

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
Pacific Public Media
TACOMA, WA
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
February 27, 2019

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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 this 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. Existing shielding by buildings or other structures were included OH loss calculations

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 and frequency separation are considered on the interfering paths, sufficient blockage or frequency separation exists to negate harmful interference from occurring with the proposed transmit-only earth station.

Company

City of Tacoma / Tacoma Public Utilities
King, County of
Northwest Pipeline GP
Puget Sound Energy, Inc
Puyallup, City of
Pierce County
Verizon Wireless (VAW) LLC - (WA)

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.

Company

Accel Net, Inc.
Bearclaw, LLC
Boeing Company
Cencom - Kitsap 911
CenturyTel of Cowiche, Inc.
CenturyTel of Washington, Inc.
City of Tacoma / Tacoma Public Utilities
Community Transit Snohomish County PTBA
Eastside Public Safety Com Agency
Frontier Communications Northwest Inc.
Grays Harbor, County of
Inland Cellular LLC
King County DOT Metro Transit Division
King, County of
McDaniel Cellular Telephone Company
New Cingular Wireless PCS LLC-Washington
Noel Communications, Inc.
Northwest Pipeline GP
Olympic Wireless, LLC
Pick Two LLC
Pierce County
Port of Seattle
Public Util Dist. #1 of Snohomish County
Puget Sound Energy, Inc
Puyallup, City of
Qwest Corporation
Seattle City Light
Seattle SMSA Limited Partnership
Seattle, City of
Silke Communications, Inc.
Skagit 911
Snohomish County Emergency Radio System
Startouch, Inc.
Thurston 9-1-1 Communications
Tribune Broadcasting Seattle, LLC
USCOC of Washington 4 Inc.
Verizon Wireless (VAW) LLC - (WA)
Washington State Military Dept, Emerg. M
Washington State of Dept of Transportat
Washington, State of
Whidbey Telephone Co
Yakima MSA Limited Partnership

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: 02/27/2019
Job Number: 190227COMSTC10

Administrative Information

Licensee Code FRI885
Licensee Name Pacific Public Media

Site Information

TACOMA, WA

Latitude (NAD 83) 47° 15' 15.3" N
Longitude (NAD 83) 122° 26' 26.6" W
Climate Zone A
Rain Zone 3
Ground Elevation (AMSL) 41.15 m / 135.0 ft

Link Information

Satellite Type Geostationary
Mode TO - Transmit-Only
Modulation Digital
Satellite Arc 58° W to 139° West Longitude
Azimuth Range 109.4° to 202.0°
Corresponding Elevation Angles 8.4° / 33.3°
Antenna Centerline (AGL) 16.15 m / 53.0 ft

Antenna Information

Transmit

Manufacturer PRODELIN CORPORATION
Model 1385
Gain / Diameter 46.0 dBi / 3.8 m
3-dB / 15-dB Beamwidth 1.00° / 2.00°

30K0G7W - 500KG7W

Max Available RF Power	(dBW/4 kHz)	-14.0	-14.0
	(dBW/MHz)	10.0	10.0
Maximum EIRP	(dBW/4 kHz)	32.0	32.0
	(dBW/MHz)	32.0	32.0
	(dBW)	40.75	52.97
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) 30K0G7W - 500KG7W / 5925.0 - 6078.47 Band Edges
30K0G7W - 500KG7W / 6088.67 - 6137.0 Band Edges
30K0G7W - 500KG7W / 6168.0 - 6211.0 Band Edges
30K0G7W - 500KG7W / 6242.0 - 6300.0 Band Edges
30K0G7W - 500KG7W / 6406.0 - 6425.0 Band Edges

Max Great Circle Coordination Distance 196.5 km / 122.1 mi
Precipitation Scatter Contour Radius 100.0 km / 62.1 mi

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Coordination Values

TACOMA, WA

Licensee Name Pacific Public Media
Latitude (NAD 83) 47° 15' 15.3" N
Longitude (NAD 83) 122° 26' 26.6" W
Ground Elevation (AMSL) 41.15 m / 135.0 ft
Antenna Centerline (AGL) 16.15 m / 53.0 ft
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 -14.0 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 6.1 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
0	0.00	109.14	-10.00	132.84
5	0.00	104.20	-10.00	132.84
10	0.54	99.27	-10.00	106.90
15	0.82	94.32	-10.00	100.00
20	0.88	89.36	-10.00	100.00
25	0.90	84.40	-10.00	100.00
30	0.85	79.45	-10.00	100.00
35	0.93	74.49	-10.00	100.00
40	0.78	69.55	-10.00	100.00
45	0.67	64.61	-10.00	100.87
50	0.80	59.65	-10.00	100.00
55	0.77	54.72	-10.00	100.00
60	0.68	49.80	-9.96	100.45
65	0.70	44.88	-8.98	102.40
70	0.62	40.00	-8.00	108.32
75	0.53	35.14	-7.03	115.16
80	0.52	30.31	-5.12	120.87
85	0.53	25.53	-3.21	126.00
90	0.30	20.93	-1.37	148.70
95	0.00	16.60	1.72	172.29
100	0.00	12.56	4.44	182.82
105	0.00	9.48	7.52	194.69
110	0.00	8.45	8.00	196.51
115	0.00	10.13	6.87	192.18
120	0.00	13.21	3.79	180.33
125	0.00	16.23	2.01	173.43
130	0.00	19.15	-0.32	162.77
135	0.33	21.64	-1.65	144.40
140	0.84	23.81	-2.52	113.65
145	0.71	26.30	-3.52	116.45
150	0.60	28.57	-4.43	119.05
155	0.73	30.35	-5.14	111.34
160	0.79	31.90	-5.76	106.65
165	0.71	33.27	-6.31	108.94
170	0.80	34.13	-6.65	103.95
175	0.89	34.61	-6.84	100.00
180	0.83	34.86	-6.94	101.70
185	0.84	34.66	-6.86	101.59

COMSEARCH

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Coordination Values

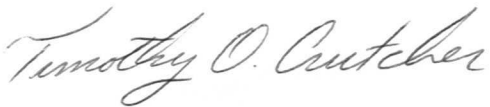
TACOMA, WA

Licensee Name	Pacific Public Media
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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	-14.0 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 6.1 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
190	1.24	33.70	-6.48	100.00
195	1.84	32.19	-5.87	100.00
200	2.17	31.22	-5.49	100.00
205	2.44	31.02	-5.41	100.00
210	2.72	31.53	-5.61	100.00
215	2.82	32.90	-6.16	100.00
220	2.99	34.81	-6.92	100.00
225	3.17	37.23	-7.45	100.00
230	3.34	40.09	-8.02	100.00
235	3.52	43.28	-8.66	100.00
240	3.69	46.74	-9.35	100.00
245	3.80	50.45	-10.00	100.00
250	3.93	54.31	-10.00	100.00
255	4.01	58.32	-10.00	100.00
260	3.99	62.45	-10.00	100.00
265	4.02	66.65	-10.00	100.00
270	4.10	70.88	-10.00	100.00
275	4.01	75.20	-10.00	100.00
280	4.06	79.52	-10.00	100.00
285	4.10	83.86	-10.00	100.00
290	3.99	88.22	-10.00	100.00
295	3.95	92.58	-10.00	100.00
300	3.86	96.92	-10.00	100.00
305	3.63	101.23	-10.00	100.00
310	3.46	105.51	-10.00	100.00
315	3.25	109.73	-10.00	100.00
320	3.01	113.88	-10.00	100.00
325	2.77	117.94	-10.00	100.00
330	2.43	121.86	-10.00	100.00
335	1.96	125.58	-10.00	100.00
340	1.36	129.00	-10.00	100.00
345	0.60	123.99	-10.00	103.93
350	0.00	119.01	-10.00	132.84
355	0.00	114.07	-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
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COMSEARCH
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DATED: February 27, 2019