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Federal Communications Commission
Office of the Secretary

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 Twelfth Street, S.W.
Washington, D.C. 20554

Attn: International Bureau

Re: PanAmSat Licensee Corp.
Erratum; File No. SAT-RPL-20061219-00155

Dear Ms. Dortch:

Enclosed please find an Erratum to PanAmSat Licensee Corp.'s Application for Authority to Launch and Operate a Replacement Satellite at 91° W.L., which was filed on December 19, 2006.

Please direct any questions regarding this Erratum to Jose Albuquerque at 202-944-6897.

Sincerely,

/s/ Jennifer D. Hindin

Jennifer D. Hindin
Counsel to PanAmSat Licensee Corp.

Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of PanAmSat Licensee Corp. Application for Authority to Launch and Operate a Replacement Satellite at 91° W.L.	File No. SAT-RPL-20061219-00155

ERRATUM

On December 19, 2006, PanAmSat Licensee Corp. ("PanAmSat") filed the above captioned application seeking authority to launch and operate a replacement C/Ku-band satellite, to be known as Galaxy 17, at the 91° W.L. orbital location. PanAmSat hereby submits this Erratum correcting certain information in the Technical Exhibit to that application. Specifically, PanAmSat has discovered an error in the calculation of the saturated flux density ("SFD") range for the C-band and Ku-band receive beams. This error, in turn, resulted in a change in the transponder gain of the C-band and Ku-band channels. Accordingly, in this Erratum, PanAmSat provides the appropriate corrections to the Technical Exhibit section of above referenced application. Consequential corrections are also made in the associated Schedule S.

A. Technical Exhibit Corrections:

1) Section 2.7.2: In the fifth line of the third paragraph on page 10, the value of "-91.2 dBW/m^{2}" should be changed to "-114.2 dBW/m^{2}".

2) Section 2.7.2: In the seventh line of the third paragraph on page 10, the value of "-89.1 dBW/m^2" should be changed to "-119.1 dBW/m^2".

3) Certification Statement: On page 27, the date should be changed from "December XX, 2006" to "December 19, 2006"

4) Exhibit 2: On page 31, in the rows titled "Conus (Horizontal Polarization)" and "Conus (Vertical Polarization)", associated with the C-band Uplink SFD Range @Maximum G/T, the range "-91.2 to -44.2 dBW/m^2" should be changed to "-114.2 to -67.2 dBW/m^2".

5) Exhibit 2: On page 31, in the rows titled "Conus (Horizontal Polarization)" and "Conus (Vertical Polarization)", associated with the Ku-band Uplink SFD Range @Maximum G/T, the range "-89.1 to -42.1 dBW/m^2" should be changed to "-119.1 to -72.1 dBW/m^2".

6) Exhibit 2: On page 31, in the rows titled "Conus (H-Pol. Up) /Conus (V-Pol. Dn.)" and "Conus (V-Pol. Up) /Conus (H-Pol. Dn.)", associated with the C-band uplink to C-Band downlink transponder gain, the range "111.5 to 64.5 dBi" should be changed to "134.5 to 87.5 dB".

7) Exhibit 2: On page 31, in the rows titled "Conus (H-Pol. Up) /Conus (V-Pol. Dn.)" and "Conus (V-Pol. Up) /Conus (H-Pol. Dn.)", associated with the Ku-band uplink to Ku-Band downlink transponder gain, the range "118.1 to 71.1 dB" should be changed to "148.1 to 101.1 dB".

8) Exhibit 5B: On page 39, under the table column titled "Maximum Transponder Gain (dB)", the value of "111.5 dB" should be changed to "134.5 dB".

9) Exhibit 5B: On page 40, under the table column titled "Maximum Transponder Gain (dB)", the value of "118.1 dB" should be changed to "148.1 dB".

10) Exhibit 6A: On page 41, the portion of the title that reads "SFD RANGE AT PEAK G/T: -91.2 TO -44.2 dBW/m2" should be changed to read "SFD RANGE AT PEAK G/T: -114.2 TO -67.2 dBW/m2".

11) Exhibit 6C: On page 43, the portion of the title that reads "SFD RANGE AT PEAK G/T: -89.1 TO -42.1 dBW/m2" should be changed to read "SFD RANGE AT PEAK G/T: -119.1 TO -72.1 dBW/m2".

12) Exhibit 7: On page 54 in the row titled "Minimum SFD [G/T: Peak; Attn: 0 dB] – (dBW/m^2)" the value of "-91.2" should be changed to "-114.2" and the value of "-89.1" should be changed to "-119.1".

B. Schedule S Corrections:

1) Section S7: In the first row associated with the CUP Beam ID, the value in column p should be changed from "-91.2" to "-114.2".

2) Section S7: In the third row associated with the KUP Beam ID, the value in column p should be changed from "-89.1" to "-119.1".

3) Section S10: For those rows associated with transponder IDs of 1C through 24C, the value under column b should be changed from "111.5" to "134.5".

4) Section S10: For those rows associated with transponder IDs of 1K through 24K, the value under column b should be changed from "118.1" to "148.1".

Conformed copies of the Technical Exhibit (Word file) and Schedule S (mdb file) as modified by this Erratum are attached for the sake of clarity and convenience. A revised version of the Inputs to the Schedule S (Word file) is also being submitted for

convenience. Please direct any questions regarding this Erratum to Jose Albuquerque at 202-944-6897.

Respectfully submitted,

/s/ Susan H. Crandall

Susan H. Crandall
Assistant General Counsel
Intelsat Corporation

Jennifer D. Hindin
WILEY REIN & FIELDING LLP
1776 K Street, N.W.
Washington, DC 20006

January 9, 2007

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/	January 5, 2007
Jose Albuquerque Intelsat Senior Director, Spectrum Engineering	Date

Erratum

PanAmSat Licensee Corp. ("PanAmSat"), herein, provides corrections to its pending application to construct, launch and operate Galaxy 17 from 91° WL. Specifically, with respect to the Technical Exhibit section of the application, PanAmSat provides corrections to 1) the saturated flux density ("SFD") of the C-band and Ku-band receive beams and 2) the transponder gain range of the C-band and Ku-band channels. Appropriate corrections to the associated Schedule S are also made.

On December 19, 2006 filed an application with the Commission requesting authority to construct, launch and operate Galaxy 17 from 91° WL (see FCC File No.: SAT-RPL-20061219-00155). Subsequent to that filing, PanAmSat noted an error in the calculation of the SFD range for the C-band and Ku-band receive beams. This error in turn resulted in a change in the transponder gain of the C-band and Ku-band channels. Accordingly, with this Erratum, PanAmSat provides the appropriate corrections to the Technical Exhibit section of the SAT-RPL-20061219-00155 filing. Appropriate corrections are also made in the associated Schedule S. The corrections to the Technical Exhibit section are as follows:

1) Section 2.7.2: In the fifth line of the third paragraph on page 10, the value of -91.2 dBW/m^2 should be changed to -114.2 dBW/m^2.
2) Section 2.7.2: In the seventh line of the third paragraph on page 10, the value of -89.1 dBW/m^2 should be changed to -119.1 dBW/m^2.
3) Exhibit 2: On page 31, in the row titled "Conus (Horizontal Polarization)" associated with the C-band Uplink SFD Range @Maximum G/T, the range -91.2 to -44.2 dBW/m^2 should be changed to -114.2 to -67.2 dBW/m^2.
4) Exhibit 2: On page 31, in the row titled "Conus (Vertical Polarization)" associated with the C-band Uplink SFD Range @Maximum G/T, the range -91.2 to -44.2 dBW/m^2 should be changed to -114.2 to -67.2 dBW/m^2.
5) Exhibit 2: On page 31, in the row titled "Conus (Horizontal Polarization)" associated with the Ku-band Uplink SFD Range @Maximum G/T, the range -89.1 to -42.1 dBW/m^2 should be changed to -119.1 to -72.1 dBW/m^2.
6) Exhibit 2: On page 31, in the row titled "Conus (Vertical Polarization)" associated with the Ku-band Uplink SFD Range @Maximum G/T, the range -89.1 to -42.1 dBW/m^2 should be changed to -119.1 to -72.1 dBW/m^2.
7) Exhibit 2: On page 31, in the row titled "Conus (H-Pol. Up) /Conus (V-Pol. Dn.)" associated with the C-band uplink to C-Band downlink transponder gain, the range "111.5 to 64.5 dBi" should be changed to "134.5 to 87.5 dB".

8) Exhibit 2: On page 31, in the row titled "Conus (V-Pol. Up) /Conus (H-Pol. Dn.)" associated with the C-band uplink to C-Band downlink transponder gain, the range "111.5 to 64.5 dBi" should be changed to "134.5 to 87.5 dB".
9) Exhibit 2: On page 31, in the row titled "Conus (H-Pol. Up) /Conus (V-Pol. Dn.)" associated with the Ku-band uplink to Ku-Band downlink transponder gain, the range 118.1 to 71.1 dB should be changed to 148.1 to 101.1 dB.
10) Exhibit 2: On page 31, in the row titled "Conus (V-Pol. Up) /Conus (H-Pol. Dn.)" associated with the Ku-band uplink to Ku-Band downlink transponder gain, the range 118.1 to 71.1 dB should be changed to 148.1 to 101.1 dB.
11) Exhibit 5B: On page 39, under the table column titled "Maximum Transponder Gain (dB)", the value of 111.5 dB should be changed to 134.5 dB.
12) Exhibit 5B: On page 40, under the table column titled "Maximum Transponder Gain (dB)", the value of 118.1 dB should be changed to 148.1 dB.
13) Exhibit 6A: On page 41, the portion of the title that reads "SFD RANGE AT PEAK G/T: -91.2 TO -44.2 dBW/m2" should be changed to read "SFD RANGE AT PEAK G/T: -114.2 TO -67.2 dBW/m2".
14) Exhibit 6C: On page 43, the portion of the title that reads "SFD RANGE AT PEAK G/T: -89.1 TO -42.1 dBW/m2" should be changed to read "SFD RANGE AT PEAK G/T: -119.1 TO -72.1 dBW/m2".
15) Exhibit 7: On page 54 in the row titled "Minimum SFD [G/T: Peak; Attn: 0 dB] – (dBW/m^2)" the value of -91.2 should be changed to -114.2.
16) Exhibit 7: On page 54 in the row titled "Minimum SFD [G/T: Peak; Attn: 0 dB] – (dBW/m^2)" the value of -89.1 should be changed to -119.1.

The corrections to the Schedule S are as follows:

1) Section S7: The first row associated with the CUP Beam ID, the the value in column p should be changed from -91.2 to -114.2.
2) Section S7: The third row associated with the KUP Beam ID, the the value in column p should be changed from -89.1 to -119.1.
3) Section S10: For those rows associated with transponder IDs of 1C through 24C, the value under column b should be changed from 111.5 to 134.5.
4) Section S10: For those rows associated with transponder IDs of 1K through 24K, the value under column b should be changed from 118.1 to 148.1.

The attached Exhibit 1 contains the corrected Galaxy 17 Technical Exhibit in its entirety. The attached Exhibit 2 contains the corrected Galaxy 17 Schedule S inputs in its entirety.

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/ Jose Albuquerque	January 5, 2007
Jose Albuquerque Intelsat Senior Director, Spectrum Engineering	Date

EXHIBIT 1

Technical Exhibit

1) Introduction

PanAmSat Licensee Corp. ("PanAmSat") seeks authority in this application to operate a new satellite, designated as Galaxy 17, from the 91° WL orbital location. The characteristics of the Galaxy 17 spacecraft as well as its compliance with the various provisions of Part 25 of the Commission's rules are provided in the remainder of this Technica Exhibit.

PanAmSat currently operates Galaxy 11 from 91° WL. This spacecraft utilizes the frequency bands of 5925 - 6425 MHz, 3700 – 4200 MHz, 13750 – 14500 MHz, 10950 – 11200 MHz and 11700 – 12200 MHz and provides coverage of the continental United States[1]. Galaxy 11 will be shifted to the nominal orbital location 74° WL to replace SBS-6 that is approaching its end-of-life and Galaxy 17 will replace Galaxy 11 at 91° WL[2].

2) Spacecraft Overview

Galaxy 17 is an Alcatel Space SPACEBUS 3000B3 spacecraft that operates on the C-band frequencies of 5925 – 6425 MHz and 3700 – 4200 MHz; and Ku-band frequencies of 14000 – 14500 MHz and 11700 – 12200 MHz. It utilizes 24 C-band and 24 Ku-band transponders. At C-band, the spacecraft is capable of providing service to the continental United States ("CONUS") and Hawaii, as well as portions of Mexico and Canada. At Ku-band, the spacecraft provides service to the continental United States, Hawaii, Puerto Rico and portions of Canada.

Galaxy 17 is a 3-axis stabilized type spacecraft, with a rectangular cube main body that supports the antennas and electronics for the various subsystems. It also utilizes two, four-panel deployable solar array wings as well as a bi-propellant propulsion system. The on-orbit configuration of the Galaxy 17 spacecraft is provided in Exhibit 1. A summary of the basic spacecraft characteristics is provided in Exhibit 2.

2.1) Structure

[1] Galaxy 11 also can provide coverage of South America in the 14000 – 14250 MHz and 10950 – 11200 MHz bands.

[2] Horizons 2 was to be launched in 2007 to replace SBS-6 at the nominal orbital location 74° WL. However, due to launch delays, Horizons 2 is not expected to be in orbit until late 2008.

The structural design of Galaxy 17 provides mechanical support for all subsystems. The structure externally supports the communication antennas, command and telemetry antennas, solar arrays, and thrusters. It also provides a stable platform for preserving the alignment of critical elements of the spacecraft.

The basic structure of the spacecraft is comprised of a central tube with a number of webs and panels attached to the tube. In its final on station configuration, the spacecraft has a rectangular-cube shape, with two deployable solar array wings, two deployable antenna reflectors (and its associated feeds), command and telemetry antennas, Earth and sun sensors, stationkeeping thrusters and an Apogee Boost Motor ("ABM") – all protruding from the main (cube) structure.

The structure is divided into two modules: the service module and the communication module. The service module supports equipment used with the Unified Propulsion Subsystem ("UPS"), the Electrical Power Supply ("EPS") subsystem, Attitude and Orbit Control Subsystem ("AOCS") and the Telemetry, Command and Ranging subsystem ("TC&R"). The communication module contains a network of heat pipes and supports equipment associated with the communication payload, e.g. amplifiers, Electrical Power Conditioning ("EPC") units and output multiplexers ("OMUXes").

The basic structural components of the service module are 1) a central tube, 2) the internal deck, 3) the east and west service module web panels, 4) the east and west service module panels, 5) the north and south service module panels, 6) vertical and horizontal service module stiffners, and 7) the anti-Earth panels.

The central tube houses the spacecraft's two propellant tanks and supports the ABM. It provides the mechanical connection to the spacecraft launch vehicle and provides global structural stiffness. The central tube also indirectly supports loads from equipment mounted onto various panels, webs and brackets that are attached to it.

The internal deck is located near the aft section of the spacecraft. It serves to equalize the shear forces acting on the communication and service module north/south web panels. Additionally, the internal deck guarantees the rigidity of the satellite. The internal deck supports a number of units associated with the service module such as the Remote Data Units ("RDUs"), Central Data Management Units ("CDMUs") and House Keeping Units ("HKUs").

The east and west service module web panels carry the Helium tanks and provide mounting surfaces for a number of units associated with the UPS.

The east and west service module panels are located on the east and west aft section of the spacecraft. They provide mounting surfaces for a number of units and support brackets, e.g. sun sensor mounting bracket, antenna deployment and pointing mechanism's ("ADPM") mounting bracket, etc.

The north and south service module panels carry the high (heat) dissipative and heavy units associated with the service module, e.g. batteries, power conditioning unit ("PCU"), etc.

Two pairs of vertical and horizontal service module stiffners are attached to the north and south service module panels and the internal deck, with each vertical and horizontal stiffner forming a horizontal "T" shape. The stiffners provide further rigidity to the north and south service module panels and additional support for the internal deck.

The anti-Earth panels consist of a north and a south panel that close out the aft section of the spacecraft.

The communication panel is composed of 1) the Earth panel, 2) the north and south communication module panels, 3) north and south communication module web panels, 4) the east and west communication module panels and 5) the east and west main plate and support structure.

The Earth panel serves to equalize the shear forces acting on the communication module north/south web panels. The Earth panel also provides mounting surface for a number of units and bracketes associated with the communication module, e.g. C and Ku-band input multiplexer ("IMUXs"), test couplers, polarization switch, etc.

The north and south communication module panels provide mounting surfaces for the high (heat) dissipative units associated with the communication module, e.g. Traveling Wave Tube Amplifiers ("TWTAs"), C and Ku-band Output Multiplexers ("OMUXs"). They also support the Earth panel and partially support the mass of the solar arrays.

The north and south communication module web panels provide rigidity to the north and south communication panels. A dedicated web panel is attached to the inside face of the associated north and south communication panel.

The east and west communication module panels are four panels – two located on the east side of the spacecraft and two located on the west side of the spacecraft – that sit atop of the east and west service module panels. The two panels on each side – east or west side – of the spacecraft are connected via a connecting/stiffner beam. The east and west communication module panels can be installed and removed very easily and allow easy access to the repeater equipment.

Two main plates are located near the nadir side of the spacecraft on the east and west sides of the spacecraft. Each plate is mounted atop a dedicated mounting bracket which is in turn attached to the main Earth panel. The east and west main plates support the feeds for the corresponding east and west deployable antennas.

In addition to the service and communication modules, there are a number of secondary structures attached to the primary structure. These are primarily brackets that provide support for external units such as reflectors and their associated feeds, sensors, solar arrays and thrusters.

Galaxy 17 utilizes two deployable reflector antennas located on the east and west sides of the spacecraft. Each reflector is attached to the main body of the spacecraft through the use of ADPMs. The feeds for the deployable antennas are mounted on the east or west main plates, as appropriate.

Galaxy 17 also employs a communication antenna mounted on the nadir side of the spacecraft. The antenna and its associated feeds and subreflector are mounted on a dedicated antenna support structure which is in turn mounted on the Earth panel.

The spacecraft employs four omni-directional antennas for telemetry, command and ranging. The antennas are grouped into pairs, with each pair mounted atop a dedicated bracket. One pair of antennas is located on the nadir (Earth facing) section of the spacecraft near the southwest corner of the Earth panel. The other pair of antennas is located in the aft section of the spacecraft, on the northeast aft edge of the east service module panel.

The spacecraft utilizes two deployable solar wings, which are extended when the spacecraft reaches its on-station orbital location. One solar wing is located on the north side of the spacecraft and the other is located on the south side of the

spacecraft. The solar wings provide the mounting surfaces for the solar cells. Each solar wing is connected to the main spacecraft structure through a dedicated Bearing and Power Transfer Assembly ("BAPTA") which is attached to the north and south communication module panels, as appropriate.

The Earth sensors are mounted atop a dedicated mounting bracket located on the northeast section of the Earth panel.

Four pairs of sun sensors are distributed on the nadir and aft section of the spacecraft. Each pair of sun sensors is mounted on top of a dedicated mounting bracket. On the nadir side of the spacecraft, a pair of sensors is mounted on a bracket located near the northwest corner of the spacecraft, with another pair of sensors mounted on a bracket located near the southeast corner of the spacecraft. On the aft side of the spacecraft, a pair of sun sensors is mounted on a bracket located on approximately the south aft edge of the east service module panel, with another pair of sensors mounted on a bracket located on approximately south aft edge of the west service module web panel.

The main station-keeping thrusters are mounted directly onto the north and south, service and communication module panels, the east and west service module panels, and the anti-Earth panel. The main ABM is attached to a series of supporting struts that in turn are attached to the central tube.

The Galaxy 17 mass budget is provided in Exhibit 3.

2.2) Thermal Subsystem

Thermal control is accomplished through the use of Optical Surface Radiators ("OSRs"), heat pipes, Multilayer Insulation ("MLI") blankets, electrical heaters and heat shields. The outer surface of the north and south (service and communication module) panels are covered with OSRs to maximize the heat rejection to space while minimizing the absorbed solar energy. The heat generated by high power units, e.g. TWTAs, OMUXs, etc. is spread over the north and south (communication module) panels by means of heat pipes that are embedded in the panels. Multilayer Insulation ("MLI") blankets cover all external areas, except radiative areas. Heaters are used to limit the lower temperature extremes of the electronics as well as the propulsion thrusters and propellant lines. Sensitive areas such as thrusters are protected thermally by means of heat shields.

2.3) Power Subsystem

The Electrical Power Subsystem ("EPS") generates, stores, conditions and protects the satellite's electrical power. It provides the energy required to operate the satellite during all modes of operation. The EPS consists of the solar arrays, batteries, associated power electronics, and power harnesses that integrate and regulate the systems.

Galaxy 17 utilizes two deployable solar array wings, with one wing located on the north side of the spacecraft and the other located on the south side of the spacecraft. Each solar wing is composed of four equal-sized main panels. Each panel supports an array of photovoltaic solar cells. During launch, the solar array wings are in the stowed position. However, once on station, the solar wings are deployed, with each wing extending out on the north and south sides of the spacecraft. The solar array is designed to provide power to the spacecraft for at least 15 years.

Power from the solar arrays is transferred to the spacecraft through the use of two BAPTAs – one for each solar wing. The BAPTA also controls the rotation of the solar wing.

During eclipse periods, the primary source of power to the spacecraft is through batteries. Galaxy 17 utilizes two 27-cell nickel-hydrogen batteries housed in four battery packs. The battery packs which are mounted on the north and south service module panels near the aft corners of the main spacecraft structure.

The Galaxy 17 EPS has been designed so that no single failure in the subsystem will cause a spacecraft failure. The EPS will provide sufficient power to the spacecraft throughout its design life to support all active communication channels as well as all necessary housekeeping loads. The beginning of life ("BOL") and end of life ("EOL") power budgets for Galaxy 17 are provided in Exhibit 4.

2.4) Attitude Control Subsystem

The Attitude and Orbit Control System ("AOCS") maintains the spacecraft attitude during the transfer orbit, initial acquisition period, and on-station geostationary operations. Additionally, the AOCS is responsible for re-acquisition of the spacecraft in case of emergency and its placement into a safe configuration.

The AOCS is composed of primary and redundant sun and Earth sensors, two three-axis gyros, four momentum wheels, bipropellant thrusters, and associated

electronics. Control of the spacecraft attitude and orientation is accomplished through the use of momentum wheels and by pulsed or continuous firing of selected thrusters by the AOCS.

2.5) Propulsion Subsystem

The propulsion subsystem provides impulse for the spacecraft maneuvering during all phases of the mission beginning with launch vehicle separation through the operational lifetime of the satellite. The major components of the propulsion subsystem are as follows: 1) a 400N ABM, 2) fourteen 10N thrusters, 3) three high pressure Helium tanks, 4) two spherical propellant tanks and 5) systems of valves, filters, regulators and transducers.

The spacecraft employs a bipropellant system, whereby it utilizes a combination of Nitrogen Tetroxide and Monomethylhydrazine as propellants. The system utilizes Helium gas as pressurant to pressurize the propellant tanks.

Each main line is equipped with a filter in order to protect sensitive down-stream components from contamination. The propellant filters act as long term protection against particles which could otherwise enter the thruster valves.

High accuracy pressure transducers are used throughout the system to measure the pressure of the propellant and Helium tanks as well as other critical points within the subsystem. Such measurements are used for general monitoring of the propulsion system as well as to gauge the level of the remaining propellant remaining within the system throughout the life of the spacecraft.

Temperature tansducers are incorporated throughout the propulsion subsystem. They are part of the thermal control subsystem of the spacecraft. Temperature transducers enable operators to determine the health of the ABM and the 10N thusters, and to determine if there are any functional disturbances within the systems, e.g. leakages.

Following separation from the launch vehicle, pyrotechnic valves are opened to allow the Helium pressurant to flow through a filter and a series of redundant (pressure) regulators into the propellant tanks. The propellant tank valves are then opened to prime the system and provide pressurized propellant to all thrusters. Prior to activating any thrusters, two of the 10N thrusters are openned for at least 2 minutes in order to vent any gas that may be trapped between the propellant tanks and the thrusters.

Following the subsystem priming, appropriate 10-N thrusters are fired to control the spin of the spacecraft. The 400-N ABM is then fired as necessary during the transfer orbit operation to inject the spacecraft into a geosynchronous orbit.

Upon completion of the transfer orbit, the ABM is isolated from the rest of the propulsion system by activating a number of normally open pyrotechnic valves. Additionally, the Helium supply is isolated from the propellant tanks by activating a number of normally open pyrotechnic valves. The system is then configured for on-station maneuvers whereby the 10-N thrusters are operated for the balance of the mission and the system operates in a blow-down mode. During on-station operations, momentum wheels are used in conjunction with the 10-N thrusters to maintain correct positioning and pointing of the spacecraft.

The architecture of the propulsion system is based on a low risk approach which has been flight proven. The system utilizes space qualified components and incorporates full redundancy for all critical components.

2.6) Data Management Subsystem

The spacecraft data management functions are handled by the Data Management Subsystem ("DMS"). The main functions of the DMS are 1) to decode and route command messages to their final destination, 2) to collect and format satellite telemetry data and deliver them to the TC&R subsystem for transmission to Earth, 3) thermal regulation of the spacecraft, 4) spacecraft failure detection, identification and recovery, 5) battery management, 6) provide on board time functions and 7) monitor the health of various spacecraft units.

The DMS is comprised of the Data Handling System ("DHS"), the On-Board Data Handling ("OBDH") bus and the on-board software. The primary components of the DHS are the Central Data Management Unit ("CDMU"), the Remote Data Units ("RDU") and the Telemetry Decryption Unit ("TDU"). The CDMU performs housekeeping data acquisition, handles telemetry and command data and has a number of embedded applications that pertain to various functions such as thermal regulation, battery management, BAPTA management, etc. The two RDUs monitor the OBDH bus, decode and execute commands routed on the OBDH bus, encode telemetry signals from the interfaced units, and transmit the encoded telemetry data onto the OBDH bus. The OBDH data bus connects the CDMU to the RDUs and the Platform Distribution Unit ("PFDU"), which distributes power to the platform units and heaters, provides battery management functions and activates pyrotechnic devices. The TDU decrypts spacecraft commands.

2.7) Communication Subsystem

2.7.1) Overview

Galaxy 17 provides 24 active communication channels at C-band frequencies and 24 active channels at Ku-band frequencies. The bandwidth of each C-band and Ku-band channel is 36 MHz. The Galaxy 17 frequency and polarization plans are provided in Exhibits 5A and 5B. At C-band, the Galaxy 17 receive and transmit beams provide coverage of the continental United States, Hawaii and portions of Mexico and Canada. At Ku-band, the Galaxy 17 receive and transmit beams provide coverage of continental United States, Hawaii, Puerto Rico and portions of Canada.

At both C and Ku-band frequencies, Galaxy 17 employs full frequency reuse through the use of orthogonal polarization within the same beam. The C and Ku-band beams utilize linear (horizontal and vertical) polarization, whereby the polarization of the uplink is opposite that of the downlink. The electric field component of the linear horizontally polarized signal is parallel to the equatorial plane and the electric field component of the linear vertically polarized signal is orthogonal to the equatorial plane. Accordingly, Galaxy 17 is compliant with the provisions of sections 25.210(a)(1) and (2) and 25.210(f) of the Commission's Rules.

The polarization sense of the C-band and Ku-band channels may be switched upon ground command. Accordingly, Galaxy 17 is compliant with the provisions of section 25.210(a)(3) of the Commission's Rules.

2.7.2) Antennas and Beam Coverage

Galaxy 17 utilizes a deployable transmit/receive C-band antenna located on the west side of the spacecraft and a deployable transmit Ku-band antenna located on the east side of the spacecraft. Each antenna is an offset fed shaped reflector illuminated by a corrugated feed horn with two orthomode transducers. The C-band and Ku-band reflectors are circularly shaped with an aperture of 2.2 meters. The C-band antenna provides the coverage of of continental United States, Hawaii and portions of Mexico and Canada. The Ku-band antenna provides coverage of United States, Hawaii, Puerto Rico and portions of Canada. The position of the C-band and Ku-band reflectors may be mechanically adjusted through the use of the ADPM.

Galaxy 17 also employs a Ku-band receive antenna assembly mounted on the Earth panel. The assembly consists of a Gregorian type shaped main reflector, an ellipsoidal sub-reflector illuminated by a feed which includes an orthogonal transducer. The Gregorian main reflector is 1.4 meter wide elliptically shaped reflector. The Ku-band receive beam provides coverage of continental United States, Hawaii, Puerto Rico and Portions of Canada.

The coverage beams of the Galaxy 17 antennas are shown in Exhibits 6A through 6D, in the format prescribed in section 25.114(d)(3) of the Commission's Rules. The peak Equivalent Isotropically Radiated Power ("EIRP") of the horizontally and vertically polarized C-band transmit beams is 43.3 dBW. The EIRP of the horizontally and vertically polarized Ku-band CONUS beam is 51.3 dBW.

The peak G/T of the horizontally and vertically polarized C-band receive beams is 5.2 dB/K. The peak G/T of the horizontally and vertically polarized Ku-band CONUS receive beams is 7.1 dB/K. The minimum saturation flux density ("SFD") corresponding to the peak G/T point of the C-band horizontally and vertically polarized receive beams is -114.2 dBW/m^2. The minimum saturation flux density ("SFD") corresponding to the peak G/T point of the Ku-band horizontally and vertically polarized receive beams is -119.1 dBW/m^2

The SFD at any G/T contour may be determined using the following formula:

$$SFD_D = SFD_P + [(G/T)_P - (G/T)_D] + A$$

where

SFD_D: SFD at desired G/T level (dBW/m^2)
SFD_P: Minimum SFD at peak G/T (dBW/m^2)
$(G/T)_D$: Desired G/T level (dB/K)
$(G/T)_P$: Peak G/T (dB/K)
A = Transponder attenuator setting (dB), ranging from 0 to 47 dB for C-band and for Ku-band transponders.

Exhibit 7 provides a detailed calculation of the EIRP, G/T and SFD of the Galaxy 17 uplink and downlink beams.

Galaxy 17 does not fully comply with the antenna cross-polarization criteria of section 25.210(i) of the Commission's Rules. Specifically, the ratio of the on-axis

co-polar gain to cross-polar gain (i.e. the cross-polarization isolation) is less than 30 dB over very limited portions of the primary coverage area of the C-band receive and transmit beams and the Ku-band transmit beam. Accordingly, PanAmSat requests a waiver of section 25.210(i) of the Commission's rules with regard to these beams.

The cross-polarization contours of the Galaxy 17 C and Ku-band communication beams are provided in Exhibits 6J through 6M. In each exhibit, the contour value listed with each contour represents the absolute level of cross-polarization isolation.

The Galaxy 17 C-band receive antenna provides a cross-polarization isolation of 30 dB or greater over its primary coverage area with the exception of Hawaii where the cross-polarization isolation is greater than 27 dB (See Exhibit 6J). The Galaxy 17 C-band transmit antenna provides a cross-polarization isolation of 30 dB or greater over its primary coverage area with the exception of Hawaii and Puerto Rico where the cross-polarization isolation is equal to greater than 28 dB and 25 dB, respectively (See Exhibit 6K). The Galaxy 17 Ku-band transmit antenna provides a cross-polarization of 30 dB or greater over its primary coverage area with the exception of sections of the states of Louisana, Mississippi and Florida where the cross-polarization is equal to or greater than 29 dB (See Exhibit 6M). The Galaxy 17 Ku-band receive antenna provides a cross-polarization isolation of 30 dB or greater over its primary coverage area and is fully compliant with the provisions of section 25.210(i) of the Commission's Rules (see Exhibit 6L).

The level of cross-polarization isolation achieved for the C-band uplink and downlink beams and the Ku-band downlink beam was the best that the satellite manufacturer could achieve without causing excessive degradation in the co-polarized gain of the beam and/or in the size of its coverage area. As a result, a slight reduction in the cross-polarization isolation with respect to the 30 dB requirement, and only in a very limited portion of the coverage area, was considered to be the best approach for making efficient use of the orbit/spectrum resources by Galaxy 17.

Moreover, as the Commission has previously recognized, "failure to meet the cross-polarization isolation requirements will not adversely impact any other operator, and the only party to suffer an increase in interference" is the applicant

itself.[3] In the case of Galaxy 17 C-band and Ku-band transmit beams, deviation from the 30 dB requirement causes very little impact, if any, on the operations of adjacent satellites. In the case of the Galaxy 17 C-band receive beam, deviation from the 30 dB requirement has no impact on potential interference to adjacent satellites. Rather, the reduction in Galaxy 17's cross-polarization isolation in limited portions of its coverage area will slightly increase the interference to Galaxy 17 carriers from its own oppositely polarized carriers as well as from emissions (of other operators) generated by adjacent satellites. By controlling the power level of Galaxy 17's carriers, however, PanAmSat can compensate for this factor, thereby meeting its transmission objectives and the requirements of its customers.

The Commission previously has granted waivers of the requirement in section 25.210(i) based on the same factors that support the waiver PanAmSat is requesting in this application.[4] Accordingly, Commission precedent supports a grant of PanAmSat's waiver request.

2.7.3) Transponder description

2.7.3.1) C-Band

Signals in the 5925 – 6425 MHz frequency band are received by the appropriate (horizontally polarized or vertically polarized) receive antenna. The output of the receive antenna is routed to a set of 500 MHz wide receivers via a test coupler and a band-pass filter.

The receivers are arranged in a 4:2 redundancy ring. Each uplink can access one of three receivers by ground command. The receivers establish the system noise figure and downconvert the received signal to the transmit frequency band. Each receiver operates over the entire 5925 – 6425 MHz band in linear mode and is designed to have high sensitivity (i.e. good noise performance) and low cross-talk coefficients (i.e. good linearity characteristics). Given that the receiver downconverts the received signal to the necessary frequency required for

[3] See ¶5 of the Terms and Conditions of the Authorization granted to SES on August 18, 2004 in SAT-LOA-20030219-00013.

[4] See waivers granted to: Intelsat North America LLC on June 17, 2005 in SAT-MOD-20050203-00019; SES Americom, Inc, on July 13, 2004; New Skies Satellites, N.V. on May 24, 2002, in 17 FCC Rcd 10369; Star One S.A. on August 24, 2004, in 19 FCC Rcd 16334; DIRECTV Enterprises, LLC on October 4, 2005, in SAT-A/O-20050504-00093 and SAT-STA-20050518-00105.

transmission, the frequency stability of the transmitted signal is controlled entirely by the receiver itself. The Galaxy 17 C-band receiver is able to maintain over the life of the spacecraft the frequency of the transmitted (downcoverted) signal to within 0.002% of the desired value. Accordingly, Galaxy 17 is compliant with the provisions of section 25.202(e) of the Commission's Rules.

The output of the receivers is then distributed to a bank of Input Mulitplexers. The IMUXs are filters that provide frequency band separation for each channel. The rejection characteristics of the IMUX are provided in Exhibit 8A.

The output of each IMUX is connected to a dedicated Linearized Channel Amplifier ("LCAMP") and its associated TWTA through a bank of redundancy switches. The redundancy switching permits the output of the IMUX to be routed to a redundant LCAMP/TWTA pair should the primary units fail or malfunction.

The gain of each channel (and its associated transponder saturation flux density) may be independently adjusted by changing the attenuation of its designated LCAMP by ground command. Consequently, the output of each LCAMP may be varied by ground command over a range of 47 dB in 1 dB increments. Accordingly, the C-band channels of Galaxy 17 are compliant with the provisions of section 25.210(c) of the Commssion's Rules.

Each TWTA produces 47 Watts of output power. All LCAMP/TWTA pairs are configured within a 30-for-24 redundancy ring.

The output of each TWTA amplifier is routed through a bank of switches to a one of two OMUXs, which also accommodates the telemetry input. The switching network allows the output of a redundant LCAMP/TWTA pair to be forwarded to the appropriate OMUX should the primary pair of units fail or malfunction. The rejection characteristics of the OMUX are provided in Exhibit 8A. The output of each OMUX is connected to the transmit antenna (feed) via a test coupler.

2.7.3.2) Ku-Band

Signals in the 14000 – 14500 MHz frequency band are received by the appropriate (horizontally polarized or vertically polarized) receive antenna. The output of the receive antenna is routed to a set of 500 MHz wide receiver via a test coupler and a band-pass filter.

The receivers are arranged in a 4:2 redundancy ring. Each uplink can access one of three receivers by ground command. The receivers establish the system noise figure and downconvert the received signal to the transmit frequency band. Each receiver operates over the entire 14000 – 14500 MHz band in linear mode and is designed to have high sensitivity (i.e. good noise performance) and low cross-talk coefficients (i.e. good linearity characteristics). Given that the receiver downconverts the received signal to the necessary frequency required for transmission, the frequency stability of the transmitted signal is controlled entirely by the receiver itself. The Galaxy 17 Ku-band receiver is able to maintain over the life of the spacecraft the frequency of the transmitted (downcoverted) signal to within 0.002% of the desired value. Accordingly, Galaxy 17 is compliant with the provisions of section 25.202(e) of the Commission's Rules.

The output of the receivers is distributed to a bank of IMUXs. The IMUXs are filters that provide frequency band separation for each channel. The rejection characteristics of the IMUX are provided in Exhibit 8B.

The output of each IMUX is connected to a dedicated LCAMP and its associated TWTA through a bank of redundancy switches. The redundancy switching permits the output of the IMUX to be routed to a redundant LCAMP/TWTA pair should the primary units fail or malfunction.

The LCAMP has two modes of operation: Fixed Gain Mode ("FGM") and Automatic Level Control ("ALC") Mode. In the Fixed Gain Mode, the gain of each channel (and its associated transponder saturation flux density) may be independently adjusted by changing the attenuation of its designated LCAMP by ground command. Consequently, in the Fixed Gain Mode, the output of each LCAMP may be varied by ground command over a range of 47 dB in 1 dB increments. Accordingly, the Ku-band channels of Galaxy 17 are compliant with the provisions of section 25.210(c) of the Commssion's Rules. In the ALC mode, the output power of the LCAMP can be set by ground command and the LCAMP provides dynamic gain control over an input range of 47 dB to maintain the output power constant at the commanded level.

The Ku-band payload utilizes 12 TWTAs that produce 107 Watts of output power and 12 TWTAs that produce 111.5 Watts of power. All LCAMP/TWTA pairs are configured within a 32-for-24 redundancy ring.

The output of each TWTA amplifier is routed through a bank of switches to a one of two OMUXs, which also accommodates the Uplink Power Control ("ULPC")

beacons. The switching network allows the output of a redundant LCAMP/TWTA pair to be forwarded to the appropriate OMUX should the primary pair of units fail or malfunction. The rejection characteristics of the OMUX are provided in Exhibit 8B. The output of each OMUX is fed into a receive reject filter and connected to the transmit antenna (feed), via a test coupler.

2.8) Telemetry, Command and Ranging Subsystem

The telemetry, command and ranging ("TC&R") subsystem provides the following functions:

1) Acquisition, processing and transmission of spacecraft telemetry data.
2) Reception and retransmission of ground station generated ranging signals.
3) Reception, processing and distribution of telecommands.

The TC&R subsystem consists primarily of the following elements: 1) Four omni antennas; 2) C-band communication antenna; 3) Two telemetry transmitters; 4) Two command receivers; 5) Data handling hardware/software; 6) C-band OMUXes; 7) Two sets of C-band LCAMP/TWTAs and 8) Microwave components including filters, switches, couplers, isolators, power splitters, cables and waveguide

2.8.1) Antennas

When on-station, command and telemetry signals are received and transmitted through Galaxy 17's main C-band communication antennas. The coverage patterns of the command and telemetry beams under these circumstances are provided in Exhibits 6F and 6H, respectively.

During emergencies and transfer orbit operations, command and telemetry signals are received and transmitted through the omni-directional antennas. The omni antennas are grouped in pairs, with one pair located near the southwest corner of the Earth panel and the other pair located on the northeast aft edge of the east service module panel. Representative graphs of the antenna gain for the command and telemetry omni antennas are provided in Exhibits 6G and 6I, respectively.

During extreme on-station emergencies and during transfer orbit operations, it is assumed that the spacecraft is not properly oriented and communication with the spacecraft cannot be established through the main communication antennas. The

graphs in Exhibits 6G and 6I show the variation in the gain of the antenna at 0° roll angle, referenced to the (horizontal) plane on the center axis of the antenna aperture, with the azimuth (or pitch angle) varying from -180° and +180° -- generally referred to as the "azimuth cut". Given that the omni antennas are horn antennas having symmetrical gain performance about the center axis of the antenna aperture, the gain variation shown in Exhibits 6G and 6I are also representative of the case where the pitch angle of the antenna is 0°, referenced to the (vertical) plane located at the center axis of the antenna aperture, with the elevation (or roll angle) varying from -180° and +180° -- generally referred to as the "elevation cut".

During emergency conditions, when the spacecraft's main communication antenna is not pointing towards Earth, the omni antennas would be used since its field of view is greater than +/- 20° and the Earth disk is only +/- 8.4°. From Exhibits 6G and 6I, it is evident that the coverage of the omni antennas is relatively flat over the entire Earth and that the variation in gain will be typically less than 1.0 dB within +/-20° of the peak gain point. The peak gain of the omni antenna is 8.0 dBi for command and 7.8 dBi for telemetry.

The omni antenna diagrams (Exhibits 6G and 6I) 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 as the pointing of the omni antennas with respect to the Earth will vary during an emergency situation. In this respect, it is our understanding that, given the specificity of the situation, Exhibits 6G and 6I, together with the descriptive characterization given in the two previous paragraphs, fulfill the requirements of Section 25.114(d)(3). However, in case the Commission has a different understanding in this respect, a waiver of the requirements of Section 25.114(d)(3) of the FCC Rules with respect to the presentation of the omni-directional antenna pattern is respectfully requested

2.8.2) Command

The Galaxy 17 command subsystem performance summary is provided in Exhibit 9. Detailed calculation of the G/T and SFD for each command beam is provided in Exhibit 10.

During on-station operations, commands are transmitted to the spacecraft through the transmission of sequences of command tones onto a linearly polarized, FM signal at the frequencies of 5925.5 MHz and 6424.5 MHz. The command signal is received by the spacecraft through the main C-band communication (receive)

antenna. The command signals are then routed to communication receivers. Within the communication receiver, the command signal is extracted and routed to two command receivers via a directional coupler. The command receivers amplify and demodulate the signal, and recover the baseband command signal and ranging tones. The output of the command receivers are forwarded to the data handling subsystem, where the commands are demodulated, decrypted, decoded and sent to the appropriate spacecraft unit.

During transfer orbit or emergency operations, the operation of the command subsystem is similar to that for on-station operations, except that the transmitted command signals are received by the omni antennas and directed to the command receivers via a set of directional couplers. Exhibits 5A and 5B provide the frequency and polarization plan for the Galaxy 17 command channels.

2.8.3) Telemetry

The Galaxy 17 telemetry subsystem performance summary is provided in Exhibit 9. Detailed calculation of the EIRP for each telemetry beam is provided in Exhibit 10.

During on-station operations, telemetry is transmitted by the spacecraft on two independent, linearly polarized PM signals on the frequencies of 4197.125 MHz and 4198.875 MHz. Baseband telemetry data is transmitted from the spacecraft's data handling subsystem to two telemetry transmitters. Within each telemetry transmitter, the baseband signal is phase modulated onto one of the two main carrier frequencies of 4197.125 MHz and 4198.875 MHz, depending on the frequency assigned to the specific transmitter. The output of the telemetry transmitters is then routed to C-band OMUX of the communication subsystem where it is frequency multiplexed with the main C-band communication channels. From the OMUX, the telemetry signal is routed to the main C-band communication (transmit) antenna for transmission to Earth. The telemetry transmitter is able to maintain over the life of the spacecraft the frequency of the transmitted signal to within 0.002% of the desired value; hence it is compliant with the provisions of section 25.202(e) of the Commission's Rules.

During transfer orbit or emergency operations, the output of each telemetry transmitter is routed to one of two C-band LCAMP/TWTA pairs within the C-band communication payload for additional amplification and transmitted to Earth through the omni antennas. Exhibits 5A and 5B provide the frequency and polarization plan for the Galaxy 17 telemetry channels.

2.8.4) Ranging

During all phases of the mission, the slant range of the spacecraft can be determined to a relatively high level of accuracy through the use of a multiple tone ranging system. Through ground command, the telemetry transmitters and command receivers are configured for operation in the ranging mode.

The ranging tones selected are modulated onto the command carrier and transmitted to the spacecraft. Once received by the spacecraft through the appropriate receiving antenna, the signal is routed directly to the spacecraft's telemetry transmitter. From the telemetry transmitter, the ranging signal is transmitted to Earth through the appropriate spacecraft transmitting antenna. On the ground, the ranging tones are demodulated and their phase compared with that of the transmitted signal to determine the range of the satellite.

Because the ranging subsystem uses the command and telemetry subsystems, the descriptions of the operation of these two latter systems during on-station, transfer orbit and emergency conditions are applicable to the ranging subsystem as well. The performance summary of the Galaxy 17 command, telemetry and ranging subsystems is provided in Exhibit 9.

2.9) Uplink Power Control Subsystem

Galaxy 17 provides two Ku-band beacons which can be used for uplink power control ("ULPC") by customers transmitting at Ku-band frequencies to the spacecraft. One ULPC beacon transmits a vertically polarized signal at 11701 MHz. The second ULPC beacon transmits a horizontally polarized signal at 12195 MHz.

The performance characteristics of the ULPC beacon are provided in Exhibit 2. Detailed calculation of the EIRP for each ULPC beam is provided in Exhibit 7. The coverage of the Galaxy 17 ULPC beam is shown in Exhibit 6E.

The ULPC subsystem utilizes a pair of transmitters – one primary and the other redundant – to generate each ULPC beacon. Accordingly, the ULPC system utilizes four transmitters – two primary and two redundant. For each beacon signal, the output of the selected (primary or redundant) transmitter is routed to one of the two Ku-band OMUXs within the communication subsystem and then directed to the appropriately polarized Ku-band antenna for transmission to Earth.

Each ULPC transmitter is able to maintain over the life of the spacecraft the frequency of the transmitted signal to within 0.002% of the desired value; hence, it is compliant with the provisions of section 25.202(e) of the Commission's Rules.

2.10) Satellite Station-Keeping

The spacecraft will be maintained within 0.05° of its nominal longitudinal position in the east-west direction as well as in the north-south direction. Accordingly, it is in compliance with the provisions of section 25.210(j) of the Commission's Rules.

The attitude of the spacecraft will be maintained with an accuracy consistent with the achievement of the specified communications performance, after taking into account all error sources (i.e. attitude perturbations, thermal distortions, misalignments, orbital tolerances and thruster perturbations).

2.11) Satellite Useful Lifetime

The design lifetime of the satellite in orbit is 15 years. This has been determined by a conservative evaluation of the effect of the synchronous orbit environment on the solar array, the amount of fuel aboard the spacecraft, the effect of the charge-discharge cycling on the life of the battery, and the wearout of the amplifiers and other active units. The mass allocation of propellant for spacecraft stationkeeping is optimized to achieve at least 15 years of operation. To enhance the probability of survival, equipment/unit redundancy is incorporated into the spacecraft design where possible. Materials and processes have been selected so that aging or wearing effects will not adversely affect spacecraft performance over the estimated life.

2.12) Spacecraft Reliability

Galaxy 17 is designed for an operational and mission life of 15 years. Life and reliability are maximized by incorporating flight proven or flight qualified units and designs to the greatest extent possible. All subsystems and units have a minimum design life of 15 years. Redundancy concepts are applied to all critical components. All avoidable single-point failure modes have been eliminated.

The projected reliability of the combined C-band and Ku-band payload is 93.8%. The projected reliability of the bus system is 80.2%. The overall reliability of the Galaxy 17 spacecraft is projected to be 75.2%. The subsystem reliability

assessments were based upon the use of failure rates and modeling assumptions from previous spacecraft programs as well as those specific to Galaxy 17.

3.0) Power Flux Density ("PFD")

The power flux density limits for space stations are specified in section 25.208 of the Commission's Rules. With respect to the 11700 – 12200 MHz band, section 25.208 of the Rules does not specify any PFD limits for geo-stationary FSS satellites. However, section 25.208 does specify PFD limits for the 3700 – 4200 MHz band.

In the 3700 – 4200 MHz band, the maximum PFD level at the Earth's surface produced by Galaxy 17 was calculated for a 30.133 MHz digital carrier, a 36 MHz analog TV/FM carrier as well as the Galaxy 17 telemetry carriers. The results are provided in Exhibit 11 and show that the downlink power flux density levels of the Galaxy 17 carriers do not exceed limits specified in section 25.208 of the Commission's Rules.

4.0) Emission Limitations

The receiver and transmitter channel filter response characteristics are determined primarily by the performance of the Input Multiplexer Filter and the Output Multiplexer Filter, respectively. The amplitude response characteristics of the Galaxy 17 C-band and Ku-band IMUXs are provided in Exhibits 8A and 8B, respectively, as required under section 25.114(c)(4)(vii) of the Commission's Rules. The amplitude response characteristics of the C-band and Ku-band OMUXs are provided in Exhibits 8A and 8B, respectively, as required under section 25.114(c)(4)(vii). The total amplitude response characteristics of the Galaxy 17 C-band and Ku-band channels are also provided in Exhibits 8A and 8B.

PanAmSat shall comply with the provisions of 25.202(f) of the Commission's rules with regard to Galaxy 17 emissions.

5.0) Service Area

At C-band frequencies, the primary service area of Galaxy 17 is the continental United States, Hawaii and portions of Canada and Mexico. At Ku-band, the primary service area of Galaxy 17 is the continental United States, Hawaii, Puerto Rico and portions of Canada.

6.0) Orbital Location

PanAmSat requests that it be assigned the 91° WL orbital location for Galaxy 17. From 91° WL, Galaxy 17 will replace the Galaxy 11 spacecraft which currently operates from this orbital location. The 91° WL location satisfies Galaxy 17 requirements for optimizing coverage, elevation angles and service availability and ensures that maximum operational, economic and public interest benefits will be derived. Moreover, the 91° WL orbital location ensures the continuity of the services being currently provided by Galaxy 11.

7.0) Orbital Arc Limitations

At C-band, Galaxy 17 is intended to provide video, audio and data services to satellite users in the continental United States, Hawaii and portions of Mexico and Canada. At Ku-band, Galaxy 17 is intended to provide similar services to users in the continental United States, Hawaii, Puerto Rico and portions of Canada. The 91° WL position affords reasonable Earth station angles to the region. The attractiveness of Galaxy 17 to this market would be severely diminished if service to this area is not possible, especially with respect to its ability to ensure the continuity of the services being currently provided by Galaxy 11.

8.0) Services and Emission Designators

Galaxy 17 is to be a general purpose communications satellite and has been designed to support various services offered within PanAmSat's satellite system. Depending upon the needs of the users, the transponders on Galaxy 17 can accommodate television, radio, voice or data communications. Typical types of communication services to be offered include:

a) Frequency modulated television (TV/FM)
b) Compressed digital video
c) High speed digital data
d) Digital single channel per carrier ("SCPC") data channels

Emission designators and allocated bandwidths for representative communication carriers, telemetry and command signals are provided in Exhibit 12.

9.0) Galaxy 17 Carrier Link Analysis

The operational co-frequency satellites nearest to the 91° WL orbital slot are Brasilsat B4, located 92° WL, Intelsat Americas 6, located at 93° WL, and Intelsat Americas 8, located at 89° WL.

Brasilsat B4 is operated by Star One and utilizes only C-band frequencies to provide service to Brazil and the surrounding area. Intelsat Americas 6 and Intelsat Americas 8 are operated by Intelsat and utilize both C and Ku-band frequencies to provide coverage of the U.S. The FCC license covering the operation of Intelsat Americas 6 is SAT-LOA-19950215-00017. The FCC filing for Intelsat Americas 8 specifies the use of C, Ku and Ka-band frequencies to provide coverage of the U.S. and South America. The FCC license covering the operation of Intelsat Americas 8 is SAT-MOD-19991102-00106.

At C-band and Ku-band frequencies, link analysis for Galaxy 17 was conducted for a number of representative carriers. For the analysis, it was assumed that the nearest satellites to Galaxy 17 were Intelsat Americas 6 (93° WL) and Intelsat Americas 8 (89° WL). At C-band, the impact to and from the operation of Brasilsat-B2 was not considered given that there is sufficient beam isolation between Galaxy 17 and Brasilsat B4.

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 stations have off-axis co-polar gains that are compliant with the limits specified in section 25.209(a)(1) of the FCC Regulations.
b) All transmitting and receiving Earth stations have a cross-polarization isolation value of at least 30 dB within their main beam lobe.
c) At C-band frequencies, degradation due to rain was not considered, given that rain (attenuation) effects are insignificant at C-band.
d) At Ku-band frequencies, rain attenuation predictions were derived using Recommendation ITU-R P.618-7.
e) At Ku-band frequencies, increase in noise temperature of the receiving Earth station due to rain is taken into account.
f) For the cases where the transponder operates in a multi-carrier mode, the effects due to intermodulation interference are taken into account.

The results of the analyses are shown in Exhibits 13A and 13B and demonstrate that operation of the Galaxy 17 satellite from 91° WL would permit the intended services to achieve their respective performance objectives while maintaining sufficient link margin.

10.0) Adjacent Satellite Link Analysis

Link analyses were also performed for Intelsat Americas 6 (93° WL) and Intelsat Americas 8 (89° WL) based on the proposed operation of Galaxy 17 from 91° WL. For Intelsat Americas 6, link calculations were performed for the carriers listed in the FCC license application SAT-LOA-19950215-00017. For Intelsat Americas 8, link calculations were performed for the carriers listed in the FCC license application SAT-MOD-19991102-00106. The assumptions made for the Galaxy 17 link analysis (as stated above) were also applied for the link studies of Intelsat Americas 6 and Intelsat Americas 8. In these studies, the adjacent satellite interference analysis is based on the emission levels for Galaxy 17 at 91° W.L. on one side and, on the other side is based on the emission levels that were considered in SAT-LOA-19950215-00017 (for Intelsat Americas 6) and in SAT-MOD-19991102-00106 (for Intelsat Americas 8).

The C-band link analysis only considered the impact of Galaxy 17 digital carriers. Specifically, at C-band it was assumed that the maximum Galaxy 17 uplink power density was –50.9 dBW/Hz and the maximum Galaxy 17 downlink EIRP density was –31.5 dBW/Hz. Similarly, the Ku-band analysis only considered the impact of Galaxy 17 digital carriers. At Ku-band, it was assumed that the maximum Galaxy 17 uplink power density was -50.3 dBW/Hz and the maximum Galaxy 17 downlink EIRP density was -23.5 dBW/Hz.

With regard to the C-band and Ku-band link analysis for Intelsat Americas 8 only the impact of the Galaxy 17 digital carriers on the Intelsat Americas 8 carriers associated with the NAFTA beams were considered. The impact on the Intelsat Americas 8 carriers associated with the South America beam was not considered given that there is sufficient beam isolation between Galaxy 17 and Intelsat Americas 8.

The impact of the Galaxy 17 TV/FM carrier, as listed in Exhibits 13A and 13B, on the transmissions of Intelsat Americas 6 and Intelsat Americas 8 was not considered for two primary reasons. First, in some cases the Galaxy 17 TV/FM carriers would be located at the center of the adjacent satellite's channel guard bands pursuant to section 25.211(a) of the FCC Rules. Hence, most of the energy of the TV/FM carrier would fall within the guard bands of the adjacent satellite transponders. The second reason was 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 coordination discussions with the adjacent satellite operator, rather than through C/I calculations – since the results of such calculations would show that narrow-band carriers typically could not operate on a co-frequency basis with TV/FM carriers. In this particular situation, coordination would be internal to the Intelsat system.

The results of the C-band and Ku-band link analysis for Intelsat Americas 6 operating at 93° WL are listed in Exhibits 14A and Exhibit 14B, respectively. The results of the C-band and Ku-band link analysis for Intelsat Americas 8 operating from 89° WL are listed in Exhibit 15A and 15B, respectively.

The results of the C-band and Ku-band analysis for Intelsat Americas 6 and Inteslat Americas 8 show that there will be some limited impact on the transmissions of these two spacecraft. However, coordination of Galaxy 11 transmissions with the Intelsat Americas 6 and Intelsat Americas 8 satellites will be conducted within the Intelsat system, as required.

11.0) Schedule S Submission

PanAmSat is providing with its application a Schedule S for the operations of Galaxy 17 from 91° WL. It is noted that the antenna gain pattern for the Galaxy 17 command and telemetry omni antennas were included in column "e" (instead of column "f") of section S8 of the Schedule S, since they are not in GXT format (see section 2.7.1).

The cross-polarization contours of the C-band and Ku-band communication beams are provided in column "f" of the Schedule S. The contour value listed with each contour represents the absolute level of cross-polarization isolation.

In column "g" of section S13 of the Schedule S, a link budget file has been included for the first link (i.e. the first of row of data) contained in that section. This link budget file is applicable to all of the links listed in section S13 and should have been included with each row of data in that section of the Schedule S. However, given that the link budget file is rather large and its inclusion with each link (or data row) would lead to the Schedule S file having an unmanageable size, all other links (or rows of data) contain a small ASCII file that references the link budget file that is attached to the first link (i.e. the link budget file attached to the first row of data).

12.0) 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:

12.1) 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.

12.2) 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 the removal of all stored energy on the spacecraft by depleting all propellant tanks, venting all pressurized systems, isolating the batteries from the spacecraft bus, and turning off all active units.

12.3) 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. Except as stated below, Galaxy 17 will not be located at the same orbital location as another satellite or at an orbital location that has an overlapping stationkeeping volume with another satellite.

The proposed orbital location for Galaxy 17 is 91° W.L. Except for Galaxy 11 that will move away from 91° W.L. after its traffic is transferred to Galaxy 17, 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 stationkeeping volume

with Galaxy 17. Intelsat is also not aware of any system with an overlapping stationkeeping volume with Galaxy 17 that is the subject of an ITU filing and that is either in orbit or progressing towards launch.

12.4) Post Mission Disposal

At the end of the mission, Intelsat will dispose of the spacecraft by moving it to a minimum altitude of 300 kilometers above the geostationary arc. This exceeds the minimum altitude established by the IADC formula. Intelsat has reserved 9.5 kilograms of fuel for this purpose. The reserved fuel figure was determined by the spacecraft manufacturer and provided for in the propellant budget. To calculate this figure, the manufacturer used the "rocket equation", *i.e.*, it plugged in the expected mass of the satellite at the end of life and the required delta-velocity to achieve the desired orbit. Intelsat has assessed the fuel gauging uncertainty and has provided an adequate margin of fuel reserve to address the assessed uncertainty in remaining propellant.

In calculating the disposal orbit, Intelsat has used simplifying assumptions as permitted under the Commission's Orbital Debris Report and Order. For reference, the effective area to mass ratios (Cr*A/M) of the Galaxy 17 spacecraft is 0.04 m^2/kg, resulting in a minimum perigee disposal altitude under the IADC formula of at most 280.4 kilometers above the geostationary arc, which is lower than the 300 kilometer above geostationary disposal altitude specified by Intelsat in this filing. Accordingly, the Galaxy 17 planned disposal orbit complies with the FCC's rules.

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 Technica Exhibit were prepared by me or under my direct supervision and to the best of my knowledge are complete and accurate.

/s/ Jose Albuquerque	December 18, 2006
Jose Albuquerque Intelsat Senior Director, Spectrum Engineering	Date

EXHIBIT 1: SPACECRAFT CONFIGURATION

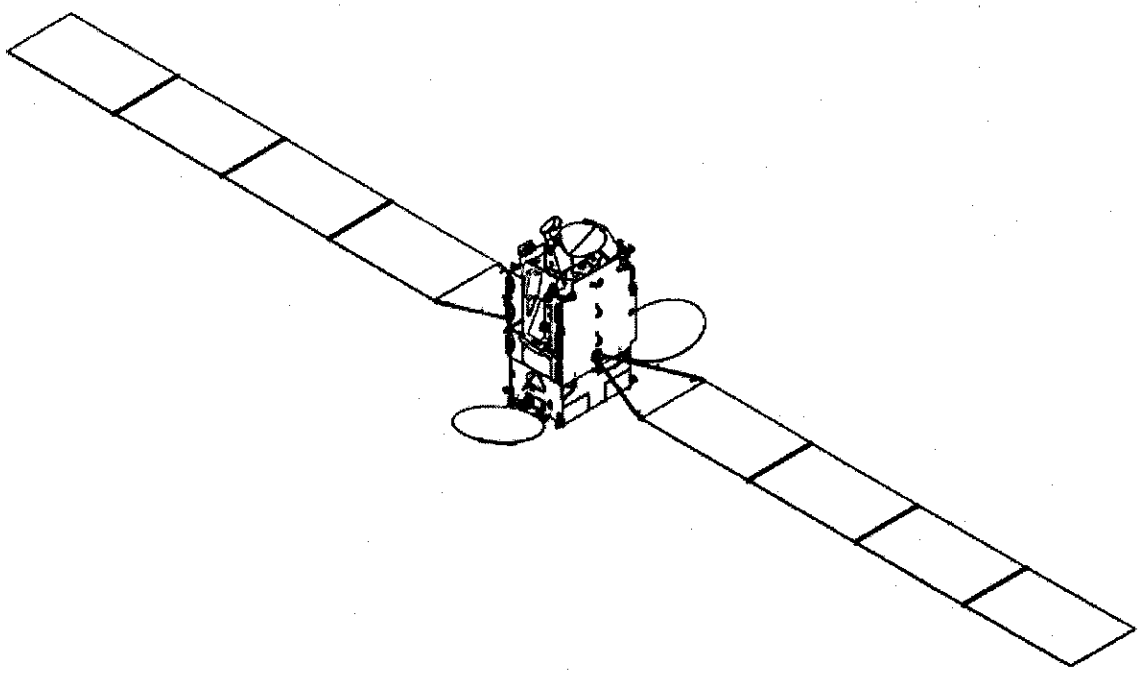


EXHIBIT 2: SUMMARY OF SPACECRAFT CHARACTERISTICS

GENERAL	
Spacecraft Name	Galaxy 17
Orbital Location	91° WL
Spacecraft Manufacturer	Alcatel Alenia Space
Spacecraft Model	SPACEBUS 3000B3
Spacecraft Type	3-axis stabilized
Spacecraft Launch Date	April-July 2007
Spacecraft Dimensions	
Length	5.3 meters
Width	3.3 meters
Depth	2.3 meters
Spacecraft Mass	
Mass w/o fuel	1777 kg
Mass w/ fuel (at launch)	4100 kg
Spacecraft Expected Lifetime	>15 years
Eclipse Capability	100%
Station-keeping	
North-South	±0.05°
East-West	±0.05°
Antenna Pointing Accuracy (Assumed station-keeping accuracy of ±0.05° in north-south and east-west directions)	
North-South	0.12°
East-West	0.12°
Rotational	0.28°
Spacecraft Reliability	75.2%
Payload Reliability	93.8%
Bus Reliability	80.2%
Propulsion Type	Bi-propellant
Maximum Solar Array Power	
Beginning of Life	10738 Watts
End of Life	8891 Watts
Deployed Area of Solar Array	66 meters^2

EXHIBIT 2: SUMMARY OF SPACECRAFT CHARACTERISTICS
(continued)

COMMUNICATION	
Frequency Bands	
C-band Uplink	5925 – 6425 MHz
C-band Downlink	3700 – 4200 MHz
Ku-band Uplink	14000 – 14500 MHz
Ku-band Downlink	11700 – 12200 MHz
Polarization	
C-band Uplink	Linear Horizontal / Linear Vertical
C-band Downlink	Linear Horizontal / Linear Vertical
Ku-band Uplink	Linear Horizontal / Linear Vertical
Ku-band Downlink	Linear Horizontal / Linear Vertical
Coverage Area	
C-band Uplink	Conus, Hawaii, Portions of Canada and Mexico
C-band Downlink	Conus, Hawaii, Portions of Canada and Mexico
Ku-band Uplink	Conus, Hawaii, Puerto Rico, Portion of Canada
Ku-band Downlink	Conus, Hawaii, Puerto Rico, Portion of Canada
Beam Cross-Polarization Isolation	
C-band Uplink	> 27 dB
C-band Downlink	> 25 dB
Ku-band Uplink	> 30 dB
Ku-band Downlink	> 29 dB
Number of Channels	
C-band	24
Ku-band	24
Communication Channel Bandwidth	
C-Band	36 MHz
Ku-band	36 MHz

EXHIBIT 2: SUMMARY OF SPACECRAFT CHARACTERISTICS
(continued)

COMMUNICATION	
Maximum Downlink EIRP	
C-band Beam	
Conus (Horizontal Polarization)	43.3 dBW
Conus (Vertical Polarization)	43.3 dBW
Ku-band	
Conus (Horizontal Polarization)	51.3 dBW
Conus (Vertical Polarization)	51.3 dBW
Maximum Uplink G/T	
C-band	
Conus (Horizontal Polarization)	5.2 dB/K
Conus (Vertical Polarization)	5.2 dB/K
Ku-band	
Conus (Horizontal Polarization)	7.1 dB/K
Conus (Vertical Polarization)	7.1 dB/K
Uplink SFD Range @ Maximum G/T	
C-band	
Conus (Horizontal Polarization)	-114.2 to -67.2 dBW/m^2
Conus (Vertical Polarization)	-114.2 to -67.2 dBW/m^2
Ku-band	
Conus (Horizontal Polarization)	-119.1 to -72.1 dBW/m^2
Conus (Vertical Polarization)	-119.1 to -72.1 dBW/m^2
Transponder Attenuator Range	
C-band	47 dB in 1 dB increments
Ku-band	47 dB in 1 dB increments
Transponder Gain	
C-band Uplink to C-band Downlink	
Conus (H-Pol. Up) / Conus (V-Pol. Dn.)	134.5 to 87.5 dB
Conus (V-Pol. Up) / Conus (H-Pol. Dn.)	134.5 to 87.5 dB
Ku-band Uplink to Ku-band Downlink	
Conus (H-Pol. Up) / Conus (V-Pol. Dn.)	148.1 to 101.1 dB
Conus (V-Pol. Up) / Conus (H-Pol. Dn.)	148.1 to 101.1 dB

EXHIBIT 2: SUMMARY OF SPACECRAFT CHARACTERISTICS
(continued)

COMMUNICATION	
Unit Redundancy	
C-band Receiver	4 for 2
C-band Amplifier	30 for 24
Ku-band Receiver	4 for 2
Ku-band Amplifier	32 for 24
Maximum Power of Last Amplifier Stage	
C-band	47 Watts
Ku-band	111.5 and 107 Watts
Transmit Frequency Stability	
C-band	< 0.002%
Ku-band	< 0.002%

EXHIBIT 2: SUMMARY OF SPACECRAFT CHARACTERISTICS
(continued)

TELEMETRY, COMMAND & RANGING	
Command Frequency	
Transfer Orbit / Emergency	5925.5 / 6424.5 MHz
On-Station	5925.5 / 6424.5 MHz
Command Polarization	
Transfer Orbit	Left Hand Circular / Right Hand Circular
On-Station	Horizontal / Vertical
Command Carrier Modulation	FM
Command Carrier Bandwidth	
Occupied Bandwidth	860 kHz
Allocated Bandwidth	1000 kHz
Command Antennas	
Transfer Orbit	Omni Antenna
On-Station	Reflector
Command Threshold at Beam Peak	
Transfer Orbit / Emergency	-105.3 dBW/m^2
On-Station	-122.5 dBW/m^2
Command G/T at Beam Peak	
Transfer Orbit / Emergency	-25.9 dB/K
On-Station	-8.9 dB/K
Telemetry Frequency	
Transfer Orbit / Emergency	4197.125 / 4198.875 MHz
On-Station	4197.125 / 4198.875 MHz
Telemetry Polarization	
Transfer Orbit / Emergency	Left Hand Circular / Right Hand Circular
On-Station	Horizontal / Horizontal
Telemetry Modulation	PM
Telemetry Carrier Occupied Bandwidth	
Occupied Bandwidth	72 kHz
Allocated Bandwidth	500 kHz
Telemetry Antenna	
Transfer Orbit / Emergency	Omni Antenna
On-Station	Reflector
Telemetry Frequency Stability	< 0.002%

EXHIBIT 2: SUMMARY OF SPACECRAFT CHARACTERISTICS
(continued)

TELEMETRY, COMMAND & RANGING	
Telemetry EIRP at Beam Peak	
Transfer Orbit / Emergency	17.2 dBW
On-Station	17.8 dBW
Ranging Accuracy	< 30 meters

EXHIBIT 2: SUMMARY OF SPACECRAFT CHARACTERISTICS
(continued)

ULPC	
Frequency	11701/ 12195 MHz
Polarization	Vertical / Horizontal
Coverage Area	Conus, Hawaii, Puerto Rico, Portion of Canada
Beam Cross-Polarization Isolation	> 29 dB
Number of channels	2
Channel Bandwidth	< 25 kHz
Maximum Downlink EIRP	
Horizontal Polarization	25.4 dBW
Vertical Polarization	25.4 dBW
Frequency Stability	< 0.002%

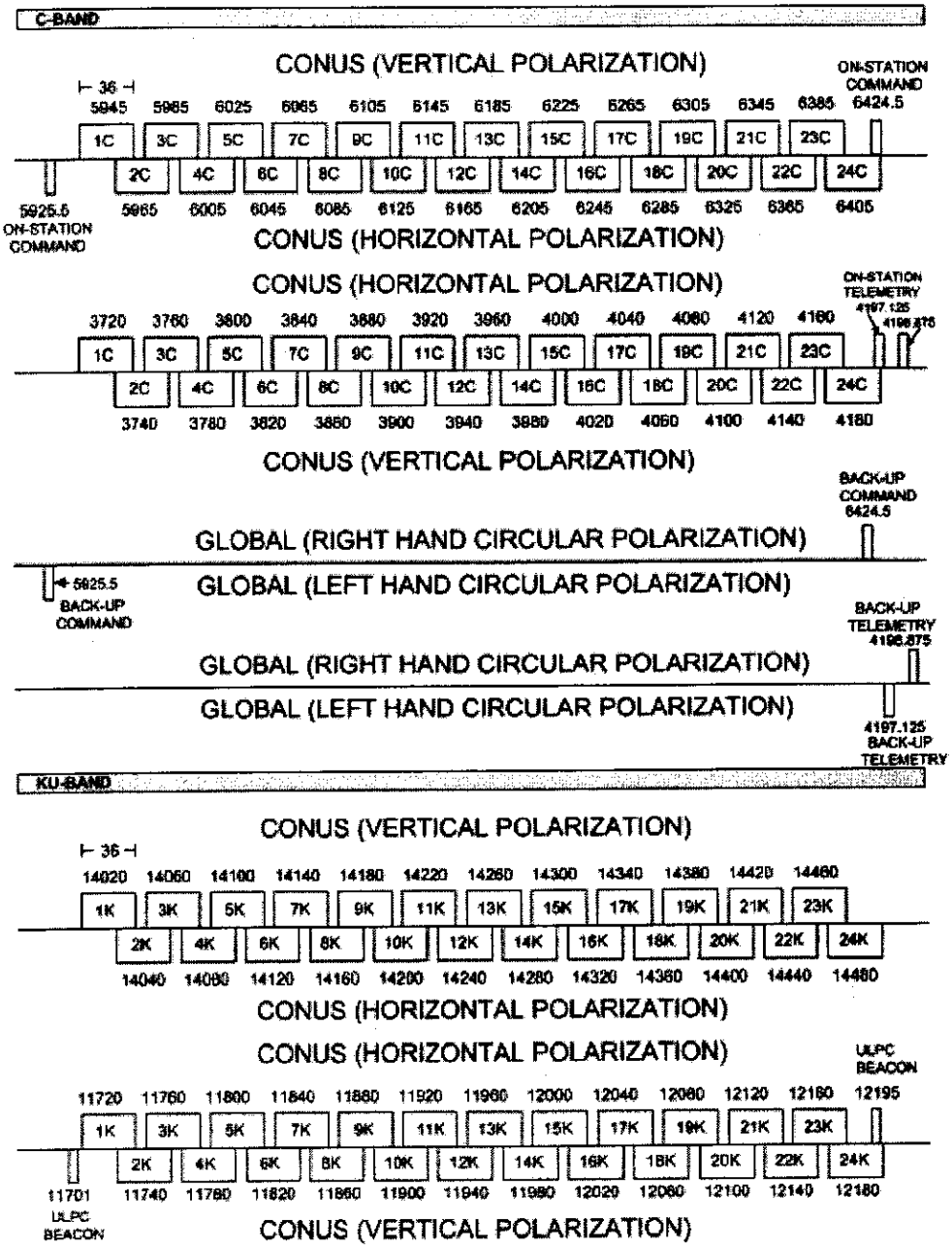
EXHIBIT 3: SPACECRAFT MASS BUDGET

Mass of Spacecraft without Fuel (kg)	1777
Mass of Fuel and Disposables (kg)	2323
Launch Mass (kg)	4100
Mass of Fuel, in orbit, at Beginning of Life (kg)	707

EXHIBIT 4: SPACECRAFT POWER BUDGET

	BEGINNING OF LIFE		END OF LIFE	
	AUTUMN EQUINOX	SUMMER SOLSTICE	AUTUMN EQUINOX	SUMMER SOLSTICE
PAYLOAD (WATTS)	6187	6187	6187	6187
BUS (WATTS)	1713	921	1713	921
TOTAL POWER (WATTS)	7900	7108	7900	7108
SOLAR ARRAY POWER (WATTS)	10738	9603	8891	8043
DEPTH OF BATTERY DISCHARGE (%)	64	N/A	61	N/A

EXHIBIT 5A: FREQUENCY PLAN



NOTES:
1) ALL FREQUENCIES ARE IN MEGAHERTZ.
2) WITH THE EXCEPTION OF THE CIRCULARLY POLARIZED TELEMETRY AND COMMAND CHANNELS, THE POLARIZATION OF ALL CHANNELS MAY BE SWITCHED THROUGH GROUND COMMAND.

EXHIBIT 5B: 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)
1C	CONUS	VERTICAL	5945	1C	CONUS	HORIZONTAL	3720	36	134.5
3C	CONUS	VERTICAL	5985	3C	CONUS	HORIZONTAL	3760	36	134.5
5C	CONUS	VERTICAL	6025	5C	CONUS	HORIZONTAL	3800	36	134.5
7C	CONUS	VERTICAL	6065	7C	CONUS	HORIZONTAL	3840	36	134.5
9C	CONUS	VERTICAL	6105	9C	CONUS	HORIZONTAL	3880	36	134.5
11C	CONUS	VERTICAL	6145	11C	CONUS	HORIZONTAL	3920	36	134.5
13C	CONUS	VERTICAL	6185	13C	CONUS	HORIZONTAL	3960	36	134.5
15C	CONUS	VERTICAL	6225	15C	CONUS	HORIZONTAL	4000	36	134.5
17C	CONUS	VERTICAL	6265	17C	CONUS	HORIZONTAL	4040	36	134.5
19C	CONUS	VERTICAL	6305	19C	CONUS	HORIZONTAL	4080	36	134.5
21C	CONUS	VERTICAL	6345	21C	CONUS	HORIZONTAL	4120	36	134.5
23C	CONUS	VERTICAL	6385	23C	CONUS	HORIZONTAL	4160	36	134.5
2C	CONUS	HORIZONTAL	5965	2C	CONUS	VERTICAL	3740	36	134.5
4C	CONUS	HORIZONTAL	6005	4C	CONUS	VERTICAL	3780	36	134.5
6C	CONUS	HORIZONTAL	6045	6C	CONUS	VERTICAL	3820	36	134.5
8C	CONUS	HORIZONTAL	6085	8C	CONUS	VERTICAL	3860	36	134.5
10C	CONUS	HORIZONTAL	6125	10C	CONUS	VERTICAL	3900	36	134.5
12C	CONUS	HORIZONTAL	6165	12C	CONUS	VERTICAL	3940	36	134.5
14C	CONUS	HORIZONTAL	6205	14C	CONUS	VERTICAL	3980	36	134.5
16C	CONUS	HORIZONTAL	6245	16C	CONUS	VERTICAL	4020	36	134.5
18C	CONUS	HORIZONTAL	6285	18C	CONUS	VERTICAL	4060	36	134.5
20C	CONUS	HORIZONTAL	6325	20C	CONUS	VERTICAL	4100	36	134.5
22C	CONUS	HORIZONTAL	6365	22C	CONUS	VERTICAL	4140	36	134.5
24C	CONUS	HORIZONTAL	6405	24C	CONUS	VERTICAL	4180	36	134.5
COMMAND 1	CONUS	HORIZONTAL	5925.5	-	-	-	-	1	N/A
COMMAND 2	CONUS	VERTICAL	6424.5	-	-	-	-	1	N/A
COMMAND 3	GLOBAL	LEFT HAND CIRCULAR	5925.5	-	-	-	-	1	N/A
COMMAND 4	GLOBAL	RIGHT HAND CIRCULAR	6424.5	-	-	-	-	1	N/A
-	-	-	-	TELEMETRY 1	CONUS	HORIZONTAL	4197.125	0.500	N/A
-	-	-	-	TELEMETRY 2	CONUS	HORIZONTAL	4198.875	0.500	N/A
-	-	-	-	TELEMETRY 3	GLOBAL	LEFT HAND CIRCULAR	4197.125	0.500	N/A
-	-	-	-	TELEMETRY 4	GLOBAL	RIGHT HAND CIRCULAR	4198.875	0.500	N/A

Note: With the exception of the circularly polarized telemetry and command channels, the polarization of all C-band channels may be switched through ground command.

EXHIBIT 5B: FREQUENCY ASSIGNMENTS (continued)

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	CONUS	VERTICAL	14020	1K	CONUS	HORIZONTAL	11720	36	148.1
3K	CONUS	VERTICAL	14060	3K	CONUS	HORIZONTAL	11760	36	148.1
5K	CONUS	VERTICAL	14100	5K	CONUS	HORIZONTAL	11800	36	148.1
7K	CONUS	VERTICAL	14140	7K	CONUS	HORIZONTAL	11840	36	148.1
9K	CONUS	VERTICAL	14180	9K	CONUS	HORIZONTAL	11880	36	148.1
11K	CONUS	VERTICAL	14220	11K	CONUS	HORIZONTAL	11920	36	148.1
13K	CONUS	VERTICAL	14260	13K	CONUS	HORIZONTAL	11960	36	148.1
15K	CONUS	VERTICAL	14300	15K	CONUS	HORIZONTAL	12000	36	148.1
17K	CONUS	VERTICAL	14340	17K	CONUS	HORIZONTAL	12040	36	148.1
19K	CONUS	VERTICAL	14380	19K	CONUS	HORIZONTAL	12080	36	148.1
21K	CONUS	VERTICAL	14420	21K	CONUS	HORIZONTAL	12120	36	148.1
23K	CONUS	VERTICAL	14460	23K	CONUS	HORIZONTAL	12160	36	148.1
2K	CONUS	HORIZONTAL	14040	2K	CONUS	VERTICAL	11740	36	148.1
4K	CONUS	HORIZONTAL	14080	4K	CONUS	VERTICAL	11780	36	148.1
6K	CONUS	HORIZONTAL	14120	6K	CONUS	VERTICAL	11820	36	148.1
8K	CONUS	HORIZONTAL	14160	8K	CONUS	VERTICAL	11860	36	148.1
10K	CONUS	HORIZONTAL	14200	10K	CONUS	VERTICAL	11900	36	148.1
12K	CONUS	HORIZONTAL	14240	12K	CONUS	VERTICAL	11940	36	148.1
14K	CONUS	HORIZONTAL	14280	14K	CONUS	VERTICAL	11980	36	148.1
16K	CONUS	HORIZONTAL	14320	16K	CONUS	VERTICAL	12020	36	148.1
18K	CONUS	HORIZONTAL	14360	18K	CONUS	VERTICAL	12060	36	148.1
20K	CONUS	HORIZONTAL	14400	20K	CONUS	VERTICAL	12100	36	148.1
22K	CONUS	HORIZONTAL	14440	22K	CONUS	VERTICAL	12140	36	148.1
24K	CONUS	HORIZONTAL	14480	24K	CONUS	VERTICAL	12180	36	148.1
				ULPC 1	CONUS	VERTICAL	11701	0.025	N/A
				UPLC 2	CONUS	HORIZONTAL	12195	0.025	N/A

Note: The polarization of all Ku-band channels and the ULPC channels may be switched through ground command.

EXHIBIT 6A: C-BAND RECEIVE BEAM
(Schedule S Beam ID: CUP)

GALAXY 17: C-BAND RECEIVE BEAM
PEAK ANTENNA GAIN: 31.7 dBi
PEAK G/T: 5.2 dB/K
SFD RANGE AT PEAK G/T: -114.2 TO -67.2 dBW/m2

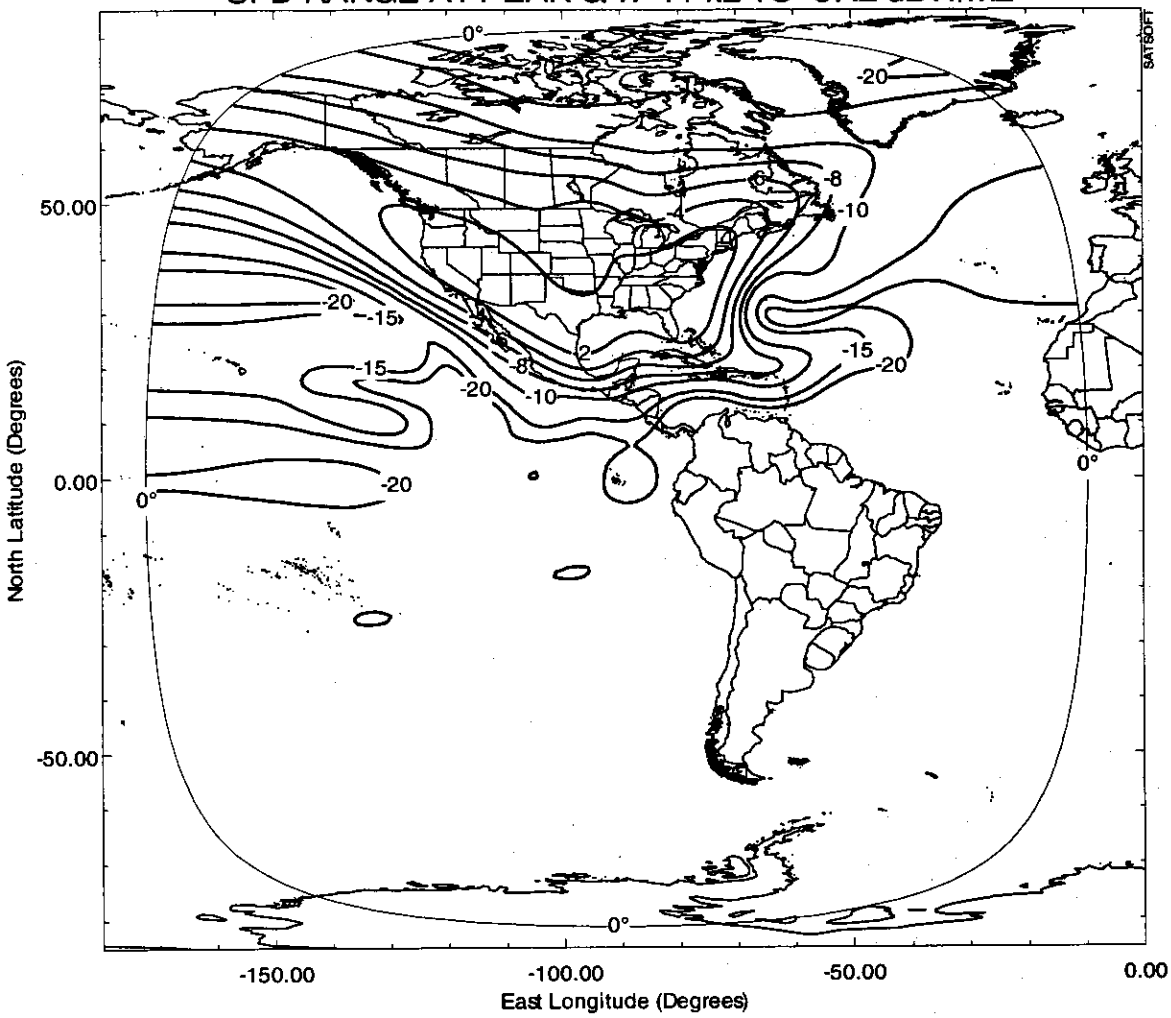


EXHIBIT 6B: C-BAND TRANSMIT BEAM
(Schedule S Beam ID: CDN)

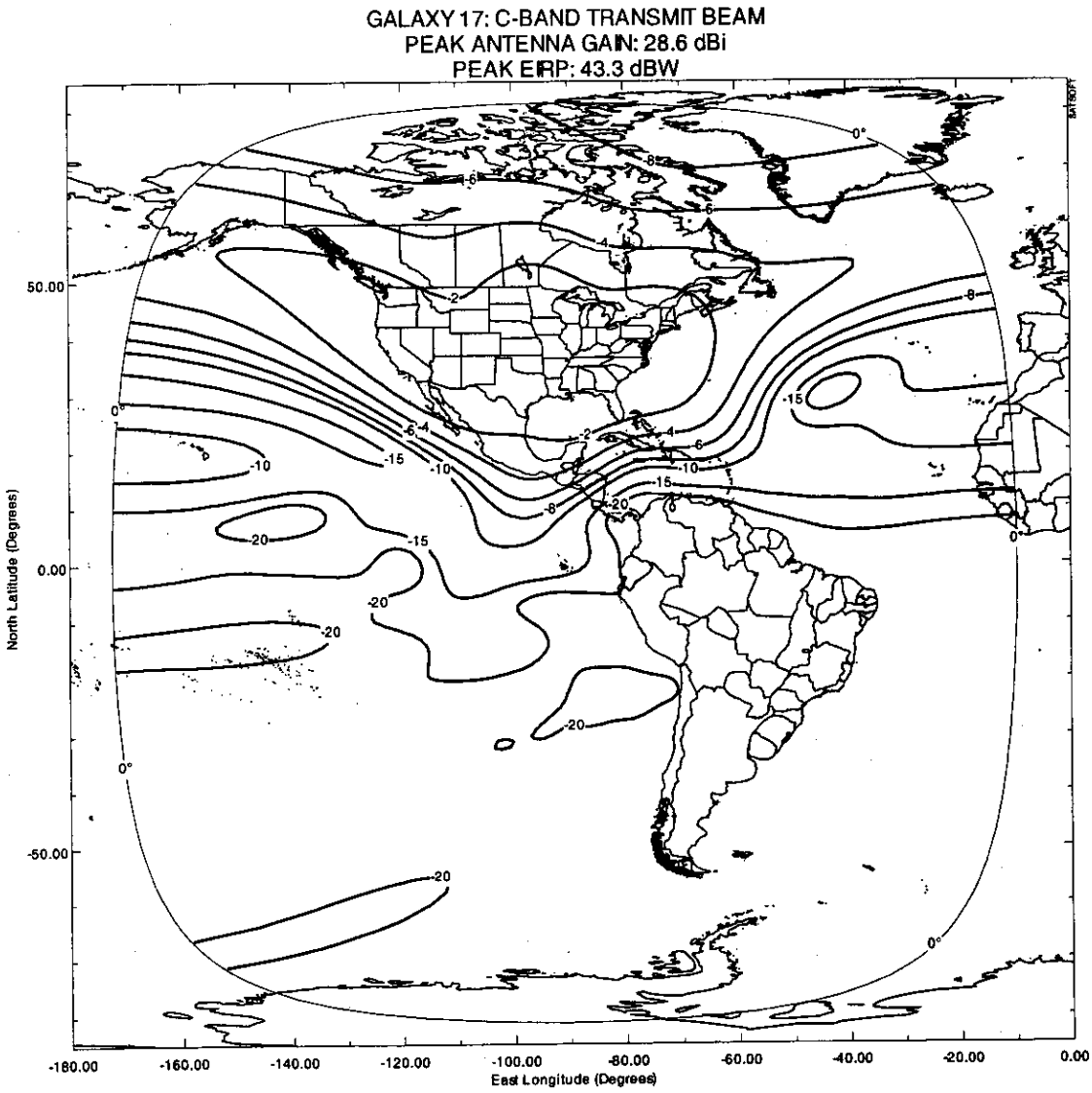


EXHIBIT 6C: Ku-BAND RECEIVE BEAM
(Schedule S Beam ID: KUP)

GALAXY 17 : KU-BAND RECEIVE BEAM
PEAK ANTENNA GAIN: 33.7 dBi
PEAK G/T: 7.1 dB/K
SFD RANGE AT PEAK G/T: -119.1 TO -72.1 dBW/m2

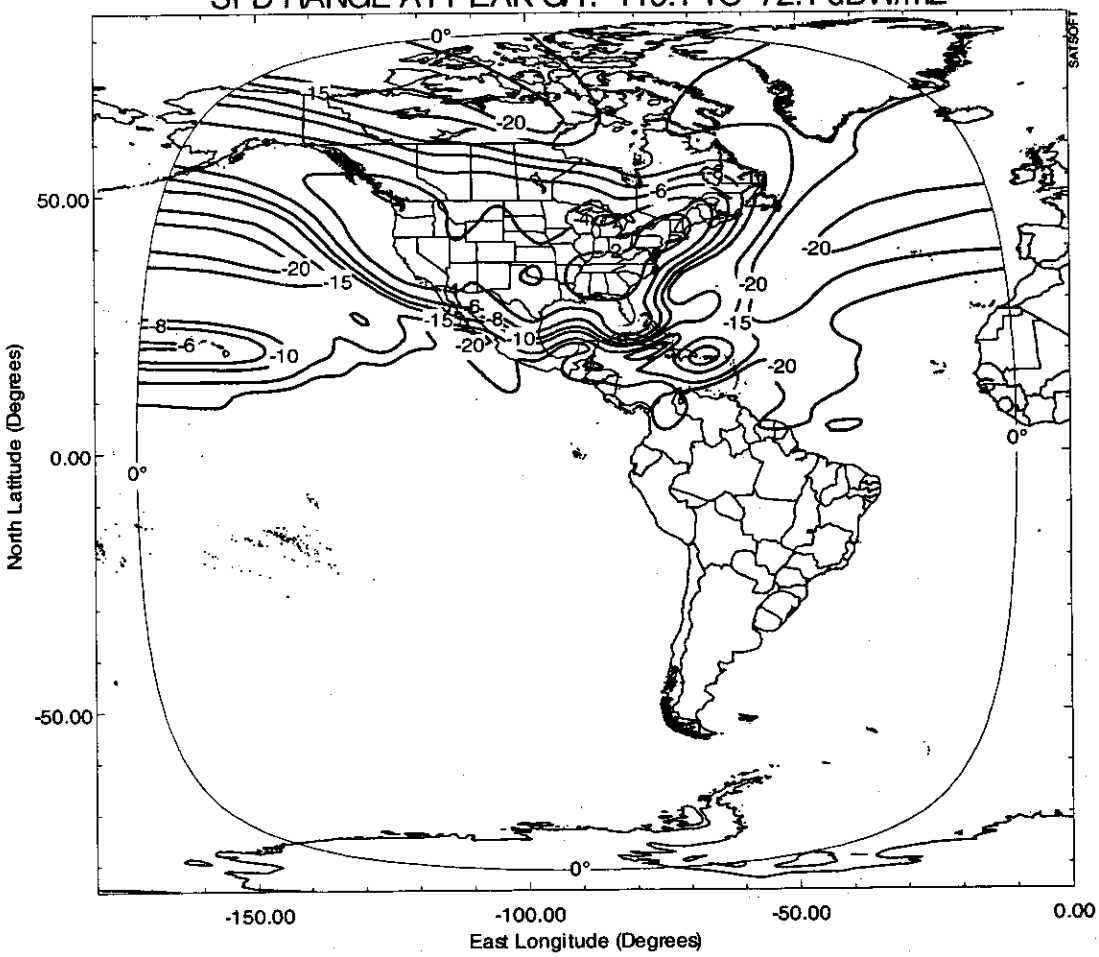


EXHIBIT 6D: Ku-BAND TRANSMIT BEAM
(Schedule S Beam ID: KDN)

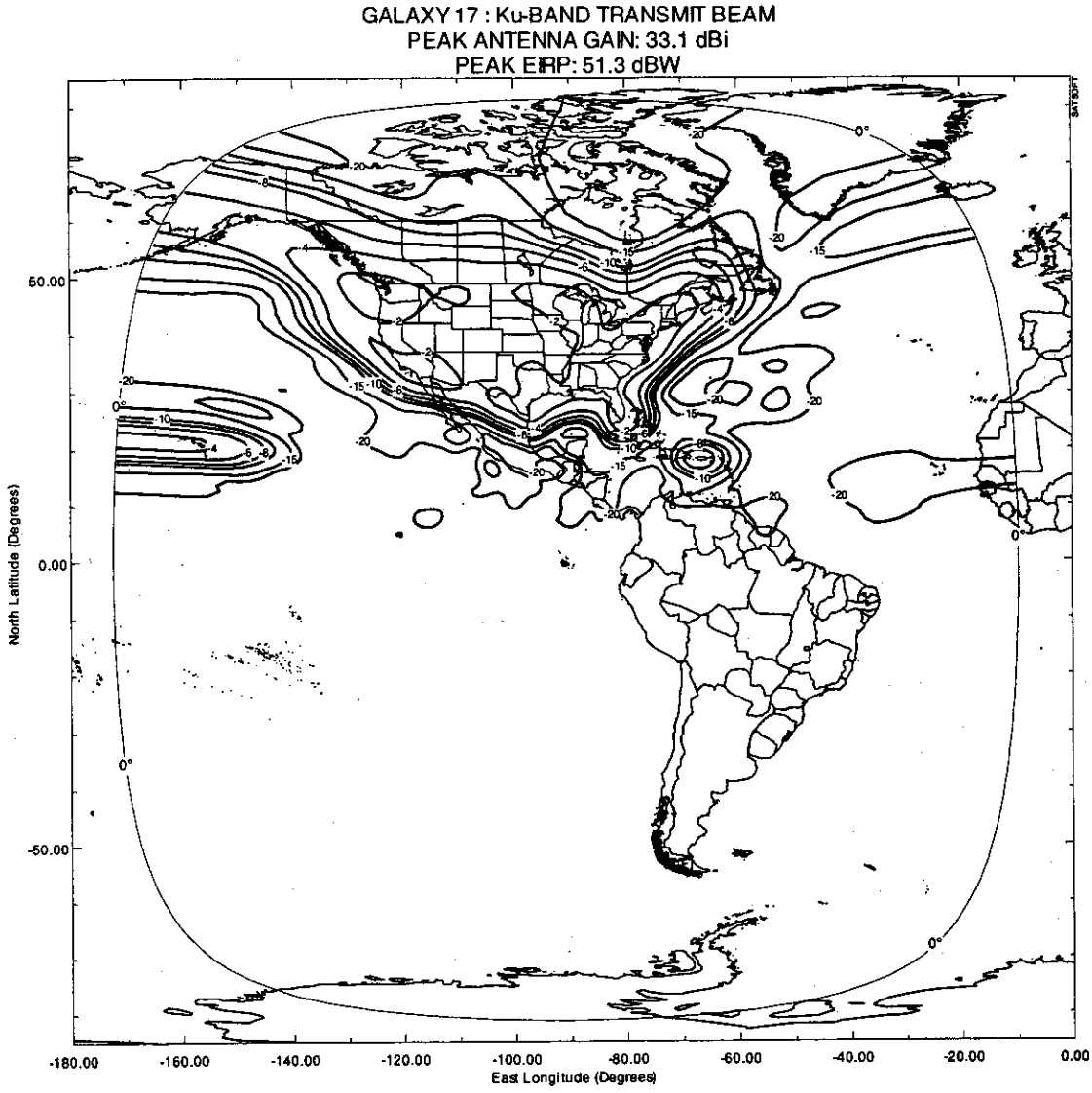


EXHIBIT 6E: Ku-BAND ULPC BEAM
(Schedule S Beam ID: UPC)

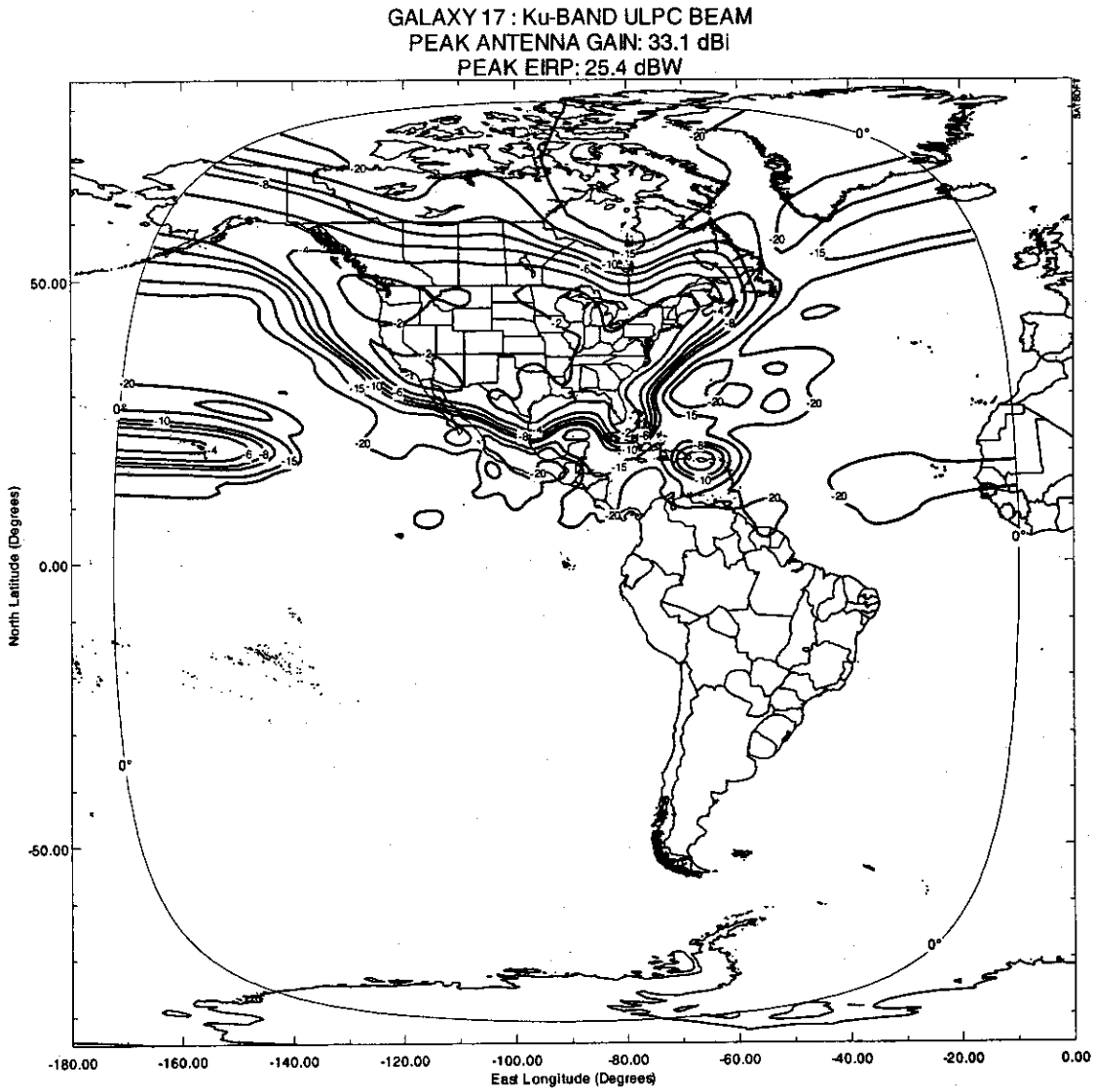


EXHIBIT 6F: C-BAND COMMAND BEAM (ON-STATION)
(Schedule S Beam ID: CMD)

GALAXY 17: C-BAND COMMAND RECEIVE BEAM
PEAK ANTENNA GAIN: 31.7 dBi
PEAK G/T: -8.9 dB/K
COMMAND THRESHOLD FLUX DENSITY AT BEAM PEAK: -122.5 dBW/m2

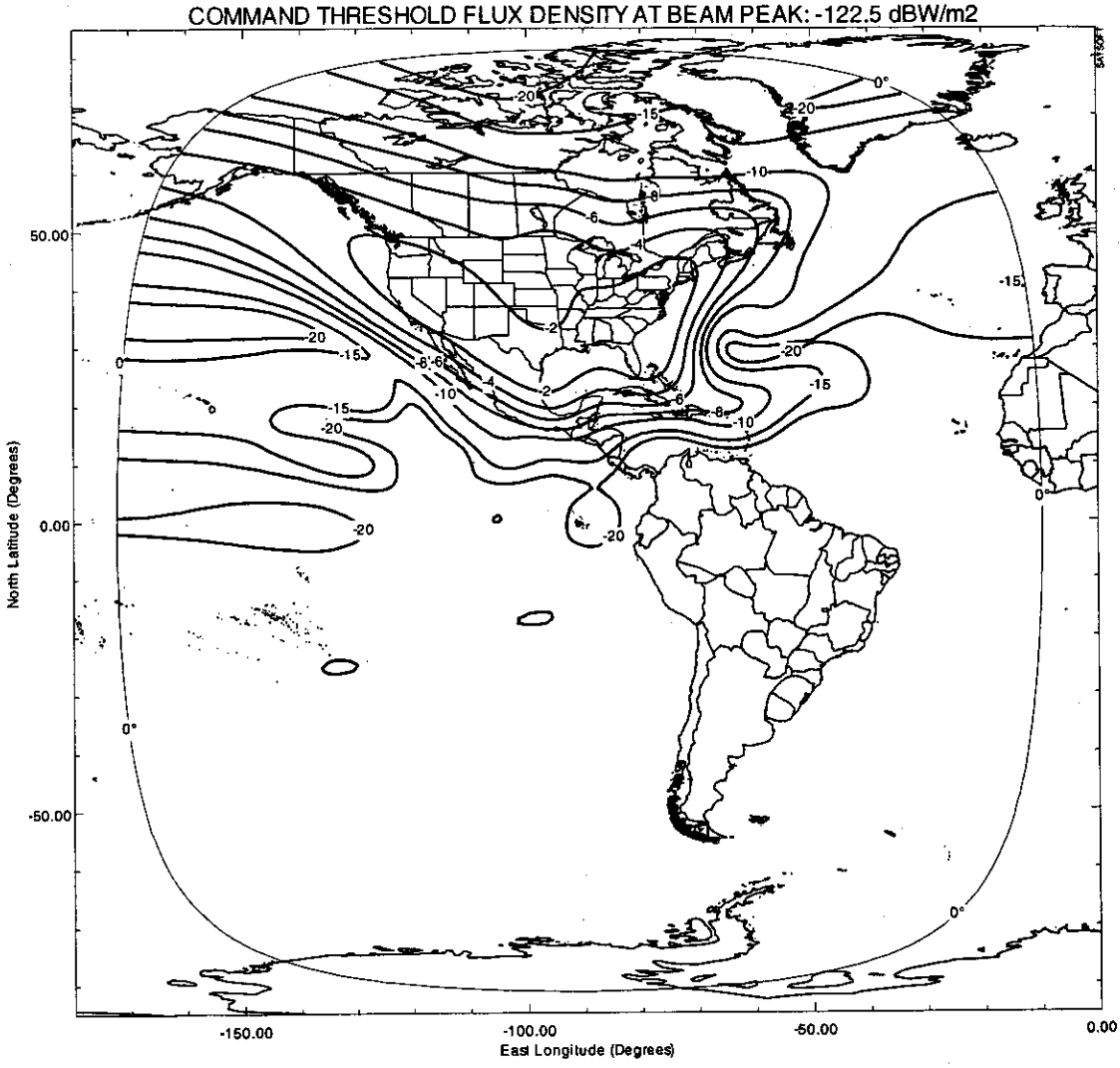
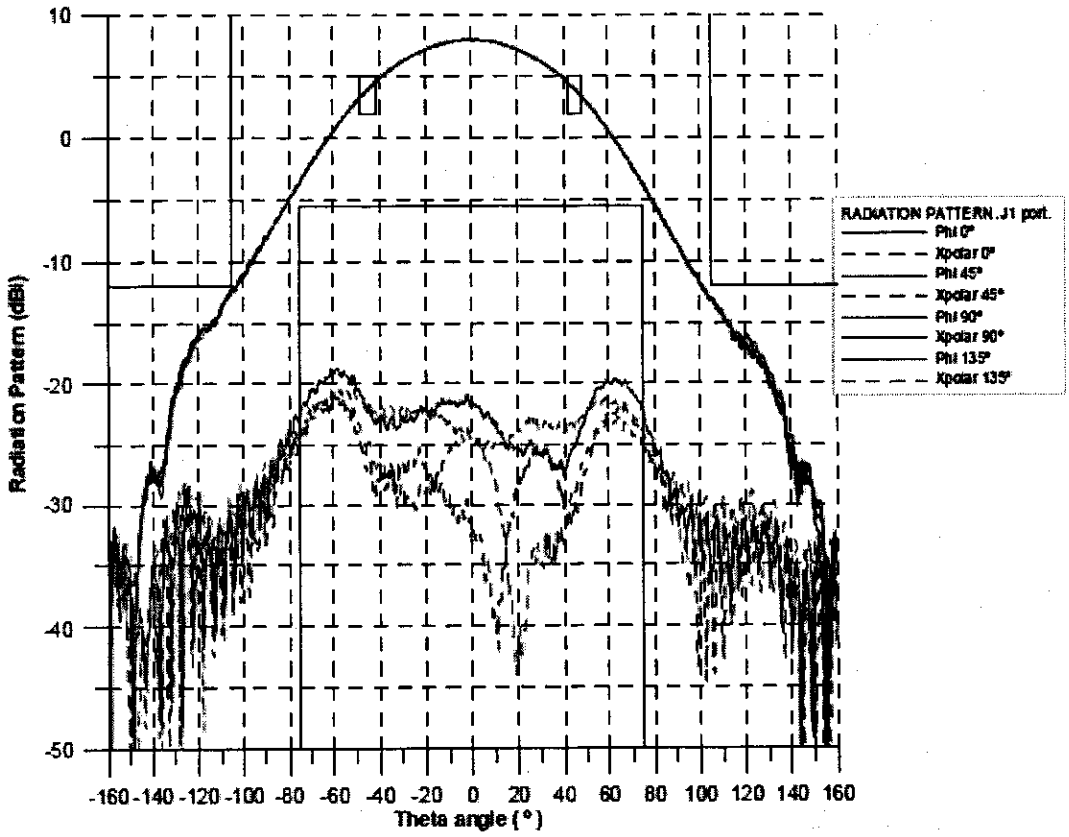


EXHIBIT 6G: C-BAND COMMAND BEAM
(BACK-UP and TRANSFER ORBIT)
(Schedule S Beam ID: OCMD)



Peak Antenna Gain: 8.0 dBi
Peak G/T: -25.9 dB/K
Command Threshold at Peak G/T: -105.3 dBW/m^2
Beam Polarization: Left Hand Circular / Right Hand Circular

EXHIBIT 6H: C-BAND TELEMETRY BEAM (ON-STATION)
(Schedule S Beam ID: TLM)

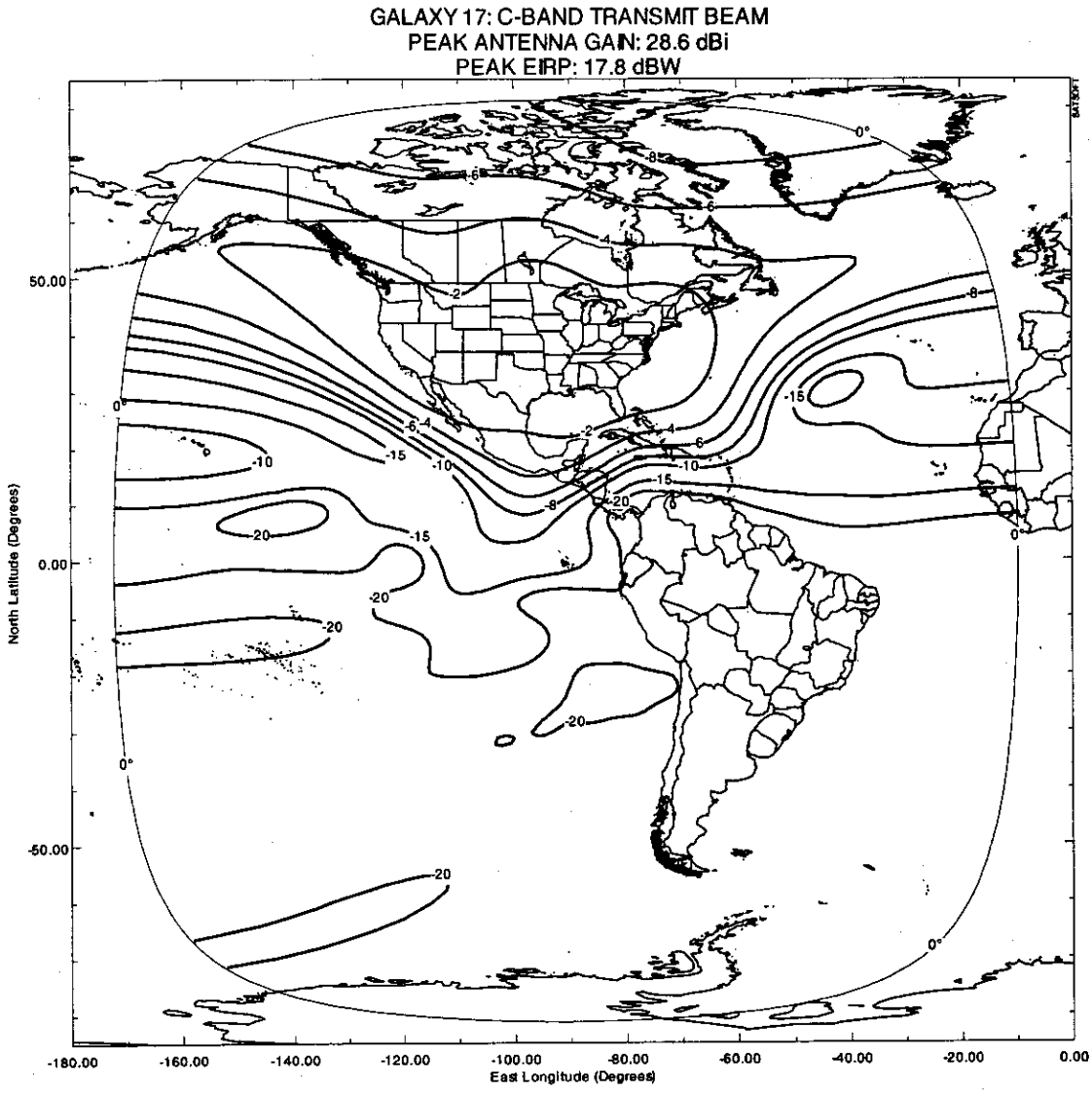
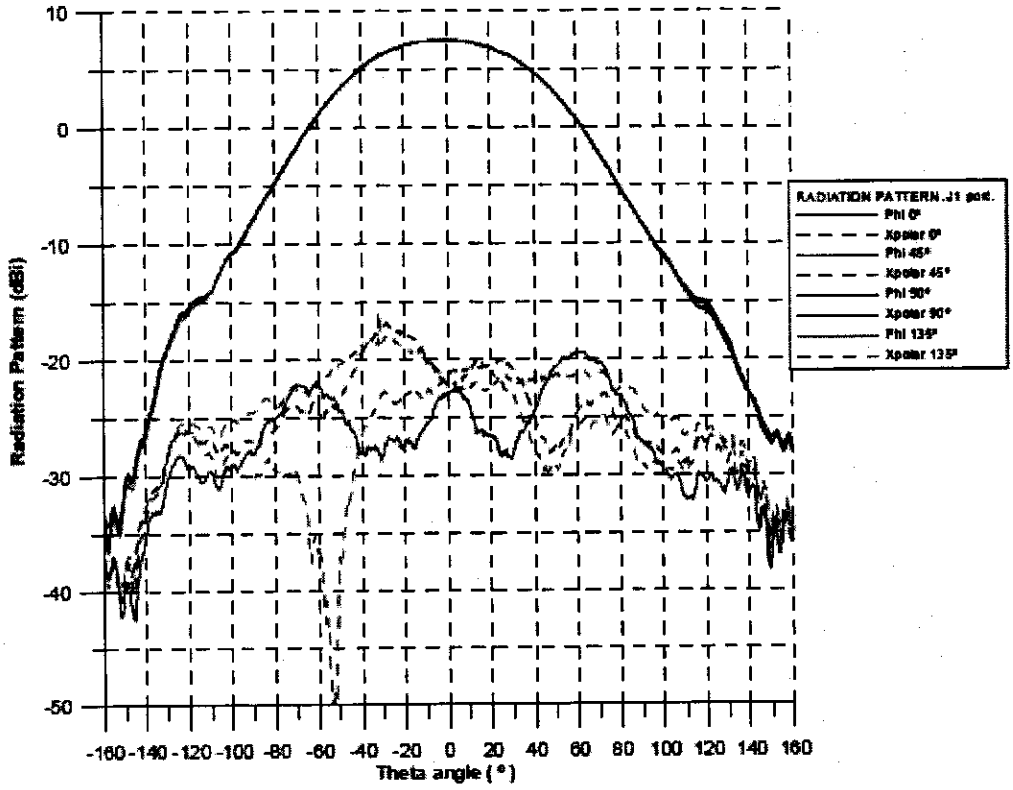


EXHIBIT 6I: C-BAND TELEMETRY BEAM
(BACK-UP and TRANSFER ORBIT)
(Schedule S Beam ID: OTLM)



Peak Antenna Gain: 7.8 dBi
Peak EIRP: 17.2 dBW
Beam Polarization: Left Hand Circular / Right Hand Circular

EXHIBIT 6J: C-BAND RECEIVE BEAM CROSS-POLARIZATION PATTERN (Schedule S Beam ID: CUP)

GALAXY 17: C-BAND RECEIVE BEAM
CROSS-POLARIZATION CONTOURS

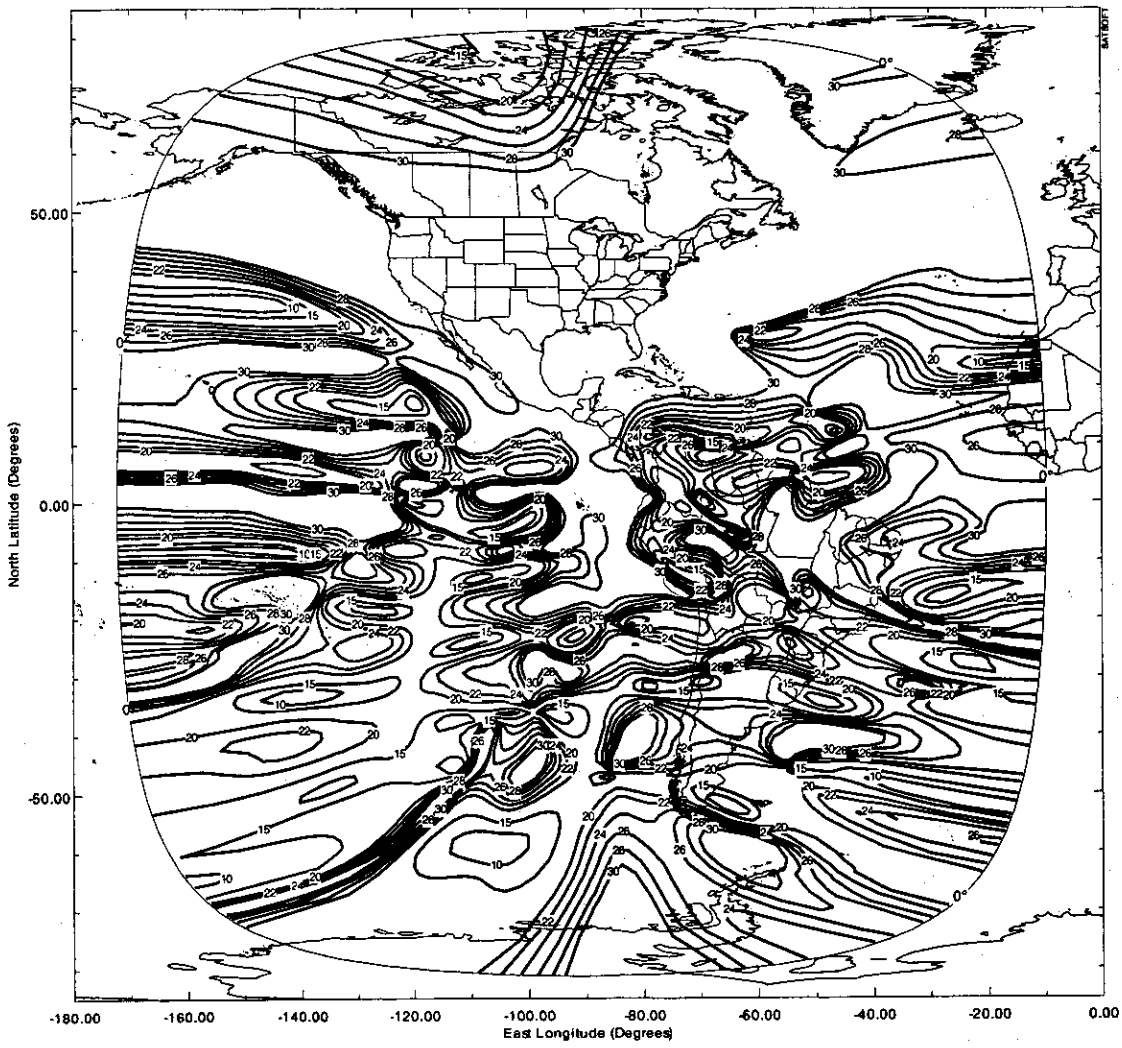


EXHIBIT 6K: C-BAND TRANSMIT BEAM CROSS-POLARIZATION PATTERN (Schedule S Beam ID: CDN)

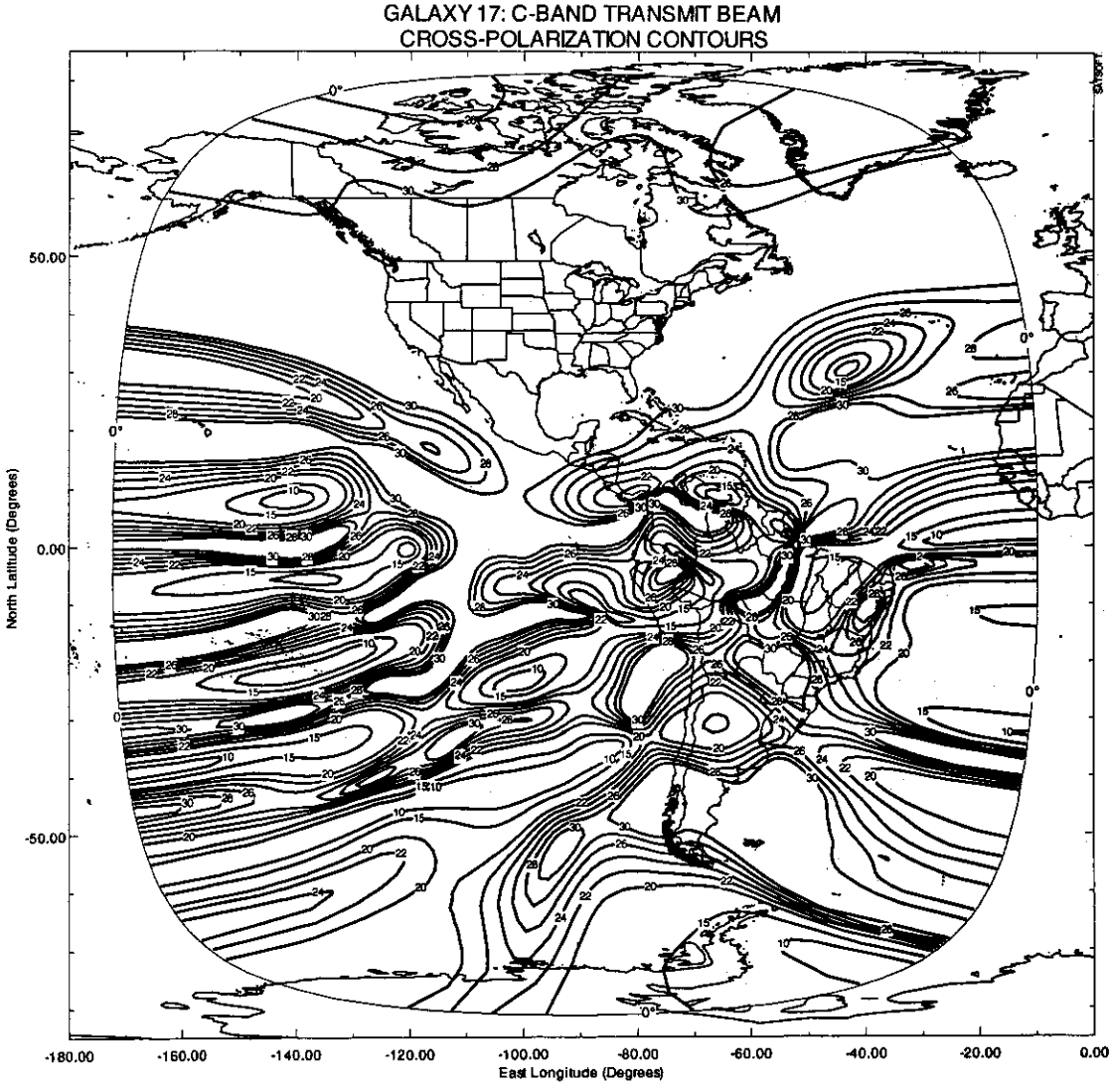


EXHIBIT 6L: Ku-BAND RECEIVE BEAM CROSS-POLARIZATION PATTERN (Schedule S Beam ID: KUP)

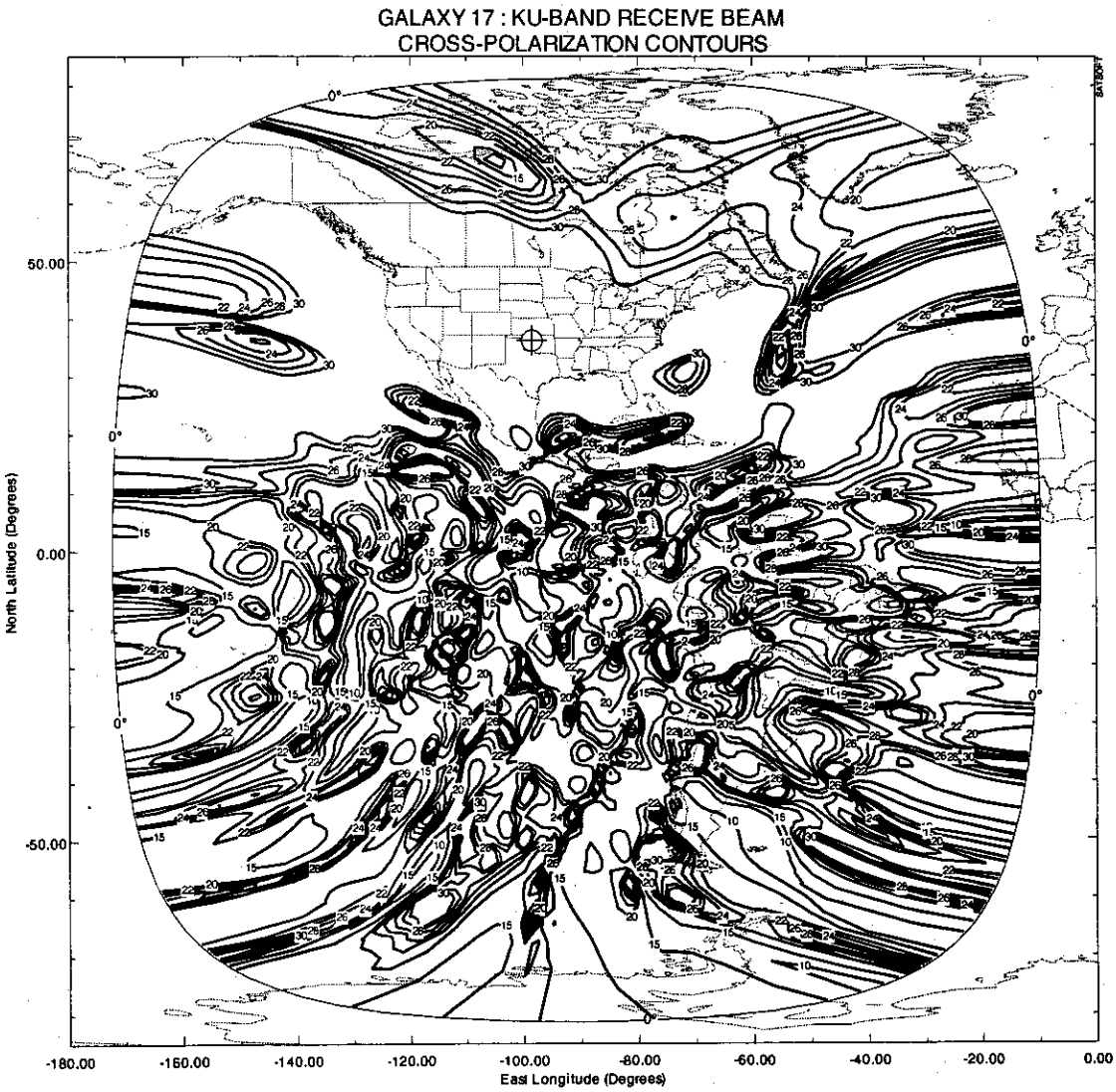


EXHIBIT 6M: Ku-BAND TRANSMIT BEAM CROSS-POLARIZATION PATTERN (Schedule S Beam ID: KDN)

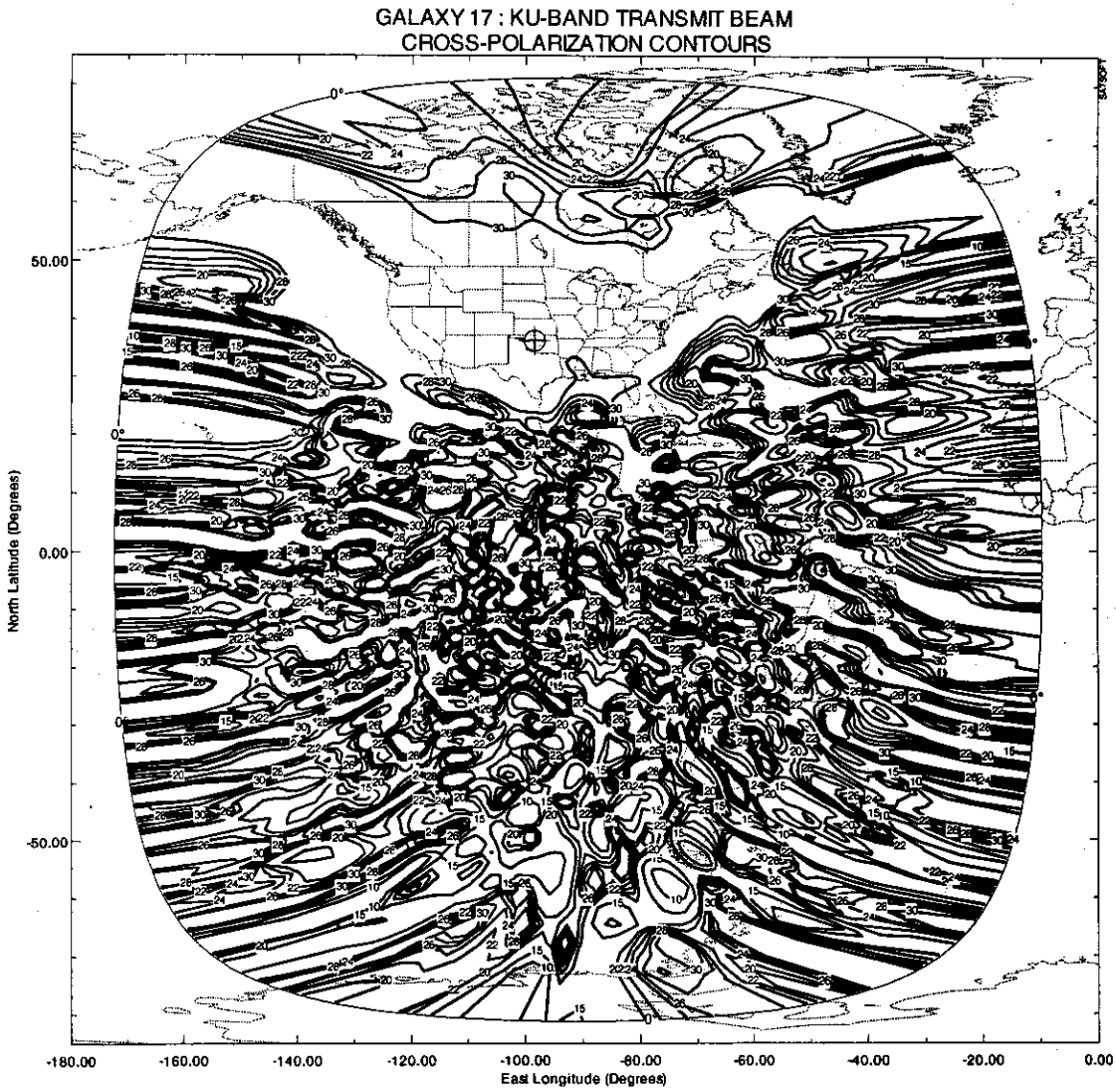


EXHIBIT 7: COMMUNICATION SUBSYSTEM
EIRP AND G/T BUDGETS

Beam Name	Conus	Conus	Conus	ULPC
Frequency Band (MHz)	3700 - 4200	11700 – 12200	11700 – 12200	12195 / 11701
Polarization	H / V	H / V	H / V	H / V
Maximum Power At The Output of Last Stage Amplifier (dBW)	16.7	20.5	20.3	-4
Loss From Last Stage Amplifier To Transmit Antenna Interface (dB)	-2.0	-2.3	-2.1	-3.7
Peak Gain of Satellite Transmit Antenna (dBi)	28.6	33.1	33.1	33.1
Maximum Downlink EIRP (dBW)	43.3	51.3	51.3	25.4
Beam Name	Conus	Conus		
Frequency Band (MHz)	5925 – 6425	14000 - 14500		
Polarization	H / V	H / V		
Antenna Noise Temperature (K)	190	215		
Receiver Noise Temperature (K)	257	238		
Total System Noise Temperature (K)	447	453		
Total System Noise Temperature (dBK)	26.5	26.6		
Peak Gain of Satellite Receive Antenna (dBi)	31.7	33.7		
Peak G/T (dB/K)	5.2	7.1		
Minimum SFD [G/T: Peak, Attn: 0 dB] -- (dBW/m^2)	-114.2	-119.1		

EXHIBIT 8A: C-BAND CHANNEL FREQUENCY RESPONSE CHARACTERISTICS

Frequency Offset Relative to Channel Center Frequency (MHz)	Attenuation Relative To Peak Level (dB)		
	IMUX	OMUX	Total
±8	0.2	0.15	0.35
±12	0.1	0.15	0.25
±14	0.15	0.3	0.45
±16	0.35	0.5	85
±18	0.4	1.2	1.6
±22	11	7.4	18.4
±25	29	19.9	48.9
±30	41	22.0	63

EXHIBIT 8B: Ku-BAND CHANNLE FREQUENCY RESPONSE CHARACTERISTIC

	Attenuation Relative To Peak Level (dB)		
Frequency Offset Relative to Channel Center Frequency (MHz)	IMUX	OMUX	Total
±8	0.15	0.2	0.35
±12	0.21	0.25	0.46
-±14	0.26	0.4	0.66
±16	0.46	0.8	1.26
±18	1.00	2.1	3.1
±22	15.6	6	21.6
±25	29	16	45
±30	42	20	62

EXHIBIT 9: TC&R SUBSYSTEM CHARACTERISTICS

	Spacecraft Antenna	
	Reflector	**Omni**
Command Frequency (MHz) / Polarization (see note)		
Transfer Orbit / Emergency	n/a	5925.5 (LHCP) 6424.5 (RHCP)
On-Station	5925.5 (H) 6424.5 (V)	n/a
Command Modulation	FM	FM
Bandwidth of Command Carrier (kHz)		
Occupied Bandwidth	860	860
Allocated Bandwidth	1000	1000
Command Threshold (dBW/m^2)		
Beam Peak	-122.5	-105.3
Edge of Coverage	-112.5	-103.3
Command G/T (dB/K)		
Beam Peak	-8.9	-25.9
Edge of Coverage	-18.9	-27.9
Telemetry Frequency (MHz) / Polarization (see note)		
Transfer Orbit / Emergency	n/a	4197.125 (LHCP) 4198.875 (RHCP)
On-Station	4197.125 (H) 4198.875 (H)	n/a
Telemetry Modulation	PM	PM
Bandwidth of Telemetry Carrier (kHz)		
Occupied	72	72
Allocated	500	500
Telemetry EIRP		
Beam Peak	17.8	17.2
Edge of Coverage	7.8	15.2
On-Station Ranging Accuracy (meters)	< 30	< 30

Note:
H: Linear Horizontal Polarization
V: Linear Vertical Polarization
LHCP: Left Hand Circular Polarization
RHCP: Right Hand Circular Polarization

EXHIBIT 10: TC&R SUBSYSTEM EIRP and G/T BUDGETS

Antenna Type	Omni	Reflector
Frequency Band (MHz)	4197.125 / 4198.7	4197.125 / 4198.7
Polarization (see note)	LHCP / RHCP	V / V
Maximum Power At The Output of Last Stage Amplifier (dBW)	16.7	-4.0
Loss From Last Stage Amplifier To Transmit Antenna Interface (dB)	-7.3	-6.8
Peak Gain of Satellite Transmit Antenna (dBi)	7.8	28.6
Maximum Downlink EIRP (dBW)	17.2	17.8
Antenna Type	Omni	Reflector
Frequency Band (MHz)	5925.4 / 6424.5	5925.4 / 6424.5
Polarization (see Note)	LHCP / RHCP	H / V
Antenna Noise Temperature (K)	100	190
Receiver Noise Temperature (K)	2331	11206
Total System Noise Temperature (K)	2431	11396
Total System Noise Temperature (dBK)	33.9	40.6
Peak Gain of Satellite Receive Antenna (dBi)	8.0	31.7
Peak G/T (dB/K)	-25.9	-8.9
SFD Threshold at Peak G/T (dBW/m^2)	-105.3	-122.5

Note:
H: Linear Horizontal Polarization
V: Linear Vertical Polarization
LHCP: Left Hand Circular Polarization
RHCP: Right Hand Circular Polarization

EXHIBIT 11: POWER FLUX DENSITY CALCULATIONS

Analog TV Carrier

Elevation Angle (degrees)	0	5	10	15	20	25	90
Assumed EIRP (dBW)	41.3*	41.3*	43.3	43.3	43.3	43.3	43.3
Spreading loss (dB/m^2)	163.4	163.3	163.2	163.0	162.9	162.8	162.1
Maximum PFD (dBW/m^2/4kHz) (36 MHz Analog TV | 4 MHz EDS)	-152.1	-152.0	-149.9	-149.7	-149.6	-149.5	-148.8
PFD Limit (dBW/m^2/4kHz)	-152	-152	-149.5	-147	-144.5	-142	-142
Margin (dB)	0.1	0	0.4	2.7	5.1	7.5	6.8

*This is the maximum allowable EIRP level at the specified elevation angle. For a beam peak of 43.3 dBW, the actual EIRP level of the beam at this particular elevation angle is equal to or lower than the value listed in the table.

Digital Carrier

Elevation Angle (degrees)	0	5	10	15	20	25	90
Assumed EIRP (dBW)	43.3	43.3	43.3	43.3	43.3	43.3	43.3
Spreading loss (dB/m^2)	163.4	163.3	163.2	163.0	162.9	162.8	162.1
Maximum PFD (dBW/m^2/4kHz) (30.133 MHz Digital Carrier)	-158.9	-158.7	-158.6	-158.5	-158.4	-158.3	-157.5
PFD Limit (dBW/m^2/4kHz)	-152	-152	-149.5	-147	-144.5	-142	-142
Margin (dB)	6.9	6.7	9.1	11.5	13.9	16.3	15.5

TT&C (Reflector)

Elevation Angle (degrees)	0	5	10	15	20	25	90
Assumed EIRP (dBW)	17.8	17.8	17.8	17.8	17.8	17.8	17.8
Spreading loss (dB/m^2)	163.4	163.3	163.2	163.0	162.9	162.8	162.1
Maximum PFD (dBW/m^2/4kHz) (72 kHz Digital Carrier)	-158.1	-158.0	-157.9	-157.8	-157.7	-157.6	-156.8
PFD Limit (dBW/m^2/4kHz)	-152	-152	-149.5	-147	-144.5	-142	-142
Margin (dB)	6.1	6.0	8.4	10.8	13.2	15.6	14.8

TT&C (Omni Antenna)

Elevation Angle (degrees)	0	5	10	15	20	25	90
Assumed EIRP (dBW)	17.2	17.2	17.2	17.2	17.2	17.2	17.2
Spreading loss (dB/m^2)	163.4	163.3	163.2	163.0	162.9	162.8	162.1
Maximum PFD (dBW/m^2/4kHz) (72 kHz Digital Carrier)	-158.7	-158.6	-158.5	-158.4	-158.3	-158.2	-157.4
PFD Limit (dBW/m^2/4kHz)	-152	-152	-149.5	-147	-144.5	-142	-142
Margin (dB)	6.7	6.6	9.0	11.4	13.8	16.2	15.4

EXHIBIT 12: EMISSION DESIGNATORS

Signal Type	Emission Designator	Allocated Bandwidth (kHz)
Analog TV/FM Carrier	36M0F3F	36000
36863 kbps Carrier	30M1G7W	36000
6000 kbps carrier	4M15G7W	6875
1544 kbps (T1) Carrier	1M21G7W	1550
64 kbps Carrier	75K4G7W	100
512 kbps Carrier	1M23G7W	1450
128 kbps Carrier	307KG7W	400
Spacecraft Command	860KF3D	1000
Spacecraft Telemetry	72K0G1D	500

EXHIBIT 13A: Galaxy 17 C-Band Link Budgets

UPLINK BEAM INFORMATION					
Uplink Beam Name	Conus	Conus	Conus	Conus	Conus
Uplink Frequency (MHz)	6175	6175	6175	6175	6175
Uplink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Uplink Relative Contour Level (dB)	-5	-5	-5	-5	-5
Uplink Contour G/T (dB/K)	0.2	0.2	0.2	0.2	0.2
Uplink SFD (dBW/m^2)	-86.2	-86.2	-86.2	-86.2	-86.2
DOWNLINK BEAM INFORMATION					
Downlink Beam Name	Conus	Conus	Conus	Conus	Conus
Downlink Frequency (MHz)	3950	3950	3950	3950	3950
Downlink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical
Downlink Relative Contour Level (dB)	-3	-3	-3	-3	-3
Downlink Contour EIRP (dBW)	40.3	40.3	40.3	40.3	40.3
ADJACENT SATELLITE 1					
Satellite 1 Orbital Location	89 WL	89 WL	89 WL	89 WL	89 WL
Uplink Power Density (dBW/Hz)	-44	-44	-44	-44	-44
Uplink Polarization Advantage (dB)	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-31.5	-31.5	-31.5	-31.5	-31.5
Downlink Polarization Advantage (dB)	0	0	0	0	0
ADJACENT SATELLITE 2					
Satellite 2 Orbital Location	93 WL	93 WL	93 WL	93 WL	93 WL
Uplink Power Density (dBW/Hz)	-44	-44	-44	-44	-44
Uplink Polarization Advantage (dB)	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-32.5	-32.5	-32.5	-32.5	-32.5
Downlink Polarization Advantage (dB)	0	0	0	0	0
CARRIER INFORMATION					
Carrier ID	36M0F3F	30M1G7W	4M15G7W	1M21G7W	75K4G7W
Information Rate (kbps)	n/a	36863	6000	1544	64
Carrier Modulation	TV/FM	QPSK	QPSK	QPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	n/a	n/a	n/a	n/a
Code Rate	n/a	3/4-RS	3/4-RS	3/4-RS	1/2-RS
Occupied Bandwidth (kHz)	36000	30133	4154.0	1212.8	75.4
Allocated Bandwidth (kHz)	36000	36000	6875	1550	100
Minimum C/N, (dB)	10	6.1	6.7	5.7	3.0
UPLINK EARTH STATION					
Earth Station Diameter (meters)	8.1	8.1	8.1	8.1	8.1
Earth Station Gain (dBi)	52.8	52.8	52.8	52.8	52.8
Earth Station Elevation Angle	20	20	20	20	20
DOWNLINK EARTH STATION					
Earth Station Diameter (meters)	4.5	3.0	3.5	3.5	3.0
Earth Station Gain (dBi)	43.9	39.7	41.1	41.1	39.7
Earth Station G/T (dB/K)	23.6	19.2	21	21	19.2
Earth Station Elevation Angle	20	20	20	20	20
UPLINK PERFORMANCE					
Uplink Earth Station EIRP (dBW)	76.7	76.7	64.1	57.6	45.9
Uplink Path Loss, Clear Sky (dB)	-200.2	-200.2	-200.2	-200.2	-200.2
Satellite G/T (dB/K)	0.2	0.2	0.2	0.2	0.2
Boltzman Constant (dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-75.6	-74.8	-66.2	-60.8	-48.8
Uplink C/N (dB)	29.7	30.5	26.5	25.3	25.8
DOWNLINK PERFORMANCE					
Downlink EIRP per Carrier (dBW)	40.3	40.3	29.2	22.7	11.0
Antenna Pointing Error (dB)	-0.5	-0.5	-0.5	-0.5	-0.5
Downlink Path Loss, Clear Sky (dB)	-196.3	-196.3	-196.3	-196.3	-196.3
Earth Station G/T (dB/K)	23.6	19.2	21	21.0	19.2
Boltzman Constant (dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-75.6	-74.8	-66.2	-60.8	-48.8
Downlink C/N (dB)	20.1	16.5	15.7	14.6	13.2
COMPOSITE LINK PERFORMANCE					
C/N Uplink (dB)	29.7	30.5	26.5	25.3	25.8
C/N Downlink (dB)	20.1	16.5	15.7	14.6	13.2
C/I Intermodulation (dB)	n/a	n/a	18.9	17.8	18.2
C/I Uplink Co-Channel (dB)*	25.0	25.0	24.5	24.5	24.8
C/I Downlink Co-Channel (dB)*	25.0	25.0	24.5	24.5	24.8
C/I Uplink Adiacent Satellite 1 (dB)	22.1	22.9	18.9	17.7	18.2
C/I Downlink Adiacent Satellite 1 (dB)	19.8	16.9	15.6	14.4	13.7
C/I Uplink Adiacent Satellite 2 (dB)	22.1	22.9	18.9	17.7	18.2
C/I Downlink Adiacent Satellite 2 (dB)	18.3	9.2	11.8	10.7	6.0
C/(N+I) Composite (dB)	12.6	7.4	7.7	6.7	4.0
Required System Margin (dB)	-1.0	-1.0	-1.0	-1.0	-1.0
Net C/(N+I) Composite (dB)	11.6	6.4	6.7	5.7	3.0
Minimum Required C/N (dB)	-10.0	-6.1	-6.7	-5.7	-3.0
Excess Link Margin (dB)	1.6	0.3	0.0	0.0	0.0
Number of Carriers	1	1	5.2	23.2	360
Carrier Density Levels					
Uplink Power Density (dBW/Hz)	-42.1	-50.9	-54.9	-56.1	-55.6
Downlink EIRP Density At Beam Peak	-22.7	-31.5	-34.0	-35.2	-34.7

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

EXHIBIT 13B: Galaxy 17 Ku-Band Link Budgets

UPLINK BEAM INFORMATION						
Uplink Beam Name	Conus	Conus	Conus	Conus	Conus	Conus
Uplink Frequency (MHz)	14250	14250	14250	14250	14250	14250
Uplink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Uplink Relative Contour Level (dB)	-6	-6	-6	-6	-6	-6
Uplink Contour G/T (dB/K)	1.1	1.1	1.1	1.1	1.1	1.1
Uplink SFD (dBW/m^2)	-83.1	-83.1	-83.1	-83.1	-83.1	-83.1
Rain Rate (mm/hr)	42.0	42.0	42.0	42.0	42.0	42.0
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	Conus	Conus	Conus	Conus	Conus	Conus
Downlink Frequency (MHz)	11950	11950	11950	11950	11950	11950
Downlink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Downlink Relative Contour Level (dB)	-4	-4	-4	-4	-4	-4
Downlink Contour EIRP (dBW)	47.3	47.3	47.3	47.3	47.3	47.3
Rain Rate (mm/hr)	42.0	42.0	42.0	42.0	42.0	42.0
ADJACENT SATELLITE 1						
Satellite 1 Orbital Location	89 WL	89 WL	89 WL	89 WL	89 WL	89 WL
Uplink Power Density (dBW/Hz)	-45	-45	-45	-45	-45	-45
Uplink Polarization Advantage (dB)	0	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-23	-23	-23	-23	-23	-23
Downlink Polarization Advantage (dB)	0	0	0	0	0	0
ADJACENT SATELLITE 2						
Satellite 2 Orbital Location	93 WL	93 WL	93 WL	93 WL	93 WL	93 WL
Uplink Power Density (dBW/Hz)	-45	-45	-45	-45	-45	-45
Uplink Polarization Advantage (dB)	0	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-24.9	-24.9	-24.9	-24.9	-24.9	-24.9
Downlink Polarization Advantage (dB)	0	0	0	0	0	0
CARRIER INFORMATION						
Carrier ID	36M0F3F	36M0F3F	36M0F3F	30M1G7W	30M1G7W	30M1G7W
Carrier Modulation	TV/FM	TV/FM	TV/FM	QPSK	QPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	4	4	n/a	n/a	n/a
Information Rate (kbps)	n/a	n/a	n/a	36863	36863	36863
Code Rate	n/a	n/a	n/a	3/4 - RS	3/4 - RS	3/4 - RS
Occupied Bandwidth (kHz)	36000	36000	36000	30133	30133	30133
Allocated Bandwidth (kHz)	36000	36000	36000	36000	36000	36000
Minimum C/N, Clear Sky (dB)	10	10	10	6.1	6.1	6.1
Minimum C/N, Rain (dB)	10	10	10	6.1	6.1	6.1
UPLINK EARTH STATION						
Earth Station Diameter (meters)	6.1	6.1	6.1	6.1	6.1	6.1
Earth Station Gain (dBi)	56.9	56.9	56.9	56.9	56.9	56.9
Earth Station Elevation Angle	20	20	20	20	20	20
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	2.4	2.4	2.4	1.2	1.2	1.2
Earth Station Gain (dBi)	47.5	47.5	47.5	41.3	41.3	41.3
Earth Station G/T (dB/K)	25	25	22.4	18.8	18.8	16.6
Earth Station Elevation Angle	20	20	20	20	20	20
LINK CATEGORY	Clear Sky	Uplink Fade	Downlink Fade	Clear Sky	Uplink Fade	Downlink Fade
UPLINK PERFORMANCE						
Uplink Earth Station EIRP (dBW)	79.8	79.8	79.8	79.8	79.8	79.8
Uplink Path Loss, Clear Sky (dB)	-207.5	-207.5	-207.5	-207.5	-207.5	-207.5
Uplink Rain Attenuation (dB)	0.0	-5.0	0.0	0.0	-5.4	0.0
Satellite G/T (dB/K)	1.1	1.1	1.1	1.1	1.1	1.1
Boltzman Constant (dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-75.6	-75.6	-75.6	-74.8	-74.8	-74.8
Uplink C/N (dB)	26.5	21.5	26.5	27.2	21.9	27.2
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	47.3	45.6	47.3	47.3	45.3	47.3
Antenna Pointing Error (dB)	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
Downlink Path Loss, Clear Sky (dB)	-205.9	-205.9	-205.9	-205.9	-205.9	-205.9
Downlink Rain Attenuation (dB)	0.0	0.0	-3.4	0.0	0.0	-2.4
Earth Station G/T (dB/K)	25.0	25.0	22.4	18.8	18.8	16.6
Boltzman Constant (dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-75.6	-75.6	-75.6	-74.8	-74.8	-74.8
Downlink C/N (dB)	18.9	17.2	12.9	13.4	11.4	8.9
COMPOSITE LINK PERFORMANCE						
C/N Uplink (dB)	26.5	21.5	26.5	27.2	21.9	27.2
C/N Downlink (dB)	18.9	17.2	12.9	13.4	11.4	8.9
C/I Intermodulation (dB)	n/a	n/a	n/a	n/a	n/a	n/a
C/I Uplink Co-Channel (dB)*	25.0	20.0	25.0	25.0	19.6	25.0
C/I Downlink Co-Channel (dB)*	25.0	23.3	25.0	25.0	23.0	25.0
C/I Uplink Adiacent Satellite 1 (dB)	25.2	20.3	25.2	26.0	20.6	26.0
C/I Downlink Adiacent Satellite 1 (dB)	21.5	19.8	21.5	16.8	14.7	16.8
C/I Uplink Adiacent Satellite 2 (dB)	25.2	20.3	25.2	26.0	20.6	26.0
C/I Downlink Adiacent Satellite 2 (dB)	21.8	20.2	21.8	15.2	13.2	15.2
C/(N+I) Composite (dB)	13.9	11.0	11.0	9.6	7.1	7.1
Required System Margin (dB)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Net C/(N+I) Composite (dB)	12.9	10.0	10.0	8.6	6.1	6.1
Minimum Required C/N (dB)	-10.0	-10.0	-10.0	-6.1	-6.1	-6.1
Excess Link Margin (dB)	2.9	0.0	0.0	2.5	0.0	0.0
Number of Carriers	1	1	1	1	1	1
Calculate Density (-27.0)						
Uplink Power Density (dBW/Hz)	-43.1	-43.1	-43.1	-51.9	-51.9	-51.9
Downlink EIRP Density At Beam Peak	-14.7	-16.4	-14.7	-23.5	-23.5	-23.5

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

EXHIBIT 13B: Galaxy 17 Ku-Band Link Budgets (continued)

UPLINK BEAM INFORMATION						
Uplink Beam Name	Conus	Conus	Conus	Conus	Conus	Conus
Uplink Frequency (MHz)	14250	14250	14250	14250	14250	14250
Uplink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Uplink Relative Contour Level (dB)	-6	-6	-6	-6	-6	-6
Uplink Contour G/T (dB/K)	1.1	1.1	1.1	1.1	1.1	1.1
Uplink SFD (dBW/m^2)	-83.1	-83.1	-83.1	-83.1	-83.1	-83.1
Rain Rate (mm/hr)	42.0	42.0	42.0	42.0	42.0	42.0
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	Conus	Conus	Conus	Conus	Conus	Conus
Downlink Frequency (MHz)	11950	11950	11950	11950	11950	11950
Downlink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Downlink Relative Contour Level (dB)	-4	-4	-4	-4	-4	-4
Downlink Contour EIRP (dBW)	47.3	47.3	47.3	47.3	47.3	47.3
Rain Rate (mm/hr)	42.0	42.0	42.0	42.0	42.0	42.0
ADJACENT SATELLITE 1						
Satellite 1 Orbital Location	89 WL	89 WL	89 WL	89 WL	89 WL	89 WL
Uplink Power Density (dBW/Hz)	-45	-45	-45	-45	-45	-45
Uplink Polarization Advantage (dB)	0	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-23	-23	-23	-23	-23	-23
Downlink Polarization Advantage (dB)	0	0	0	0	0	0
ADJACENT SATELLITE 2						
Satellite 2 Orbital Location	93 WL	93 WL	93 WL	93 WL	93 WL	93 WL
Uplink Power Density (dBW/Hz)	-45	-45	-45	-45	-45	-45
Uplink Polarization Advantage (dB)	0	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-24.9	-24.9	-24.9	-24.9	-24.9	-24.9
Downlink Polarization Advantage (dB)	0	0	0	0	0	0
CARRIER INFORMATION						
Carrier ID	4M15G7W	4M15G7W	4M15G7W	1M21G7W	1M21G7W	1M21G7W
Carrier Modulation	QPSK	QPSK	QPSK	QPSK	QPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	n/a	n/a	n/a	n/a	n/a	n/a
Information Rate (kbps)	6000	6000	6000	1544	1544	1544
Code Rate	3/4 - RS	3/4 - RS	3/4 - RS	3/4 - RS	3/4 - RS	3/4 - RS
Occupied Bandwidth (kHz)	4154	4154	4154	1212.8	1212.8	1212.8
Allocated Bandwidth (kHz)	6875	6875	6875	1550	1550	1550
Minimum C/N, Clear Sky (dB)	6.7	6.3	6.3	5.7	5.5	5.5
Minimum C/N, Rain (dB)	6.7	6.3	6.3	5.7	5.5	5.5
UPLINK EARTH STATION						
Earth Station Diameter (meters)	6.1	6.1	6.1	6.1	6.1	6.1
Earth Station Gain (dBi)	56.9	56.9	56.9	56.9	56.9	56.9
Earth Station Elevation Angle	20	20	20	20	20	20
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	1.8	1.8	1.8	1.8	1.8	1.8
Earth Station Gain (dBi)	44.8	44.8	44.8	44.8	44.8	44.8
Earth Station G/T (dB/K)	22.3	22.3	19.8	22.3	22.3	19.7
Earth Station Elevation Angle	20	20	20	20	20	20
LINK TYPE	Clear Sky	Uplink Fade	Downlink Fade	Clear Sky	Uplink Fade	Downlink Fade
UPLINK PERFORMANCE						
Uplink Earth Station EIRP (dBW)	66.8	66.8	66.8	60.6	60.6	60.6
Uplink Path Loss, Clear Sky (dB)	-207.5	-207.5	-207.5	-207.5	-207.5	-207.5
Uplink Rain Attenuation (dB)	0.0	-2.8	0.0	0.0	-2.8	0.0
Satellite G/T (dB/K)	1.1	1.1	1.1	1.1	1.1	1.1
Boltzman Constant (dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-66.2	-66.2	-66.2	-60.8	-60.8	-60.8
Uplink C/N (dB)	22.8	20.0	22.8	22.0	19.2	22.0
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	36.8	34.1	36.8	30.6	27.9	30.6
Antenna Pointing Error (dB)	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
Downlink Path Loss, Clear Sky (dB)	-205.9	-205.9	-205.9	-205.9	-205.9	-205.9
Downlink Rain Attenuation (dB)	0.0	0.0	-3.1	0.0	0.0	-3.2
Earth Station G/T (dB/K)	22.3	22.3	19.8	22.3	22.3	19.7
Boltzman Constant (dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-66.2	-66.2	-66.2	-60.8	-60.8	-60.8
Downlink C/N (dB)	15.0	12.4	9.4	14.2	11.5	8.5
COMPOSITE LINK PERFORMANCE						
C/N Uplink (dB)	22.8	20.0	22.8	22.0	19.2	22.0
C/N Downlink (dB)	15.0	12.4	9.4	14.2	11.5	8.5
C/I Intermodulation (dB)	19.2	17.4	19.2	18.3	15.8	18.3
C/I Uplink Co-Channel (dB)*	25.2	22.4	25.2	25.5	22.7	25.5
C/I Downlink Co-Channel (dB)*	25.2	22.5	25.2	25.5	22.8	25.5
C/I Uplink Adjacent Satellite 1 (dB)	21.6	18.8	21.6	20.8	18.0	20.8
C/I Downlink Adjacent Satellite 1 (dB)	17.9	15.3	17.9	17.1	14.4	17.1
C/I Uplink Adjacent Satellite 2 (dB)	21.6	18.8	21.6	20.8	18.0	20.8
C/I Downlink Adjacent Satellite 2 (dB)	17.7	15.1	17.7	16.9	14.2	16.9
C/(N+I) Composite (dB)	9.9	7.3	7.3	9.1	6.4	6.4
Required System Margin (dB)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Net C/(N+I) Composite (dB)	8.9	6.3	6.3	8.1	5.4	5.4
Minimum Required C/N (dB)	-6.7	-6.3	-6.3	-5.7	-5.5	-5.5
Excess Link Margin (dB)	2.2	0.0	0.0	2.5	0.0	0.0
Number of Carriers	5	5	5	20.9	20.9	20.9
OTHER DENSITY						
Uplink Power Density (dBW/Hz)	-56.3	-56.3	-56.3	-57.1	-57.1	-57.1
Downlink EIRP Density At Beam Peak	-25.4	-25.4	-25.4	-26.2	-26.2	-26.2

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

EXHIBIT 13B: Galaxy 17 Ku-Band Link Budgets (continued)

UPLINK BEAM INFORMATION						
Uplink Beam Name	Conus	Conus	Conus	Conus	Conus	Conus
Uplink Frequency (MHz)	14250	14250	14250	14250	14250	14250
Uplink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Uplink Relative Contour Level (dB)	-6	-6	-6	-6	-6	-6
Uplink Contour G/T (dB/K)	1.1	1.1	1.1	1.1	1.1	1.1
Uplink SFD (dBW/m^2)	-83.1	-83.1	-83.1	-83.1	-83.1	-83.1
Rain Rate (mm/hr)	42.0	42.0	42.0	42.0	42.0	42.0
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	Conus	Conus	Conus	Conus	Conus	Conus
Downlink Frequency (MHz)	11950	11950	11950	11950	11950	11950
Downlink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Downlink Relative Contour Level (dB)	-4	-4	-4	-4	-4	-4
Downlink Contour EIRP (dBW)	47.3	47.3	47.3	47.3	47.3	47.3
Rain Rate (mm/hr)	42.0	42.0	42.0	42.0	42.0	42.0
ADJACENT SATELLITE 1						
Satellite 1 Orbital Location	89 WL	89 WL	89 WL	89 WL	89 WL	89 WL
Uplink Power Density (dBW/Hz)	-45	-45	-45	-45	-45	-45
Uplink Polarization Advantage (dB)	0	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-23	-23	-23	-23	-23	-23
Downlink Polarization Advantage (dB)	0	0	0	0	0	0
ADJACENT SATELLITE 2						
Satellite 2 Orbital Location	93 WL	93 WL	93 WL	93 WL	93 WL	93 WL
Uplink Power Density (dBW/Hz)	-45	-45	-45	-45	-45	-45
Uplink Polarization Advantage (dB)	0	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-24.9	-24.9	-24.9	-24.9	-24.9	-24.9
Downlink Polarization Advantage (dB)	0	0	0	0	0	0
CARRIER INFORMATION						
Carrier ID	1M23G7W	1M23G7W	1M23G7W	75K4G7W	75K4G7W	75K4G7W
Carrier Modulation	BPSK	BPSK	BPSK	QPSK	QPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	n/a	n/a	n/a	n/a	n/a	n/a
Information Rate (kbps)	512	512	512	64	64	64
Code Rate	1/2	1/2	1/2	1/2 - RS	1/2 - RS	1/2 - RS
Occupied Bandwidth (kHz)	1229	1229	1229	75.4	75.4	75.4
Allocated Bandwidth (kHz)	1450	1450	1450	100	100	100
Minimum C/N, Clear Sky (dB)	3.4	2.7	2.7	3.0	2.8	2.8
Minimum C/N, Rain (dB)	3.4	2.7	2.7	3.0	2.8	2.8
UPLINK EARTH STATION						
Earth Station Diameter (meters)	6.1	6.1	6.1	6.1	6.1	6.1
Earth Station Gain (dBi)	56.9	56.9	56.9	56.9	56.9	56.9
Earth Station Elevation Angle	20	20	20	20	20	20
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	1.2	1.2	1.2	1.2	1.2	1.2
Earth Station Gain (dBi)	41.3	41.3	41.3	41.3	41.3	41.3
Earth Station G/T (dB/K)	18.8	18.8	16.3	18.8	18.8	16.3
Earth Station Elevation Angle	20	20	20	20	20	20
LINK FADE TYPE	Clear Sky	Uplink Fade	Downlink Fade	Clear Sky	Uplink Fade	Downlink Fade
UPLINK PERFORMANCE						
Uplink Earth Station EIRP (dBW)	60.7	60.7	60.7	48.7	48.7	48.7
Uplink Path Loss, Clear Sky (dB)	-207.5	-207.5	-207.5	-207.5	-207.5	-207.5
Uplink Rain Attenuation (dB)	0.0	-2.9	0.0	0.0	-2.9	0.0
Satellite G/T (dB/K)	1.1	1.1	1.1	1.1	1.1	1.1
Boltzman Constant (dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-60.9	-60.9	-60.9	-48.8	-48.8	-48.8
Uplink C/N (dB)	22.0	19.1	22.0	22.2	19.3	22.2
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	30.7	27.9	30.7	18.7	15.8	18.7
Antenna Pointing Error (dB)	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
Downlink Path Loss, Clear Sky (dB)	-205.9	-205.9	-205.9	-205.9	-205.9	-205.9
Downlink Rain Attenuation (dB)	0.0	0.0	-2.9	0.0	0.0	-3.0
Earth Station G/T (dB/K)	18.8	18.8	16.3	18.8	18.8	16.3
Boltzman Constant (dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-60.9	-60.9	-60.9	-48.8	-48.8	-48.8
Downlink C/N (dB)	10.7	7.9	5.4	10.9	8.0	5.5
COMPOSITE PERFORMANCE						
C/N Uplink (dB)	22.0	19.1	22.0	22.2	19.3	22.2
C/N Downlink (dB)	10.7	7.9	5.4	10.9	8.0	5.5
C/I Intermodulation (dB)	18.4	15.7	18.4	18.5	15.6	18.5
C/I Uplink Co-Channel (dB)*	25.8	23.0	25.8	25.5	22.6	25.5
C/I Downlink Co-Channel (dB)*	25.8	23.0	25.8	25.5	22.6	25.5
C/I Uplink Adjacent Satellite 1 (dB)	20.8	17.9	20.8	20.9	18.1	20.9
C/I Downlink Adjacent Satellite 1 (dB)	14.1	11.2	14.1	14.2	11.3	14.2
C/I Uplink Adjacent Satellite 2 (dB)	20.8	17.9	20.8	20.9	18.1	20.9
C/I Downlink Adjacent Satellite 2 (dB)	12.5	9.7	12.5	12.7	9.8	12.7
C/(N+I) Composite (dB)	6.5	3.7	3.7	6.7	3.8	3.8
Required System Margin (dB)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Net C/(N+I) Composite (dB)	5.5	2.7	2.7	5.7	2.8	2.8
Minimum Required C/N (dB)	-3.4	-2.7	-2.7	-3.0	-2.8	-2.8
Excess Link Margin (dB)	2.1	0.0	0.0	2.7	0.0	0.0
Number of Carriers	20.4	20.4	20.4	322.8	322.8	322.8
Carrier Density Level						
Uplink Power Density (dBW/Hz)	-57.1	-57.1	-57.1	-57.0	-57.0	-57.0
Downlink EIRP Density At Beam Peak	-26.2	-26.2	-26.2	-26.1	-26.1	-26.1

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

EXHIBIT 13B: Galaxy 17 Ku-Band Link Budgets (continued)

UPLINK BEAM INFORMATION			
Uplink Beam Name	Conus	Conus	Conus
Uplink Frequency (MHz)	14250	14250	14250
Uplink Beam Polarization	Vertical	Vertical	Vertical
Uplink Relative Contour Level (dB)	-6	-6	-6
Uplink Contour G/T (dB/K)	1.1	1.1	1.1
Uplink SFD (dBW/m^2)	-83.1	-83.1	-83.1
Rain Rate (mm/hr)	42.0	42.0	42.0
DOWNLINK BEAM INFORMATION			
Downlink Beam Name	Conus	Conus	Conus
Downlink Frequency (MHz)	11950	11950	11950
Downlink Beam Polarization	Horizontal	Horizontal	Horizontal
Downlink Relative Contour Level (dB)	-4	-4	-4
Downlink Contour EIRP (dBW)	47.3	47.3	47.3
Rain Rate (mm/hr)	42.0	42.0	42.0
ADJACENT SATELLITE			
Satellite 1 Orbital Location	89 WL	89 WL	89 WL
Uplink Power Density (dBW/Hz)	-45	-45	-45
Uplink Polarization Advantage (dB)	0	0	0
Downlink EIRP Density (dBW/Hz)	-23	-23	-23
Downlink Polarization Advantage (dB)	0	0	0
ADJACENT SATELLITE			
Satellite 2 Orbital Location	93 WL	93 WL	93 WL
Uplink Power Density (dBW/Hz)	-45	-45	-45
Uplink Polarization Advantage (dB)	0	0	0
Downlink EIRP Density (dBW/Hz)	-24.9	-24.9	-24.9
Downlink Polarization Advantage (dB)	0	0	0
CARRIER INFORMATION			
Carrier ID	307KG7W	307KG7W	307KG7W
Carrier Modulation	BPSK	BPSK	BPSK
Peak to Peak Bandwidth of EDS (MHz)	n/a	n/a	n/a
Information Rate (kbps)	128	128	128
Code Rate	1/2	1/2	1/2
Occupied Bandwidth (kHz)	307	307	307
Allocated Bandwidth (kHz)	400	400	400
Minimum C/N, Clear Sky (dB)	3.4	2.7	2.7
Minimum C/N, Rain (dB)	3.4	2.7	2.7
UPLINK EARTH STATION			
Earth Station Diameter (meters)	1.2	1.2	1.2
Earth Station Gain (dBi)	42.9	42.9	42.9
Earth Station Elevation Angle	20	20	20
DOWNLINK EARTH STATION			
Earth Station Diameter (meters)	6.1	6.1	6.1
Earth Station Gain (dBi)	55.5	55.5	55.5
Earth Station G/T (dB/K)	33.1	33.1	29.5
Earth Station Elevation Angle	20	20	20
LINK FADE TYPE	Clear Sky	Uplink Fade	Downlink Fade
UPLINK PERFORMANCE			
Uplink Earth Station EIRP (dBW)	47.5	47.5	47.5
Uplink Path Loss, Clear Sky (dB)	-207.5	-207.5	-207.5
Uplink Rain Attenuation (dB)	0.0	-2.2	0.0
Satellite G/T (dB/K)	1.1	1.1	1.1
Boltzman Constant (dBW/K-Hz)	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-54.9	-54.9	-54.9
Uplink C/N (dB)	14.9	12.7	14.9
DOWNLINK PERFORMANCE			
Downlink EIRP per Carrier (dBW)	17.5	15.3	17.5
Antenna Pointing Error (dB)	-0.5	-0.5	-0.5
Downlink Path Loss, Clear Sky (dB)	-205.9	-205.9	-205.9
Downlink Rain Attenuation (dB)	0.0	0.0	-7.0
Earth Station G/T (dB/K)	33.1	33.1	29.5
Boltzman Constant (dBW/K-Hz)	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-54.9	-54.9	-54.9
Downlink C/N (dB)	17.9	15.7	7.3
COMPOSITE LINK PERFORMANCE			
C/N Uplink (dB)	14.9	12.7	14.9
C/N Downlink (dB)	17.9	15.7	7.3
C/I Intermodulation (dB)	11.2	9.0	11.2
C/I Uplink Co-Channel (dB)*	18.2	16.1	18.2
C/I Downlink Co-Channel (dB)*	18.2	16.1	18.2
C/I Uplink Adjacent Satellite 1 (dB)	13.6	11.5	13.6
C/I Downlink Adjacent Satellite 1 (dB)	19.9	17.8	19.9
C/I Uplink Adjacent Satellite 2 (dB)	13.6	11.5	13.6
C/I Downlink Adjacent Satellite 2 (dB)	21.2	19.1	21.2
C/(N+I) Composite (dB)	5.9	3.7	3.7
Required System Margin (dB)	-1.0	-1.0	-1.0
Net C/(N+I) Composite (dB)	4.9	2.7	2.7
Minimum Required C/N (dB)	-3.4	-2.7	-2.7
Excess Link Margin (dB)	1.5	0.0	0.0
Number of Carriers	90	90	90
Carrier Density Level			
Uplink Power Density (dBW/Hz)	-50.3	-50.3	-50.3
Downlink EIRP Density At Beam Peak	-33.4	-33.4	-33.4

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

EXHIBIT 14A: Intelsat Americas 6 C-Band Link Budgets

UPLINK BEAM INFORMATION					
Uplink Beam Name	Conus	Conus	Conus	Conus	Conus
Uplink Frequency (MHz)	6175	6175	6175	6175	6175
Uplink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical
Uplink Relative Contour Level (dB)	-2.7	-2.7	-2.7	-2.7	-2.7
Uplink Contour G/T (dB/K)	1.0	1.0	1.0	1.0	1.0
Uplink SFD (dBW/m^2)	-86.0	-92.0	-83.0	-83.0	-81
DOWNLINK BEAM INFORMATION					
Downlink Beam Name	Conus	Conus	Conus	Conus	Conus
Downlink Frequency (MHz)	3950	3950	3950	3950	3950
Downlink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Downlink Relative Contour Level (dB)	-3.3	-3.3	-3.3	-3.3	-3.3
Downlink Contour EIRP (dBW)	37	37	37	37	37.0
ADJACENT SATELLITE 1					
Satellite 1 Orbital Location	95 WL	95 WL	95 WL	95 WL	95 WL
Uplink Power Density (dBW/Hz)	-49.1	-49.1	-49.1	-49.1	-49.1
Uplink Polarization Advantage (dB)	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-38.2	-38.2	-38.2	-38.2	-38.2
Downlink Polarization Advantage (dB)	0	0	0	0	0
ADJACENT SATELLITE 2					
Satellite 2 Orbital Location	91 WL	91 WL	91 WL	91 WL	91 WL
Uplink Power Density (dBW/Hz)	-50.9	-50.9	-50.9	-50.9	-50.9
Uplink Polarization Advantage (dB)	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-31.5	-31.5	-31.5	-31.5	-31.5
Downlink Polarization Advantage (dB)	0	0	0	0	0
CARRIER INFORMATION					
Carrier ID	36M0F8W	32M4F8W	30M9G7W	36M0G7W	30M0D7W
Information Rate (kbps)	n/a	n/a	45000	60000	90000
Carrier Modulation	TV/FM	TV/FM	QPSK	QPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	4	n/a	n/a	n/a
Code Rate	n/a	n/a	R7/8	R1/1	R1/1
Occupied Bandwidth (kHz)	36000	32400	30900	36000	30000
Allocated Bandwidth (kHz)	36000	32400	30900	36000	30000
Minimum C/N, (dB)	8	8	17.4	18.0	21.0
UPLINK EARTH STATION					
Earth Station Diameter (meters)	11.0	4.5	15.5	13.0	30.0
Earth Station Gain (dBi)	54.9	46.2	58.0	56.2	62.8
Earth Station Elevation Angle	20	20	20	20	20
DOWNLINK EARTH STATION					
Earth Station Diameter (meters)	7.0	4.5	15.5	13.0	18.3
Earth Station Gain (dBi)	47.0	43.9	54.5	53.2	56.3
Earth Station G/T (dB/K)	26.3	23.3	36.6	33	38.0
Earth Station Elevation Angle	20	20	20	20	20
UPLINK PERFORMANCE					
Uplink Earth Station EIRP (dBW)	76.9	70.9	79.9	79.9	81.9
Uplink Path Loss, Clear Sky (dB)	-200.2	-200.2	-200.2	-200.2	-200.2
Satellite G/T (dB/K)	1.0	1.0	1.0	1.0	1.0
Boltzman Constant (dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-75.6	-75.6	-74.9	-75.6	-74.8
Uplink C/N (dB)	30.7	24.7	34.4	33.7	36.5
DOWNLINK PERFORMANCE					
Downlink EIRP per Carrier (dBW)	37.0	37.0	37.0	37.0	37.0
Antenna Pointing Error (dB)	-0.5	-0.5	-0.5	-0.5	-0.5
Downlink Path Loss, Clear Sky (dB)	-196.3	-196.3	-196.3	-196.3	-196.3
Earth Station G/T (dB/K)	26.3	23.3	36.6	33.0	38.0
Boltzman Constant (dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-75.6	-75.6	-74.9	-75.6	-74.8
Downlink C/N (dB)	19.5	16.5	30.5	26.2	32.0
COMPOSITE LINK PERFORMANCE					
C/N Uplink (dB)	30.7	24.7	34.4	33.7	36.5
C/N Downlink (dB)	19.5	16.5	30.5	26.2	32.0
C/I Intermodulation (dB)	n/a	n/a	n/a	n/a	n/a
C/I Uplink Co-Channel (dB)*	27.0	27.0	27.7	27.0	27.8
C/I Downlink Co-Channel (dB)*	27.0	27.0	27.7	27.0	27.8
C/I Uplink Adjacent Satellite 1 (dB)	29.7	23.7	33.4	32.7	35.5
C/I Downlink Adjacent Satellite 1 (dB)	26.4	23.2	34.2	31.7	34.9
C/I Uplink Adjacent Satellite 2 (dB)	31.5	25.5	35.2	34.5	37.3
C/I Downlink Adjacent Satellite 2 (dB)	18.1	14.0	26.7	24.2	28.8
C/(N+I) Composite (dB)	14.5	10.9	21.0	19.2	22.0
Required System Margin (dB)	-1.0	-1.0	-1.0	-1.0	-1.0
Net C/(N+I) Composite (dB)	13.5	9.9	20.0	18.2	21.0
Minimum Required C/N (dB)	-8.0	-8.0	-17.4	-18.0	-21.0
Excess Link Margin (dB)	5.5	1.9	2.6	0.2	0.0
Number of Carriers	1	1	1	1	1
Carrier Density Levels					
Uplink Power Density (dBW/Hz)	-44.0	-41.3	-53.0	-51.9	-55.7
Downlink EIRP Density At Beam Peak	-25.7	-25.7	-34.6	-35.3	-34.5

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

EXHIBIT 14A: Intelsat Americas 6 C-Band Link Budgets (continued)

UPLINK BEAM INFORMATION					
Uplink Beam Name	Conus	Conus	Conus	Conus	Conus
Uplink Frequency (MHz)	6175	6175	6175	6175	6175
Uplink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical
Uplink Relative Contour Level (dB)	-2.7	-2.7	-2.7	-2.7	-2.7
Uplink Contour G/T (dB/K)	1.0	1.0	1.0	1.0	1.0
Uplink SFD (dBW/m^2)	-92.0	-89.0	-86.0	-86.0	-86.0
DOWNLINK BEAM INFORMATION					
Downlink Beam Name	Conus	Conus	Conus	Conus	Conus
Downlink Frequency (MHz)	3950	3950	3950	3950	3950
Downlink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Downlink Relative Contour Level (dB)	-3.3	-3.3	-3.3	-3.3	-3.3
Downlink Contour EIRP (dBW)	37	37	37	37	37.0
ADJACENT SATELLITE 1					
Satellite 1 Orbital Location	95 WL	95 WL	95 WL	95 WL	95 WL
Uplink Power Density (dBW/Hz)	-49.1	-49.1	-49.1	-49.1	-49.1
Uplink Polarization Advantage (dB)	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-38.2	-38.2	-38.2	-38.2	-38.2
Downlink Polarization Advantage (dB)	0	0	0	0	0
ADJACENT SATELLITE 2					
Satellite 2 Orbital Location	91 WL	91 WL	91 WL	91 WL	91 WL
Uplink Power Density (dBW/Hz)	-50.9	-50.9	-50.9	-50.9	-50.9
Uplink Polarization Advantage (dB)	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-31.5	-31.5	-31.5	-31.5	-31.5
Downlink Polarization Advantage (dB)	0	0	0	0	0
CARRIER INFORMATION					
Carrier ID	24M0G7W	1M98G7W	3M90G7W	1M24G7W	44K0G7W
Information Rate (kbps)	20000	3300	6500	1544	64
Carrier Modulation	QPSK	QPSK	QPSK	QPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	n/a	n/a	n/a	n/a	n/a
Code Rate	R1/2	R1/1	R1/1	R3/4	R7/8
Occupied Bandwidth (kHz)	20000	1980	3900	1235	44
Allocated Bandwidth (kHz)	24000	1980	3900	1235	44
Minimum C/N, (dB)	8	9.0	9.0	8.7	9.4
UPLINK EARTH STATION					
Earth Station Diameter (meters)	9.2	5.0	7.0	6.1	6.1
Earth Station Gain (dBi)	53.0	57.9	51.1	49.0	49.7
Earth Station Elevation Angle	20	20	20	20	20
DOWNLINK EARTH STATION					
Earth Station Diameter (meters)	7.0	4.5	4.5	6.1	6.1
Earth Station Gain (dBi)	48.1	43.9	43.9	46.2	46.2
Earth Station G/T (dB/K)	27.5	23.6	23.3	25.5	25.5
Earth Station Elevation Angle	20	20	20	20	20
UPLINK PERFORMANCE					
Uplink Earth Station EIRP (dBW)	70.9	61.1	65.0	57.8	44.0
Uplink Path Loss, Clear Sky (dB)	-200.2	-200.2	-200.2	-200.2	-200.2
Satellite G/T (dB/K)	1.0	1.0	1.0	1.0	1.0
Boltzman Constant (dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-73.0	-63.0	-65.9	-60.9	-46.4
Uplink C/N (dB)	27.3	27.5	28.5	26.3	27.0
DOWNLINK PERFORMANCE					
Downlink EIRP per Carrier (dBW)	37.0	25.7	26.6	19.3	5.6
Antenna Pointing Error (dB)	-0.5	-0.5	-0.5	-0.5	-0.5
Downlink Path Loss, Clear Sky (dB)	-196.3	-196.3	-196.3	-196.3	-196.3
Earth Station G/T (dB/K)	27.5	23.6	23.3	25.5	25.5
Boltzman Constant (dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-73.0	-63.0	-65.9	-60.9	-46.4
Downlink C/N (dB)	23.3	18.1	15.7	15.7	16.4
COMPOSITE/INTERFERENCE PERFORMANCE					
C/N Uplink (dB)	27.3	27.5	28.5	26.3	27.0
C/N Downlink (dB)	23.3	18.1	15.7	15.7	16.4
C/I Intermodulation (dB)	n/a	20.5	18.5	16.3	17.0
C/I Uplink Co-Channel (dB)*	28.8	31.8	29.8	27.5	28.2
C/I Downlink Co-Channel (dB)*	28.8	31.8	29.8	27.5	28.2
C/I Uplink Adjacent Satellite 1 (dB)	26.3	26.6	27.5	25.3	26.0
C/I Downlink Adjacent Satellite 1 (dB)	29.5	24.5	22.5	22.5	23.2
C/I Uplink Adjacent Satellite 2 (dB)	28.1	28.4	29.3	27.1	27.8
C/I Downlink Adjacent Satellite 2 (dB)	21.3	15.3	13.3	14.0	14.7
C/(N+I) Composite (dB)	16.6	11.9	10.0	9.7	10.4
Required System Margin (dB)	-1.0	-1.0	-1.0	-1.0	-1.0
Net C/(N+I) Composite (dB)	15.6	10.9	9.0	8.7	9.4
Minimum Required C/N (dB)	-8.0	-9.0	-9.0	-8.7	-9.4
Excess Link Margin (dB)	7.6	1.9	0.0	0.0	0.0
Number of Carriers	1	6	4.8	25.7	613.7
Carrier Density (kcps)					
Uplink Power Density (dBW/Hz)	-55.1	-59.8	-520	-52.1	-52.1
Downlink EIRP Density At Beam Peak	-32.7	-34.0	-36.0	-38.3	-37.6

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

EXHIBIT 14B: Intelsat Americas 6 Ku-Band Link Budgets

UPLINK BEAM INFORMATION						
Uplink Beam Name	Conus	Conus	Conus	Conus	Conus	Conus
Uplink Frequency (MHz)	14250	14250	14250	14250	14250	14250
Uplink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Uplink Relative Contour Level (dB)	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8
Uplink Contour G/T (dB/K)	0.0	0.0	0.0	0.0	0.0	0.0
Uplink SFD (dBW/m^2)	-81.0	-81.0	-81.0	-84.0	-84.0	-84.0
Rain Rate (mm/hr)	42.0	42.0	42.0	42.0	42.0	42.0
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	Conus	Conus	Conus	Conus	Conus	Conus
Downlink Frequency (MHz)	11950	11950	11950	11950	11950	11950
Downlink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Downlink Relative Contour Level (dB)	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6
Downlink Contour EIRP (dBW)	46.5	46.5	46.5	46.5	46.5	46.5
Rain Rate (mm/hr)	42.0	42.0	42.0	42.0	42.0	42.0
ADJACENT SATELLITE 1						
Satellite 1 Orbital Location	95 WL	95 WL	95 WL	95 WL	95 WL	95 WL
Uplink Power Density (dBW/Hz)	-45.2	-45.2	-45.2	-45.2	-45.2	-45.2
Uplink Polarization Advantage (dB)	0	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-25.7	-25.7	-25.7	-25.7	-25.7	-25.7
Downlink Polarization Advantage (dB)	0	0	0	0	0	0
ADJACENT SATELLITE 2						
Satellite 2 Orbital Location	91 WL	91 WL	91 WL	91 WL	91 WL	91 WL
Uplink Power Density (dBW/Hz)	-50.3	-50.3	-50.3	-50.3	-50.3	-50.3
Uplink Polarization Advantage (dB)	0	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-23.5	-23.5	-23.5	-23.5	-23.5	-23.5
Downlink Polarization Advantage (dB)	0	0	0	0	0	0
CARRIER INFORMATION						
Carrier ID	32M4F8W	32M4F8W	32M4F8W	27M0F8W	30M1G7W	30M1G7W
Carrier Modulation	TV/FM	TV/FM	TV/FM	TV/FM	TV/FM	TV/FM
Peak to Peak Bandwidth of EDS (MHz)	4	4	4	4	4	4
Information Rate (kbps)	n/a	n/a	n/a	n/a	n/a	n/a
Code Rate	n/a	n/a	n/a	n/a	n/a	n/a
Occupied Bandwidth (kHz)	32400	32400	32400	27000	27000	27000
Allocated Bandwidth (kHz)	32400	32400	32400	27000	27000	27000
Minimum C/N, Clear Sky (dB)	8	8	8	8.0	8.0	8.0
Minimum C/N, Rain (dB)	8	8	8	8.0	8.0	8.0
UPLINK EARTH STATION						
Earth Station Diameter (meters)	8.1	8.1	8.1	2.4	2.4	2.4
Earth Station Gain (dBi)	59.8	59.8	59.8	49.2	49.2	49.2
Earth Station Elevation Angle	20	20	20	20	20	20
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	5.5	5.5	5.5	8.1	8.1	8.1
Earth Station Gain (dBi)	54.4	54.4	54.4	58.5	58.5	58.5
Earth Station G/T (dB/K)	31.2	31.2	27.8	35.4	35.4	32.0
Earth Station Elevation Angle	20	20	20	20	20	20
LINK FADE DATA	Clear Sky	Uplink Fade	Downlink Fade	Clear Sky	Uplink Fade	Downlink Fade
UPLINK PERFORMANCE						
Uplink Earth Station EIRP (dBW)	81.9	81.9	81.9	75.9	75.9	75.9
Uplink Path Loss, Clear Sky (dB)	-207.5	-207.5	-207.5	-207.5	-207.5	-207.5
Uplink Rain Attenuation (dB)	0.0	-13.6	0.0	0.0	-9.5	0.0
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 (dB-Hz)	-75.1	-75.1	-75.1	-74.3	-74.3	-74.3
Uplink C/N (dB)	27.9	14.3	27.9	22.7	13.2	22.7
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	46.5	38.4	46.5	41.9	34.8	41.9
Antenna Pointing Error (dB)	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
Downlink Path Loss, Clear Sky (dB)	-205.9	-205.9	-205.9	-205.9	-205.9	-205.9
Downlink Rain Attenuation (dB)	0.0	0.0	-12.2	0.0	0.0	-12.2
Earth Station G/T (dB/K)	31.2	31.2	27.8	35.4	35.4	32.0
Boltzman Constant (dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-75.1	-75.1	-75.1	-74.3	-74.3	-74.3
Downlink C/N (dB)	24.7	16.6	9.2	25.1	18.1	9.5
COMPOSITE LINK PERFORMANCE						
C/N Uplink (dB)	27.9	14.3	27.9	22.7	13.2	22.7
C/N Downlink (dB)	24.7	16.6	9.2	25.1	18.1	9.5
C/I Intermodulation (dB)	n/a	n/a	n/a	n/a	n/a	n/a
C/I Uplink Co-Channel (dB)*	29.2	15.6	29.2	27.0	17.5	27.0
C/I Downlink Co-Channel (dB)*	29.2	21.1	29.2	27.0	20.0	27.0
C/I Uplink Adjacent Satellite 1 (dB)	32.2	18.6	32.2	27.0	17.5	27.0
C/I Downlink Adjacent Satellite 1 (dB)	31.4	23.3	31.4	31.0	23.9	31.0
C/I Uplink Adjacent Satellite 2 (dB)	37.3	23.7	37.3	32.1	22.6	32.1
C/I Downlink Adjacent Satellite 2 (dB)	28.6	20.5	28.6	28.4	21.3	28.4
C/(N+I) Composite (dB)	19.9	9.0	9.0	17.6	9.0	9.0
Required System Margin (dB)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Net C/(N+I) Composite (dB)	18.9	8.0	8.0	16.6	8.0	8.0
Minimum Required C/N (dB)	-8.0	-8.0	-8.0	-8.0	-8.0	-8.0
Excess Link Margin (dB)	10.9	0.0	0.0	8.6	0.0	0.0
Number of Carriers	1	1	1	2	2	2
Carrier Density Level						
Uplink Power Density (dBW/Hz)	-43.9	-43.9	-43.9	-39.3	-39.3	-39.3
Downlink EIRP Density At Beam Peak	-17.9	-26.0	-17.9	-22.5	-29.6	-22.5

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

EXHIBIT 14B: Intelsat Americas 6 Ku-Band Link Budgets (continued)

UPLINK BEAM INFORMATION						
Uplink Beam Name	Conus	Conus	Conus	Conus	Conus	Conus
Uplink Frequency (MHz)	14250	14250	14250	14250	14250	14250
Uplink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Uplink Relative Contour Level (dB)	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8
Uplink Contour G/T (dB/K)	0.0	0.0	0.0	0.0	0.0	0.0
Uplink SFD (dBW/m^2)	-84.0	-84.0	-84.0	-81.0	-81.0	-81.0
Rain Rate (mm/hr)	42.0	42.0	42.0	42.0	42.0	42.0
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	Conus	Conus	Conus	Conus	Conus	Conus
Downlink Frequency (MHz)	11950	11950	11950	11950	11950	11950
Downlink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Downlink Relative Contour Level (dB)	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6
Downlink Contour EIRP (dBW)	46.5	46.5	46.5	46.5	46.5	46.5
Rain Rate (mm/hr)	42.0	42.0	42.0	42.0	42.0	42.0
ADJACENT SATELLITE 1						
Satellite 1 Orbital Location	95 WL	95 WL	95 WL	95 WL	95 WL	95 WL
Uplink Power Density (dBW/Hz)	-45.2	-45.2	-45.2	-45.2	-45.2	-45.2
Uplink Polarization Advantage (dB)	0	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-25.7	-25.7	-25.7	-25.7	-25.7	-25.7
Downlink Polarization Advantage (dB)	0	0	0	0	0	0
ADJACENT SATELLITE 2						
Satellite 2 Orbital Location	91 WL	91 WL	91 WL	91 WL	91 WL	91 WL
Uplink Power Density (dBW/Hz)	-50.3	-50.3	-50.3	-50.3	-50.3	-50.3
Uplink Polarization Advantage (dB)	0	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-23.5	-23.5	-23.5	-23.5	-23.5	-23.5
Downlink Polarization Advantage (dB)	0	0	0	0	0	0
CARRIER INFORMATION						
Carrier ID	36M0G7W	36M0G7W	36M0G7W	23M5G7W	23M5G7W	23M5G7W
Carrier Modulation	QPSK	QPSK	QPSK	QPSK	QPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	n/a	n/a	n/a	n/a	n/a	n/a
Information Rate (kbps)	45000	45000	45000	27000	27000	27000
Code Rate	R3/4	R3/4	R3/4	R2/3	R2/3	R2/3
Occupied Bandwidth (kHz)	31600	31600	31600	19500	19500	19500
Allocated Bandwidth (kHz)	36000	36000	36000	27000	27000	27000
Minimum C/N, Clear Sky (dB)	8.8	8.8	8.8	8.4	8.4	8.4
Minimum C/N, Rain (dB)	8.8	8.8	8.8	8.4	8.4	8.4
UPLINK EARTH STATION						
Earth Station Diameter (meters)	5.5	5.5	5.5	4.5	4.5	4.5
Earth Station Gain (dBi)	56.1	56.1	56.1	54.8	54.8	54.8
Earth Station Elevation Angle	20	20	20	20	20	20
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	5.5	5.5	5.5	2.4	2.4	2.4
Earth Station Gain (dBi)	54.5	54.5	54.5	47.1	47.1	47.1
Earth Station G/T (dB/K)	30.0	30.0	27.3	22.6	22.6	21.4
Earth Station Elevation Angle	20	20	20	20	20	20
LINK FADE TYPE	Clear Sky	Uplink Fade	Downlink Fade	Clear Sky	Uplink Fade	Downlink Fade
UPLINK PERFORMANCE						
Uplink Earth Station EIRP (dBW)	78.9	78.9	78.9	78.9	78.9	78.9
Uplink Path Loss, Clear Sky (dB)	-207.5	-207.5	-207.5	-207.5	-207.5	-207.5
Uplink Rain Attenuation (dB)	0.0	-11.1	0.0	0.0	-3.1	0.0
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 (dB-Hz)	-75.0	-75.0	-75.0	-72.9	-72.9	-72.9
Uplink C/N (dB)	25.0	14.0	25.0	27.1	24.0	27.1
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	46.5	40.9	46.5	41.9	40.0	41.9
Antenna Pointing Error (dB)	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
Downlink Path Loss, Clear Sky (dB)	-205.9	-205.9	-205.9	-205.9	-205.9	-205.9
Downlink Rain Attenuation (dB)	0.0	0.0	-10.8	0.0	0.0	-1.8
Earth Station G/T (dB/K)	30.0	30.0	27.3	22.6	22.6	21.4
Boltzman Constant (dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-75.0	-75.0	-75.0	-72.9	-72.9	-72.9
Downlink C/N (dB)	23.7	18.1	10.2	13.7	11.9	10.8
COMPOSITE LINK PERFORMANCE						
C/N Uplink (dB)	25.0	14.0	25.0	27.1	24.0	27.1
C/N Downlink (dB)	23.7	18.1	10.2	13.7	11.9	10.8
C/I Intermodulation (dB)	n/a	n/a	n/a	n/a	n/a	n/a
C/I Uplink Co-Channel (dB)*	28.8	17.7	28.8	27.0	23.9	27.0
C/I Downlink Co-Channel (dB)*	28.8	23.2	28.8	27.0	25.2	27.0
C/I Uplink Adjacent Satellite 1 (dB)	29.3	18.2	29.3	31.4	28.2	31.4
C/I Downlink Adjacent Satellite 1 (dB)	31.5	25.9	31.5	21.4	19.6	21.4
C/I Uplink Adjacent Satellite 2 (dB)	34.4	23.3	34.4	36.5	33.3	36.5
C/I Downlink Adjacent Satellite 2 (dB)	28.7	23.1	28.7	17.7	15.8	17.7
C/(N+I) Composite (dB)	18.6	9.8	9.8	11.3	9.4	9.4
Required System Margin (dB)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Net C/(N+I) Composite (dB)	17.6	8.8	8.8	10.3	8.4	8.4
Minimum Required C/N (dB)	-8.8	-8.8	-8.8	-8.4	-8.4	-8.4
Excess Link Margin (dB)	8.8	0.0	0.0	1.9	0.0	0.0
Number of Carriers	1	1	1	2	2	2
Carrier Density Levels						
Uplink Power Density (dBW/Hz)	-52.2	-52.2	-52.2	-48.8	-48.8	-48.8
Downlink EIRP Density At Beam Peak	-26.9	-26.9	-26.9	-29.4	-29.4	-29.4

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

EXHIBIT 14B: Intelsat Americas 6 Ku-Band Link Budgets (continued)

UPLINK BEAM INFORMATION						
Uplink Beam Name	Conus	Conus	Conus	Conus	Conus	Conus
Uplink Frequency (MHz)	14250	14250	14250	14250	14250	14250
Uplink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Uplink Relative Contour Level (dB)	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8
Uplink Contour G/T (dB/K)	0.0	0.0	0.0	0.0	0.0	0.0
Uplink SFD (dBW/m^2)	-80.0	-80.0	-80.0	-78.0	-78.0	-78.0
Rain Rate (mm/hr)	42.0	42.0	42.0	42.0	42.0	42.0
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	Conus	Conus	Conus	Conus	Conus	Conus
Downlink Frequency (MHz)	11950	11950	11950	11950	11950	11950
Downlink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Downlink Relative Contour Level (dB)	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6
Downlink Contour EIRP (dBW)	46.5	46.5	46.5	46.5	46.5	46.5
Rain Rate (mm/hr)	42.0	42.0	42.0	42.0	42.0	42.0
ADJACENT SATELLITE						
Satellite 1 Orbital Location	95 WL	95 WL	95 WL	95 WL	95 WL	95 WL
Uplink Power Density (dBW/Hz)	-45.2	-45.2	-45.2	-45.2	-45.2	-45.2
Uplink Polarization Advantage (dB)	0	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-25.7	-25.7	-25.7	-25.7	-25.7	-25.7
Downlink Polarization Advantage (dB)	0	0	0	0	0	0
ADJACENT SATELLITE						
Satellite 2 Orbital Location	91 WL	91 WL	91 WL	91 WL	91 WL	91 WL
Uplink Power Density (dBW/Hz)	-50.3	-50.3	-50.3	-50.3	-50.3	-50.3
Uplink Polarization Advantage (dB)	0	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-23.5	-23.5	-23.5	-23.5	-23.5	-23.5
Downlink Polarization Advantage (dB)	0	0	0	0	0	0
CARRIER INFORMATION						
Carrier ID	1M24G7W	1M24G7W	1M24G7W	1M80G7W	1M80G7W	1M80G7W
Carrier Modulation	QPSK	QPSK	QPSK	QPSK	QPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	n/a	n/a	n/a	n/a	n/a	n/a
Information Rate (kbps)	1544	1544	1544	3000	3000	3000
Code Rate	R3/4	R3/4	R3/4	R1/1	R1/1	R1/1
Occupied Bandwidth (kHz)	1029	1029	1029	1600	1600	1600
Allocated Bandwidth (kHz)	1235	1235	1235	1800	1800	1800
Minimum C/N, Clear Sky (dB)	8.4	8.4	8.4	9.0	9.0	9.0
Minimum C/N, Rain (dB)	8.4	8.4	8.4	9.0	9.0	9.0
UPLINK EARTH STATION						
Earth Station Diameter (meters)	2.4	2.4	2.4	4.6	4.6	4.6
Earth Station Gain (dBi)	49.2	49.2	49.2	54.9	54.9	54.9
Earth Station Elevation Angle	20	20	20	20	20	20
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	3.0	3.0	3.0	6.1	6.1	6.1
Earth Station Gain (dBi)	49.2	49.2	49.2	55.5	55.5	55.5
Earth Station G/T (dB/K)	26.7	26.7	24.4	33.1	33.1	29.4
Earth Station Elevation Angle	20	20	20	20	20	20
LINK PARAMETER	Clear Sky	Uplink Fade	Downlink Fade	Clear Sky	Uplink Fade	Downlink Fade
UPLINK PERFORMANCE						
Uplink Earth Station EIRP (dBW)	61.1	61.1	61.1	64.9	78.9	78.9
Uplink Path Loss, Clear Sky (dB)	-207.5	-207.5	-207.5	-207.5	-207.5	-207.5
Uplink Rain Attenuation (dB)	0.0	-2.2	0.0	0.0	-4.5	0.0
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 (dB-Hz)	-60.1	-60.1	-60.1	-62.0	-62.0	-62.0
Uplink C/N (dB)	22.1	19.9	22.1	23.9	19.4	23.9
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	28.1	25.9	28.1	29.8	25.4	29.8
Antenna Pointing Error (dB)	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
Downlink Path Loss, Clear Sky (dB)	-205.9	-205.9	-205.9	-205.9	-205.9	-205.9
Downlink Rain Attenuation (dB)	0.0	0.0	-2.6	0.0	0.0	-7.8
Earth Station G/T (dB/K)	26.7	26.7	24.4	33.1	33.1	29.4
Boltzman Constant (dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-60.1	-60.1	-60.1	-62.0	-62.0	-62.0
Downlink C/N (dB)	16.8	14.7	11.8	23.1	18.6	11.6
COMPOSITE LINK PERFORMANCE						
C/N Uplink (dB)	22.1	19.9	22.1	23.9	19.4	23.9
C/N Downlink (dB)	16.8	14.7	11.8	23.1	18.6	11.6
C/I Intermodulation (dB)	17.5	15.5	17.5	17.4	13.0	17.4
C/I Uplink Co-Channel (dB)*	29.6	27.4	29.6	29.7	25.2	29.7
C/I Downlink Co-Channel (dB)*	29.6	27.5	29.6	29.7	25.3	29.7
C/I Uplink Adjacent Satellite 1 (dB)	26.4	24.2	26.4	28.2	23.7	28.2
C/I Downlink Adjacent Satellite 1 (dB)	22.0	19.8	22.0	27.8	23.4	27.8
C/I Uplink Adjacent Satellite 2 (dB)	31.5	29.3	31.5	33.3	28.8	33.3
C/I Downlink Adjacent Satellite 2 (dB)	18.5	16.4	18.5	25.0	20.5	25.0
C/(N+I) Composite (dB)	11.5	9.4	9.4	14.4	10.0	10.0
Required System Margin (dB)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Net C/(N+I) Composite (dB)	10.5	8.4	8.4	13.4	9.0	9.0
Minimum Required C/N (dB)	-8.4	-8.4	-8.4	-9.0	-9.0	-9.0
Excess Link Margin (dB)	2.1	0.0	0.0	4.4	0.0	0.0
Number of Carriers	24	24	24	16	16	16
Carrier Density (C/I)						
Uplink Power Density (dBW/Hz)	-48.2	-48.2	-48.2	-52.1	-52.1	-52.1
Downlink EIRP Density At Beam Peak	-30.4	-30.4	-30.4	-30.6	-30.6	-30.6

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

EXHIBIT 14B: Intelsat Americas 6 Ku-Band Link Budgets (continued)

UPLINK BEAM INFORMATION						
Uplink Beam Name	Conus	Conus	Conus	Conus	Conus	Conus
Uplink Frequency (MHz)	14250	14250	14250	14250	14250	14250
Uplink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Uplink Relative Contour Level (dB)	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8
Uplink Contour G/T (dB/K)	0.0	0.0	0.0	0.0	0.0	0.0
Uplink SFD (dBW/m^2)	-82.0	-82.0	-82.0	-89.0	-89.0	-89.0
Rain Rate (mm/hr)	42.0	42.0	42.0	42.0	42.0	42.0
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	Conus	Conus	Conus	Conus	Conus	Conus
Downlink Frequency (MHz)	11950	11950	11950	11950	11950	11950
Downlink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Downlink Relative Contour Level (dB)	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6
Downlink Contour EIRP (dBW)	46.5	46.5	46.5	46.5	46.5	46.5
Rain Rate (mm/hr)	42.0	42.0	42.0	42.0	42.0	42.0
ADJACENT SATELLITE 1						
Satellite 1 Orbital Location	95 WL	95 WL	95 WL	95 WL	95 WL	95 WL
Uplink Power Density (dBW/Hz)	-45.2	-45.2	-45.2	-45.2	-45.2	-45.2
Uplink Polarization Advantage (dB)	0	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-25.7	-25.7	-25.7	-25.7	-25.7	-25.7
Downlink Polarization Advantage (dB)	0	0	0	0	0	0
ADJACENT SATELLITE 2						
Satellite 2 Orbital Location	91 WL	91 WL	91 WL	91 WL	91 WL	91 WL
Uplink Power Density (dBW/Hz)	-50.3	-50.3	-50.3	-50.3	-50.3	-50.3
Uplink Polarization Advantage (dB)	0	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-23.5	-23.5	-23.5	-23.5	-23.5	-23.5
Downlink Polarization Advantage (dB)	0	0	0	0	0	0
CARRIER INFORMATION						
Carrier ID	3M90G7W	3M90G7W	3M90G7W	300KG9W	300KG9W	300KG9W
Carrier Modulation	QPSK	QPSK	QPSK	BPSK	BPSK	BPSK
Peak to Peak Bandwidth of EDS (MHz)	n/a	n/a	n/a	n/a	n/a	n/a
Information Rate (kbps)	4500	4500	4500	125	125	125
Code Rate	R2/3	R2/3	R2/3	R1/2	R1/2	R1/2
Occupied Bandwidth (kHz)	3260	3260	3260	250	250	250
Allocated Bandwidth (kHz)	3900	3900	3900	300	300	300
Minimum C/N, Clear Sky (dB)	7.4	7.4	7.4	4.0	4.0	4.0
Minimum C/N, Rain (dB)	7.4	7.4	7.4	4.0	4.0	4.0
UPLINK EARTH STATION						
Earth Station Diameter (meters)	3.8	3.8	3.8	1.2	1.2	1.2
Earth Station Gain (dBi)	53.0	53.0	53.0	42.5	42.5	42.5
Earth Station Elevation Angle	20	20	20	20	20	20
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	4.6	4.6	4.6	8.1	8.1	8.1
Earth Station Gain (dBi)	53.5	53.5	53.5	58.5	58.5	58.5
Earth Station G/T (dB/K)	31.0	31.0	27.4	35.4	35.4	32.0
Earth Station Elevation Angle	20	20	20	20	20	20
LINK FADE TYP	Clear Sky	Uplink Fade	Downlink Fade	Clear Sky	Uplink Fade	Downlink Fade
UPLINK PERFORMANCE						
Uplink Earth Station EIRP (dBW)	63.9	63.9	63.9	44.1	44.1	44.1
Uplink Path Loss, Clear Sky (dB)	-207.5	-207.5	-207.5	-207.5	-207.5	-207.5
Uplink Rain Attenuation (dB)	0.0	-4.6	0.0	0.0	-3.3	0.0
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 (dB-Hz)	-65.1	-65.1	-65.1	-54.0	-54.0	-54.0
Uplink C/N (dB)	19.9	15.3	19.9	11.3	8.0	11.3
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	32.8	28.4	32.8	20.1	16.8	20.1
Antenna Pointing Error (dB)	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
Downlink Path Loss, Clear Sky (dB)	-205.9	-205.9	-205.9	-205.9	-205.9	-205.9
Downlink Rain Attenuation (dB)	0.0	0.0	-7.4	0.0	0.0	-12.6
Earth Station G/T (dB/K)	31.0	31.0	27.4	35.4	35.4	32.0
Boltzman Constant (dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-65.1	-65.1	-65.1	-54.0	-54.0	-54.0
Downlink C/N (dB)	20.9	16.4	10.0	23.7	20.4	7.8
COMPOSITE INTERFERENCE						
C/N Uplink (dB)	19.9	15.3	19.9	11.3	8.0	11.3
C/N Downlink (dB)	20.9	16.4	10.0	23.7	20.4	7.8
C/I Intermodulation (dB)	17.3	13.1	17.3	15.7	12.5	15.7
C/I Uplink Co-Channel (dB)*	29.4	24.8	29.4	27.8	24.5	27.8
C/I Downlink Co-Channel (dB)*	29.4	25.0	29.4	27.8	24.5	27.8
C/I Uplink Adjacent Satellite 1 (dB)	24.1	19.6	24.1	15.6	12.3	15.6
C/I Downlink Adjacent Satellite 1 (dB)	25.8	21.4	25.8	29.5	26.3	29.5
C/I Uplink Adjacent Satellite 2 (dB)	29.2	24.7	29.2	20.7	17.4	20.7
C/I Downlink Adjacent Satellite 2 (dB)	22.8	18.4	22.8	26.9	23.6	26.9
C/(N+I) Composite (dB)	12.8	8.4	8.4	8.3	5.0	5.1
Required System Margin (dB)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Net C/(N+I) Composite (dB)	11.8	7.4	7.4	7.3	4.0	4.1
Minimum Required C/N (dB)	-7.4	-7.4	-7.4	-4.0	-4.0	-4.0
Excess Link Margin (dB)	4.4	0.0	0.0	3.3	0.0	0.1
Number of Carriers	8	8	8	150	150	150
Carrier Density Level						
Uplink Power Density (dBW/Hz)	-54.3	-54.3	-54.3	-52.3	-52.3	-52.3
Downlink EIRP Density At Beam Peak	-30.7	-30.7	-30.7	-32.3	-32.3	-32.3

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

EXHIBIT 14B: Intelsat Americas 6 Ku-Band Link Budgets (continued)

UPLINK BEAM INFORMATION						
Uplink Beam Name	Conus	Conus	Conus	Conus	Conus	Conus
Uplink Frequency (MHz)	14250	14250	14250	14250	14250	14250
Uplink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Uplink Relative Contour Level (dB)	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8
Uplink Contour G/T (dB/K)	0.0	0.0	0.0	0.0	0.0	0.0
Uplink SFD (dBW/m^2)	-87.0	-87.0	-87.0	-85.0	-85.0	-85.0
Rain Rate (mm/hr)	42.0	42.0	42.0	42.0	42.0	42.0
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	Conus	Conus	Conus	Conus	Conus	Conus
Downlink Frequency (MHz)	11950	11950	11950	11950	11950	11950
Downlink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Downlink Relative Contour Level (dB)	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6
Downlink Contour EIRP (dBW)	46.5	46.5	46.5	46.5	46.5	46.5
Rain Rate (mm/hr)	42.0	42.0	42.0	42.0	42.0	42.0
ADJACENT SATELLITE 1						
Satellite 1 Orbital Location	95 WL	95 WL	95 WL	95 WL	95 WL	95 WL
Uplink Power Density (dBW/Hz)	-45.2	-45.2	-45.2	-45.2	-45.2	-45.2
Uplink Polarization Advantage (dB)	0	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-25.7	-25.7	-25.7	-25.7	-25.7	-25.7
Downlink Polarization Advantage (dB)	0	0	0	0	0	0
ADJACENT SATELLITE 2						
Satellite 2 Orbital Location	91 WL	91 WL	91 WL	91 WL	91 WL	91 WL
Uplink Power Density (dBW/Hz)	-50.3	-50.3	-50.3	-50.3	-50.3	-50.3
Uplink Polarization Advantage (dB)	0	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-23.5	-23.5	-23.5	-23.5	-23.5	-23.5
Downlink Polarization Advantage (dB)	0	0	0	0	0	0
CARRIER INFORMATION						
Carrier ID	115KG1D	115KG1D	115KG1D	38K4G1D	38K4G1D	38K4G1D
Carrier Modulation	BPSK	BPSK	BPSK	BPSK	BPSK	BPSK
Peak to Peak Bandwidth of EDS (MHz)	n/a	n/a	n/a	n/a	n/a	n/a
Information Rate (kbps)	64	64	64	32	32	32
Code Rate	R2/3	R2/3	R2/3	R1/1	R1/1	R1/1
Occupied Bandwidth (kHz)	96	96	96	32	32	32
Allocated Bandwidth (kHz)	115	115	115	38.4	38.4	38.4
Minimum C/N, Clear Sky (dB)	5.2	5.2	5.2	7.0	7.0	7.0
Minimum C/N, Rain (dB)	5.2	5.2	5.2	7.0	7.0	7.0
UPLINK EARTH STATION						
Earth Station Diameter (meters)	1.8	1.8	1.8	1.8	1.8	1.8
Earth Station Gain (dBi)	46.2	46.2	46.2	46.2	46.2	46.2
Earth Station Elevation Angle	20	20	20	20	20	20
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	9.2	9.2	9.2	9.0	9.0	9.0
Earth Station Gain (dBi)	59.5	59.5	59.5	59.2	59.2	59.2
Earth Station G/T (dB/K)	37.1	37.1	33.3	36.0	36.0	32.7
Earth Station Elevation Angle	20	20	20	20	20	20
LINK FADE INFO	Clear Sky	Uplink Fade	Downlink Fade	Clear Sky	Uplink Fade	Downlink Fade
UPLINK PERFORMANCE						
Uplink Earth Station EIRP (dBW)	41.9	41.9	41.9	39.4	39.4	39.4
Uplink Path Loss, Clear Sky (dB)	-207.5	-207.5	-207.5	-207.5	-207.5	-207.5
Uplink Rain Attenuation (dB)	0.0	-3.4	0.0	0.0	-3.1	0.0
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 (dB-Hz)	-49.8	-49.8	-49.8	-45.1	-45.1	-45.1
Uplink C/N (dB)	13.2	9.7	13.2	15.5	12.3	15.5
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	15.9	12.4	15.9	11.4	8.3	11.4
Antenna Pointing Error (dB)	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
Downlink Path Loss, Clear Sky (dB)	-205.9	-205.9	-205.9	-205.9	-205.9	-205.9
Downlink Rain Attenuation (dB)	0.0	0.0	-12.6	0.0	0.0	-10.4
Earth Station G/T (dB/K)	37.1	37.1	33.3	36.0	36.0	32.7
Boltzman Constant (dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-49.9	-49.8	-49.8	-45.1	-45.1	-45.1
Downlink C/N (dB)	25.3	21.9	8.9	24.5	21.4	10.8
COMPOSITE LINK PERFORMANCE						
C/N Uplink (dB)	13.2	9.7	13.2	15.5	12.3	15.5
C/N Downlink (dB)	25.3	21.9	8.9	24.5	21.4	10.8
C/I Intermodulation (dB)	15.6	12.2	15.6	15.9	12.8	15.9
C/I Uplink Co-Channel (dB)*	27.7	24.3	27.7	28.0	24.9	28.0
C/I Downlink Co-Channel (dB)*	27.7	24.3	27.7	28.0	24.9	28.0
C/I Uplink Adiacent Satellite 1 (dB)	17.5	14.0	17.5	19.7	16.6	19.7
C/I Downlink Adiacent Satellite 1 (dB)	28.9	25.5	28.9	30.2	27.1	30.2
C/I Uplink Adiacent Satellite 2 (dB)	22.6	19.1	22.6	24.8	21.7	24.8
C/I Downlink Adiacent Satellite 2 (dB)	26.3	22.9	26.3	27.6	24.5	27.6
C/(N+I) Composite (dB)	9.6	6.2	6.3	11.1	8.0	8.1
Required System Margin (dB)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Net C/(N+I) Composite (dB)	8.6	5.2	5.3	10.1	7.0	7.1
Minimum Required C/N (dB)	-5.2	-5.2	-5.2	-7.0	-7.0	-7.0
Excess Link Margin (dB)	3.4	0.0	0.1	3.1	0.0	0.1
Number of Carriers	400	400	400	1125	1125	1125
Carrier Density (dB)						
Uplink Power Density (dBW/Hz)	-54.1	-54.1	-54.1	-51.9	-51.9	-51.9
Downlink EIRP Density At Beam Peak	-32.4	-32.4	-32.4	-32.1	-32.1	-32.1

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

EXHIBIT 14B: Intelsat Americas 6 Ku-Band Link Budgets (continued)

UPLINK BEAM INFORMATION						
Uplink Beam Name	Conus	Conus	Conus	Conus	Conus	Conus
Uplink Frequency (MHz)	14250	14250	14250	14250	14250	14250
Uplink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Uplink Relative Contour Level (dB)	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8
Uplink Contour G/T (dB/K)	0.0	0.0	0.0	0.0	0.0	0.0
Uplink SFD (dBW/m^2)	-82.0	-82.0	-82.0	-84.0	-84.0	-84.0
Rain Rate (mm/hr)	42.0	42.0	42.0	42.0	42.0	42.0
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	Conus	Conus	Conus	Conus	Conus	Conus
Downlink Frequency (MHz)	11950	11950	11950	11950	11950	11950
Downlink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Downlink Relative Contour Level (dB)	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6
Downlink Contour EIRP (dBW)	46.5	46.5	46.5	46.5	46.5	46.5
Rain Rate (mm/hr)	42.0	42.0	42.0	42.0	42.0	42.0
ADJACENT SATELLITE						
Satellite 1 Orbital Location	95 WL	95 WL	95 WL	95 WL	95 WL	95 WL
Uplink Power Density (dBW/Hz)	-45.2	-45.2	-45.2	-45.2	-45.2	-45.2
Uplink Polarization Advantage (dB)	0	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-25.7	-25.7	-25.7	-25.7	-25.7	-25.7
Downlink Polarization Advantage (dB)	0	0	0	0	0	0
ADJACENT SATELLITE						
Satellite 2 Orbital Location	91 WL	91 WL	91 WL	91 WL	91 WL	91 WL
Uplink Power Density (dBW/Hz)	-50.3	-50.3	-50.3	-50.3	-50.3	-50.3
Uplink Polarization Advantage (dB)	0	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-23.5	-23.5	-23.5	-23.5	-23.5	-23.5
Downlink Polarization Advantage (dB)	0	0	0	0	0	0
CARRIER INFORMATION						
Carrier ID	1M23G7W	1M23G7W	1M23G7W	25K0F3W	25K0F3W	25K0F3W
Carrier Modulation	BPSK	BPSK	BPSK	FM	FM	FM
Peak to Peak Bandwidth of EDS (MHz)	n/a	n/a	n/a	4	4	4
Information Rate (kbps)	128	128	128	n/a	n/a	n/a
Code Rate	R1/2	R1/2	R1/2	n/a	n/a	n/a
Occupied Bandwidth (kHz)	1024	1024	1024	25	25	25
Allocated Bandwidth (kHz)	1230	1230	1230	25	25	25
Minimum C/N, Clear Sky (dB)	-2.4	-2.4	-2.4	6.5	6.5	6.5
Minimum C/N, Rain (dB)	-2.4	-2.4	-2.4	6.5	6.5	6.5
UPLINK EARTH STATION						
Earth Station Diameter (meters)	9.2	9.2	9.2	2.4	2.4	2.4
Earth Station Gain (dBi)	60.2	60.2	60.2	49.2	49.2	49.2
Earth Station Elevation Angle	20	20	20	20	20	20
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	1.2	1.2	1.2	8.1	8.1	8.1
Earth Station Gain (dBi)	41.3	41.3	41.3	58.5	58.5	58.5
Earth Station G/T (dB/K)	18.8	18.8	16.0	35.4	35.4	32.0
Earth Station Elevation Angle	20	20	20	20	20	20
LINK FADE TYPE	Clear Sky	Uplink Fade	Downlink Fade	Clear Sky	Uplink Fade	Downlink Fade
UPLINK PERFORMANCE						
Uplink Earth Station EIRP (dBW)	56.6	56.6	56.6	40.0	40.0	40.0
Uplink Path Loss, Clear Sky (dB)	-207.5	-207.5	-207.5	-207.5	-207.5	-207.5
Uplink Rain Attenuation (dB)	0.0	-3.9	0.0	0.0	-4.8	0.0
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 (dB-Hz)	-60.1	-60.1	-60.1	-44.0	-44.0	-44.0
Uplink C/N (dB)	17.6	13.6	17.6	17.1	12.4	17.1
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	25.5	21.6	25.5	10.9	6.2	10.9
Antenna Pointing Error (dB)	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
Downlink Path Loss, Clear Sky (dB)	-205.9	-205.9	-205.9	-205.9	-205.9	-205.9
Downlink Rain Attenuation (dB)	0.0	0.0	-3.8	0.0	0.0	-12.0
Earth Station G/T (dB/K)	18.8	18.8	16.0	35.4	35.4	32.0
Boltzman Constant (dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-60.1	-60.1	-60.1	-44.0	-44.0	-44.0
Downlink C/N (dB)	6.4	2.5	-0.2	24.5	19.8	9.1
COMPOSITE LINK PERFORMANCE						
C/N Uplink (dB)	17.6	13.6	17.6	17.1	12.4	17.1
C/N Downlink (dB)	6.4	2.5	-0.2	24.5	19.8	9.1
C/I Intermodulation (dB)	15.0	11.1	15.0	16.6	11.8	16.6
C/I Uplink Co-Channel (dB)*	27.1	23.1	27.1	29.4	24.7	29.4
C/I Downlink Co-Channel (dB)*	27.1	23.2	27.1	29.4	24.7	29.4
C/I Uplink Adjacent Satellite 1 (dB)	21.9	17.9	21.9	21.4	16.6	21.4
C/I Downlink Adjacent Satellite 1 (dB)	12.4	8.5	12.4	30.4	25.6	30.4
C/I Uplink Adjacent Satellite 2 (dB)	27.0	23.0	27.0	26.5	21.7	26.5
C/I Downlink Adjacent Satellite 2 (dB)	6.8	2.8	6.8	27.8	23.0	27.8
C/(N+I) Composite (dB)	2.5	-1.4	-1.4	12.3	7.5	7.5
Required System Margin (dB)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Net C/(N+I) Composite (dB)	1.5	-2.4	-2.4	11.3	6.5	6.5
Minimum Required C/N (dB)	2.4	2.4	2.4	-6.5	-6.5	-6.5
Excess Link Margin (dB)	3.9	0.0	0.0	4.8	0.0	0.0
Number of Carriers	43	43	43	1240	1240	1240
SATELLITE DENSITY LEVEL						
Uplink Power Density (dBW/Hz)	-63.7	-63.7	-63.7	-75.2	-75.2	-75.2
Downlink EIRP Density At Beam Peak	-33.0	-33.0	-33.0	-53.5	-58.2	-53.5

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

EXHIBIT 14B: Intelsat Americas 6 Ku-Band Link Budgets (continued)

UPLINK BEAM INFORMATION						
Uplink Beam Name	Conus	Conus	Conus	Conus	Conus	Conus
Uplink Frequency (MHz)	14250	14250	14250	14250	14250	14250
Uplink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Uplink Relative Contour Level (dB)	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8
Uplink Contour G/T (dB/K)	0.0	0.0	0.0	0.0	0.0	0.0
Uplink SFD (dBW/m^2)	-90.0	-90.0	-90.0	-84.0	-84.0	-84.0
Rain Rate (mm/hr)	42.0	42.0	42.0	42.0	42.0	42.0
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	Conus	Conus	Conus	Conus	Conus	Conus
Downlink Frequency (MHz)	11950	11950	11950	11950	11950	11950
Downlink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Downlink Relative Contour Level (dB)	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6
Downlink Contour EIRP (dBW)	46.5	46.5	46.5	46.5	46.5	46.5
Rain Rate (mm/hr)	42.0	42.0	42.0	42.0	42.0	42.0
ADJACENT SATELLITE 1						
Satellite 1 Orbital Location	95 WL	95 WL	95 WL	95 WL	95 WL	95 WL
Uplink Power Density (dBW/Hz)	-45.2	-45.2	-45.2	-45.2	-45.2	-45.2
Uplink Polarization Advantage (dB)	0	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-25.7	-25.7	-25.7	-25.7	-25.7	-25.7
Downlink Polarization Advantage (dB)	0	0	0	0	0	0
ADJACENT SATELLITE 2						
Satellite 2 Orbital Location	91 WL	91 WL	91 WL	91 WL	91 WL	91 WL
Uplink Power Density (dBW/Hz)	-50.3	-50.3	-50.3	-50.3	-50.3	-50.3
Uplink Polarization Advantage (dB)	0	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-23.5	-23.5	-23.5	-23.5	-23.5	-23.5
Downlink Polarization Advantage (dB)	0	0	0	0	0	0
CARRIER INFORMATION						
Carrier ID	27M0F8W	27M0F8W	27M0F8W	27M0G7W	27M0G7W	27M0G7W
Carrier Modulation	TV/FM	TV/FM	TV/FM	OPSK	OPSK	OPSK
Peak to Peak Bandwidth of EDS (MHz)	4	4	4	n/a	n/a	n/a
Information Rate (kbps)	25919	25919	25919	45000	45000	45000
Code Rate	n/a	n/a	n/a	R1/1	R1/1	R1/1
Occupied Bandwidth (kHz)	27000	27000	27000	22500	22500	22500
Allocated Bandwidth (kHz)	27000	27000	27000	27000	27000	27000
Minimum C/N, Clear Sky (dB)	8.0	8.0	8.0	9.0	9.0	9.0
Minimum C/N, Rain (dB)	8.0	8.0	8.0	9.0	9.0	9.0
UPLINK EARTH STATION						
Earth Station Diameter (meters)	6.1	6.1	6.1	5.5	5.5	5.5
Earth Station Gain (dBi)	57.1	57.1	57.1	56.1	56.1	56.1
Earth Station Elevation Angle	20	20	20	20	20	20
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	2.4	2.4	2.4	1.8	1.8	1.8
Earth Station Gain (dBi)	47.1	47.1	47.1	44.8	44.8	44.8
Earth Station G/T (dB/K)	22.6	22.6	20.5	20.1	20.1	18.7
Earth Station Elevation Angle	20	20	20	20	20	20
LINK FADE TYPE	Clear Sky	Uplink Fade	Downlink Fade	Clear Sky	Uplink Fade	Downlink Fade
UPLINK PERFORMANCE						
Uplink Earth Station EIRP (dBW)	73.4	73.4	73.4	78.9	78.9	78.9
Uplink Path Loss, Clear Sky (dB)	-207.5	-207.5	-207.5	-207.5	-207.5	-207.5
Uplink Rain Attenuation (dB)	0.0	-7.1	0.0	0.0	-6.1	0.0
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 (dB-Hz)	-74.3	-74.3	-74.3	-73.5	-73.5	-73.5
Uplink C/N (dB)	20.2	13.1	20.2	26.5	20.4	26.5
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	46.5	45.3	46.5	46.5	44.6	46.5
Antenna Pointing Error (dB)	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
Downlink Path Loss, Clear Sky (dB)	-205.9	-205.9	-205.9	-205.9	-205.9	-205.9
Downlink Rain Attenuation (dB)	0.0	0.0	-4.7	0.0	0.0	-2.5
Earth Station G/T (dB/K)	22.6	22.6	20.5	20.1	20.1	18.7
Boltzman Constant (dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-74.3	-74.3	-74.3	-73.5	-73.5	-73.5
Downlink C/N (dB)	16.9	15.8	10.2	15.2	13.3	11.3
COMPOSITE LINK PERFORMANCE						
C/N Uplink (dB)	20.2	13.1	20.2	26.5	20.4	26.5
C/N Downlink (dB)	16.9	15.8	10.2	15.2	13.3	11.3
C/I Intermodulation (dB)	n/a	n/a	n/a	n/a	n/a	n/a
C/I Uplink Co-Channel (dB)*	27.5	20.4	27.5	27.0	20.9	27.0
C/I Downlink Co-Channel (dB)*	27.0	25.8	27.0	27.0	25.1	27.0
C/I Uplink Adjacent Satellite 1 (dB)	24.5	17.4	24.5	30.8	24.6	30.8
C/I Downlink Adjacent Satellite 1 (dB)	24.6	23.5	24.6	23.0	21.1	23.0
C/I Uplink Adjacent Satellite 2 (dB)	29.6	22.5	29.6	35.9	29.7	35.9
C/I Downlink Adjacent Satellite 2 (dB)	20.9	19.7	20.9	18.7	16.8	18.7
C/(N+I) Composite (dB)	13.0	9.0	9.0	12.5	10.0	10.0
Required System Margin (dB)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Net C/(N+I) Composite (dB)	12.0	8.0	8.0	11.5	9.0	9.0
Minimum Required C/N (dB)	-8.0	-8.0	-8.0	-9.0	-9.0	-9.0
Excess Link Margin (dB)	4.0	0.0	0.0	2.5	0.0	0.0
Number of Carriers	1	1	1	1	1	1
CARRIER DENSITY						
Uplink Power Density (dBW/Hz)	-49.7	-49.7	-49.7	-50.7	-50.7	-50.7
Downlink EIRP Density At Beam Peak	-17.9	-19.1	-17.9	-25.4	-25.4	-25.4

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

EXHIBIT 14B: Intelsat Americas 6 Ku-Band Link Budgets (continued)

UPLINK BEAM INFORMATION						
Uplink Beam Name	Conus	Conus	Conus	Conus	Conus	Conus
Uplink Frequency (MHz)	14250	14250	14250	14250	14250	14250
Uplink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Uplink Relative Contour Level (dB)	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8
Uplink Contour G/T (dB/K)	0.0	0.0	0.0	0.0	0.0	0.0
Uplink SFD (dBW/m^2)	-90.0	-90.0	-90.0	-82.0	-82.0	-82.0
Rain Rate (mm/hr)	42.0	42.0	42.0	42.0	42.0	42.0
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	Conus	Conus	Conus	Conus	Conus	Conus
Downlink Frequency (MHz)	11950	11950	11950	11950	11950	11950
Downlink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Downlink Relative Contour Level (dB)	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6
Downlink Contour EIRP (dBW)	46.5	46.5	46.5	46.5	46.5	46.5
Rain Rate (mm/hr)	42.0	42.0	42.0	42.0	42.0	42.0
ADJACENT SATELLITE 1						
Satellite 1 Orbital Location	95 WL	95 WL	95 WL	95 WL	95 WL	95 WL
Uplink Power Density (dBW/Hz)	-45.2	-45.2	-45.2	-45.2	-45.2	-45.2
Uplink Polarization Advantage (dB)	0	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-25.7	-25.7	-25.7	-25.7	-25.7	-25.7
Downlink Polarization Advantage (dB)	0	0	0	0	0	0
ADJACENT SATELLITE 2						
Satellite 2 Orbital Location	91 WL	91 WL	91 WL	91 WL	91 WL	91 WL
Uplink Power Density (dBW/Hz)	-50.3	-50.3	-50.3	-50.3	-50.3	-50.3
Uplink Polarization Advantage (dB)	0	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-23.5	-23.5	-23.5	-23.5	-23.5	-23.5
Downlink Polarization Advantage (dB)	0	0	0	0	0	0
CARRIER INFORMATION						
Carrier ID	24M0G7W	24M0G7W	24M0G7W	600KG7W	600KG7W	600KG7W
Carrier Modulation	QPSK	QPSK	QPSK	BPSK	BPSK	BPSK
Peak to Peak Bandwidth of EDS (MHz)	n/a	n/a	n/a	n/a	n/a	n/a
Information Rate (kbps)	20000	20000	20000	250	250	250
Code Rate	R1/2	R1/2	R1/2	R1/2	R1/2	R1/2
Occupied Bandwidth (kHz)	20000	20000	20000	500	500	500
Allocated Bandwidth (kHz)	24000	24000	24000	600	600	600
Minimum C/N, Clear Sky (dB)	8.0	8.0	8.0	4.0	4.0	4.0
Minimum C/N, Rain (dB)	8.0	8.0	8.0	4.0	4.0	4.0
UPLINK EARTH STATION						
Earth Station Diameter (meters)	6.1	6.1	6.1	6.1	6.1	6.1
Earth Station Gain (dBi)	57.1	57.1	57.1	57.1	57.1	57.1
Earth Station Elevation Angle	20	20	20	20	20	20
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	1.8	1.8	1.8	1.8	1.8	1.8
Earth Station Gain (dBi)	44.8	44.8	44.8	44.8	44.8	44.8
Earth Station G/T (dB/K)	20.1	20.1	18.3	22.3	22.3	19.6
Earth Station Elevation Angle	20	20	20	20	20	20
LINK FADE TYPE	Clear Sky	Uplink Fade	Downlink Fade	Clear Sky	Uplink Fade	Downlink Fade
UPLINK PERFORMANCE						
Uplink Earth Station EIRP (dBW)	72.9	72.9	72.9	56.4	56.4	56.4
Uplink Path Loss, Clear Sky (dB)	-207.5	-207.5	-207.5	-207.5	-207.5	-207.5
Uplink Rain Attenuation (dB)	0.0	-6.2	0.0	0.0	-3.1	0.0
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 (dB-Hz)	-73.0	-73.0	-73.0	-57.0	-57.0	-57.0
Uplink C/N (dB)	21.0	14.8	21.0	20.5	17.4	20.5
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	46.5	44.6	46.5	25.3	22.3	25.3
Antenna Pointing Error (dB)	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
Downlink Path Loss, Clear Sky (dB)	-205.9	-205.9	-205.9	-205.9	-205.9	-205.9
Downlink Rain Attenuation (dB)	0.0	0.0	-3.7	0.0	0.0	-3.4
Earth Station G/T (dB/K)	20.1	20.1	18.3	22.3	22.3	19.6
Boltzman Constant (dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-73.0	-73.0	-73.0	-57.0	-57.0	-57.0
Downlink C/N (dB)	15.7	13.8	10.3	12.8	9.7	6.7
COMPOSITE LINK PERFORMANCE						
C/N Uplink (dB)	21.0	14.8	21.0	20.5	17.4	20.5
C/N Downlink (dB)	15.7	13.8	10.3	12.8	9.7	6.7
C/I Intermodulation (dB)	n/a	n/a	n/a	14.9	11.9	14.9
C/I Uplink Co-Channel (dB)*	27.5	21.3	27.5	27.0	23.9	27.0
C/I Downlink Co-Channel (dB)*	27.5	25.6	27.5	27.0	23.9	27.0
C/I Uplink Adjacent Satellite 1 (dB)	25.3	19.1	25.3	24.8	21.7	24.8
C/I Downlink Adjacent Satellite 1 (dB)	23.5	21.6	23.5	18.4	15.3	18.4
C/I Uplink Adjacent Satellite 2 (dB)	30.4	24.2	30.4	29.9	26.8	29.9
C/I Downlink Adjacent Satellite 2 (dB)	19.2	17.3	19.2	14.1	11.0	14.1
C/(N+I) Composite (dB)	12.3	9.0	9.0	8.1	5.0	5.0
Required System Margin (dB)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Net C/(N+I) Composite (dB)	11.3	8.0	8.0	7.1	4.0	4.0
Minimum Required C/N (dB)	-8.0	-8.0	-8.0	-4.0	-4.0	-4.0
Excess Link Margin (dB)	3.3	0.0	0.0	3.1	0.0	0.0
Number of Carriers	1	1	1	45	45	45
Carrier Density (dB)						
Uplink Power Density (dBW/Hz)	-57.2	-57.2	-57.2	-57.7	-57.7	-57.7
Downlink EIRP Density At Beam Peak	-24.9	-24.9	-24.9	-30.0	-30.0	-30.0

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

EXHIBIT 15A: Intelsat Americas 8 C-Band Link Budgets

UPLINK BEAM INFORMATION				
Uplink Beam Name	Nafta	Nafta	Nafta	Nafta
Uplink Frequency (MHz)	6250	6250	6250	6250
Uplink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal
Uplink Relative Contour Level (dB)	-5	-5	-5	-5
Uplink Contour G/T (dB/K)	-3.0	-3.0	-3.0	-3.0
Uplink SFD (dBW/m^2)	-88.7	-88.7	-83.7	-83.7
DOWNLINK BEAM INFORMATION				
Downlink Beam Name	Nafta	Nafta	Nafta	Nafta
Downlink Frequency (MHz)	4025	4025	4025	4025
Downlink Beam Polarization	Vertical	Vertical	Vertical	Vertical
Downlink Relative Contour Level (dB)	-4.2	-2.8	-2.0	-2.0
Downlink Contour EIRP (dBW)	37	38.4	39.2	39.2
ADJACENT SATELLITE 1				
Satellite 1 Orbital Location	87 WL	87 WL	87 WL	87 WL
Uplink Power Density (dBW/Hz)	-49.1	-49.1	-49.1	-49.1
Uplink Polarization Advantage (dB)	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-38.3	-38.3	-38.3	-38.3
Downlink Polarization Advantage (dB)	0	0	0	0
ADJACENT SATELLITE 2				
Satellite 2 Orbital Location	91 WL	91 WL	91 WL	91 WL
Uplink Power Density (dBW/Hz)	-50.9	-50.9	-50.9	-50.9
Uplink Polarization Advantage (dB)	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-31.5	-31.5	-31.5	-31.5
Downlink Polarization Advantage (dB)	0	0	0	0
CARRIER INFORMATION				
Carrier ID	36M0F8F	27M0G7W	2M19G7W	57K5G7W
Information Rate (kbps)	n/a	40000	3000	128
Carrier Modulation	TV/FM	QPSK	QPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	n/a	n/a	n/a
Code Rate	n/a	R3/4	R2/3	R3/4
Occupied Bandwidth (kHz)	36000	27000	2188	57.5
Allocated Bandwidth (kHz)	36000	32000	2400	57.5
Minimum C/N, (dB)	14	7.8	-7.9	-7.7
UPLINK EARTH STATION				
Earth Station Diameter (meters)	7.0	7.0	3.8	3.8
Earth Station Gain (dBi)	51.4	51.4	46.1	46.1
Earth Station Elevation Angle	20	20	20	20
DOWNLINK EARTH STATION				
Earth Station Diameter (meters)	8.1	4.5	3.8	3.8
Earth Station Gain (dBi)	49.3	43.4	42.0	42.0
Earth Station G/T (dB/K)	28.6	23.0	21.6	21.6
Earth Station Elevation Angle	20	20	20	20
UPLINK PERFORMANCE				
Uplink Earth Station EIRP (dBW)	74.2	74.2	63.4	47.4
Uplink Path Loss, Clear Sky (dB)	-200.2	-200.2	-200.2	-200.2
Satellite G/T (dB/K)	-3.0	-3.0	-3.0	-3.0
Boltzman Constant (dBW/K-Hz)	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-75.6	-74.3	-63.4	-47.6
Uplink C/N (dB)	23.9	25.2	25.3	25.1
DOWNLINK PERFORMANCE				
Downlink EIRP per Carrier (dBW)	37.0	38.4	24.9	8.9
Antenna Pointing Error (dB)	-0.5	-0.5	-0.5	-0.5
Downlink Path Loss, Clear Sky (dB)	-196.3	-196.3	-196.3	-196.3
Earth Station G/T (dB/K)	28.6	23.0	21.6	21.6
Boltzman Constant (dBW/K-Hz)	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-75.6	-74.3	-63.4	-47.6
Downlink C/N (dB)	21.6	18.7	14.7	14.5
COMPOSITE LINK PERFORMANCE				
C/N Uplink (dB)	23.9	25.2	25.3	25.1
C/N Downlink (dB)	21.6	18.7	14.7	14.5
C/I Intermodulation (dB)	n/a	n/a	18.6	18.4
C/I Uplink Co-Channel (dB)*	27.0	27.5	28.0	28.2
C/I Downlink Co-Channel (dB)*	27.0	27.5	28.0	28.2
C/I Uplink Adjacent Satellite 1 (dB)	24.7	26.0	26.1	25.9
C/I Downlink Adjacent Satellite 1 (dB)	28.4	25.9	21.7	21.5
C/I Uplink Adjacent Satellite 2 (dB)	26.5	27.8	27.9	27.7
C/I Downlink Adjacent Satellite 2 (dB)	20.2	16.7	11.9	11.7
C/(N+I) Composite (dB)	15.0	13.2	8.9	8.7
Required System Margin (dB)	-1.0	-1.0	-1.0	-1.0
Net C/(N+I) Composite (dB)	14.0	12.2	7.9	7.7
Minimum Required C/N (dB)	-14.0	-7.8	-7.9	-7.7
Excess Link Margin (dB)	0.0	4.4	0.0	0.0
Number of Carriers	1	1	12	480.2
Carrier Density Level				
Uplink Power Density (dBW/Hz)	-43.2	-51.5	-46.1	-46.3
Downlink EIRP Density At Beam Peak	-24.8	-33.1	-36.5	-36.7

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

EXHIBIT 15B: Intelsat Americas 8 Ku-Band Link Budgets

UPLINK BEAM INFORMATION						
Uplink Beam Name	Nafta	Nafta	Nafta	Nafta	Nafta	Nafta
Uplink Frequency (MHz)	14250	14250	14250	14250	14250	14250
Uplink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Uplink Relative Contour Level (dB)	-4	-4	-4	-4	-4	-4
Uplink Contour G/T (dB/K)	0.0	0.0	0.0	0.0	0.0	0.0
Uplink SFD (dBW/m^2)	-85.0	-85.0	-85.0	-93.0	-93.0	-93.0
Rain Rate (mm/hr)	42.0	42.0	42.0	42.0	42.0	42.0
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	Nafta	Nafta	Nafta	Nafta	Nafta	Nafta
Downlink Frequency (MHz)	11950	11950	11950	11950	11950	11950
Downlink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Downlink Relative Contour Level (dB)	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6
Downlink Contour EIRP (dBW)	50.0	50.0	50.0	49.6	49.6	49.6
Rain Rate (mm/hr)	42.0	42.0	42.0	42.0	42.0	42.0
ADJACENT SATELLITE 1						
Satellite 1 Orbital Location	87 WL	87 WL	87 WL	87 WL	87 WL	87 WL
Uplink Power Density (dBW/Hz)	-47.1	-47.1	-47.1	-47.1	-47.1	-47.1
Uplink Polarization Advantage (dB)	0	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-29.8	-29.8	-29.8	-29.8	-29.8	-29.8
Downlink Polarization Advantage (dB)	0	0	0	0	0	0
ADJACENT SATELLITE 2						
Satellite 2 Orbital Location	91 WL	91 WL	91 WL	91 WL	91 WL	91 WL
Uplink Power Density (dBW/Hz)	-50.3	-50.3	-50.3	-50.3	-50.3	-50.3
Uplink Polarization Advantage (dB)	0	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-23.5	-23.5	-23.5	-23.5	-23.5	-23.5
Downlink Polarization Advantage (dB)	0	0	0	0	0	0
CARRIER INFORMATION						
Carrier ID	36M0F3F	36M0F3F	36M0F3F	29M0G7W	29M0G7W	29M0G7W
Carrier Modulation	TV/FM	TV/FM	TV/FM	QPSK	QPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	4	4	4	n/a	n/a	n/a
Information Rate (kbps)	n/a	n/a	n/a	40000	40000	40000
Code Rate	n/a	n/a	n/a	R2/3	R2/3	R2/3
Occupied Bandwidth (kHz)	36000	36000	36000	29000	29000	29000
Allocated Bandwidth (kHz)	36000	36000	36000	36000	36000	36000
Minimum C/N, Clear Sky (dB)	14	14	14	6.9	6.9	6.9
Minimum C/N, Rain (dB)	14	14	14	6.9	6.9	6.9
UPLINK EARTH STATION						
Earth Station Diameter (meters)	4.5	4.5	4.5	4.5	4.5	4.5
Earth Station Gain (dBi)	54.7	54.7	54.7	54.5	54.5	54.5
Earth Station Elevation Angle	20	20	20	20	20	20
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	4.5	4.5	4.5	1.8	1.8	1.8
Earth Station Gain (dBi)	52.9	52.9	52.9	44.9	44.9	44.9
Earth Station G/T (dB/K)	31.3	31.3	27.5	22.4	22.4	19.1
Earth Station Elevation Angle	20	20	20	20	20	20
LINK FADE TYPE	Clear Sky	Uplink Fade	Downlink Fade	Clear Sky	Uplink Fade	Downlink Fade
UPLINK PERFORMANCE						
Uplink Earth Station EIRP (dBW)	77.9	77.9	77.9	69.9	69.9	69.9
Uplink Path Loss, Clear Sky (dB)	-207.5	-207.5	-207.5	-207.5	-207.5	-207.5
Uplink Rain Attenuation (dB)	0.0	-4.3	0.0	0.0	-5.2	0.0
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 (dB-Hz)	-75.6	-75.6	-75.6	-74.6	-74.6	-74.6
Uplink C/N (dB)	23.5	19.2	23.5	16.4	11.2	16.4
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	50.0	48.7	50.0	49.6	47.7	49.6
Antenna Pointing Error (dB)	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
Downlink Path Loss, Clear Sky (dB)	-205.9	-205.9	-205.9	-205.9	-205.9	-205.9
Downlink Rain Attenuation (dB)	0.0	0.0	-6.8	0.0	0.0	-6.7
Earth Station G/T (dB/K)	31.3	31.3	27.5	22.4	22.4	19.1
Boltzman Constant (dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-75.6	-75.6	-75.6	-74.6	-74.6	-74.6
Downlink C/N (dB)	27.9	26.6	17.2	19.5	17.7	9.5
COMPOSITE LINK PERFORMANCE						
C/N Uplink (dB)	23.5	19.2	23.5	16.4	11.2	16.4
C/N Downlink (dB)	27.9	26.6	17.2	19.5	17.7	9.5
C/I Intermodulation (dB)	n/a	n/a	n/a	n/a	n/a	n/a
C/I Uplink Co-Channel (dB)*	27.0	22.7	27.0	27.0	21.8	27.0
C/I Downlink Co-Channel (dB)*	27.0	25.7	27.0	27.0	25.1	27.0
C/I Uplink Adjacent Satellite 1 (dB)	27.4	23.1	27.4	20.4	15.2	20.4
C/I Downlink Adjacent Satellite 1 (dB)	36.1	34.8	36.1	29.1	27.2	29.1
C/I Uplink Adjacent Satellite 2 (dB)	30.6	26.3	30.6	23.6	18.4	23.6
C/I Downlink Adjacent Satellite 2 (dB)	28.9	27.6	28.9	20.7	18.8	20.7
C/(N+I) Composite (dB)	18.4	15.0	15.0	12.1	7.9	7.9
Required System Margin (dB)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Net C/(N+I) Composite (dB)	17.4	14.0	14.0	11.1	6.9	6.9
Minimum Required C/N (dB)	-14.0	-14.0	-14.0	-6.9	-6.9	-6.9
Excess Link Margin (dB)	3.4	0.0	0.0	4.2	0.0	0.0
Number of Carriers	1	1	1	1	1	1
Carrier Density (C/I)						
Uplink Power Density (dBW/Hz)	-42.8	-42.8	-42.8	-59.2	-59.2	-59.2
Downlink EIRP Density At Beam Peak	-14.4	-15.7	-14.4	-23.0	-23.0	-23.0

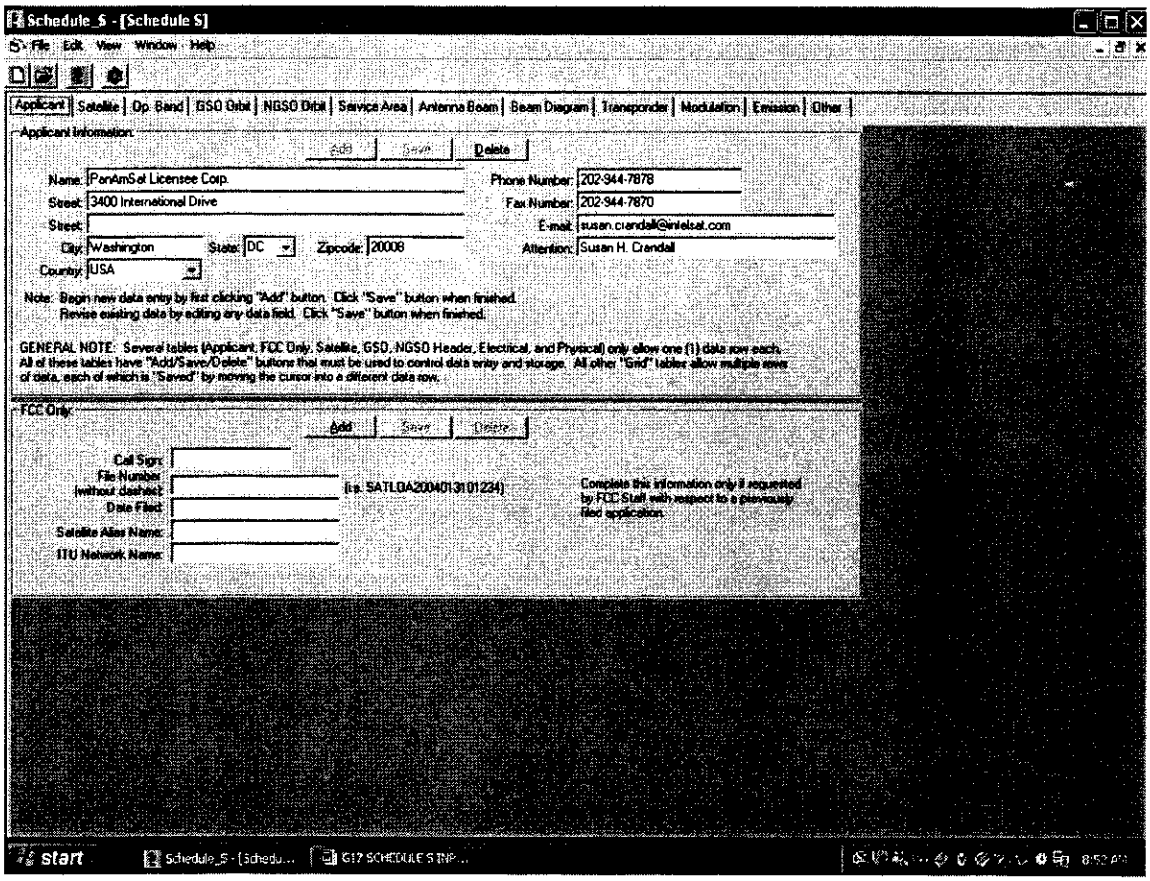
*The C/I level is adjusted depending on the signal level and transponder mode of operation

EXHIBIT 15B: Intelsat Americas 8 Ku-Band Link Budgets (continued)

UPLINK BEAM INFORMATION						
Uplink Beam Name	Nafta	Nafta	Nafta	Nafta	Nafta	Nafta
Uplink Frequency (MHz)	14250	14250	14250	14250	14250	14250
Uplink Beam Polarization	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Uplink Relative Contour Level (dB)	-4	-4	-4	-4	-4	-4
Uplink Contour G/T (dB/K)	0.0	0.0	0.0	0.0	0.0	0.0
Uplink SFD (dBW/m^2)	-86.0	-86.0	-86.0	-89.0	-89.0	-89.0
Rain Rate (mm/hr)	42.0	42.0	42.0	42.0	42.0	42.0
DOWNLINK BEAM INFORMATION						
Downlink Beam Name	Nafta	Nafta	Nafta	Nafta	Nafta	Nafta
Downlink Frequency (MHz)	11950	11950	11950	11950	11950	11950
Downlink Beam Polarization	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Downlink Relative Contour Level (dB)	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6
Downlink Contour EIRP (dBW)	50.0	50.0	50.0	48.0	48.0	48.0
Rain Rate (mm/hr)	42.0	42.0	42.0	42.0	42.0	42.0
ADJACENT SATELLITE 1						
Satellite 1 Orbital Location	87 WL	87 WL	87 WL	87 WL	87 WL	87 WL
Uplink Power Density (dBW/Hz)	-47.1	-47.1	-47.1	-47.1	-47.1	-47.1
Uplink Polarization Advantage (dB)	0	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-29.8	-29.8	-29.8	-29.8	-29.8	-29.8
Downlink Polarization Advantage (dB)	0	0	0	0	0	0
ADJACENT SATELLITE 2						
Satellite 2 Orbital Location	91 WL	91 WL	91 WL	91 WL	91 WL	91 WL
Uplink Power Density (dBW/Hz)	-50.3	-50.3	-50.3	-50.3	-50.3	-50.3
Uplink Polarization Advantage (dB)	0	0	0	0	0	0
Downlink EIRP Density (dBW/Hz)	-23.5	-23.5	-23.5	-23.5	-23.5	-23.5
Downlink Polarization Advantage (dB)	0	0	0	0	0	0
CARRIER INFORMATION						
Carrier ID	3M25G7W	3M25G7W	3M25G7W	128K0G7W	128K0G7W	128K0G7W
Carrier Modulation	QPSK	QPSK	QPSK	QPSK	QPSK	QPSK
Peak to Peak Bandwidth of EDS (MHz)	n/a	n/a	n/a	n/a	n/a	n/a
Information Rate (kbps)	3000	3000	3000	128	128	128
Code Rate	R1/2	R1/2	R1/2	R1/2	R1/2	R1/2
Occupied Bandwidth (kHz)	3250	3250	3250	128	128	128
Allocated Bandwidth (kHz)	3250	3250	3250	170	170	170
Minimum C/N, Clear Sky (dB)	5.2	5.2	5.2	5.5	5.5	5.5
Minimum C/N, Rain (dB)	5.2	5.2	5.2	5.5	5.5	5.5
UPLINK EARTH STATION						
Earth Station Diameter (meters)	4.5	4.5	4.5	1.2	1.2	1.2
Earth Station Gain (dBi)	54.5	54.5	54.5	43.2	43.2	43.2
Earth Station Elevation Angle	20	20	20	20	20	20
DOWNLINK EARTH STATION						
Earth Station Diameter (meters)	1.8	1.8	1.8	6.0	6.0	6.0
Earth Station Gain (dBi)	44.9	44.9	44.9	55.4	55.4	55.4
Earth Station G/T (dB/K)	22.4	22.4	19.2	32.6	32.6	29.0
Earth Station Elevation Angle	20	20	20	20	20	20
LINK FADE TYPE*	Clear Sky	Uplink Fade	Downlink Fade	Clear Sky	Uplink Fade	Downlink Fade
UPLINK PERFORMANCE						
Uplink Earth Station EIRP (dBW)	61.8	61.8	61.8	44.9	44.9	44.9
Uplink Path Loss, Clear Sky (dB)	-207.5	-207.5	-207.5	-207.5	-207.5	-207.5
Uplink Rain Attenuation (dB)	0.0	-4.8	0.0	0.0	-4.8	0.0
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 (dB-Hz)	-65.1	-65.1	-65.1	-51.1	-51.1	-51.1
Uplink C/N (dB)	17.8	13.0	17.8	14.9	10.2	14.9
DOWNLINK PERFORMANCE						
Downlink EIRP per Carrier (dBW)	37.4	32.7	37.4	21.5	16.7	21.5
Antenna Pointing Error (dB)	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
Downlink Path Loss, Clear Sky (dB)	-205.9	-205.9	-205.9	-205.9	-205.9	-205.9
Downlink Rain Attenuation (dB)	0.0	0.0	-6.1	0.0	0.0	-13.5
Earth Station G/T (dB/K)	22.4	22.4	19.2	32.6	32.6	29.0
Boltzman Constant (dBW/K-Hz)	228.6	228.6	228.6	228.6	228.6	228.6
Carrier Noise Bandwidth (dB-Hz)	-65.1	-65.1	-65.1	-51.1	-51.1	-51.1
Downlink C/N (dB)	16.8	12.2	7.5	25.2	20.4	8.2
COMPOSITE LINK PERFORMANCE						
C/N Uplink (dB)	17.8	13.0	17.8	14.9	10.2	14.9
C/N Downlink (dB)	16.8	12.2	7.5	25.2	20.4	8.2
C/I Intermodulation (dB)	18.1	14.2	18.1	18.3	13.5	18.3
C/I Uplink Co-Channel (dB)*	28.3	23.5	28.3	27.2	22.5	27.2
C/I Downlink Co-Channel (dB)*	28.3	23.7	28.3	27.2	22.5	27.2
C/I Uplink Adjacent Satellite 1 (dB)	21.8	17.0	21.8	18.9	14.1	18.9
C/I Downlink Adjacent Satellite 1 (dB)	26.4	21.7	26.4	34.5	29.8	34.5
C/I Uplink Adjacent Satellite 2 (dB)	25.0	20.2	25.0	22.1	17.3	22.1
C/I Downlink Adjacent Satellite 2 (dB)	18.0	13.3	18.0	27.6	22.8	27.6
C/(N+I) Composite (dB)	10.8	6.2	6.2	11.3	6.5	6.5
Required System Margin (dB)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Net C/(N+I) Composite (dB)	9.8	5.2	5.2	10.3	5.5	5.5
Minimum Required C/N (dB)	-5.2	-5.2	-5.2	-5.5	-5.5	-5.5
Excess Link Margin (dB)	4.6	0.0	0.0	4.8	0.0	0.0
Number of Carriers	8.2	8.2	8.2	200	200	200
Carrier Density (dB)						
Uplink Power Density (dBW/Hz)	-57.8	-57.8	-57.8	-49.4	-49.4	-49.4
Downlink EIRP Density At Beam Peak	-26.1	-26.1	-26.1	-26.0	-26.0	-26.0

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

EXHIBIT 2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File Edit View Window Help
Applicant | Satellite | Op. Band | GSO Orbit | NGSO Orbit | Service Area | Antenna Beam | Beam Diagram | Transponder | Modulation | Emission | Other
Applicant Information
Add Save Delete
Name: PanAmSat Licensee Corp.
Street: 3400 International Drive
Street:
City: Washington State: DC Zipcode: 20008
Country: USA
Phone Number: 202-944-7878
Fax Number: 202-944-7870
E-mail: susan.crandall@intelsat.com
Attention: Susan H. Crandall
Note: Begin new data entry by first clicking "Add" button. Click "Save" button when finished.
Revise existing data by editing any data field. Click "Save" button when finished.
GENERAL NOTE: Several tables (Applicant, FCC Only, Satellite, GSO, NGSO Header, Electrical, and Physical) only allow one (1) data row each.
All of these tables have "Add/Save/Delete" buttons that must be used to control data entry and storage. All other "Grid" tables allow multiple rows
of data, each of which is "Saved" by moving the cursor into a different data row.
FCC Only
Add Save Delete
Call Sign:
File Number (without dashes):
(e.g. SATLOA20040131I0124)
Date Filed:
Satellite Alias Name:
ITU Network Name:
Complete this information only if requested by FCC Staff with respect to a previously filed application.
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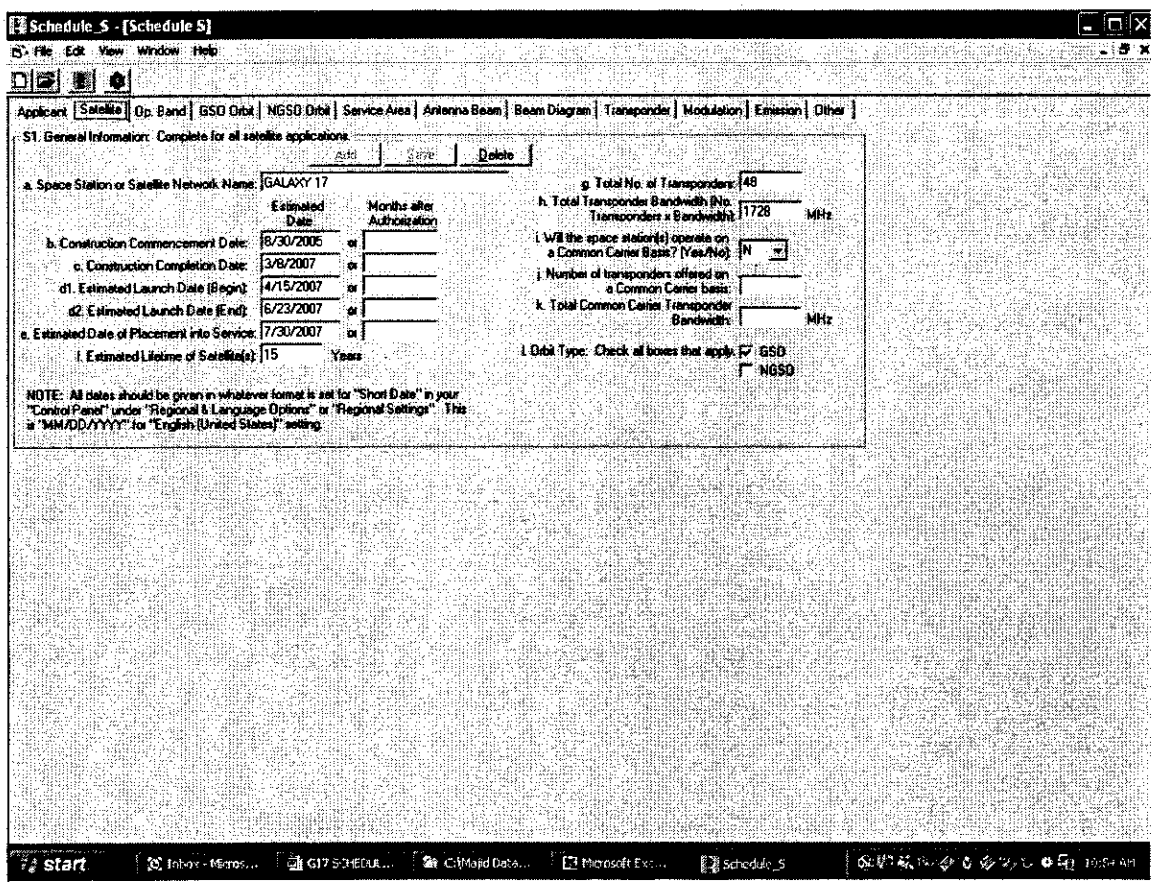
G12 SCHEDULE S.INF...

GALAXY 17 (91 WL) SCHEDULE S INPUTS



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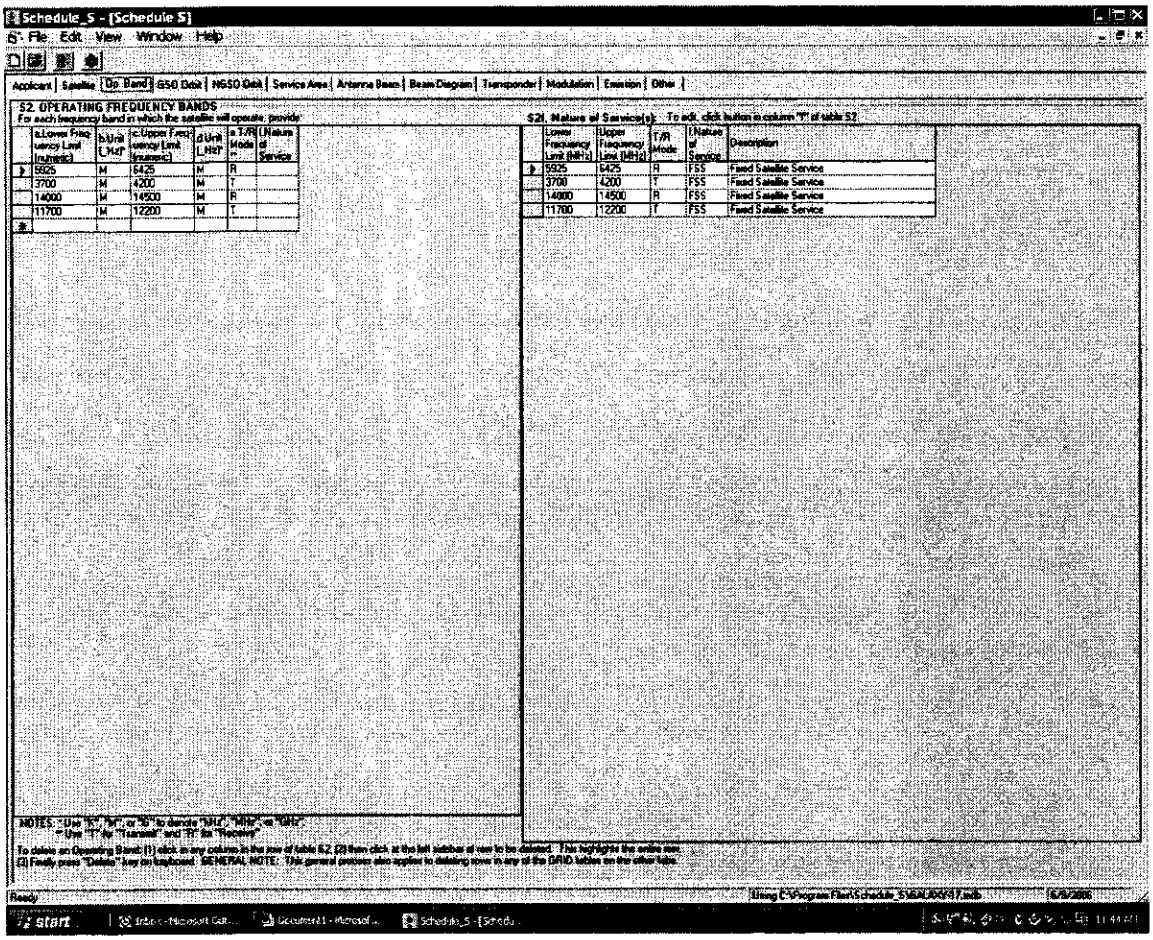

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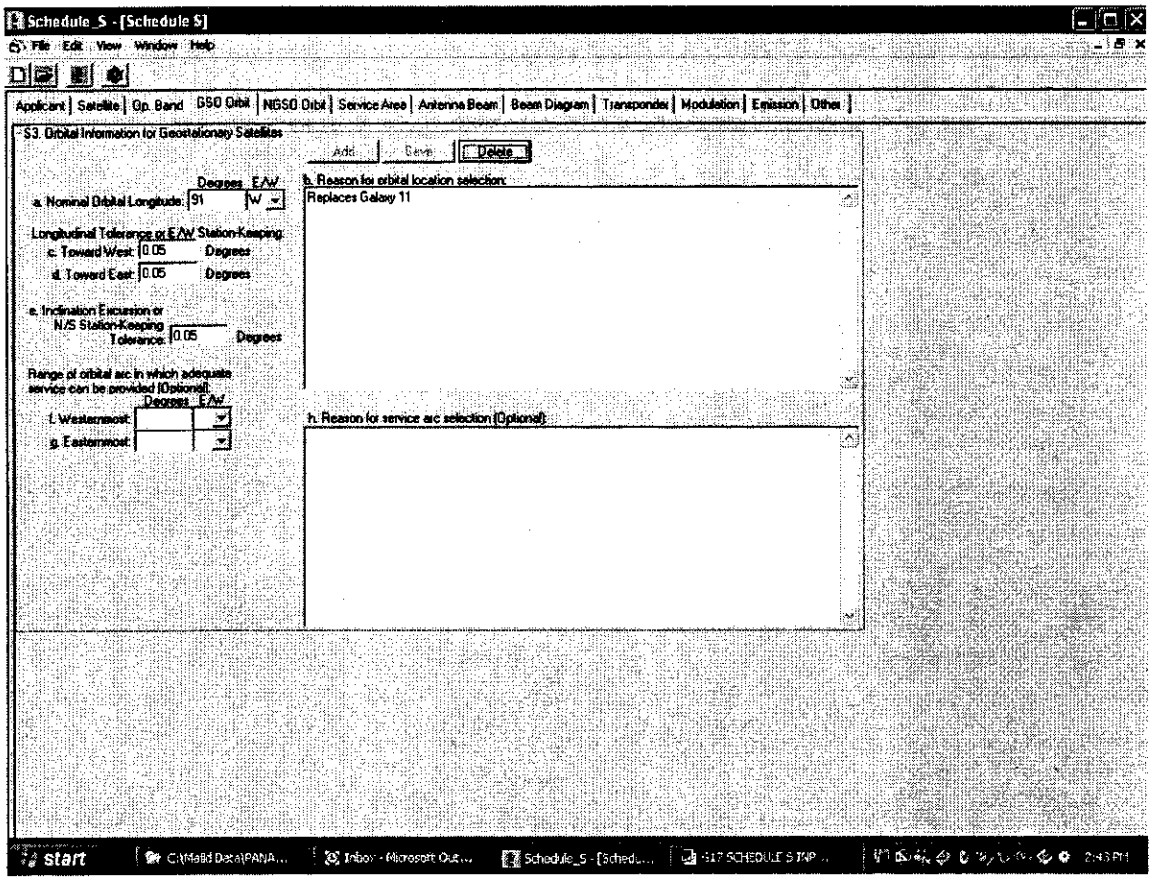

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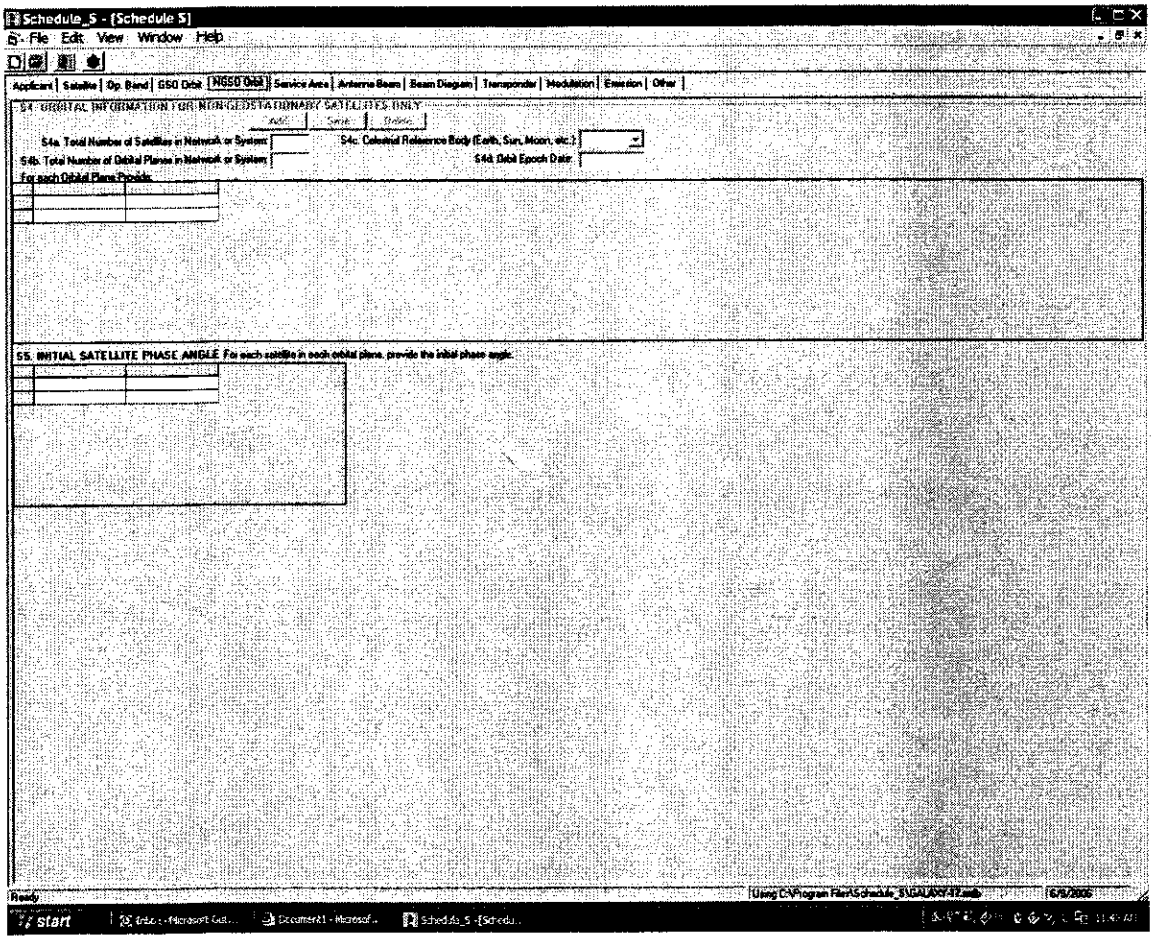

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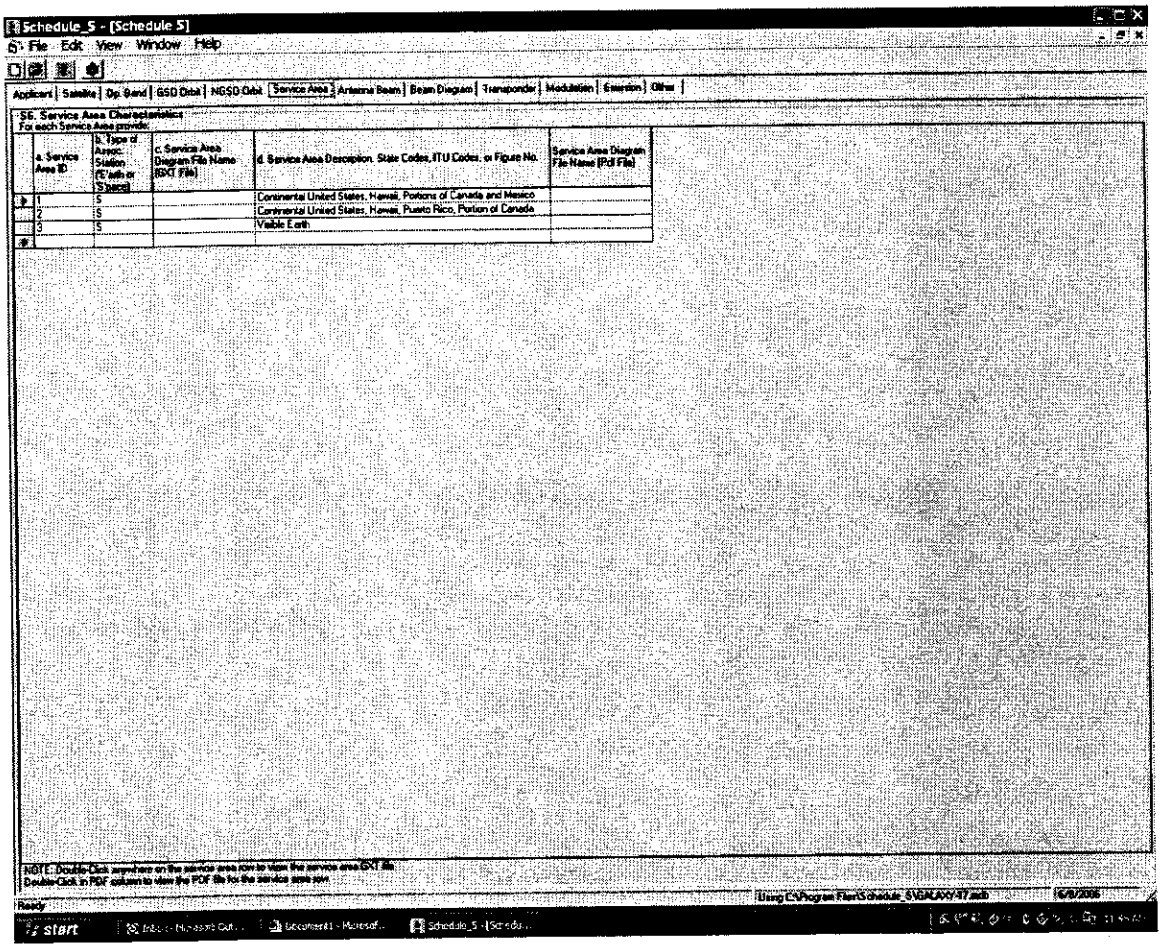

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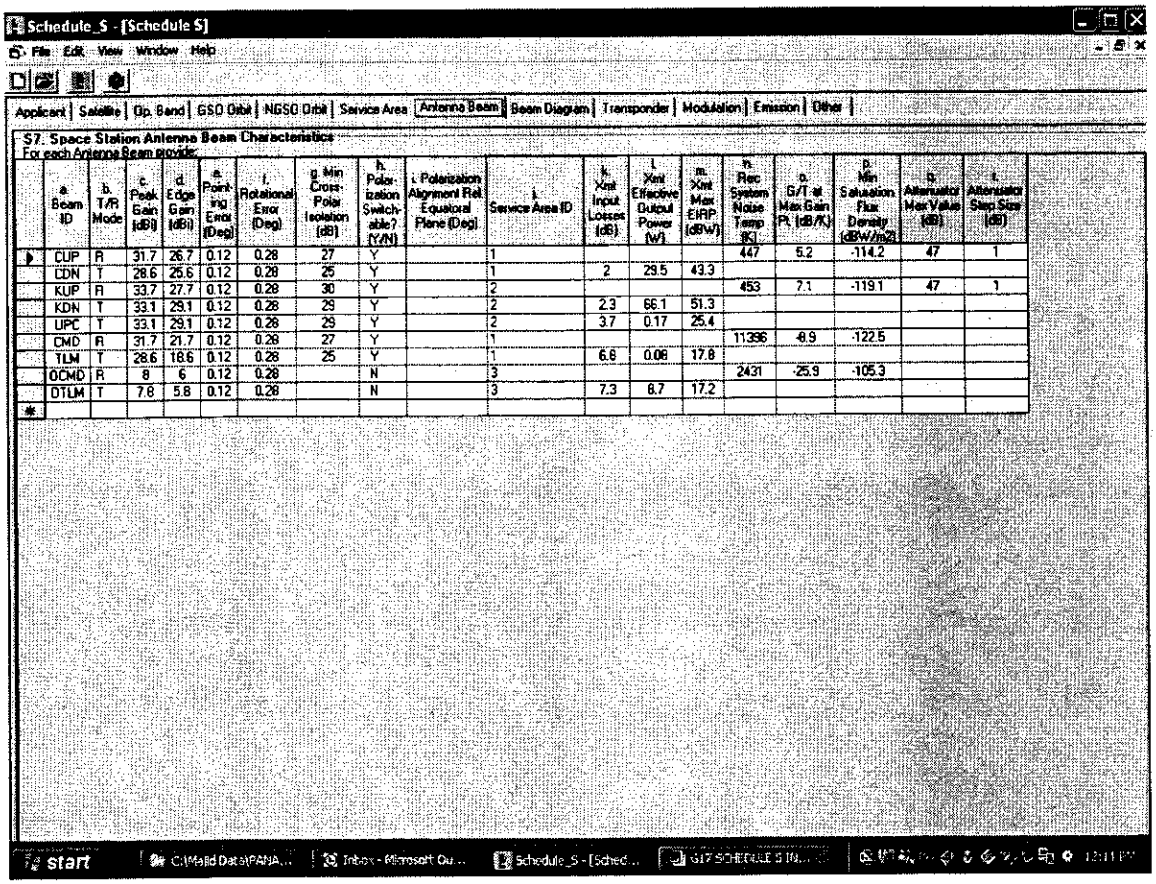

Schedule_S - [Schedule S]

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Applicant | Satellite | Op. Band | GSO Orbit | NGSO Orbit | Service Area | Antenna Beam | Beam Diagram | Transponder | Modulation | Emission | Other

S7. Space Station Antenna Beam Characteristics
For each Antenna Beam provide:

a. Beam ID	b. T/R Mode	c. Peak Gain (dBi)	d. Edge Gain (dBi)	e. Pointing Error (Deg)	f. Rotational Error (Deg)	g. Min Cross-Polar Isolation (dB)	h. Polarization Switchable? (Y/N)	i. Polarization Alignment Ref. Equatorial Plane (Deg)	j. Service Area ID	k. Xmt Input Losses (dB)	l. Xmt Effective Output Power (W)	m. Xmt Max EIRP (dBW)	n. Rec System Noise Temp (K)	o. G/T at Max Gain Pt. (dB/K)	p. Min Saturation Flux Density (dBW/m2)	q. Attenuator Max Value (dB)	r. Attenuator Step Size (dB)
CUP	R	31.7	26.7	0.12	0.28	27	Y		1				447	5.2	-114.2	47	1
CDN	T	28.6	25.6	0.12	0.28	25	Y		1	2	29.5	43.3					
KUP	R	33.7	27.7	0.12	0.28	30	Y		2				453	7.1	-119.1	47	1
KDN	T	33.1	29.1	0.12	0.28	29	Y		2	2.3	66.1	51.3					
UPC	T	33.1	29.1	0.12	0.28	29	Y		2	3.7	0.17	25.4					
CMD	R	31.7	21.7	0.12	0.28	27	Y		1				11396	-8.9	-122.5		
TLM	T	28.6	18.6	0.12	0.28	25	Y		1	6.8	0.08	17.8					
OCMD	R	8	6	0.12	0.28		N		3				2431	-25.9	-105.3		
OTLM	T	7.8	5.8	0.12	0.28		N		3	7.3	8.7	17.2					

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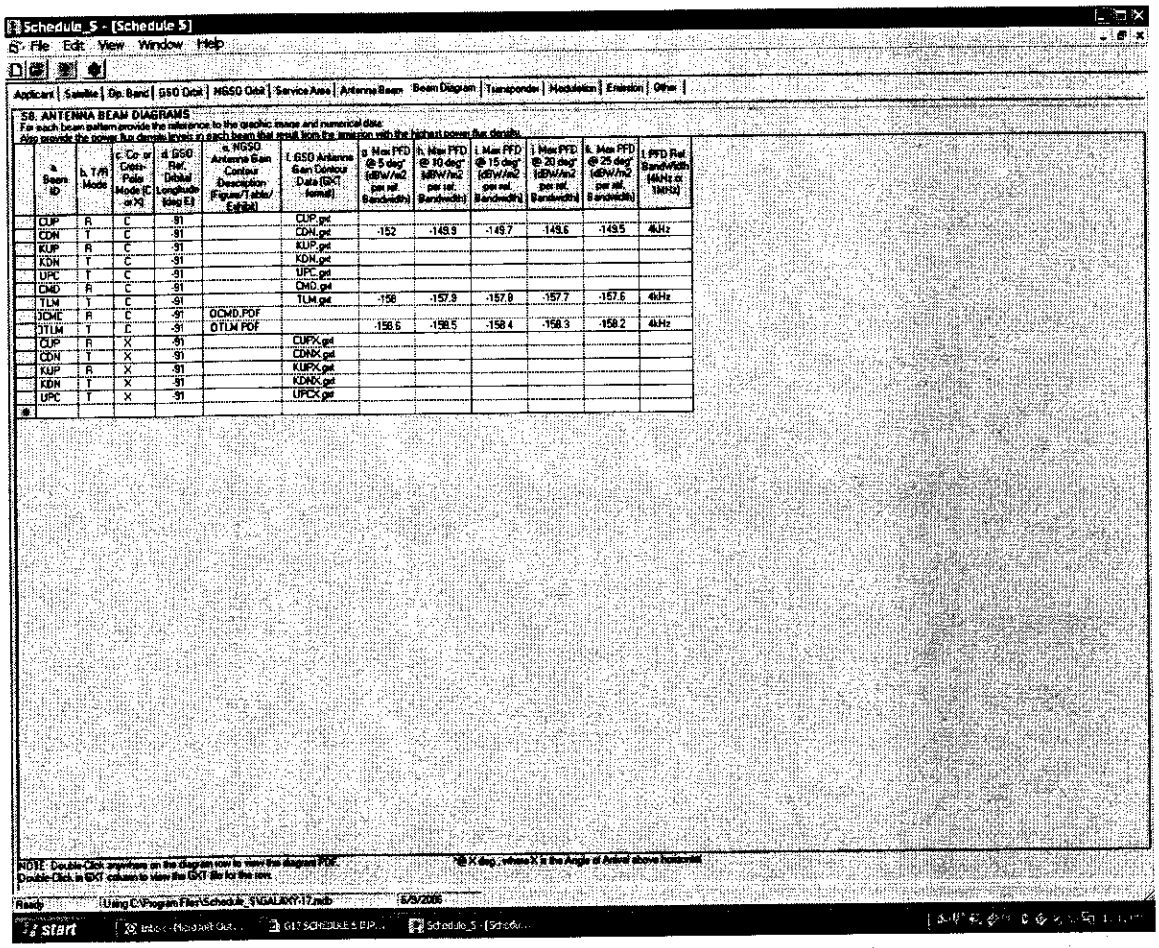

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Applicant | Satellite | Op. Band | GSO Orbit | NGSO Orbit | Service Area | Antenna Beam | Beam Diagram | Transponder | Modulation | Emission | Other

S8. ANTENNA BEAM DIAGRAMS

For each beam pattern provide the reference to the graphic image and numerical data.
Also provide the power flux density levels in each beam that result from the emission with the highest power flux density.

a. Beam ID	b. T/R Mode	c. Co or Cross-Pole Mode (C or X)	d. GSO Sat. Orbital Longitude (deg E)	e. NGSO Antenna Gain Contour Description (Figure/Table/Exhibit)	f. GSO Antenna Gain Contour Data (GXT Name)	g. Max PFD @ 5 deg (dBW/m2 per rel. Bandwidth)	h. Max PFD @ 10 deg (dBW/m2 per rel. Bandwidth)	i. Max PFD @ 15 deg (dBW/m2 per rel. Bandwidth)	j. Max PFD @ 20 deg (dBW/m2 per rel. Bandwidth)	k. Max PFD @ 25 deg (dBW/m2 per rel. Bandwidth)	l. PFD Ref. Bandwidth (kHz or MHz)
CUP	R	C	-91		CUP.gxt						
CDN	T	C	-91		CDN.gxt	-152	-149.9	-149.7	-149.6	-149.5	4kHz
KUP	R	C	-91		KUP.gxt						
KDN	T	C	-91		KDN.gxt						
UPC	T	C	-91		UPC.gxt						
CMD	R	C	-91		CMD.gxt						
TLM	T	C	-91		TLM.gxt	-158	-157.9	-157.8	-157.7	-157.6	4kHz
QCMD	R	C	-91	QCMD.PDF							
QTLM	T	C	-91	QTLM.PDF		-158.6	-158.5	-158.4	-158.3	-158.2	4kHz
CUPX	R	X	-91		CUPX.gxt						
CDNX	T	X	-91		CDNX.gxt						
KUPX	R	X	-91		KUPX.gxt						
KDNX	T	X	-91		KDNX.gxt						
UPCX	T	X	-91		UPCX.gxt						

NOTE: Double-Click anywhere on the diagram row to view the diagram PDF.
Double-Click in GXT column to view the GXT file for the row.

*@ X deg., where X is the Angle of Arrival above horizontal.

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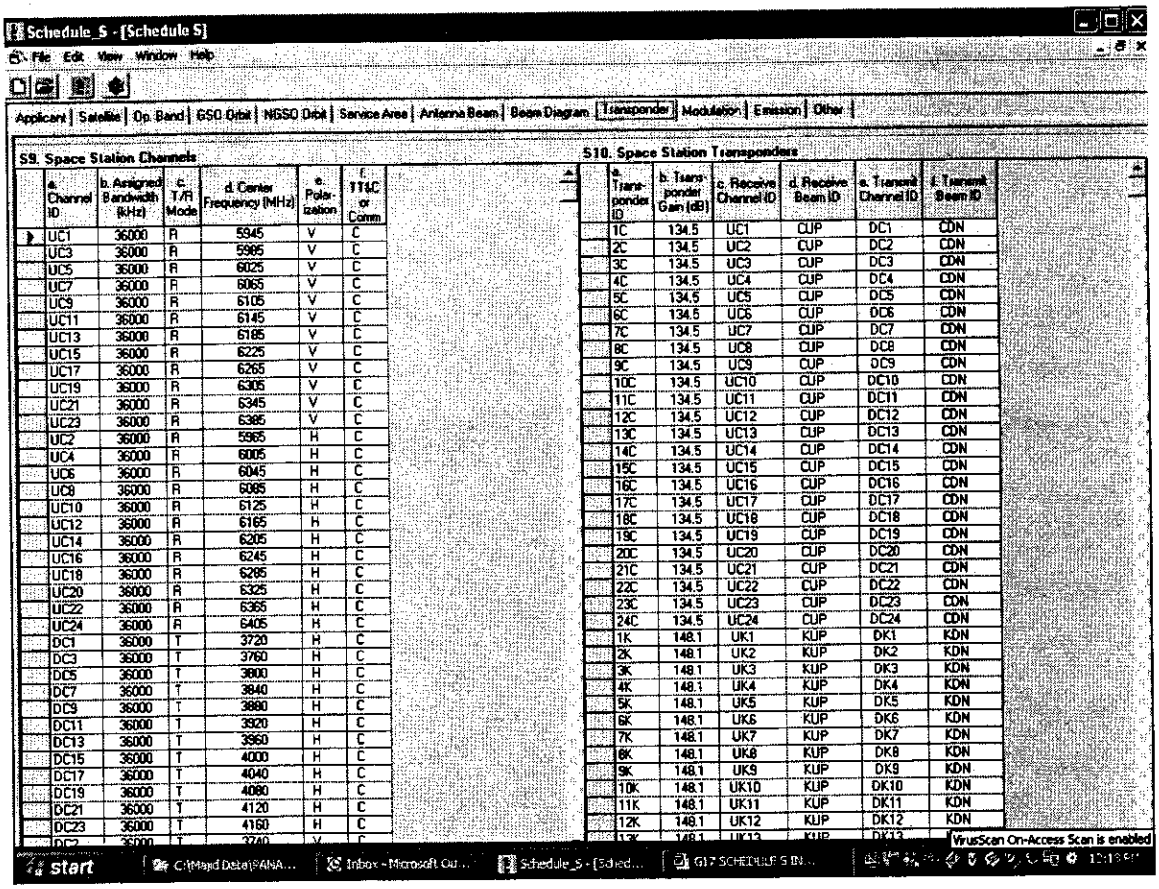

a. Channel ID	b. Assigned Bandwidth (kHz)	c. T/R Mode	d. Center Frequency (MHz)	e. Polarization	f. TT&C or Comm
UC1	36000	R	5945	V	C
UC3	36000	R	5985	V	C
UC5	36000	R	6025	V	C
UC7	36000	R	6065	V	C
UC9	36000	R	6105	V	C
UC11	36000	R	6145	V	C
UC13	36000	R	6185	V	C
UC15	36000	R	6225	V	C
UC17	36000	R	6265	V	C
UC19	36000	R	6305	V	C
UC21	36000	R	6345	V	C
UC23	36000	R	6385	V	C
UC2	36000	R	5965	H	C
UC4	36000	R	6005	H	C
UC6	36000	R	6045	H	C
UC8	36000	R	6085	H	C
UC10	36000	R	6125	H	C
UC12	36000	R	6165	H	C
UC14	36000	R	6205	H	C
UC16	36000	R	6245	H	C
UC18	36000	R	6285	H	C
UC20	36000	R	6325	H	C
UC22	36000	R	6365	H	C
UC24	36000	R	6405	H	C
DC1	36000	T	3720	H	C
DC3	36000	T	3760	H	C
DC5	36000	T	3800	H	C
DC7	36000	T	3840	H	C
DC9	36000	T	3880	H	C
DC11	36000	T	3920	H	C
DC13	36000	T	3960	H	C
DC15	36000	T	4000	H	C
DC17	36000	T	4040	H	C
DC19	36000	T	4080	H	C
DC21	36000	T	4120	H	C
DC23	36000	T	4160	H	C
DC2	36000	T	3740	V	C

a. Transponder ID	b. Transponder Gain (dB)	c. Receive Channel ID	d. Receive Beam ID	e. Transmit Channel ID	f. Transmit Beam ID
1C	134.5	UC1	CUP	DC1	CDN
2C	134.5	UC2	CUP	DC2	CDN
3C	134.5	UC3	CUP	DC3	CDN
4C	134.5	UC4	CUP	DC4	CDN
5C	134.5	UC5	CUP	DC5	CDN
6C	134.5	UC6	CUP	DC6	CDN
7C	134.5	UC7	CUP	DC7	CDN
8C	134.5	UC8	CUP	DC8	CDN
9C	134.5	UC9	CUP	DC9	CDN
10C	134.5	UC10	CUP	DC10	CDN
11C	134.5	UC11	CUP	DC11	CDN
12C	134.5	UC12	CUP	DC12	CDN
13C	134.5	UC13	CUP	DC13	CDN
14C	134.5	UC14	CUP	DC14	CDN
15C	134.5	UC15	CUP	DC15	CDN
16C	134.5	UC16	CUP	DC16	CDN
17C	134.5	UC17	CUP	DC17	CDN
18C	134.5	UC18	CUP	DC18	CDN
19C	134.5	UC19	CUP	DC19	CDN
20C	134.5	UC20	CUP	DC20	CDN
21C	134.5	UC21	CUP	DC21	CDN
22C	134.5	UC22	CUP	DC22	CDN
23C	134.5	UC23	CUP	DC23	CDN
24C	134.5	UC24	CUP	DC24	CDN
1K	148.1	UK1	KUP	DK1	KDN
2K	148.1	UK2	KUP	DK2	KDN
3K	148.1	UK3	KUP	DK3	KDN
4K	148.1	UK4	KUP	DK4	KDN
5K	148.1	UK5	KUP	DK5	KDN
6K	148.1	UK6	KUP	DK6	KDN
7K	148.1	UK7	KUP	DK7	KDN
8K	148.1	UK8	KUP	DK8	KDN
9K	148.1	UK9	KUP	DK9	KDN
10K	148.1	UK10	KUP	DK10	KDN
11K	148.1	UK11	KUP	DK11	KDN
12K	148.1	UK12	KUP	DK12	KDN
13K	148.1	UK13	KUP	DK13	KDN

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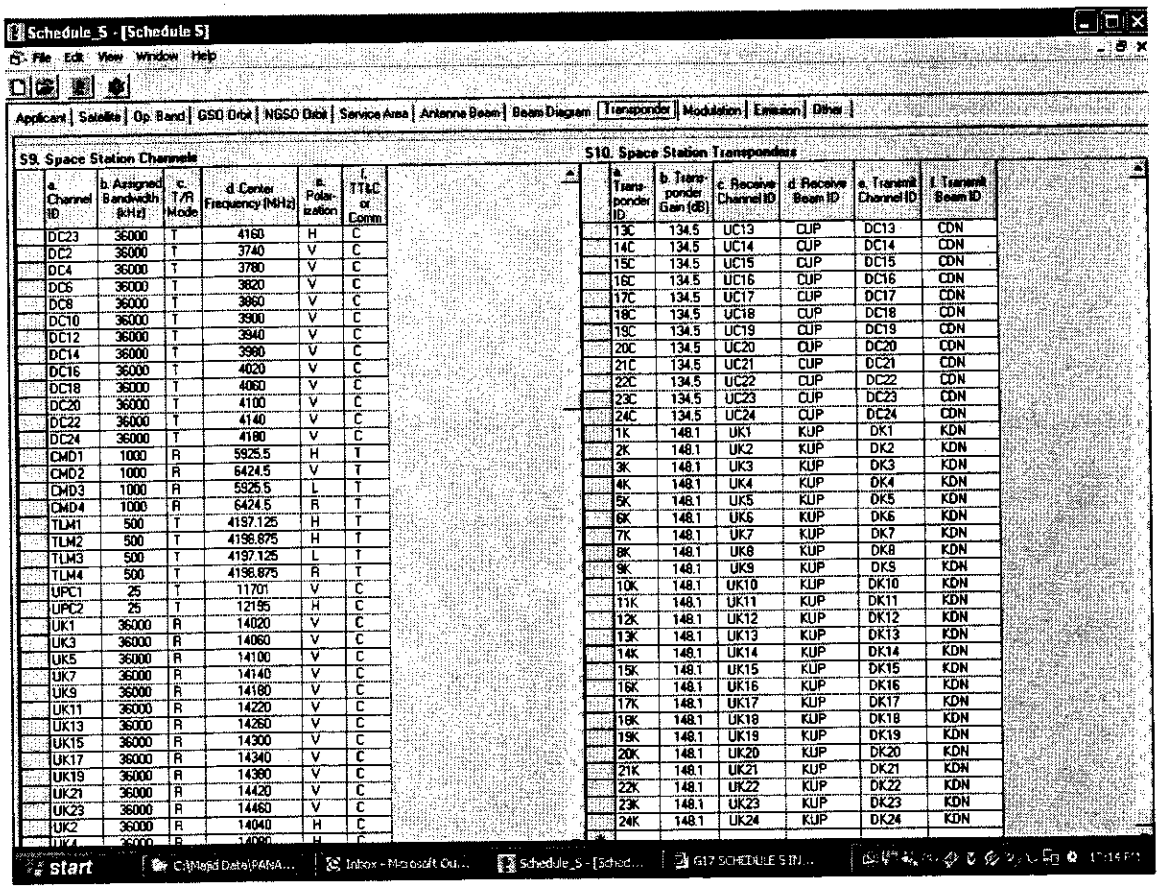

a. Channel ID	b. Assigned Bandwidth (kHz)	c. T/R Mode	d. Center Frequency (MHz)	e. Polarization	f. TT&C or Comm
DC23	36000	T	4160	H	C
DC2	36000	T	3740	V	C
DC4	36000	T	3780	V	C
DC6	36000	T	3820	V	C
DC8	36000	T	3860	V	C
DC10	36000	T	3900	V	C
DC12	36000	T	3940	V	C
DC14	36000	T	3980	V	C
DC16	36000	T	4020	V	C
DC18	36000	T	4060	V	C
DC20	36000	T	4100	V	C
DC22	36000	T	4140	V	C
DC24	36000	T	4180	V	C
CMD1	1000	R	5925.5	H	T
CMD2	1000	R	6424.5	V	T
CMD3	1000	R	5925.5	L	T
CMD4	1000	R	6424.5	R	T
TLM1	500	T	4197.125	H	T
TLM2	500	T	4196.875	H	T
TLM3	500	T	4197.125	L	T
TLM4	500	T	4196.875	R	T
UPC1	25	T	11701	V	C
UPC2	25	T	12195	H	C
UK1	36000	R	14020	V	C
UK3	36000	R	14060	V	C
UK5	36000	R	14100	V	C
UK7	36000	R	14140	V	C
UK9	36000	R	14180	V	C
UK11	36000	R	14220	V	C
UK13	36000	R	14260	V	C
UK15	36000	R	14300	V	C
UK17	36000	R	14340	V	C
UK19	36000	R	14380	V	C
UK21	36000	R	14420	V	C
UK23	36000	R	14460	V	C
UK2	36000	R	14040	H	C

a. Transponder ID	b. Transponder Gain (dB)	c. Receive Channel ID	d. Receive Beam ID	e. Transmit Channel ID	f. Transmit Beam ID
13C	134.5	UC13	CUP	DC13	CDN
14C	134.5	UC14	CUP	DC14	CDN
15C	134.5	UC15	CUP	DC15	CDN
16C	134.5	UC16	CUP	DC16	CDN
17C	134.5	UC17	CUP	DC17	CDN
18C	134.5	UC18	CUP	DC18	CDN
19C	134.5	UC19	CUP	DC19	CDN
20C	134.5	UC20	CUP	DC20	CDN
21C	134.5	UC21	CUP	DC21	CDN
22C	134.5	UC22	CUP	DC22	CDN
23C	134.5	UC23	CUP	DC23	CDN
24C	134.5	UC24	CUP	DC24	CDN
1K	148.1	UK1	KUP	DK1	KDN
2K	148.1	UK2	KUP	DK2	KDN
3K	148.1	UK3	KUP	DK3	KDN
4K	148.1	UK4	KUP	DK4	KDN
5K	148.1	UK5	KUP	DK5	KDN
6K	148.1	UK6	KUP	DK6	KDN
7K	148.1	UK7	KUP	DK7	KDN
8K	148.1	UK8	KUP	DK8	KDN
9K	148.1	UK9	KUP	DK9	KDN
10K	148.1	UK10	KUP	DK10	KDN
11K	148.1	UK11	KUP	DK11	KDN
12K	148.1	UK12	KUP	DK12	KDN
13K	148.1	UK13	KUP	DK13	KDN
14K	148.1	UK14	KUP	DK14	KDN
15K	148.1	UK15	KUP	DK15	KDN
16K	148.1	UK16	KUP	DK16	KDN
17K	148.1	UK17	KUP	DK17	KDN
18K	148.1	UK18	KUP	DK18	KDN
19K	148.1	UK19	KUP	DK19	KDN
20K	148.1	UK20	KUP	DK20	KDN
21K	148.1	UK21	KUP	DK21	KDN
22K	148.1	UK22	KUP	DK22	KDN
23K	148.1	UK23	KUP	DK23	KDN
24K	148.1	UK24	KUP	DK24	KDN

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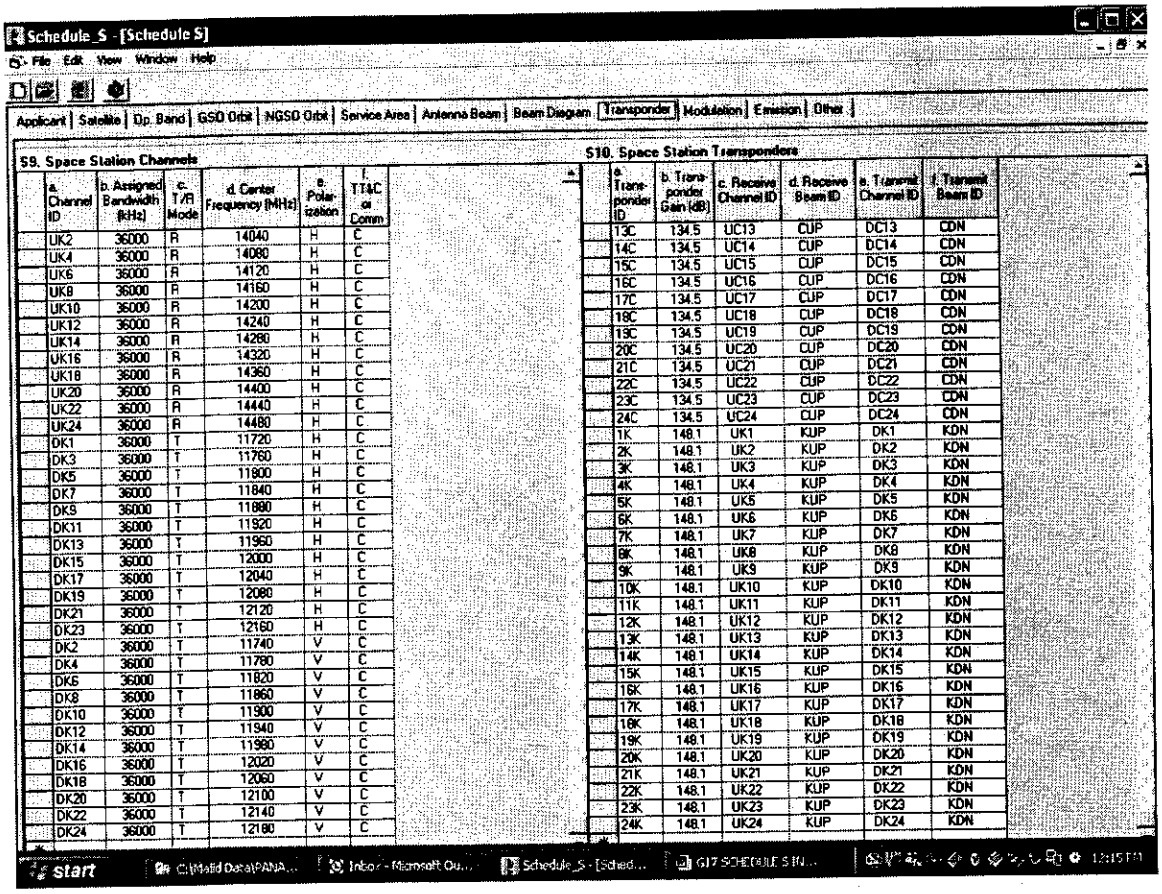

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Applicant | Satellite | Op. Band | GSO Orbit | NGSO Orbit | Service Area | Antenna Beam | Beam Diagram | Transponder | Modulation | Emission | Other

S9. Space Station Channels

a. Channel ID	b. Assigned Bandwidth (kHz)	c. T/R Mode	d. Center Frequency (MHz)	e. Polarization	f. TT&C or Comm
UK2	36000	R	14040	H	C
UK4	36000	R	14080	H	C
UK6	36000	R	14120	H	C
UK8	36000	R	14160	H	C
UK10	36000	R	14200	H	C
UK12	36000	R	14240	H	C
UK14	36000	R	14280	H	C
UK16	36000	R	14320	H	C
UK18	36000	R	14360	H	C
UK20	36000	R	14400	H	C
UK22	36000	R	14440	H	C
UK24	36000	R	14480	H	C
DK1	36000	T	11720	H	C
DK3	36000	T	11760	H	C
DK5	36000	T	11800	H	C
DK7	36000	T	11840	H	C
DK9	36000	T	11880	H	C
DK11	36000	T	11920	H	C
DK13	36000	T	11960	H	C
DK15	36000	T	12000	H	C
DK17	36000	T	12040	H	C
DK19	36000	T	12080	H	C
DK21	36000	T	12120	H	C
DK23	36000	T	12160	H	C
DK2	36000	T	11740	V	C
DK4	36000	T	11780	V	C
DK6	36000	T	11820	V	C
DK8	36000	T	11860	V	C
DK10	36000	T	11900	V	C
DK12	36000	T	11940	V	C
DK14	36000	T	11980	V	C
DK16	36000	T	12020	V	C
DK18	36000	T	12060	V	C
DK20	36000	T	12100	V	C
DK22	36000	T	12140	V	C
DK24	36000	T	12180	V	C

S10. Space Station Transponders

a. Transponder ID	b. Transponder Gain (dB)	c. Receive Channel ID	d. Receive Beam ID	e. Transmit Channel ID	f. Transmit Beam ID
13C	134.5	UC13	CUP	DC13	CDN
14C	134.5	UC14	CUP	DC14	CDN
15C	134.5	UC15	CUP	DC15	CDN
16C	134.5	UC16	CUP	DC16	CDN
17C	134.5	UC17	CUP	DC17	CDN
18C	134.5	UC18	CUP	DC18	CDN
19C	134.5	UC19	CUP	DC19	CDN
20C	134.5	UC20	CUP	DC20	CDN
21C	134.5	UC21	CUP	DC21	CDN
22C	134.5	UC22	CUP	DC22	CDN
23C	134.5	UC23	CUP	DC23	CDN
24C	134.5	UC24	CUP	DC24	CDN
1K	148.1	UK1	KUP	DK1	KDN
2K	148.1	UK2	KUP	DK2	KDN
3K	148.1	UK3	KUP	DK3	KDN
4K	148.1	UK4	KUP	DK4	KDN
5K	148.1	UK5	KUP	DK5	KDN
6K	148.1	UK6	KUP	DK6	KDN
7K	148.1	UK7	KUP	DK7	KDN
8K	148.1	UK8	KUP	DK8	KDN
9K	148.1	UK9	KUP	DK9	KDN
10K	148.1	UK10	KUP	DK10	KDN
11K	148.1	UK11	KUP	DK11	KDN
12K	148.1	UK12	KUP	DK12	KDN
13K	148.1	UK13	KUP	DK13	KDN
14K	148.1	UK14	KUP	DK14	KDN
15K	148.1	UK15	KUP	DK15	KDN
16K	148.1	UK16	KUP	DK16	KDN
17K	148.1	UK17	KUP	DK17	KDN
18K	148.1	UK18	KUP	DK18	KDN
19K	148.1	UK19	KUP	DK19	KDN
20K	148.1	UK20	KUP	DK20	KDN
21K	148.1	UK21	KUP	DK21	KDN
22K	148.1	UK22	KUP	DK22	KDN
23K	148.1	UK23	KUP	DK23	KDN
24K	148.1	UK24	KUP	DK24	KDN

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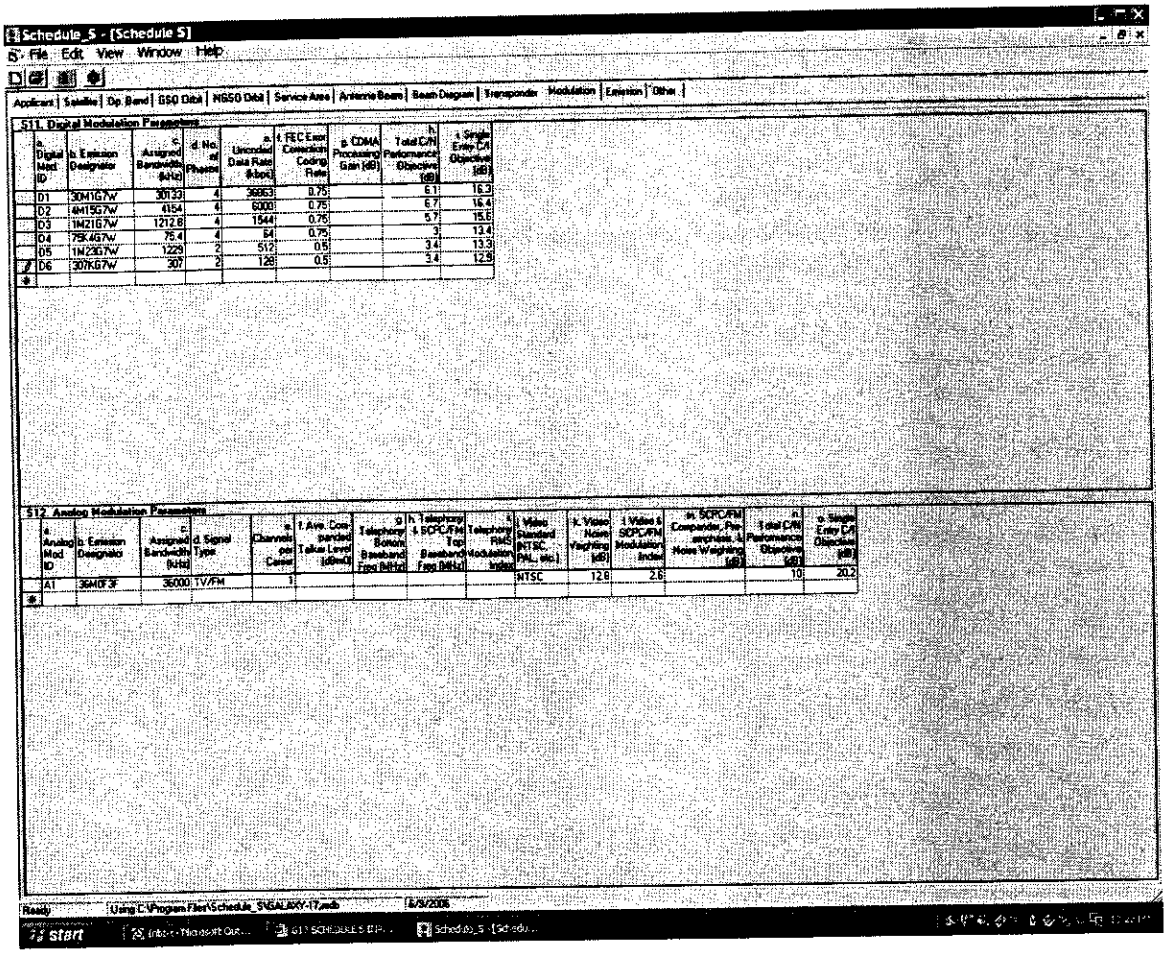

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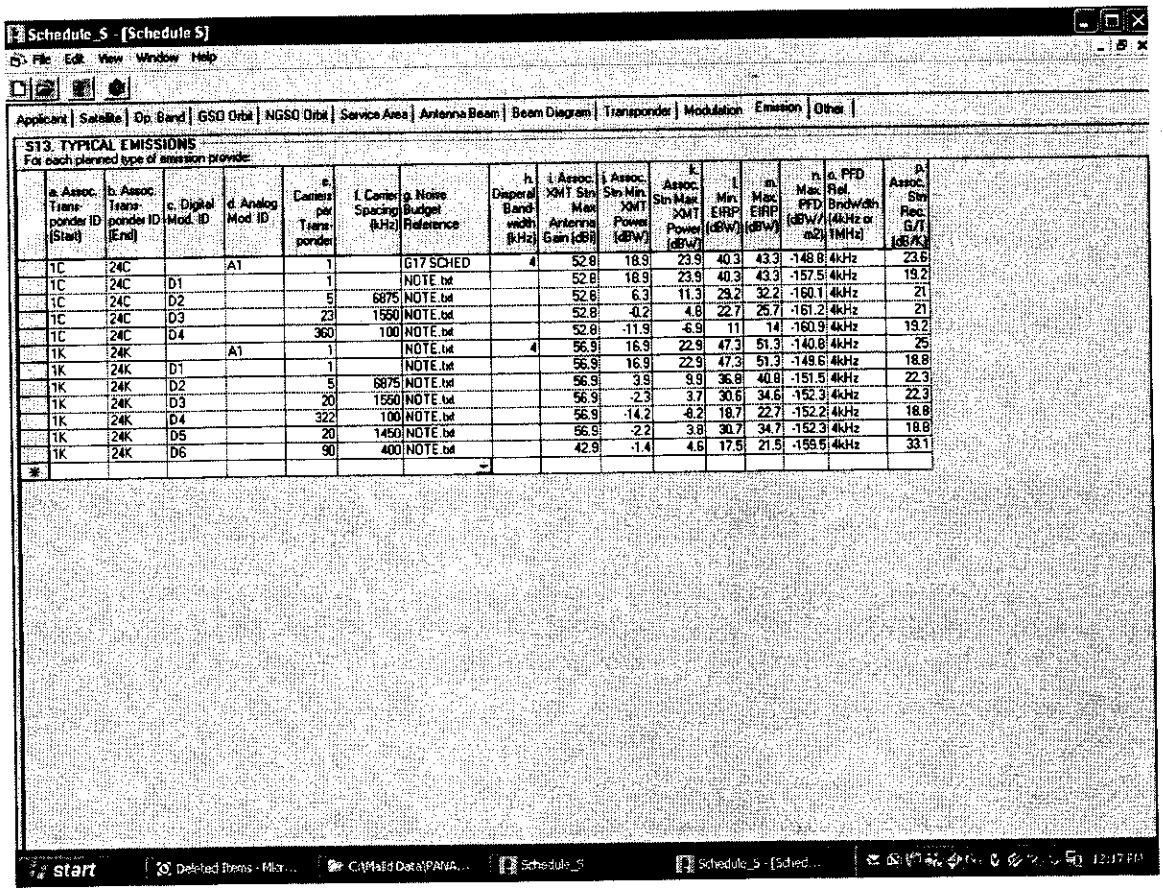

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Applicant | Satellite | Op. Band | GSO Orbit | NGSO Orbit | Service Area | Antenna Beam | Beam Diagram | Transponder | Modulation | Emission | Other |

S13. TYPICAL EMISSIONS
For each planned type of emission provide:

a. Assoc. Transponder ID (Start)	b. Assoc. Transponder ID (End)	c. Digital Mod. ID	d. Analog Mod. ID	e. Carriers per Transponder	f. Carrier Spacing (kHz)	g. Noise Budget Reference	h. Dispersal Bandwidth (kHz)	i. Assoc. XMT Stn Max Antenna Gain (dBi)	j. Assoc. Stn Min. XMT Power (dBW)	k. Assoc. Stn Max XMT Power (dBW)	l. Min. EIRP (dBW)	m. Max. EIRP (dBW)	n. Max. PFD (dBW/m2)	o. PFD Ref. Bndwdth (4kHz or 1MHz)	p. Assoc. Stn Rec. G/T (dB/K)
1C	24C		A1	1		G17 SCHED	4	52.8	18.9	23.9	40.3	43.3	-148.8	4kHz	23.6
1C	24C	D1		1		NOTE.txt		52.8	18.9	23.9	40.3	43.3	-157.5	4kHz	19.2
1C	24C	D2		5	6875	NOTE.txt		52.8	6.3	11.3	29.2	32.2	-160.1	4kHz	21
1C	24C	D3		23	1550	NOTE.txt		52.8	-0.2	4.8	22.7	25.7	-161.2	4kHz	21
1C	24C	D4		360	100	NOTE.txt		52.8	-11.9	-6.9	11	14	-160.9	4kHz	19.2
1K	24K		A1	1		NOTE.txt	4	56.9	16.9	22.9	47.3	51.3	-140.8	4kHz	25
1K	24K	D1		1		NOTE.txt		56.9	16.9	22.9	47.3	51.3	-149.6	4kHz	18.8
1K	24K	D2		5	6875	NOTE.txt		56.9	3.9	9.9	36.8	40.8	-151.5	4kHz	22.3
1K	24K	D3		20	1550	NOTE.txt		56.9	-2.3	3.7	30.6	34.6	-152.3	4kHz	22.3
1K	24K	D4		322	100	NOTE.txt		56.9	-14.2	-8.2	18.7	22.7	-152.2	4kHz	18.8
1K	24K	D5		20	1450	NOTE.txt		56.9	-2.2	3.8	30.7	34.7	-152.3	4kHz	18.8
1K	24K	D6		90	400	NOTE.txt		42.9	-1.4	4.6	17.5	21.5	-159.5	4kHz	33.1

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