

APPLICATION FOR EARTH STATION SPECIAL TEMPORARY AUTHORITY

APPLICANT INFORMATION Enter a description of this application to identify it on the main menu:  
Request for Special Temporary Authority Using Castle Rock, Colorado Earth Station KL92

1. Applicant

<b>Name:</b>	Intelsat License LLC	<b>Phone Number:</b>	703-559-7848
<b>DBA Name:</b>		<b>Fax Number:</b>	703-559-8539
<b>Street:</b>	c/o Intelsat Corporation 7900 Tysons One Place	<b>E-Mail:</b>	susan.crandall@intelsat.com
<b>City:</b>	McLean	<b>State:</b>	VA
<b>Country:</b>	USA	<b>Zipcode:</b>	22102 -5972
<b>Attention:</b>	Susan H Crandall		

Fig. 1 SES-STA-2015 0406-00200

Call Sign KL92 Grant Date 4-28-15

(or other identifier)

From S-4-15 Term Dates 4-28-15

To 6-30-15

Approved: [Signature]

GRANTED  
International Bureau

Applicant: Intelsat License LLC  
Call Sign: KL92  
File No.: SES-STA-20150406-00200  
Special Temporary Authority (STA)

File: SES-STA-20150406-00200  
Call Sign: KL92 Grant Date: 4-28-15  
(or other identifier)  
From: 5-4-15 Term Dates To: 6-3-15  
Approved: Paul E. Hayes  
GRANTED  
International Bureau

Intelsat License LLC ("Intelsat") is granted STA, beginning May 04, 2015 for 30 days to operate its fixed earth station KL92 at Castle Rock, CO to provide launch and early orbit phase (LEOP) services for MexSat-G1 satellite to proceed to its in-orbit testing location of 113° W.L. MexSat-G1 is licensed by the Mexican administration.

1. Uplink (Earth-to-space) frequencies will be on 13249.0 MHz (LHCP) and 12751.0 MHz (RHCP) within the coordinated emission and power limits.
2. Downlink (space-to-Earth) frequencies will be on 11201.0 MHz and 11202.0 MHz (LHCP & RHCP).
3. The LEOP operations must 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. Currently the 24x7 contact information for the Eutelsat-115WB satellite LEOP mission is as follows: Ph: (703) 559-7701- East Coast Operations Center (primary); (310) 525-5591-West Coast Operations Center (back-up). Request to speak with Harry Burnham or Kevin Bell.
4. Grant of this STA is without prejudice to any determination that the Commission may make regarding pending or future Intelsat License LLC applications.
5. All operations under this grant of STA shall be on an unprotected and non-harmful interference basis. Intelsat's KL92 shall not cause harmful interference to, and shall not claim protection from interference caused to it by, any other lawfully operating radio communication system.
6. In the event of any harmful interference as a result of operations under this grant of STA, Intelsat shall cease operations immediately upon notification of such interference and shall immediately inform the Commission, in writing, of such an event.
7. Any action taken or expense incurred as a result of operations pursuant to this STA is solely at Intelsat License LLC's risk.

This grant is issued pursuant to Section 0.261 of the Commission's rules on delegated authority, 47 C.F.R. § 0.261, and is effective upon release.

**2. Contact**

**Name:** Susan H. Crandall      **Phone Number:** 703-559-7848  
**Company:** Intelsat Corporation      **Fax Number:** 703-559-3957  
**Street:** 7900 Tysons One Place      **E-Mail:** susan.crandall@intelsat.com  
**City:** McLean      **State:** VA  
**Country:** USA      **Zipcode:** 22102 -5972  
**Attention:**      **Relationship:** 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?

If Yes, complete and attach FCC Form 159. If No, indicate reason for fee exemption (see 47 C.F.R. Section 1.1114).

Governmental Entity     Noncommercial educational licensee

Other (please explain):

4b. Fee Classification    CGX - Fixed Satellite Transmit/Receive Earth Station

5. Type Request

Use Prior to Grant       Change Station Location       Other

6. Requested Use Prior Date

7. City Castle Rock

8. Latitude  
(dd mm ss.s h)    39 16 38.0    N

9. State CO	10. Longitude (dd mm ss.s h) 104 48 25.0 W
11. Please supply any need attachments. Attachment 1: STA Request      Attachment 2: Exhibit A      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.) <div style="border: 1px solid black; padding: 5px;"> <p>Intelsat License LLC herein requests a grant of Special Temporary Authority for 30 days, commencing April 29, 2015, to use its Castle Rock, Colorado Ku-band earth station, call sign KL92, to provide launch and early orbit phase services for the MexSat-G1 satellite. MexSat-G1 is expected to be launched on April 29, 2015.</p> </div>	
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 "party to the application" for these purposes.      Yes <input checked="" type="radio"/> No <input type="radio"/>	
14. Name of Person Signing Cynthia J. Grady	15. Title of Person Signing Regulatory Counsel, Intelsat Corporation
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).	

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Remember – You are not required to respond to a collection of information sponsored by the Federal government, and the government may not conduct or sponsor this collection, unless it displays a currently valid OMB control number or if we fail to provide you with this notice. This collection has been assigned an OMB control number of 3060-0678.

**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.**

April 2, 2015

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

Re: Request for Special Temporary Authority  
Castle Rock, Colorado Earth Station KL92

Dear Ms. Dortch:

Intelsat License LLC (“Intelsat”) herein requests a grant of Special Temporary Authority (“STA”)<sup>1</sup> for 30 days, commencing April 29, 2015, to use its Castle Rock, Colorado Ku-band earth station—call sign KL92—to provide launch and early orbit phase (“LEOP”) services for the MexSat-G1 satellite. MexSat-G1 is expected to be launched on April 29, 2015.<sup>2</sup> The LEOP period is expected to last approximately ten days.<sup>3</sup>

The MexSat-G1 LEOP operations will be performed in the following frequency bands: 13249.0 MHz (LHCP) and 12751.0 MHz (RHCP) in the uplink, and 11201.0 MHz and 11202.0 MHz in the downlink (LHCP & RHCP). The LEOP operations will be coordinated with all operators of satellites that use the same frequency bands and are in the LEOP path.<sup>4</sup> 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 MexSat-G1 LEOP mission is as follows:

Ph.: (703) 559-7701 – East Coast Operations Center (primary)  
(310) 525-5591 – West Coast Operations Center (back-up)

Request to speak with Harry Burnham or Kevin Bell.

In further support of this request, Intelsat hereby attaches Exhibits A and B, which contain technical information that demonstrates that the operation of the earth station will be compatible with its

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<sup>1</sup> Intelsat has filed its STA request, an FCC Form 159, a \$195.00 filing fee, and this supporting letter electronically via the International Bureau’s Filing System (“IBFS”).

<sup>2</sup> The permanent orbital location for MexSat-G1, which Intelsat understands is licensed by Mexico, will be at 113.0° W.L. The in-orbit testing location will be 113.1° W.L.

<sup>3</sup> Intelsat is seeking authority for 30 days to accommodate a possible launch delay.

<sup>4</sup> Boeing, the manager of the MexSat-G1 LEOP mission, will handle the coordination.

Ms. Marlene H. Dortch  
April 2, 2015  
Page 2

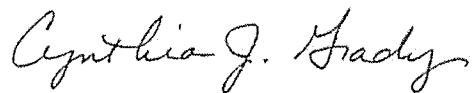
electromagnetic environment and will not cause harmful interference into any lawfully operating terrestrial facility, as well as a waiver request. Intelsat also notes that for purposes of the MexSat-G1 LEOP mission, it is seeking to operate in the frequencies listed in the request at power levels not to exceed 22 dBW. The technical information submitted with this STA request reflects a power level as high as 28 dBW because Intelsat might operate at this level in the event an emergency necessitates the use of a higher power level in order to command the satellite. 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.

Finally, Intelsat clarifies that during the MexSat-G1 LEOP mission, Boeing will serve as the mission manager. Boeing will build and send the commands to the Intelsat antenna, which will process and execute the commands. Telemetry received by Intelsat will be forwarded to Boeing. Intelsat will perform the ranging sessions by sending a tone to the spacecraft periodically. Intelsat will remain in control of the baseband unit, RF equipment, and antenna.

Grant of this STA request will allow Intelsat to help launch the MexSat-G1 satellite. This, in turn, will help will provide additional capacity at the 113.0° W.L. orbital location and thereby promotes the public interest.

Please direct any questions regarding this STA request to the undersigned at (703) 559-6949.

Respectfully submitted,



Cynthia J. Grady  
Regulatory Counsel  
Intelsat Corporation

cc: Paul Blais

## 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.<sup>2</sup>

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>3</sup> The Commission may grant a waiver for good cause shown.<sup>4</sup> The Commission typically grants a waiver where the particular facts make strict compliance inconsistent with the public interest.<sup>5</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>6</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 MexSat-G1 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 MexSat-G1 satellite, nor is Intelsat in contractual privity with that operator. Rather, an affiliate of Intelsat has a contract with the Boeing, the manufacturer of the MexSat-G1 satellite, to conduct LEOP services for the satellite.

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

<sup>2</sup> See *EchoStar Satellite Operating Company Application for Special Temporary Authority Related to Moving the EchoStar 6 Satellite from the 77° W.L. Orbital Location to the 96.2° W.L. Orbital Location, and to Operate at the 96.2° W.L. Orbital Location*, DA 13-593, File No. SAT-STA-20130220-00023 (released Apr. 1, 2013) (noting that operating TT&C earth stations in the United States with a foreign-licensed satellite does not constitute "DBS service").

<sup>3</sup> 47 C.F.R. §§ 25.137 and 25.114.

<sup>4</sup> 47 C.F.R. §1.3.

<sup>5</sup> *N.E. Cellular Tel. Co. v. FCC*, 897 F.2d 1164, 1166 (D.C. Cir. 1990) ("*Northeast Cellular*").

<sup>6</sup> *WAIT Radio v. FCC*, 418 F.2d 1153, 1159 (D.C. Cir. 1969); *Northeast Cellular*, 897 F.2d at 1166.



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 MexSat-G1 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 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>7</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 ten days of LEOP services to the MexSat-G1 satellite.

It is Intelsat’s understanding that MexSat-G1 is licensed by Mexico, which is a WTO-member country. 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 MexSat-G1 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>7</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  
Castle Rock, Colorado**

Temporary Transmit-Only Earth Station  
Operation Dates: 04/23/2015 - 07/10/2015

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 March 10, 2015.

Company

3G Wireless, LLC  
AERIAL VIDEO SYSTEMS  
AT&T California  
Alascom Inc  
Ascent Media Network Services, LLC  
Bellsouth Telecommunications, Inc.  
BFI Licenses, LLC  
Borgeson, Tom R.  
Broadcast Sports Inc.  
CBS Television Stations  
CBTV, INC.  
Circuit of the Americas, LLC  
CNG Communications, Inc.  
COLORADO PUBLIC TELEVISION, INC. KDBI-TV  
CP Communications, LLC  
Carolina Telephone and Telegraph Co  
Casper, John  
Catholic Television Apostolate  
CenturyTel of the Southwest, Inc.  
Chicago Comnet Corp  
Cincinnati Bell Wireless LLC  
Citywide News Network, Inc.  
Cohen, Elena  
Cowboys Stadium LP  
DCI II, INC.  
Denver Digital Television, LLC  
Direct Broadcast Services, Inc.  
Entravision Holdings, LLC  
FULL GOSPEL OUTREACH, INC.  
Federal Communications Commission  
Fishman Brothers Enterprises

Company (Continued)

GOODYEAR TIRE AND RUBBER COMPANY  
GSN News, Inc  
Gray Television Licensee LLC (Gray TV)  
Gray Television Licensee, LLC  
HF Enterprises, Inc  
Hallco Unlimited, Inc.  
Hawaiian Telcom, Inc.  
Heiden, William  
Interlink Network Corp.  
ION MEDIA DENVER LICENSE, INC.  
Illinois Bell Telephone Company  
Indiana Bell Telephone Company  
Information & Display Systems, Inc.  
Information Super Station, LLC  
International Communications Group, Inc.  
KWGN, LLC  
Kentucky RSA #3 Cellular General Partner  
Kentucky RSA #4 Cellular General Partner  
LIN Television Corporation  
Loop Inc.  
MERCURY COMMUNICATIONS  
Metro Networks Communications, Inc.  
Metrosat Communications Inc.  
Michigan Bell Telephone Company  
Microwave Video Systems, LLC  
Moreen, Steven K  
Multimedia Holdings Corporation  
NEW ENGLAND DIGITAL DISTRIBUTION, INC.  
NEW ENGLAND SATELLITE SYSTEMS INC  
NSM Surveillance  
Navajo Communications Company  
NorthWest Suburbs Community Access Corp  
OHIO BELL TELEPHONE COMPANY  
Onboard Images  
Pacific Television Center  
Penn Service Microwave Co., Inc.  
Pikes Peak Television, Inc.  
Plateau Telecommunications, Inc.  
Plum TV, LLC  
Production & Satellite Services, Inc.  
Public Television Communications Center  
QUICK LINK CONNECTIONS INC  
Qwest Corporation  
RCC Minnesota Inc. - MN NE ND SD  
REMOTE FACILITIES CONSULTING SERVICES  
RF Central, LLC  
RF Film, Inc  
RF Technology, LLC  
Radiofone, Inc.  
Randy Hermes Production  
Regulus Media Services, Inc.  
Remote Broadcasts, Inc.  
Rocky Mountain Public Broadcasting Netwo

Company (Continued)

Sangre De Cristo Communications, LLC  
Scripps Media, Inc. - KMGH TV  
Smoky Hills Public Television Corp.  
Southwestern Bell Telephone L.P.  
Speedshotz, Inc  
Syncom Media Group, Inc  
Time Warner Cable Pacific West LLC  
Total RF Marketing Inc  
Tribune Broadcasting Denver License, LLC  
TV Microwaves Co.  
Unisat, Inc.  
United Telephone - Southeast  
VERIZON SOUTH INC.  
Verizon California Inc.  
Verizon Maryland, Inc.  
Verizon New England Inc.  
Verizon New Jersey, Inc.  
Verizon New York, Inc.  
Verizon North Inc.  
Verizon Northwest Inc.  
Verizon Pennsylvania, Inc.  
Verizon Virginia, Inc.  
Verizon Washington DC, Inc.  
Village Video Productions Inc  
Vyvx, LLC  
Westar Satellite Services LP  
Western Technical Services  
Wexler Video, Inc.  
Winged Vision Inc  
Wisconsin Bell, Inc.  
Wolfe Air Aviation  
Word of God Fellowship, Inc

Society of Broadcast Engineers Frequency Coordinators

Colorado: Front Range Region  
          Western Slope Region  
  
Kansas: Entire State Except Kansas City Area  
  
Nebraska: Eastern Region  
  
New Mexico: Entire State (1 GHz Up)  
  
Wyoming: Entire State

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

The following section presents the data pertinent to frequency coordination of the 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: 03/19/2015  
 Job Number: 150310COMSJC01

**Administrative Information**

Status: TEMPORARY (Operation from 04/23/2015 to 07/10/2015)  
 Call Sign: TEMP07  
 Licensee Code: INTELS  
 Licensee Name: Intelsat License LLC

**Site Information** **CASTLE ROCK, COLORADO**

Venue Name:  
 Latitude (NAD 83): 39° 16' 38.0" N  
 Longitude (NAD 83): 104° 48' 26.9" W  
 Climate Zone: A  
 Rain Zone: 2  
 Ground Elevation (AMSL): 2087.36 m / 6848.3 ft

**Link Information**

Satellite Type: Geostationary  
 Mode: TO - Transmit-Only  
 Modulation: Analog and Digital  
 Satellite Arc: 33° W to 177° West Longitude  
 Azimuth Range: 101.8° to 258.5°  
 Corresponding Elevation Angles: 5.3° / 5.0°  
 Antenna Centerline (AGL): 7.74 m / 25.4 ft

**Antenna Information**

Manufacturer: NEC  
 Model: 12.5 Meter  
 Gain / Diameter: 64.0 dBi / 12.5 m  
 3-dB / 15-dB Beamwidth: 0.12° / 0.22°

**Transmit**

Max Available RF Power	(dBW/4 kHz)	4.7
	(dBW/MHz)	28.7
Maximum EIRP	(dBW/4 kHz)	68.7
	(dBW/MHz)	92.7
	(dBW)	92.0
Interference Objectives:	Long Term	-151.0 dBW/4 kHz 20%
	Short Term	-128.0 dBW/4 kHz 0.0025%

**Frequency Information**

Emission / Frequency Range (MHz):  
 850KFXD / 12751.0  
 850KFXD / 13249.0

**Transmit 13.0 GHz**

Max Great Circle Coordination Distance: 535.6 km / 332.8 mi  
 Precipitation Scatter Contour Radius: 317.8 km / 197.4 mi

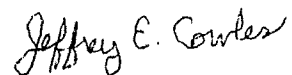
**COMSEARCH**  
**Earth Station Data Sheet**  
 19700 Janelia Farm Boulevard, Ashburn, VA 20147  
 (703)726-5500 <http://www.comsearch.com>

<b>Coordination Values</b>	<b>CASTLE ROCK, CO</b>	
Licensee Name	Intelsat License LLC	
Latitude (NAD 83)	39° 16' 38.0" N	
Longitude (NAD 83)	104° 48' 26.9" W	
Ground Elevation (AMSL)	2087.36 m / 6848.3 ft	
Antenna Centerline (AGL)	7.74 m / 25.4 ft	
Antenna Model	NEC 12.5 Meter	
Antenna Mode	Transmit 13.0 GHz	
Interference Objectives:	Long Term	-151.0 dBW/4 kHz    20%
	Short Term	-128.0 dBW/4 kHz    0.0025%
Max Available RF Power	4.7 (dBW/4 kHz)	

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 13.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
0	5.43	101.50	-10.00	100.00
5	5.55	96.76	-10.00	100.00
10	5.61	91.76	-10.00	100.00
15	6.07	86.76	-10.00	100.00
20	5.89	81.76	-10.00	100.00
25	5.78	76.76	-10.00	100.00
30	5.84	71.76	-10.00	100.00
35	5.61	66.76	-10.00	100.00
40	4.76	61.76	-10.00	100.00
45	4.09	56.76	-10.00	100.00
50	3.20	51.79	-10.00	100.00
55	2.70	46.81	-9.76	100.00
60	2.48	41.83	-8.54	100.00
65	1.40	36.93	-7.19	121.27
70	1.20	31.99	-5.63	130.62
75	0.35	27.18	-3.86	186.64
80	0.00	22.37	-1.74	206.99
85	0.00	17.56	0.89	217.33
90	0.00	12.89	4.24	231.63
95	0.21	8.46	8.81	251.80
100	0.24	5.38	13.74	519.51
105	0.00	6.23	12.13	346.64
110	0.22	9.56	7.49	244.93
115	0.25	13.23	3.96	225.20
120	0.29	16.84	1.34	210.34
125	0.25	20.41	-0.75	206.17
130	0.47	23.69	-2.36	181.48
135	0.41	27.03	-3.79	181.19
140	0.46	30.11	-4.97	171.70
145	0.42	33.07	-5.99	171.47
150	0.58	35.62	-6.79	153.04
155	0.83	37.80	-7.44	137.29
160	0.93	39.75	-7.98	130.99
165	0.98	41.35	-8.41	128.18
170	1.00	42.55	-8.72	126.66
175	0.88	43.40	-8.94	130.86
180	0.85	43.69	-9.01	131.34

## 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.



Jeffrey E. Cowles  
Engineer III, Telecommunications  
COMSEARCH  
19700 Janelia Farm Blvd.  
Ashburn, Va. 20147

DATED: March 19, 2015