

# 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

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### Administrative Information

Licensee Name SON BROADCASTING COMPANY, INC

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### 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

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### 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

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### 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°

Max Available RF Power (dBW/4 kHz) (dBW/MHz)	<u>1M00G7W - 4M00G7W</u>				
	-13.98	-13.98			
	10.0	10.0			
Maximum EIRP (dBW/4 kHz) (dBW/MHz) (dBW)	31.92	31.92			
	55.9	55.9			
	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%

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### 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

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### 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



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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