

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
LBiSat LLC
EAGLE MTN, UT
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
May 06, 2021

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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 limited 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 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-only earth station.

Company
Utah, County of
Union Pacific Railroad Company
FIF Utah
Questar Infocomm

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 03/15/2021.

Company

AT&T Mobility Spectrum LLC - Utah
All West Communications, Inc.
Beehive Telephone Company, Inc.
Bonneville International Corporation
Brigham Young University
Broadway Media, LLC
Carbon County
Cellco Partnership - CO/ID/MT/WY/UT
Cellular, Inc. Financial Corporation
Citizens Telecommunications Co of Utah
City of Los Angeles Dept Water & Power
Deseret Generation and Transmission Coop
Emery County Sheriff's Office
FIF Utah LLC
Intermountain Health Care
KSB Industries, LLC
New Cingular Wireless PCS LLC-Utah
Nextel License Holdings 4 Inc.
Olympic Wireless, LLC
PacifiCorp
Questar Infocomm, Inc.
Qwest Corporation
Salt Lake County of
Salt Lake, County of
Sprint Spectrum L.P.
Sprintcom, Inc
T-Mobile License LLC
Tooele County Dept of Emergency Mgmt
Union Pacific Railroad Company
Utah Communications Authority
Utah Transit Authority, State of Utah
Utah, County of

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: 03/15/2021
Job Number: 210315COMSTC01

Administrative Information

Status ENGINEER PROPOSAL
Licensee Name LBiSat LLC

Site Information

EAGLE MTN, UT

Latitude (NAD 83) 40° 17' 8.0" N
Longitude (NAD 83) 112° 1' 26.2" W
Climate Zone A
Rain Zone 5
Ground Elevation (AMSL) 1478.93 m / 4852.1 ft

Link Information

Satellite Type Geostationary
Mode TO - Transmit-Only
Modulation Digital
Satellite Arc 55° W to 139° West Longitude
Azimuth Range 112.8° to 218.2°
Corresponding Elevation Angles 16.2° / 35.8°
Antenna Centerline (AGL) 3.0 m / 9.8 ft

Antenna Information

Transmit

Manufacturer GD
Model 1385
Gain / Diameter 46.8 dBi / 3.8 m
3-dB / 15-dB Beamwidth 0.80° / 1.60°

		<u>51K2G7W - 27M0G7W - 36M0G7W</u>		
Max Available RF Power	(dBW/4 kHz)	-16.0	-16.0	-16.0
	(dBW/MHz)	4.93	8.0	8.0
Maximum EIRP	(dBW/4 kHz)	30.8	30.8	30.8
	(dBW/MHz)	47.87	54.8	54.8
	(dBW)	47.87	69.09	70.34
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) 51K2G7W - 27M0G7W / 5925.0 - 5958.0 Band Edges
51K2G7W - 27M0G7W / 5990.0 - 6019.0 Band Edges
51K2G7W - 36M0G7W / 6050.0 - 6425.0 Band Edges

Max Great Circle Coordination Distance 134.7 km / 83.7 mi
Precipitation Scatter Contour Radius 100.0 km / 62.1 mi

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Coordination Values

EAGLE MTN, UT

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Antenna Centerline (AGL) 3.0 m / 9.8 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 -16.0 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 6.1 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
0	0.28	111.85	-10.00	120.71
5	0.24	107.06	-10.00	124.09
10	0.49	102.28	-10.00	104.01
15	0.59	97.47	-10.00	100.00
20	1.09	92.67	-10.00	100.00
25	1.63	87.83	-10.00	100.00
30	1.24	83.01	-10.00	100.00
35	1.49	78.17	-10.00	100.00
40	2.15	73.29	-10.00	100.00
45	2.17	68.46	-10.00	100.00
50	2.80	63.56	-10.00	100.00
55	2.95	58.72	-10.00	100.00
60	4.27	53.69	-10.00	100.00
65	4.97	48.75	-10.00	100.00
70	5.93	43.74	-9.02	100.00
75	6.76	38.75	-7.71	100.00
80	6.72	33.95	-6.27	100.00
85	6.82	29.18	-4.63	100.00
90	7.05	24.43	-2.70	100.00
95	6.52	20.15	-0.60	100.00
100	6.88	15.75	2.07	100.00
105	6.36	12.50	4.58	100.00
110	5.61	10.92	6.05	100.00
115	5.67	10.74	6.23	100.00
120	5.53	12.85	4.27	100.00
125	4.86	16.57	1.52	100.00
130	4.04	20.47	-0.78	100.00
135	3.24	24.23	-2.61	100.00
140	1.61	28.49	-4.37	100.00
145	1.45	31.44	-5.44	100.00
150	0.86	34.52	-6.45	100.00
155	0.54	37.10	-7.24	108.94
160	0.23	39.38	-7.88	131.03
165	0.00	41.21	-8.38	131.84
170	0.00	42.42	-8.69	131.00
175	0.00	43.16	-8.88	130.49
180	0.00	43.41	-8.94	130.33
185	0.00	43.16	-8.88	130.49

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Earth Station Data Sheet

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Coordination Values

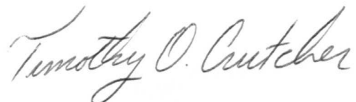
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Max Available RF Power -16.0 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 6.1 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
190	0.00	42.42	-8.69	131.00
195	0.00	41.21	-8.38	131.84
200	0.00	39.58	-7.94	133.02
205	0.00	37.84	-7.45	133.08
210	0.00	36.59	-7.08	134.07
215	0.00	35.91	-6.88	134.64
220	0.00	35.82	-6.85	134.71
225	0.00	36.34	-7.01	134.28
230	0.00	37.43	-7.33	133.40
235	0.00	39.05	-7.79	133.41
240	0.00	41.13	-8.35	131.89
245	0.00	43.60	-8.99	130.20
250	0.25	46.24	-9.63	124.72
255	0.33	49.29	-10.00	117.21
260	0.38	52.58	-10.00	112.75
265	0.38	56.08	-10.00	112.65
270	0.35	59.74	-10.00	115.18
275	0.46	63.46	-10.00	106.28
280	0.64	67.26	-10.00	100.00
285	0.78	71.17	-10.00	100.00
290	0.83	75.16	-10.00	100.00
295	0.82	79.21	-10.00	100.00
300	0.60	83.30	-10.00	100.00
305	0.39	87.39	-10.00	112.41
310	0.36	91.46	-10.00	114.67
315	0.38	95.53	-10.00	113.20
320	0.42	99.59	-10.00	110.05
325	0.42	103.63	-10.00	109.86
330	0.43	107.63	-10.00	109.04
335	0.44	111.57	-10.00	108.02
340	0.43	115.45	-10.00	108.64
345	0.43	119.24	-10.00	108.93
350	0.39	121.38	-10.00	111.79
355	0.35	116.62	-10.00	115.47

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
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DATED: May 06, 2021