

November 26, 2012

Ms. Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 12<sup>th</sup> Street, S.W.  
Washington, D.C. 20554



Re: Request for Special Temporary Authority  
Fillmore, California Earth Station E4132

Dear Ms. Dortch:

Intelsat License LLC (“Intelsat”) herein requests a grant of Special Temporary Authority (“STA”)<sup>1</sup> for 30 days, from December 8, 2012 through January 6, 2013, to use its Fillmore, California C-band earth station -- call sign E4132 -- to provide launch and early orbit phase (“LEOP”) services to the Yamal-402 satellite that is expected to be launched on December 8, 2012.<sup>2</sup> The LEOP period is expected to last approximately 10 days.<sup>3</sup>

The Yamal-402 LEOP operations will be performed in the following frequency bands:

Uplink: 6420.0 MHz (LHCP) and 6421.5 MHz (RHCP)  
Downlink: 3931.5 MHz and 3401.0 MHz (LHCP); 4011.5 MHz and 3409.5 MHz (RHCP)

The LEOP operations will be coordinated with all operators of satellites that use the same frequency bands and are in the LEOP path. All operators of satellites in that path will be provided with an emergency phone number where the licensee can be reached in the event that harmful interference occurs.

The 24x7 contact information for the Yamal-402 LEOP mission is as follows:

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<sup>1</sup> Intelsat has filed its STA request, an FCC Form 159, a \$180.00 filing fee and this supporting letter electronically via the International Bureau’s Filing System (“IBFS”).

<sup>2</sup> It is Intelsat’s understanding that the satellite’s permanent orbital location will be 55.0° E.L. and that it will be in-orbit tested at 54.9° E.L.

<sup>3</sup> Intelsat is seeking authority through January 6, 2013 to accommodate a possible launch delay.

Ms. Marlene H. Dortch  
November 26, 2012  
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Ph.: (202) 944-7701 – East Coast Operations Center (primary)  
(310) 525-5900 – West Coast Operations Center (back-up)

Request to speak with Harry Burnham or Kevin Bell.

In further support of this request, Intelsat is attaching Exhibits A and B, which contain a waiver request, as well as technical information that demonstrates that the operation of the earth station will be compatible with its electromagnetic environment and will not cause harmful interference into any lawfully operating terrestrial facility. In the extremely unlikely event that harmful interference should occur due to transmissions to or from its earth station, Intelsat will take all reasonable steps to eliminate the interference.

Intelsat also notes that for purposes of the Yamal-402 LEOP mission, it is seeking to operate in the frequencies listed in the request at power levels not to exceed 26.5 dBW. The technical information submitted with the STA request reflects a power level as high as 34.0 dBW because that is the level at which Intelsat might operate in the event an emergency necessitates the use of a higher power level in order to command the satellite.

Grant of this STA request will enable Intelsat to help launch the Yamal-402 satellite. This will serve the public interest by ensuring that it can bring additional capacity to Russia, Europe and the Middle East.

Please direct any questions regarding this STA request to the undersigned at (202) 944-7848.

Respectfully submitted,



Susan H. Crandall  
Assistant General Counsel  
Intelsat Corporation

cc: Paul Blais

APPLICATION FOR EARTH STATION SPECIAL TEMPORARY AUTHORITY

APPLICANT INFORMATION Enter a description of this application to identify it on the main menu:  
STA Request for Earth Station E4132

**1. Applicant**

|                   |                                |                      |                             |
|-------------------|--------------------------------|----------------------|-----------------------------|
| <b>Name:</b>      | Intelsat License LLC           | <b>Phone Number:</b> | 202-944-7848                |
| <b>DBA Name:</b>  |                                | <b>Fax Number:</b>   | 202-944-7870                |
| <b>Street:</b>    | c/o Intelsat Corporation       | <b>E-Mail:</b>       | susan.crandall@intelsat.com |
|                   | 3400 International Drive, N.W. |                      |                             |
| <b>City:</b>      | Washington                     | <b>State:</b>        | DC                          |
| <b>Country:</b>   | USA                            | <b>Zipcode:</b>      | 20008 -3006                 |
| <b>Attention:</b> | Susan H. Crandall              |                      |                             |

|   |  |
|---|--|
| <b>2. Contact</b>   |  |
| <b>Name:</b> Susan H. Crandall  | <b>Phone Number:</b> 202-944-7848          |
| <b>Company:</b> Intelsat Corporation  | <b>Fax Number:</b> 202-944-7870            |
| <b>Street:</b> 3400 International Drive, N.W.   | <b>E-Mail:</b> susan.crandall@intelsat.com |
| <b>City:</b> Washington   | <b>State:</b> DC                           |
| <b>Country:</b> USA   | <b>Zipcode:</b> 20008 -3006                |
| <b>Attention:</b> Susan H. Crandall   | <b>Relationship:</b> Legal Counsel         |
| (If your application is related to an application filed with the Commission, enter either the file number or the IB Submission ID of the related application. Please enter only one.) |  |
| 3. Reference File Number or Submission ID   |  |
| 4a. Is a fee submitted with this application?   |  |
| <input checked="" type="radio"/> If Yes, complete and attach FCC Form 159. If No, indicate reason for fee exemption (see 47 C.F.R. Section 1.1114).                                   |  |
| <input type="radio"/> Governmental Entity <input type="radio"/> Noncommercial educational licensee  |  |
| <input type="radio"/> Other (please explain):   |  |
| 4b. Fee Classification CGX - Fixed Satellite Transmit/Receive Earth Station   |  |
| 5. Type Request   |  |
| <input type="radio"/> Use Prior to Grant <input type="radio"/> Change Station Location <input checked="" type="radio"/> Other   |  |
| 6. Requested Use Prior Date   |  |
| 7. City Fillmore  |  |
| 8. Latitude (dd mm ss.s h) 34 24 22.0 N   |  |

|  |  |
|--|--|
| 9. State<br>CA   | 10. Longitude<br>(dd mm ss.s h) 118 53 34.0 W  |
| 11. Please supply any need attachments.<br>Attachment 1: STA Request   | Attachment 2: Exhibit A<br>Attachment 3: Exhibit B   |
| 12. Description. (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)   | <p>Intelsat License LLC herein requests a grant of Special Temporary Authority for 30 days, from December 8, 2012 through January 6, 2013, to use its Fillmore, California C-band earth station, call sign E4132, to provide launch and early orbit phase services to the Yamal-402 satellite that is expected to be launched on December 8, 2012.</p> |
| 13. By checking Yes, the undersigned certifies that neither applicant nor any other party to the application is subject to a denial of Federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti-Drug Act of 1988, 21 U.S.C. Section 862, because of a conviction for possession or distribution of a controlled substance. See 47 CFR 1.2002(b) for the meaning of &quot;party to the application&quot;; for these purposes. | <p>Yes <input checked="" type="radio"/> No <input type="radio"/></p>   |
| 14. Name of Person Signing<br>Susan H. Crandall  | 15. Title of Person Signing<br>Asst. General Counsel, Intelsat Corporation   |
| <p>WILLFUL FALSE STATEMENTS MADE ON THIS FORM ARE PUNISHABLE BY FINE AND / OR IMPRISONMENT (U.S. Code, Title 18, Section 1001), AND/OR REVOCATION OF ANY STATION AUTHORIZATION (U.S. Code, Title 47, Section 312(a)(1)), AND/OR FORFEITURE (U.S. Code, Title 47, Section 503).</p>   |  |

**FCC NOTICE REQUIRED BY THE PAPERWORK REDUCTION ACT**

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**THE FOREGOING NOTICE IS REQUIRED BY THE PAPERWORK REDUCTION ACT OF 1995, PUBLIC LAW 104-13, OCTOBER 1, 1995, 44 U.S.C. SECTION 3507.**

## Exhibit A

### PETITION FOR WAIVER OF SECTIONS 25.137 AND 25.114

Pursuant to Section 25.137 of the Federal Communications Commission's ("Commission" or "FCC") rules, earth station applicants "requesting authority to operate with a non-U.S. licensed space station *to serve the United States*" must demonstrate that effective competitive opportunities exist and must provide the same technical information required by Section 25.114 for U.S.-licensed space stations.<sup>1</sup> Intelsat License LLC ("Intelsat") herein seeks authority to provide launch and early orbit phase ("LEOP") services -- not commercial services - - to the United States, and thus believes that Section 25.137 does not apply.

To the extent the Commission determines, however, that Intelsat's request for authority to provide LEOP services on a special temporary basis is a request to serve the United States with a non U.S.-licensed satellite, Intelsat respectfully requests a waiver of Sections 25.137 and 25.114 of the Commission's rules.<sup>2</sup> The Commission may grant a waiver for good cause shown.<sup>3</sup> The Commission typically grants a waiver where the particular facts make strict compliance inconsistent with the public interest.<sup>4</sup> In granting a waiver, the Commission may take into account considerations of hardship, equity, or more effective implementation of overall policy on an individual basis.<sup>5</sup> Waiver is therefore appropriate if special circumstances warrant a deviation from the general rule, and such a deviation will serve the public interest.

In this case, good cause exists for a waiver of both Section 25.137 and Section 25.114. With respect to Section 25.114, Intelsat seeks authority only to provide LEOP services for the Yamal-402 satellite. The information sought by Section 25.114 is not relevant to LEOP services. Moreover, Intelsat does not have -- and would not easily be able to obtain -- such information because Intelsat is not the operator of the Yamal-402 satellite, nor is Intelsat in contractual privity with that operator. Rather, an affiliate of Intelsat has a contract with Telespazio, the LEOP mission manager hired by the manufacturer of the Yamal-402 satellite, to conduct LEOP services for the satellite.

The information that Intelsat is not including is not required to determine potential harmful interference. The Schedule S information for this satellite would pertain to the operation of the Yamal-402 satellite at its final orbital location. However, the present application for LEOP services involves communications *prior* to the satellite attaining its final location in the geostationary orbit. In other words, during the LEOP mission, the earth station will not be communicating with a satellite located in the geostationary orbit. Rather, it will be transmitting to a satellite traveling on its "transfer orbit" or "LEOP path", which starts immediately following its separation from a launch vehicle, and ends when the satellite reaches its geostationary orbital

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<sup>1</sup> 47 C.F.R. § 25.137 (emphasis added).

<sup>2</sup> 47 C.F.R. §§ 25.137 and 25.114.

<sup>3</sup> 47 C.F.R. §1.3.

<sup>4</sup> *N.E. Cellular Tel. Co. v. FCC*, 897 F.2d 1164, 1166 (D.C. Cir. 1990) ("*Northeast Cellular*").

<sup>5</sup> *WAIT Radio v. FCC*, 418 F.2d 1153, 1159 (D.C. Cir. 1969); *Northeast Cellular*, 897 F.2d at 1166.

location. Moreover, as with any STA, Intelsat will perform the LEOP services on a non-interference basis.

Because it is not relevant to the service for which Intelsat seeks authorization, and because obtaining the information would be a hardship, Intelsat seeks a waiver of all the information required by Section 25.114. Intelsat has provided in this STA request the required technical information that is relevant to the LEOP services for which Intelsat seeks authorization.

Good cause also exists to waive Section 25.137. Section 25.137 is designed to ensure that “U.S.-licensed satellite systems have effective competitive opportunities to provide analogous services” in other countries. Here, there is no service being provided by the satellite; it is simply being placed in its orbital location after separating from the launch vehicle. Thus, the purpose of the information required by Section 25.137 is not implicated here. For example, Section 25.137(d) requires earth station applicants requesting authority to operate with a non-U.S.-licensed space station that is not in orbit and operating to post a bond.<sup>6</sup> The underlying purpose in having to post a bond—*i.e.*, to prevent warehousing of orbital locations by operators seeking to serve the United States—would not be served by requiring Intelsat to post a bond in order to provide approximately 10 days of LEOP services to the Yamal-402 satellite.

It is Intelsat’s understanding that Yamal-402 is licensed by the Russian Federation, which is a WTO-member country. It is also Intelsat’s understanding that at its permanent orbital location of 55.0° E.L., Yamal-402 will not serve the United States. Thus, the purposes of Section 25.137—to ensure that U.S. satellite operators enjoy “effective competitive opportunities” to serve foreign markets and to prevent warehousing of orbital locations serving the United States—will not be undermined by grant of this waiver request.

Finally, Intelsat notes that it expects to operate with the Yamal-402 satellite using its U.S. earth station for a period of approximately 10 days. Requiring Intelsat to obtain copious technical and legal information from an unrelated party, where there is no risk of harmful interference and the operations will cease after approximately 10 days, would pose undue hardship without serving underlying policy objectives. Given these particular facts, the waiver sought herein is plainly appropriate.

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<sup>6</sup> See 47 C.F.R. §25.137(d)(4).



Prepared By

**COMSEARCH**

19700 Janelia Farm Boulevard, Ashburn, VA 20147  
(703)726-5500 <http://www.comsearch.com>

Prepared For

**Intelsat License LLC  
FILLMORE, CALIFORNIA**

Temporary Transmit-Only Earth Station  
Operation Dates: 12/07/2012 - 01/20/2013

Pursuant to Part 25.203(c) of the FCC Rules and Regulations, the satellite earth station proposed in this application was coordinated by Comsearch using computer techniques and in accordance with Part 25 of the FCC Rules and Regulations. Verbal and written coordination was conducted with the below listed carriers on November 11, 2012.

Company

ABC Holding Company Inc.  
ANAHEIM CITY, COMMUNICATIONS DIVISION  
AT&T California  
AirSites2000, LLC  
American Tower, LLC  
BNSF Railway Company  
Bishop Union High School  
CCO SoCal I, LLC  
CNG Communications, Inc.  
COAST COMMUNITY COLLEGE DISTRICT  
California, State of  
Calvary Chapel of Costa Mesa  
Cellco Partnership - California  
Chevron USA Inc.  
City Of Los Angeles, Dept Water & Power  
Coachella Valley Water District  
DRS Technical Services  
Ducor Telephone Company  
Entravision Holdings, LLC  
Exxon Communications Company  
Federal Communications Commission  
Fresno MSA Limited Partnership  
Fresno, County of  
GTE Mobilnet of California LTD Partnersh  
GTE Mobilnet of Santa Barbara LTD Ptnsh  
Gila Electronics of Yuma, Inc  
Goff, Wayne C.

Company (Continued)

KERN COMMUNITY COLLEGE DISTRICT BAKERSFI  
KERN COUNTY SUPERINTENDENT OF SCHOOLS  
KERN ED TELECOM CONSORTIUM  
KTLA INC  
Kern, County of  
Kings County Office of Education  
LOS ANGELES UNIFIED SCHOOL DISTRICT  
Los Angeles City Info Technology Agency  
Los Angeles County Dept of Public Works  
Los Angeles County FCC Licensing Section  
Los Angeles SMSA Ltd. Partnership  
MHO Networks  
MOBILE RELAY ASSOCIATES INC  
MONTEBELLO CITY CALIFORNIA  
Metropolitan Water Dist of So California  
New Cingular Wireless PCS - Los Angeles  
New Cingular Wireless PCS LLC - N CAL  
New Cingular Wireless PCS LLC -San Diego  
Nextel of California Inc.  
Nextweb Inc  
OCCIDENTAL OF ELK HILLS INC  
ORANGE, COUNTY OF, CA  
Pacific Gas and Electric Company  
Paramount Farming Company, LLC.  
Plains Exploration & Production Company  
QUALCOMM INC.  
Regents of the University of California  
Regional 3Cs  
Riverside, County of  
SAN DIEGO, CITY OF  
SAN LUIS OBISPO COUNTY  
San Bernardino County of California  
San Diego County  
San Diego Gas & Electric Company  
Santa Barbara Cellular Systems, Ltd.  
Skyriver Communications  
Southern California Edison Company  
Southern California Gas Company  
Southern California Regional Rail Auth.  
T-Mobile License LLC  
TULARE, COUNTY OF  
TV MICROWAVES CO  
Turn Wireless, LLC  
University of California,HPWREN  
Ventura, County of  
Verizon California Inc.  
Verizon Wireless (VAW) LLC (CA)  
Vintage Production California LLC

Company (Continued)

WWC License L.L.C. - California  
Western Pacific Mobile Microwave  
Western Technical Services  
unWired Broadband, Inc

There are no unresolved interference objections with the stations contained in these applications.

The following section presents the data pertinent to frequency coordination of the proposed earth station that was circulated to all carriers within its coordination contours.

**COMSEARCH**  
**Earth Station Data Sheet**  
 19700 Janelia Farm Boulevard, Ashburn, VA 20147  
 (703)726-5500 <http://www.comsearch.com>

Date: 11/21/2012  
 Job Number: 121111COMSJC01

**Administrative Information**

Status: TEMPORARY (Operation from 12/07/2012 to 01/20/2013)  
 Call Sign: TEMP01  
 Licensee Code: INTELS  
 Licensee Name: Intelsat License LLC

**Site Information** **FILLMORE, CALIFORNIA**

Venue Name  
 Latitude (NAD 83): 34° 24' 22.0" N  
 Longitude (NAD 83): 118° 53' 37.4" W  
 Climate Zone: A  
 Rain Zone: 4  
 Ground Elevation (AMSL): 313.94 m / 1030.0 ft

**Link Information**

Satellite Type: Low Earth Orbit  
 Mode: TO - Transmit-Only  
 Modulation: Digital  
 Minimum Elevation Angle: 5.0°  
 Azimuth Range: 0.0° to 360°  
 Antenna Centerline (AGL): 8.23 m / 27.0 ft

**Antenna Information**

Manufacturer: Scientific-Atlanta  
 Model: 10.3 Meter  
 Gain / Diameter: 53.8 dBi / 10.3 m  
 3-dB / 15-dB Beamwidth: 0.40° / 0.60°

**Transmit**

|                          |             |                          |
|--------------------------|-------------|--------------------------|
| Max Available RF Power   | (dBW/4 kHz) | 10.9                     |
|                          | (dBW/MHz)   | 34.9                     |
| Maximum EIRP             | (dBW/4 kHz) | 64.7                     |
|                          | (dBW/MHz)   | 88.7                     |
|                          | (dBW)       | 88.0                     |
| Interference Objectives: | Long Term   | -154.0 dBW/4 kHz 20%     |
|                          | Short Term  | -131.0 dBW/4 kHz 0.0025% |

**Frequency Information**

Emission / Frequency Range (MHz): **Transmit 6.1 GHz**  
 850KFXD / 6420.0  
 850KFXD / 6421.5

Max Great Circle Coordination Distance: 347.9 km / 216.2 mi  
 Precipitation Scatter Contour Radius: 325.4 km / 202.2 mi

## COMSEARCH Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147  
(703)726-5500 <http://www.comsearch.com>

|                            |                               |                             |
|----------------------------|-------------------------------|-----------------------------|
| <b>Coordination Values</b> | <b>FILLMORE, CA</b>           |                             |
| Licensee Name              | Intelsat License LLC          |                             |
| Latitude (NAD 83)          | 34° 24' 22.0" N               |                             |
| Longitude (NAD 83)         | 118° 53' 37.4" W              |                             |
| Ground Elevation (AMSL)    | 313.94 m / 1030.0 ft          |                             |
| Antenna Centerline (AGL)   | 8.23 m / 27.0 ft              |                             |
| Antenna Model              | Scientific-Atlanta 10.3 Meter |                             |
| Antenna Mode               | Transmit 6.1 GHz              |                             |
| Interference Objectives:   | Long Term                     | -154.0 dBW/4 kHz    20%     |
|                            | Short Term                    | -131.0 dBW/4 kHz    0.0025% |
| Max Available RF Power     | 10.9 (dBW/4 kHz)              |                             |

| Azimuth (°) | Horizon Elevation (°) | Antenna Discrimination (°) | Transmit 6.1 GHz   |                            |
|-------------|-----------------------|----------------------------|--------------------|----------------------------|
|             |                       |                            | Horizon Gain (dBi) | Coordination Distance (km) |
| 0           | 9.45                  | 76.90                      | -10.00             | 256.40                     |
| 5           | 9.81                  | 73.28                      | -10.00             | 256.40                     |
| 10          | 11.84                 | 70.32                      | -10.00             | 256.40                     |
| 15          | 10.91                 | 66.54                      | -10.00             | 256.40                     |
| 20          | 12.89                 | 64.07                      | -10.00             | 256.40                     |
| 25          | 13.83                 | 61.45                      | -10.00             | 256.40                     |
| 30          | 11.05                 | 56.89                      | -10.00             | 256.40                     |
| 35          | 11.05                 | 53.97                      | -10.00             | 256.40                     |
| 40          | 11.16                 | 51.36                      | -10.00             | 256.40                     |
| 45          | 12.08                 | 49.66                      | -10.00             | 256.40                     |
| 50          | 12.02                 | 47.53                      | -10.00             | 256.40                     |
| 55          | 12.02                 | 45.80                      | -10.00             | 256.40                     |
| 60          | 11.89                 | 44.32                      | -10.00             | 256.40                     |
| 65          | 10.13                 | 41.66                      | -10.00             | 256.40                     |
| 70          | 10.13                 | 41.15                      | -10.00             | 256.40                     |
| 75          | 10.13                 | 41.13                      | -7.96              | 269.20                     |
| 80          | 8.91                  | 40.41                      | -4.20              | 292.90                     |
| 85          | 8.91                  | 41.41                      | 0.77               | 324.20                     |
| 90          | 6.32                  | 40.56                      | 4.53               | 347.90                     |
| 95          | 6.32                  | 42.59                      | 4.53               | 347.90                     |
| 100         | 6.32                  | 45.00                      | 4.53               | 347.90                     |
| 105         | 6.35                  | 47.76                      | 4.53               | 347.90                     |
| 110         | 5.84                  | 50.44                      | 4.53               | 347.90                     |
| 115         | 4.00                  | 52.69                      | 4.53               | 347.90                     |
| 120         | 2.01                  | 55.33                      | 4.53               | 347.90                     |
| 125         | 1.94                  | 59.11                      | 4.53               | 347.90                     |
| 130         | 2.44                  | 63.20                      | 4.53               | 347.90                     |
| 135         | 2.62                  | 67.23                      | 4.53               | 347.90                     |
| 140         | 2.67                  | 71.27                      | 4.53               | 347.90                     |
| 145         | 2.87                  | 75.38                      | 4.53               | 347.90                     |
| 150         | 2.62                  | 79.46                      | 4.53               | 347.90                     |
| 155         | 3.19                  | 83.65                      | 4.53               | 347.90                     |
| 160         | 2.85                  | 87.77                      | 4.53               | 347.90                     |
| 165         | 3.52                  | 91.91                      | 4.53               | 347.90                     |
| 170         | 3.28                  | 96.04                      | 4.53               | 347.90                     |
| 175         | 3.00                  | 100.19                     | 4.53               | 347.90                     |
| 180         | 2.53                  | 104.38                     | 4.53               | 347.90                     |

## COMSEARCH Earth Station Data Sheet

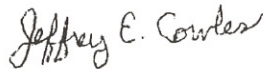
19700 Janelia Farm Boulevard, Ashburn, VA 20147  
(703)726-5500 <http://www.comsearch.com>

|                            |                               |                             |
|----------------------------|-------------------------------|-----------------------------|
| <b>Coordination Values</b> | <b>FILLMORE, CA</b>           |                             |
| Licensee Name              | Intelsat License LLC          |                             |
| Latitude (NAD 83)          | 34° 24' 22.0" N               |                             |
| Longitude (NAD 83)         | 118° 53' 37.4" W              |                             |
| Ground Elevation (AMSL)    | 313.94 m / 1030.0 ft          |                             |
| Antenna Centerline (AGL)   | 8.23 m / 27.0 ft              |                             |
| Antenna Model              | Scientific-Atlanta 10.3 Meter |                             |
| Antenna Mode               | Transmit 6.1 GHz              |                             |
| Interference Objectives:   | Long Term                     | -154.0 dBW/4 kHz    20%     |
|                            | Short Term                    | -131.0 dBW/4 kHz    0.0025% |
| Max Available RF Power     | 10.9 (dBW/4 kHz)              |                             |

| Azimuth (°) | Horizon Elevation (°) | Antenna Discrimination (°) | Transmit 6.1 GHz   |                            |
|-------------|-----------------------|----------------------------|--------------------|----------------------------|
|             |                       |                            | Horizon Gain (dBi) | Coordination Distance (km) |
| 185         | 2.35                  | 108.51                     | 4.53               | 347.90                     |
| 190         | 2.28                  | 112.57                     | 4.53               | 347.90                     |
| 195         | 0.78                  | 117.05                     | 4.53               | 347.90                     |
| 200         | 0.41                  | 121.18                     | 4.53               | 347.90                     |
| 205         | 1.23                  | 124.74                     | 4.53               | 347.90                     |
| 210         | 0.97                  | 128.61                     | 4.53               | 347.90                     |
| 215         | 0.94                  | 132.22                     | 4.53               | 347.90                     |
| 220         | 0.00                  | 136.21                     | 4.53               | 347.90                     |
| 225         | 0.00                  | 139.42                     | 4.53               | 347.90                     |
| 230         | 0.00                  | 142.31                     | 4.53               | 347.90                     |
| 235         | 0.00                  | 144.80                     | 4.53               | 347.90                     |
| 240         | 0.00                  | 146.79                     | 4.53               | 347.90                     |
| 245         | 0.00                  | 148.21                     | 4.53               | 347.90                     |
| 250         | 0.00                  | 148.95                     | 4.53               | 347.90                     |
| 255         | 0.00                  | 148.97                     | 4.53               | 347.90                     |
| 260         | 0.00                  | 148.28                     | 4.53               | 347.90                     |
| 265         | 0.00                  | 146.92                     | 4.53               | 347.90                     |
| 270         | 0.00                  | 144.96                     | 4.53               | 347.90                     |
| 275         | 1.12                  | 141.62                     | 0.77               | 324.20                     |
| 280         | 1.30                  | 138.71                     | -4.20              | 292.90                     |
| 285         | 2.93                  | 134.56                     | -7.96              | 269.20                     |
| 290         | 4.19                  | 130.57                     | -10.00             | 256.40                     |
| 295         | 4.04                  | 127.29                     | -10.00             | 256.40                     |
| 300         | 4.42                  | 123.56                     | -10.00             | 256.40                     |
| 305         | 3.72                  | 120.18                     | -10.00             | 256.40                     |
| 310         | 3.09                  | 116.58                     | -10.00             | 256.40                     |
| 315         | 2.76                  | 112.74                     | -10.00             | 256.40                     |
| 320         | 3.33                  | 108.58                     | -10.00             | 256.40                     |
| 325         | 4.75                  | 104.28                     | -10.00             | 256.40                     |
| 330         | 5.93                  | 100.12                     | -10.00             | 256.40                     |
| 335         | 7.78                  | 95.99                      | -10.00             | 256.40                     |
| 340         | 8.25                  | 92.08                      | -10.00             | 256.40                     |
| 345         | 9.31                  | 88.23                      | -10.00             | 256.40                     |
| 350         | 9.65                  | 84.45                      | -10.00             | 256.40                     |
| 355         | 9.64                  | 80.68                      | -10.00             | 256.40                     |

## Certification

I hereby certify that I am the technically qualified person responsible for the preparation of the frequency coordination data contained in this report. I am familiar with Parts 101 and 25 of the FCC Rules and Regulations and I have either prepared or reviewed the frequency coordination data submitted with this report, and that it is complete and correct to the best of my knowledge and belief.



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DATED: November 21, 2012

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