# **Engineering Statement**

#### 1 Introduction

Intelsat License LLC ("Intelsat") seeks authority in this application to launch and operate a new satellite designated as Intelsat 36. This spacecraft will operate from 68.5° E.L. co-located with the Intelsat 20 spacecraft currently operating at that location.

The characteristics of the Intelsat 36 spacecraft, as well as its compliance with the various provisions of Part 25 of the Federal Communication Commission's ("FCC or "Commission") rules, are provided in the remainder of this Engineering Statement.

#### 2 Spacecraft Overview

Intelsat 36 is a Space Systems Loral model SS/L-1300 spacecraft that is capable of operating in C-band and Ku-band frequencies listed in the table below.

C-band:	Uplink:	5925 – 6725MHz
	Downlink:	3650 – 4200 MHz
Ku-band:	Uplink:	13000 – 13250 MHz
		17300 – 18100 MHz
	Downlink:	11200 – 11450 MHz
		11700 – 12500 MHz

The spacecraft provides the following coverage:

<b>Band</b>	<u>Beam</u>	<u>Coverage</u>
C-band	Landmass	Europe, Asia, Middle East, and Africa
Ku-band	Southern Africa	Southern Africa

#### 2.1 Spacecraft Characteristics

Intelsat 36 is a three-axis stabilized type spacecraft that has a rectangular outer body structure. Intelsat 36 utilizes two deployable solar array wings and a number of deployable and non-deployable antennas.

The Intelsat 36 spacecraft is composed of the following subsystems:

- 1) Thermal
- 2) Power
- 3) Attitude Control
- 4) Propulsion

- 5) Telemetry, Command and Ranging ("TC&R")
- 6) Uplink Power Control ("ULPC")
- 7) Communications

These subsystems maintain the correct position and attitude of the spacecraft, ensure that all internal units are maintained within the required temperature range, and ensure that the spacecraft can be commanded and controlled with a high level of reliability from launch to the end of its useful life. The spacecraft design incorporates redundancy in each of the various subsystems in order to avoid single point failures.

The structural design of Intelsat 36 provides mechanical support for all subsystems. The structure supports the communication antennas, solar arrays, and thrusters. It also provides a stable platform for preserving the alignment of critical elements of the spacecraft.

A summary of the basic spacecraft characteristics is provided in Exhibit 1.

#### 2.2 Communication Subsystem

Intelsat 36 provides active communication channels at C-band and Ku-band frequencies. The C-band payload employs channels having a bandwidth of 27 MHz, 36 MHz, 54 MHz, 57 MHz, and 60 MHz. The Ku-band payload employs channels having bandwidths of 36 MHz, 54 MHz, 72 MHz, and 82 MHz. The Intelsat 36 frequency and polarization plan as well as the coverage contours for the C-band and Ku-band beams are provided in Schedule S.

The level of isolation of the Intelsat 36 beams is equal to or greater than 27 dB. This level was the best that the satellite manufacturer could achieve without causing excessive degradation in the performance of the beam and/or in the size of the beams' coverage area. Intelsat has taken this level of isolation into account in its planned operations. Section 25.210(i)(1) requires antenna-cross-polarization isolation such that the ratio of the on-axis co-polar gain to the on-axis cross-polar gain of the antenna in the assigned frequency band shall be at least 30 dB within its primary coverage area Therefore, to the extent necessary, Intelsat requests a waiver of Section 25.210(i)(1).

Exhibits 2 and 3 provide the beam parameters for the Intelsat 36 uplink and downlink beams, respectively.

## 2.3 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; and

3) Reception, processing and distribution of telecommands.

Intelsat 36 can be commanded through the use of two available command channels centered at the frequencies 6722.0 MHz and 6724.5 MHz. The spacecraft telemetry is received through two of four telemetry channels centered at the frequencies 3652.0 MHz, 3652.5 MHz, 3653.5 MHz, and 3654.0 MHz.

The coverage patterns of the on-station command and telemetry beams as well as the wide-angle beams used for orbital maneuvers and on-station emergencies have gain contours that vary by less than 8 dB across the surface of the Earth, and accordingly the gain at 8 dB below the peak falls beyond the edge of the Earth. Therefore, pursuant to Section 25.114(c)(4)(vi)(A) of the FCC's rules, contours for these beams are not required to be provided and the associated GXT files have not been included in Schedule S. The Intelsat 36 command and telemetry subsystem performance is summarized in Exhibit 4.

## 2.4 Uplink Power Control Subsystem

Intelsat 36 utilizes one C-band and two Ku-band ULPC channels. The C-band ULPC channel center frequency is 3650.5 MHz. The Ku-band ULPC channel center frequencies are 11200.5 MHz and 12496.0 MHz.

The coverage patterns of the C-band and Ku-band beams have gain contours that vary by less than 8 dB across the surface of the Earth, and accordingly the gain at 8 dB below the peak falls beyond the edge of the Earth. Therefore, pursuant to Section 25.114(c)(4)(vi)(A) of the FCC's rules, contours for these beams are not required to be provided and the associated GXT files have not been included in Schedule S. The Intelsat 36 ULPC subsystem performance is summarized in Exhibit 4.

## 2.5 Satellite Station-Keeping

The spacecraft will be maintained within 0.05° of its nominal longitudinal position in the east-west direction. Accordingly, it is in compliance with Section 25.210(j) of the Commission's rules.

The attitude of the spacecraft will be maintained with 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, etc.).

# **3** Services and Emission Designators

Intelsat 36 is to be a general purpose communications satellite and has been designed to support various services offered within the Intelsat's satellite system. Depending upon the needs of the users, the transponders on Intelsat 36 can accommodate television, radio, voice, and data communications. Typical communication services include:

a) Compressed digital video

- b) High speed digital data
- c) Digital single channel per carrier ("SCPC") data channels

Emission designators and allocated bandwidths for representative communication carriers are provided in Schedule S.

# 4 Power Flux Density ("PFD")

The power flux density ("PFD") limits for space stations operating in the 3650-4200 MHz band are contained in Section 25.208 of the Commission's rules. With respect to the frequency band 11200 - 11450 MHz, there are PFD limits specified in No. 21.16 of the ITU Radio Regulations. Neither the Commission's rules nor the ITU Radio Regulations specify any PFD limits for the 11700 - 12500 MHz band applicable to geostationary satellites operating in the fixed satellite service in ITU Region 1.

The maximum PFD levels for the Intelsat 36 transmissions were calculated for the 3650 – 4200 MHz, 11200 – 11450 MHz, and 11700 – 12500 MHz bands. The PFD levels were also calculated for the Intelsat 36 telemetry and ULPC carriers. The results are provided in Schedule S and show that the downlink power flux density levels of the Intelsat 36 carriers do not exceed the limits specified in Section 25.208 of the Commission's rules or the limits specified in No. 21.16 of the ITU Radio Regulations.

# 5 Emission Compliance

Section 25.202(e) of the FCC's rules requires that the carrier frequency of each space station transmitter be maintained within 0.002% of the reference frequency. Intelsat 36 is designed to be compliant with the provisions of this rule.

Intelsat will comply with the provisions of Section 25.202(f) of the Commission's rules with regard to Intelsat 36 emissions.

# 6 Orbital Location

Intelsat requests that it be assigned the 68.5° E.L. orbital location for Intelsat 36. The 68.5° E.L. location satisfies Intelsat 36 requirements for optimizing coverage, elevation angles, and service availability. Additionally, the location also ensures that the maximum operational, economic, and public interest benefits will be derived.

As previously indicated, Intelsat 36 will be co-located with Intelsat 20 at  $68.5^{\circ}$  E.L. Intelsat will use the well-documented eccentricity and inclination collocation strategy for orbit control. With this procedure, two spacecraft can be controlled with the same stationkeeping limits of  $\pm 0.05$  degrees in both latitude and longitude and still maintain a minimum close approach of greater than 5 km.

# 7 Interference Analysis

The impact of the proposed Intelsat 36 emissions on the transmissions of adjacent satellites located at  $66.5^{\circ}$  E.L.<sup>1</sup> and  $70.5^{\circ}$  E.L.<sup>2</sup> was analyzed. Interference analysis was conducted for a number of representative carriers at non-planned C-band and Ku-band frequencies. It was assumed that there was a hypothetical satellite having the same operating characteristics as Intelsat 36 at the  $66.5^{\circ}$  E.L. orbital location and another such satellite at  $70.5^{\circ}$  E.L.

For the satellite located at 66.5° E.L. it was assumed that the adjacent satellites were Intelsat 36, located at 68.5° E.L., and a hypothetical satellite having the same operating characteristics as Intelsat 36 located at 64.5° E.L.

For the satellite located at 70.5° E.L., it was assumed that the adjacent satellites were Intelsat 36, located at 68.5° E.L., and a hypothetical satellite having the same operating characteristics as Intelsat 36 located at 72.5° E.L.<sup>3</sup>

Other assumptions made for the interference analysis were as follows:

- a) In the plane of the geostationary satellite orbit, all transmitting and receiving earth station antennas have off-axis co-polar gains that are compliant with the limits specified in section 25.209(a)(1) of the FCC's rules.
- 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 is not considered, given that rain (attenuation) effects are insignificant at C-band.
- d) At Ku-band frequencies, rain attenuation predictions are derived using Recommendation ITU-R P.618.
- 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.

All assumptions and the results of the analysis are documented in Exhibits 5 and 6. The Intelsat 36 transmissions will be limited to those levels contained in Sections 25.212(c) and (d) and Section 25.138 of the Commission's rules, as applicable, unless higher levels

<sup>&</sup>lt;sup>1</sup> At the time of submission of this application, no satellites are located at or near two degrees from 68.5°E.L. in the vicinity of 66.5°E.L.

 $<sup>^{2}</sup>$  Eutelsat 70B is located at 70.5°E.L., but it is not licensed by the United States. The inclusion of the satellite in the interference analysis would therefore be inconsistent with a two-degree orbital separation environment and policy.

 $<sup>^{3}</sup>$  At the time of submission of this application, no satellites licensed by the United Stated are located at or near either 64.5° E.L. or 72.5° E.L.

are coordinated with affected adjacent satellite operators. In any case, pursuant to the results in Exhibits 5 and 6, the uplink power density of the Intelsat 36 digital carriers will not exceed the levels specified below:

a)	5925 – 6725 MHz:	-38.7 dBW/Hz
b)	13000 – 13250 MHz:	-50.0 dBW/Hz
c)	17300 – 18100 MHz:	-50.0 dBW/Hz

The downlink EIRP density of Intelsat 36 digital carriers will not exceed the levels specified below:

a)	3650 – 4200 MHz:	-32.0 dBW/Hz
b)	11200 – 11450 MHz:	-20.0 dBW/Hz
c)	11700 – 12500 MHz:	-19.5 dBW/Hz

## 8 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.

#### 8.1 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.

#### 8.2 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 and by leaving the batteries in a permanent discharge state.

#### 8.3 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. With the exception of Intelsat 20, Intelsat 36 will not be located at the same orbital location as

another satellite or at an orbital location that has an overlapping station-keeping volume with another satellite.

With the exception of Intelsat 20, Intelsat is not aware of any other FCC-licensed system, or any other system applied for and under consideration by the FCC, having an overlapping station-keeping volume with Intelsat 36. Intelsat is also not aware of any system with an overlapping station-keeping volume with Intelsat 36, with the exception of Intelsat 20, that is the subject of an ITU filing and that is either in orbit or progressing towards launch.

To safely maintain Intelsat 36 and Intelsat 20 at  $68.5^{\circ}$  E.L., Intelsat will use the welldocumented eccentricity and inclination collocation strategy for orbit control. With this procedure, two spacecraft can be controlled with the same station-keeping limits of  $\pm 0.05$ degrees in both latitude and longitude and still maintain a minimum close approach of greater than 5 km.

#### 8.4 Post-Mission Disposal

At the end of the mission, Intelsat intends to dispose of the spacecraft by moving it to a minimum altitude above the altitude established by the IADC formula. Intelsat has reserved 1.6 kilograms of xenon 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 "rocket equation" was used, taking into account the expected mass of the satellite at the end of life and the required delta-velocity to achieve the desired orbit. The fuel gauging uncertainty has been taken into account in these calculations.

In calculating the disposal orbit, Intelsat has used simplifying assumptions as permitted under the Commission's Orbital Debris Report and Order.<sup>4</sup> For reference, the effective area to mass ratio (Cr\*A/M) of the Intelsat 36 spacecraft is 0.041 m<sup>2</sup>/kg, resulting in a minimum perigee disposal altitude under the IADC formula of at most 300 kilometers above the geostationary arc. Accordingly, the Intelsat 36 planned disposal orbit complies with the FCC's rules.

## 9 ITU Filing

Intelsat 36's operations in the 3650– 4200 MHz and 5925 – 6725 MHz bands have been coordinated under the Administration of the United States International Telecommunication Union ("ITU") filings USASAT-14I, USASAT-14I-3, and USASAT-60C.

<sup>&</sup>lt;sup>4</sup> *Mitigation of Orbital Debris*, Second Report and Order, IB Docket No. 02-54, FCC 04-130 (rel. June 21, 2004).

Intelsat 36's operations in the 11200 – 11450 MHz and 13000 – 13250 MHz bands have been coordinated under the Administration of Germany International Telecommunication Union ("ITU") filing, Odyssey FSS-68.5E.

Intelsat currently has no United States ITU filing with for a satellite network that specifies operation in the frequency bands 11200 - 11450 MHz, 13000 - 13250 MHz, 11700 - 12500 MHz and 17300 - 18100 MHz at the nominal orbital location of  $68.5^{\circ}$  E.L. Intelsat will submit to the Commission Appendix 4 information for a new satellite network that utilizes these frequency bands at the nominal orbital of  $68.5^{\circ}$  E.L., to be forwarded to the ITU.

#### **10 TC&R Control Earth Stations**

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Intelsat will conduct TC&R operations through one or more of the following earth stations: Mingenew, Australia; Kumsan, South Korea; or Fucino, Italy. Additionally, Intelsat is capable of remotely controlling Intelsat 36 from its facilities in McLean, VA or in Long Beach, CA.

# **Certification Statement**

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

/s/ Roya Shambayati

December 28, 2015

Roya Shambayati Intelsat Director, Spectrum Strategy

Date

# **EXHIBIT 1**

## SUMMARY OF SPACECRAFT CHARACTERISTICS

General Spacecraft Characteristics			
Spacecraft Name	Intelsat 36		
Orbital Location	68.5° E.L.		
Spacecraft Manufacturer	Space Systems Loral		
Spacecraft Model	SS/L-1300		
Spacecraft Type	3-axis stabilized		
Spacecraft Expected Lifetime	15 years		
Eclipse Capability	100%		
Station-keeping			
North-South	$\pm 0.05^{\circ}$		
East-West	±0.05°		
Propulsion Type	Xenon ion		

# EXHIBIT 2

#### COMMUNICATION SUBSYSTEM UPLINK BEAM PARAMETERS

Beam Name	C-Band Linear	C-Band Linear	Ku-Band Linear	Ku-Band Linear
Schedule S Beam ID	CWHU	CWVU	KUHU	KUVU
Frequency Band (MHz)	5925 - 6725	5925 - 6725	13000 - 13250 17300 - 18100	13000 - 13250 17300 - 18100
Polarization	Horizontal	Vertical	Horizontal	Vertical
Beam Peak Gain (dBi)	26.7	26.8	37.5	37.6
G/T (dB/K)	0.8	1.2	11.3	11.3
Minimum SFD (dBW/m <sup>2</sup> )	-79.4	-79.8	-83.7	-83.7
Maximum SFD (dBW/m <sup>2</sup> )	-103.4	-103.8	-104.7	-104.7

# EXHIBIT 3

#### COMMUNICATION SUBSYSTEM DOWNLINK BEAM PARAMETERS

Beam Name	C-Band Linear	C-Band Linear	Ku-Band Linear	Ku-Band Linear
Schedule S Beam ID	CWHD	CWVD	KUHD	KUVD
Frequency Bond (MHz)	3650 4200	3650 - 4200	11200 - 11450	11200 - 11450
Frequency Band (MHZ)	3030 - 4200		11700 - 12500	11700 - 12500
Polarization	Horizontal	Vertical	Horizontal	Vertical
Peak Antenna Gain (dBi)	28.0	28.0	37.4	37.5
EIRP (dBW)	44.6	44.6	56.4	56.7

### **EXHIBIT 4**

## TC&R and ULPC SUBSYSTEM CHARACTERISTICS

Beam Name	Command - Global	Command – Omni	
Schedule S Beam ID	CGRU	CZRU	
Frequencies (MHz)	6722.0, 6724.5	6722.0, 6724.5	
Polarization	RHCP	RHCP	
Peak Antenna Gain (dBi)	19.0	6.0	

Beam Name	Telemetry - Global	Telemetry – Omni	ULPC	ULPC
Schedule S Beam ID	TGLD	TZLD	CLRD	KLRD
Frequencies (MHz)	3652.0, 3652.5, 3653.5, 3654.0	3652.0, 3652.5, 3653.5, 3654.0	3650.5	11200.5, 12496.0
Polarization	LHCP	LHCP	RHCP	RHCP
Peak Antenna Gain (dBi)	18.1	6.0	27.2	27.5
Maximum Channel EIRP (dBW)	9.4	13.0	20.0	18.0

Note: RHCP: Right Hand Circular Polarization, LHCP: Left Hand Circular Polarization

# EXHIBIT 5 <u>Hypothetical 66.5°E INTERFERENCE ANALYSIS</u>

Upths         CWHU / CWU         CWHU / CWU </th <th>UPLINK BEAM INFORMATION</th> <th></th> <th></th> <th></th> <th></th>	UPLINK BEAM INFORMATION				
Uplick Programmy (MH2)         6015         6015         6015         6015         6015         6015           Uplick Ream Peak GT (EdK)         0.8         0.8         0.8         0.8         0.8         0.8           Uplick Ream Peak GT (EdK)         79.8         79.8         77.8	Uplink Beam Name	CWHU / CWVU	CWHU / CWVU	CWHU / CWVU	CWHU / CWVU
Uptik Beam Pairitation         Horizontal/Vertical         Horizontal/Vertical <td>Uplink Frequency (MHz)</td> <td>6015</td> <td>6015</td> <td>6015</td> <td>6015</td>	Uplink Frequency (MHz)	6015	6015	6015	6015
Lipick Beam Peak QT (GBK)         0.8         0.8         0.8         0.8         0.8           Lipick Beam Peak QT (GBK)         -79.8         -79.8         -79.8         -79.8         -79.8           Lipick Realities Control: Level (dB)         -6.0         -6.0         -6.0         -6.0           Downlink Beam Name         CWHD / CWVD         CWHD / CWVD /	Uplink Beam Polarization	Horizontal/Vertical	Horizontal/Vertical	Horizontal/Vertical	Horizontal/Vertical
Lipsik Beam Peak SED (BWVm2)         -79.8 <th< td=""><td>Uplink Beam Peak G/T (dB/K)</td><td>0.8</td><td>0.8</td><td>0.8</td><td>0.8</td></th<>	Uplink Beam Peak G/T (dB/K)	0.8	0.8	0.8	0.8
Uptik Ratifie Contor Level (dB)         -9.0	Uplink Beam Peak SFD (dBW/m2)	-79.8	-79.8	-79.8	-79.8
DOWNLINK BEAM INFORMATION         CWHD / CWVD         CWVD / CWVD         CWVD / CWVD         CWVD / C	Uplink Relative Contour Level (dB)	-8.0	-8.0	-8.0	-8.0
Downlik Baam Name         CWHD / CWUD         CWUD         CWHD / CWUD         CWHD / CWUD         CWUD         CWUD / CWUD         CWHD / CWUD         CWUD / CWUD / CWUD         CWUD / CWUD / CWUD	DOWNLINK BEAM INFORMATION				
Downlik Frequency (MHz)         3790         3790         3790         3790         3790         3790         3790           Downlik Ream Polarization         Horizontal/Vertical         Horizontal/Vertical         Horizontal/Vertical         Horizontal/Vertical           Downlik Ream Polarization         44.6         44.6         44.6         44.6         44.6           Downlik Ream Polarization         45.5         -8.5         -8.5         -8.5         -8.5           DataCett SATELLITE 1         Inteliat 36         Inteliat 36         Inteliat 36         Inteliat 36         Inteliat 36           Obtrial Location         66.5E         66.5E         66.5E         66.5E         66.5E           Deam Peak Downlik EIRP Density (dBW/Hz)         -32.0         -32.0         -32.0         -32.0           Satalite Name         Hypothetical 64.5E         Hypothetical 64.5E         64.5E         64.5E           Deam Peak Downlik EIRP Density (dBW/Hz)         -32.0 <td>Downlink Beam Name</td> <td>CWHD / CWVD</td> <td>CWHD / CWVD</td> <td>CWHD / CWVD</td> <td>CWHD / CWVD</td>	Downlink Beam Name	CWHD / CWVD	CWHD / CWVD	CWHD / CWVD	CWHD / CWVD
Downlik Baar Polatization         Horizontal/Verical	Downlink Frequency (MHz)	3790	3790	3790	3790
Downlink Baam Peak ERP (dBW)         44.6         58.5         -8.5         <	Downlink Beam Polarization	Horizontal/Vertical	Horizontal/Vertical	Horizontal/Vertical	Horizontal/Vertical
Downlink Relative Contour Level (dB)         -6.5         -8.5         -9.5         -8.5           DAUACENT SATELUTE 1         Intelisat 36         Intelisat 36         Intelisat 36         Intelisat 36         Intelisat 36           Othat Location         66.5.5         66.5.5         66.5.5         66.5.6         66.5.6           Diplink Power Density (dBW/Hz)         -33.7         38.7         38.7         38.7         38.7           Beam Peak Downlink EIRP Density (dBW/Hz)         -32.0         -32.0         -32.0         -32.0         -32.0           Statellite Name         Hypothetical 64.5.5         64.5.5         64.5.5         64.5.5         64.5.5           Orbital Location         64.5.5         64.5.5         64.5.5         64.5.5         64.5.5           Orbital Location         64.5.5         64.5.5         64.5.5         64.5.5         64.5.5           Carrier ID	Downlink Beam Peak EIRP (dBW)	44.6	44.6	44.6	44.6
ADJACENT SATELLTE 1         Intelsat 36         Intelsat 36         Intelsat 36         Intelsat 36           Drbital Location         66.5E         66.5E         66.5E         68.5E         68.5E           Uplink Power Density (dBW/Hz)         -38.7         -38.7         -38.7         -38.7         -38.7           Beam Peak Downlink EIRP Density (dBW/Hz)         -32.0         -32.0         -32.0         -32.0           ADJACENT SATELLTE 2         Hypothetical 64.5E         Hypothetical 64.5E         Hypothetical 64.5E         C6.45E         64.5E         64.5E         64.5E         64.5E         64.5E         64.5E         64.5E         C6.45E	Downlink Relative Contour Level (dB)	-8.5	-8.5	-8.5	-8.5
Stateline Name         Inteliata 36         Inteliata 36         Inteliata 36         Inteliata 36         Inteliata 36           Obitial Location         66.5E         66.5E         66.5E         66.5E           Uplink Power Danalty (dBW/Hz)         -38.7         -38.7         -38.7         -38.7           Beam Peak Downlink EIRP Density (dBW/Hz)         -32.0	ADJACENT SATELLITE 1				
Orbital Location         68.5E         68.5E         68.5E         68.5E           Uplink Power Density (dBW/Hz)         -32.0         -32.0         -32.0         -32.0           ADJACENT SATELUTE 2	Satellite Name	Intelsat 36	Intelsat 36	Intelsat 36	Intelsat 36
Lybink Power Density (dBW/Hz)         -38.7         -38.7         -38.7         -38.7         -38.7         -38.7         Beam Peak Downlink EIRP Density (dBW/Hz)         -32.0 <td>Orbital Location</td> <td>68.5E</td> <td>68.5E</td> <td>68.5E</td> <td>68.5E</td>	Orbital Location	68.5E	68.5E	68.5E	68.5E
Beam Peak Downlink EIRP Density (dBW/Hz)         -32.0         -32.0         -32.0         -32.0           Satellite Name         Hypothetical 64.5E         Hypothetical 64.5E         Hypothetical 64.5E         Hypothetical 64.5E         Carrier ID         36M0G7W         53.20         -32.0         -32.0         -32.0         -32.0         -32.0         -32.0         Carrier ID         Carrier Modulation         OPSK         QPSK         QPSK         BPSK         Information Rate(kpp)         368660         8448         1024         272         Code Rate         0.4111.3         124         717.1         140.024         272         Code Rate         0.620.5         1733         861         Mirmum C/N, Rain (dB)         7.3         7.3         7.3         7.3	Uplink Power Density (dBW/Hz)	-38.7	-38.7	-38.7	-38.7
ADJACENT SATELITE 2         mode         mode           Satellite Name         Hypothetical 64.5E         Hypothetical 64.5E         Hypothetical 64.5E         Hypothetical 64.5E         64.5E <td< td=""><td>Beam Peak Downlink EIRP Density (dBW/Hz)</td><td>-32.0</td><td>-32.0</td><td>-32.0</td><td>-32.0</td></td<>	Beam Peak Downlink EIRP Density (dBW/Hz)	-32.0	-32.0	-32.0	-32.0
Statistic Name         Hypothetical 64.5E         Hypothetical 64.5E         Hypothetical 64.5E         Hypothetical 64.5E           Orbital Location         64.5E         64.5E         64.5E         64.5E           Opink Power Density (dBW/Hz)         38.7         38.7         38.7         38.7           Beam Peak Downink EIRP Density (dBW/Hz)         32.0         32.0         32.0         32.0           CArrier ID         36M0G7W         8M25G7W         1M74G7W         861KG7W           Carrier ID         36M0G7W         8M25G7W         1M74G7W         861KG7W           Carrier IM odulation         OPSK         OPSK         OPSK         BPSK           Information Rate(kpbs)         368600         8448         1024         272           Code Rate         3/4x188/204         3/4         1/2         0.431           Occupied Bandwidth(k1z)         36600         8250.5         1733         861           Minimum C/N, Rain (dB)         7.3         7.3         1.8         0.8           UPLINK EARTH STATION         UPLINK EARTH STATION         UPLINK EARTH STATION         UPLINK EARTH STATION           Earth Station Diameter (meters)         7.5         7.5         3.7         3.7           Earth Station Clain (GB	ADJACENT SATELLITE 2				
Orbital Location         64.5E         64.5E         64.5E         64.5E           Uplink Power Density (dBW/Hz)         -38.7         -38.7         -38.7         -38.7           Beam Peak Downlink EIRP Density (dBW/Hz)         32.0         -32.0         -32.0         -32.0           CARRIER INFORMATION                Carrier ID         36M0G7W         8MM2507W         1M74G7W         861K07W           Carrier ID         368060         8448         1024         272           Code Rate         3/4/x188/204         3/4         1/12         0.431           Occupied Bandwidth(kHz)         26664.7         6111.3         1224         717.1           Allcocated Bandwidth(kHz)         36000         6250.5         1733         861           Minimum C/N, Rain (dB)         7.3         7.3         1.8         0.8           UPLINK EARTH STATION               Earth Station Diameter (meters)         7.5         7.5         3.7         3.7           Earth Station Gain (dBi)         64.4         6.4         6.4         6.4           ODWALINK EARTH STATION	Satellite Name	Hypothetical 64.5E	Hypothetical 64.5E	Hypothetical 64.5E	Hypothetical 64.5E
Uplink Power Density (dBW/Hz)         -38.7         -38.7         -38.7         -38.7         -38.7           Beam Peak Downink EIRP Density (dBW/Hz)         -32.0         -32.0         -32.0         -32.0           Carrier ID         36M0G7W         8M25G7W         1M74G7W         881KG7W           Carrier Modulation         QPSK         QPSK         QPSK         BPSK           Information Rate(k0ps)         36660         8448         1024         272           Code Rate         3/4x188/204         3/4         1/2         0.431           Occupied Bandwidth(k1z)         26664.7         6111.3         1284         717.1           Allocated Bandwidth(k1z)         36000         6250.5         1733         861           Minimum C/N, Rain (dB)         7.3         7.3         7.3         1.8         0.8           UPLINK EARTH STATION         T         T         T         5.0         3.7         3.7           Earth Station Diameter (meters)         7.5         7.5         3.7         3.7         5.7           Earth Station Diameter (meters)         7.5         7.5         3.7         3.7           Earth Station Diameter (meters)         7.5         7.5         3.7         3.7     <	Orbital Location	64.5E	64.5E	64.5E	64.5E
Beam Peak Downlink EIRP Density (dBW/Hz)         32.0         -32.0         -32.0         -32.0           CARRIER INFORMATION               861KG7W         861KG7W         861KG7W          861KG7W         861KG7W         861KG7W         861KG7W         S67K         Carrier Modulation         QPSK         QPSK <td>Uplink Power Density (dBW/Hz)</td> <td>-38.7</td> <td>-38.7</td> <td>-38.7</td> <td>-38.7</td>	Uplink Power Density (dBW/Hz)	-38.7	-38.7	-38.7	-38.7
CARRIER INFORMATION         Mathematical State (bps)         36M0G7W         8M25G7W         1M74G7W         861KG7W           Carrier Modulation         QPSK         QPSK         QPSK         QPSK         QPSK         BPSK           Information Rate(kbps)         36860         8448         1024         272           Code Rate         3/4x188/204         3/4         1/12         0.431           Occupied Bandwidth(kHz)         26664.7         61111.3         1284         717.1           Allocated Bandwidth(kHz)         36000         8250.5         1733         861           Minimum C/N, Rain (dB)         7.3         7.3         1.8         0.8 <b>UPLINE KARTH STATION</b>	Beam Peak Downlink EIRP Density (dBW/Hz)	-32.0	-32.0	-32.0	-32.0
Carrier ID         36M0G7W         8M25G7W         IM74G7W         861KG7W           Carrier Modulation         QPSK         QPSK         QPSK         QPSK         BPSK           Information Rate(kbps)         36860         8448         1024         272           Code Rate         3/4x188/204         3/4         1/2         0.431           Decupied Bandwidth(kHz)         26664.7         6111.3         1284         717.1           Allocated Bandwidth(kHz)         36000         8250.5         1733         861           Minimum C/N, Rain (dB)         7.3         7.3         1.8         0.8           UPLINK EARTH STATION	CARRIER INFORMATION				
Carrier Modulation         QPSK         QPSK         QPSK         QPSK         BPSK           Information Rate(ktps)         36860         8448         1024         272           Code Rate         3/4x188/204         3/4         1/2         0.431           Occupied Bandwidth(kHz)         26664.7         6111.3         1284         717.1           Allocated Bandwidth(kHz)         36000         8250.5         1733         861           Minimum CN, Rain (dB)         7.3         7.3         1.8         0.8           UPLINK EARTH STATION	Carrier ID	36M0G7W	8M25G7W	1M74G7W	861KG7W
Information Rate(kbps)         38680         8448         1024         272           Code Rate         3/4x188/204         3/4         1/2         0.431           Occupied Bandwidth(kHz)         26664.7         6111.3         1284         717.1           Allocated Bandwidth(kHz)         36000         8250.5         1733         861           Minimum C/N, Rain (dB)         7.3         7.3         1.8         0.8           UPLINK EARTH STATION               Earth Station Cain (dB)         53.7         47.7         45.1         45.1           Earth Station Gain (dB)         53.7         47.7         45.1         45.1           Earth Station Cain (dB)         53.7         7.5         3.7         3.7           Earth Station Diameter (meters)         7.5         7.5         3.7         3.7           Earth Station Clim (dB)         48.1         48.1         41.9         41.9           Earth Station Clim (dB)         29.0         22.7         22.7           Earth Station Elevation Angle         6.4         6.4         6.4         6.4           COMPOSITE LINK PERFORMANCE           5.8         26.3         26.4         <	Carrier Modulation	QPSK	QPSK	QPSK	BPSK
Code Rate         3/4x188/204         3/4         1/2         0.431           Occupied Bandwidth(kHz)         26664.7         6111.3         1284         71.1           Allocated Bandwidth(kHz)         36000         8250.5         1733         861           Minimum C/N, Rain (dB)         7.3         7.3         1.8         0.8           UPLINK EARTH STATION               Earth Station Diameter (meters)         10.0         5.0         3.7         3.7           Earth Station Cain (dBi)         53.7         47.7         45.1         45.1           Earth Station Diameter (meters)         7.5         7.5         3.7         3.7           Earth Station Diameter (meters)         7.5         7.5         3.7         3.7           Earth Station Gain (dBi)         48.1         48.1         41.9         41.9           Earth Station Gain (dBi)         48.1         48.1         41.9         41.9           Earth Station GAT (dBK)         29.0         29.0         22.7         22.7           Earth Station Cain (Algi)         48.1         48.1         41.9         41.9           Earth Station Cain (Algi)         25.8         26.3         26.4	Information Rate(kbps)	36860	8448	1024	272
Occupied Bandwidth(kHz)         26664.7         6111.3         1284         717.1           Allocated Bandwidth(kHz)         36000         8250.5         1733         861           Minimum C/N, Rain (dB)         7.3         7.3         1.8         0.8           UPLINK EARTH STATION               Earth Station Diameter (meters)         10.0         5.0         3.7         3.7           Earth Station Diameter (meters)         6.4         6.4         6.4         6.4           DOWNLINK EARTH STATION               Earth Station Elevation Angle         6.4         6.4         6.4         6.4           DOWNLINK EARTH STATION                Earth Station Elevation Angle         6.4         6.4         6.4         6.4         6.4           DOWNLINK EARTH STATION         29.0         29.0         22.7         22.7         22.7           Earth Station Elevation Angle         6.4         6.4         6.4         6.4         6.4           COMPOSITE LINK PERFORMANCE            31.9         31.9           Uplink Interference C/I (dB)	Code Rate	3/4x188/204	3/4	1/2	0.431
Allocated Bandwidh(kHz)         36000         8250.5         1733         861           Minimum C/N, Rain (dB)         7.3         7.3         1.8         0.8           UPLINK EARTH STATION	Occupied Bandwidth(kHz)	26664.7	6111.3	1284	717.1
Minimum C/N, Rain (dB)         7.3         7.3         1.8         0.8           UPLINK EARTH STATION	Allocated Bandwidth(kHz)	36000	8250.5	1733	861
UPLINK EARTH STATION         Image: constraint of the state of t	Minimum C/N, Rain (dB)	7.3	7.3	1.8	0.8
Earth Station Diameter (meters)         10.0         5.0         3.7         3.7           Earth Station Gain (dBi)         53.7         47.7         45.1         45.1           Earth Station Elevation Angle         6.4         6.4         6.4         6.4           DOWNLINK EARTH STATION	UPLINK EARTH STATION				
Earth Station Gain (dBi)         53.7         47.7         45.1         45.1           Earth Station Angle         6.4         6.4         6.4         6.4         6.4           DOWNLINK EARTH STATION	Earth Station Diameter (meters)	10.0	5.0	3.7	3.7
Earth Station Elevation Angle         6.4         6.4         6.4         6.4           DOWNLINK EARTH STATION	Earth Station Gain (dBi)	53.7	47.7	45.1	45.1
DOWNLINK EARTH STATION         Image: constraint of the state of	Earth Station Elevation Angle	6.4	6.4	6.4	6.4
Earth Station Diameter (meters)         7.5         7.5         3.7         3.7           Earth Station Gain (dBi)         48.1         48.1         41.9         41.9           Earth Station GJT (dB/K)         29.0         29.0         22.7         22.7           Earth Station Elevation Angle         6.4         6.4         6.4         6.4           COMPOSITE LINK PERFORMANCE	DOWNLINK EARTH STATION				
Earth Station Gain (dBi)         48.1         48.1         41.9         41.9           Earth Station G/T (dB/K)         29.0         29.0         22.7         22.7           Earth Station Elevation Angle         6.4         6.4         6.4         6.4           COMPOSITE LINK PERFORMANCE               C/N Thermal Uplink (dB)         25.8         26.3         26.4         25.9           Uplink Interference C/I (dB)         13.2         13.7         13.9         13.3           Intermodulation C/IM (dB)         35.3         21.8         21.3         21.8           Downlink Thermal C/N (dB)         15.0         15.0         8.8         8.2           Downlink Interference C/I (dB)         24.1         21.7         20.5         23.5           Downlink Adjacent Satellite C/I (dB)         15.4         15.4         6.0         5.4           Subtotal C/N (dB)         9.3         9.2         3.4         3.0           Antenna Mispointing and Other Losses (dB)         1.5         1.5         1.5         1.5           Total C/N (dB)         7.8         7.7         1.9         1.5           Minimum Required C/N (dB)         7.3         7.3         1.8 <td>Earth Station Diameter (meters)</td> <td>7.5</td> <td>7.5</td> <td>3.7</td> <td>3.7</td>	Earth Station Diameter (meters)	7.5	7.5	3.7	3.7
Earth Station G/T (dB/K)         29.0         29.0         22.7         22.7           Earth Station Elevation Angle         6.4         6.4         6.4         6.4         6.4           COMPOSITE LINK PERFORMANCE                 C/N Thermal Uplink (dB)         25.8         26.3         26.4         25.9               31.9           31.9            31.9           31.9           31.3            31.3            31.3            31.3            31.3            31.3            31.3             31.3            31.3                               <	Earth Station Gain (dBi)	48.1	48.1	41.9	41.9
Earth Station Elevation Angle         6.4         6.4         6.4         6.4         6.4           COMPOSITE LINK PERFORMANCE         C <thc< t<="" td=""><td>Earth Station G/T (dB/K)</td><td>29.0</td><td>29.0</td><td>22.7</td><td>22.7</td></thc<>	Earth Station G/T (dB/K)	29.0	29.0	22.7	22.7
COMPOSITE LINK PERFORMANCE         C/N Thermal Uplink (dB)         25.8         26.3         26.4         25.9           Uplink Interference C/I (dB)         28.6         29.1         19.4         31.9           Uplink Adjacent Satellite C/I (dB)         13.2         13.7         13.9         13.3           Intermodulation C/IM (dB)         35.3         21.8         21.3         21.8           Downlink Thermal C/N (dB)         15.0         15.0         8.8         8.2           Downlink Interference C/I (dB)         24.1         21.7         20.5         23.5           Downlink Adjacent Satellite C/I (dB)         15.4         15.4         6.0         5.4           Subtotal C/N (dB)         9.3         9.2         3.4         3.0           Antenna Mispointing and Other Losses (dB)         1.5         1.5         1.5           Total C/N (dB)         7.3         7.3         1.8         0.8           CARRIER DENSITY LEVELS         Uplink Power Density (dBW/Hz)         -47.8         -41.3         -39.3         -39.0	Earth Station Elevation Angle	6.4	6.4	6.4	6.4
C/N Thermal Uplink (dB)         25.8         26.3         26.4         25.9           Uplink Interference C/I (dB)         28.6         29.1         19.4         31.9           Uplink Adjacent Satellite C/I (dB)         13.2         13.7         13.9         13.3           Intermodulation C/IM (dB)         35.3         21.8         21.3         21.8           Downlink Thermal C/N (dB)         15.0         15.0         8.8         8.2           Downlink Interference C/I (dB)         24.1         21.7         20.5         23.5           Downlink Adjacent Satellite C/I (dB)         15.4         15.4         6.0         5.4           Subtotal C/N (dB)         9.3         9.2         3.4         3.0           Antenna Mispointing and Other Losses (dB)         1.5         1.5         1.5         1.5           Total C/N (dB)         7.3         7.3         1.8         0.8           CARRIER DENSITY LEVELS         Uplink Power Density (dBW/Hz)         -47.8         -41.3         -39.3         -39.0           Downlink EIRP Density At Beam Peak (dBW/Hz)         -37.1         -37.1         -41.9         -37.6	COMPOSITE LINK PERFORMANCE				
Uplink Interference C/I (dB)         28.6         29.1         19.4         31.9           Uplink Adjacent Satellite C/I (dB)         13.2         13.7         13.9         13.3           Intermodulation C/IM (dB)         35.3         21.8         21.3         21.8           Downlink Thermal C/N (dB)         15.0         15.0         8.8         8.2           Downlink Interference C/I (dB)         24.1         21.7         20.5         23.5           Downlink Adjacent Satellite C/I (dB)         15.4         15.4         6.0         5.4           Subtotal C/N (dB)         9.3         9.2         3.4         3.0           Antenna Mispointing and Other Losses (dB)         1.5         1.5         1.5         1.5           Total C/N (dB)         7.3         7.3         1.8         0.8           CARRIER DENSITY LEVELS         Uplink Power Density (dBW/Hz)         -47.8         -41.3         -39.3         -39.0           Downlink EIRP Density At Beam Peak (dBW/Hz)         -37.1         -37.1         -41.9         -37.6	C/N Thermal Uplink (dB)	25.8	26.3	26.4	25.9
Uplink Adjacent Satellite C/I (dB)         13.2         13.7         13.9         13.3           Intermodulation C/IM (dB)         35.3         21.8         21.3         21.8           Downlink Thermal C/N (dB)         15.0         15.0         8.8         8.2           Downlink Interference C/I (dB)         24.1         21.7         20.5         23.5           Downlink Adjacent Satellite C/I (dB)         15.4         15.4         6.0         5.4           Subtotal C/N (dB)         9.3         9.2         3.4         3.0           Antenna Mispointing and Other Losses (dB)         1.5         1.5         1.5         1.5           Total C/N (dB)         7.8         7.7         1.9         1.5           Minimum Required C/N (dB)         7.3         7.3         1.8         0.8           CARRIER DENSITY LEVELS         Uplink Power Density (dBW/Hz)         -47.8         -41.3         -39.3         -39.0           Downlink EIRP Density At Beam Peak (dBW/Hz)         -37.1         -37.1         -41.9         -37.6	Uplink Interference C/I (dB)	28.6	29.1	19.4	31.9
Intermodulation C/IM (dB)         35.3         21.8         21.3         21.8           Downlink Thermal C/N (dB)         15.0         15.0         8.8         8.2           Downlink Interference C/I (dB)         24.1         21.7         20.5         23.5           Downlink Adjacent Satellite C/I (dB)         15.4         15.4         6.0         5.4           Subtotal C/N (dB)         9.3         9.2         3.4         3.0           Antenna Mispointing and Other Losses (dB)         1.5         1.5         1.5         1.5           Total C/N (dB)         7.8         7.7         1.9         1.5           Minimum Required C/N (dB)         7.3         7.3         1.8         0.8           CARRIER DENSITY LEVELS         -         -         -         -           Uplink Power Density (dBW/Hz)         -47.8         -41.3         -39.3         -39.0           Downlink EIRP Density At Beam Peak (dBW/Hz)         -37.1         -37.1         -41.9         -37.6	Uplink Adjacent Satellite C/I (dB)	13.2	13.7	13.9	13.3
Downlink Thermal C/N (dB)         15.0         15.0         8.8         8.2           Downlink Interference C/I (dB)         24.1         21.7         20.5         23.5           Downlink Adjacent Satellite C/I (dB)         15.4         15.4         6.0         5.4           Subtotal C/N (dB)         9.3         9.2         3.4         3.0           Antenna Mispointing and Other Losses (dB)         1.5         1.5         1.5         1.5           Total C/N (dB)         7.8         7.7         1.9         1.5           Minimum Required C/N (dB)         7.3         7.3         1.8         0.8           CARRIER DENSITY LEVELS	Intermodulation C/IM (dB)	35.3	21.8	21.3	21.8
Downlink Interference C/I (dB)         24.1         21.7         20.5         23.5           Downlink Adjacent Satellite C/I (dB)         15.4         15.4         6.0         5.4           Subtotal C/N (dB)         9.3         9.2         3.4         3.0           Antenna Mispointing and Other Losses (dB)         1.5         1.5         1.5         1.5           Total C/N (dB)         7.8         7.7         1.9         1.5           Minimum Required C/N (dB)         7.3         7.3         1.8         0.8           CARRIER DENSITY LEVELS         -47.8         -41.3         -39.3         -39.0           Downlink EIRP Density At Beam Peak (dBW/Hz)         -37.1         -37.1         -41.9         -37.6	Downlink Thermal C/N (dB)	15.0	15.0	8.8	8.2
Downlink Adjacent Satellite C/I (dB)         15.4         15.4         6.0         5.4           Subtotal C/N (dB)         9.3         9.2         3.4         3.0           Antenna Mispointing and Other Losses (dB)         1.5         1.5         1.5         1.5           Total C/N (dB)         7.8         7.7         1.9         1.5           Minimum Required C/N (dB)         7.3         7.3         1.8         0.8           CARRIER DENSITY LEVELS         U         -47.8         -41.3         -39.3         -39.0           Downlink EIRP Density At Beam Peak (dBW/Hz)         -37.1         -37.1         -41.9         -37.6	Downlink Interference C/I (dB)	24.1	21.7	20.5	23.5
Subtotal C/N (dB)         9.3         9.2         3.4         3.0           Antenna Mispointing and Other Losses (dB)         1.5         1.5         1.5         1.5           Total C/N (dB)         7.8         7.7         1.9         1.5           Minimum Required C/N (dB)         7.3         7.3         1.8         0.8           CARRIER DENSITY LEVELS         -47.8         -41.3         -39.3         -39.0           Downlink EIRP Density At Beam Peak (dBW/Hz)         -37.1         -37.1         -41.9         -37.6	Downlink Adjacent Satellite C/I (dB)	15.4	15.4	6.0	5.4
Subtotal C/N (dB)         9.3         9.2         3.4         3.0           Antenna Mispointing and Other Losses (dB)         1.5         1.5         1.5         1.5           Total C/N (dB)         7.8         7.7         1.9         1.5           Minimum Required C/N (dB)         7.3         7.3         1.8         0.8           CARRIER DENSITY LEVELS					
Antenna Mispointing and Other Losses (dB)         1.5         1.5         1.5         1.5           Total C/N (dB)         7.8         7.7         1.9         1.5           Minimum Required C/N (dB)         7.3         7.3         1.8         0.8           CARRIER DENSITY LEVELS         -47.8         -41.3         -39.3         -39.0           Uplink Power Density (dBW/Hz)         -37.1         -37.1         -41.9         -37.6	Subtotal C/N (dB)	9.3	9.2	3.4	3.0
Total C/N (dB)         7.8         7.7         1.9         1.5           Minimum Required C/N (dB)         7.3         7.3         1.8         0.8           CARRIER DENSITY LEVELS	Antenna Mispointing and Other Losses (dB)	1.5	1.5	1.5	1.5
Minimum Required C/N (dB)         7.3         7.3         1.8         0.8           CARRIER DENSITY LEVELS	Total C/N (dB)	7.8	7.7	1.9	1.5
CARRIER DENSITY LEVELS	Minimum Required C/N (dB)	7.3	7.3	1.8	0.8
Uplink Power Density (dBW/Hz)         -47.8         -41.3         -39.3         -39.0           Downlink EIRP Density At Beam Peak (dBW/Hz)         -37.1         -37.1         -41.9         -37.6	CARRIER DENSITY LEVELS				
Downlink EIRP Density At Beam Peak (dBW/Hz)         -37.1         -37.1         -41.9         -37.6	Uplink Power Density (dBW/Hz)	-47.8	-41.3	-39.3	-39.0
	Downlink EIRP Density At Beam Peak (dBW/Hz)	-37.1	-37.1	-41.9	-37.6

UPLINK BEAM INFORMATION				
Uplink Beam Name	CWHU/CWVU	CWHU/CWVU	CWHU/CWVU	CWHU/CWVU
Uplink Frequency (MHz)	6610	6610	6610	6610
Uplink Beam Polarization	Horizontal/Vertical	Horizontal/Vertical	Horizontal/Vertical	Horizontal/Vertical
Uplink Beam Peak G/T (dB/K)	0.8	0.8	0.8	0.8
Uplink Beam Peak SFD (dBW/m2)	-79.8	-79.8	-79.8	-79.8
Uplink Relative Contour Level (dB)	-8.0	-8.0	-8.0	-8.0
DOWNLINK BEAM INFORMATION				
Downlink Beam Name	KUVD/KUHD	KUVD/KUHD	KUVD/KUHD	KUVD/KUHD
Downlink Frequency (MHz)	11888	11888	11888	11888
Downlink Beam Polarization	Vertical/Horizontal	Vertical/Horizontal	Vertical/Horizontal	Vertical/Horizontal
Downlink Beam Peak EIRP (dBW)	56.7	56.7	56.7	56.7
Downlink Relative Contour Level (dB)	-7.9	-7.9	-7.9	-7.9
ADJACENT SATELLITE 1				
Satellite Name	Intelsat 36	Intelsat 36	Intelsat 36	Intelsat 36
Orbital Location	68.5E	68.5E	68.5E	68.5E
Uplink Power Density (dBW/Hz)	-38.7	-38.7	-38.7	-38.7
Beam Peak Downlink EIRP Density (dBW/Hz)	-19.5	-19.5	-19.5	-19.5
ADJACENT SATELLITE 2				
Satellite Name	Hypothetical 64.5E	Hypothetical 64.5E	Hypothetical 64.5E	Hypothetical 64.5E
Orbital Location	64.5E	64.5E	64.5E	64.5E
Uplink Power Density (dBW/Hz)	-38.7	-38.7	-38.7	-38.7
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0
CARRIER INFORMATION				
Carrier ID	36M0G7W	8M25G7W	1M74G7W	861KG7W
Carrier Modulation	QPSK	QPSK	QPSK	BPSK
Information Rate(kbps)	36860	8448	1024	272
Code Bate	3/4x188/204	3/4	1/2	0.431
Occupied Bandwidth(kHz)	26664.7	6111.3	1284	717.1
Allocated Bandwidth(kHz)	36000	8250.5	1733	861
Minimum C/N. Rain (dB)	7.3	7.3	1.8	0.8
				0.0
Earth Station Diameter (meters)	10.0	3.7	3.7	3.7
Earth Station Gain (dBi)	53.7	45.1	45.1	45.1
Earth Station Elevation Angle	6.4	6.4	6.4	6.4
DOWNLINK EARTH STATION				-
Earth Station Diameter (meters)	6.5	6.5	2.4	1.8
Earth Station Gain (dBi)	55.6	55.6	47.0	44.5
Earth Station G/T (dB/K)	34.0	34.0	25.0	23.3
Earth Station Elevation Angle	25.2	25.2	25.2	25.2
C/N Thermal Unlink (dB)	24.0	24.0	23.3	23.8
Unlink Interference C/L (dB)	36.3	36.2	35.5	39.8
Unlink Adjacent Satellite C/L (dB)	11.6	11.6	10.9	11.4
Intermodulation C/IM (dB)	999.0	44.5	43.6	45.6
Downlink Thermal C/N (dB)	22.7	21.8	40.0	10.0
Downlink Interference C/L (dB)	22.1	21.0	23.2	23.6
Downlink Adjacent Satellite C/L(dB)	16.3	15.0	6.5	23.0
Downink Aujacent Galenite C/I (UD)	10.5	13.3	0.0	4.4
Subtotal C/N (dB)	0.8	9.0	4.2	2.8
Antenna Microinting and Other Lasses (dP)	1.5	1.5	1.5	1.5
	1.0	8.4	27	1.0
	7 2	73	1.9	0.9
	1.5	1.3	1.0	0.0
	-50.2	_45.2	_41.2	_41.0
	-30.2	-40.2	-41.2	-41.3
DOWNING EIRF Density AL Dealth Feak (UDW/HZ)	-20.3	-20.4	-21.1	-20.0

UPLINK BEAM INFORMATION				
Uplink Beam Name	KUHU / KUVU	ΚυΗυ / Κυνυ	ΚυΗυ / Κυνυ	ΚυΗυ / Κυνυ
Uplink Frequency (MHz)	13068	13068	13068	13068
Uplink Beam Polarization	Horizontal/Vertical	Horizontal/Vertical	Horizontal/Vertical	Horizontal/Vertical
Uplink Beam Peak G/T (dB/K)	11.3	11.3	11.3	11.3
Uplink Beam Peak SFD (dBW/m2)	-81.2	-81.2	-81.2	-81.2
Uplink Relative Contour Level (dB)	8.5	-8.5	-8.5	-8.5
DOWNLINK BEAM INFORMATION				
Downlink Beam Name	KUVD / KUHD	KUVD / KUHD	KUVD / KUHD	KUVD / KUHD
Downlink Frequency (MHz)	11268	11268	11268	11268
Downlink Beam Polarization	Vertical/Horizontal	Vertical/Horizontal	Vertical/Horizontal	Vertical/Horizontal
Downlink Beam Peak EIRP (dBW)	56.7	56.7	56.7	56.7
Downlink Relative Contour Level (dB)	-7.9	-7.9	-7.9	-7.9
ADJACENT SATELLITE 1				
Satellite Name	Intelsat 36	Intelsat 36	Intelsat 36	Intelsat 36
Orbital Location	68.5E	68.5E	68.5E	68.5E
Uplink Power Density (dBW/Hz)	-50	-50	-50.0	-50.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-19.5	-19.5	-19.5	-19.5
ADJACENT SATELLITE 2				
Satellite Name	Hypothetical 64.5E	Hypothetical 64.5E	Hypothetical 64.5E	Hypothetical 64.5E
Orbital Location	64.5E	64.5E	64.5E	64.5E
Uplink Power Density (dBW/Hz)	-50	-50	-50.0	-50.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0
CARRIER INFORMATION				
Carrier ID	36M0G7W	8M25G7W	1M74G7W	861KG7W
Carrier Modulation	QPSK	QPSK	QPSK	BPSK
Information Rate(kbps)	36860	8448	1024	272
Code Rate	3/4x188/204	3/4	1/2	0.431
Occupied Bandwidth(kHz)	26664.7	6111.3	1284	717.1
Allocated Bandwidth(kHz)	36000	8250.5	1733	861
Minimum C/N, Rain (dB)	7.3	7.3	1.8	0.8
UPLINK EARTH STATION				
Earth Station Diameter (meters)	6.5	2.4	1.8	1.8
Earth Station Gain (dBi)	57.4	48.7	46.2	46.2
Earth Station Elevation Angle	25.2	25.2	25.2	25.2
DOWNLINK EARTH STATION				
Earth Station Diameter (meters)	6.5	6.5	2.4	1.8
Earth Station Gain (dBi)	55.6	55.6	47.0	44.5
Earth Station G/T (dB/K)	34.0	34.0	25.0	23.3
Earth Station Elevation Angle	25.2	25.2	25.2	25.2
COMPOSITE LINK PERFORMANCE				
C/N Thermal Uplink (dB)	19.9	19.9	19.1	19.7
Uplink Interference C/I (dB)	28.1	27.6	26.9	32.6
Uplink Adjacent Satellite C/I (dB)	14.0	13.9	13.2	13.7
Intermodulation C/IM (dB)	999.0	43.0	42.3	44.3
Downlink Thermal C/N (dB)	23.8	22.9	13.2	12.0
Downlink Interference C/I (dB)	28.4	24.8	23.3	24.0
Downlink Adjacent Satellite C/I (dB)	17.3	17.2	7.7	5.6
Subtotal C/N (dB)	11.2	11.0	5.5	4.0
Antenna Mispointing and Other Losses (dB)	1.5	1.5	1.5	1.5
Total C/N (dB)	9.7	9.5	4.0	2.5
Minimum Required C/N (dB)	7.3	7.3	1.8	0.8
CARRIER DENSITY LEVELS				
Uplink Power Density (dBW/Hz)	-61.5	-52.9	-51.1	-50.6
Downlink EIRP Density At Beam Peak (dBW/Hz)	-26.3	-26.4	-27.1	-26.6

# EXHIBIT 6 <u>HYPOTHETICAL 70.5°E SATELLITE INTERFERENCE ANALYSIS</u>

UPLINK BEAM INFORMATION				
Uplink Beam Name	CWHU / CWVU	CWHU / CWVU	CWHU / CWVU	CWHU / CWVU
Uplink Frequency (MHz)	6015	6015	6015	6015
Uplink Beam Polarization	Horizontal/Vertical	Horizontal/Vertical	Horizontal/Vertical	Horizontal/Vertical
Uplink Beam Peak G/T (dB/K)	0.8	0.8	0.8	0.8
Uplink Beam Peak SFD (dBW/m2)	-79.8	-79.8	-79.8	-79.8
Uplink Relative Contour Level (dB)	-8.0	-8.0	-8.0	-8.0
DOWNLINK BEAM INFORMATION				
Downlink Beam Name	CWHD / CWVD	CWHD / CWVD	CWHD / CWVD	CWHD / CWVD
Downlink Frequency (MHz)	3790	3790	3790	3790
Downlink Beam Polarization	Horizontal/Vertical	Horizontal/Vertical	Horizontal/Vertical	Horizontal/Vertical
Downlink Beam Peak EIRP (dBW)	44.6	44.6	44.6	44.6
Downlink Relative Contour Level (dB)	-8.5	-8.5	-8.5	-8.5
ADJACENT SATELLITE 1				
Satellite Name	Intelsat 36	Intelsat 36	Intelsat 36	Intelsat 36
Orbital Location	68.5E	68.5E	68.5E	68.5E
Uplink Power Density (dBW/Hz)	-38.7	-38.7	-38.7	-38.7
Beam Peak Downlink EIRP Density (dBW/Hz)	-32.0	-32.0	-32.0	-32.0
ADJACENT SATELLITE 2				
Satellite Name	Hypothetical 72.5E	Hypothetical 72.5E	Hypothetical 72.5E	Hypothetical 72.5E
Orbital Location	72.5E	72.5E	72.5E	72.5E
Uplink Power Density (dBW/Hz)	-38.7	-38.7	-38.7	-38.7
Beam Peak Downlink EIRP Density (dBW/Hz)	-32.0	-32.0	-32.0	-32.0
CARRIER INFORMATION				
Carrier ID	36M0G7W	8M25G7W	1M74G7W	861KG7W
Carrier Modulation	QPSK	QPSK	QPSK	BPSK
Information Rate(kbps)	36860	8448	1024	272
Code Rate	3/4x188/204	3/4	1/2	0.431
Occupied Bandwidth(kHz)	26664.7	6111.3	1284	717.1
Allocated Bandwidth(kHz)	36000	8250.5	1733	861
Minimum C/N, Rain (dB)	7.3	7.3	1.8	0.8
UPLINK EARTH STATION				
Earth Station Diameter (meters)	10.0	5.0	3.7	3.7
Earth Station Gain (dBi)	53.7	47.7	45.1	45.1
Earth Station Elevation Angle	6.4	6.4	6.4	6.4
DOWNLINK EARTH STATION				
Earth Station Diameter (meters)	7.5	7.5	3.7	3.7
Earth Station Gain (dBi)	48.1	48.1	41.9	41.9
Earth Station G/T (dB/K)	29.0	29.0	22.7	22.7
Earth Station Elevation Angle	6.4	6.4	6.4	6.4
COMPOSITE LINK PERFORMANCE				
C/N Thermal Uplink (dB)	25.8	26.3	26.4	25.9
Uplink Interference C/I (dB)	28.6	29.1	19.4	31.9
Uplink Adjacent Satellite C/I (dB)	13.2	13.7	13.9	13.3
Intermodulation C/IM (dB)	35.3	21.8	21.3	21.8
Downlink Thermal C/N (dB)	15.0	15.0	8.8	8.2
Downlink Interference C/I (dB)	24.1	21.7	20.5	23.5
Downlink Adjacent Satellite C/I (dB)	15.4	15.4	6.0	5.4
Subtotal C/N (dB)	9.3	9.2	3.4	3.0
Antenna Mispointing and Other Losses (dB)	1.5	1.5	1.5	1.5
Total C/N (dB)	7.8	7.7	1.9	1.5
Minimum Required C/N (dB)	7.3	7.3	1.8	0.8
CARRIER DENSITY LEVELS				
Uplink Power Density (dBW/Hz)	-47.8	-41.3	-39.3	-39.0
Downlink EIRP Density At Beam Peak (dBW/Hz)	-37.1	-37.1	-41.9	-37.6

Uplink Beam Name         CWHU/CWVU         CWHU/CWVU         CWHU/CWVU         CWHU/CWVU           Uplink Beam Peak C71 (dBK)         6610         Jot 2010         Jot 2010 <t< th=""><th>UPLINK BEAM INFORMATION</th><th></th><th></th><th></th><th></th></t<>	UPLINK BEAM INFORMATION				
Uplink Frequency (MHz)         6610         Lpink Ream Polarization         Horizontal/Vertical         Horizontal/Vertic	Uplink Beam Name	CWHU/CWVU	CWHU/CWVU	CWHU/CWVU	CWHU/CWVU
Uplink Beam Polarization         Horizontal/Vertical         Horizontal/Vertical         Horizontal/Vertical           Uplink Beam Peak STD (dBW/m2)         -73.8         -73.8         -73.8         -73.8           Uplink Ream Peak STD (dBW/m2)         -73.8         -73.8         -73.8         -73.8           Uplink Ream Peak STD (dBW/m2)         -8.0         -8.0         -8.0         -8.0           Downlink Beam Name         KUVD/KUHD         KUVD/KUHD         KUVD/KUHD         KUVD/KUHD           Downlink Beam Paak StP (dBW)         56.7         56.7         56.7         56.7           Downlink Ream Peak StP (dBW)         56.7         56.7         56.7         56.7           Downlink Ream Peak StP (dBW)         56.7         56.7         56.7         56.7           Downlink Relative Contour Level (dB)         -7.9         -7.9         -7.9         -7.9           ADJACENT SATELLITE 1	Uplink Frequency (MHz)	6610	6610	6610	6610
Uplink Beam Peak G/T (dB/k)         0.8         0.8         0.8         0.8         0.8           Uplink Beam Peak SPD (dB//m2)         -79.8         -79.9         -79.9         -79.9         -79.9         -7.9<	Uplink Beam Polarization	Horizontal/Vertical	Horizontal/Vertical	Horizontal/Vertical	Horizontal/Vertical
Uplink Beam Peak SFD (dBW/m2)         -79.8         -8.0         -7.9	Uplink Beam Peak G/T (dB/K)	0.8	0.8	0.8	0.8
Upink Relative Contour Level (dB)         -8.0         -8.0         -8.0         -8.0         -8.0         -8.0           DOWLINK BEAM INFORMATION         KUVD/KUHD         KUVD/KUHD         KUVD/KUHD         KUVD/KUHD           Downlink Beam Name         KUVD/KUHD         KUVD/KUHD         KUVD/KUHD         KUVD/KUHD           Downlink Beam Poak EIRP (dBW)         56.7         56.7         56.7         56.7           Downlink Relative Contour Level (dB)         -7.9         -7.9         -7.9         -7.9           ADJACENT SATELLITE 1         Intelsat 36         Intelsat 36         Intelsat 36         Intelsat 36         Intelsat 36           Obmink Relative Contour Level (dB)         -7.9         -7.9         -7.9         -7.9         -7.9           ADJACENT SATELLITE 1         Intelsat 36         Intelsat 36         Intelsat 36         Intelsat 36         Intelsat 36           Obital Location         68.5E         68.5E         68.5E         68.5E         68.5E           Satellite Name         Hypothetical 72.5E         72.5E         72.5E         72.5E         72.5E           Obital Location         72.5E         72.5E         72.5E         72.5E         72.5E         72.5E           Orbital Location         QPSK         <	Uplink Beam Peak SFD (dBW/m2)	-79.8	-79.8	-79.8	-79.8
DOWNLINK BEAM INFORMATION         KUVD/KUHD         KUVD/KUHD         KUVD/KUHD           Downlink Frequency (MHz)         11888         1188         118         118         118         118         118         118         118         118         118         118         118         118         118         118         118         118         118         118         118	Uplink Relative Contour Level (dB)	-8.0	-8.0	-8.0	-8.0
Downlink Beam Name         KUVD/KUHD         KUVD/KUHD         KUVD/KUHD         KUVD/KUHD           Downlink Frequency (MHz)         11888         11888         11888         11888         11888           Downlink Beam Polarization         Vertical/Horizontal         Vertical/Horizontal         Vertical/Horizontal         Vertical/Horizontal           Downlink Beam Peak EIRP (dBW)         56.7         56.7         56.7         56.7           Downlink Relative Contour Level (dB)         -7.9         -7.9         -7.9         -7.9           ADJACENT SATELLITE 1               Satellite Name         Intelsat 36         Intelsat 36         Intelsat 36         Intelsat 36           Orbital Location         68.5E         68.5E         68.5E         68.5E            ADJACENT SATELLITE 2         -19.5         -19.5         -19.5         -19.5           ADJACENT SATELLITE 2         -19.5         -19.5         -19.5         -19.5           Satellite Name         Hypothetical 72.5E         T2.5E         T2.5E         72.5E         72.5E           Uplink Power Density (dBW/Hz)         -38.7         -38.7         -38.7         -38.7         -38.7           Beam Peak Downlink EIRP Density (dBW/Hz)<	DOWNLINK BEAM INFORMATION				
Downlink Frequency (MHz)         11888         Vertical/Horizontal         Variad           Satellite Name         Intelsat 36         In	Downlink Beam Name	KUVD/KUHD	KUVD/KUHD	KUVD/KUHD	KUVD/KUHD
Downlink Beam Polarization         Vertical/Horizontal         Vertical/Horizontal         Vertical/Horizontal         Vertical/Horizontal           Downlink Beam Peak EIRP (dBW)         56.7         56.7         56.7         56.7           Downlink Beam Peak EIRP (dBW)         -7.9         -7.9         -7.9         -7.9           ADJACENT SATELLITE 1         Intelsat 36         Intelsat 36         Intelsat 36         Intelsat 36           Satellite Name         Intelsat 36         Intelsat 36         Intelsat 36         Intelsat 36           Uplink Power Density (dBW/Hz)         -38.7         -38.7         -38.7         -38.7           Beam Peak Downlink EIRP Density (dBW/Hz)         -19.5         -19.5         -19.5         -19.5           ADJACENT SATELLITE 2         Imported at 72.5E         T2.5E	Downlink Frequency (MHz)	11888	11888	11888	11888
Downlink Beam Peak EIRP (dBW)         56.7         56.7         56.7         56.7           Downlink Relative Contour Level (dB)         -7.9         -7.9         -7.9         -7.9           ADJACENT SATELLITE 1	Downlink Beam Polarization	Vertical/Horizontal	Vertical/Horizontal	Vertical/Horizontal	Vertical/Horizontal
Downlink Relative Contour Level (dB)         -7.9         -7.9         -7.9         -7.9           ADJACENT SATELLITE 1         Intelsat 36         Intelsat 36         Intelsat 36         Intelsat 36           Satellite Name         68.5E         68.5E         68.5E         68.5E           Uplink Power Density (dBW/Hz)         -38.7         -38.7         -38.7         -38.7           Beam Peak Downlink EIRP Density (dBW/Hz)         -19.5         -19.5         -19.5         -19.5           ADJACENT SATELLITE 2	Downlink Beam Peak EIRP (dBW)	56.7	56.7	56.7	56.7
ADJACENT SATELLITE 1         Intelsat 36         Intelsat 36         Intelsat 36         Intelsat 36           Satellite Name         68.5E         68.5E         68.5E         68.5E         68.5E           Orbital Location         68.5E         68.5E         68.5E         68.5E         68.5E           Uplink Power Density (dBW/Hz)         -38.7         -38.7         -38.7         -38.7         -38.7           Beam Peak Downlink EIRP Density (dBW/Hz)         -19.5         -19.5         -19.5         -19.5           ADJACENT SATELLITE 2                Satellite Name         Hypothetical 72.5E         T2.5E         T2.5E         T2.5E         72.5E         72.5E <td>Downlink Relative Contour Level (dB)</td> <td>-7.9</td> <td>-7.9</td> <td>-7.9</td> <td>-7.9</td>	Downlink Relative Contour Level (dB)	-7.9	-7.9	-7.9	-7.9
Satellite Name         Intelsat 36         Intelsat 36         Intelsat 36         Intelsat 36           Orbital Location         68.5E         68.5E         68.5E         68.5E           Uplink Power Density (dBW/Hz)         -38.7         -38.7         -38.7         -38.7           Beam Peak Downlink EIRP Density (dBW/Hz)         -19.5         -19.5         -19.5         -19.5           ADJACENT SATELLITE 2                Satellite Name         Hypothetical 72.5E         Hypothetical 72.5E         T2.5E         72.5E         72.6D         72.00         72.00         72.00<	ADJACENT SATELLITE 1				
Orbital Location         68.5E         68.5E         68.5E         68.5E           Uplink Power Density (dBW/Hz)         -38.7         -38.7         -38.7         -38.7           Beam Peak Downlink EIRP Density (dBW/Hz)         -19.5         -19.5         -19.5         -19.5           ADJACENT SATELLITE 2	Satellite Name	Intelsat 36	Intelsat 36	Intelsat 36	Intelsat 36
Uplink Power Density (dBW/Hz)         -38.7         -19.5 <t< td=""><td>Orbital Location</td><td>68.5E</td><td>68.5E</td><td>68.5E</td><td>68.5E</td></t<>	Orbital Location	68.5E	68.5E	68.5E	68.5E
Beam Peak Downlink EIRP Density (dBW/Hz)         -19.5         19.5         -19.5         19.5	Uplink Power Density (dBW/Hz)	-38.7	-38.7	-38.7	-38.7
ADJACENT SATELLITE 2Hypothetical 72.5EHypothetical 72.5EHypothetical 72.5ESatellite NameHypothetical 72.5E72.5E72.5E72.5EOrbital Location72.5E72.5E72.5E72.5EUplink Power Density (dBW/Hz)-38.7-38.7-38.7-38.7Beam Peak Downlink EIRP Density (dBW/Hz)-20.0-20.0-20.0-20.0CARRIER INFORMATIONCarrier ID36M0G7W8M25G7W1M74G7W861KG7WCarrier ID36M0G7W8M25G7W1M74G7W861KG7WCarrier ModulationQPSKQPSKQPSKBPSKInformation Rate(kbps)3686084481024272Code Rate3/4x188/2043/41/20.431Occupied Bandwidth(kHz)26664.76111.31284717.1Allocated Bandwidth(kHz)360008250.51733861Minimum C/N, Rain (dB)7.37.37.31.80.8UPLINK EARTH STATIONEarth Station Diameter (meters)10.03.73.73.7Earth Station Elevation Angle6.46.46.46.46.46.4DOWNLINK EARTH STATIONEarth Station Diameter (meters)6.56.52.418	Beam Peak Downlink EIRP Density (dBW/Hz)	-19.5	-19.5	-19.5	-19.5
Satellite NameHypothetical 72.5EHypothetical 72.5EHypothetical 72.5EHypothetical 72.5EOrbital Location72.5E72.5E72.5E72.5EUplink Power Density (dBW/Hz)-38.7-38.7-38.7-38.7Beam Peak Downlink EIRP Density (dBW/Hz)-20.0-20.0-20.0-20.0CARRIER INFORMATION	ADJACENT SATELLITE 2				
Orbital Location         72.5E         72.5E         72.5E         72.5E         72.5E         72.5E           Uplink Power Density (dBW/Hz)         -38.7         -38.7         -38.7         -38.7         -38.7           Beam Peak Downlink EIRP Density (dBW/Hz)         -20.0         -20.0         -20.0         -20.0           CARRIER INFORMATION             -20.0         -20.0         -20.0           Carrier ID         36M0G7W         8M25G7W         1M74G7W         861KG7W           Carrier Modulation         QPSK         QPSK         QPSK         BPSK           Information Rate(kbps)         36860         8448         1024         272           Code Rate         3/4x188/204         3/4         1/2         0.431           Occupied Bandwidth(kHz)         26664.7         6111.3         1284         717.1           Allocated Bandwidth(kHz)         36000         8250.5         1733         861           Minimum C/N, Rain (dB)         7.3         7.3         1.8         0.8           UPLINK EARTH STATION               Earth Station Diameter (meters)         10.0         3.7         3.7         3.7	Satellite Name	Hypothetical 72.5E	Hypothetical 72.5E	Hypothetical 72.5E	Hypothetical 72.5E
Uplink Power Density (dBW/Hz)         -38.7         Minit of the set	Orbital Location	72.5E	72.5E	72.5E	72.5E
Beam Peak Downlink EIRP Density (dBW/Hz)         -20.0	Uplink Power Density (dBW/Hz)	-38.7	-38.7	-38.7	-38.7
CARRIER INFORMATION         Carrier ID         36M0G7W         8M25G7W         1M74G7W         861KG7W           Carrier ID         36M0G7W         8M25G7W         1M74G7W         861KG7W           Carrier Modulation         QPSK         QPSK         QPSK         BPSK           Information Rate(kbps)         36860         8448         1024         272           Code Rate         3/4x188/204         3/4         1/2         0.431           Occupied Bandwidth(kHz)         26664.7         6111.3         1284         717.1           Allocated Bandwidth(kHz)         36000         8250.5         1733         861           Minimum C/N, Rain (dB)         7.3         7.3         1.8         0.8           UPLINK EARTH STATION         Image: Carrier Station Diameter (meters)         10.0         3.7         3.7         3.7           Earth Station Diameter (meters)         10.0         3.7         45.1         45.1         45.1           Earth Station Cain (dBi)         53.7         45.1         45.1         45.1         45.1           Earth Station Elevation Angle         6.4         6.4         6.4         6.4         6.4           DOWNLINK EARTH STATION         Imameter (meters)         6.5 <td< td=""><td>Beam Peak Downlink EIRP Density (dBW/Hz)</td><td>-20.0</td><td>-20.0</td><td>-20.0</td><td>-20.0</td></td<>	Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0
Carrier ID         36M0G7W         8M25G7W         1M74G7W         861KG7W           Carrier Modulation         QPSK         QPSK         QPSK         BPSK           Information Rate(kbps)         36860         8448         1024         272           Code Rate         3/4x188/204         3/4         1/2         0.431           Occupied Bandwidth(kHz)         26664.7         6111.3         1284         717.1           Allocated Bandwidth(kHz)         36000         8250.5         1733         861           Minimum C/N, Rain (dB)         7.3         7.3         1.8         0.8           UPLINK EARTH STATION               Earth Station Diameter (meters)         10.0         3.7         3.7         3.7           Earth Station Elevation Angle         6.4         6.4         6.4         6.4           DOWNLINK EARTH STATION                Earth Station Elevation Angle         6.4         6.4         6.4         6.4         6.4           DOWNLINK EARTH STATION                 Earth Station Elevation Angle         6.5         6.5	CARRIER INFORMATION				
Carrier Modulation         QPSK         QPSK         QPSK         BPSK           Information Rate(kbps)         36860         8448         1024         272           Code Rate         3/4x188/204         3/4         1/2         0.431           Occupied Bandwidth(kHz)         26664.7         6111.3         1284         717.1           Allocated Bandwidth(kHz)         36000         8250.5         1733         861           Minimum C/N, Rain (dB)         7.3         7.3         1.8         0.8           UPLINK EARTH STATION               Earth Station Diameter (meters)         10.0         3.7         3.7         3.7           Earth Station Elevation Angle         6.4         6.4         6.4         6.4           DOWNLINK EARTH STATION               Earth Station Elevation Angle         6.4         6.4         6.4         6.4           DOWNLINK EARTH STATION	Carrier ID	36M0G7W	8M25G7W	1M74G7W	861KG7W
Information Rate(kbps)         36860         8448         1024         272           Code Rate         3/4x188/204         3/4         1/2         0.431           Occupied Bandwidth(kHz)         26664.7         6111.3         1284         717.1           Allocated Bandwidth(kHz)         36000         8250.5         1733         861           Minimum C/N, Rain (dB)         7.3         7.3         1.8         0.8           UPLINK EARTH STATION               Earth Station Diameter (meters)         10.0         3.7         3.7         3.7           Earth Station Gain (dBi)         53.7         45.1         45.1         45.1           Earth Station Elevation Angle         6.4         6.4         6.4         6.4           DOWNLINK EARTH STATION               Earth Station Elevation Angle         6.5         6.5         2.4         1.8	Carrier Modulation	QPSK	QPSK	QPSK	BPSK
Code Rate         3/4x188/204         3/4         1/2         0.431           Occupied Bandwidth(kHz)         26664.7         6111.3         1284         717.1           Allocated Bandwidth(kHz)         36000         8250.5         1733         861           Minimum C/N, Rain (dB)         7.3         7.3         1.8         0.8           UPLINK EARTH STATION	Information Rate(kbps)	36860	8448	1024	272
Occupied Bandwidth(kHz)         26664.7         6111.3         1284         717.1           Allocated Bandwidth(kHz)         36000         8250.5         1733         861           Minimum C/N, Rain (dB)         7.3         7.3         1.8         0.8           UPLINK EARTH STATION               Earth Station Diameter (meters)         10.0         3.7         3.7         3.7           Earth Station Gain (dBi)         53.7         45.1         45.1         45.1           Earth Station Elevation Angle         6.4         6.4         6.4         6.4           DOWNLINK EARTH STATION               Earth Station Diameter (meters)         6.5         6.5         2.4         1.8	Code Rate	3/4x188/204	3/4	1/2	0.431
Allocated Bandwidth(kHz)       36000       8250.5       1733       861         Minimum C/N, Rain (dB)       7.3       7.3       1.8       0.8         UPLINK EARTH STATION             Earth Station Diameter (meters)       10.0       3.7       3.7       3.7         Earth Station Gain (dBi)       53.7       45.1       45.1       45.1         Earth Station Elevation Angle       6.4       6.4       6.4       6.4         DOWNLINK EARTH STATION             Earth Station Diameter (meters)       6.5       6.5       2.4       1.8	Occupied Bandwidth(kHz)	26664.7	6111.3	1284	717.1
Minimum C/N, Rain (dB)         7.3         7.3         1.8         0.8           UPLINK EARTH STATION                0.8           Earth Station Diameter (meters)         10.0         3.7         3.7         3.7	Allocated Bandwidth(kHz)	36000	8250.5	1733	861
UPLINK EARTH STATION10.03.73.7Earth Station Diameter (meters)10.03.73.7Earth Station Gain (dBi)53.745.145.1Earth Station Elevation Angle6.46.46.4DOWNLINK EARTH STATIONEarth Station Diameter (meters)Earth Station Diameter (meters)6.56.52.4	Minimum C/N, Rain (dB)	7.3	7.3	1.8	0.8
Earth Station Diameter (meters)10.03.73.7Earth Station Gain (dBi)53.745.145.1Earth Station Elevation Angle6.46.46.4DOWNLINK EARTH STATIONEarth Station Diameter (meters)Earth Station Diameter (meters)6.56.52.4	UPLINK EARTH STATION	40.0	0.7		
Earth Station Gain (GBI)     53.7     45.1     45.1       Earth Station Elevation Angle     6.4     6.4     6.4       DOWNLINK EARTH STATION	Earth Station Diameter (meters)	10.0	3.7	3.7	3.7
Earth Station Elevation Angle     6.4     6.4     6.4       DOWNLINK EARTH STATION     6.5     6.5     2.4     1.8	Earth Station Gain (dBi)	53.7	45.1	45.1	45.1
Earth Station Diameter (meters) 6.5 6.5 2.4 18		6.4	6.4	6.4	6.4
	Earth Station Diameter (meters)	6.5	6.5	2.4	1.0
	Earth Station Diameter (meters)	0.5 55 6	0.J 55.6	47.0	1.0
Earth Station GLT (dBK) 34.0 34.0 25.0 23.3	Earth Station G/T (dB/K)	34.0	34.0	47.0	44.5
Lath Station Elevation Angle         25.2         25.2         25.2	Earth Station Elevation Angle	25.2	25.2	25.0	25.3
Composite Link PERCORMANCE		23.2	23.2	23.2	23.2
		24.0	24.0	23.3	23.8
On Homme (2/)         210         200         200           Unlink Interference (2/) (4B)         36.3         36.2         35.5         39.8	Liplink Interference C/L (dB)	36.3	36.2	35.5	39.8
Uplink Adjacent Satellite C/I (dB) 11.6 11.6 10.9 11.4	Uplink Adjacent Satellite C/L(dB)	11.6	11.6	10.9	11.4
Opening Galaxies         Opening Galaxies <thopening galaxies<="" th=""> <thopening galaxies<="" t<="" td=""><td>Intermodulation C/IM (dB)</td><td>999.0</td><td>44.5</td><td>43.6</td><td>45.6</td></thopening></thopening>	Intermodulation C/IM (dB)	999.0	44.5	43.6	45.6
Downlink Thermal C/N (dB) 22.7 21.8 12.1 10.9	Downlink Thermal C/N (dB)	22.7	21.8	12.1	10.9
Downlink Interference C/I (dB) 28.1 24.7 23.2 23.6	Downlink Interference C/I (dB)	28.1	24.7	23.2	23.6
Downlink Adjacent Satellite C/I (dB) 16.3 15.9 6.5 4.4	Downlink Adjacent Satellite C/I (dB)	16.3	15.9	6.5	4.4
Subtotal C/N (dB) 9.8 9.6 4.2 2.8	Subtotal C/N (dB)	9.8	9.6	4.2	2.8
Antenna Mispointing and Other Losses (dB) 1.5 1.5 1.5 1.5	Antenna Mispointing and Other Losses (dB)	1.5	1.5	1.5	1.5
Total C/N (dB)         8.3         8.1         2.7         1.3	Total C/N (dB)	8.3	8.1	2.7	1.3
Minimum Required C/N (dB) 7.3 7.3 1.8 0.8	Minimum Required C/N (dB)	7.3	7.3	1.8	0.8
CARRIER DENSITY LEVELS	CARRIER DENSITY LEVELS				
Uplink Power Density (dBW/Hz) -50.2 -45.2 -41.2 -41.9	Uplink Power Density (dBW/Hz)	-50.2	-45.2	-41.2	-41.9
Downlink EIRP Density At Beam Peak (dBW/Hz)         -26.3         -26.4         -27.1         -26.6	Downlink EIRP Density At Beam Peak (dBW/Hz)	-26.3	-26.4	-27.1	-26.6

UPLINK BEAM INFORMATION				
Uplink Beam Name	ΚυΗυ / Κυνυ	ΚυΗυ / Κυνυ	ΚυΗυ / Κυνυ	ΚυΗυ / Κυνυ
Uplink Frequency (MHz)	13068	13068	13068	13068
Uplink Beam Polarization	Horizontal/Vertical	Horizontal/Vertical	Horizontal/Vertical	Horizontal/Vertical
Uplink Beam Peak G/T (dB/K)	11.3	11.3	11.3	11.3
Uplink Beam Peak SFD (dBW/m2)	-81.2	-81.2	-81.2	-81.2
Uplink Relative Contour Level (dB)	8.5	-8.5	-8.5	-8.5
DOWNLINK BEAM INFORMATION				
Downlink Beam Name	KUVD / KUHD	KUVD / KUHD	KUVD / KUHD	KUVD / KUHD
Downlink Frequency (MHz)	11268	11268	11268	11268
Downlink Beam Polarization	Vertical/Horizontal	Vertical/Horizontal	Vertical/Horizontal	Vertical/Horizontal
Downlink Beam Peak EIRP (dBW)	56.7	56.7	56.7	56.7
Downlink Relative Contour Level (dB)	-7.9	-7.9	-7.9	-7.9
ADJACENT SATELLITE 1				
Satellite Name	Intelsat 36	Intelsat 36	Intelsat 36	Intelsat 36
Orbital Location	68.5E	68.5E	68.5E	68.5E
Uplink Power Density (dBW/Hz)	-50.0	-50.0	-50.0	-50.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-19.5	-19.5	-19.5	-19.5
ADJACENT SATELLITE 2				
Satellite Name	Hypothetical 72.5E	Hypothetical 72.5E	Hypothetical 72.5E	Hypothetical 72.5E
Orbital Location	72.5E	72.5E	72.5E	72.5E
Uplink Power Density (dBW/Hz)	-50.0	-50.0	-50.0	-50.0
Beam Peak Downlink EIRP Density (dBW/Hz)	-20.0	-20.0	-20.0	-20.0
CARRIER INFORMATION				
Carrier ID	36M0G7W	8M25G7W	1M74G7W	861KG7W
Carrier Modulation	QPSK	QPSK	QPSK	BPSK
Information Rate(kbps)	36860	8448	1024	272
Code Rate	3/4x188/204	3/4	1/2	0.431
Occupied Bandwidth(kHz)	26664.7	6111.3	1284	717.1
Allocated Bandwidth(kHz)	36000	8250.5	1733	861
Minimum C/N, Rain (dB)	7.3	7.3	1.8	0.8
UPLINK EARTH STATION				
Earth Station Diameter (meters)	6.5	2.4	1.8	1.8
Earth Station Gain (dBi)	57.4	48.7	46.2	46.2
Earth Station Elevation Angle	25.2	25.2	25.2	25.2
DOWNLINK EARTH STATION				
Earth Station Diameter (meters)	6.5	6.5	2.4	1.8
Earth Station Gain (dBi)	55.6	55.6	47.0	44.5
Earth Station G/T (dB/K)	34.0	34.0	25.0	23.3
Earth Station Elevation Angle	25.2	25.2	25.2	25.2
COMPOSITE LINK PERFORMANCE				
C/N Thermal Uplink (dB)	19.9	19.9	19.1	19.7
Uplink Interference C/I (dB)	28.1	27.6	26.9	32.6
Uplink Adjacent Satellite C/I (dB)	14.0	13.9	13.2	13.7
Intermodulation C/IM (dB)	999.0	43.0	42.3	44.3
Downlink Thermal C/N (dB)	23.8	22.9	13.2	12.0
Downlink Interference C/I (dB)	28.4	24.8	23.3	24.0
Downlink Adjacent Satellite C/I (dB)	17.3	17.2	7.7	5.6
Subtotal C/N (dB)	11.2	11.0	5.5	4.0
Antenna Mispointing and Other Losses (dB)	1.5	1.5	1.5	1.5
Total C/N (dB)	9.7	9.5	4.0	2.5
Minimum Required C/N (dB)	7.3	7.3	1.8	0.8
CARRIER DENSITY LEVELS				
Uplink Power Density (dBW/Hz)	-61.5	-52.9	-51.1	-50.6
Downlink EIRP Density At Beam Peak (dBW/Hz)	-26.3	-26.4	-27.1	-26.6