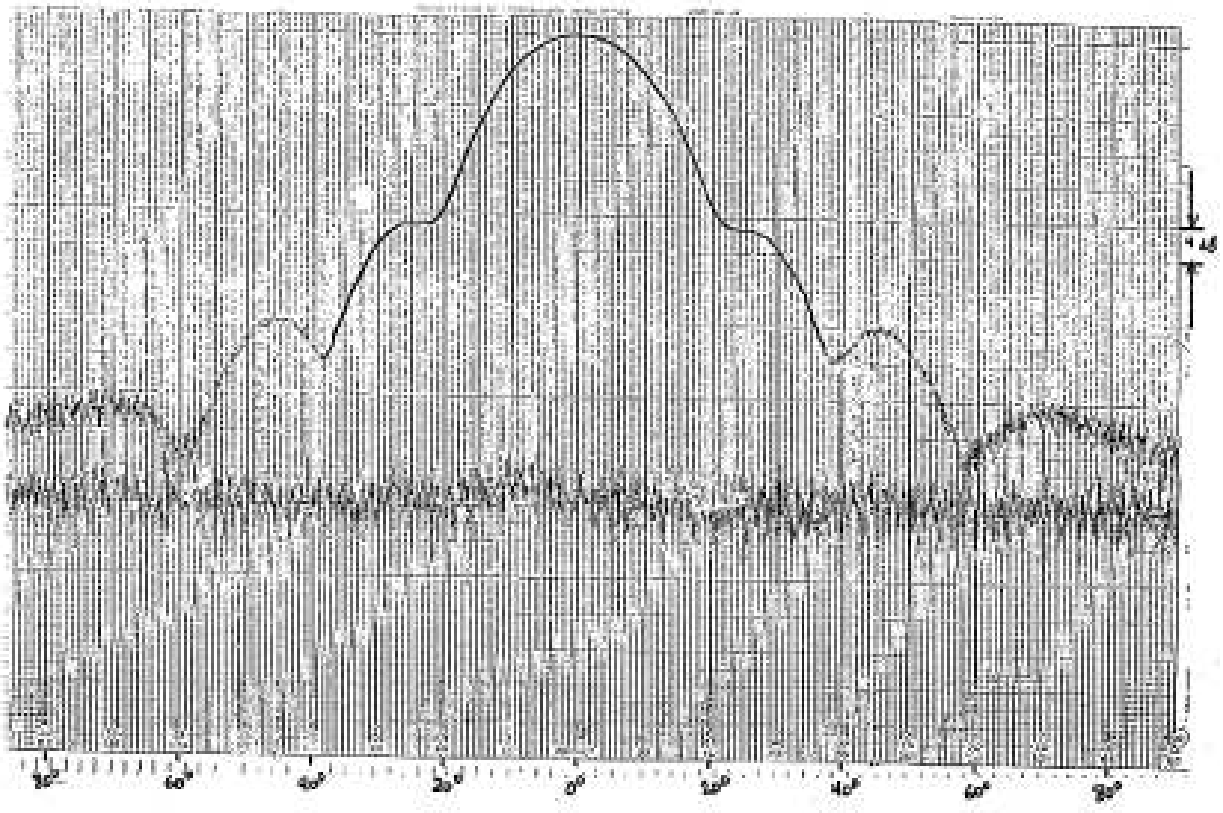
Polarization: Horizontal
Peak Antenna Gain: 24.2 dBi
Peak EIRP: 19.1 dBW



Notes:
1) Gain variation in azimuth shown for elevation angle of 0°.
2) The x-axis represents the azimuth angle and spans from -90° to +90°. Each major axis division line represents 10° of azimuth.
3) The y-axis represents the antenna gain. Each major axis division line represents 4 dB of gain.

ULPC Transmit Beam
(Global Antenna)
(Beam ID: UPGV)

Polarization: Vertical
Peak Antenna Gain: 24.2 dBi
Peak EIRP: 19.1 dBW



Notes:
1) Gain variation in azimuth shown for elevation angle of 0°.

2) The x-axis represents the azimuth angle and spans from -90° to +90°. Each major axis division line represents 10° of azimuth.
3) The y-axis represents the antenna gain. Each major axis division line represents 4 dB of gain.

EXHIBIT 3: Power Flux Density Calculations

FREQUENCY BAND : 10950 – 11200 MHz							
BHDL (H): 24M0F3F							
Elevation Angle (degrees)	0	5	10	15	20	25	90
Assumed EIRP (dBW)	43.4*	43.3*	45.7*	48.0*	50.4*	52.5	52.5
Occupied Bandwidth (kHz)	4000	4000	4000	4000	4000	4000	4000
Spreading Loss (dB/m^2)	163.4	163.3	163.2	163.0	162.9	162.8	162.1
Maximum EIRP Spectral Density (dBW/m^2/4kHz)	-150.0	-150.0	-147.5	-145.0	-142.5	-140.3	-139.6
PFD Limit (dBW/m^2/4kHz)	-150	-150	-147.5	-145.0	-142.5	-140.0	-140.0
Margin (dB)	0.0	0.0	0.0	0.0	0.0	0.3	-0.4
BHDL (H): 27M0G7W							
Elevation Angle (degrees)	0	5	10	15	20	25	90
Assumed EIRP (dBW)	50.9*	50.8*	52.5	52.5	52.5	52.5	52.5
Occupied Bandwidth (kHz)	22600	22600	22600	22600	22600	22600	22600
Spreading Loss (dB/m^2)	163.4	163.3	163.2	163.0	162.9	162.8	162.1
Maximum EIRP Spectral Density (dBW/m^2/4kHz)	-150.0	-150.0	-148.2	-148.1	-148.0	-147.8	-147.1
PFD Limit (dBW/m^2/4kHz)	-150	-150	-147.5	-145.0	-142.5	-140.0	-140.0
Margin (dB)	0.0	0.0	0.7	3.1	5.5	7.8	7.1
BVDL (V): 24M0F3F							
Elevation Angle (degrees)	0	5	10	15	20	25	90
Assumed EIRP (dBW)	43.4*	43.3*	45.7*	48.0*	50.4*	51.9	51.9
Occupied Bandwidth (kHz)	4000	4000	4000	4000	4000	4000	4000
Spreading Loss (dB/m^2)	163.4	163.3	163.2	163.0	162.9	162.8	162.1
Maximum EIRP Spectral Density (dBW/m^2/4kHz)	-150.0	-150.0	-147.5	-145.0	-142.5	-140.9	-140.2
PFD Limit (dBW/m^2/4kHz)	-150	-150	-147.5	-145.0	-142.5	-140.0	-140.0
Margin (dB)	0.0	0.0	0.0	0.0	0.0	0.9	0.2
BVDL (V): 27M0G7W							
Elevation Angle (degrees)	0	5	10	15	20	25	90
Assumed EIRP (dBW)	50.9*	50.8*	51.9	51.9	51.9	51.9	51.9
Occupied Bandwidth (kHz)	22600	22600	22600	22600	22600	22600	22600
Spreading Loss (dB/m^2)	163.4	163.3	163.2	163.0	162.9	162.8	162.1
Maximum EIRP Spectral Density (dBW/m^2/4kHz)	-150.0	-150.0	-148.8	-148.7	-148.6	-148.4	-147.7
PFD Limit (dBW/m^2/4kHz)	-150	-150	-147.5	-145.0	-142.5	-140.0	-140.0
Margin (dB)	0.0	0.0	1.3	3.7	6.1	8.4	7.7
KHDL (H): 24M0F3F							
Elevation Angle (degrees)	0	5	10	15	20	25	90
Assumed EIRP (dBW)	43.4*	43.3*	45.7*	48.0*	50.4*	52.1	52.1
Occupied Bandwidth (kHz)	4000	4000	4000	4000	4000	4000	4000
Spreading Loss (dB/m^2)	163.4	163.3	163.2	163.0	162.9	162.8	162.1
Maximum EIRP Spectral Density (dBW/m^2/4kHz)	-150.0	-150.0	-147.5	-145.0	-142.5	-140.7	-140.0
PFD Limit (dBW/m^2/4kHz)	-150	-150	-147.5	-145.0	-142.5	-140.0	-140.0
Margin (dB)	0.0	0.0	0.0	0.0	0.0	0.7	0.0

FREQUENCY BAND : 10950 – 11200 MHz							
KHDL (H): 27M0G7W							
Elevation Angle (degrees)	0	5	10	15	20	25	90
Assumed EIRP (dBW)	50.9*	50.8*	52.1	52.1	52.1	52.1	52.1
Occupied Bandwidth (kHz)	22600	22600	22600	22600	22600	22600	22600
Spreading Loss (dB/m^2)	163.4	163.3	163.2	163.0	162.9	162.8	162.1
Maximum EIRP Spectral Density (dBW/m^2/4kHz)	-150.0	-150.0	-148.6	-148.5	-148.4	-148.2	-147.5
PFD Limit (dBW/m^2/4kHz)	-150	-150	-147.5	-145.0	-142.5	-140.0	-140.0
Margin (dB)	0.0	0.0	1.1	3.5	5.9	8.2	7.5
KVDL (V): 24M0F3F							
Elevation Angle (degrees)	0	5	10	15	20	25	90
Assumed EIRP (dBW)	43.4*	43.3*	45.7*	48.0*	50.4*	52.0	52.0
Occupied Bandwidth (kHz)	4000	4000	4000	4000	4000	4000	4000
Spreading Loss (dB/m^2)	163.4	163.3	163.2	163.0	162.9	162.8	162.1
Maximum EIRP Spectral Density (dBW/m^2/4kHz)	-150.0	-150.0	-147.5	-145.0	-142.5	-140.8	-140.1
PFD Limit (dBW/m^2/4kHz)	-150	-150	-147.5	-145.0	-142.5	-140.0	-140.0
Margin (dB)	0.0	0.0	0.0	0.0	0.0	0.8	0.1
KVDL (V): 27M0G7W							
Elevation Angle (degrees)	0	5	10	15	20	25	90
Assumed EIRP (dBW)	50.9*	50.8*	52.0	52.0	52.0	52.0	52.0
Occupied Bandwidth (kHz)	22600	22600	22600	22600	22600	22600	22600
Spreading Loss (dB/m^2)	163.4	163.3	163.2	163.0	162.9	162.8	162.1
Maximum EIRP Spectral Density (dBW/m^2/4kHz)	-150.0	-150.0	-148.7	-148.6	-148.5	-148.3	-147.6
PFD Limit (dBW/m^2/4kHz)	-150	-150	-147.5	-145.0	-142.5	-140.0	-140.0
Margin (dB)	0.0	0.0	1.2	3.6	6.0	8.3	7.6
UPGH (H)							
Elevation Angle (degrees)	0	5	10	15	20	25	90
Assumed EIRP (dBW)	19.1	19.1	19.1	19.1	19.1	19.1	19.1
Occupied Bandwidth (kHz)	25	25	25	25	25	25	25
Spreading Loss (dB/m^2)	163.4	163.3	163.2	163.0	162.9	162.8	162.1
Maximum EIRP Spectral Density (dBW/m^2/4kHz)	-152.2	-152.1	-152.0	-151.9	-151.8	-151.7	-150.9
PFD Limit (dBW/m^2/4kHz)	-150	-150	-147.5	-145.0	-142.5	-140.0	-140.0
Margin (dB)	2.2	2.1	4.5	6.9	9.3	11.7	10.9
UPGV (V)							
Elevation Angle (degrees)	0	5	10	15	20	25	90
Assumed EIRP (dBW)	19.1	19.1	19.1	19.1	19.1	19.1	19.1
Occupied Bandwidth (kHz)	25	25	25	25	25	25	25
Spreading Loss (dB/m^2)	163.4	163.3	163.2	163.0	162.9	162.8	162.1
Maximum EIRP Spectral Density (dBW/m^2/4kHz)	-152.2	-152.1	-152.0	-151.9	-151.8	-151.7	-150.9
PFD Limit (dBW/m^2/4kHz)	-150	-150	-147.5	-145.0	-142.5	-140.0	-140.0
Margin (dB)	2.2	2.1	4.5	6.9	9.3	11.7	10.9

* This is the maximum allowable EIRP level at the specified elevation angle. The actual EIRP level of the carrier at this particular elevation angle will be made to be equal to or lower than the value listed in the table through reduction in the output power of the channel

EXHIBIT 4: Galaxy 11 Link Budgets

UPLINK BEAM INFORMATION						
Uplink Beam Name	KHUL	KHUL	KHUL	KHUL	KHUL	KHUL
Uplink Frequency (GHz)	14.0-14.5	14.0-14.5	14.0-14.5	14.0-14.5	14.0-14.5	14.0-14.5
Uplink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Uplink Relative Contour Level (dB)	-6.3	-6.3	-6.3	-6.3	-6.3	-6.3
Uplink Contour G/T (dB/K)	0.0	0.0	0.0	0.0	0.0	0.0
Uplink Contour SFD (dBW/m2)	-78.5	-78.5	-80.5	-80.5	-80.5	-80.5
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	KVDL	KVDL	KVDL	KVDL	KVDL	KVDL
Downlink Frequency (GHz)	11.7-12.2	11.7-12.2	11.7-12.2	11.7-12.2	11.7-12.2	11.7-12.2
Downlink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Downlink Relative Contour Level (dB)	-6.4	-6.4	-6.4	-6.4	-6.4	-6.4
Downlink Contour EIRP (dBW)	43.3	43.3	43.3	43.3	43.3	43.3
ADJACENT SATELLITE 1						
Satellite 1 Orbital Location	53.6W	53.6W	53.6W	53.6W	53.6W	53.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.4	-26.4	-26.4	-26.4	-26.4	-26.4
ADJACENT SATELLITE 2						
Satellite 1 Orbital Location	57.6W	57.6W	57.6W	57.6W	57.6W	57.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.4	-26.4	-26.4	-26.4	-26.4	-26.4
CARRIER INFORMATION						
Carrier ID	36M0F3F	36M0G7W	8M25G7W	1M43G7W	717KG7W	111KG7W
Carrier Modulation	TV/FM	QPSK	QPSK	BPSK	BPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	N/A	N/A	N/A	N/A	N/A
Information Rate(kbps)	N/A	36860	8448	512	256	128
Code Rate	N/A	3/4x188/204	3/4x188/204	1/2	1/2	3/4
Occupied Bandwidth(kHz)	32400	26664.7	6111.3	1024.0	512.0	85.3
Allocated Bandwidth(kHz)	36000	35997.5	8250.5	1434.0	717.0	111.0
Minimum C/N, Clear Sky (dB)	16.4	7.3	7.3	-0.2	-0.2	5.9
Minimum C/N, Rain (dB)	16.4	7.3	7.3	-0.2	-0.2	5.9
UPLINK EARTH STATION						
Earth Station Diameter (meters)	6.5	6.5	4.0	4.0	4.0	2.4
Earth Station Gain (dBi)	57.4	57.4	53.1	53.1	53.1	48.7
Earth Station Elevation Angle	10.1	10.1	10.1	10.1	10.1	10.1
Rain Rate (mm/yr)	394	394	394	394	394	394
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	6.5	2.4	4.0	1.8	1.8	4.0
Earth Station Gain (dBi)	55.6	47.0	51.4	44.5	44.5	51.4
Earth Station G/T (dB/K)	34.0	25.0	29.0	23.3	23.3	29.0
Earth Station Elevation Angle	10.0	10.0	10.0	10.0	10.0	10.0
Rain Rate (mm/yr)	214	214	214	214	214	214
LINK FADE TYPE	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky
UPLINK PERFORMANCE						
Uplink Earth Station EIRP (dBW)	80.9	79.7	67.5	59.1	56.2	48.0
Uplink Path Loss, Clear Sky (dB)	-208.1	-208.1	-208.1	-208.1	-208.1	-208.1
Satellite G/T(dB/K)	0.0	0.0	0.0	0.0	0.0	0.0
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	32.4	26.7	6.1	1.0	0.5	0.1
Uplink C/N(dB)	26.3	25.9	20.1	19.5	19.6	19.2
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	42.5	41.9	32.3	23.8	20.8	12.6
Downlink Path Loss, Clear Sky (dB)	-206.5	-206.5	-206.5	-206.5	-206.5	-206.5
Downlink Earth Station G/T (dB/K)	34.0	25.0	29.0	23.3	23.3	29.0
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	32.4	26.7	6.1	1.0	0.5	0.1
Transponder Correction Factor	0.0	0.3	0.0	0.0	0.0	0.0
Downlink C / N(dB)	23.5	15.0	15.5	9.1	9.1	14.4
COMPOSITE LINK PERFORMANCE						
Uplink Earth Station HPA Intermodulation C/N (dB)	35.7	35.4	29.6	29.0	29.0	28.6
C/N Uplink (dB)	26.3	25.9	20.1	19.5	19.6	19.2
Uplink Interference C/I (dB)	48.1	38.7	31.7	38.4	31.0	31.5
Uplink Adjacent Satellite C/I (dB)	26.7	26.4	20.6	20.0	20.1	19.7
Intermodulation C/IM (dB)	124.9	200.0	21.0	18.6	18.2	17.7
Downlink C/N (dB)	23.5	15.0	15.5	9.1	9.1	14.4
Downlink Interference C/I (dB)	46.9	35.4	29.2	23.4	22.1	21.6
Downlink Adjacent Satellite C/I (dB)	18.7	10.2	11.5	3.7	3.7	10.3
Subtotal C/N (dB)	16.5	8.8	9.0	2.3	2.3	7.5
Margin - Other Losses (dB)	0	1.5	1.5	1.5	1.5	1.5
Total C/N (dB)	16.5	7.3	7.5	0.8	0.8	6.0
Minimum Required C/N (dB)	16.4	7.3	7.3	-0.2	-0.2	5.9
Number of Carriers	1	1	4	25	50	324
CARRIER DENSITY LEVELS						
Uplink Power Density (dBW/Hz)	-42.5	-52.0	-53.5	-54.1	-54.0	-50.0
Downlink EIRP Density At Beam Peak (dBW/Hz)	-17.1	-26.0	-29.2	-29.9	-29.9	-30.3

UPLINK BEAM INFORMATION						
Uplink Beam Name	EHUL	EHUL	EHUL	EHUL	EHUL	EHUL
Uplink Frequency (GHz)	13.75-14.0	13.75-14.0	13.75-14.0	13.75-14.0	13.75-14.0	13.75-14.0
Uplink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Uplink Relative Contour Level (dB)	-6.0	-6.0	-6.0	-6.0	-6.0	-6.0
Uplink Contour G/T (dB/K)	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8
Uplink Contour SFD (dBW/m2)	-82.3	-83.3	-80.3	-80.3	-80.3	-80.3
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	EVDL	EVDL	EVDL	EVDL	EVDL	EVDL
Downlink Frequency (GHz)	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2
Downlink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Downlink Relative Contour Level (dB)	-6.0	-6.0	-6.0	-6.0	-6.0	-6.0
Downlink Contour EIRP (dBW)	45.2	45.2	45.2	45.2	45.2	45.2
ADJACENT SATELLITE 1						
Satellite 1 Orbital Location	53.6W	53.6W	53.6W	53.6W	53.6W	53.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.0	-26.0	-26.0	-26.0	-26.0	-26.0
ADJACENT SATELLITE 2						
Satellite 1 Orbital Location	57.6W	57.6W	57.6W	57.6W	57.6W	57.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.0	-26.0	-26.0	-26.0	-26.0	-26.0
CARRIER INFORMATION						
Carrier ID	25M0F3F	27M0G7W	8M25G7W	1M43G7W	717KG7W	111KG7W
Carrier Modulation	TV/FM	QPSK	QPSK	BPSK	BPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	N/A	N/A	N/A	N/A	N/A
Information Rate(kbps)	N/A	27650	8448	512	256	128
Code Rate	N/A	3/4x188/204	3/4x188/204	1/2	1/2	3/4
Occupied Bandwidth(kHz)	20700	20002.1	6111.3	1024.0	512.0	85.3
Allocated Bandwidth(kHz)	25000	27003	8250.5	1434.0	717.0	111.0
Minimum C/N, Clear Sky (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Minimum C/N, Rain (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
UPLINK EARTH STATION						
Earth Station Diameter (meters)	4.0	2.4	4.0	2.4	2.4	4.0
Earth Station Gain (dBi)	53.1	48.7	53.1	48.7	48.7	53.1
Earth Station Elevation Angle	10.1	10.1	10.1	10.1	10.1	10.1
Rain Rate (mm/yr)	3479	3479	3479	3479	3479	3479
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	6.5	2.4	2.4	1.8	1.8	2.4
Earth Station Gain (dBi)	55.6	47.0	47.0	44.5	44.5	47.0
Earth Station G/T (dB/K)	34.0	25.0	25.0	23.3	23.3	25.0
Earth Station Elevation Angle	10.2	10.2	10.2	10.2	10.2	10.2
Rain Rate (mm/yr)	2098	2098	2098	2098	2098	2098
LINK FADE TYPE	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky
UPLINK PERFORMANCE						
Uplink Earth Station EIRP (dBW)	72.3	71.2	68.8	57.0	53.9	49.2
Uplink Path Loss, Clear Sky (dB)	-208.3	-208.3	-208.3	-208.3	-208.3	-208.3
Satellite G/T(dB/K)	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Uplink C/N(dB)	18.6	17.7	20.4	16.4	16.3	19.4
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	50.0	40.8	35.4	23.4	20.3	15.6
Downlink Path Loss, Clear Sky (dB)	-206.0	-206.0	-206.0	-206.0	-206.0	-206.0
Downlink Earth Station G/T (dB/K)	34.0	25.0	25.0	23.3	23.3	25.0
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Transponder Correction Factor	0.0	0.6	0.0	0.0	0.0	0.0
Downlink C / N(dB)	33.4	16.0	15.1	9.2	9.1	13.9
COMPOSITE LINK PERFORMANCE						
Uplink Earth Station HPA Intermodulation C/N (dB)	34.3	33.3	36.1	32.1	32.0	35.1
C/N Uplink (dB)	18.6	17.7	20.4	16.4	16.3	19.4
Uplink Interference C/I (dB)	32.6	30.9	200.0	200.0	96.4	85.5
Uplink Adjacent Satellite C/I (dB)	20.1	19.2	22.0	17.9	17.8	20.9
Intermodulation C/IM (dB)	126.8	200.0	25.7	19.2	18.7	21.7
Downlink C/N (dB)	33.4	16.0	15.1	9.2	9.1	13.9
Downlink Interference C/I (dB)	42.4	30.6	31.7	19.6	21.8	24.7
Downlink Adjacent Satellite C/I (dB)	19.8	11.2	10.9	4.0	3.9	9.6
Subtotal C/N (dB)	14.6	8.8	8.8	2.4	2.3	7.4
Margin - Other Losses (dB)	0	1.5	1.5	1.5	1.5	1.5
Total C/N (dB)	14.6	7.3	7.3	0.9	0.8	5.9
Minimum Required C/N (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Number of Carriers	1	1	3	19	38	243
CARRIER DENSITY LEVELS						
Uplink Power Density (dBW/Hz)	-46.8	-50.5	-52.2	-51.8	-51.9	-53.2
Downlink EIRP Density At Beam Peak (dBW/Hz)	-10.0	-26.2	-26.5	-30.7	-30.8	-27.7

UPLINK BEAM INFORMATION						
Uplink Beam Name	KVUL	KVUL	KVUL	KVUL	KVUL	KVUL
Uplink Frequency (GHz)	14.0-14.5	14.0-14.5	14.0-14.5	14.0-14.5	14.0-14.5	14.0-14.5
Uplink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Uplink Relative Contour Level (dB)	-6.3	-6.3	-6.3	-6.3	-6.3	-6.3
Uplink Contour G/T (dB/K)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
Uplink Contour SFD (dBW/m2)	-79.0	-81.0	-81.0	-81.0	-81.0	-81.0
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	KHDL	KHDL	KHDL	KHDL	KHDL	KHDL
Downlink Frequency (GHz)	11.7-12.2	11.7-12.2	11.7-12.2	11.7-12.2	11.7-12.2	11.7-12.2
Downlink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Downlink Relative Contour Level (dB)	-6.2	-6.2	-6.2	-6.2	-6.2	-6.2
Downlink Contour EIRP (dBW)	43.5	43.5	43.5	43.5	43.5	43.5
ADJACENT SATELLITE 1						
Satellite 1 Orbital Location	53.6W	53.6W	53.6W	53.6W	53.6W	53.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.2	-26.2	-26.2	-26.2	-26.2	-26.2
ADJACENT SATELLITE 2						
Satellite 1 Orbital Location	57.6W	57.6W	57.6W	57.6W	57.6W	57.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.2	-26.2	-26.2	-26.2	-26.2	-26.2
CARRIER INFORMATION						
Carrier ID	36M0F3F	36M0G7W	8M25G7W	1M43G7W	717KG7W	111KG7W
Carrier Modulation	TV/FM	QPSK	QPSK	BPSK	BPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	N/A	N/A	N/A	N/A	N/A
Information Rate(kbps)	N/A	36860	8448	512	256	128
Code Rate	N/A	3/4x188/204	3/4x188/204	1/2	1/2	3/4
Occupied Bandwidth(kHz)	32400	26664.7	6111.3	1024.0	512.0	85.3
Allocated Bandwidth(kHz)	36000	35997.5	8250.5	1434.0	717.0	111.0
Minimum C/N, Clear Sky (dB)	16.4	7.3	7.3	-0.2	-0.2	5.9
Minimum C/N, Rain (dB)	16.4	7.3	7.3	-0.2	-0.2	5.9
UPLINK EARTH STATION						
Earth Station Diameter (meters)	6.5	4.0	4.0	4.0	4.0	4.0
Earth Station Gain (dBi)	57.4	53.1	53.1	53.1	53.1	53.1
Earth Station Elevation Angle	10.0	10.0	10.0	10.0	10.0	10.0
Rain Rate (mm/yr)	285	285	285	285	285	285
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	6.5	2.4	4.0	1.8	1.8	4.0
Earth Station Gain (dBi)	55.6	47	51.4	44.5	44.5	51.4
Earth Station G/T (dB/K)	34.0	25.0	29.0	23.3	23.3	29.0
Earth Station Elevation Angle	10.0	10.0	10.0	10.0	10.0	10.0
Rain Rate (mm/yr)	320	320	320	320	320	320
LINK FADE TYPE	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky
UPLINK PERFORMANCE						
Uplink Earth Station EIRP (dBW)	80.5	77.2	66.9	58.3	55.4	47.4
Uplink Path Loss, Clear Sky (dB)	-208.1	-208.1	-208.1	-208.1	-208.1	-208.1
Satellite G/T(dB/K)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	32.4	26.7	6.1	1.0	0.5	0.1
Uplink C/N(dB)	24.4	21.9	18.0	17.2	17.3	17.1
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	42.8	42.1	32.5	23.8	20.8	12.8
Downlink Path Loss, Clear Sky (dB)	-206.5	-206.5	-206.5	-206.5	-206.5	-206.5
Downlink Earth Station G/T (dB/K)	34.0	25.0	29.0	23.3	23.3	29.0
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	32.4	26.7	6.1	1.0	0.5	0.1
Transponder Correction Factor	0.0	0.3	0.0	0.0	0.0	0.0
Downlink C / N(dB)	23.8	15.2	15.7	9.1	9.1	14.6
COMPOSITE LINK PERFORMANCE						
Uplink Earth Station HPA Intermodulation C/N (dB)	33.9	31.4	27.5	26.8	26.8	26.6
C/N Uplink (dB)	24.4	21.9	18.0	17.2	17.3	17.1
Uplink Interference C/I (dB)	43.1	29.3	200.0	200.0	200.0	200.0
Uplink Adjacent Satellite C/I (dB)	26.4	23.9	20.0	19.2	19.3	19.1
Intermodulation C/IM (dB)	124.9	200.0	21.1	18.5	18.2	17.9
Downlink C/N (dB)	23.8	15.2	15.7	9.1	9.1	14.6
Downlink Interference C/I (dB)	44.9	33.2	36.0	23.7	23.8	22.5
Downlink Adjacent Satellite C/I (dB)	19.0	10.5	11.7	3.8	3.8	10.6
Subtotal C/N (dB)	16.4	8.8	8.9	2.3	2.3	7.6
Margin - Other Losses (dB)	0	1.5	1.5	1.5	1.5	1.5
Total C/N (dB)	16.4	7.3	7.4	0.8	0.8	6.1
Minimum Required C/N (dB)	16.4	7.3	7.3	-0.2	-0.2	5.9
Number of Carriers	1	1	4	25	50	324
CARRIER DENSITY LEVELS						
Uplink Power Density (dBW/Hz)	-42.9	-50.2	-54.1	-54.9	-54.8	-55.0
Downlink EIRP Density At Beam Peak (dBW/Hz)	-17.0	-26.0	-29.2	-30.1	-30.1	-30.3

UPLINK BEAM INFORMATION						
Uplink Beam Name	EVUL	EVUL	EVUL	EVUL	EVUL	EVUL
Uplink Frequency (GHz)	13.75-14.0	13.75-14.0	13.75-14.0	13.75-14.0	13.75-14.0	13.75-14.0
Uplink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Uplink Relative Contour Level (dB)	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4
Uplink Contour G/T (dB/K)	0.8	0.8	0.8	0.8	0.8	0.8
Uplink Contour SFD (dBW/m2)	-74.8	-84.8	-79.8	-79.8	-79.8	-79.8
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	EHDL	EHDL	EHDL	EHDL	EHDL	EHDL
Downlink Frequency (GHz)	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2
Downlink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Downlink Relative Contour Level (dB)	-6.1	-6.1	-6.1	-6.1	-6.1	-6.1
Downlink Contour EIRP (dBW)	44.8	44.8	44.8	44.8	44.8	44.8
ADJACENT SATELLITE 1						
Satellite 1 Orbital Location	53.6W	53.6W	53.6W	53.6W	53.6W	53.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.1	-26.1	-26.1	-26.1	-26.1	-26.1
ADJACENT SATELLITE 2						
Satellite 1 Orbital Location	57.6W	57.6W	57.6W	57.6W	57.6W	57.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.1	-26.1	-26.1	-26.1	-26.1	-26.1
CARRIER INFORMATION						
Carrier ID	25M0F3F	27M0G7W	8M25G7W	1M43G7W	717KG7W	111KG7W
Carrier Modulation	TV/FM	QPSK	QPSK	BPSK	BPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	N/A	N/A	N/A	N/A	N/A
Information Rate(kbps)	N/A	27650	8448	512	256	128
Code Rate	N/A	3/4x188/204	3/4x188/204	1/2	1/2	3/4
Occupied Bandwidth(kHz)	20700	20002.1	6111.3	1024.0	512.0	85.3
Allocated Bandwidth(kHz)	25000	27003	8250.5	1434.0	717.0	111.0
Minimum C/N, Clear Sky (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Minimum C/N, Rain (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
UPLINK EARTH STATION						
Earth Station Diameter (meters)	6.5	2.4	4.0	2.4	2.4	4.0
Earth Station Gain (dBi)	57.4	48.7	53.1	48.7	48.7	53.1
Earth Station Elevation Angle	21.4	21.4	21.4	21.4	21.4	21.4
Rain Rate (mm/yr)	771	771	771	771	771	771
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	4.0	2.4	2.4	1.8	1.8	2.4
Earth Station Gain (dBi)	51.4	47.0	47.0	44.5	44.5	47.0
Earth Station G/T (dB/K)	29.0	25.0	25.0	23.3	23.3	25.0
Earth Station Elevation Angle	10.2	10.2	10.2	10.2	10.2	10.2
Rain Rate (mm/yr)	3131	3131	3131	3131	3131	3131
LINK FADE TYPE	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky
UPLINK PERFORMANCE						
Uplink Earth Station EIRP (dBW)	79.8	69.3	68.6	56.8	53.8	49.1
Uplink Path Loss, Clear Sky (dB)	-207.6	-207.6	-207.6	-207.6	-207.6	-207.6
Satellite G/T(dB/K)	0.8	0.8	0.8	0.8	0.8	0.8
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Uplink C/N(dB)	28.4	18.1	22.5	18.5	18.5	21.6
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	41.2	40.8	35.0	22.9	19.9	15.2
Downlink Path Loss, Clear Sky (dB)	-206.0	-206.0	-206.0	-206.0	-206.0	-206.0
Downlink Earth Station G/T (dB/K)	29.0	25.0	25.0	23.3	23.3	25.0
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Transponder Correction Factor	0.0	0.6	0.0	0.0	0.0	0.0
Downlink C / N(dB)	19.6	16.0	14.7	8.7	8.7	13.5
COMPOSITE LINK PERFORMANCE						
Uplink Earth Station HPA Intermodulation C/N (dB)	45.7	35.3	39.8	35.7	35.7	38.8
C/N Uplink (dB)	28.4	18.1	22.5	18.5	18.5	21.6
Uplink Interference C/I (dB)	55.2	33.5	33.1	37.0	32.6	46.2
Uplink Adjacent Satellite C/I (dB)	27.6	17.3	21.8	17.6	17.7	20.8
Intermodulation C/IM (dB)	126.8	200.0	25.8	19.1	18.8	21.8
Downlink C/N (dB)	19.6	16.0	14.7	8.7	8.7	13.5
Downlink Interference C/I (dB)	44.8	32.9	29.4	20.2	20.6	24.7
Downlink Adjacent Satellite C/I (dB)	16.2	11.5	10.9	4.0	4.0	9.6
Subtotal C/N (dB)	14.2	8.8	8.8	2.3	2.3	7.5
Margin - Other Losses (dB)	0	1.5	1.5	1.5	1.5	1.5
Total C/N (dB)	14.2	7.3	7.3	0.8	0.8	6.0
Minimum Required C/N (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Number of Carriers	1	1	3	19	38	243
CARRIER DENSITY LEVELS						
Uplink Power Density (dBW/Hz)	-43.6	-52.4	-52.4	-52.0	-52.0	-53.3
Downlink EIRP Density At Beam Peak (dBW/Hz)	-18.7	-26.1	-26.8	-31.1	-31.1	-28.0

UPLINK BEAM INFORMATION						
Uplink Beam Name	EHUL	EHUL	EHUL	EHUL	EHUL	EHUL
Uplink Frequency (GHz)	13.75-14.0	13.75-14.0	13.75-14.0	13.75-14.0	13.75-14.0	13.75-14.0
Uplink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Uplink Relative Contour Level (dB)	-6.0	-6.0	-6.0	-6.0	-6.0	-6.0
Uplink Contour G/T (dB/K)	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8
Uplink Contour SFD (dBW/m2)	-81.3	-82.3	-78.3	-78.3	-78.3	-78.3
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	BVDL	BVDL	BVDL	BVDL	BVDL	BVDL
Downlink Frequency (GHz)	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2
Downlink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Downlink Relative Contour Level (dB)	-6.0	-6.0	-6.0	-6.0	-6.0	-6.0
Downlink Contour EIRP (dBW)	45.9	45.9	45.9	45.9	45.9	45.9
ADJACENT SATELLITE 1						
Satellite 1 Orbital Location	53.6W	53.6W	53.6W	53.6W	53.6W	53.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.0	-26.0	-26.0	-26.0	-26.0	-26.0
ADJACENT SATELLITE 2						
Satellite 1 Orbital Location	57.6W	57.6W	57.6W	57.6W	57.6W	57.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.0	-26.0	-26.0	-26.0	-26.0	-26.0
CARRIER INFORMATION						
Carrier ID	25M0F3F	27M0G7W	8M25G7W	1M43G7W	717KG7W	111KG7W
Carrier Modulation	TV/FM	QPSK	QPSK	BPSK	BPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	N/A	N/A	N/A	N/A	N/A
Information Rate(kbps)	N/A	27650	8448	512	256	128
Code Rate	N/A	3/4x188/204	3/4x188/204	1/2	1/2	3/4
Occupied Bandwidth(kHz)	20700	20002.1	6111.3	1024.0	512.0	85.3
Allocated Bandwidth(kHz)	25000	27003	8250.5	1434.0	717.0	111.0
Minimum C/N, Clear Sky (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Minimum C/N, Rain (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
UPLINK EARTH STATION						
Earth Station Diameter (meters)	4.0	2.4	4.0	4.0	4.0	4.0
Earth Station Gain (dBi)	53.1	48.7	53.1	53.1	53.1	53.1
Earth Station Elevation Angle	10.1	10.1	10.1	10.1	10.1	10.1
Rain Rate (mm/yr)	3479	3479	3479	3479	3479	3479
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	6.5	2.4	2.4	1.2	1.8	2.4
Earth Station Gain (dBi)	55.6	47.0	47.0	40.9	44.5	47.0
Earth Station G/T (dB/K)	34.0	25.0	25.0	19.8	23.3	25.0
Earth Station Elevation Angle	45.2	45.2	45.2	45.2	45.2	45.2
Rain Rate (mm/yr)	851	851	851	851	851	851
LINK FADE TYPE	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky
UPLINK PERFORMANCE						
Uplink Earth Station EIRP (dBW)	72.3	71.3	70.3	62.5	59.2	50.7
Uplink Path Loss, Clear Sky (dB)	-208.3	-208.3	-208.3	-208.3	-208.3	-208.3
Satellite G/T(dB/K)	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Uplink C/N(dB)	18.6	17.8	21.9	21.9	21.6	20.9
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	41.1	41.0	35.6	27.6	24.3	15.8
Downlink Path Loss, Clear Sky (dB)	-204.9	-204.9	-204.9	-204.9	-204.9	-204.9
Downlink Earth Station G/T (dB/K)	34.0	25.0	25.0	19.8	23.3	25.0
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Transponder Correction Factor	0.0	0.7	0.0	0.0	0.0	0.0
Downlink C / N(dB)	25.6	17.4	16.4	11.0	14.2	15.2
COMPOSITE LINK PERFORMANCE						
Uplink Earth Station HPA Intermodulation C/N (dB)	34.3	33.5	37.6	37.6	37.3	36.6
C/N Uplink (dB)	18.6	17.8	21.9	21.9	21.6	20.9
Uplink Interference C/I (dB)	34.2	27.3	31.3	32.1	105.9	91.2
Uplink Adjacent Satellite C/I (dB)	20.2	19.3	23.4	23.4	23.1	22.4
Intermodulation C/IM (dB)	126.8	200.0	21.8	20.5	20.0	19.2
Downlink C/N (dB)	25.6	17.4	16.4	11.0	14.2	15.2
Downlink Interference C/I (dB)	42.9	31.7	33.7	24.2	23.9	22.1
Downlink Adjacent Satellite C/I (dB)	19.4	10.9	10.6	3.1	2.9	9.3
Subtotal C/N (dB)	14.2	8.8	8.9	2.3	2.4	7.4
Margin - Other Losses (dB)	0	1.5	1.5	1.5	1.5	1.5
Total C/N (dB)	14.2	7.3	7.4	0.8	0.9	5.9
Minimum Required C/N (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Number of Carriers	1	1	3	19	38	243
CARRIER DENSITY LEVELS						
Uplink Power Density (dBW/Hz)	-46.8	-50.4	-50.7	-50.7	-51.0	-51.7
Downlink EIRP Density At Beam Peak (dBW/Hz)	-18.9	-26.0	-26.3	-26.5	-26.8	-27.5

UPLINK BEAM INFORMATION						
Uplink Beam Name	EVUL	EVUL	EVUL	EVUL	EVUL	EVUL
Uplink Frequency (GHz)	13.75-14.0	13.75-14.0	13.75-14.0	13.75-14.0	13.75-14.0	13.75-14.0
Uplink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Uplink Relative Contour Level (dB)	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4
Uplink Contour G/T (dB/K)	0.8	0.8	0.8	0.8	0.8	0.8
Uplink Contour SFD (dBW/m2)	-74.8	-83.8	-79.8	-79.8	-79.8	-79.8
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	BHDL	BHDL	BHDL	BHDL	BHDL	BHDL
Downlink Frequency (GHz)	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2
Downlink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Downlink Relative Contour Level (dB)	-5.7	-5.7	-5.7	-5.7	-5.7	-5.7
Downlink Contour EIRP (dBW)	47.0	47.0	47.0	47.0	47.0	47.0
ADJACENT SATELLITE 1						
Satellite 1 Orbital Location	53.6W	53.6W	53.6W	53.6W	53.6W	53.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-25.7	-25.7	-25.7	-25.7	-25.7	-25.7
ADJACENT SATELLITE 2						
Satellite 1 Orbital Location	57.6W	57.6W	57.6W	57.6W	57.6W	57.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-25.7	-25.7	-25.7	-25.7	-25.7	-25.7
CARRIER INFORMATION						
Carrier ID	25M0F3F	27M0G7W	8M25G7W	1M43G7W	717KG7W	111KG7W
Carrier Modulation	TV/FM	QPSK	QPSK	BPSK	BPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	N/A	N/A	N/A	N/A	N/A
Information Rate(kbps)	N/A	27650	8448	512	256	128
Code Rate	N/A	3/4x188/204	3/4x188/204	1/2	1/2	3/4
Occupied Bandwidth(kHz)	20700	20002.1	6111.3	1024.0	512.0	85.3
Allocated Bandwidth(kHz)	25000	27003	8250.5	1434.0	717.0	111.0
Minimum C/N, Clear Sky (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Minimum C/N, Rain (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
UPLINK EARTH STATION						
Earth Station Diameter (meters)	6.5	1.8	2.4	2.4	1.8	2.4
Earth Station Gain (dBi)	57.4	46.2	48.7	48.7	46.2	48.7
Earth Station Elevation Angle	21.4	21.4	21.4	21.4	21.4	21.4
Rain Rate (mm/yr)	771	771	771	771	771	771
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	4.0	2.4	2.4	1.2	1.2	2.4
Earth Station Gain (dBi)	51.4	47.0	47.0	40.9	40.9	47.0
Earth Station G/T (dB/K)	29.0	25.0	25.0	19.8	19.8	25.0
Earth Station Elevation Angle	43.5	43.5	43.5	43.5	43.5	43.5
Rain Rate (mm/yr)	976	976	976	976	976	976
LINK FADE TYPE	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky
UPLINK PERFORMANCE						
Uplink Earth Station EIRP (dBW)	78.2	69.0	64.4	55.9	53.0	44.8
Uplink Path Loss, Clear Sky (dB)	-207.6	-207.6	-207.6	-207.6	-207.6	-207.6
Satellite G/T(dB/K)	0.8	0.8	0.8	0.8	0.8	0.8
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Uplink C/N(dB)	26.8	17.8	18.3	17.6	17.7	17.3
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	41.5	41.3	36.2	27.5	24.6	16.4
Downlink Path Loss, Clear Sky (dB)	-204.9	-204.9	-204.9	-204.9	-204.9	-204.9
Downlink Earth Station G/T (dB/K)	29.0	25.0	25.0	19.8	19.8	25.0
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Transponder Correction Factor	0.0	0.7	0.0	0.0	0.0	0.0
Downlink C / N(dB)	21.0	17.7	17.1	10.9	11.0	15.8
COMPOSITE LINK PERFORMANCE						
Uplink Earth Station HPA Intermodulation C/N (dB)	44.1	35.0	35.6	34.9	35.0	34.6
C/N Uplink (dB)	26.8	17.8	18.3	17.6	17.7	17.3
Uplink Interference C/I (dB)	53.5	34.2	27.3	32.1	26.4	36.5
Uplink Adjacent Satellite C/I (dB)	26.1	17.0	17.6	16.8	16.9	16.5
Intermodulation C/IM (dB)	126.8	200.0	22.1	19.9	19.8	19.3
Downlink C/N (dB)	21.0	17.7	17.1	10.9	11.0	15.8
Downlink Interference C/I (dB)	44.7	32.3	29.4	23.1	22.0	22.2
Downlink Adjacent Satellite C/I (dB)	16.0	11.5	11.5	3.4	3.5	10.3
Subtotal C/N (dB)	14.3	9.0	8.8	2.3	2.4	7.5
Margin - Other Losses (dB)	0	1.5	1.5	1.5	1.5	1.5
Total C/N (dB)	14.3	7.5	7.3	0.8	0.9	6.0
Minimum Required C/N (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Number of Carriers	1	1	3	19	38	243
CARRIER DENSITY LEVELS						
Uplink Power Density (dBW/Hz)	-45.2	-50.2	-52.2	-52.9	-50.3	-53.2
Downlink EIRP Density At Beam Peak (dBW/Hz)	-18.8	-26.0	-25.9	-26.9	-26.8	-27.2

UPLINK BEAM INFORMATION						
Uplink Beam Name	BHUL	BHUL	BHUL	BHUL	BHUL	BHUL
Uplink Frequency (GHz)	14.0-14.25	14.0-14.25	14.0-14.25	14.0-14.25	14.0-14.25	14.0-14.25
Uplink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Uplink Relative Contour Level (dB)	-5.7	-5.7	-5.7	-5.7	-5.7	-5.7
Uplink Contour G/T (dB/K)	0.0	0.0	0.0	0.0	0.0	0.0
Uplink Contour SFD (dBW/m2)	-80.6	-81.6	-80.6	-80.6	-80.6	-80.6
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	BVDL	BVDL	BVDL	BVDL	BVDL	BVDL
Downlink Frequency (GHz)	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2
Downlink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Downlink Relative Contour Level (dB)	-6.0	-6.0	-6.0	-6.0	-6.0	-6.0
Downlink Contour EIRP (dBW)	45.9	45.9	45.9	45.9	45.9	45.9
ADJACENT SATELLITE 1						
Satellite 1 Orbital Location	53.6W	53.6W	53.6W	53.6W	53.6W	53.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.0	-26.0	-26.0	-26.0	-26.0	-26.0
ADJACENT SATELLITE 2						
Satellite 1 Orbital Location	57.6W	57.6W	57.6W	57.6W	57.6W	57.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.0	-26.0	-26.0	-26.0	-26.0	-26.0
CARRIER INFORMATION						
Carrier ID	25M0F3F	27M0G7W	8M25G7W	1M43G7W	717KG7W	111KG7W
Carrier Modulation	TV/FM	QPSK	QPSK	BPSK	BPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	N/A	N/A	N/A	N/A	N/A
Information Rate(kbps)	N/A	27650	8448	512	256	128
Code Rate	N/A	3/4x188/204	3/4x188/204	1/2	1/2	3/4
Occupied Bandwidth(kHz)	20700	20002.1	6111.3	1024.0	512.0	85.3
Allocated Bandwidth(kHz)	25000	27003	8250.5	1434.0	717.0	111.0
Minimum C/N, Clear Sky (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Minimum C/N, Rain (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
UPLINK EARTH STATION						
Earth Station Diameter (meters)	4.0	2.4	4.0	4.0	4.0	2.4
Earth Station Gain (dBi)	53.1	48.7	53.1	53.1	53.1	48.7
Earth Station Elevation Angle	44.1	44.1	44.1	44.1	44.1	44.1
Rain Rate (mm/yr)	758	758	758	758	758	758
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	6.5	2.4	2.4	1.2	1.2	2.4
Earth Station Gain (dBi)	55.6	47.0	47.0	40.9	40.9	47.0
Earth Station G/T (dB/K)	34.0	25.0	25.0	19.8	19.8	25.0
Earth Station Elevation Angle	45.2	45.2	45.2	45.2	45.2	45.2
Rain Rate (mm/yr)	851	851	851	851	851	851
LINK FADE TYPE	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky
UPLINK PERFORMANCE						
Uplink Earth Station EIRP (dBW)	71.4	70.5	66.9	58.9	55.9	47.4
Uplink Path Loss, Clear Sky (dB)	-207.1	-207.1	-207.1	-207.1	-207.1	-207.1
Satellite G/T(dB/K)	0.0	0.0	0.0	0.0	0.0	0.0
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Uplink C/N(dB)	19.7	19.0	20.5	20.3	20.3	19.6
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	41.0	41.0	35.9	27.7	24.7	16.2
Downlink Path Loss, Clear Sky (dB)	-204.9	-204.9	-204.9	-204.9	-204.9	-204.9
Downlink Earth Station G/T (dB/K)	34.0	25.0	25.0	19.8	19.8	25.0
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Transponder Correction Factor	0.0	0.6	0.0	0.0	0.0	0.0
Downlink C / N(dB)	25.5	17.3	16.7	11.1	11.1	15.6
COMPOSITE LINK PERFORMANCE						
Uplink Earth Station HPA Intermodulation C/N (dB)	32.9	32.2	33.7	33.5	33.5	32.8
C/N Uplink (dB)	19.7	19.0	20.5	20.3	20.3	19.6
Uplink Interference C/I (dB)	43.1	31.6	200.0	200.0	102.7	88.1
Uplink Adjacent Satellite C/I (dB)	19.2	18.5	20.0	19.8	19.8	19.1
Intermodulation C/IM (dB)	126.8	200.0	21.5	20.0	19.8	19.0
Downlink C/N (dB)	25.5	17.3	16.7	11.1	11.1	15.6
Downlink Interference C/I (dB)	43.3	31.0	29.4	23.1	24.0	22.1
Downlink Adjacent Satellite C/I (dB)	19.2	10.8	10.8	3.2	3.2	9.6
Subtotal C/N (dB)	14.3	8.9	8.8	2.3	2.3	7.5
Margin - Other Losses (dB)	0	1.5	1.5	1.5	1.5	1.5
Total C/N (dB)	14.3	7.4	7.3	0.8	0.8	6.0
Minimum Required C/N (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Number of Carriers	1	1	3	19	38	243
CARRIER DENSITY LEVELS						
Uplink Power Density (dBW/Hz)	-47.7	-51.2	-54.1	-54.3	-54.3	-50.6
Downlink EIRP Density At Beam Peak (dBW/Hz)	-19.0	-26.0	-26.0	-26.4	-26.4	-27.1

UPLINK BEAM INFORMATION						
Uplink Beam Name	BVUL	BVUL	BVUL	BVUL	BVUL	BVUL
Uplink Frequency (GHz)	14.0-14.25	14.0-14.25	14.0-14.25	14.0-14.25	14.0-14.25	14.0-14.25
Uplink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Uplink Relative Contour Level (dB)	-6.0	-6.0	-6.0	-6.0	-6.0	-6.0
Uplink Contour G/T (dB/K)	0.3	0.3	0.3	0.3	0.3	0.3
Uplink Contour SFD (dBW/m2)	-80.9	-80.9	-79.9	-79.9	-79.9	-79.9
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	BHDL	BHDL	BHDL	BHDL	BHDL	BHDL
Downlink Frequency (GHz)	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2
Downlink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Downlink Relative Contour Level (dB)	-5.8	-5.8	-5.8	-5.8	-5.8	-5.8
Downlink Contour EIRP (dBW)	46.9	46.9	46.9	46.9	46.9	46.9
ADJACENT SATELLITE 1						
Satellite 1 Orbital Location	53.6W	53.6W	53.6W	53.6W	53.6W	53.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-25.8	-25.8	-25.8	-25.8	-25.8	-25.8
ADJACENT SATELLITE 2						
Satellite 1 Orbital Location	57.6W	57.6W	57.6W	57.6W	57.6W	57.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-25.8	-25.8	-25.8	-25.8	-25.8	-25.8
CARRIER INFORMATION						
Carrier ID	25M0F3F	27M0G7W	8M25G7W	1M43G7W	717KG7W	111KG7W
Carrier Modulation	TV/FM	QPSK	QPSK	BPSK	BPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	N/A	N/A	N/A	N/A	N/A
Information Rate(kbps)	N/A	27650	8448	512	256	128
Code Rate	N/A	3/4x188/204	3/4x188/204	1/2	1/2	3/4
Occupied Bandwidth(kHz)	20700	20002.1	6111.3	1024.0	512.0	85.3
Allocated Bandwidth(kHz)	25000	27003	8250.5	1434.0	717.0	111.0
Minimum C/N, Clear Sky (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Minimum C/N, Rain (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
UPLINK EARTH STATION						
Earth Station Diameter (meters)	2.4	2.4	4.0	2.4	2.4	2.4
Earth Station Gain (dBi)	48.7	48.7	53.1	48.7	48.7	48.7
Earth Station Elevation Angle	46.5	46.5	46.5	46.4	46.5	46.5
Rain Rate (mm/yr)	1007	1007	1007	1090	1007	1007
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	6.5	2.4	2.4	1.2	1.2	2.4
Earth Station Gain (dBi)	55.6	47.0	47.0	40.9	40.9	47.0
Earth Station G/T (dB/K)	34.0	25.0	25.0	19.8	19.8	25.0
Earth Station Elevation Angle	43.5	43.5	43.5	43.5	43.5	43.5
Rain Rate (mm/yr)	976	976	976	976	976	976
LINK FADE TYPE	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky
UPLINK PERFORMANCE						
Uplink Earth Station EIRP (dBW)	71.7	70.4	66.7	58.8	55.7	47.1
Uplink Path Loss, Clear Sky (dB)	-207.1	-207.1	-207.1	-207.1	-207.1	-207.1
Satellite G/T(dB/K)	0.3	0.3	0.3	0.3	0.3	0.3
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Uplink C/N(dB)	20.3	19.2	20.6	20.5	20.4	19.6
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	40.5	41.1	36.0	27.8	24.8	16.2
Downlink Path Loss, Clear Sky (dB)	-205.0	-205.0	-205.0	-205.0	-205.0	-205.0
Downlink Earth Station G/T (dB/K)	34.0	25.0	25.0	19.8	19.8	25.0
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Transponder Correction Factor	0.0	0.8	0.0	0.0	0.0	0.0
Downlink C / N(dB)	24.9	17.5	16.8	11.0	11.1	15.5
COMPOSITE LINK PERFORMANCE						
Uplink Earth Station HPA Intermodulation C/N (dB)	33.6	32.5	34.0	33.6	33.7	32.9
C/N Uplink (dB)	20.3	19.2	20.6	20.5	20.4	19.6
Uplink Interference C/I (dB)	45.2	33.7	30.4	35.7	30.0	39.7
Uplink Adjacent Satellite C/I (dB)	19.5	18.4	19.9	19.6	19.6	18.8
Intermodulation C/IM (dB)	126.8	200.0	22.7	21.1	21.0	20.1
Downlink C/N (dB)	24.9	17.5	16.8	11.0	11.1	15.5
Downlink Interference C/I (dB)	43.8	33.2	28.9	23.4	22.2	21.9
Downlink Adjacent Satellite C/I (dB)	18.6	10.7	10.7	3.1	3.2	9.4
Subtotal C/N (dB)	14.3	8.8	8.8	2.2	2.3	7.4
Margin - Other Losses (dB)	0	1.5	1.5	1.5	1.5	1.5
Total C/N (dB)	14.3	7.3	7.3	0.7	0.8	5.9
Minimum Required C/N (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Number of Carriers	1	1	3	19	38	243
CARRIER DENSITY LEVELS						
Uplink Power Density (dBW/Hz)	-43.0	-51.3	-54.3	-50.0	-50.1	-50.9
Downlink EIRP Density At Beam Peak (dBW/Hz)	-19.7	-26.1	-26.0	-26.6	-26.5	-27.3

UPLINK BEAM INFORMATION						
Uplink Beam Name	BHUL	BHUL	BHUL	BHUL	BHUL	BHUL
Uplink Frequency (GHz)	14.0-14.25	14.0-14.25	14.0-14.25	14.0-14.25	14.0-14.25	14.0-14.25
Uplink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Uplink Relative Contour Level (dB)	-5.7	-5.7	-5.7	-5.7	-5.7	-5.7
Uplink Contour G/T (dB/K)	0.0	0.0	0.0	0.0	0.0	0.0
Uplink Contour SFD (dBW/m2)	-81.6	-82.6	-80.6	-80.6	-80.6	-80.6
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	EVDL	EVDL	EVDL	EVDL	EVDL	EVDL
Downlink Frequency (GHz)	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2
Downlink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Downlink Relative Contour Level (dB)	-6.0	-6.0	-6.0	-6.0	-6.0	-6.0
Downlink Contour EIRP (dBW)	45.2	45.2	45.2	45.2	45.2	45.2
ADJACENT SATELLITE 1						
Satellite 1 Orbital Location	53.6W	53.6W	53.6W	53.6W	53.6W	53.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.0	-26.0	-26.0	-26.0	-26.0	-26.0
ADJACENT SATELLITE 2						
Satellite 1 Orbital Location	57.6W	57.6W	57.6W	57.6W	57.6W	57.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.0	-26.0	-26.0	-26.0	-26.0	-26.0
CARRIER INFORMATION						
Carrier ID	25M0F3F	27M0G7W	8M25G7W	1M43G7W	717KG7W	111KG7W
Carrier Modulation	TV/FM	QPSK	QPSK	BPSK	BPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	N/A	N/A	N/A	N/A	N/A
Information Rate(kbps)	N/A	27650	8448	512	256	128
Code Rate	N/A	3/4x188/204	3/4x188/204	1/2	1/2	3/4
Occupied Bandwidth(kHz)	20700	20002.1	6111.3	1024.0	512.0	85.3
Allocated Bandwidth(kHz)	25000	27003	8250.5	1434.0	717.0	111.0
Minimum C/N, Clear Sky (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Minimum C/N, Rain (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
UPLINK EARTH STATION						
Earth Station Diameter (meters)	4.0	2.4	4.0	1.8	1.8	2.4
Earth Station Gain (dBi)	53.1	48.7	53.1	46.2	46.2	48.7
Earth Station Elevation Angle	44.1	44.1	44.1	44.1	44.1	44.1
Rain Rate (mm/yr)	758	758	758	758	758	758
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	6.5	2.4	2.4	1.8	1.8	2.4
Earth Station Gain (dBi)	55.6	47.0	47.0	44.5	44.5	47.0
Earth Station G/T (dB/K)	34.0	25.0	25.0	23.3	23.3	25.0
Earth Station Elevation Angle	10.2	10.2	10.2	10.2	10.2	10.2
Rain Rate (mm/yr)	2098	2098	2098	2098	2098	2098
LINK FADE TYPE	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky
UPLINK PERFORMANCE						
Uplink Earth Station EIRP (dBW)	71.3	70.5	67.2	55.4	52.4	47.7
Uplink Path Loss, Clear Sky (dB)	-207.0	-207.0	-207.0	-207.0	-207.0	-207.0
Satellite G/T(dB/K)	0.0	0.0	0.0	0.0	0.0	0.0
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Uplink C/N(dB)	19.7	19.1	20.9	16.9	16.9	20.0
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	40.7	40.8	35.4	23.4	20.4	15.7
Downlink Path Loss, Clear Sky (dB)	-206.0	-206.0	-206.0	-206.0	-206.0	-206.0
Downlink Earth Station G/T (dB/K)	34.0	25.0	25.0	23.3	23.3	25.0
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Transponder Correction Factor	0.0	0.6	0.0	0.0	0.0	0.0
Downlink C / N(dB)	24.1	16.0	15.1	9.2	9.2	14.0
COMPOSITE LINK PERFORMANCE						
Uplink Earth Station HPA Intermodulation C/N (dB)	32.8	32.2	34.0	29.9	30.0	33.1
C/N Uplink (dB)	19.7	19.1	20.9	16.9	16.9	20.0
Uplink Interference C/I (dB)	43.0	32.5	200.0	200.0	97.1	86.3
Uplink Adjacent Satellite C/I (dB)	19.1	18.5	20.3	16.2	16.3	19.4
Intermodulation C/IM (dB)	126.8	200.0	25.7	19.1	18.7	21.7
Downlink C/N (dB)	24.1	16.0	15.1	9.2	9.2	14.0
Downlink Interference C/I (dB)	42.3	31.6	39.4	20.7	21.9	24.7
Downlink Adjacent Satellite C/I (dB)	19.6	11.2	10.9	4.0	4.0	9.7
Subtotal C/N (dB)	14.2	8.9	8.8	2.3	2.3	7.5
Margin - Other Losses (dB)	0	1.5	1.5	1.5	1.5	1.5
Total C/N (dB)	14.2	7.4	7.3	0.8	0.8	6.0
Minimum Required C/N (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Number of Carriers	1	1	3	19	38	243
CARRIER DENSITY LEVELS						
Uplink Power Density (dBW/Hz)	-47.8	-51.2	-53.8	-50.9	-50.9	-50.3
Downlink EIRP Density At Beam Peak (dBW/Hz)	-19.3	-26.2	-26.5	-30.7	-30.7	-27.6

UPLINK BEAM INFORMATION						
Uplink Beam Name	BVUL	BVUL	BVUL	BVUL	BVUL	BVUL
Uplink Frequency (GHz)	14.0-14.25	14.0-14.25	14.0-14.25	14.0-14.25	14.0-14.25	14.0-14.25
Uplink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Uplink Relative Contour Level (dB)	-6.0	-6.0	-6.0	-6.1	-6.0	-6.0
Uplink Contour G/T (dB/K)	0.3	0.3	0.3	0.2	0.3	0.3
Uplink Contour SFD (dBW/m2)	-82.9	-83.9	-78.9	-78.8	-78.9	-78.9
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	EHDL	EHDL	EHDL	EHDL	EHDL	EHDL
Downlink Frequency (GHz)	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2
Downlink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Downlink Relative Contour Level (dB)	-6.1	-6.1	-6.1	-6.1	-6.1	-6.1
Downlink Contour EIRP (dBW)	44.8	44.8	44.8	44.8	44.8	44.8
ADJACENT SATELLITE 1						
Satellite 1 Orbital Location	53.6W	53.6W	53.6W	53.6W	53.6W	53.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.1	-26.1	-26.1	-26.1	-26.1	-26.1
ADJACENT SATELLITE 2						
Satellite 1 Orbital Location	57.6W	57.6W	57.6W	57.6W	57.6W	57.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.1	-26.1	-26.1	-26.1	-26.1	-26.1
CARRIER INFORMATION						
Carrier ID	25M0F3F	27M0G7W	8M25G7W	1M43G7W	717KG7W	111KG7W
Carrier Modulation	TV/FM	QPSK	QPSK	BPSK	BPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	N/A	N/A	N/A	N/A	N/A
Information Rate(kbps)	N/A	27650	8448	512	256	128
Code Rate	N/A	3/4x188/204	3/4x188/204	1/2	1/2	3/4
Occupied Bandwidth(kHz)	20700	20002.1	6111.3	1024.0	512.0	85.3
Allocated Bandwidth(kHz)	25000	27003	8250.5	1434.0	717.0	111.0
Minimum C/N, Clear Sky (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Minimum C/N, Rain (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
UPLINK EARTH STATION						
Earth Station Diameter (meters)	2.4	2.4	4.0	2.4	2.4	4.0
Earth Station Gain (dBi)	48.7	48.7	53.1	48.7	48.7	53.1
Earth Station Elevation Angle	46.5	46.5	46.5	46.4	46.5	46.5
Rain Rate (mm/yr)	1007	1007	1007	1090	1007	1007
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	6.5	2.4	2.4	1.8	1.8	2.4
Earth Station Gain (dBi)	55.6	47.0	47.0	44.5	44.5	47.0
Earth Station G/T (dB/K)	34.0	25.0	25.0	23.3	23.3	25.0
Earth Station Elevation Angle	10.2	10.2	10.2	10.2	10.2	10.2
Rain Rate (mm/yr)	3131	3131	3131	3131	3131	3131
LINK FADE TYPE	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky
UPLINK PERFORMANCE						
Uplink Earth Station EIRP (dBW)	70.9	69.5	68.8	56.9	53.9	49.1
Uplink Path Loss, Clear Sky (dB)	-207.0	-207.0	-207.0	-207.0	-207.0	-207.0
Satellite G/T(dB/K)	0.3	0.3	0.3	0.2	0.3	0.3
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Uplink C/N(dB)	19.6	18.4	22.8	18.6	18.7	21.7
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	41.1	40.8	35.0	22.9	19.9	15.1
Downlink Path Loss, Clear Sky (dB)	-206.0	-206.0	-206.0	-206.0	-206.0	-206.0
Downlink Earth Station G/T (dB/K)	34.0	25.0	25.0	23.3	23.3	25.0
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Transponder Correction Factor	0.0	0.6	0.0	0.0	0.0	0.0
Downlink C / N(dB)	24.5	16.0	14.7	8.7	8.7	13.4
COMPOSITE LINK PERFORMANCE						
Uplink Earth Station HPA Intermodulation C/N (dB)	32.8	31.6	36.0	31.9	31.9	34.9
C/N Uplink (dB)	19.6	18.4	22.8	18.6	18.7	21.7
Uplink Interference C/I (dB)	44.5	32.8	32.2	34.3	28.8	42.4
Uplink Adjacent Satellite C/I (dB)	18.7	17.5	21.9	17.8	17.8	20.8
Intermodulation C/IM (dB)	126.8	200.0	25.8	19.1	18.8	21.7
Downlink C/N (dB)	24.5	16.0	14.7	8.7	8.7	13.4
Downlink Interference C/I (dB)	45.0	32.4	29.4	20.2	20.6	24.6
Downlink Adjacent Satellite C/I (dB)	20.4	11.5	10.9	4.0	4.0	9.5
Subtotal C/N (dB)	14.3	8.9	8.8	2.3	2.3	7.4
Margin - Other Losses (dB)	0	1.5	1.5	1.5	1.5	1.5
Total C/N (dB)	14.3	7.4	7.3	0.8	0.8	5.9
Minimum Required C/N (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Number of Carriers	1	1	3	19	38	243
CARRIER DENSITY LEVELS						
Uplink Power Density (dBW/Hz)	-43.8	-52.2	-52.2	-51.9	-51.9	-53.3
Downlink EIRP Density At Beam Peak (dBW/Hz)	-18.8	-26.1	-26.8	-31.1	-31.1	-28.1

EXHIBIT 5: 53.6° W.L. Link Budgets

UPLINK BEAM INFORMATION						
Uplink Beam Name	KHUL	KHUL	KHUL	KHUL	KHUL	KHUL
Uplink Frequency (GHz)	14.0-14.5	14.0-14.5	14.0-14.5	14.0-14.5	14.0-14.5	14.0-14.5
Uplink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Uplink Relative Contour Level (dB)	-6.3	-6.3	-6.3	-6.3	-6.3	-6.3
Uplink Contour G/T (dB/K)	0.0	0.0	0.0	0.0	0.0	0.0
Uplink Contour SFD (dBW/m2)	-78.5	-78.5	-80.5	-80.5	-80.5	-80.5
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	KVDL	KVDL	KVDL	KVDL	KVDL	KVDL
Downlink Frequency (GHz)	11.7-12.2	11.7-12.2	11.7-12.2	11.7-12.2	11.7-12.2	11.7-12.2
Downlink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Downlink Relative Contour Level (dB)	-6.4	-6.4	-6.4	-6.4	-6.4	-6.4
Downlink Contour EIRP (dBW)	43.3	43.3	43.3	43.3	43.3	43.3
ADJACENT SATELLITE 1						
Satellite 1 Orbital Location	51.6W	51.6W	51.6W	51.6W	51.6W	51.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.4	-26.4	-26.4	-26.4	-26.4	-26.4
ADJACENT SATELLITE 2						
Satellite 1 Orbital Location	55.6W	55.6W	55.6W	55.6W	55.6W	55.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.4	-26.4	-26.4	-26.4	-26.4	-26.4
CARRIER INFORMATION						
Carrier ID	36M0F3F	36M0G7W	8M25G7W	1M43G7W	717KG7W	111KG7W
Carrier Modulation	TV/FM	QPSK	QPSK	BPSK	BPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	N/A	N/A	N/A	N/A	N/A
Information Rate(kbps)	N/A	36860	8448	512	256	128
Code Rate	N/A	3/4x188/204	3/4x188/204	1/2	1/2	3/4
Occupied Bandwidth(kHz)	32400	26664.7	6111.3	1024.0	512.0	85.3
Allocated Bandwidth(kHz)	36000	35997.5	8250.5	1434.0	717.0	111.0
Minimum C/N, Clear Sky (dB)	16.4	7.3	7.3	-0.2	-0.2	5.9
Minimum C/N, Rain (dB)	16.4	7.3	7.3	-0.2	-0.2	5.9
UPLINK EARTH STATION						
Earth Station Diameter (meters)	6.5	6.5	4.0	4.0	4.0	2.4
Earth Station Gain (dBi)	57.4	57.4	53.1	53.1	53.1	48.7
Earth Station Elevation Angle	10.1	10.1	10.1	10.1	10.1	10.1
Rain Rate (mm/yr)	394	394	394	394	394	394
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	6.5	2.4	4.0	1.8	1.8	4.0
Earth Station Gain (dBi)	55.6	47.0	51.4	44.5	44.5	51.4
Earth Station G/T (dB/K)	34.0	25.0	29.0	23.3	23.3	29.0
Earth Station Elevation Angle	10.0	10.0	10.0	10.0	10.0	10.0
Rain Rate (mm/yr)	214	214	214	214	214	214
LINK FADE TYPE	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky
UPLINK PERFORMANCE						
Uplink Earth Station EIRP (dBW)	80.9	79.7	67.5	59.1	56.2	48.0
Uplink Path Loss, Clear Sky (dB)	-208.1	-208.1	-208.1	-208.1	-208.1	-208.1
Satellite G/T(dB/K)	0.0	0.0	0.0	0.0	0.0	0.0
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	32.4	26.7	6.1	1.0	0.5	0.1
Uplink C/N(dB)	26.3	25.9	20.1	19.5	19.6	19.2
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	42.5	41.9	32.3	23.8	20.8	12.6
Downlink Path Loss, Clear Sky (dB)	-206.5	-206.5	-206.5	-206.5	-206.5	-206.5
Downlink Earth Station G/T (dB/K)	34.0	25.0	29.0	23.3	23.3	29.0
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	32.4	26.7	6.1	1.0	0.5	0.1
Transponder Correction Factor	0.0	0.3	0.0	0.0	0.0	0.0
Downlink C / N(dB)	23.5	15.0	15.5	9.1	9.1	14.4
COMPOSITE LINK PERFORMANCE						
Uplink Earth Station HPA Intermodulation C/N (dB)	35.7	35.4	29.6	29.0	29.0	28.6
C/N Uplink (dB)	26.3	25.9	20.1	19.5	19.6	19.2
Uplink Interference C/I (dB)	48.1	38.7	31.7	38.4	31.0	31.5
Uplink Adjacent Satellite C/I (dB)	26.7	26.4	20.6	20.0	20.1	19.7
Intermodulation C/IM (dB)	124.9	200.0	21.0	18.6	18.2	17.7
Downlink C/N (dB)	23.5	15.0	15.5	9.1	9.1	14.4
Downlink Interference C/I (dB)	46.9	35.4	29.2	23.4	22.1	21.6
Downlink Adjacent Satellite C/I (dB)	18.7	10.2	11.5	3.7	3.7	10.3
Subtotal C/N (dB)	16.5	8.8	9.0	2.3	2.3	7.5
Margin - Other Losses (dB)	0	1.5	1.5	1.5	1.5	1.5
Total C/N (dB)	16.5	7.3	7.5	0.8	0.8	6.0
Minimum Required C/N (dB)	16.4	7.3	7.3	-0.2	-0.2	5.9
Number of Carriers	1	1	4	25	50	324
CARRIER DENSITY LEVELS						
Uplink Power Density (dBW/Hz)	-42.5	-52.0	-53.5	-54.1	-54.0	-50.0
Downlink EIRP Density At Beam Peak (dBW/Hz)	-17.1	-26.0	-29.2	-29.9	-29.9	-30.3

UPLINK BEAM INFORMATION						
Uplink Beam Name	EHUL	EHUL	EHUL	EHUL	EHUL	EHUL
Uplink Frequency (GHz)	13.75-14.0	13.75-14.0	13.75-14.0	13.75-14.0	13.75-14.0	13.75-14.0
Uplink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Uplink Relative Contour Level (dB)	-6.0	-6.0	-6.0	-6.0	-6.0	-6.0
Uplink Contour G/T (dB/K)	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8
Uplink Contour SFD (dBW/m2)	-82.3	-83.3	-80.3	-80.3	-80.3	-80.3
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	EVDL	EVDL	EVDL	EVDL	EVDL	EVDL
Downlink Frequency (GHz)	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2
Downlink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Downlink Relative Contour Level (dB)	-6.0	-6.0	-6.0	-6.0	-6.0	-6.0
Downlink Contour EIRP (dBW)	45.2	45.2	45.2	45.2	45.2	45.2
ADJACENT SATELLITE 1						
Satellite 1 Orbital Location	51.6W	51.6W	51.6W	51.6W	51.6W	51.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.0	-26.0	-26.0	-26.0	-26.0	-26.0
ADJACENT SATELLITE 2						
Satellite 1 Orbital Location	55.6W	55.6W	55.6W	55.6W	55.6W	55.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.0	-26.0	-26.0	-26.0	-26.0	-26.0
CARRIER INFORMATION						
Carrier ID	25M0F3F	27M0G7W	8M25G7W	1M43G7W	717KG7W	111KG7W
Carrier Modulation	TV/FM	QPSK	QPSK	BPSK	BPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	N/A	N/A	N/A	N/A	N/A
Information Rate(kbps)	N/A	27650	8448	512	256	128
Code Rate	N/A	3/4x188/204	3/4x188/204	1/2	1/2	3/4
Occupied Bandwidth(kHz)	20700	20002.1	6111.3	1024.0	512.0	85.3
Allocated Bandwidth(kHz)	25000	27003	8250.5	1434.0	717.0	111.0
Minimum C/N, Clear Sky (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Minimum C/N, Rain (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
UPLINK EARTH STATION						
Earth Station Diameter (meters)	4.0	2.4	4.0	2.4	2.4	4.0
Earth Station Gain (dBi)	53.1	48.7	53.1	48.7	48.7	53.1
Earth Station Elevation Angle	10.1	10.1	10.1	10.1	10.1	10.1
Rain Rate (mm/yr)	3479	3479	3479	3479	3479	3479
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	6.5	2.4	2.4	1.8	1.8	2.4
Earth Station Gain (dBi)	55.6	47.0	47.0	44.5	44.5	47.0
Earth Station G/T (dB/K)	34.0	25.0	25.0	23.3	23.3	25.0
Earth Station Elevation Angle	10.2	10.2	10.2	10.2	10.2	10.2
Rain Rate (mm/yr)	2098	2098	2098	2098	2098	2098
LINK FADE TYPE	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky
UPLINK PERFORMANCE						
Uplink Earth Station EIRP (dBW)	72.3	71.2	68.8	57.0	53.9	49.2
Uplink Path Loss, Clear Sky (dB)	-208.3	-208.3	-208.3	-208.3	-208.3	-208.3
Satellite G/T(dB/K)	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Uplink C/N(dB)	18.6	17.7	20.4	16.4	16.3	19.4
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	50.0	40.8	35.4	23.4	20.3	15.6
Downlink Path Loss, Clear Sky (dB)	-206.0	-206.0	-206.0	-206.0	-206.0	-206.0
Downlink Earth Station G/T (dB/K)	34.0	25.0	25.0	23.3	23.3	25.0
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Transponder Correction Factor	0.0	0.6	0.0	0.0	0.0	0.0
Downlink C / N(dB)	33.4	16.0	15.1	9.2	9.1	13.9
COMPOSITE LINK PERFORMANCE						
Uplink Earth Station HPA Intermodulation C/N (dB)	34.3	33.3	36.1	32.1	32.0	35.1
C/N Uplink (dB)	18.6	17.7	20.4	16.4	16.3	19.4
Uplink Interference C/I (dB)	32.6	30.9	200.0	200.0	96.4	85.5
Uplink Adjacent Satellite C/I (dB)	20.1	19.2	22.0	17.9	17.8	20.9
Intermodulation C/IM (dB)	126.8	200.0	25.7	19.2	18.7	21.7
Downlink C/N (dB)	33.4	16.0	15.1	9.2	9.1	13.9
Downlink Interference C/I (dB)	42.4	30.6	31.7	19.6	21.8	24.7
Downlink Adjacent Satellite C/I (dB)	19.8	11.2	10.9	4.0	3.9	9.6
Subtotal C/N (dB)	14.6	8.8	8.8	2.4	2.3	7.4
Margin - Other Losses (dB)	0	1.5	1.5	1.5	1.5	1.5
Total C/N (dB)	14.6	7.3	7.3	0.9	0.8	5.9
Minimum Required C/N (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Number of Carriers	1	1	3	19	38	243
CARRIER DENSITY LEVELS						
Uplink Power Density (dBW/Hz)	-46.8	-50.5	-52.2	-51.8	-51.9	-53.2
Downlink EIRP Density At Beam Peak (dBW/Hz)	-10.0	-26.2	-26.5	-30.7	-30.8	-27.7

UPLINK BEAM INFORMATION						
Uplink Beam Name	KVUL	KVUL	KVUL	KVUL	KVUL	KVUL
Uplink Frequency (GHz)	14.0-14.5	14.0-14.5	14.0-14.5	14.0-14.5	14.0-14.5	14.0-14.5
Uplink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Uplink Relative Contour Level (dB)	-6.3	-6.3	-6.3	-6.3	-6.3	-6.3
Uplink Contour G/T (dB/K)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
Uplink Contour SFD (dBW/m2)	-79.0	-81.0	-81.0	-81.0	-81.0	-81.0
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	KHDL	KHDL	KHDL	KHDL	KHDL	KHDL
Downlink Frequency (GHz)	11.7-12.2	11.7-12.2	11.7-12.2	11.7-12.2	11.7-12.2	11.7-12.2
Downlink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Downlink Relative Contour Level (dB)	-6.2	-6.2	-6.2	-6.2	-6.2	-6.2
Downlink Contour EIRP (dBW)	43.5	43.5	43.5	43.5	43.5	43.5
ADJACENT SATELLITE 1						
Satellite 1 Orbital Location	51.6W	51.6W	51.6W	51.6W	51.6W	51.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.2	-26.2	-26.2	-26.2	-26.2	-26.2
ADJACENT SATELLITE 2						
Satellite 1 Orbital Location	55.6W	55.6W	55.6W	55.6W	55.6W	55.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.2	-26.2	-26.2	-26.2	-26.2	-26.2
CARRIER INFORMATION						
Carrier ID	36M0F3F	36M0G7W	8M25G7W	1M43G7W	717KG7W	111KG7W
Carrier Modulation	TV/FM	QPSK	QPSK	BPSK	BPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	N/A	N/A	N/A	N/A	N/A
Information Rate(kbps)	N/A	36860	8448	512	256	128
Code Rate	N/A	3/4x188/204	3/4x188/204	1/2	1/2	3/4
Occupied Bandwidth(kHz)	32400	26664.7	6111.3	1024.0	512.0	85.3
Allocated Bandwidth(kHz)	36000	35997.5	8250.5	1434.0	717.0	111.0
Minimum C/N, Clear Sky (dB)	16.4	7.3	7.3	-0.2	-0.2	5.9
Minimum C/N, Rain (dB)	16.4	7.3	7.3	-0.2	-0.2	5.9
UPLINK EARTH STATION						
Earth Station Diameter (meters)	6.5	4.0	4.0	4.0	4.0	4.0
Earth Station Gain (dBi)	57.4	53.1	53.1	53.1	53.1	53.1
Earth Station Elevation Angle	10.0	10.0	10.0	10.0	10.0	10.0
Rain Rate (mm/yr)	285	285	285	285	285	285
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	6.5	2.4	4.0	1.8	1.8	4.0
Earth Station Gain (dBi)	55.6	47	51.4	44.5	44.5	51.4
Earth Station G/T (dB/K)	34.0	25.0	29.0	23.3	23.3	29.0
Earth Station Elevation Angle	10.0	10.0	10.0	10.0	10.0	10.0
Rain Rate (mm/yr)	320	320	320	320	320	320
LINK FADE TYPE	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky
UPLINK PERFORMANCE						
Uplink Earth Station EIRP (dBW)	80.5	77.2	66.9	58.3	55.4	47.4
Uplink Path Loss, Clear Sky (dB)	-208.1	-208.1	-208.1	-208.1	-208.1	-208.1
Satellite G/T(dB/K)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	32.4	26.7	6.1	1.0	0.5	0.1
Uplink C/N(dB)	24.4	21.9	18.0	17.2	17.3	17.1
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	42.8	42.1	32.5	23.8	20.8	12.8
Downlink Path Loss, Clear Sky (dB)	-206.5	-206.5	-206.5	-206.5	-206.5	-206.5
Downlink Earth Station G/T (dB/K)	34.0	25.0	29.0	23.3	23.3	29.0
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	32.4	26.7	6.1	1.0	0.5	0.1
Transponder Correction Factor	0.0	0.3	0.0	0.0	0.0	0.0
Downlink C / N(dB)	23.8	15.2	15.7	9.1	9.1	14.6
COMPOSITE LINK PERFORMANCE						
Uplink Earth Station HPA Intermodulation C/N (dB)	33.9	31.4	27.5	26.8	26.8	26.6
C/N Uplink (dB)	24.4	21.9	18.0	17.2	17.3	17.1
Uplink Interference C/I (dB)	43.1	29.3	200.0	200.0	200.0	200.0
Uplink Adjacent Satellite C/I (dB)	26.4	23.9	20.0	19.2	19.3	19.1
Intermodulation C/IM (dB)	124.9	200.0	21.1	18.5	18.2	17.9
Downlink C/N (dB)	23.8	15.2	15.7	9.1	9.1	14.6
Downlink Interference C/I (dB)	44.9	33.2	36.0	23.7	23.8	22.5
Downlink Adjacent Satellite C/I (dB)	19.0	10.5	11.7	3.8	3.8	10.6
Subtotal C/N (dB)	16.4	8.8	8.9	2.3	2.3	7.6
Margin - Other Losses (dB)	0	1.5	1.5	1.5	1.5	1.5
Total C/N (dB)	16.4	7.3	7.4	0.8	0.8	6.1
Minimum Required C/N (dB)	16.4	7.3	7.3	-0.2	-0.2	5.9
Number of Carriers	1	1	4	25	50	324
CARRIER DENSITY LEVELS						
Uplink Power Density (dBW/Hz)	-42.9	-50.2	-54.1	-54.9	-54.8	-55.0
Downlink EIRP Density At Beam Peak (dBW/Hz)	-17.0	-26.0	-29.2	-30.1	-30.1	-30.3

UPLINK BEAM INFORMATION						
Uplink Beam Name	EVUL	EVUL	EVUL	EVUL	EVUL	EVUL
Uplink Frequency (GHz)	13.75-14.0	13.75-14.0	13.75-14.0	13.75-14.0	13.75-14.0	13.75-14.0
Uplink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Uplink Relative Contour Level (dB)	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4
Uplink Contour G/T (dB/K)	0.8	0.8	0.8	0.8	0.8	0.8
Uplink Contour SFD (dBW/m2)	-74.8	-84.8	-79.8	-79.8	-79.8	-79.8
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	EHDL	EHDL	EHDL	EHDL	EHDL	EHDL
Downlink Frequency (GHz)	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2
Downlink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Downlink Relative Contour Level (dB)	-6.1	-6.1	-6.1	-6.1	-6.1	-6.1
Downlink Contour EIRP (dBW)	44.8	44.8	44.8	44.8	44.8	44.8
ADJACENT SATELLITE 1						
Satellite 1 Orbital Location	51.6W	51.6W	51.6W	51.6W	51.6W	51.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.1	-26.1	-26.1	-26.1	-26.1	-26.1
ADJACENT SATELLITE 2						
Satellite 1 Orbital Location	55.6W	55.6W	55.6W	55.6W	55.6W	55.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.1	-26.1	-26.1	-26.1	-26.1	-26.1
CARRIER INFORMATION						
Carrier ID	25M0F3F	27M0G7W	8M25G7W	1M43G7W	717KG7W	111KG7W
Carrier Modulation	TV/FM	QPSK	QPSK	BPSK	BPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	N/A	N/A	N/A	N/A	N/A
Information Rate(kbps)	N/A	27650	8448	512	256	128
Code Rate	N/A	3/4x188/204	3/4x188/204	1/2	1/2	3/4
Occupied Bandwidth(kHz)	20700	20002.1	6111.3	1024.0	512.0	85.3
Allocated Bandwidth(kHz)	25000	27003	8250.5	1434.0	717.0	111.0
Minimum C/N, Clear Sky (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Minimum C/N, Rain (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
UPLINK EARTH STATION						
Earth Station Diameter (meters)	6.5	2.4	4.0	2.4	2.4	4.0
Earth Station Gain (dBi)	57.4	48.7	53.1	48.7	48.7	53.1
Earth Station Elevation Angle	21.4	21.4	21.4	21.4	21.4	21.4
Rain Rate (mm/yr)	771	771	771	771	771	771
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	4.0	2.4	2.4	1.8	1.8	2.4
Earth Station Gain (dBi)	51.4	47.0	47.0	44.5	44.5	47.0
Earth Station G/T (dB/K)	29.0	25.0	25.0	23.3	23.3	25.0
Earth Station Elevation Angle	10.2	10.2	10.2	10.2	10.2	10.2
Rain Rate (mm/yr)	3131	3131	3131	3131	3131	3131
LINK FADE TYPE	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky
UPLINK PERFORMANCE						
Uplink Earth Station EIRP (dBW)	79.8	69.3	68.6	56.8	53.8	49.1
Uplink Path Loss, Clear Sky (dB)	-207.6	-207.6	-207.6	-207.6	-207.6	-207.6
Satellite G/T(dB/K)	0.8	0.8	0.8	0.8	0.8	0.8
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Uplink C/N(dB)	28.4	18.1	22.5	18.5	18.5	21.6
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	41.2	40.8	35.0	22.9	19.9	15.2
Downlink Path Loss, Clear Sky (dB)	-206.0	-206.0	-206.0	-206.0	-206.0	-206.0
Downlink Earth Station G/T (dB/K)	29.0	25.0	25.0	23.3	23.3	25.0
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Transponder Correction Factor	0.0	0.6	0.0	0.0	0.0	0.0
Downlink C / N(dB)	19.6	16.0	14.7	8.7	8.7	13.5
COMPOSITE LINK PERFORMANCE						
Uplink Earth Station HPA Intermodulation C/N (dB)	45.7	35.3	39.8	35.7	35.7	38.8
C/N Uplink (dB)	28.4	18.1	22.5	18.5	18.5	21.6
Uplink Interference C/I (dB)	55.2	33.5	33.1	37.0	32.6	46.2
Uplink Adjacent Satellite C/I (dB)	27.6	17.3	21.8	17.6	17.7	20.8
Intermodulation C/IM (dB)	126.8	200.0	25.8	19.1	18.8	21.8
Downlink C/N (dB)	19.6	16.0	14.7	8.7	8.7	13.5
Downlink Interference C/I (dB)	44.8	32.9	29.4	20.2	20.6	24.7
Downlink Adjacent Satellite C/I (dB)	16.2	11.5	10.9	4.0	4.0	9.6
Subtotal C/N (dB)	14.2	8.8	8.8	2.3	2.3	7.5
Margin - Other Losses (dB)	0	1.5	1.5	1.5	1.5	1.5
Total C/N (dB)	14.2	7.3	7.3	0.8	0.8	6.0
Minimum Required C/N (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Number of Carriers	1	1	3	19	38	243
CARRIER DENSITY LEVELS						
Uplink Power Density (dBW/Hz)	-43.6	-52.4	-52.4	-52.0	-52.0	-53.3
Downlink EIRP Density At Beam Peak (dBW/Hz)	-18.7	-26.1	-26.8	-31.1	-31.1	-28.0

UPLINK BEAM INFORMATION						
Uplink Beam Name	EHUL	EHUL	EHUL	EHUL	EHUL	EHUL
Uplink Frequency (GHz)	13.75-14.0	13.75-14.0	13.75-14.0	13.75-14.0	13.75-14.0	13.75-14.0
Uplink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Uplink Relative Contour Level (dB)	-6.0	-6.0	-6.0	-6.0	-6.0	-6.0
Uplink Contour G/T (dB/K)	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8
Uplink Contour SFD (dBW/m2)	-81.3	-82.3	-78.3	-78.3	-78.3	-78.3
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	BVDL	BVDL	BVDL	BVDL	BVDL	BVDL
Downlink Frequency (GHz)	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2
Downlink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Downlink Relative Contour Level (dB)	-6.0	-6.0	-6.0	-6.0	-6.0	-6.0
Downlink Contour EIRP (dBW)	45.9	45.9	45.9	45.9	45.9	45.9
ADJACENT SATELLITE 1						
Satellite 1 Orbital Location	51.6W	51.6W	51.6W	51.6W	51.6W	51.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.0	-26.0	-26.0	-26.0	-26.0	-26.0
ADJACENT SATELLITE 2						
Satellite 1 Orbital Location	55.6W	55.6W	55.6W	55.6W	55.6W	55.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.0	-26.0	-26.0	-26.0	-26.0	-26.0
CARRIER INFORMATION						
Carrier ID	25M0F3F	27M0G7W	8M25G7W	1M43G7W	717KG7W	111KG7W
Carrier Modulation	TV/FM	QPSK	QPSK	BPSK	BPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	N/A	N/A	N/A	N/A	N/A
Information Rate(kbps)	N/A	27650	8448	512	256	128
Code Rate	N/A	3/4x188/204	3/4x188/204	1/2	1/2	3/4
Occupied Bandwidth(kHz)	20700	20002.1	6111.3	1024.0	512.0	85.3
Allocated Bandwidth(kHz)	25000	27003	8250.5	1434.0	717.0	111.0
Minimum C/N, Clear Sky (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Minimum C/N, Rain (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
UPLINK EARTH STATION						
Earth Station Diameter (meters)	4.0	2.4	4.0	4.0	4.0	4.0
Earth Station Gain (dBi)	53.1	48.7	53.1	53.1	53.1	53.1
Earth Station Elevation Angle	10.1	10.1	10.1	10.1	10.1	10.1
Rain Rate (mm/yr)	3479	3479	3479	3479	3479	3479
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	6.5	2.4	2.4	1.2	1.8	2.4
Earth Station Gain (dBi)	55.6	47.0	47.0	40.9	44.5	47.0
Earth Station G/T (dB/K)	34.0	25.0	25.0	19.8	23.3	25.0
Earth Station Elevation Angle	45.2	45.2	45.2	45.2	45.2	45.2
Rain Rate (mm/yr)	851	851	851	851	851	851
LINK FADE TYPE	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky
UPLINK PERFORMANCE						
Uplink Earth Station EIRP (dBW)	72.3	71.3	70.3	62.5	59.2	50.7
Uplink Path Loss, Clear Sky (dB)	-208.3	-208.3	-208.3	-208.3	-208.3	-208.3
Satellite G/T(dB/K)	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Uplink C/N(dB)	18.6	17.8	21.9	21.9	21.6	20.9
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	41.1	41.0	35.6	27.6	24.3	15.8
Downlink Path Loss, Clear Sky (dB)	-204.9	-204.9	-204.9	-204.9	-204.9	-204.9
Downlink Earth Station G/T (dB/K)	34.0	25.0	25.0	19.8	23.3	25.0
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Transponder Correction Factor	0.0	0.7	0.0	0.0	0.0	0.0
Downlink C / N(dB)	25.6	17.4	16.4	11.0	14.2	15.2
COMPOSITE LINK PERFORMANCE						
Uplink Earth Station HPA Intermodulation C/N (dB)	34.3	33.5	37.6	37.6	37.3	36.6
C/N Uplink (dB)	18.6	17.8	21.9	21.9	21.6	20.9
Uplink Interference C/I (dB)	34.2	27.3	31.3	32.1	105.9	91.2
Uplink Adjacent Satellite C/I (dB)	20.2	19.3	23.4	23.4	23.1	22.4
Intermodulation C/IM (dB)	126.8	200.0	21.8	20.5	20.0	19.2
Downlink C/N (dB)	25.6	17.4	16.4	11.0	14.2	15.2
Downlink Interference C/I (dB)	42.9	31.7	33.7	24.2	23.9	22.1
Downlink Adjacent Satellite C/I (dB)	19.4	10.9	10.6	3.1	2.9	9.3
Subtotal C/N (dB)	14.2	8.8	8.9	2.3	2.4	7.4
Margin - Other Losses (dB)	0	1.5	1.5	1.5	1.5	1.5
Total C/N (dB)	14.2	7.3	7.4	0.8	0.9	5.9
Minimum Required C/N (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Number of Carriers	1	1	3	19	38	243
CARRIER DENSITY LEVELS						
Uplink Power Density (dBW/Hz)	-46.8	-50.4	-50.7	-50.7	-51.0	-51.7
Downlink EIRP Density At Beam Peak (dBW/Hz)	-18.9	-26.0	-26.3	-26.5	-26.8	-27.5

UPLINK BEAM INFORMATION						
Uplink Beam Name	EVUL	EVUL	EVUL	EVUL	EVUL	EVUL
Uplink Frequency (GHz)	13.75-14.0	13.75-14.0	13.75-14.0	13.75-14.0	13.75-14.0	13.75-14.0
Uplink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Uplink Relative Contour Level (dB)	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4
Uplink Contour G/T (dB/K)	0.8	0.8	0.8	0.8	0.8	0.8
Uplink Contour SFD (dBW/m2)	-74.8	-83.8	-79.8	-79.8	-79.8	-79.8
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	BHDL	BHDL	BHDL	BHDL	BHDL	BHDL
Downlink Frequency (GHz)	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2
Downlink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Downlink Relative Contour Level (dB)	-5.7	-5.7	-5.7	-5.7	-5.7	-5.7
Downlink Contour EIRP (dBW)	47.0	47.0	47.0	47.0	47.0	47.0
ADJACENT SATELLITE 1						
Satellite 1 Orbital Location	51.6W	51.6W	51.6W	51.6W	51.6W	51.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-25.7	-25.7	-25.7	-25.7	-25.7	-25.7
ADJACENT SATELLITE 2						
Satellite 1 Orbital Location	55.6W	55.6W	55.6W	55.6W	55.6W	55.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-25.7	-25.7	-25.7	-25.7	-25.7	-25.7
CARRIER INFORMATION						
Carrier ID	25M0F3F	27M0G7W	8M25G7W	1M43G7W	717KG7W	111KG7W
Carrier Modulation	TV/FM	QPSK	QPSK	BPSK	BPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	N/A	N/A	N/A	N/A	N/A
Information Rate(kbps)	N/A	27650	8448	512	256	128
Code Rate	N/A	3/4x188/204	3/4x188/204	1/2	1/2	3/4
Occupied Bandwidth(kHz)	20700	20002.1	6111.3	1024.0	512.0	85.3
Allocated Bandwidth(kHz)	25000	27003	8250.5	1434.0	717.0	111.0
Minimum C/N, Clear Sky (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Minimum C/N, Rain (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
UPLINK EARTH STATION						
Earth Station Diameter (meters)	6.5	1.8	2.4	2.4	1.8	2.4
Earth Station Gain (dBi)	57.4	46.2	48.7	48.7	46.2	48.7
Earth Station Elevation Angle	21.4	21.4	21.4	21.4	21.4	21.4
Rain Rate (mm/yr)	771	771	771	771	771	771
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	4.0	2.4	2.4	1.2	1.2	2.4
Earth Station Gain (dBi)	51.4	47.0	47.0	40.9	40.9	47.0
Earth Station G/T (dB/K)	29.0	25.0	25.0	19.8	19.8	25.0
Earth Station Elevation Angle	43.5	43.5	43.5	43.5	43.5	43.5
Rain Rate (mm/yr)	976	976	976	976	976	976
LINK FADE TYPE	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky
UPLINK PERFORMANCE						
Uplink Earth Station EIRP (dBW)	78.2	69.0	64.4	55.9	53.0	44.8
Uplink Path Loss, Clear Sky (dB)	-207.6	-207.6	-207.6	-207.6	-207.6	-207.6
Satellite G/T(dB/K)	0.8	0.8	0.8	0.8	0.8	0.8
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Uplink C/N(dB)	26.8	17.8	18.3	17.6	17.7	17.3
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	41.5	41.3	36.2	27.5	24.6	16.4
Downlink Path Loss, Clear Sky (dB)	-204.9	-204.9	-204.9	-204.9	-204.9	-204.9
Downlink Earth Station G/T (dB/K)	29.0	25.0	25.0	19.8	19.8	25.0
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Transponder Correction Factor	0.0	0.7	0.0	0.0	0.0	0.0
Downlink C / N(dB)	21.0	17.7	17.1	10.9	11.0	15.8
COMPOSITE LINK PERFORMANCE						
Uplink Earth Station HPA Intermodulation C/N (dB)	44.1	35.0	35.6	34.9	35.0	34.6
C/N Uplink (dB)	26.8	17.8	18.3	17.6	17.7	17.3
Uplink Interference C/I (dB)	53.5	34.2	27.3	32.1	26.4	36.5
Uplink Adjacent Satellite C/I (dB)	26.1	17.0	17.6	16.8	16.9	16.5
Intermodulation C/IM (dB)	126.8	200.0	22.1	19.9	19.8	19.3
Downlink C/N (dB)	21.0	17.7	17.1	10.9	11.0	15.8
Downlink Interference C/I (dB)	44.7	32.3	29.4	23.1	22.0	22.2
Downlink Adjacent Satellite C/I (dB)	16.0	11.5	11.5	3.4	3.5	10.3
Subtotal C/N (dB)	14.3	9.0	8.8	2.3	2.4	7.5
Margin - Other Losses (dB)	0	1.5	1.5	1.5	1.5	1.5
Total C/N (dB)	14.3	7.5	7.3	0.8	0.9	6.0
Minimum Required C/N (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Number of Carriers	1	1	3	19	38	243
CARRIER DENSITY LEVELS						
Uplink Power Density (dBW/Hz)	-45.2	-50.2	-52.2	-52.9	-50.3	-53.2
Downlink EIRP Density At Beam Peak (dBW/Hz)	-18.8	-26.0	-25.9	-26.9	-26.8	-27.2

UPLINK BEAM INFORMATION						
Uplink Beam Name	BHUL	BHUL	BHUL	BHUL	BHUL	BHUL
Uplink Frequency (GHz)	14.0-14.25	14.0-14.25	14.0-14.25	14.0-14.25	14.0-14.25	14.0-14.25
Uplink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Uplink Relative Contour Level (dB)	-5.7	-5.7	-5.7	-5.7	-5.7	-5.7
Uplink Contour G/T (dB/K)	0.0	0.0	0.0	0.0	0.0	0.0
Uplink Contour SFD (dBW/m2)	-80.6	-81.6	-80.6	-80.6	-80.6	-80.6
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	BVDL	BVDL	BVDL	BVDL	BVDL	BVDL
Downlink Frequency (GHz)	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2
Downlink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Downlink Relative Contour Level (dB)	-6.0	-6.0	-6.0	-6.0	-6.0	-6.0
Downlink Contour EIRP (dBW)	45.9	45.9	45.9	45.9	45.9	45.9
ADJACENT SATELLITE 1						
Satellite 1 Orbital Location	51.6W	51.6W	51.6W	51.6W	51.6W	51.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.0	-26.0	-26.0	-26.0	-26.0	-26.0
ADJACENT SATELLITE 2						
Satellite 1 Orbital Location	55.6W	55.6W	55.6W	55.6W	55.6W	55.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.0	-26.0	-26.0	-26.0	-26.0	-26.0
CARRIER INFORMATION						
Carrier ID	25M0F3F	27M0G7W	8M25G7W	1M43G7W	717KG7W	111KG7W
Carrier Modulation	TV/FM	QPSK	QPSK	BPSK	BPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	N/A	N/A	N/A	N/A	N/A
Information Rate(kbps)	N/A	27650	8448	512	256	128
Code Rate	N/A	3/4x188/204	3/4x188/204	1/2	1/2	3/4
Occupied Bandwidth(kHz)	20700	20002.1	6111.3	1024.0	512.0	85.3
Allocated Bandwidth(kHz)	25000	27003	8250.5	1434.0	717.0	111.0
Minimum C/N, Clear Sky (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Minimum C/N, Rain (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
UPLINK EARTH STATION						
Earth Station Diameter (meters)	4.0	2.4	4.0	4.0	4.0	2.4
Earth Station Gain (dBi)	53.1	48.7	53.1	53.1	53.1	48.7
Earth Station Elevation Angle	44.1	44.1	44.1	44.1	44.1	44.1
Rain Rate (mm/yr)	758	758	758	758	758	758
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	6.5	2.4	2.4	1.2	1.2	2.4
Earth Station Gain (dBi)	55.6	47.0	47.0	40.9	40.9	47.0
Earth Station G/T (dB/K)	34.0	25.0	25.0	19.8	19.8	25.0
Earth Station Elevation Angle	45.2	45.2	45.2	45.2	45.2	45.2
Rain Rate (mm/yr)	851	851	851	851	851	851
LINK FADE TYPE	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky
UPLINK PERFORMANCE						
Uplink Earth Station EIRP (dBW)	71.4	70.5	66.9	58.9	55.9	47.4
Uplink Path Loss, Clear Sky (dB)	-207.1	-207.1	-207.1	-207.1	-207.1	-207.1
Satellite G/T(dB/K)	0.0	0.0	0.0	0.0	0.0	0.0
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Uplink C/N(dB)	19.7	19.0	20.5	20.3	20.3	19.6
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	41.0	41.0	35.9	27.7	24.7	16.2
Downlink Path Loss, Clear Sky (dB)	-204.9	-204.9	-204.9	-204.9	-204.9	-204.9
Downlink Earth Station G/T (dB/K)	34.0	25.0	25.0	19.8	19.8	25.0
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Transponder Correction Factor	0.0	0.6	0.0	0.0	0.0	0.0
Downlink C / N(dB)	25.5	17.3	16.7	11.1	11.1	15.6
COMPOSITE LINK PERFORMANCE						
Uplink Earth Station HPA Intermodulation C/N (dB)	32.9	32.2	33.7	33.5	33.5	32.8
C/N Uplink (dB)	19.7	19.0	20.5	20.3	20.3	19.6
Uplink Interference C/I (dB)	43.1	31.6	200.0	200.0	102.7	88.1
Uplink Adjacent Satellite C/I (dB)	19.2	18.5	20.0	19.8	19.8	19.1
Intermodulation C/IM (dB)	126.8	200.0	21.5	20.0	19.8	19.0
Downlink C/N (dB)	25.5	17.3	16.7	11.1	11.1	15.6
Downlink Interference C/I (dB)	43.3	31.0	29.4	23.1	24.0	22.1
Downlink Adjacent Satellite C/I (dB)	19.2	10.8	10.8	3.2	3.2	9.6
Subtotal C/N (dB)	14.3	8.9	8.8	2.3	2.3	7.5
Margin - Other Losses (dB)	0	1.5	1.5	1.5	1.5	1.5
Total C/N (dB)	14.3	7.4	7.3	0.8	0.8	6.0
Minimum Required C/N (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Number of Carriers	1	1	3	19	38	243
CARRIER DENSITY LEVELS						
Uplink Power Density (dBW/Hz)	-47.7	-51.2	-54.1	-54.3	-54.3	-50.6
Downlink EIRP Density At Beam Peak (dBW/Hz)	-19.0	-26.0	-26.0	-26.4	-26.4	-27.1

UPLINK BEAM INFORMATION						
Uplink Beam Name	BVUL	BVUL	BVUL	BVUL	BVUL	BVUL
Uplink Frequency (GHz)	14.0-14.25	14.0-14.25	14.0-14.25	14.0-14.25	14.0-14.25	14.0-14.25
Uplink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Uplink Relative Contour Level (dB)	-6.0	-6.0	-6.0	-6.0	-6.0	-6.0
Uplink Contour G/T (dB/K)	0.3	0.3	0.3	0.3	0.3	0.3
Uplink Contour SFD (dBW/m2)	-80.9	-80.9	-79.9	-79.9	-79.9	-79.9
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	BHDL	BHDL	BHDL	BHDL	BHDL	BHDL
Downlink Frequency (GHz)	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2
Downlink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Downlink Relative Contour Level (dB)	-5.8	-5.8	-5.8	-5.8	-5.8	-5.8
Downlink Contour EIRP (dBW)	46.9	46.9	46.9	46.9	46.9	46.9
ADJACENT SATELLITE 1						
Satellite 1 Orbital Location	51.6W	51.6W	51.6W	51.6W	51.6W	51.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-25.8	-25.8	-25.8	-25.8	-25.8	-25.8
ADJACENT SATELLITE 2						
Satellite 1 Orbital Location	55.6W	55.6W	55.6W	55.6W	55.6W	55.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-25.8	-25.8	-25.8	-25.8	-25.8	-25.8
CARRIER INFORMATION						
Carrier ID	25M0F3F	27M0G7W	8M25G7W	1M43G7W	717KG7W	111KG7W
Carrier Modulation	TV/FM	QPSK	QPSK	BPSK	BPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	N/A	N/A	N/A	N/A	N/A
Information Rate(kbps)	N/A	27650	8448	512	256	128
Code Rate	N/A	3/4x188/204	3/4x188/204	1/2	1/2	3/4
Occupied Bandwidth(kHz)	20700	20002.1	6111.3	1024.0	512.0	85.3
Allocated Bandwidth(kHz)	25000	27003	8250.5	1434.0	717.0	111.0
Minimum C/N, Clear Sky (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Minimum C/N, Rain (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
UPLINK EARTH STATION						
Earth Station Diameter (meters)	2.4	2.4	4.0	2.4	2.4	2.4
Earth Station Gain (dBi)	48.7	48.7	53.1	48.7	48.7	48.7
Earth Station Elevation Angle	46.5	46.5	46.5	46.4	46.5	46.5
Rain Rate (mm/yr)	1007	1007	1007	1090	1007	1007
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	6.5	2.4	2.4	1.2	1.2	2.4
Earth Station Gain (dBi)	55.6	47.0	47.0	40.9	40.9	47.0
Earth Station G/T (dB/K)	34.0	25.0	25.0	19.8	19.8	25.0
Earth Station Elevation Angle	43.5	43.5	43.5	43.5	43.5	43.5
Rain Rate (mm/yr)	976	976	976	976	976	976
LINK FADE TYPE	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky
UPLINK PERFORMANCE						
Uplink Earth Station EIRP (dBW)	71.7	70.4	66.7	58.8	55.7	47.1
Uplink Path Loss, Clear Sky (dB)	-207.1	-207.1	-207.1	-207.1	-207.1	-207.1
Satellite G/T(dB/K)	0.3	0.3	0.3	0.3	0.3	0.3
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Uplink C/N(dB)	20.3	19.2	20.6	20.5	20.4	19.6
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	40.5	41.1	36.0	27.8	24.8	16.2
Downlink Path Loss, Clear Sky (dB)	-205.0	-205.0	-205.0	-205.0	-205.0	-205.0
Downlink Earth Station G/T (dB/K)	34.0	25.0	25.0	19.8	19.8	25.0
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Transponder Correction Factor	0.0	0.8	0.0	0.0	0.0	0.0
Downlink C / N(dB)	24.9	17.5	16.8	11.0	11.1	15.5
COMPOSITE LINK PERFORMANCE						
Uplink Earth Station HPA Intermodulation C/N (dB)	33.6	32.5	34.0	33.6	33.7	32.9
C/N Uplink (dB)	20.3	19.2	20.6	20.5	20.4	19.6
Uplink Interference C/I (dB)	45.2	33.7	30.4	35.7	30.0	39.7
Uplink Adjacent Satellite C/I (dB)	19.5	18.4	19.9	19.6	19.6	18.8
Intermodulation C/IM (dB)	126.8	200.0	22.7	21.1	21.0	20.1
Downlink C/N (dB)	24.9	17.5	16.8	11.0	11.1	15.5
Downlink Interference C/I (dB)	43.8	33.2	28.9	23.4	22.2	21.9
Downlink Adjacent Satellite C/I (dB)	18.6	10.7	10.7	3.1	3.2	9.4
Subtotal C/N (dB)	14.3	8.8	8.8	2.2	2.3	7.4
Margin - Other Losses (dB)	0	1.5	1.5	1.5	1.5	1.5
Total C/N (dB)	14.3	7.3	7.3	0.7	0.8	5.9
Minimum Required C/N (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Number of Carriers	1	1	3	19	38	243
CARRIER DENSITY LEVELS						
Uplink Power Density (dBW/Hz)	-43.0	-51.3	-54.3	-50.0	-50.1	-50.9
Downlink EIRP Density At Beam Peak (dBW/Hz)	-19.7	-26.1	-26.0	-26.6	-26.5	-27.3

UPLINK BEAM INFORMATION						
Uplink Beam Name	BHUL	BHUL	BHUL	BHUL	BHUL	BHUL
Uplink Frequency (GHz)	14.0-14.25	14.0-14.25	14.0-14.25	14.0-14.25	14.0-14.25	14.0-14.25
Uplink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Uplink Relative Contour Level (dB)	-5.7	-5.7	-5.7	-5.7	-5.7	-5.7
Uplink Contour G/T (dB/K)	0.0	0.0	0.0	0.0	0.0	0.0
Uplink Contour SFD (dBW/m2)	-81.6	-82.6	-80.6	-80.6	-80.6	-80.6
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	EVDL	EVDL	EVDL	EVDL	EVDL	EVDL
Downlink Frequency (GHz)	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2
Downlink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Downlink Relative Contour Level (dB)	-6.0	-6.0	-6.0	-6.0	-6.0	-6.0
Downlink Contour EIRP (dBW)	45.2	45.2	45.2	45.2	45.2	45.2
ADJACENT SATELLITE 1						
Satellite 1 Orbital Location	51.6W	51.6W	51.6W	51.6W	51.6W	51.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.0	-26.0	-26.0	-26.0	-26.0	-26.0
ADJACENT SATELLITE 2						
Satellite 1 Orbital Location	55.6W	55.6W	55.6W	55.6W	55.6W	55.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.0	-26.0	-26.0	-26.0	-26.0	-26.0
CARRIER INFORMATION						
Carrier ID	25M0F3F	27M0G7W	8M25G7W	1M43G7W	717KG7W	111KG7W
Carrier Modulation	TV/FM	QPSK	QPSK	BPSK	BPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	N/A	N/A	N/A	N/A	N/A
Information Rate(kbps)	N/A	27650	8448	512	256	128
Code Rate	N/A	3/4x188/204	3/4x188/204	1/2	1/2	3/4
Occupied Bandwidth(kHz)	20700	20002.1	6111.3	1024.0	512.0	85.3
Allocated Bandwidth(kHz)	25000	27003	8250.5	1434.0	717.0	111.0
Minimum C/N, Clear Sky (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Minimum C/N, Rain (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
UPLINK EARTH STATION						
Earth Station Diameter (meters)	4.0	2.4	4.0	1.8	1.8	2.4
Earth Station Gain (dBi)	53.1	48.7	53.1	46.2	46.2	48.7
Earth Station Elevation Angle	44.1	44.1	44.1	44.1	44.1	44.1
Rain Rate (mm/yr)	758	758	758	758	758	758
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	6.5	2.4	2.4	1.8	1.8	2.4
Earth Station Gain (dBi)	55.6	47.0	47.0	44.5	44.5	47.0
Earth Station G/T (dB/K)	34.0	25.0	25.0	23.3	23.3	25.0
Earth Station Elevation Angle	10.2	10.2	10.2	10.2	10.2	10.2
Rain Rate (mm/yr)	2098	2098	2098	2098	2098	2098
LINK FADE TYPE	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky
UPLINK PERFORMANCE						
Uplink Earth Station EIRP (dBW)	71.3	70.5	67.2	55.4	52.4	47.7
Uplink Path Loss, Clear Sky (dB)	-207.0	-207.0	-207.0	-207.0	-207.0	-207.0
Satellite G/T(dB/K)	0.0	0.0	0.0	0.0	0.0	0.0
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Uplink C/N(dB)	19.7	19.1	20.9	16.9	16.9	20.0
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	40.7	40.8	35.4	23.4	20.4	15.7
Downlink Path Loss, Clear Sky (dB)	-206.0	-206.0	-206.0	-206.0	-206.0	-206.0
Downlink Earth Station G/T (dB/K)	34.0	25.0	25.0	23.3	23.3	25.0
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Transponder Correction Factor	0.0	0.6	0.0	0.0	0.0	0.0
Downlink C / N(dB)	24.1	16.0	15.1	9.2	9.2	14.0
COMPOSITE LINK PERFORMANCE						
Uplink Earth Station HPA Intermodulation C/N (dB)	32.8	32.2	34.0	29.9	30.0	33.1
C/N Uplink (dB)	19.7	19.1	20.9	16.9	16.9	20.0
Uplink Interference C/I (dB)	43.0	32.5	200.0	200.0	97.1	86.3
Uplink Adjacent Satellite C/I (dB)	19.1	18.5	20.3	16.2	16.3	19.4
Intermodulation C/IM (dB)	126.8	200.0	25.7	19.1	18.7	21.7
Downlink C/N (dB)	24.1	16.0	15.1	9.2	9.2	14.0
Downlink Interference C/I (dB)	42.3	31.6	39.4	20.7	21.9	24.7
Downlink Adjacent Satellite C/I (dB)	19.6	11.2	10.9	4.0	4.0	9.7
Subtotal C/N (dB)	14.2	8.9	8.8	2.3	2.3	7.5
Margin - Other Losses (dB)	0	1.5	1.5	1.5	1.5	1.5
Total C/N (dB)	14.2	7.4	7.3	0.8	0.8	6.0
Minimum Required C/N (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Number of Carriers	1	1	3	19	38	243
CARRIER DENSITY LEVELS						
Uplink Power Density (dBW/Hz)	-47.8	-51.2	-53.8	-50.9	-50.9	-50.3
Downlink EIRP Density At Beam Peak (dBW/Hz)	-19.3	-26.2	-26.5	-30.7	-30.7	-27.6

UPLINK BEAM INFORMATION						
Uplink Beam Name	BVUL	BVUL	BVUL	BVUL	BVUL	BVUL
Uplink Frequency (GHz)	14.0-14.25	14.0-14.25	14.0-14.25	14.0-14.25	14.0-14.25	14.0-14.25
Uplink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Uplink Relative Contour Level (dB)	-6.0	-6.0	-6.0	-6.1	-6.0	-6.0
Uplink Contour G/T (dB/K)	0.3	0.3	0.3	0.2	0.3	0.3
Uplink Contour SFD (dBW/m2)	-82.9	-83.9	-78.9	-78.8	-78.9	-78.9
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	EHDL	EHDL	EHDL	EHDL	EHDL	EHDL
Downlink Frequency (GHz)	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2
Downlink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Downlink Relative Contour Level (dB)	-6.1	-6.1	-6.1	-6.1	-6.1	-6.1
Downlink Contour EIRP (dBW)	44.8	44.8	44.8	44.8	44.8	44.8
ADJACENT SATELLITE 1						
Satellite 1 Orbital Location	51.6W	51.6W	51.6W	51.6W	51.6W	51.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.1	-26.1	-26.1	-26.1	-26.1	-26.1
ADJACENT SATELLITE 2						
Satellite 1 Orbital Location	55.6W	55.6W	55.6W	55.6W	55.6W	55.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.1	-26.1	-26.1	-26.1	-26.1	-26.1
CARRIER INFORMATION						
Carrier ID	25M0F3F	27M0G7W	8M25G7W	1M43G7W	717KG7W	111KG7W
Carrier Modulation	TV/FM	QPSK	QPSK	BPSK	BPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	N/A	N/A	N/A	N/A	N/A
Information Rate(kbps)	N/A	27650	8448	512	256	128
Code Rate	N/A	3/4x188/204	3/4x188/204	1/2	1/2	3/4
Occupied Bandwidth(kHz)	20700	20002.1	6111.3	1024.0	512.0	85.3
Allocated Bandwidth(kHz)	25000	27003	8250.5	1434.0	717.0	111.0
Minimum C/N, Clear Sky (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Minimum C/N, Rain (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
UPLINK EARTH STATION						
Earth Station Diameter (meters)	2.4	2.4	4.0	2.4	2.4	4.0
Earth Station Gain (dBi)	48.7	48.7	53.1	48.7	48.7	53.1
Earth Station Elevation Angle	46.5	46.5	46.5	46.4	46.5	46.5
Rain Rate (mm/yr)	1007	1007	1007	1090	1007	1007
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	6.5	2.4	2.4	1.8	1.8	2.4
Earth Station Gain (dBi)	55.6	47.0	47.0	44.5	44.5	47.0
Earth Station G/T (dB/K)	34.0	25.0	25.0	23.3	23.3	25.0
Earth Station Elevation Angle	10.2	10.2	10.2	10.2	10.2	10.2
Rain Rate (mm/yr)	3131	3131	3131	3131	3131	3131
LINK FADE TYPE	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky
UPLINK PERFORMANCE						
Uplink Earth Station EIRP (dBW)	70.9	69.5	68.8	56.9	53.9	49.1
Uplink Path Loss, Clear Sky (dB)	-207.0	-207.0	-207.0	-207.0	-207.0	-207.0
Satellite G/T(dB/K)	0.3	0.3	0.3	0.2	0.3	0.3
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Uplink C/N(dB)	19.6	18.4	22.8	18.6	18.7	21.7
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	41.1	40.8	35.0	22.9	19.9	15.1
Downlink Path Loss, Clear Sky (dB)	-206.0	-206.0	-206.0	-206.0	-206.0	-206.0
Downlink Earth Station G/T (dB/K)	34.0	25.0	25.0	23.3	23.3	25.0
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Transponder Correction Factor	0.0	0.6	0.0	0.0	0.0	0.0
Downlink C / N(dB)	24.5	16.0	14.7	8.7	8.7	13.4
COMPOSITE LINK PERFORMANCE						
Uplink Earth Station HPA Intermodulation C/N (dB)	32.8	31.6	36.0	31.9	31.9	34.9
C/N Uplink (dB)	19.6	18.4	22.8	18.6	18.7	21.7
Uplink Interference C/I (dB)	44.5	32.8	32.2	34.3	28.8	42.4
Uplink Adjacent Satellite C/I (dB)	18.7	17.5	21.9	17.8	17.8	20.8
Intermodulation C/IM (dB)	126.8	200.0	25.8	19.1	18.8	21.7
Downlink C/N (dB)	24.5	16.0	14.7	8.7	8.7	13.4
Downlink Interference C/I (dB)	45.0	32.4	29.4	20.2	20.6	24.6
Downlink Adjacent Satellite C/I (dB)	20.4	11.5	10.9	4.0	4.0	9.5
Subtotal C/N (dB)	14.3	8.9	8.8	2.3	2.3	7.4
Margin - Other Losses (dB)	0	1.5	1.5	1.5	1.5	1.5
Total C/N (dB)	14.3	7.4	7.3	0.8	0.8	5.9
Minimum Required C/N (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Number of Carriers	1	1	3	19	38	243
CARRIER DENSITY LEVELS						
Uplink Power Density (dBW/Hz)	-43.8	-52.2	-52.2	-51.9	-51.9	-53.3
Downlink EIRP Density At Beam Peak (dBW/Hz)	-18.8	-26.1	-26.8	-31.1	-31.1	-28.1

EXHIBIT 6: 57.6° W.L. Link Budgets

UPLINK BEAM INFORMATION						
Uplink Beam Name	KHUL	KHUL	KHUL	KHUL	KHUL	KHUL
Uplink Frequency (GHz)	14.0-14.5	14.0-14.5	14.0-14.5	14.0-14.5	14.0-14.5	14.0-14.5
Uplink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Uplink Relative Contour Level (dB)	-6.3	-6.3	-6.3	-6.3	-6.3	-6.3
Uplink Contour G/T (dB/K)	0.0	0.0	0.0	0.0	0.0	0.0
Uplink Contour SFD (dBW/m2)	-78.5	-78.5	-80.5	-80.5	-80.5	-80.5
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	KVDL	KVDL	KVDL	KVDL	KVDL	KVDL
Downlink Frequency (GHz)	11.7-12.2	11.7-12.2	11.7-12.2	11.7-12.2	11.7-12.2	11.7-12.2
Downlink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Downlink Relative Contour Level (dB)	-6.4	-6.4	-6.4	-6.4	-6.4	-6.4
Downlink Contour EIRP (dBW)	43.3	43.3	43.3	43.3	43.3	43.3
ADJACENT SATELLITE 1						
Satellite 1 Orbital Location	55.6W	55.6W	55.6W	55.6W	55.6W	55.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.4	-26.4	-26.4	-26.4	-26.4	-26.4
ADJACENT SATELLITE 2						
Satellite 1 Orbital Location	59.6W	59.6W	59.6W	59.6W	59.6W	59.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.4	-26.4	-26.4	-26.4	-26.4	-26.4
CARRIER INFORMATION						
Carrier ID	36M0F3F	36M0G7W	8M25G7W	1M43G7W	717KG7W	111KG7W
Carrier Modulation	TV/FM	QPSK	QPSK	BPSK	BPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	N/A	N/A	N/A	N/A	N/A
Information Rate(kbps)	N/A	36860	8448	512	256	128
Code Rate	N/A	3/4x188/204	3/4x188/204	1/2	1/2	3/4
Occupied Bandwidth(kHz)	32400	26664.7	6111.3	1024.0	512.0	85.3
Allocated Bandwidth(kHz)	36000	35997.5	8250.5	1434.0	717.0	111.0
Minimum C/N, Clear Sky (dB)	16.4	7.3	7.3	-0.2	-0.2	5.9
Minimum C/N, Rain (dB)	16.4	7.3	7.3	-0.2	-0.2	5.9
UPLINK EARTH STATION						
Earth Station Diameter (meters)	6.5	6.5	4.0	4.0	4.0	2.4
Earth Station Gain (dBi)	57.4	57.4	53.1	53.1	53.1	48.7
Earth Station Elevation Angle	10.1	10.1	10.1	10.1	10.1	10.1
Rain Rate (mm/yr)	394	394	394	394	394	394
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	6.5	2.4	4.0	1.8	1.8	4.0
Earth Station Gain (dBi)	55.6	47.0	51.4	44.5	44.5	51.4
Earth Station G/T (dB/K)	34.0	25.0	29.0	23.3	23.3	29.0
Earth Station Elevation Angle	10.0	10.0	10.0	10.0	10.0	10.0
Rain Rate (mm/yr)	214	214	214	214	214	214
LINK FADE TYPE	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky
UPLINK PERFORMANCE						
Uplink Earth Station EIRP (dBW)	80.9	79.7	67.5	59.1	56.2	48.0
Uplink Path Loss, Clear Sky (dB)	-208.1	-208.1	-208.1	-208.1	-208.1	-208.1
Satellite G/T(dB/K)	0.0	0.0	0.0	0.0	0.0	0.0
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	32.4	26.7	6.1	1.0	0.5	0.1
Uplink C/N(dB)	26.3	25.9	20.1	19.5	19.6	19.2
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	42.5	41.9	32.3	23.8	20.8	12.6
Downlink Path Loss, Clear Sky (dB)	-206.5	-206.5	-206.5	-206.5	-206.5	-206.5
Downlink Earth Station G/T (dB/K)	34.0	25.0	29.0	23.3	23.3	29.0
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	32.4	26.7	6.1	1.0	0.5	0.1
Transponder Correction Factor	0.0	0.3	0.0	0.0	0.0	0.0
Downlink C / N(dB)	23.5	15.0	15.5	9.1	9.1	14.4
COMPOSITE LINK PERFORMANCE						
Uplink Earth Station HPA Intermodulation C/N (dB)	35.7	35.4	29.6	29.0	29.0	28.6
C/N Uplink (dB)	26.3	25.9	20.1	19.5	19.6	19.2
Uplink Interference C/I (dB)	48.1	38.7	31.7	38.4	31.0	31.5
Uplink Adjacent Satellite C/I (dB)	26.7	26.4	20.6	20.0	20.1	19.7
Intermodulation C/IM (dB)	124.9	200.0	21.0	18.6	18.2	17.7
Downlink C/N (dB)	23.5	15.0	15.5	9.1	9.1	14.4
Downlink Interference C/I (dB)	46.9	35.4	29.2	23.4	22.1	21.6
Downlink Adjacent Satellite C/I (dB)	18.7	10.2	11.5	3.7	3.7	10.3
Subtotal C/N (dB)	16.5	8.8	9.0	2.3	2.3	7.5
Margin - Other Losses (dB)	0	1.5	1.5	1.5	1.5	1.5
Total C/N (dB)	16.5	7.3	7.5	0.8	0.8	6.0
Minimum Required C/N (dB)	16.4	7.3	7.3	-0.2	-0.2	5.9
Number of Carriers	1	1	4	25	50	324
CARRIER DENSITY LEVELS						
Uplink Power Density (dBW/Hz)	-42.5	-52.0	-53.5	-54.1	-54.0	-50.0
Downlink EIRP Density At Beam Peak (dBW/Hz)	-17.1	-26.0	-29.2	-29.9	-29.9	-30.3

UPLINK BEAM INFORMATION						
Uplink Beam Name	EHUL	EHUL	EHUL	EHUL	EHUL	EHUL
Uplink Frequency (GHz)	13.75-14.0	13.75-14.0	13.75-14.0	13.75-14.0	13.75-14.0	13.75-14.0
Uplink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Uplink Relative Contour Level (dB)	-6.0	-6.0	-6.0	-6.0	-6.0	-6.0
Uplink Contour G/T (dB/K)	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8
Uplink Contour SFD (dBW/m2)	-82.3	-83.3	-80.3	-80.3	-80.3	-80.3
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	EVDL	EVDL	EVDL	EVDL	EVDL	EVDL
Downlink Frequency (GHz)	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2
Downlink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Downlink Relative Contour Level (dB)	-6.0	-6.0	-6.0	-6.0	-6.0	-6.0
Downlink Contour EIRP (dBW)	45.2	45.2	45.2	45.2	45.2	45.2
ADJACENT SATELLITE 1						
Satellite 1 Orbital Location	55.6W	55.6W	55.6W	55.6W	55.6W	55.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.0	-26.0	-26.0	-26.0	-26.0	-26.0
ADJACENT SATELLITE 2						
Satellite 1 Orbital Location	59.6W	59.6W	59.6W	59.6W	59.6W	59.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.0	-26.0	-26.0	-26.0	-26.0	-26.0
CARRIER INFORMATION						
Carrier ID	25M0F3F	27M0G7W	8M25G7W	1M43G7W	717KG7W	111KG7W
Carrier Modulation	TV/FM	QPSK	QPSK	BPSK	BPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	N/A	N/A	N/A	N/A	N/A
Information Rate(kbps)	N/A	27650	8448	512	256	128
Code Rate	N/A	3/4x188/204	3/4x188/204	1/2	1/2	3/4
Occupied Bandwidth(kHz)	20700	20002.1	6111.3	1024.0	512.0	85.3
Allocated Bandwidth(kHz)	25000	27003	8250.5	1434.0	717.0	111.0
Minimum C/N, Clear Sky (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Minimum C/N, Rain (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
UPLINK EARTH STATION						
Earth Station Diameter (meters)	4.0	2.4	4.0	2.4	2.4	4.0
Earth Station Gain (dBi)	53.1	48.7	53.1	48.7	48.7	53.1
Earth Station Elevation Angle	10.1	10.1	10.1	10.1	10.1	10.1
Rain Rate (mm/yr)	3479	3479	3479	3479	3479	3479
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	6.5	2.4	2.4	1.8	1.8	2.4
Earth Station Gain (dBi)	55.6	47.0	47.0	44.5	44.5	47.0
Earth Station G/T (dB/K)	34.0	25.0	25.0	23.3	23.3	25.0
Earth Station Elevation Angle	10.2	10.2	10.2	10.2	10.2	10.2
Rain Rate (mm/yr)	2098	2098	2098	2098	2098	2098
LINK FADE TYPE	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky
UPLINK PERFORMANCE						
Uplink Earth Station EIRP (dBW)	72.3	71.2	68.8	57.0	53.9	49.2
Uplink Path Loss, Clear Sky (dB)	-208.3	-208.3	-208.3	-208.3	-208.3	-208.3
Satellite G/T(dB/K)	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Uplink C/N(dB)	18.6	17.7	20.4	16.4	16.3	19.4
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	50.0	40.8	35.4	23.4	20.3	15.6
Downlink Path Loss, Clear Sky (dB)	-206.0	-206.0	-206.0	-206.0	-206.0	-206.0
Downlink Earth Station G/T (dB/K)	34.0	25.0	25.0	23.3	23.3	25.0
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Transponder Correction Factor	0.0	0.6	0.0	0.0	0.0	0.0
Downlink C / N(dB)	33.4	16.0	15.1	9.2	9.1	13.9
COMPOSITE LINK PERFORMANCE						
Uplink Earth Station HPA Intermodulation C/N (dB)	34.3	33.3	36.1	32.1	32.0	35.1
C/N Uplink (dB)	18.6	17.7	20.4	16.4	16.3	19.4
Uplink Interference C/I (dB)	32.6	30.9	200.0	200.0	96.4	85.5
Uplink Adjacent Satellite C/I (dB)	20.1	19.2	22.0	17.9	17.8	20.9
Intermodulation C/IM (dB)	126.8	200.0	25.7	19.2	18.7	21.7
Downlink C/N (dB)	33.4	16.0	15.1	9.2	9.1	13.9
Downlink Interference C/I (dB)	42.4	30.6	31.7	19.6	21.8	24.7
Downlink Adjacent Satellite C/I (dB)	19.8	11.2	10.9	4.0	3.9	9.6
Subtotal C/N (dB)	14.6	8.8	8.8	2.4	2.3	7.4
Margin - Other Losses (dB)	0	1.5	1.5	1.5	1.5	1.5
Total C/N (dB)	14.6	7.3	7.3	0.9	0.8	5.9
Minimum Required C/N (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Number of Carriers	1	1	3	19	38	243
CARRIER DENSITY LEVELS						
Uplink Power Density (dBW/Hz)	-46.8	-50.5	-52.2	-51.8	-51.9	-53.2
Downlink EIRP Density At Beam Peak (dBW/Hz)	-10.0	-26.2	-26.5	-30.7	-30.8	-27.7

UPLINK BEAM INFORMATION						
Uplink Beam Name	KVUL	KVUL	KVUL	KVUL	KVUL	KVUL
Uplink Frequency (GHz)	14.0-14.5	14.0-14.5	14.0-14.5	14.0-14.5	14.0-14.5	14.0-14.5
Uplink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Uplink Relative Contour Level (dB)	-6.3	-6.3	-6.3	-6.3	-6.3	-6.3
Uplink Contour G/T (dB/K)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
Uplink Contour SFD (dBW/m2)	-79.0	-81.0	-81.0	-81.0	-81.0	-81.0
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	KHDL	KHDL	KHDL	KHDL	KHDL	KHDL
Downlink Frequency (GHz)	11.7-12.2	11.7-12.2	11.7-12.2	11.7-12.2	11.7-12.2	11.7-12.2
Downlink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Downlink Relative Contour Level (dB)	-6.2	-6.2	-6.2	-6.2	-6.2	-6.2
Downlink Contour EIRP (dBW)	43.5	43.5	43.5	43.5	43.5	43.5
ADJACENT SATELLITE 1						
Satellite 1 Orbital Location	55.6W	55.6W	55.6W	55.6W	55.6W	55.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.2	-26.2	-26.2	-26.2	-26.2	-26.2
ADJACENT SATELLITE 2						
Satellite 1 Orbital Location	59.6W	59.6W	59.6W	59.6W	59.6W	59.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.2	-26.2	-26.2	-26.2	-26.2	-26.2
CARRIER INFORMATION						
Carrier ID	36M0F3F	36M0G7W	8M25G7W	1M43G7W	717KG7W	111KG7W
Carrier Modulation	TV/FM	QPSK	QPSK	BPSK	BPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	N/A	N/A	N/A	N/A	N/A
Information Rate(kbps)	N/A	36860	8448	512	256	128
Code Rate	N/A	3/4x188/204	3/4x188/204	1/2	1/2	3/4
Occupied Bandwidth(kHz)	32400	26664.7	6111.3	1024.0	512.0	85.3
Allocated Bandwidth(kHz)	36000	35997.5	8250.5	1434.0	717.0	111.0
Minimum C/N, Clear Sky (dB)	16.4	7.3	7.3	-0.2	-0.2	5.9
Minimum C/N, Rain (dB)	16.4	7.3	7.3	-0.2	-0.2	5.9
UPLINK EARTH STATION						
Earth Station Diameter (meters)	6.5	4.0	4.0	4.0	4.0	4.0
Earth Station Gain (dBi)	57.4	53.1	53.1	53.1	53.1	53.1
Earth Station Elevation Angle	10.0	10.0	10.0	10.0	10.0	10.0
Rain Rate (mm/yr)	285	285	285	285	285	285
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	6.5	2.4	4.0	1.8	1.8	4.0
Earth Station Gain (dBi)	55.6	47	51.4	44.5	44.5	51.4
Earth Station G/T (dB/K)	34.0	25.0	29.0	23.3	23.3	29.0
Earth Station Elevation Angle	10.0	10.0	10.0	10.0	10.0	10.0
Rain Rate (mm/yr)	320	320	320	320	320	320
LINK FADE TYPE	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky
UPLINK PERFORMANCE						
Uplink Earth Station EIRP (dBW)	80.5	77.2	66.9	58.3	55.4	47.4
Uplink Path Loss, Clear Sky (dB)	-208.1	-208.1	-208.1	-208.1	-208.1	-208.1
Satellite G/T(dB/K)	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	32.4	26.7	6.1	1.0	0.5	0.1
Uplink C/N(dB)	24.4	21.9	18.0	17.2	17.3	17.1
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	42.8	42.1	32.5	23.8	20.8	12.8
Downlink Path Loss, Clear Sky (dB)	-206.5	-206.5	-206.5	-206.5	-206.5	-206.5
Downlink Earth Station G/T (dB/K)	34.0	25.0	29.0	23.3	23.3	29.0
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	32.4	26.7	6.1	1.0	0.5	0.1
Transponder Correction Factor	0.0	0.3	0.0	0.0	0.0	0.0
Downlink C / N(dB)	23.8	15.2	15.7	9.1	9.1	14.6
COMPOSITE LINK PERFORMANCE						
Uplink Earth Station HPA Intermodulation C/N (dB)	33.9	31.4	27.5	26.8	26.8	26.6
C/N Uplink (dB)	24.4	21.9	18.0	17.2	17.3	17.1
Uplink Interference C/I (dB)	43.1	29.3	200.0	200.0	200.0	200.0
Uplink Adjacent Satellite C/I (dB)	26.4	23.9	20.0	19.2	19.3	19.1
Intermodulation C/IM (dB)	124.9	200.0	21.1	18.5	18.2	17.9
Downlink C/N (dB)	23.8	15.2	15.7	9.1	9.1	14.6
Downlink Interference C/I (dB)	44.9	33.2	36.0	23.7	23.8	22.5
Downlink Adjacent Satellite C/I (dB)	19.0	10.5	11.7	3.8	3.8	10.6
Subtotal C/N (dB)	16.4	8.8	8.9	2.3	2.3	7.6
Margin - Other Losses (dB)	0	1.5	1.5	1.5	1.5	1.5
Total C/N (dB)	16.4	7.3	7.4	0.8	0.8	6.1
Minimum Required C/N (dB)	16.4	7.3	7.3	-0.2	-0.2	5.9
Number of Carriers	1	1	4	25	50	324
CARRIER DENSITY LEVELS						
Uplink Power Density (dBW/Hz)	-42.9	-50.2	-54.1	-54.9	-54.8	-55.0
Downlink EIRP Density At Beam Peak (dBW/Hz)	-17.0	-26.0	-29.2	-30.1	-30.1	-30.3

UPLINK BEAM INFORMATION						
Uplink Beam Name	EVUL	EVUL	EVUL	EVUL	EVUL	EVUL
Uplink Frequency (GHz)	13.75-14.0	13.75-14.0	13.75-14.0	13.75-14.0	13.75-14.0	13.75-14.0
Uplink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Uplink Relative Contour Level (dB)	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4
Uplink Contour G/T (dB/K)	0.8	0.8	0.8	0.8	0.8	0.8
Uplink Contour SFD (dBW/m2)	-74.8	-84.8	-79.8	-79.8	-79.8	-79.8
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	EHDL	EHDL	EHDL	EHDL	EHDL	EHDL
Downlink Frequency (GHz)	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2
Downlink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Downlink Relative Contour Level (dB)	-6.1	-6.1	-6.1	-6.1	-6.1	-6.1
Downlink Contour EIRP (dBW)	44.8	44.8	44.8	44.8	44.8	44.8
ADJACENT SATELLITE 1						
Satellite 1 Orbital Location	55.6W	55.6W	55.6W	55.6W	55.6W	55.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.1	-26.1	-26.1	-26.1	-26.1	-26.1
ADJACENT SATELLITE 2						
Satellite 1 Orbital Location	59.6W	59.6W	59.6W	59.6W	59.6W	59.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.1	-26.1	-26.1	-26.1	-26.1	-26.1
CARRIER INFORMATION						
Carrier ID	25M0F3F	27M0G7W	8M25G7W	1M43G7W	717KG7W	111KG7W
Carrier Modulation	TV/FM	QPSK	QPSK	BPSK	BPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	N/A	N/A	N/A	N/A	N/A
Information Rate(kbps)	N/A	27650	8448	512	256	128
Code Rate	N/A	3/4x188/204	3/4x188/204	1/2	1/2	3/4
Occupied Bandwidth(kHz)	20700	20002.1	6111.3	1024.0	512.0	85.3
Allocated Bandwidth(kHz)	25000	27003	8250.5	1434.0	717.0	111.0
Minimum C/N, Clear Sky (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Minimum C/N, Rain (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
UPLINK EARTH STATION						
Earth Station Diameter (meters)	6.5	2.4	4.0	2.4	2.4	4.0
Earth Station Gain (dBi)	57.4	48.7	53.1	48.7	48.7	53.1
Earth Station Elevation Angle	21.4	21.4	21.4	21.4	21.4	21.4
Rain Rate (mm/yr)	771	771	771	771	771	771
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	4.0	2.4	2.4	1.8	1.8	2.4
Earth Station Gain (dBi)	51.4	47.0	47.0	44.5	44.5	47.0
Earth Station G/T (dB/K)	29.0	25.0	25.0	23.3	23.3	25.0
Earth Station Elevation Angle	10.2	10.2	10.2	10.2	10.2	10.2
Rain Rate (mm/yr)	3131	3131	3131	3131	3131	3131
LINK FADE TYPE	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky
UPLINK PERFORMANCE						
Uplink Earth Station EIRP (dBW)	79.8	69.3	68.6	56.8	53.8	49.1
Uplink Path Loss, Clear Sky (dB)	-207.6	-207.6	-207.6	-207.6	-207.6	-207.6
Satellite G/T(dB/K)	0.8	0.8	0.8	0.8	0.8	0.8
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Uplink C/N(dB)	28.4	18.1	22.5	18.5	18.5	21.6
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	41.2	40.8	35.0	22.9	19.9	15.2
Downlink Path Loss, Clear Sky (dB)	-206.0	-206.0	-206.0	-206.0	-206.0	-206.0
Downlink Earth Station G/T (dB/K)	29.0	25.0	25.0	23.3	23.3	25.0
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Transponder Correction Factor	0.0	0.6	0.0	0.0	0.0	0.0
Downlink C / N(dB)	19.6	16.0	14.7	8.7	8.7	13.5
COMPOSITE LINK PERFORMANCE						
Uplink Earth Station HPA Intermodulation C/N (dB)	45.7	35.3	39.8	35.7	35.7	38.8
C/N Uplink (dB)	28.4	18.1	22.5	18.5	18.5	21.6
Uplink Interference C/I (dB)	55.2	33.5	33.1	37.0	32.6	46.2
Uplink Adjacent Satellite C/I (dB)	27.6	17.3	21.8	17.6	17.7	20.8
Intermodulation C/IM (dB)	126.8	200.0	25.8	19.1	18.8	21.8
Downlink C/N (dB)	19.6	16.0	14.7	8.7	8.7	13.5
Downlink Interference C/I (dB)	44.8	32.9	29.4	20.2	20.6	24.7
Downlink Adjacent Satellite C/I (dB)	16.2	11.5	10.9	4.0	4.0	9.6
Subtotal C/N (dB)	14.2	8.8	8.8	2.3	2.3	7.5
Margin - Other Losses (dB)	0	1.5	1.5	1.5	1.5	1.5
Total C/N (dB)	14.2	7.3	7.3	0.8	0.8	6.0
Minimum Required C/N (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Number of Carriers	1	1	3	19	38	243
CARRIER DENSITY LEVELS						
Uplink Power Density (dBW/Hz)	-43.6	-52.4	-52.4	-52.0	-52.0	-53.3
Downlink EIRP Density At Beam Peak (dBW/Hz)	-18.7	-26.1	-26.8	-31.1	-31.1	-28.0

UPLINK BEAM INFORMATION						
Uplink Beam Name	EHUL	EHUL	EHUL	EHUL	EHUL	EHUL
Uplink Frequency (GHz)	13.75-14.0	13.75-14.0	13.75-14.0	13.75-14.0	13.75-14.0	13.75-14.0
Uplink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Uplink Relative Contour Level (dB)	-6.0	-6.0	-6.0	-6.0	-6.0	-6.0
Uplink Contour G/T (dB/K)	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8
Uplink Contour SFD (dBW/m2)	-81.3	-82.3	-78.3	-78.3	-78.3	-78.3
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	BVDL	BVDL	BVDL	BVDL	BVDL	BVDL
Downlink Frequency (GHz)	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2
Downlink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Downlink Relative Contour Level (dB)	-6.0	-6.0	-6.0	-6.0	-6.0	-6.0
Downlink Contour EIRP (dBW)	45.9	45.9	45.9	45.9	45.9	45.9
ADJACENT SATELLITE 1						
Satellite 1 Orbital Location	55.6W	55.6W	55.6W	55.6W	55.6W	55.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.0	-26.0	-26.0	-26.0	-26.0	-26.0
ADJACENT SATELLITE 2						
Satellite 1 Orbital Location	59.6W	59.6W	59.6W	59.6W	59.6W	59.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.0	-26.0	-26.0	-26.0	-26.0	-26.0
CARRIER INFORMATION						
Carrier ID	25M0F3F	27M0G7W	8M25G7W	1M43G7W	717KG7W	111KG7W
Carrier Modulation	TV/FM	QPSK	QPSK	BPSK	BPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	N/A	N/A	N/A	N/A	N/A
Information Rate(kbps)	N/A	27650	8448	512	256	128
Code Rate	N/A	3/4x188/204	3/4x188/204	1/2	1/2	3/4
Occupied Bandwidth(kHz)	20700	20002.1	6111.3	1024.0	512.0	85.3
Allocated Bandwidth(kHz)	25000	27003	8250.5	1434.0	717.0	111.0
Minimum C/N, Clear Sky (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Minimum C/N, Rain (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
UPLINK EARTH STATION						
Earth Station Diameter (meters)	4.0	2.4	4.0	4.0	4.0	4.0
Earth Station Gain (dBi)	53.1	48.7	53.1	53.1	53.1	53.1
Earth Station Elevation Angle	10.1	10.1	10.1	10.1	10.1	10.1
Rain Rate (mm/yr)	3479	3479	3479	3479	3479	3479
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	6.5	2.4	2.4	1.2	1.8	2.4
Earth Station Gain (dBi)	55.6	47.0	47.0	40.9	44.5	47.0
Earth Station G/T (dB/K)	34.0	25.0	25.0	19.8	23.3	25.0
Earth Station Elevation Angle	45.2	45.2	45.2	45.2	45.2	45.2
Rain Rate (mm/yr)	851	851	851	851	851	851
LINK FADE TYPE	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky
UPLINK PERFORMANCE						
Uplink Earth Station EIRP (dBW)	72.3	71.3	70.3	62.5	59.2	50.7
Uplink Path Loss, Clear Sky (dB)	-208.3	-208.3	-208.3	-208.3	-208.3	-208.3
Satellite G/T(dB/K)	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Uplink C/N(dB)	18.6	17.8	21.9	21.9	21.6	20.9
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	41.1	41.0	35.6	27.6	24.3	15.8
Downlink Path Loss, Clear Sky (dB)	-204.9	-204.9	-204.9	-204.9	-204.9	-204.9
Downlink Earth Station G/T (dB/K)	34.0	25.0	25.0	19.8	23.3	25.0
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Transponder Correction Factor	0.0	0.7	0.0	0.0	0.0	0.0
Downlink C / N(dB)	25.6	17.4	16.4	11.0	14.2	15.2
COMPOSITE LINK PERFORMANCE						
Uplink Earth Station HPA Intermodulation C/N (dB)	34.3	33.5	37.6	37.6	37.3	36.6
C/N Uplink (dB)	18.6	17.8	21.9	21.9	21.6	20.9
Uplink Interference C/I (dB)	34.2	27.3	31.3	32.1	105.9	91.2
Uplink Adjacent Satellite C/I (dB)	20.2	19.3	23.4	23.4	23.1	22.4
Intermodulation C/IM (dB)	126.8	200.0	21.8	20.5	20.0	19.2
Downlink C/N (dB)	25.6	17.4	16.4	11.0	14.2	15.2
Downlink Interference C/I (dB)	42.9	31.7	33.7	24.2	23.9	22.1
Downlink Adjacent Satellite C/I (dB)	19.4	10.9	10.6	3.1	2.9	9.3
Subtotal C/N (dB)	14.2	8.8	8.9	2.3	2.4	7.4
Margin - Other Losses (dB)	0	1.5	1.5	1.5	1.5	1.5
Total C/N (dB)	14.2	7.3	7.4	0.8	0.9	5.9
Minimum Required C/N (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Number of Carriers	1	1	3	19	38	243
CARRIER DENSITY LEVELS						
Uplink Power Density (dBW/Hz)	-46.8	-50.4	-50.7	-50.7	-51.0	-51.7
Downlink EIRP Density At Beam Peak (dBW/Hz)	-18.9	-26.0	-26.3	-26.5	-26.8	-27.5

UPLINK BEAM INFORMATION						
Uplink Beam Name	EVUL	EVUL	EVUL	EVUL	EVUL	EVUL
Uplink Frequency (GHz)	13.75-14.0	13.75-14.0	13.75-14.0	13.75-14.0	13.75-14.0	13.75-14.0
Uplink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Uplink Relative Contour Level (dB)	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4
Uplink Contour G/T (dB/K)	0.8	0.8	0.8	0.8	0.8	0.8
Uplink Contour SFD (dBW/m2)	-74.8	-83.8	-79.8	-79.8	-79.8	-79.8
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	BHDL	BHDL	BHDL	BHDL	BHDL	BHDL
Downlink Frequency (GHz)	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2
Downlink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Downlink Relative Contour Level (dB)	-5.7	-5.7	-5.7	-5.7	-5.7	-5.7
Downlink Contour EIRP (dBW)	47.0	47.0	47.0	47.0	47.0	47.0
ADJACENT SATELLITE 1						
Satellite 1 Orbital Location	55.6W	55.6W	55.6W	55.6W	55.6W	55.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-25.7	-25.7	-25.7	-25.7	-25.7	-25.7
ADJACENT SATELLITE 2						
Satellite 1 Orbital Location	59.6W	59.6W	59.6W	59.6W	59.6W	59.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-25.7	-25.7	-25.7	-25.7	-25.7	-25.7
CARRIER INFORMATION						
Carrier ID	25M0F3F	27M0G7W	8M25G7W	1M43G7W	717KG7W	111KG7W
Carrier Modulation	TV/FM	QPSK	QPSK	BPSK	BPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	N/A	N/A	N/A	N/A	N/A
Information Rate(kbps)	N/A	27650	8448	512	256	128
Code Rate	N/A	3/4x188/204	3/4x188/204	1/2	1/2	3/4
Occupied Bandwidth(kHz)	20700	20002.1	6111.3	1024.0	512.0	85.3
Allocated Bandwidth(kHz)	25000	27003	8250.5	1434.0	717.0	111.0
Minimum C/N, Clear Sky (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Minimum C/N, Rain (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
UPLINK EARTH STATION						
Earth Station Diameter (meters)	6.5	1.8	2.4	2.4	1.8	2.4
Earth Station Gain (dBi)	57.4	46.2	48.7	48.7	46.2	48.7
Earth Station Elevation Angle	21.4	21.4	21.4	21.4	21.4	21.4
Rain Rate (mm/yr)	771	771	771	771	771	771
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	4.0	2.4	2.4	1.2	1.2	2.4
Earth Station Gain (dBi)	51.4	47.0	47.0	40.9	40.9	47.0
Earth Station G/T (dB/K)	29.0	25.0	25.0	19.8	19.8	25.0
Earth Station Elevation Angle	43.5	43.5	43.5	43.5	43.5	43.5
Rain Rate (mm/yr)	976	976	976	976	976	976
LINK FADE TYPE	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky
UPLINK PERFORMANCE						
Uplink Earth Station EIRP (dBW)	78.2	69.0	64.4	55.9	53.0	44.8
Uplink Path Loss, Clear Sky (dB)	-207.6	-207.6	-207.6	-207.6	-207.6	-207.6
Satellite G/T(dB/K)	0.8	0.8	0.8	0.8	0.8	0.8
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Uplink C/N(dB)	26.8	17.8	18.3	17.6	17.7	17.3
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	41.5	41.3	36.2	27.5	24.6	16.4
Downlink Path Loss, Clear Sky (dB)	-204.9	-204.9	-204.9	-204.9	-204.9	-204.9
Downlink Earth Station G/T (dB/K)	29.0	25.0	25.0	19.8	19.8	25.0
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Transponder Correction Factor	0.0	0.7	0.0	0.0	0.0	0.0
Downlink C / N(dB)	21.0	17.7	17.1	10.9	11.0	15.8
COMPOSITE LINK PERFORMANCE						
Uplink Earth Station HPA Intermodulation C/N (dB)	44.1	35.0	35.6	34.9	35.0	34.6
C/N Uplink (dB)	26.8	17.8	18.3	17.6	17.7	17.3
Uplink Interference C/I (dB)	53.5	34.2	27.3	32.1	26.4	36.5
Uplink Adjacent Satellite C/I (dB)	26.1	17.0	17.6	16.8	16.9	16.5
Intermodulation C/IM (dB)	126.8	200.0	22.1	19.9	19.8	19.3
Downlink C/N (dB)	21.0	17.7	17.1	10.9	11.0	15.8
Downlink Interference C/I (dB)	44.7	32.3	29.4	23.1	22.0	22.2
Downlink Adjacent Satellite C/I (dB)	16.0	11.5	11.5	3.4	3.5	10.3
Subtotal C/N (dB)	14.3	9.0	8.8	2.3	2.4	7.5
Margin - Other Losses (dB)	0	1.5	1.5	1.5	1.5	1.5
Total C/N (dB)	14.3	7.5	7.3	0.8	0.9	6.0
Minimum Required C/N (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Number of Carriers	1	1	3	19	38	243
CARRIER DENSITY LEVELS						
Uplink Power Density (dBW/Hz)	-45.2	-50.2	-52.2	-52.9	-50.3	-53.2
Downlink EIRP Density At Beam Peak (dBW/Hz)	-18.8	-26.0	-25.9	-26.9	-26.8	-27.2

UPLINK BEAM INFORMATION						
Uplink Beam Name	BHUL	BHUL	BHUL	BHUL	BHUL	BHUL
Uplink Frequency (GHz)	14.0-14.25	14.0-14.25	14.0-14.25	14.0-14.25	14.0-14.25	14.0-14.25
Uplink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Uplink Relative Contour Level (dB)	-5.7	-5.7	-5.7	-5.7	-5.7	-5.7
Uplink Contour G/T (dB/K)	0.0	0.0	0.0	0.0	0.0	0.0
Uplink Contour SFD (dBW/m2)	-80.6	-81.6	-80.6	-80.6	-80.6	-80.6
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	BVDL	BVDL	BVDL	BVDL	BVDL	BVDL
Downlink Frequency (GHz)	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2
Downlink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Downlink Relative Contour Level (dB)	-6.0	-6.0	-6.0	-6.0	-6.0	-6.0
Downlink Contour EIRP (dBW)	45.9	45.9	45.9	45.9	45.9	45.9
ADJACENT SATELLITE 1						
Satellite 1 Orbital Location	55.6W	55.6W	55.6W	55.6W	55.6W	55.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.0	-26.0	-26.0	-26.0	-26.0	-26.0
ADJACENT SATELLITE 2						
Satellite 1 Orbital Location	59.6W	59.6W	59.6W	59.6W	59.6W	59.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.0	-26.0	-26.0	-26.0	-26.0	-26.0
CARRIER INFORMATION						
Carrier ID	25M0F3F	27M0G7W	8M25G7W	1M43G7W	717KG7W	111KG7W
Carrier Modulation	TV/FM	QPSK	QPSK	BPSK	BPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	N/A	N/A	N/A	N/A	N/A
Information Rate(kbps)	N/A	27650	8448	512	256	128
Code Rate	N/A	3/4x188/204	3/4x188/204	1/2	1/2	3/4
Occupied Bandwidth(kHz)	20700	20002.1	6111.3	1024.0	512.0	85.3
Allocated Bandwidth(kHz)	25000	27003	8250.5	1434.0	717.0	111.0
Minimum C/N, Clear Sky (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Minimum C/N, Rain (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
UPLINK EARTH STATION						
Earth Station Diameter (meters)	4.0	2.4	4.0	4.0	4.0	2.4
Earth Station Gain (dBi)	53.1	48.7	53.1	53.1	53.1	48.7
Earth Station Elevation Angle	44.1	44.1	44.1	44.1	44.1	44.1
Rain Rate (mm/yr)	758	758	758	758	758	758
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	6.5	2.4	2.4	1.2	1.2	2.4
Earth Station Gain (dBi)	55.6	47.0	47.0	40.9	40.9	47.0
Earth Station G/T (dB/K)	34.0	25.0	25.0	19.8	19.8	25.0
Earth Station Elevation Angle	45.2	45.2	45.2	45.2	45.2	45.2
Rain Rate (mm/yr)	851	851	851	851	851	851
LINK FADE TYPE	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky
UPLINK PERFORMANCE						
Uplink Earth Station EIRP (dBW)	71.4	70.5	66.9	58.9	55.9	47.4
Uplink Path Loss, Clear Sky (dB)	-207.1	-207.1	-207.1	-207.1	-207.1	-207.1
Satellite G/T(dB/K)	0.0	0.0	0.0	0.0	0.0	0.0
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Uplink C/N(dB)	19.7	19.0	20.5	20.3	20.3	19.6
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	41.0	41.0	35.9	27.7	24.7	16.2
Downlink Path Loss, Clear Sky (dB)	-204.9	-204.9	-204.9	-204.9	-204.9	-204.9
Downlink Earth Station G/T (dB/K)	34.0	25.0	25.0	19.8	19.8	25.0
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Transponder Correction Factor	0.0	0.6	0.0	0.0	0.0	0.0
Downlink C / N(dB)	25.5	17.3	16.7	11.1	11.1	15.6
COMPOSITE LINK PERFORMANCE						
Uplink Earth Station HPA Intermodulation C/N (dB)	32.9	32.2	33.7	33.5	33.5	32.8
C/N Uplink (dB)	19.7	19.0	20.5	20.3	20.3	19.6
Uplink Interference C/I (dB)	43.1	31.6	200.0	200.0	102.7	88.1
Uplink Adjacent Satellite C/I (dB)	19.2	18.5	20.0	19.8	19.8	19.1
Intermodulation C/IM (dB)	126.8	200.0	21.5	20.0	19.8	19.0
Downlink C/N (dB)	25.5	17.3	16.7	11.1	11.1	15.6
Downlink Interference C/I (dB)	43.3	31.0	29.4	23.1	24.0	22.1
Downlink Adjacent Satellite C/I (dB)	19.2	10.8	10.8	3.2	3.2	9.6
Subtotal C/N (dB)	14.3	8.9	8.8	2.3	2.3	7.5
Margin - Other Losses (dB)	0	1.5	1.5	1.5	1.5	1.5
Total C/N (dB)	14.3	7.4	7.3	0.8	0.8	6.0
Minimum Required C/N (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Number of Carriers	1	1	3	19	38	243
CARRIER DENSITY LEVELS						
Uplink Power Density (dBW/Hz)	-47.7	-51.2	-54.1	-54.3	-54.3	-50.6
Downlink EIRP Density At Beam Peak (dBW/Hz)	-19.0	-26.0	-26.0	-26.4	-26.4	-27.1

UPLINK BEAM INFORMATION						
Uplink Beam Name	BVUL	BVUL	BVUL	BVUL	BVUL	BVUL
Uplink Frequency (GHz)	14.0-14.25	14.0-14.25	14.0-14.25	14.0-14.25	14.0-14.25	14.0-14.25
Uplink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Uplink Relative Contour Level (dB)	-6.0	-6.0	-6.0	-6.0	-6.0	-6.0
Uplink Contour G/T (dB/K)	0.3	0.3	0.3	0.3	0.3	0.3
Uplink Contour SFD (dBW/m2)	-80.9	-80.9	-79.9	-79.9	-79.9	-79.9
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	BHDL	BHDL	BHDL	BHDL	BHDL	BHDL
Downlink Frequency (GHz)	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2
Downlink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Downlink Relative Contour Level (dB)	-5.8	-5.8	-5.8	-5.8	-5.8	-5.8
Downlink Contour EIRP (dBW)	46.9	46.9	46.9	46.9	46.9	46.9
ADJACENT SATELLITE 1						
Satellite 1 Orbital Location	55.6W	55.6W	55.6W	55.6W	55.6W	55.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-25.8	-25.8	-25.8	-25.8	-25.8	-25.8
ADJACENT SATELLITE 2						
Satellite 1 Orbital Location	59.6W	59.6W	59.6W	59.6W	59.6W	59.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-25.8	-25.8	-25.8	-25.8	-25.8	-25.8
CARRIER INFORMATION						
Carrier ID	25M0F3F	27M0G7W	8M25G7W	1M43G7W	717KG7W	111KG7W
Carrier Modulation	TV/FM	QPSK	QPSK	BPSK	BPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	N/A	N/A	N/A	N/A	N/A
Information Rate(kbps)	N/A	27650	8448	512	256	128
Code Rate	N/A	3/4x188/204	3/4x188/204	1/2	1/2	3/4
Occupied Bandwidth(kHz)	20700	20002.1	6111.3	1024.0	512.0	85.3
Allocated Bandwidth(kHz)	25000	27003	8250.5	1434.0	717.0	111.0
Minimum C/N, Clear Sky (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Minimum C/N, Rain (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
UPLINK EARTH STATION						
Earth Station Diameter (meters)	2.4	2.4	4.0	2.4	2.4	2.4
Earth Station Gain (dBi)	48.7	48.7	53.1	48.7	48.7	48.7
Earth Station Elevation Angle	46.5	46.5	46.5	46.4	46.5	46.5
Rain Rate (mm/yr)	1007	1007	1007	1090	1007	1007
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	6.5	2.4	2.4	1.2	1.2	2.4
Earth Station Gain (dBi)	55.6	47.0	47.0	40.9	40.9	47.0
Earth Station G/T (dB/K)	34.0	25.0	25.0	19.8	19.8	25.0
Earth Station Elevation Angle	43.5	43.5	43.5	43.5	43.5	43.5
Rain Rate (mm/yr)	976	976	976	976	976	976
LINK FADE TYPE	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky
UPLINK PERFORMANCE						
Uplink Earth Station EIRP (dBW)	71.7	70.4	66.7	58.8	55.7	47.1
Uplink Path Loss, Clear Sky (dB)	-207.1	-207.1	-207.1	-207.1	-207.1	-207.1
Satellite G/T(dB/K)	0.3	0.3	0.3	0.3	0.3	0.3
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Uplink C/N(dB)	20.3	19.2	20.6	20.5	20.4	19.6
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	40.5	41.1	36.0	27.8	24.8	16.2
Downlink Path Loss, Clear Sky (dB)	-205.0	-205.0	-205.0	-205.0	-205.0	-205.0
Downlink Earth Station G/T (dB/K)	34.0	25.0	25.0	19.8	19.8	25.0
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Transponder Correction Factor	0.0	0.8	0.0	0.0	0.0	0.0
Downlink C / N(dB)	24.9	17.5	16.8	11.0	11.1	15.5
COMPOSITE LINK PERFORMANCE						
Uplink Earth Station HPA Intermodulation C/N (dB)	33.6	32.5	34.0	33.6	33.7	32.9
C/N Uplink (dB)	20.3	19.2	20.6	20.5	20.4	19.6
Uplink Interference C/I (dB)	45.2	33.7	30.4	35.7	30.0	39.7
Uplink Adjacent Satellite C/I (dB)	19.5	18.4	19.9	19.6	19.6	18.8
Intermodulation C/IM (dB)	126.8	200.0	22.7	21.1	21.0	20.1
Downlink C/N (dB)	24.9	17.5	16.8	11.0	11.1	15.5
Downlink Interference C/I (dB)	43.8	33.2	28.9	23.4	22.2	21.9
Downlink Adjacent Satellite C/I (dB)	18.6	10.7	10.7	3.1	3.2	9.4
Subtotal C/N (dB)	14.3	8.8	8.8	2.2	2.3	7.4
Margin - Other Losses (dB)	0	1.5	1.5	1.5	1.5	1.5
Total C/N (dB)	14.3	7.3	7.3	0.7	0.8	5.9
Minimum Required C/N (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Number of Carriers	1	1	3	19	38	243
CARRIER DENSITY LEVELS						
Uplink Power Density (dBW/Hz)	-43.0	-51.3	-54.3	-50.0	-50.1	-50.9
Downlink EIRP Density At Beam Peak (dBW/Hz)	-19.7	-26.1	-26.0	-26.6	-26.5	-27.3

UPLINK BEAM INFORMATION						
Uplink Beam Name	BHUL	BHUL	BHUL	BHUL	BHUL	BHUL
Uplink Frequency (GHz)	14.0-14.25	14.0-14.25	14.0-14.25	14.0-14.25	14.0-14.25	14.0-14.25
Uplink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Uplink Relative Contour Level (dB)	-5.7	-5.7	-5.7	-5.7	-5.7	-5.7
Uplink Contour G/T (dB/K)	0.0	0.0	0.0	0.0	0.0	0.0
Uplink Contour SFD (dBW/m2)	-81.6	-82.6	-80.6	-80.6	-80.6	-80.6
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	EVDL	EVDL	EVDL	EVDL	EVDL	EVDL
Downlink Frequency (GHz)	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2
Downlink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Downlink Relative Contour Level (dB)	-6.0	-6.0	-6.0	-6.0	-6.0	-6.0
Downlink Contour EIRP (dBW)	45.2	45.2	45.2	45.2	45.2	45.2
ADJACENT SATELLITE 1						
Satellite 1 Orbital Location	55.6W	55.6W	55.6W	55.6W	55.6W	55.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.0	-26.0	-26.0	-26.0	-26.0	-26.0
ADJACENT SATELLITE 2						
Satellite 1 Orbital Location	59.6W	59.6W	59.6W	59.6W	59.6W	59.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.0	-26.0	-26.0	-26.0	-26.0	-26.0
CARRIER INFORMATION						
Carrier ID	25M0F3F	27M0G7W	8M25G7W	1M43G7W	717KG7W	111KG7W
Carrier Modulation	TV/FM	QPSK	QPSK	BPSK	BPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	N/A	N/A	N/A	N/A	N/A
Information Rate(kbps)	N/A	27650	8448	512	256	128
Code Rate	N/A	3/4x188/204	3/4x188/204	1/2	1/2	3/4
Occupied Bandwidth(kHz)	20700	20002.1	6111.3	1024.0	512.0	85.3
Allocated Bandwidth(kHz)	25000	27003	8250.5	1434.0	717.0	111.0
Minimum C/N, Clear Sky (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Minimum C/N, Rain (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
UPLINK EARTH STATION						
Earth Station Diameter (meters)	4.0	2.4	4.0	1.8	1.8	2.4
Earth Station Gain (dBi)	53.1	48.7	53.1	46.2	46.2	48.7
Earth Station Elevation Angle	44.1	44.1	44.1	44.1	44.1	44.1
Rain Rate (mm/yr)	758	758	758	758	758	758
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	6.5	2.4	2.4	1.8	1.8	2.4
Earth Station Gain (dBi)	55.6	47.0	47.0	44.5	44.5	47.0
Earth Station G/T (dB/K)	34.0	25.0	25.0	23.3	23.3	25.0
Earth Station Elevation Angle	10.2	10.2	10.2	10.2	10.2	10.2
Rain Rate (mm/yr)	2098	2098	2098	2098	2098	2098
LINK FADE TYPE	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky
UPLINK PERFORMANCE						
Uplink Earth Station EIRP (dBW)	71.3	70.5	67.2	55.4	52.4	47.7
Uplink Path Loss, Clear Sky (dB)	-207.0	-207.0	-207.0	-207.0	-207.0	-207.0
Satellite G/T(dB/K)	0.0	0.0	0.0	0.0	0.0	0.0
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Uplink C/N(dB)	19.7	19.1	20.9	16.9	16.9	20.0
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	40.7	40.8	35.4	23.4	20.4	15.7
Downlink Path Loss, Clear Sky (dB)	-206.0	-206.0	-206.0	-206.0	-206.0	-206.0
Downlink Earth Station G/T (dB/K)	34.0	25.0	25.0	23.3	23.3	25.0
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Transponder Correction Factor	0.0	0.6	0.0	0.0	0.0	0.0
Downlink C / N(dB)	24.1	16.0	15.1	9.2	9.2	14.0
COMPOSITE LINK PERFORMANCE						
Uplink Earth Station HPA Intermodulation C/N (dB)	32.8	32.2	34.0	29.9	30.0	33.1
C/N Uplink (dB)	19.7	19.1	20.9	16.9	16.9	20.0
Uplink Interference C/I (dB)	43.0	32.5	200.0	200.0	97.1	86.3
Uplink Adjacent Satellite C/I (dB)	19.1	18.5	20.3	16.2	16.3	19.4
Intermodulation C/IM (dB)	126.8	200.0	25.7	19.1	18.7	21.7
Downlink C/N (dB)	24.1	16.0	15.1	9.2	9.2	14.0
Downlink Interference C/I (dB)	42.3	31.6	39.4	20.7	21.9	24.7
Downlink Adjacent Satellite C/I (dB)	19.6	11.2	10.9	4.0	4.0	9.7
Subtotal C/N (dB)	14.2	8.9	8.8	2.3	2.3	7.5
Margin - Other Losses (dB)	0	1.5	1.5	1.5	1.5	1.5
Total C/N (dB)	14.2	7.4	7.3	0.8	0.8	6.0
Minimum Required C/N (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Number of Carriers	1	1	3	19	38	243
CARRIER DENSITY LEVELS						
Uplink Power Density (dBW/Hz)	-47.8	-51.2	-53.8	-50.9	-50.9	-50.3
Downlink EIRP Density At Beam Peak (dBW/Hz)	-19.3	-26.2	-26.5	-30.7	-30.7	-27.6

UPLINK BEAM INFORMATION						
Uplink Beam Name	BVUL	BVUL	BVUL	BVUL	BVUL	BVUL
Uplink Frequency (GHz)	14.0-14.25	14.0-14.25	14.0-14.25	14.0-14.25	14.0-14.25	14.0-14.25
Uplink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Uplink Relative Contour Level (dB)	-6.0	-6.0	-6.0	-6.1	-6.0	-6.0
Uplink Contour G/T (dB/K)	0.3	0.3	0.3	0.2	0.3	0.3
Uplink Contour SFD (dBW/m2)	-82.9	-83.9	-78.9	-78.8	-78.9	-78.9
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	EHDL	EHDL	EHDL	EHDL	EHDL	EHDL
Downlink Frequency (GHz)	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2	10.95-11.2
Downlink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Downlink Relative Contour Level (dB)	-6.1	-6.1	-6.1	-6.1	-6.1	-6.1
Downlink Contour EIRP (dBW)	44.8	44.8	44.8	44.8	44.8	44.8
ADJACENT SATELLITE 1						
Satellite 1 Orbital Location	55.6W	55.6W	55.6W	55.6W	55.6W	55.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.1	-26.1	-26.1	-26.1	-26.1	-26.1
ADJACENT SATELLITE 2						
Satellite 1 Orbital Location	59.6W	59.6W	59.6W	59.6W	59.6W	59.6W
Uplink Power Density (dBW/Hz)	-45.0	-45.0	-45.0	-45.0	-45.0	-45.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Downlink EIRP Density at ES (dBW/Hz)	-26.1	-26.1	-26.1	-26.1	-26.1	-26.1
CARRIER INFORMATION						
Carrier ID	25M0F3F	27M0G7W	8M25G7W	1M43G7W	717KG7W	111KG7W
Carrier Modulation	TV/FM	QPSK	QPSK	BPSK	BPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	N/A	N/A	N/A	N/A	N/A
Information Rate(kbps)	N/A	27650	8448	512	256	128
Code Rate	N/A	3/4x188/204	3/4x188/204	1/2	1/2	3/4
Occupied Bandwidth(kHz)	20700	20002.1	6111.3	1024.0	512.0	85.3
Allocated Bandwidth(kHz)	25000	27003	8250.5	1434.0	717.0	111.0
Minimum C/N, Clear Sky (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Minimum C/N, Rain (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
UPLINK EARTH STATION						
Earth Station Diameter (meters)	2.4	2.4	4.0	2.4	2.4	4.0
Earth Station Gain (dBi)	48.7	48.7	53.1	48.7	48.7	53.1
Earth Station Elevation Angle	46.5	46.5	46.5	46.4	46.5	46.5
Rain Rate (mm/yr)	1007	1007	1007	1090	1007	1007
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	6.5	2.4	2.4	1.8	1.8	2.4
Earth Station Gain (dBi)	55.6	47.0	47.0	44.5	44.5	47.0
Earth Station G/T (dB/K)	34.0	25.0	25.0	23.3	23.3	25.0
Earth Station Elevation Angle	10.2	10.2	10.2	10.2	10.2	10.2
Rain Rate (mm/yr)	3131	3131	3131	3131	3131	3131
LINK FADE TYPE	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky
UPLINK PERFORMANCE						
Uplink Earth Station EIRP (dBW)	70.9	69.5	68.8	56.9	53.9	49.1
Uplink Path Loss, Clear Sky (dB)	-207.0	-207.0	-207.0	-207.0	-207.0	-207.0
Satellite G/T(dB/K)	0.3	0.3	0.3	0.2	0.3	0.3
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Uplink C/N(dB)	19.6	18.4	22.8	18.6	18.7	21.7
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	41.1	40.8	35.0	22.9	19.9	15.1
Downlink Path Loss, Clear Sky (dB)	-206.0	-206.0	-206.0	-206.0	-206.0	-206.0
Downlink Earth Station G/T (dB/K)	34.0	25.0	25.0	23.3	23.3	25.0
Boltzman Constant(dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (MHz)	20.7	20.0	6.1	1.0	0.5	0.1
Transponder Correction Factor	0.0	0.6	0.0	0.0	0.0	0.0
Downlink C / N(dB)	24.5	16.0	14.7	8.7	8.7	13.4
COMPOSITE LINK PERFORMANCE						
Uplink Earth Station HPA Intermodulation C/N (dB)	32.8	31.6	36.0	31.9	31.9	34.9
C/N Uplink (dB)	19.6	18.4	22.8	18.6	18.7	21.7
Uplink Interference C/I (dB)	44.5	32.8	32.2	34.3	28.8	42.4
Uplink Adjacent Satellite C/I (dB)	18.7	17.5	21.9	17.8	17.8	20.8
Intermodulation C/IM (dB)	126.8	200.0	25.8	19.1	18.8	21.7
Downlink C/N (dB)	24.5	16.0	14.7	8.7	8.7	13.4
Downlink Interference C/I (dB)	45.0	32.4	29.4	20.2	20.6	24.6
Downlink Adjacent Satellite C/I (dB)	20.4	11.5	10.9	4.0	4.0	9.5
Subtotal C/N (dB)	14.3	8.9	8.8	2.3	2.3	7.4
Margin - Other Losses (dB)	0	1.5	1.5	1.5	1.5	1.5
Total C/N (dB)	14.3	7.4	7.3	0.8	0.8	5.9
Minimum Required C/N (dB)	14.2	7.3	7.3	-0.2	-0.2	5.9
Number of Carriers	1	1	3	19	38	243
CARRIER DENSITY LEVELS						
Uplink Power Density (dBW/Hz)	-43.8	-52.2	-52.2	-51.9	-51.9	-53.3
Downlink EIRP Density At Beam Peak (dBW/Hz)	-18.8	-26.1	-26.8	-31.1	-31.1	-28.1