

# FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for  
**Public Broadcasting of Colorado, Inc.**  
**AVON, CO**  
**Satellite Earth Station**

Prepared By:  
COMSEARCH  
19700 Janelia Farm Boulevard  
Ashburn, VA 20147  
March 12, 2018

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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. Further, there will be no restrictions of its operation due to interference considerations.

## **2. SUMMARY OF RESULTS**

There were no great circle interference cases identified during the interference study of the proposed earth station.

No 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 02/14/2018.

Company

Qwest Corporation

## **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: 03/12/2018  
Job Number: 180214COMSTC03

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### Administrative Information

Licensee Code PUBCOL  
Licensee Name Public Broadcasting of Colorado, Inc.

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### Site Information

#### AVON, CO

Venue Name KPRE K206EM  
Latitude (NAD 83) 39° 37' 19.9" N  
Longitude (NAD 83) 106° 29' 16.6" W  
Climate Zone A  
Rain Zone 2  
Ground Elevation (AMSL) 2303.87 m / 7558.6 ft

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### Link Information

Satellite Type Geostationary  
Mode RO - Receive-Only  
Modulation Digital  
Satellite Arc 58° W to 143° West Longitude  
Azimuth Range 119.4° to 229.3°  
Corresponding Elevation Angles 22.7° / 30.8°  
Antenna Centerline (AGL) 9.75 m / 32.0 ft

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### Antenna Information

#### Receive

Manufacturer Anderson  
Model Offset  
Gain / Diameter 38.2 dBi / 2.4 m  
3-dB / 15-dB Beamwidth 1.00° / 2.00°

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

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### Frequency Information

#### Receive 4.0 GHz

Emission / Frequency Range (MHz) 30K0G7W - 36M0G7W / 3700.0 - 4200.0  
30K0F7W - 36M0F7W / 3700.0 - 4200.0

Max Great Circle Coordination Distance 285.3 km / 177.2 mi  
Precipitation Scatter Contour Radius 499.0 km / 310.0 mi

# COMSEARCH

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### Coordination Values

### AVON, CO

Licensee Name Public Broadcasting of Colorado, Inc.  
Latitude (NAD 83) 39° 37' 19.9" N  
Longitude (NAD 83) 106° 29' 16.6" W  
Ground Elevation (AMSL) 2303.87 m / 7558.6 ft  
Antenna Centerline (AGL) 9.75 m / 32.0 ft  
Antenna Mode Receive 4.0 GHz  
Interference Objectives: Long Term -156.0 dBW/MHz 20%  
Short Term -146.0 dBW/MHz 0.01%

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 4.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
0	11.69	118.85	-10.00	100.00
5	11.96	113.99	-10.00	100.00
10	12.77	109.14	-10.00	100.00
15	13.31	104.25	-10.00	100.00
20	13.48	99.32	-10.00	100.00
25	13.37	94.39	-10.00	100.00
30	13.47	89.45	-10.00	100.00
35	12.76	84.53	-10.00	100.00
40	12.06	79.63	-10.00	100.00
45	11.23	74.76	-10.00	100.00
50	10.73	69.91	-10.00	100.00
55	9.90	65.12	-10.00	100.00
60	9.39	60.35	-10.00	100.00
65	9.63	55.50	-10.00	100.00
70	9.55	50.71	-10.00	100.00
75	8.95	46.09	-9.59	100.00
80	7.96	41.68	-8.50	110.17
85	8.61	36.88	-7.17	109.79
90	7.18	32.95	-5.95	128.74
95	6.33	29.12	-4.61	142.59
100	6.37	25.17	-3.02	149.83
105	6.30	21.71	-1.42	159.28
110	5.42	19.60	-0.31	178.79
115	5.58	17.65	0.83	183.40
120	5.37	17.32	1.04	187.15
125	6.19	17.37	1.00	176.76
130	6.63	19.13	-0.04	162.51
135	8.47	20.70	-0.90	136.34
140	9.88	22.47	-1.79	121.59
145	10.91	24.23	-2.61	110.67
150	11.43	26.10	-3.42	103.67
155	11.72	27.83	-4.11	100.00
160	11.69	29.51	-4.75	100.00
165	11.71	30.78	-5.21	100.00
170	11.72	31.70	-5.53	100.00
175	11.54	32.43	-5.77	100.00
180	11.61	32.54	-5.81	100.00
185	11.05	32.92	-5.94	100.00



# COMSEARCH

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### Coordination Values

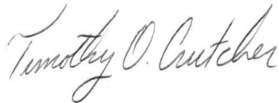
### AVON, CO

Licensee Name Public Broadcasting of Colorado, Inc.  
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Antenna Centerline (AGL) 9.75 m / 32.0 ft  
Antenna Mode Receive 4.0 GHz  
Interference Objectives: Long Term -156.0 dBW/MHz 20%  
Short Term -146.0 dBW/MHz 0.01%

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 4.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
190	10.31	33.08	-5.99	100.50
195	11.14	31.33	-5.40	100.00
200	12.03	29.18	-4.63	100.00
205	12.75	26.89	-3.74	100.00
210	14.22	23.61	-2.33	100.00
215	15.70	20.10	-0.58	100.00
220	14.33	18.81	0.14	100.29
225	13.21	18.07	0.58	109.60
230	11.64	19.16	-0.06	117.05
235	10.92	20.64	-0.87	118.23
240	11.03	22.38	-1.75	113.59
245	10.30	25.63	-3.22	112.25
250	10.22	28.89	-4.52	107.28
255	9.05	33.21	-6.03	110.59
260	8.09	37.54	-7.36	113.53
265	5.76	42.66	-8.75	132.47
270	4.98	46.99	-9.80	134.60
275	3.94	51.49	-10.00	149.17
280	3.15	55.90	-10.00	166.20
285	0.82	60.82	-10.00	230.25
290	0.00	65.18	-10.00	285.28
295	0.78	69.16	-10.00	232.32
300	1.96	73.21	-10.00	195.68
305	2.09	77.53	-10.00	192.51
310	2.52	81.86	-10.00	182.51
315	3.71	86.21	-10.00	153.79
320	4.74	90.67	-10.00	137.10
325	6.34	95.23	-10.00	121.51
330	7.41	99.85	-10.00	109.94
335	8.02	104.49	-10.00	103.60
340	8.57	109.14	-10.00	100.00
345	9.12	113.81	-10.00	100.00
350	8.78	118.29	-10.00	100.00
355	9.67	123.02	-10.00	100.00

## 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: March 12, 2018