FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for

Alaska Telecom, Inc.
Sedalia, Colorado

Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, Virginia 20147
November 30, 2011

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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, based upon the restrictions noted in the Summary of Results (Section 2).

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 most cases.

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 losses exist to negate harmful interference from occurring with the proposed transmit-receive earth station. Further, the transmit spectrum will be limited to frequencies 5925.0 to 5958.7 MHz, and 5991.0 to 6425.0 MHz.

Company

Colorado Springs Utilities
Qwest Corporation
Sangre de Christo Communications, Inc.
State of Colorado
Verizon Wireless – Mountain Region

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 October 29, 2011.

Company

AT&T COMMUNICATIONS OF MOUNTAIN STATES
Adcom 911
AirLife Denver
BNSF Railway Company
Black Hills Corporation
Boulder, County of
CBS Communications Services
CBS Television Stations
Cellular Inc. Network Corporation
City of Colorado Springs
Colorado Interstate Gas Company
Colorado Springs Utilities
ENTRAVISION HOLDINGS, LLC
FONES WEST DIGITAL SYSTEMS INC.
Gray Television Licensee, Inc. (KKTV)
Great Western Communications, LLC
Intermountain Rural Electric Association
International Communications Group, Inc.
METROPOLITAN AREA NETWORKS, INC.
MHO Networks
Multimedia Holdings Corporation
NE Colorado Cellular, Inc.
New Cingular Wireless PCS LLC -Colorado
Nex-Tech Wireless, LLC
Open Range Communications Inc., D-I-P
QWEST CORPORATION
SANGRE DE CRISTO COMMUNICATIONS, INC.
Smoky Hill Cellular of Colorado LP
Sprint Communications Company, LP
State of Colorado
Tri State Generation & Transmission
Verizon Wireless - Mountain Region

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:	11/30/2011
Job Number:	111029COMSJC01

Administrative Information

Status	ENGINEER PROPOSAL
Call Sign	
Licensee Code	S30800
Licensee Name	ALASKA TELECOM, INC.

Site Information — SEDALIA, COLORADO

Venue Name	
Latitude (NAD 83)	39° 22' 53.9" N
Longitude (NAD 83)	105° 2' 54.1" W
Climate Zone	A
Rain Zone	2
Ground Elevation (AMSL)	2159.51 m / 7085.0 ft

Link Information

Satellite Type	Geostationary
Mode	TR - Transmit-Receive
Modulation	Digital
Satellite Arc	60° W to 143° West Longitude
Azimuth Range	122.4° to 230.9°
Corresponding Elevation Angles	25.2° / 30.0°
Antenna Centerline (AGL)	9.75 m / 32.0 ft

Antenna Information	Receive	Transmit
Manufacturer	Vertex/RSI	Vertex/RSI
Model	9.2 Meter	9.2 Meter
Gain / Diameter	50.1 dBi / 9.2 m	53.6 dBi / 9.2 m
3-dB / 15-dB Beamwidth	0.52° / 1.07°	0.37° / 0.77°

				21K9G7W to 43M2G7W
Max Available RF Power	(dBW/4 kHz)			-2.7 -11.9
	(dBW/MHz)			4.7 12.1
Maximum EIRP	(dBW/4 kHz)			50.9 41.7
	(dBW/MHz)			58.3 65.7
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)	21K9G7W - 43M2G7W / 3700.0 - 4200.0	21K9G7W - 33M0G7W / 5925.0 - 5958.7 21K9G7W - 43M2G7W / 5991.0 - 6425.0
Max Great Circle Coordination Distance	325.8 km / 202.4 mi	193.3 km / 120.1 mi
Precipitation Scatter Contour Radius	495.1 km / 307.6 mi	100.0 km / 62.1 mi

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Coordination Values	**SEDALIA, CO**			
Licensee Name	ALASKA TELECOM, INC.			
Latitude (NAD 83)	39° 22' 53.9" N			
Longitude (NAD 83)	105° 2' 54.1" W			
Ground Elevation (AMSL)	2159.51 m / 7085.0 ft			
Antenna Centerline (AGL)	9.75 m / 32.0 ft			
Antenna Model	Vertex/RSI 9.2 Meter			
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			-2.7 (dBW/4 kHz)	

			Receive 4.0 GHz		Transmit 6.1 GHz	
Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
0	5.91	120.33	-10.00	126.07	-10.00	100.00
5	6.45	115.79	-10.00	120.25	-10.00	100.00
10	5.65	111.00	-10.00	128.57	-10.00	100.00
15	6.05	106.36	-10.00	124.65	-10.00	100.00
20	6.43	101.68	-10.00	120.48	-10.00	100.00
25	6.35	96.96	-10.00	121.34	-10.00	100.00
30	5.27	92.21	-10.00	132.24	-10.00	100.00
35	3.92	87.53	-10.00	149.57	-10.00	100.00
40	2.97	82.93	-10.00	172.24	-10.00	100.00
45	2.53	78.35	-10.00	182.43	-10.00	100.00
50	2.05	73.82	-10.00	193.40	-10.00	100.00
55	1.50	69.36	-10.00	205.60	-10.00	104.70
60	0.41	65.09	-10.00	259.61	-10.00	147.13
65	0.00	60.79	-10.00	285.28	-10.00	170.66
70	0.00	56.46	-10.00	285.28	-10.00	170.66
75	0.00	52.21	-10.00	285.28	-10.00	170.66
80	0.00	48.05	-10.00	285.28	-10.00	170.66
85	0.00	44.02	-9.09	291.12	-9.09	174.19
90	0.00	40.17	-8.10	297.67	-8.10	178.04
95	0.00	36.54	-7.07	304.60	-7.07	182.02
100	0.00	33.22	-6.03	311.76	-6.03	186.01
105	0.00	30.30	-5.04	319.42	-5.04	189.85
110	0.00	27.92	-4.15	325.78	-4.15	193.27
115	0.92	25.34	-3.09	265.46	-3.09	142.12
120	1.12	24.22	-2.61	259.16	-2.61	136.88
125	1.36	24.01	-2.51	251.04	-2.51	132.27
130	1.94	24.46	-2.71	230.49	-2.71	117.40
135	2.48	25.87	-3.32	213.45	-3.32	104.12
140	3.31	27.87	-4.13	194.31	-4.13	100.00
145	4.01	30.15	-4.98	174.90	-4.98	100.00
150	4.37	32.41	-5.77	162.66	-5.77	100.00
155	5.20	33.93	-6.26	147.66	-6.26	100.00
160	5.61	35.42	-6.73	141.05	-6.73	100.00
165	6.52	36.02	-6.91	131.83	-6.91	100.00
170	6.74	36.84	-7.16	128.44	-7.16	100.00
175	6.87	37.35	-7.31	126.51	-7.31	100.00
180	6.25	38.17	-7.54	132.26	-7.54	100.00
185	5.16	39.05	-7.79	141.15	-7.79	100.00

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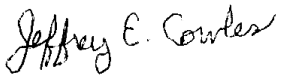
Antenna Model	Vertex/RSI 9.2 Meter			
Antenna Mode	Receive 4.0 GHz		Transmit 6.1 GHz	
Interference Objectives: Long Term	-156.0 dBW/MHz	20%	-154.0 dBW/4 kHz	20%
Short Term	-146.0 dBW/MHz	0.01%	-131.0 dBW/4 kHz	0.0025%
Max Available RF Power			-2.7 (dBW/4 kHz)	

			Receive 4.0 GHz		Transmit 6.1 GHz	
Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
190	4.34	39.19	-7.83	152.64	-7.83	100.00
195	4.65	37.80	-7.44	149.64	-7.44	100.00
200	5.95	35.10	-6.63	137.97	-6.63	100.00
205	6.59	32.70	-5.86	134.13	-5.86	100.00
210	6.25	30.82	-5.22	140.83	-5.22	100.00
215	6.00	28.53	-4.38	147.79	-4.38	100.00
220	5.62	26.58	-3.61	155.96	-3.61	100.00
225	5.12	25.55	-3.19	164.48	-3.19	100.00
230	4.75	25.29	-3.08	172.62	-3.08	100.00
235	4.50	25.84	-3.31	175.59	-3.31	100.00
240	4.25	27.24	-3.88	176.76	-3.88	100.00
245	3.90	29.47	-4.73	178.64	-4.73	100.00
250	4.21	31.74	-5.54	166.62	-5.54	100.00
255	4.70	34.42	-6.42	153.79	-6.42	100.00
260	4.93	37.72	-7.41	145.59	-7.41	100.00
265	4.91	41.45	-8.44	141.22	-8.44	100.00
270	4.20	45.72	-9.50	147.08	-9.50	100.00
275	4.18	49.76	-10.00	145.15	-10.00	100.00
280	4.37	53.86	-10.00	142.35	-10.00	100.00
285	4.11	58.20	-10.00	146.23	-10.00	100.00
290	3.97	62.55	-10.00	148.56	-10.00	100.00
295	4.04	66.91	-10.00	147.28	-10.00	100.00
300	3.87	71.35	-10.00	150.46	-10.00	100.00
305	5.46	75.60	-10.00	130.40	-10.00	100.00
310	4.75	80.18	-10.00	136.90	-10.00	100.00
315	4.02	84.73	-10.00	147.54	-10.00	100.00
320	4.15	89.22	-10.00	145.59	-10.00	100.00
325	3.85	93.71	-10.00	150.93	-10.00	100.00
330	2.62	98.10	-10.00	180.27	-10.00	100.00
335	2.61	102.52	-10.00	180.56	-10.00	100.00
340	2.77	106.94	-10.00	176.87	-10.00	100.00
345	3.22	111.40	-10.00	164.60	-10.00	100.00
350	3.22	115.75	-10.00	164.62	-10.00	100.00
355	4.91	120.53	-10.00	134.83	-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.



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DATED: November 30, 2011