

E160158 SES-STA-20161005-00828 IB2016002219
Son Broadcasting, Inc.

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:
STA Request for E160158

1. Applicant

Name:	Son Broadcasting, Inc.	Phone Number:	505-345-1991
DBA Name:		Fax Number:	505-345-5669
Street:	5010 Fourth St NW	E-Mail:	ted@sonbroadcasting.org
City:	Albuquerque	State:	NM
Country:	USA	Zipcode:	87107
Attention:	Mr Ted Gonzales		



File # SES-STA-20161005-00828
E160158 Grant Date 10-13-16
Call Sign (or other identifier)
Term Dates
From: 10-13-16 To: 12-15-16
Approved: [Signature]

Applicant: Son Broadcasting Inc.
Call Sign: E160158
File No.: SES-STA-20161005-00828
Special Temporary Authority (STA)



File # SES-STA-20161005-00828
Call Sign E160158 Grant Date 10-13-16
(or other identifier)
Term Dates
From: 10-13-16 To: 12-12-16
Approved: Paul E. Black

Son Broadcasting Inc. is granted a special temporary authority (STA) for 60 days, commencing October 13, 2016, to use its Albuquerque, NM, C-band earth station, to communicate with Galaxy 16 (call sign S2687) at 99°W.L. orbital location to provide satellite distribution of non-commercial radio programs and educational content to regional downlinks in the 5925-6183 MHz (Earth-to-space) and 3700-4200 MHz (space-to-Earth) frequency bands under the following conditions:

1. Operations will not exceed the operational power levels and parameters requested and coordinated.
2. Operations, 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 and notify the FCC in writing.
3. Transmitter(s) must be turned off during antenna maintenance to ensure compliance with the FCC-specified safety guidelines for human exposure to radiofrequency radiation in the region between the antenna feed and the reflector. Appropriate measure must also be taken to restrict access to other regions in which the earth station's power flux density levels exceed the specified guidelines.
4. The licensee shall take all necessary measures to ensure that the antenna does not create potential exposure of humans to radiofrequency radiation in excess of the FCC exposure limits defined in 47 CFR 1.1307 (b) and 1.1310 wherever such exposures might occur. Measures must be taken to ensure compliance with limits for both occupational/controlled exposure and for general population/uncontrolled exposure, as defined in these rule sections. The FCC's OET Bulletin 65 (available on-line at www.fcc.gov/oet/rfsafety) provides information on predicting exposure levels and on methods for ensuring compliance, including the use of warning and alerting signs and protective equipment for workers.
5. Any action taken or expense incurred as a result of operations pursuant to this STA is solely at Son Broadcasting Inc's risk.

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 upon release.

2. Contact

Name: Son Broadcasting, Inc. **Phone Number:** 505-345-1991
Company: Son Broadcasting, Inc. **Fax Number:** 505-345-5669
Street: 5010 Fourth St NW **E-Mail:** ted@sonbroadcasting.org
City: Albuquerque **State:** NM
Country: USA **Zipcode:** 87107 -
Attention: **Relationship:** Same

(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 SESLIC2016092900815 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): Non-Commercial / Not for Profit Entity

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

10/10/2016

7. City Albuquerque	8. Latitude (dd mm ss.s h) 35 6 50.7 N
9. State NM	10. Longitude (dd mm ss.s h) 106 37 52.7 W
11. Please supply any need attachments. Attachment 1: STARRequestLetter Attachment 2: RadHaz Attachment 3: CoordRpt	
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.) STA request for Son Broadcasting, Inc. See attached request letter.	
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. Yes <input checked="" type="radio"/> No <input type="radio"/>	
14. Name of Person Signing Ted Gonzales	15. Title of Person Signing Operations Manager
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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September 30, 2016

Paul Blais, Branch Chief
System Analysis Branch
Satellite Division
International Bureau
Federal Communications Commission
445 12th Street SW
Washington, DC 20554

Contact: Ted Gonzales, President
Son Broadcasting, Inc.
5010 4th St. NW
Albuquerque, NM 87107
505-345-1991
email: ted@sonbroadcasting.org

Re: Request for a 90 day Special Temporary Authority (STA)

Dear Mr. Blais,

Pursuant to Section 25.120(a) of the Rules and Regulations ("Regulations") of the Federal Communications Commission, Son Broadcasting, Inc. seeks consideration for a request for 90 day Special Temporary Authority ("STA") to operate a new earth station in Albuquerque, NM.

Son Broadcasting, Inc. is requesting a 90 day STA to start satellite operations while their permanent FSS C-band application (SES-LIC-20160929-00815 / E160158) is currently pending with the Commission. Son Broadcasting, Inc. does not have a terrestrial interconnection to their regional affiliated stations, that serve the public interest, and therefore is requesting a 90 day STA to keep broadcast programming on the air.

Son Broadcasting, Inc. accordingly urgently requests that a 90 day STA be granted so that the reliable broadcast service to the public in key regional areas can be satisfied and maintained forthwith.

Thank you for your attention and help in this matter.

Sincerely,

A handwritten signature in black ink, appearing to read "Ted Gonzales", written over the word "Sincerely".

Ted Gonzales, President

Analysis of Non-Ionizing Radiation for a 3.8-Meter Earth Station System

This report analyzes the non-ionizing radiation levels for a 3.8-meter earth station system. The analysis and calculations performed in this report comply with the methods described in the FCC Office of Engineering and Technology Bulletin, No. 65 first published in 1985 and revised in 1997 in Edition 97-01. The radiation safety limits used in the analysis are in conformance with the FCC R&O 96-326. Bulletin No. 65 and the FCC R&O specifies that there are two separate tiers of exposure limits that are dependant on the situation in which the exposure takes place and/or the status of the individuals who are subject to the exposure. The Maximum Permissible Exposure (MPE) limits for persons in a General Population/Uncontrolled environment are shown in Table 1. The General Population/Uncontrolled MPE is a function of transmit frequency and is for an exposure period of thirty minutes or less. The MPE limits for persons in an Occupational/Controlled environment are shown in Table 2. The Occupational MPE is a function of transmit frequency and is for an exposure period of six minutes or less. The purpose of the analysis described in this report is to determine the power flux density levels of the earth station in the far-field, near-field, transition region, between the subreflector or feed and main reflector surface, at the main reflector surface, and between the antenna edge and the ground and to compare these levels to the specified MPEs.

Table 1. Limits for General Population/Uncontrolled Exposure (MPE)

Frequency Range (MHz)	Power Density (mW/cm ²)
30-300	0.2
300-1500	Frequency (MHz)*(0.8/1200)
1500-100,000	1.0

Table 2. Limits for Occupational/Controlled Exposure (MPE)

Frequency Range (MHz)	Power Density (mW/cm ²)
30-300	1.0
300-1500	Frequency (MHz)*(4.0/1200)
1500-100,000	5.0

Table 3. Formulas and Parameters Used for Determining Power Flux Densities

Parameter	Symbol	Formula	Value	Units
Antenna Diameter	D	Input	3.8	m
Antenna Surface Area	A _{surface}	$\pi D^2 / 4$	11.34	m ²
Feed Flange Diameter	D _{fa}	Input	19.0	cm
Area of Feed Flange	A _{fa}	$\pi D_{fa}^2 / 4$	283.53	cm ²
Frequency	F	Input	6175	MHz
Wavelength	λ	300 / F	0.048583	m
Transmit Power	P	Input	40.00	W
Antenna Gain (dBi)	G _{es}	Input	45.9	dBi
Antenna Gain (factor)	G	$10^{G_{es}/10}$	38904.5	n/a
Pi	π	Constant	3.1415927	n/a
Antenna Efficiency	η	$G\lambda^2 / (\pi^2 D^2)$	0.64	n/a

1. Far Field Distance Calculation

The distance to the beginning of the far field can be determined from the following equation:

$$\begin{aligned} \text{Distance to the Far Field Region} \quad R_{ff} &= 0.60 D^2 / \lambda \\ &= 178.3 \text{ m} \end{aligned} \quad (1)$$

The maximum main beam power density in the far field can be determined from the following equation:

$$\begin{aligned} \text{On-Axis Power Density in the Far Field} \quad S_{ff} &= G P / (4 \pi R_{ff}^2) \\ &= 3.894 \text{ W/m}^2 \\ &= 0.389 \text{ mW/cm}^2 \end{aligned} \quad (2)$$

2. Near Field Calculation

Power flux density is considered to be at a maximum value throughout the entire length of the defined Near Field region. The region is contained within a cylindrical volume having the same diameter as the antenna. Past the boundary of the Near Field region, the power density from the antenna decreases linearly with respect to increasing distance.

The distance to the end of the Near Field can be determined from the following equation:

$$\begin{aligned} \text{Extent of the Near Field} \quad R_{nf} &= D^2 / (4 \lambda) \\ &= 74.3 \text{ m} \end{aligned} \quad (3)$$

The maximum power density in the Near Field can be determined from the following equation:

$$\begin{aligned} \text{Near Field Power Density} \quad S_{nf} &= 16.0 \eta P / (\pi D^2) \\ &= 9.090 \text{ W/m}^2 \\ &= 0.909 \text{ mW/cm}^2 \end{aligned} \quad (4)$$

3. Transition Region Calculation

The Transition region is located between the Near and Far Field regions. The power density begins to decrease linearly with increasing distance in the Transition region. While the power density decreases inversely with distance in the Transition region, the power density decreases inversely with the square of the distance in the Far Field region. The maximum power density in the Transition region will not exceed that calculated for the Near Field region. The power density calculated in Section 1 is the highest power density the antenna can produce in any of the regions away from the antenna. The power density at a distance R_t can be determined from the following equation:

$$\begin{aligned} \text{Transition Region Power Density} \quad S_t &= S_{nf} R_{nf} / R_t \\ &= 0.909 \text{ mW/cm}^2 \end{aligned} \quad (5)$$

4. Region between the Feed Assembly and the Antenna Reflector

Transmissions from the feed assembly are directed toward the antenna reflector surface, and are confined within a conical shape defined by the type of feed assembly. The most common feed assemblies are waveguide flanges, horns or subreflectors. The energy between the feed assembly and reflector surface can be calculated by determining the power density at the feed assembly surface. This can be determined from the following equation:

$$\begin{aligned} \text{Power Density at the Feed Flange} \quad S_{fa} &= 4000 P / A_{fa} & (6) \\ &= 564.317 \text{ mW/cm}^2 \end{aligned}$$

5. Main Reflector Region

The power density in the main reflector is determined in the same manner as the power density at the feed assembly. The area is now the area of the reflector aperture and can be determined from the following equation:

$$\begin{aligned} \text{Power Density at the Reflector Surface} \quad S_{\text{surface}} &= 4 P / A_{\text{surface}} & (7) \\ &= 14.108 \text{ W/m}^2 \\ &= 1.411 \text{ mW/cm}^2 \end{aligned}$$

6. Region between the Reflector and the Ground

Assuming uniform illumination of the reflector surface, the power density between the antenna and the ground can be determined from the following equation:

$$\begin{aligned} \text{Power Density between Reflector and Ground} \quad S_g &= P / A_{\text{surface}} & (8) \\ &= 3.527 \text{ W/m}^2 \\ &= 0.353 \text{ mW/cm}^2 \end{aligned}$$

7. Summary of Calculations

Table 4. Summary of Expected Radiation levels for Uncontrolled Environment

Region	Calculated Maximum Radiation Power Density Level (mW/cm ²)		Hazard Assessment
1. Far Field ($R_{ff} = 178.3$ m)	S_{ff}	0.389	Satisfies FCC MPE
2. Near Field ($R_{nf} = 74.3$ m)	S_{nf}	0.909	Satisfies FCC MPE
3. Transition Region ($R_{nf} < R_t < R_{ff}$)	S_t	0.909	Satisfies FCC MPE
4. Between Feed Assembly and Antenna Reflector	S_{fa}	564.317	Potential Hazard
5. Main Reflector	$S_{surface}$	1.411	Potential Hazard
6. Between Reflector and Ground	S_g	0.353	Satisfies FCC MPE

Table 5. Summary of Expected Radiation levels for Controlled Environment

Region	Calculated Maximum Radiation Power Density Level (mW/cm ²)		Hazard Assessment
1. Far Field ($R_{ff} = 178.3$ m)	S_{ff}	0.389	Satisfies FCC MPE
2. Near Field ($R_{nf} = 74.3$ m)	S_{nf}	0.909	Satisfies FCC MPE
3. Transition Region ($R_{nf} < R_t < R_{ff}$)	S_t	0.909	Satisfies FCC MPE
4. Between Feed Assembly and Antenna Reflector	S_{fa}	564.317	Potential Hazard
5. Main Reflector	$S_{surface}$	1.411	Satisfies FCC MPE
6. Between Reflector and Ground	S_g	0.353	Satisfies FCC MPE

It is the applicant's responsibility to ensure that the public and operational personnel are not exposed to harmful levels of radiation.

8. Conclusions

Based on the above analysis it is concluded that the FCC MPE guidelines have been exceeded (or met) in the regions of Table 4 and 5. The applicant proposes to comply with the MPE limits by one or more of the following methods.

This antenna will be located in a fenced area. The fenced area will be sufficient to prohibit the general public from having access the areas that exceed the MPE limits

Since one diameter removed from the main beam of the antenna or ½ diameter removed from the edge of the antenna the RF levels are reduced by a factor of 100 or 20 dB. None of the areas exceeding the MPE levels will be accessible by the general public.

Radiation hazard signs will be posted while this earth station is in operation.

Means of Compliance Controlled Areas

The earth station's operational staff will not have access to the areas that exceed the MPE levels while the earth station is in operation.

The transmitters will be turned off during antenna maintenance

The applicant agrees to abide by the conditions specified in Condition 5208 provided below:

Condition 5208 - The licensee shall take all necessary measures to ensure that the antenna does not create potential exposure of humans to radiofrequency radiation in excess of the FCC exposure limits defined in 47 CFR 1.1307(b) and 1.1310 wherever such exposures might occur. Measures must be taken to ensure compliance with limits for both occupational/controlled exposure and for general population/uncontrolled exposure, as defined in these rule sections. Compliance can be accomplished in most cases by appropriate restrictions such as fencing. Requirements for restrictions can be determined by predictions based on calculations, modeling or by field measurements. The FCC's OET Bulletin 65 (available on-line at www.fcc.gov/oet/rfsafety) provides information on predicting exposure levels and on methods for ensuring compliance, including the use of warning and alerting signs and protective equipment for worker.

Prepared By

Timothy O. Crutcher
Telecom Engineer
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
SON BROADCASTING COMPANY, INC.
KCHF-TV
ALBUQUERQUE, NM
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
September 23, 2016

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1. CONCLUSIONS

An interference study considering all existing, proposed and prior coordinated microwave facilities within the coordination contours of the proposed earth station demonstrates that this site will operate satisfactorily with the common carrier microwave environment. Operation will be restricted to the bandwidth shown in Section 4 of the report.

2. SUMMARY OF RESULTS

A number of great circle interference cases were identified during the interference study of the proposed earth station. Each of the cases, which exceeded the interference objective on a line-of-sight basis, was profiled and the propagation losses estimated using NBS TN101 (Revised) techniques. The losses were found to be sufficient to reduce the signal levels to acceptable magnitudes in every case.

The following companies reported potential great circle interference conflicts that did not meet the objectives on a line-of-sight basis. When over-the-horizon losses are considered on the interfering paths, sufficient blockage exists to negate harmful interference from occurring with the proposed transmit-receive earth station.

Company

Public Service Company of New Mexico

No other carriers reported potential interference cases.

3. SUPPLEMENTAL SHOWING

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.

Coordination data for this earth station was sent to the below listed carriers with a letter dated 08/31/2016.

Company

AT&T Corp.
Agavue, LLC
Albuquerque, City of
Alltel Comm Southwest Holdings Inc.
Alltel Communications LLC-AZ/CO/NM/NV/UT
Alltel New License Sub LLC - Southwest
Americas Communications LLC
BNSF Railway Company
Bernalillo, County of
Commnet Four Corners, LLC
Global Telecom & Technology Americas, In
Internet Services, LLC
KASY-TV LICENSEE LLC
Legacy Church, Inc.
Navajo Communications Company
Navajo Technical College
New Cingular Wireless PCS, LLC - NM
New Mexico RSA #3 Limited Partnership
New Mexico, State of
Olympic Wireless, LLC
Public Service Company of New Mexico
Pueblo of Laguna Utility Authority
Qwest Corporation
Sacred Wind Communications, Inc
Sandoval County of
Sangre De Cristo Water Division
Smith Bagley, Inc.
T-Mobile License LLC
Transworld Network Corp
Verizon Wireless(VAW) LLC-AZ/CO/NM/NV/UT

4. EARTH STATION COORDINATION DATA

This 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: 09/23/2016
Job Number: 160831COMSTC02

Administrative Information

Licensee Name SON BROADCASTING COMPANY, INC

Site Information

ALBUQUERQUE, NM

Venue Name KCHF-TV
Latitude (NAD 83) 35° 6' 50.7" N
Longitude (NAD 83) 106° 37' 52.7" W
Climate Zone A
Rain Zone 5
Ground Elevation (AMSL) 1530.1 m / 5020.0 ft

Link Information

Satellite Type Geostationary
Mode TR - Transmit-Receive
Modulation Digital
Satellite Arc 43° W to 139° West Longitude
Azimuth Range 105.9° to 227.8°
Corresponding Elevation Angles 12.8° / 36.7°
Antenna Centerline (AGL) 2.6 m / 8.5 ft

Antenna Information

	Receive	Transmit
Manufacturer	Prodelin	Prodelin
Model	1383	1383
Gain / Diameter	41.9 dBi / 3.8 m	45.9 dBi / 3.8 m
3-dB / 15-dB Beamwidth	1.00° / 2.00°	0.80° / 1.60°

1M00G7W – 4M00G7W

Max Available RF Power	(dBW/4 kHz)	-13.98	-13.98		
	(dBW/MHz)	10.0	10.0		
Maximum EIRP	(dBW/4 kHz)	31.92	31.92		
	(dBW/MHz)	55.9	55.9		
	(dBW)	55.9	61.92		
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)	1M00G7W - 4M00G7W / 3700.0 - 4200.0	1M00G7W - 4M00G7W / 5925.0 - 6183.0
Max Great Circle Coordination Distance	304.1 km / 188.9 mi	139.6 km / 86.7 mi
Precipitation Scatter Contour Radius	410.9 km / 255.3 mi	100.0 km / 62.1 mi

COMSEARCH

Earth Station Data Sheet

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

Coordination Values

ALBUQUERQUE, NM

Licensee Name	SON BROADCASTING COMPANY, INC		
Latitude (NAD 83)	35° 6' 50.7" N		
Longitude (NAD 83)	106° 37' 52.7" W		
Ground Elevation (AMSL)	1530.1 m / 5020.0 ft		
Antenna Centerline (AGL)	2.6 m / 8.5 ft		
Antenna Mode	Receive 4.0 GHz		Transmit 6.1 GHz
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%
Max Available RF Power			-13.98 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 4.0 GHz		Transmit 6.1 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
0	0.00	105.51	-10.00	285.28	-10.00	132.84
5	0.00	100.64	-10.00	285.28	-10.00	132.84
10	0.60	95.78	-10.00	243.08	-10.00	103.94
15	0.73	90.90	-10.00	235.60	-10.00	100.00
20	0.85	86.01	-10.00	228.32	-10.00	100.00
25	0.92	81.11	-10.00	224.63	-10.00	100.00
30	1.06	76.22	-10.00	218.44	-10.00	100.00
35	1.26	71.32	-10.00	212.43	-10.00	100.00
40	1.19	66.44	-10.00	214.39	-10.00	100.00
45	1.23	61.57	-10.00	213.33	-10.00	100.00
50	1.19	56.71	-10.00	214.44	-10.00	100.00
55	1.23	51.86	-10.00	213.34	-10.00	100.00
60	1.26	47.03	-9.81	213.23	-9.81	100.00
65	1.31	42.23	-8.64	217.69	-8.64	100.00
70	1.30	37.48	-7.35	224.67	-7.35	100.00
75	1.14	32.85	-5.91	238.02	-5.91	100.00
80	1.13	28.27	-4.28	248.08	-4.28	100.00
85	1.41	23.71	-2.37	250.32	-2.37	100.00
90	1.40	19.51	-0.25	264.80	-0.25	102.70
95	1.39	15.76	2.06	281.96	2.06	109.86
100	1.39	12.86	4.27	299.13	4.27	116.58
105	1.60	11.26	5.71	302.51	5.71	115.72
110	2.15	11.42	5.56	281.48	5.56	102.28
115	2.02	14.08	3.29	267.84	3.29	100.00
120	1.34	18.10	0.56	272.74	0.56	106.60
125	0.96	22.13	-1.62	272.97	-1.62	110.79
130	0.91	25.84	-3.31	264.59	-3.31	108.00
135	0.91	29.40	-4.71	255.66	-4.71	104.14
140	1.01	32.73	-5.87	242.50	-5.87	100.00
145	1.05	35.90	-6.88	235.40	-6.88	100.00
150	0.94	38.93	-7.76	235.50	-7.76	100.00
155	1.02	41.52	-8.46	227.53	-8.46	100.00
160	1.01	43.83	-9.04	224.86	-9.04	100.00
165	1.63	45.13	-9.36	204.88	-9.36	100.00
170	1.57	46.54	-9.70	205.11	-9.70	100.00
175	1.64	47.31	-9.87	204.91	-9.87	100.00
180	1.38	47.84	-10.00	209.07	-10.00	100.00
185	0.87	48.07	-10.00	227.63	-10.00	100.00

COMSEARCH

Earth Station Data Sheet

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

Coordination Values

ALBUQUERQUE, NM

Licensee Name	SON BROADCASTING COMPANY, INC		
Latitude (NAD 83)	35° 6' 50.7" N		
Longitude (NAD 83)	106° 37' 52.7" W		
Ground Elevation (AMSL)	1530.1 m / 5020.0 ft		
Antenna Centerline (AGL)	2.6 m / 8.5 ft		
Antenna Mode	Receive 4.0 GHz		Transmit 6.1 GHz
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%
Max Available RF Power			-13.98 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 4.0 GHz		Transmit 6.1 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
190	0.49	47.57	-9.93	251.55	-9.93	109.85
195	0.00	46.59	-9.71	287.14	-9.71	133.63
200	0.30	44.42	-9.19	277.87	-9.19	126.78
205	0.55	41.91	-8.56	254.79	-8.56	110.02
210	0.70	39.65	-7.96	249.12	-7.96	105.11
215	0.00	38.60	-7.67	300.57	-7.67	138.09
220	0.00	37.44	-7.33	302.81	-7.33	139.07
225	0.00	36.83	-7.16	304.02	-7.16	139.59
230	0.00	36.80	-7.15	304.08	-7.15	139.62
235	0.00	37.35	-7.31	302.99	-7.31	139.15
240	0.00	38.45	-7.62	300.86	-7.62	138.22
245	0.00	40.06	-8.07	297.87	-8.07	136.93
250	0.00	42.11	-8.61	294.27	-8.61	135.39
255	0.00	44.56	-9.22	290.27	-9.22	133.69
260	0.00	47.32	-9.88	286.07	-9.88	133.18
265	0.23	50.21	-10.00	282.09	-10.00	130.76
270	0.00	53.60	-10.00	285.28	-10.00	132.84
275	0.23	56.92	-10.00	282.07	-10.00	130.75
280	0.22	60.51	-10.00	282.50	-10.00	131.03
285	0.22	64.21	-10.00	282.91	-10.00	131.30
290	0.25	68.00	-10.00	279.38	-10.00	128.98
295	0.00	71.93	-10.00	285.28	-10.00	132.84
300	0.00	75.84	-10.00	285.28	-10.00	132.84
305	0.00	79.79	-10.00	285.28	-10.00	132.84
310	0.22	83.76	-10.00	282.91	-10.00	131.30
315	0.00	87.78	-10.00	285.28	-10.00	132.84
320	0.20	91.79	-10.00	284.98	-10.00	132.65
325	0.00	95.78	-10.00	285.28	-10.00	132.84
330	0.00	99.77	-10.00	285.28	-10.00	132.84
335	0.00	103.73	-10.00	285.28	-10.00	132.84
340	0.00	107.64	-10.00	285.28	-10.00	132.84
345	0.00	111.51	-10.00	285.28	-10.00	132.84
350	0.00	115.22	-10.00	285.28	-10.00	132.84
355	0.00	110.37	-10.00	285.28	-10.00	132.84

5. CERTIFICATION

I HEREBY CERTIFY THAT I AM THE TECHNICALLY QUALIFIED PERSON RESPONSIBLE FOR THE PREPARATION OF THE FREQUENCY COORDINATION DATA CONTAINED IN THIS APPLICATION, THAT I AM FAMILIAR WITH PARTS 101 AND 25 OF THE FCC RULES AND REGULATIONS, THAT I HAVE EITHER PREPARED OR REVIEWED THE FREQUENCY COORDINATION DATA SUBMITTED WITH THIS APPLICATION, AND THAT IT IS COMPLETE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.



Timothy O. Crutcher
Frequency Planner
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147

DATED: September 23, 2016