

APPLICATION FOR EARTH STATION SPECIAL TEMPORARY AUTHORITY

APPLICANT INFORMATION Enter a description of this application to identify it on the main menu:
Request for 30-Day STA to Use Hagerstown, MD Earth Station E000296 to Provide LEOP Services for Telstar 18V Satellite

1. Applicant

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



File # SES-STA-20180727-02078
 Call Sign E000296 Grant Date 9-6-18
 (or other identifier)
 Term Dates
 From: 9-6-18 To: 10-6-18
 Approved: Paul E. Hays

2. Contact

Name: Cynthia J. Grady **Phone Number:** 703-559-6949
Company: Intelsat US LLC **Fax Number:** 703-559-8539
Street: 7900 Tysons One Place **E-Mail:** cynthia.grady@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/Hagerstown

8. Latitude
(dd mm ss.s h) 39 35 54.0 N

9. State MD	10. Longitude (dd mm ss.s h) 77 45 35.0 W
11. Please supply any need attachments. Attachment 1: LEOP 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 August 17, 2018, to use its Hagerstown, Maryland C-band earth station, call sign E000296, to provide launch and early orbit phase services for the Telstar 18V satellite. Telstar 18V is expected to launch on August 17, 2018.</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"; party to the application; for these purposes. <p style="text-align: right;">Yes <input checked="" type="radio"/> No <input type="radio"/></p>	
14. Name of Person Signing Cynthia J. Grady	15. Title of Person Signing Regulatory Counsel, Intelsat US LLC
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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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.

Applicant: Intelsat License LLC
Call Sign: E000296
File No.: SES-STA-20180727-02078
Special Temporary Authority (STA)

Intelsat License LLC ("Intelsat") is granted STA for 30 days starting September 06, 2018 to operate its earth station in Hagerstown, Maryland to provide launch and early orbit phase ("LEOP") services for the Telstar 18V satellite with in-orbit testing location 136.5° E.L. and permanent orbital location of 138.0° E.L. Operations shall utilize frequencies 6423.00 MHz and 6425.00 MHz (Earth-to-space); and 3623.00 MHz, 3625.00 MHz; and 4199.0 (space-to-Earth). Operations are authorized under the following conditions:

1. Operations will not exceed the operational power levels and parameters coordinated.
2. In the event of any harmful interference Intelsat shall cease operations immediately upon notification of such interference, and shall immediately inform the Commission, in writing, of such an event.
3. Grant of this STA is without prejudice to any determination that the Commission may make regarding pending or future Intelsat applications.
4. Any action taken or expense incurred as a result of operations pursuant to this STA is solely at Intelsat's risk.
5. The 24/7 point of contact for this 18V LEOP mission is as follows: Ph: (703) 559-7701 – East Coast Operations Center (primary) and (310)525-5591- West Coast Center (back-up).

This grant is issued pursuant to Section 0.26 1 of the Commission's rules on delegated authority, 47 C.F.R. § 0.261, and is effective upon release.



File # SES-STA-20180727-02078
Call Sign E000296 Grant Date 9-6-18
(or other identifier)
Term Dates
From: 9-6-18 To: 10-6-18
Approved: Karl E. Han

July 24, 2018

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: Request for Special Temporary Authority
Hagerstown, Maryland Earth Station E000296

Dear Ms. Dortch:

Intelsat License LLC (“Intelsat”) herein requests a grant of Special Temporary Authority (“STA”)¹ for 30 days, commencing August 17, 2018, to use its Hagerstown, Maryland C-band earth station—call sign E000296—to provide launch and early orbit phase (“LEOP”) services for the Telstar 18V satellite.² Telstar 18V is expected to launch on August 17, 2018.³ Intelsat expects the LEOP period to last approximately 10 days.

The Telstar 18V LEOP operations will be performed at the following frequencies: 6423.00 MHz, 6425.00 MHz, 6647.0 MHz, and 6649.0 MHz (RHCP) in the uplink, and 3623.00 MHz (LHCP), 3625.00 MHz (LHCP), and 4199.00 MHz (Linear) in the downlink. The LEOP operations will be coordinated with all operators of satellites that use the same frequency bands and are in the LEOP path.⁴ 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 Telstar 18V 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 herewith attaches Exhibits A and B, which contain a coordination report and waiver requests. In the extremely unlikely event that harmful interference

¹ Intelsat has filed its STA request, FCC Form 159, a \$200.00 filing fee, and this supporting letter electronically via the International Bureau’s Filing System (“IBFS”).

² This LEOP mission will also be supported by the following antennas: E040125, KA275, and E4132.

³ The permanent orbital location for Telstar 18V, which Intelsat understands is licensed by Tonga, will be at 138.0° E.L. The in-orbit testing location will be 136.5° E.L.

⁴ SSL, the manager of the Telstar 18V LEOP mission, will handle the coordination.

Ms. Marlene H. Dortch
July 24, 2018
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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 Telstar 18V launch, SSL will control the spacecraft. SSL 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 SSL. 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 Telstar 18V satellite. This, in turn, will help provide services to China, Mongolia, Southeast Asia, and the Pacific Ocean region from the 138.0° E.L. orbital location and thereby promotes the public interest.

Please direct any questions regarding this STA request to the undersigned at (703) 559-7848.

Respectfully submitted,

/s/ Cynthia J. Grady

Cynthia J. Grady
Regulatory Counsel
Intelsat US LLC

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 communicate with a non-U.S. licensed space station" to serve the United States must demonstrate that U.S.-licensed satellite systems have effective competitive opportunities to provide analogous services in certain countries and must provide the same legal and technical information for the non-U.S.-licensed space station as required by Section 25.114 for U.S.-licensed space stations.¹ 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.²

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.³ The Commission may grant a waiver for good cause shown.⁴ The Commission typically grants a waiver where the particular facts make strict compliance inconsistent with the public interest.⁵ 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.⁶ 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 of the FCC's rules. With respect to Section 25.114, Intelsat seeks authority only to provide LEOP services for the Telstar 18V 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 Telstar 18V satellite. Intelsat has a contract with SSL, the manufacturer of the Telstar 18V satellite, to conduct LEOP services.

¹ 47 C.F.R. § 25.137.

² 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*, Order and Authorization, 28 FCC Rcd. 4229 (2013) (noting that operating TT&C earth stations in the United States with a foreign-licensed satellite does not constitute "DBS service").

³ 47 C.F.R. §§ 25.137 and 25.114.

⁴ 47 C.F.R. § 1.3.

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

⁶ *WAIT Radio v. FCC*, 419 F.2d 1153, 1159 (D.C. Cir. 1969); *Northeast Cellular*, 897 F.2d at 1166.

The information required under Section 25.114 of the FCC's rules is not necessary to determine potential harmful interference. The Schedule S information for this satellite would pertain to the operation of the Telstar 18V 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 of the Commission's rules. 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 of the agency's rules. Section 25.137 is designed to ensure that "U.S.-licensed satellite systems have effective competitive opportunities to provide analogous services" in other countries.⁷ 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 Section 25.137 would not be served by applying these rules to LEOP services. For example, Section 25.137(d)(4) 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.⁸ The underlying purpose of Section 25.137(d)(4)—to provide parity between U.S.-licensed and non-U.S.-licensed commercial satellite systems in discouraging orbital location warehousing—would not be served by requiring Intelsat to post a bond to provide approximately 10 days of LEOP services to the Telstar 18V satellite.

It is Intelsat's understanding that Telstar 18V is licensed by Tonga, which is a WTO-member country. Thus, the purpose of Section 25.137—to ensure that U.S. satellite operators enjoy "effective competitive opportunities" to serve certain foreign markets—will not be undermined by grant of this waiver request.

Finally, Intelsat notes that it expects to operate with the Telstar 18V 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.

⁷ 47 C.F.R. § 25.137(a).

⁸ 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 Hagerstown, Maryland

Temporary Transmit-Only Earth Station
Operation Dates: 07/01/2018 - 09/01/2018

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 April 28, 2018.

Company

AB Services LLC
AT&T Corp.
AT&T Wireless Services 3 LLC - PA
Adams County Department of Emergency Svc
Affiniti PA, LLC
Albemarle, County of, Virginia
Alltel Communications LLC-E OH WV
American Electric Power Service Corp
Appalachia Engineering Services
Appalachian Power Company
Argos Engineering, LLC
Atlantic Broadband (Penn), LLC
Atlantic City Electric Company
Atlantic Coast Pipeline, LLC
Atlantic, County of
Baltimore County of Maryland
Baltimore Gas and Electric Company
Beaver Springs Faith Baptist Church, Inc
Bedford County of
Believe Wireless, LLC
Berks County Department of Emergency Ser
Blair County 911
Blue Ridge Carriers
Blueline Communications
CBS Radio of Maryland, LLC
Calvert, County of
Cambria, County of
Capital Communications of America
Caroline County, VA
Carroll, County of
Cellco Partnership - Bridgeville, PA/WV
Cellco Partnership - Southern Virginia
Cellco Partnership- PA Region
Cellco Partnership-WDC/Baltimore
Cellco Prtnrshp - Phil. Tri-State Rgn
Charles, County of

Chester, County of
City of Fredericksburg
Citynet
Clearfield, County of
Clinton, County of
Columbia Gas Transmission, LLC
Commonwealth of Pennsylvania
Commonwealth of Pennsylvania-Radio Proj.
Comprehensive Wireless LLC
Conterra Ultra Broadband, LLC
County of Augusta
County of Camden
County of Centre
County of Culpeper
County of Fayette
County of Frederick
County of Lycoming
County of York
DSRC Networks
Dauphin County Emergency Management
Delaware County (PA) Emergency Services
Delaware Division of Communications
Delmarva Broadcasting Company
Delmarva Power and Light Company
Dominion Energy Transmission, Inc.
ECW Wireless, LLC
Eastern MLG LLC
Electric Railroad, LLC
Enoch Pratt Free Library
Essex, County of
Exelon Generation Company, LLC
FELHC, Inc.
Federal Communication Commission
Fulton County of (PA)
Fundamental Broadcasting LLC
GTT America LLC
Garden State Transmissions
Getwireless.Net
Gloucester, County of
Greene, County of (PA)
Hanover, County of
Hardy Cellular Telephone Company
Hardy County OEM/E911
Harrisonburg-Rockingham ECC
High Voltage Communications LLC (CFN)
Indiana, County of
Jefferson County of Pennsylvania
Jefferson Microwave, LLC
Juniata County Emergency Services
King and Queen County
Kryptick Technologies
Lancaster County-Wide Communications
Limitless Mobile, LLC
Loudoun, County of
MGW Networks, LLC
Maryland Public Broadcasting Commission

Maryland State Highway Administration
Maryland, State of - Dept.of Info & Tech
Mifflin County
Montgomery County Of
Montgomery, County of
National Tower Company LLC
New Cingular Wireless PCS LLC - NJ
New Cingular Wireless PCS - Maryland
New Cingular Wireless PCS LLC - DC
New Cingular Wireless PCS LLC - VA
New Cingular Wireless PCS LLC - WV,NC,SC
New Cingular Wireless PCS LLC-DE/NH/RI
New Cingular Wireless PCS, LLC - PA
New Jersey Turnpike Authority-Pkwy Div
New Jersey, State of -NJ Transit
New Line Networks, LLC
Norfolk Southern Railway
Northumberland County DPS/911
PSEG Services Corporation
Peco Energy Company
Pennsylvania Turnpike Commission
Perry, County of
Pittsburgh SMSA Limited Partnership
Preston County Office of Emergency Manag
Prince George's County
Prince William, County of
Radio One Inc
Rappahannock Electric Cooperative
Rockbridge Reg. Pub Safety Comm Ctr
Rural Broadband Network Services LLC
Rural Broadband, LLC
SW Networks
Shenandoah Personal Communications, LLC
Shenandoah Valley Electric Cooperative
Snyder, County of
Somerset, County of
South Central Task Force (SCTFNET)
Southern Maryland Electric Cooperative I
Spotsylvania, County of
St. Mary's County of (MD)
Stafford, County of
State of Maryland, MIEMSS
T-Mobile License LLC
Texas Eastern Communications, LLC
Thought Transmissions, LLC
Torelco LLC
Transcontinental Gas Pipeline Corp.
US Cellular Operating Company, LLC (WI)
USCOC of Cumberland, Inc.
USCOC of Virginia RSA #3, Inc.
USOC of Pennsylvania RSA No 10 B2 Inc.
Uniti Fiber PEG, LLC
Ursa Navigation Solutions, Inc.
Verizon Maryland, Inc.
Verizon Wireless (VAW) LLC - Maryland
Verizon Wireless (VAW) LLC - W/B/V Mkts

Verizon Wireless (VAW) LLC-Pennsylvania
Verizon Wireless VAW LLC - West Virginia
Verizon Wireless VAW LLC-Southern VA
Virginia Broadband, LLC
Virginia Department of State Police
Virginia Electric & Power Company
WV DHHR BPH, Office of Ems, Com. Div.
Warrenton Fauquier Joint Communications
Washington Gas Light Company
Washington Suburban Sanitary Commission
Washington, County of
Weblin Holdings LLC
Westmoreland, County of
Wicomico County
Wireless Internetwork LLC
World Class Wireless, LLC
iSignal
xWave Engineering LLC

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: 04/28/2018
Job Number: 180428COMSGE06

Administrative Information

Status: TEMPORARY (Operation from 07/01/2018 to 09/01/2018)
Call Sign: TEMP09
Licensee Code: INTELS
Licensee Name: Intelsat License LLC

Site Information

HAGERSTOWN, MD

Venue Name
Latitude (NAD 83): 39° 35' 54.0" N
Longitude (NAD 83): 77° 45' 35.0" W
Climate Zone: A
Rain Zone: 2
Ground Elevation (AMSL): 173.74 m / 570.0 ft

Link Information

Satellite Type: Geostationary
Mode: TO - Transmit-Only
Modulation: Digital
Satellite Arc: 6° W to 149° West Longitude
Azimuth Range: 101.9° to 257.8°
Corresponding Elevation Angles: 5.3° / 5.7°
Antenna Centerline (AGL): 5.79 m / 19.0 ft

Antenna Information

Transmit - FCC32

Manufacturer: TIW
Model: TIW9.0KFPA
Gain / Diameter: 53.5 dBi / 9.0 m
3-dB / 15-dB Beamwidth: 0.36° / 0.67°

Max Available RF Power (dBW/4 kHz): 4.5
(dBW/MHz): 28.5

Maximum EIRP (dBW/4 kHz): 58.0
(dBW/MHz): 82.0

Interference Objectives: Long Term: -154.0 dBW/4 kHz 20%
Short Term: -131.0 dBW/4 kHz 0.0025%

Frequency Information

Transmit 6.1 GHz

Emission / Frequency Range (MHz): 1M00FXD / 6423.0
1M00FXD / 6425.0

Max Great Circle Coordination Distance: 475.4 km / 295.4 mi
Precipitation Scatter Contour Radius: 328.0 km / 203.8 mi

Coordination Values	HAGERSTOWN, MD	
Licensee Name	Intelsat License LLC	
Latitude (NAD 83)	39° 35' 54.0" N	
Longitude (NAD 83)	77° 45' 35.0" W	
Ground Elevation (AMSL)	173.74 m / 570.0 ft	
Antenna Centerline (AGL)	5.79 m / 19.0 ft	
Antenna Model	TIW 9 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	4.5 (dBW/4 kHz)	

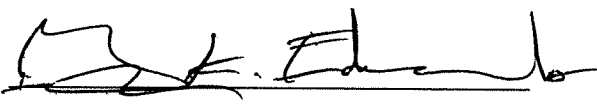
Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 6.1 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
0	0.00	101.81	-10.00	198.42
5	0.00	96.84	-10.00	198.42
10	0.00	91.86	-10.00	198.42
15	0.00	86.88	-10.00	198.42
20	0.00	81.90	-10.00	198.42
25	0.00	76.92	-10.00	198.42
30	0.00	71.95	-10.00	198.42
35	0.00	66.97	-10.00	198.42
40	0.00	62.00	-10.00	198.42
45	0.00	57.03	-10.00	198.42
50	0.00	52.06	-10.00	198.42
55	0.00	47.09	-9.82	199.09
60	0.00	42.14	-8.62	203.70
65	0.00	37.19	-7.26	207.26
70	0.00	32.26	-5.72	213.41
75	0.00	27.34	-3.92	220.90
80	0.00	22.47	-1.79	230.32
85	0.00	17.65	0.83	242.62
90	0.00	12.98	4.17	259.01
95	0.00	8.66	8.56	284.19
100	0.00	5.61	13.27	475.43
105	0.00	6.15	12.28	347.23
110	0.00	9.60	7.45	277.50
115	0.00	13.27	3.93	257.71
120	0.00	16.89	1.31	244.96
125	0.00	20.41	-0.75	235.11
130	0.00	23.83	-2.43	227.44
135	0.00	27.11	-3.83	221.30
140	0.00	30.23	-5.01	216.31
145	0.00	33.14	-6.01	212.22
150	0.00	35.82	-6.85	208.86
155	0.00	38.20	-7.55	206.13
160	0.00	40.26	-8.12	205.58
165	0.00	41.93	-8.56	203.90
170	0.00	43.16	-8.88	202.70
175	0.00	43.92	-9.07	201.98
180	0.00	44.18	-9.13	201.74
185	0.00	43.92	-9.07	201.98

Coordination Values	HAGERSTOWN, MD	
Licensee Name	Intelsat License LLC	
Latitude (NAD 83)	39° 35' 54.0" N	
Longitude (NAD 83)	77° 45' 35.0" W	
Ground Elevation (AMSL)	173.74 m / 570.0 ft	
Antenna Centerline (AGL)	5.79 m / 19.0 ft	
Antenna Model	TIW 9 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	4.5 (dBW/4 kHz)	

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 6.1 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
190	0.00	43.16	-8.88	202.70
195	0.00	41.93	-8.56	203.90
200	0.00	40.26	-8.12	205.58
205	0.00	38.20	-7.55	206.13
210	0.00	35.81	-6.85	208.86
215	0.00	33.14	-6.01	212.22
220	0.00	30.22	-5.01	216.31
225	0.00	27.11	-3.83	221.30
230	0.00	23.83	-2.43	227.43
235	0.00	20.42	-0.75	235.10
240	0.00	16.89	1.31	244.98
245	0.00	13.28	3.92	257.69
250	0.00	9.59	7.46	277.57
255	0.00	6.33	11.96	353.95
260	0.00	6.11	12.35	458.19
265	0.00	9.18	7.93	280.36
270	0.00	13.46	3.77	256.89
275	0.00	18.11	0.55	241.29
280	0.00	22.90	-2.00	229.38
285	0.00	27.76	-4.09	220.20
290	0.00	32.66	-5.85	212.85
295	0.00	37.59	-7.38	206.81
300	0.00	42.53	-8.72	203.31
305	0.00	47.48	-9.91	198.76
310	0.00	52.44	-10.00	198.42
315	0.00	57.40	-10.00	198.42
320	0.00	62.37	-10.00	198.42
325	0.00	67.34	-10.00	198.42
330	0.00	72.31	-10.00	198.42
335	0.00	77.28	-10.00	198.42
340	0.00	82.26	-10.00	198.42
345	0.00	87.23	-10.00	198.42
350	0.00	92.21	-10.00	198.42
355	0.00	97.18	-10.00	198.42

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.

BY: 

Gary K. Edwards
Senior Manager
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DATED: May 4, 2018