

E7541 SES-STA-20120614-00514 IB2012001423
Lockheed Martin Corporation

Approved by OMB
3060-0678

APPLICATION FOR EARTH STATION SPECIAL TEMPORARY AUTHORITY

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

1. Applicant

Name:	Lockheed Martin Corporation	Phone Number:	703-413-5970
DBA Name:		Fax Number:	703-413-5908
Street:	2121 Crystal Drive Suite 100	E-Mail:	jennifer.warren@lmco.com
City:	Arlington	State:	VA
Country:	USA	Zipcode:	22202
Attention:	Ms Jennifer Warren		


SES-STA-20120614-00514
E7541
Call Sign: (or other identifier)
From: 7-16-12
To: 8-10-12
Approved: Paul Eblen
Professional Director

Applicant: Lockheed Martin Corporation
Call Sign: E7541
File No.: SES-STA-20120614-00514
Special Temporary Authority

Lockheed Martin Corporation is authorized to use its fixed earth station E7541 in Carpentersville, New Jersey from July 12, 2012 to August 10, 2012 to provide telemetry, tracking and control (TT&C) functions during the post-launch and early orbit phase ("LEOP") services for the Intelsat 23 satellite, Call Sign 2831, licensed by Intelsat License LLC, under the following conditions.

- 1) E7541, shall not cause harmful interference to, and shall not claim protection from, interference caused to it by any other lawfully operating station and it shall cease transmission(s) immediately upon notice of such interference.
- 2) Grant of this authorization is without prejudice to any determination that the Commission may make regarding pending or future Lockheed Martin Corporation's applications.
- 3) Any action taken or expense incurred as a result of operations pursuant to this special temporary authority is solely at Lockheed Martin Corporation's risk.
- 4) This action is issued pursuant to Section 0.261 of the Commission's rules on delegated authority, 47 C.F.R. § 0.261, and is effective immediately.

SES-STA-20120614-00514

	Call Sign <u>E7541</u>	Grant Date <u>7-11-12</u>
	(or other identifier)	
	From <u>7-12-12</u>	Term Dates <u>8-10-12</u>
GRANTED	Approved <u>Paul E. Hayes</u>	
International Bureau		

2. Contact	
Name: Stephen D. Baruch	Phone Number: 202-416-6782
Company: Lerman Senter PLLC	Fax Number: 202-429-4626
Street: 2000 K Street, NW Suite 600	E-Mail: sbaruch@lermansenter.com
City: Washington	State: DC
Country: USA	Zipcode: 20006 -1809
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?	
<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 07/04/2012	
7. City Carpentersville	
8. Latitude (dd mm ss.s h) 40 38 39.1 N	

9. State NJ	10. Longitude (dd mm ss.h) 75 11 27.8 W
11. Please supply any need attachments. Attachment 1: Exhibit A Attachment 2: Attachment 3:	
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; margin: 5px 0;">Lockheed Martin Corp. requests a 30-day STA to use the C-band antenna on its Carpentersville, NJ earth station to support post-launch/early-operations TT&C for the Intelsat 23 satellite, which is scheduled to be launched on July 6, 2012. STA period to commence July 4, 2012 to allow for calibration testing. See Exhibit A.</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 Jennifer Warren	15. Title of Person Signing Vice President, Technology Policy & Regulation
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).	

FCC NOTICE REQUIRED BY THE PAPERWORK REDUCTION ACT

The public reporting for this collection of information is estimated to average 2 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the required data, and completing and reviewing the collection of information. If you have any comments on this burden estimate, or how we can improve the collection and reduce the burden it causes you, please write to the Federal Communications Commission, AMD-PERM, Paperwork Reduction Project (3060-0678), Washington, DC 20554. We will also accept your comments regarding the Paperwork Reduction Act aspects of this collection via the Internet if you send them to PRA@fcc.gov. PLEASE DO NOT SEND COMPLETED FORMS TO THIS ADDRESS.

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.

Exhibit A
Lockheed Martin Corporation
Carpentersville, NJ Earth Station
Call Sign E7541
STA Request for
LEOp TT&C Operations
June 2012

Description

Lockheed Martin Corporation (“Lockheed Martin”) requests special temporary authority (“STA”) to operate its Carpentersville, New Jersey C-band fixed earth station (see File No. SES-LIC-20081103-01443, as amended)¹ to provide telemetry, tracking and control (“TT&C”) functions during the post-launch and transfer orbit phases of operation (“LEOp”) for the Intelsat 23 satellite that is licensed by the Commission under Call Sign S2831 and that will be operated by Intelsat License LLC (“Intelsat”). Intelsat 23 is currently scheduled for launch on July 6, 2012, and Lockheed Martin intends to perform test transmissions in preparation for the launch on or about July 4, 2012.² To the extent required to meet this timetable, Lockheed Martin requests expedited treatment of the instant STA request and action by July 4, 2012.

Lockheed Martin specifically seeks authority to transmit using right-hand circular polarization on the 6173.7 MHz and 6176.3 MHz frequencies. The earth station would receive telemetry signals from the Intelsat 23 satellite on the 3947.5 MHz, 3948.0 MHz, 3952.0 MHz, and 3952.5 MHz channels, all with right-hand circular polarization. The mission duration for the LEOp TT&C operations requested here is no more than 10 days after launch. Lockheed Martin hereby requests a 30-day STA term commencing July 4, 2012 to enable it to accommodate any slippage in the launch date without the need for additional authority from the Commission.

The transmit frequencies Lockheed Martin seeks to use for the Intelsat 23 TT&C support operations are not included in Lockheed Martin’s former license for Call Sign E7541 and current application for the C-band antenna in File No. SES-LIC-20081103-01443 (also under Call Sign E7541). Lockheed Martin notes, however, that the Commission has previously granted Lockheed Martin STA requests for launch and early-operations TT&C support using its Carpentersville, New Jersey earth station facilities. Most recently, the Commission authorized Lockheed Martin to perform launch support operations for the JCSAT-13 and Vinasat-2 satellites in May 2012. *See e.g.*, Request of Lockheed Martin Corp. for STA to support LEOp TT&C Functions of JCSAT-13 and Vinasat-2, File No. SES-STA-20120427-00403 (Vinasat-2 LEOp TT&C was conducted in C-band). *See also* Request of Lockheed Martin Corp. for STA to support LEOp TT&C Functions of BSAT-3c, File No. SES-STA-20110504-00547; and Request

¹ The pending application in File No. SES-LIC-20081103-01443, under Call Sign E7541, was filed on a provisional basis to replace Lockheed Martin’s inadvertently non-renewed license for a 14.2 meter C-band antenna at the Carpentersville, NJ site. Lockheed Martin’s petition to reinstate the license for Call Sign E7541, as well as the “replacement” application it filed in the alternative under File No. SES-LIC-20081103-01443, are pending.

² The test transmissions that would begin on or about July 4, 2012 would occur over a period of approximately two days. During these tests, the earth station would not be communicating with any satellite; instead, the transmissions will be made with the antenna at zenith to verify RF functionality.

of Lockheed Martin Corp. for STA to Support LEOp TT&C Functions for EchoStar-7, File No. SES-STA-20020208-00160 (STA to support launch and early operations TT&C functions for EchoStar-7 satellite using 17.3-17.8 GHz band frequencies for Earth-to-space telecommand transmissions).

Lockheed Martin's pending license application in File No. SES-LIC-20081103-01443 included radiation hazard studies for the C-band antenna that Lockheed Martin hereby incorporates by reference. *See* Exhibit 28 to Application of Lockheed Martin Corporation, File No. SES-LIC-20081103-01443.

The transmit frequencies Lockheed Martin seeks to use for the Intelsat 23 LEOp TT&C support operations are not included in Lockheed Martin's former license for Call Sign E7541 and current application for the C-band antenna in File No. SES-LIC-20081103-01443 (also under Call Sign E7541). Lockheed Martin emphasizes that its proposed transmissions on the 6173.7 MHz and 6176.3 MHz transmit frequencies will use the emission designators for telecommand functions that are proposed in the pending license application, or will use carriers that do not exceed the highest e.i.r.p., e.i.r.p. density, and bandwidth prescribed in the application for the telecommand carriers. When no commands are being sent, a CW carrier that is within the emission envelope proposed in Lockheed Martin's application, as amended, would be present. *See* File No. SES-AMD-20081219-01664, at Schedule B. The information in the Schedule B portion of Lockheed Martin's pending application in File No. SES-LIC-20081130-01443, as amended, is hereby incorporated by reference for the proposed C-band operation.

With respect to the proposed telemetry receive operations at 3947.5 MHz, 3948.0 MHz, 3952.0 MHz, and 3952.5 MHz, Lockheed Martin notes that these C-band telemetry receive frequencies are already proposed for inclusion in the license for Call Sign E7541 in the pending license application.

Lockheed Martin has secured a temporary frequency coordination for operations on the Intelsat 23 telecommand frequencies from its Carpentersville earth station facility. The report is attached to this Exhibit A as Attachment 1. The receive frequencies are encompassed within the scope of the frequency coordination that is associated with the former license for Call Sign E7541 and current application in File No. SES-LIC-20081130-01443, as amended, so no separate report is provided here.

Lockheed Martin notes that it is possible that during an unexpected emergency with either satellite, the power levels proposed for the earth station in the license application for Call Sign E7541, as amended, may need to be exceeded to help recover the satellite. Under these extremely unlikely circumstances, Lockheed Martin will make every effort to coordinate such operations with affected users, and will take all reasonable steps to swiftly eliminate any harmful interference caused. Lockheed Martin fully understands that all of its proposed LEOp TT&C support for the Intelsat 23 launch will be on a strictly non-harmful interference, non-protected basis.

Lockheed Martin believes that the limited operations it proposed in support of the launch of Intelsat 23 – operations Lockheed Martin and the satellite operator will coordinate in advance

with any and all potentially affected entities that operate communications systems in compliance with the Table of Frequency Allocations during the limited period of use – are required in the public interest. Lockheed Martin's earth station will be part of a global network of control facilities that will be used to position the satellite as it progresses from transfer orbit to its final location. The safe and orderly use of the entire geostationary orbital resource and protection of the hundreds of satellites from the U.S. and other countries that operate there depends in no small part on ensuring that the Intelsat 23 satellite is controlled while over North America, and Lockheed Martin's earth station thus will serve a limited-duration, but nonetheless vital function.

Lockheed Martin designates Michael Usarzewicz to be the contact person that will be available whenever transmission to, or reception from, Intelsat 23 is to occur through the subject earth station. Mr. Usarzewicz can be reached at the following cell phone number: (609)-865-2658 and/or station number: (908) 859-4050.

The antenna to be used for operations under the proposed STA is already built. It is the same antenna that was previously authorized under Call Sign E7541 and that is now the subject of the pending application and reinstatement request described in Note 1 above. As noted, the C-band antenna has been authorized for use on an STA-basis to support other satellite launches.

In sum, Lockheed Martin requests authority to operate its Carpentersville, NJ C-band earth station antenna to provide critical TT&C services during the launch and early operations phase of the Intelsat 23 satellite, for a term of 30 days – including two days for calibration testing, and a 10 day window between July 4 and August 3, 2012 for TT&C support operations.

ATTACHMENT 1

Prepared By

COMSEARCH

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

Prepared For

Lockheed Martin Corporation Carpentersville, New Jersey

Temporary Transmit-Only Earth Station
Operation Dates: 07/01/2012 - 08/01/2012

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 June 8, 2012.

Company

AB Services LLC
ALGONQUIN GAS TRANSMISSION CO
AT&T COMMUNICATIONS OF MARYLAND INC
AT&T COMMUNICATIONS OF VIRGINIA INC
AT&T CORP
Aerbender, LLC
Allentown SMSA Limited Partnership
Appalachian Broadcasting
Atlantic City Electric Company
Auburn Data Systems, LLC
BAY BROADBAND COMMUNICATIONS LLC
BFI Licenses, LLC
BLAIR COUNTY 911
Baltimore County of Maryland
Baltimore Gas and Electric Company
Bedford, County of
Berks, County of
Binghamton MSA Limited Partnership
Borough of Huntingdon
CAMDEN COUNTY
CHESTER, COUNTY OF
CONSOLIDATED EDISON COMPANY OF NEW YORK
CTAB Holdings LLC
Capital Communications of America
Cellco Partnership - (W-NY)
Cellco Partnership - Bridgeville, PA/WV
Cellco Partnership- PA Region
Cellco Partnership-Newark-Dallas Verizon
Cellco Partnership-WA/Baltimore
Cellco Prtnrshp - Phil. Tri-State Rgn

Company (Continued)

China Cat Productions LLC
Commonwealth of Pennsylvania-Radio Proj.
Comprehensive Wireless LLC
Conterra Ultra Broadband, LLC
Coral Reef Technologies Ltd
Coralinks
County of Frederick
County of Warren
DAUPHIN COUNTY EMERGENCY MANAGEMENT
DELAWARE STATE - DTI
Delmarva Power & Light Company
Direct Broadcast Services, Inc.
EASTERN PENNSYLVANIA EMS COUNCIL
ECW Wireless, LLC
EG Broadcast Newco Corp
EMS OF NORTHEAST PENNSYLVANIA
Eastern MLG LLC
Enoch Pratt Free Library
Essex County Sherrif Office
Exelon Generation Company, L.L.C
FELHC, Inc.
Federal Communications Commission
Fibertrack, LLC
Fundamental Broadcasting LLC
Garden State Transmissions
Geneva Communications, LLC
Gloucester, County of
Goosetown Network Services, LLC
Hardy Cellular Telephone Company
High Voltage Communications LLC
Jefferson Microwave, LLC
Jubatus, LLC
Juniata County Emergency Services
Kryptic Technologies
LACKAWANNA COMMUNICATIONS
Last Mile Inc.
Luzerne County Department of Public Sfty
MAHANTANGO MOUNTAIN MICROWAVE
MB Microwave, LLC
MVC Research. LLC
Maryland Public Broadcasting Commission
Maryland State Highway Administration
Maryland, State of - Dept.of Info & Tech
Monroe County Control Center (PA)
NEW YORK CITY POLICE DEPARTMENT
NYNEX Mobile of New York LP
Nassau County Police Department
New Cingular Wireless PCS LLC -NJ
New Cingular Wireless PCS - Maryland
New Cingular Wireless PCS LLC - DC
New Cingular Wireless PCS LLC-DE/NH/RI
New Cingular Wireless PCS of PA LLC
New Cingular Wireless PCS, LLC (NY)

Company (Continued)

New Cingular Wireless PCS, LLC - PA
New Jersey State Police
New Jersey Transit Rail Operations, Inc.
New Jersey Turnpike Authority-Pkwy Div
New Jersey, State of -NJ Transit
New York Communications CO., Inc
New York State Police
New York, City of
Newgig Networks, LLC
Norfolk Southern Railway
Northeast Pennsylvania SMSA LTD Prtnrsh
Northeast Utilities Services Company
OCEAN, COUNTY OF
Ocean, County of-Div of Wireless Tech.
Orange Poughkeepsie SMSA LTD Partnership
Orange and Rockland Utilities, Inc.
PENNSYLVANIA TURNPIKE COMMISSION
PSEG Services Corporation
Passaic Valley Microwave
Peco Energy Company
Penn Service Microwave Co., Inc.
Pike, County of PA
Prince George's County
Qoncept Holdings LLC
SCS Networks
SCTF NET
SW Networks
State of Maryland, MIEMSS
State of WV DHHR/BPH STECS
Stevens Institute of Technology
Suffolk, County of
Sullivan, County of
TRF SERVICES LLC
Texas Eastern Communications, Inc.
Thought Transmissions, LLC
Turtla Networks 6466
Turtle Networks 6384
Turtle Networks 6386
Turtle Networks 6457
USCOC of Cumberland, Inc.
Upstate Cellular Network
Velox Networks LLC
Verizon Wireless (VAW) LLC (Georgia)
Verizon Wireless (VAW) LLC (NY)
Verizon Wireless (VAW) LLC - Ohio
WASHINGTON SUBURBAN SANITARY COMMISSION
WITF Inc.
Washington D.C. SMSA L.P.
Washington Gas Light Company
Weblin Holdings LLC
Wico, LLC

Company (Continued)

Wireless Backhaul Infrastructure, LLC
Wireless Internetwork LLC
World Class Wireless LLC
York County Dept of Emergency Services
Zen Networks, Inc
iSignal

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: 06/14/2012
Job Number: 120608COMSJC02

Administrative Information

Status: TEMPORARY (Operation from 07/01/2012 to 08/01/2012)
Call Sign: TEMP08
Licensee Code: RCASTR
Licensee Name: LOCKHEED MARTIN CORPORATION

Site Information

CARPENTERSVILLE, NEW JERSEY

Venue Name:
Latitude (NAD 83): 40° 38' 39.4" N
Longitude (NAD 83): 75° 11' 27.6" W
Climate Zone: A
Rain Zone: 2
Ground Elevation (AMSL): 54.86 m / 180.0 ft

Link Information

Satellite Type: Geostationary
Mode: TO - Transmit-Only
Modulation: Digital
Satellite Arc: 18° W to 132° West Longitude
Azimuth Range: 112.8° to 246.9°
Corresponding Elevation Angles: 15.9° / 16.2°
Antenna Centerline (AGL): 9.14 m / 30.0 ft

Antenna Information

Transmit

Manufacturer: TIW
Model: 14.2 Meter
Gain / Diameter: 57.5 dBi / 14.2 m
3-dB / 15-dB Beamwidth: 0.20° / 0.50°

Max Available RF Power (dBW/4 kHz): 29.8
(dBW/MHz): 29.8

Maximum EIRP (dBW/4 kHz): 87.3
(dBW/MHz): 87.3
(dBW): 87.3

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): 1K00G3D / 6173.7
1K00G3D / 6176.3

Max Great Circle Coordination Distance: 319.0 km / 198.2 mi
Precipitation Scatter Contour Radius: 523.0 km / 324.9 mi

COMSEARCH Earth Station Data Sheet

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

Coordination Values	CARPENTERSVILLE, NJ	
Licensee Name	LOCKHEED MARTIN CORPORATION	
Latitude (NAD 83)	40° 38' 39.4" N	
Longitude (NAD 83)	75° 11' 27.6" W	
Ground Elevation (AMSL)	54.86 m / 180.0 ft	
Antenna Centerline (AGL)	9.14 m / 30.0 ft	
Antenna Model	TIW 14.2 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	29.8 (dBW/4 kHz)	

			Transmit 6.1 GHz	
Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Horizon Gain (dBi)	Coordination Distance (km)
0	3.54	112.22	-10.00	195.91
5	3.44	107.35	-10.00	197.88
10	4.05	102.50	-10.00	185.33
15	4.33	97.62	-10.00	180.56
20	3.97	92.72	-10.00	186.82
25	3.25	87.83	-10.00	201.82
30	3.56	82.95	-10.00	195.34
35	3.60	78.07	-10.00	194.70
40	3.62	73.19	-10.00	194.07
45	3.66	68.31	-10.00	193.35
50	3.42	63.48	-10.00	198.30
55	3.51	58.62	-10.00	196.40
60	3.29	53.83	-10.00	201.04
65	3.08	49.07	-10.00	205.48
70	3.20	44.28	-9.15	205.60
75	3.00	39.61	-7.95	216.36
80	2.76	35.05	-6.62	229.57
85	2.54	30.60	-5.14	243.88
90	2.27	26.37	-3.53	260.95
95	2.23	22.30	-1.71	275.13
100	2.55	18.41	0.38	281.95
105	2.55	15.42	2.29	297.30
110	2.11	14.08	3.29	318.98
115	2.43	13.66	3.61	311.76
120	2.11	15.55	2.21	310.09
125	2.45	18.11	0.55	286.45
130	2.22	21.59	-1.36	278.19
135	2.16	24.80	-2.86	268.78
140	2.65	27.42	-3.95	248.28
145	2.25	30.50	-5.11	250.75
150	2.21	33.07	-5.99	246.81
155	1.91	35.58	-6.78	249.50
160	2.13	37.30	-7.29	240.77
165	2.60	38.39	-7.61	227.32
170	2.41	39.69	-7.97	229.81
175	1.90	40.87	-8.29	241.12
180	1.90	41.11	-8.35	240.76

COMSEARCH

Earth Station Data Sheet

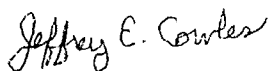
19700 Janelia Farm Boulevard, Ashburn, VA 20147
(703)726-5500 <http://www.comsearch.com>

Coordination Values	CARPENTERSVILLE, NJ
Licensee Name	LOCKHEED MARTIN CORPORATION
Latitude (NAD 83)	40° 38' 39.4" N
Longitude (NAD 83)	75° 11' 27.6" W
Ground Elevation (AMSL)	54.86 m / 180.0 ft
Antenna Centerline (AGL)	9.14 m / 30.0 ft
Antenna Model	TIW 14.2 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	29.8 (dBW/4 kHz)

			Transmit 6.1 GHz	
Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Horizon Gain (dBi)	Coordination Distance (km)
185	1.85	40.92	-8.30	242.52
190	1.24	40.83	-8.27	262.48
195	1.36	39.56	-7.93	260.37
200	2.31	37.14	-7.25	236.65
205	1.76	35.72	-6.82	254.19
210	1.78	33.43	-6.10	258.04
215	2.34	30.43	-5.08	248.60
220	2.98	27.15	-3.85	241.41
225	4.04	23.36	-2.21	227.67
230	4.93	19.56	-0.29	224.91
235	4.30	16.77	1.39	247.40
240	4.35	13.69	3.59	261.20
245	3.60	12.73	4.38	284.37
250	2.38	14.15	3.23	310.32
255	2.22	16.10	1.83	303.50
260	2.59	18.79	0.15	279.27
265	3.08	22.21	-1.66	252.92
270	2.75	26.53	-3.59	248.16
275	2.58	30.96	-5.27	242.18
280	2.85	35.38	-6.72	226.71
285	3.20	39.91	-8.03	211.46
290	3.81	44.49	-9.21	194.41
295	4.44	49.15	-10.00	178.74
300	5.32	53.85	-10.00	163.45
305	5.47	58.70	-10.00	161.69
310	5.49	63.59	-10.00	161.42
315	5.43	68.49	-10.00	162.17
320	4.59	73.44	-10.00	176.14
325	3.78	78.36	-10.00	190.72
330	3.36	83.25	-10.00	199.70
335	3.12	88.13	-10.00	204.59
340	2.98	93.00	-10.00	206.03
345	3.16	97.87	-10.00	203.80
350	3.35	102.75	-10.00	199.81
355	3.44	107.62	-10.00	197.94

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, Virginia 20147

DATED: June 14, 2012