

APPLICATION FOR EARTH STATION SPECIAL TEMPORARY AUTHORITY

APPLICANT INFORMATION Enter a description of this application to identify it on the main menu:
STA for LEOP Services for RASCOM-QAF 1R Satellite Using Earth Station KA275

1. Applicant

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

With Condition



File # SES-STA-20100621-00729
Call Sign KA275 Grant Date 6/30/2010
(or other identifier)
Term Dates
From Launch To: +30 days
Approved: Jeanette R. Spriggs

Attachment

SES-STA-20100621-00729
KA275

Condition:

All operations shall be on an unprotected and non-harmful interference basis, i.e., Intelsat North America LLC 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.

With Condition

File # <u>SES-STA-20100621-00729</u>	
Call Sign <u>KA275</u> (or other identifier)	Grant Date <u>6/30/2010</u>
From <u>Launch</u>	Term Dates To: <u>+ 30 days</u>
Approved: <u>Jeanette N. Spriggs</u>	

GRANTED
FEDERAL COMMUNICATIONS COMMISSION
Bureau

2. Contact

Name:	Susan H Crandall	Phone Number:	202-944-7848
Company:	Intelsat Corporation	Fax Number:	202-944-7870
Street:	3400 International Drive, N.W.	E-Mail:	susan.crandall@intelsat.com
City:	Washington	State:	DC
Country:	USA	Zipcode:	20008 -3006
Attention:	Susan H. Crandall	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 Clarksburg

8. Latitude
(dd mm ss.s h) 39 13 7.4 N

9. State MD	10. Longitude (dd mm ss.s h) 77 16 10.9 W
11. Please supply any need attachments. Attachment 1: Exhibit B Attachment 2: Exhibit A Attachment 3: STA Request	
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: 10px 0;">Intelsat North America LLC herein requests a grant of Special Temporary Authority for 30 days, from August 3, 2010 through September 1, 2010, to use its Clarksburg, Maryland C-band earth station -- call sign KA275 -- to provide launch and early orbit phase services for the RASCOM-QAF 1R satellite that is expected to be launched on August 3, 2010.</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. <input checked="" type="radio"/> Yes <input type="radio"/> No	
14. Name of Person Signing Susan H. Crandall	15. Title of Person Signing Asst. General 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).	

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

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.¹ 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.² The Commission may grant a waiver for good cause shown.³ The Commission typically grants a waiver where the particular facts make strict compliance inconsistent with the public interest.⁴ 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.⁵ 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 RASCOM-QAF 1R satellite. Intelsat has already provided with its STA request all the technical information relating to the LEOP services that Intelsat will be performing. 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 RASCOM-QAF 1R satellite, nor is Intelsat in contractual privity with that operator. Rather, Intelsat has a contract with Telespazio, which was hired by Thales, the manufacturer of the RASCOM-QAF 1R 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 RASCOM-QAF 1R 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

¹ 47 C.F.R. § 25.137 (emphasis added).

² 47 C.F.R. §§ 25.137 and 25.114.

³ 47 C.F.R. § 1.3.

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

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

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. As noted above, Intelsat has provided 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.⁶ 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.⁷ 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 RASCOM-QAF 1R satellite.

It is Intelsat's understanding that RASCOM-QAF 1R will operate against ITU filings held by RASCOM, an intergovernmental organization, and will be operated by RASCOMStar, a Mauritius company.⁸ It is also Intelsat's understanding that at 2.8° E.L., RASCOM-QAF 1R 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 RASCOM-QAF 1R 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.

⁶ 47 C.F.R. § 25.137(a).

⁷ See 47 C.F.R. § 25.137(d)(4).

⁸ Mauritius is a WTO-member country.

June 21, 2010

Ms. Marlene H. Dortch
Secretary

Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554



Re: Request for Special Temporary Authority
Clarksburg, Maryland Earth Station KA275

Dear Ms. Dortch:

Intelsat North America LLC ("Intelsat") herein requests a grant of Special Temporary Authority ("STA")¹ for 30 days, from August 3, 2010 through September 1, 2010, to use its Clarksburg, Maryland C-band earth station -- call sign KA275 -- to provide launch and early orbit phase ("LEOP") services for the RASCOM-QAF IR satellite that is expected to be launched on August 3, 2010.² The LEOP period is expected to last approximately 10 days.³

The RASCOM-QAF IR LEOP operations will be performed in the following frequency bands: 6182 MHz and 6183.5 MHz (uplink) and 3956.2 MHz and 3957.7 MHz (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 RASCOM-QAF IR LEOP mission is as follows:

Harry Burnham or Mike Munion
Ph.: (202) 944-7753 (primary)
(202) 944-7701 (back-up)

¹ Intelsat has filed its STA request, an FCC Form 159, a \$175.00 filing fee and this supporting letter electronically via the International Bureau's Filing System ("IBFS").

² The permanent orbital location for RASCOM-QAF IR is 2.8° E.L.

³ Intelsat is seeking authority through September 1, 2010 to accommodate a possible launch delay.

⁴ Telespazio, which was hired by the manufacturer of RASCOM-QAF IR, is coordinating the LEOP mission.

Ms. Marlene H. Dortch
June 21, 2010
Page 2

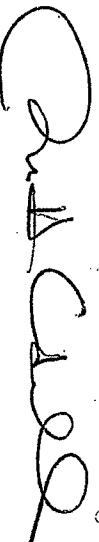
In further support of this request, Intelsat is attaching Exhibit A, which contains a waiver request, as well as Exhibit B, which contains technical information that demonstrates that the operation of the earth station will be compatible with its electromagnetic environment and will not cause harmful 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 RASCOM-QAF IR 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 higher power level of 34.4 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 allow Intelsat to help launch the RASCOM-QAF IR satellite to the 2.8° E.L. location. This, in turn, will promote the public interest by ensuring continuity of service from that location to Africa, 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: Kathryn Medley

EXHIBIT B

Prepared By

COMSEARCH

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

Prepared For

**Intelsat North America LLC
CLARKSBURG, MARYLAND**

Temporary Transmit/Receive Earth Station
Operation Dates: 05/21/2010 - 11/21/2010

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 9, 2010.

Company

ALLTEL Communications of VA No. 1, Inc.
ALLTEL Communications, LLC
AT&T COMMUNICATIONS OF MARYLAND INC
AT&T COMMUNICATIONS OF VIRGINIA INC
AT&T CORP
Allegheny Power Service Corporation
Alitel Communications LLC - Verizon SOVA
Alitel Communications of Virginia #1 LLC
Alitel Broadband (Delmar), LLC
Atlantic Broadband (Penn), LLC
Atlantic City Electric Company
BAY BROADBAND COMMUNICATIONS LLC
BEDFORD COUNTY 911
Baltimore County of Maryland
Baltimore Gas and Electric Company
Borough of Huntingdon
CHESTER, COUNTY OF
COLLEGE OF SOUTHERN MARYLAND
Carolina Power & Light Company
Celco Partnership - Southern Virginia
Celco Partnership- PA Region
Celco Partnership-Newark-Dallas Verizon
Celco Partnership-Washington/Baltimore
Celco Ptnrshp - Phil. Tri-State Rgn
Charles, County of
Charlottesville Cellular Partnership
Conterra Ultra Broadband, LLC

Company (Continued)

County of Frederick
County of Stafford
County of York
DAUPHIN COUNTY EMERGENCY MANAGEMENT
DELAWARE STATE - DTI
Delmarva Power & Light Company
Enoch Pratt Free Library
Exelon Generation Company, L.L.C
Federal Communications Commission
Frederick County
Gloucester County
Gloucester, County of
HANOVER COUNTY
Hampton Roads Planning District Commission
Hardy Cellular Telephone Company
Harrisonburg-Rockingham ECC
International Communications Group, Inc.
LB Tower Company LLC
Last Mile Inc.
Local Communications Network, Inc.
Loudoun, County of
MARYLAND PUBLIC BROADCASTING COMMISSION
MCI Communication Services, Inc.
METROPOLITAN AREA NETWORKS, INC.
Maryland State Highway Administration
Maryland, State of - Budget & Management
Mecklenburg Electric Cooperative
NTELOS Telephone, Inc.
National Radio Astronomy Observatory
New Cingular Wireless PCS LLC -NJ
New Cingular Wireless PCS - VA/DC/MID
New Cingular Wireless PCS LLC - DC
New Cingular Wireless PCS LLC- DE/NH/RI
New Cingular Wireless PCS, LLC - PA
New Jersey, State of -NJ Transit
Norfolk Southern Railway
Northern Virginia Electric Cooperative
Open Range Communications
PENNSYLVANIA TURNPIKE COMMISSION
PRINCE WILLIAM COUNTY
PSEG Services Corporation
Peco Energy Company
Penn Service Microwave Co., Inc.
Petersburg Cellular Partnership
Prince George's County
RAPPAHANNOCK ELECTRIC COOPERATIVE
RCTC Wholesale Corporation - Verizon
SCTF NET
South & Central Wireless, LLC - SOVA
Southern Maryland Electric Cooperative I

Company (Continued)

State of Maryland, MIEMSS
State of WV DHHR/BPH STECS
Texas Eastern Communications, Inc.
UNIVERSITY OF NORTH CAROLINA
USCOC of Cumberland, Inc.
USCOC of North Carolina RSA #7, Inc.
USCOC of Virginia RSA #2, Inc.
USCOC of Virginia RSA #3, Inc.
Verizon Maryland, Inc.
Verizon Virginia, Inc.
Virginia Broadband, LLC
Virginia Cellular LLC
Virginia Department of State Police
Virginia Electric & Power Company
Virginia PCS Alliance, L.C.
Virginia RSA #7, Inc.
WASHINGTON SUBURBAN SANITARY COMMISSION
WTF Inc.
Washington D.C. SMSA L.P.
Washington Gas Light Company
Wireless Strategies, Inc.
York County

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: 04/28/2010
 Job Number: 100409COMSJC03

Administrative Information
 Status: TEMPORARY (Operation from 05/21/2010 to 11/21/2010)
 Call Sign: TEMP11
 Licensee Code: INTNOA
 Licensee Name: Intelsat North America LLC

Site Information
 Venue Name: **CLARKSBURG, MARYLAND**
 Latitude (NAD 83): 39° 13' 7.4" N
 Longitude (NAD 83): 77° 16' 10.9" W
 Climate Zone: A
 Rain Zone: 2
 Ground Elevation (AMSL): 140.82 m / 462.0 ft

Link Information
 Satellite Type: Low Earth Orbit
 Mode: TR - Transmit-Receive
 Modulation: Digital
 Minimum Elevation Angle: 5.0° /
 Azimuth Range: 0.0° to 360°
 Antenna Centerline (AGL): 12.8 m / 42.0 ft

Antenna Information		Receive	Transmit
Manufacturer		TIW	TIW
Model		19.2 Meter	19.2 Meter
Gain / Diameter		55.6 dBi / 19.2 m	59.1 dBi / 19.2 m
3-dB / 15-dB Beamwidth		0.20° / 0.60°	0.20° / 0.40°

Max Available RF Power	(dBW/4 KHz)	11.1
	(dBW/MHz)	34.4
Maximum EIRP	(dBW/4 KHz)	70.2
	(dBW/MHz)	93.5
	(dBW)	93.5

Interference Objectives:	Long Term	-156.0 dBW/MHz	20%	-154.0 dBW/4 KHz	20%
	Short Term	-146.0 dBW/MHz	0.01%	-131.0 dBW/4 KHz	0.0025%

Frequency Information		Receive 4.0 GHz	Transmit 6.1 GHz
Emission / Frequency Range (MHz)		150KFXD / 3856.2	850KFXD / 6182.0
		150KFXD / 3857.7	850KFXD / 6183.5

Max Great Circle Coordination Distance	452.7 km / 281.3 mi	350.2 km / 217.6 mi
Precipitation Scatter Contour Radius	469.5 km / 291.7 mi	456.2 km / 283.4 mi

COMSEARCH

Earth Station Data Sheet

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

Coordination Values

CLARKSBURG, MD

Intelsat North America LLC

Licensee Name
 Latitude (NAD 83) 39° 13' 7.4" N
 Longitude (NAD 83) 77° 16' 10.9" W
 Ground Elevation (AMSL) 140.82 m / 462.0 ft
 Antenna Centerline (AGL) 12.8 m / 42.0 ft
 Antenna Model TIW 19.2 Meter

Antenna Mode

Receive 4.0 GHz

Interference Objectives: Long Term

-156.0 dBW/MHz

Transmit 6.1 GHz

Short Term

-146.0 dBW/MHz

-154.0 dBW/4 KHz

Max Available RF Power

0.01%

-131.0 dBW/4 KHz

0.0025%

Azimuth (°)	Receive 4.0 GHz		Transmit 6.1 GHz			
	Horizon Elevation (°)	Antenna Discrimination (°)	Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
0	1.17	98.13	4.50	313.10	4.50	198.30
5	1.09	93.13	4.50	313.10	4.50	198.30
10	1.01	88.13	4.50	317.80	4.50	203.20
15	1.17	83.13	4.50	308.70	4.50	193.70
20	1.29	78.13	4.50	302.40	4.50	187.20
25	1.31	73.13	4.50	302.90	4.50	187.80
30	1.14	68.13	4.50	314.80	4.50	200.10
35	1.44	63.13	4.50	299.00	4.50	183.70
40	1.48	58.13	4.50	285.20	4.50	169.30
45	1.54	53.13	4.50	294.80	4.50	179.30
50	1.22	48.13	4.50	309.20	4.50	193.30
55	0.85	43.13	4.50	327.40	4.50	213.90
60	0.76	38.13	4.50	332.30	4.50	218.30
65	0.82	33.13	4.50	333.10	4.50	219.10
70	0.96	28.13	4.50	320.80	4.50	206.40
75	0.82	23.13	4.50	330.20	4.50	216.10
80	0.82	18.13	4.50	330.90	4.50	216.80
85	0.79	13.14	4.50	332.30	4.50	218.30
90	0.74	8.14	4.50	335.30	4.50	221.40
95	0.67	3.17	4.50	338.40	4.50	224.60
100	0.73	1.91	4.50	337.60	4.50	223.80
105	0.84	6.87	4.50	328.80	4.50	214.60
110	0.76	11.87	4.50	333.10	4.50	219.10
115	0.81	16.87	4.50	337.60	4.50	223.80
120	0.81	21.87	4.50	329.50	4.50	215.30
125	0.89	26.87	4.50	324.00	4.50	209.70
130	0.83	31.87	4.50	325.40	4.50	211.10
135	0.66	36.87	4.50	343.30	4.50	229.80
140	0.49	41.87	4.50	356.40	4.50	243.40
145	0.37	46.87	4.50	364.00	4.50	251.40
150	0.30	51.87	4.50	379.60	4.50	267.80
155	0.26	56.87	4.50	379.60	4.50	267.80
160	0.36	61.87	4.50	379.60	4.50	267.80
165	0.37	66.87	4.50	370.00	4.50	257.70
170	0.32	71.87	4.50	452.70	4.50	350.20
175	0.00	76.87	4.50	452.70	4.50	350.20
180	0.00	81.87	4.50	452.70	4.50	350.20
185	0.00	86.87	4.50	452.70	4.50	350.20

COMSEARCH

Earth Station Data Sheet

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

Coordination Values

CLARKSBURG, MD

Licensee Name: Intelsat North America LLC
 Latitude (NAD 83): 39° 13' 7.4" N
 Longitude (NAD 83): 77° 16' 10.9" W
 Ground Elevation (AMSL): 140.82 m / 462.0 ft
 Antenna Centerline (AGL): 12.8 m / 42.0 ft
 Antenna Model: TIW 19.2 Meter

Antenna Mode: Receive 4.0 GHz

Interference Objectives: Long Term -156.0 dBW/MHz 20%
 Short Term -146.0 dBW/MHz 0.01%

Max Available RF Power

Transmit 6.1 GHz -154.0 dBW/4 KHz 20%
 -131.0 dBW/4 KHz 0.0025%
 11.1 (dBW/4 KHz)

Azimuth (°)	Horizon		Antenna Discrimination (°)	Receive 4.0 GHz		Transmit 6.1 GHz	
	Elevation (°)	Gain (dBi)		Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)	
190	0.00	91.87	91.87	4.50	452.70	4.50	350.20
195	0.00	96.87	96.87	4.50	452.70	4.50	350.20
200	0.00	101.87	101.87	4.50	452.70	4.50	350.20
205	0.00	106.87	106.87	4.50	452.70	4.50	350.20
210	0.35	111.87	111.87	4.50	372.60	4.50	260.50
215	0.58	116.87	116.87	4.50	356.40	4.50	243.40
220	0.74	121.87	121.87	4.50	331.60	4.50	217.60
225	0.87	126.87	126.87	4.50	323.40	4.50	209.00
230	0.97	131.87	131.87	4.50	314.20	4.50	199.50
235	1.00	136.87	136.87	4.50	309.70	4.50	194.80
240	1.16	141.87	141.87	4.50	308.10	4.50	193.20
245	1.24	146.87	146.87	4.50	307.60	4.50	192.60
250	1.03	151.87	151.87	4.50	317.20	4.50	202.60
255	1.37	156.87	156.87	4.50	303.40	4.50	188.30
260	1.74	161.86	161.86	4.50	292.50	4.50	176.90
265	1.95	166.84	166.84	4.50	283.20	4.50	167.20
270	2.29	171.79	171.79	4.50	274.70	4.50	158.20
275	2.53	176.57	176.57	4.50	263.60	4.50	146.80
280	2.61	177.62	177.62	4.50	254.70	4.50	137.30
285	2.56	172.99	172.99	4.50	249.30	4.50	131.60
290	2.59	168.04	168.04	4.50	246.00	4.50	128.20
295	2.59	163.07	163.07	4.50	245.50	4.50	127.60
300	2.59	158.09	158.09	4.50	248.10	4.50	130.30
305	2.38	153.10	153.10	4.50	255.30	4.50	138.00
310	2.14	148.12	148.12	4.50	269.90	4.50	153.30
315	2.14	143.12	143.12	4.50	286.90	4.50	171.00
320	1.62	138.13	138.13	4.50	298.10	4.50	182.70
325	1.37	133.13	133.13	4.50	297.60	4.50	182.20
330	1.25	128.13	128.13	4.50	304.50	4.50	184.20
335	1.31	123.13	123.13	4.50	302.90	4.50	187.80
340	1.35	118.13	118.13	4.50	299.50	4.50	184.20
345	1.36	113.13	113.13	4.50	300.90	4.50	185.70
350	1.26	108.13	108.13	4.50	305.00	4.50	189.90
355	1.24	103.13	103.13	4.50	307.60	4.50	192.60