FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for

BYU Broadcasting
Provo, Utah

Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, Virginia 20147
April 5, 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 offset 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 6175.0 to 6270.0 MHz, 6303.0 to 6359.0 MHz, and 6392.0 to 6425.0 MHz.

Company

None

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 March 6, 2011.

Company

All West Communications, Inc.
BEEHIVE TELEPHONE COMPANY INC
BONNEVILLE HOLDING COMPANY (KSL-TV)
Brigham Young University
Carbon County of Utah
Carbon/Emery Telecom, Inc.
Cellular, Inc. Financial Corporation
Citizens Telecommunications Co of Utah
DESERET GENERATION & TRANSMISSION COOP
Emery County Sheriff's Office
Emery Telcom Video LLC
Great Western Communications, LLC
Intermountain Health Care
International Communications Group, Inc.
Manti Telephone Company
NEXTEL LICENSE HOLDINGS 4 INC
New Cingular Wireless PCS LLC-Utah
New Cingular Wireless PCS, LLC (was WWC)
New Provo Cellular Telephone Company LLC
PACIFICORP
QWEST CORPORATION
Questar Infocomm, Inc.
SALT LAKE COUNTY OF
T-MOBILE LIC LLC - VOICESTREAM PCS BTA I
T-Mobile License LLC
TOOELE COUNTY DEPT OF EMERGENCY MGMT
UTAH COMMUNICATIONS AGENCY NETWORK
UTAH, COUNTY OF
UTAH, STATE OF
Union Telephone Company, Inc.
Utah Transit Authority, State of Utah
VERIZON WIRELESS (VAW)LLC - (UTAH)
Wasatch Utah RSA No. 2 Ltd 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:	04/05/2011
Job Number:	110306COMSJC01

Administrative Information

Status	ENGINEER PROPOSAL
Call Sign	
Licensee Code	BYUBRD
Licensee Name	BYU Broadcasting

Site Information — PROVO, UTAH

Venue Name	
Latitude (NAD 83)	40° 15' 16.9" N
Longitude (NAD 83)	111° 38' 52.3" W
Climate Zone	A
Rain Zone	5
Ground Elevation (AMSL)	1433.78 m / 4704.0 ft

Link Information

Satellite Type	Geostationary
Mode	TR - Transmit-Receive
Modulation	Digital
Satellite Arc	90° W to 92° West Longitude
Azimuth Range	148.4° to 151.1°
Corresponding Elevation Angles	38.4° / 39.2°
Antenna Centerline (AGL)	21.34 m / 70.0 ft

Antenna Information		Receive		Transmit	
Manufacturer		Andrew Corporation		Andrew Corporation	
Model		4.5 Meter		4.5 Meter	
Gain / Diameter		43.8 dBi / 4.5 m		46.6 dBi / 4.5 m	
3-dB / 15-dB Beamwidth		1.10° / 2.10°		0.80° / 1.50°	
Max Available RF Power	(dBW/4 kHz)			-16.3	
	(dBW/MHz)			7.7	
Maximum EIRP	(dBW/4 kHz)			30.3	
	(dBW/MHz)			54.3	
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)	10M5G7W / 3700.0 - 4200.0	10M5G7W / 6175.0 - 6270.0 10M5G7W / 6303.0 - 6359.0 10M5G7W / 6392.0 - 6425.0
Max Great Circle Coordination Distance	298.3 km / 185.3 mi	132.0 km / 82.0 mi
Precipitation Scatter Contour Radius	383.4 km / 238.2 mi	100.0 km / 62.1 mi

COMSEARCH

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Coordination Values	**PROVO, UT**			
Licensee Name	BYU Broadcasting			
Latitude (NAD 83)	40° 15' 16.9" N			
Longitude (NAD 83)	111° 38' 52.3" W			
Ground Elevation (AMSL)	1433.78 m / 4704.0 ft			
Antenna Centerline (AGL)	21.34 m / 70.0 ft			
Antenna Model	Andrew Corporation 4.5 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			-16.3 (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	1.94	133.28	-10.00	196.22	-10.00	100.00
5	2.56	130.65	-10.00	181.74	-10.00	100.00
10	3.61	127.93	-10.00	155.87	-10.00	100.00
15	4.58	124.85	-10.00	139.31	-10.00	100.00
20	6.10	121.72	-10.00	124.11	-10.00	100.00
25	7.18	118.13	-10.00	112.36	-10.00	100.00
30	8.74	114.46	-10.00	100.00	-10.00	100.00
35	11.08	110.71	-10.00	100.00	-10.00	100.00
40	13.20	106.64	-10.00	100.00	-10.00	100.00
45	13.73	102.20	-10.00	100.00	-10.00	100.00
50	14.84	97.74	-10.00	100.00	-10.00	100.00
55	15.40	93.17	-10.00	100.00	-10.00	100.00
60	13.64	88.59	-10.00	100.00	-10.00	100.00
65	12.20	84.12	-10.00	100.00	-10.00	100.00
70	11.44	79.71	-10.00	100.00	-10.00	100.00
75	12.87	75.10	-10.00	100.00	-10.00	100.00
80	17.79	69.88	-10.00	100.00	-10.00	100.00
85	18.64	65.11	-10.00	100.00	-10.00	100.00
90	19.91	60.24	-10.00	100.00	-10.00	100.00
95	19.11	55.79	-10.00	100.00	-10.00	100.00
100	17.59	51.67	-10.00	100.00	-10.00	100.00
105	15.11	48.16	-10.00	100.00	-10.00	100.00
110	14.98	44.04	-9.10	100.00	-9.10	100.00
115	15.46	39.77	-7.99	100.00	-7.99	100.00
120	14.11	36.71	-7.12	100.00	-7.12	100.00
125	12.76	34.18	-6.34	100.00	-6.34	100.00
130	11.75	32.00	-5.63	100.00	-5.63	100.00
135	10.53	30.68	-5.17	102.39	-5.17	100.00
140	8.47	30.97	-5.27	118.81	-5.27	100.00
145	6.36	32.18	-5.69	137.44	-5.69	100.00
150	4.01	34.40	-6.41	165.57	-6.41	100.00
155	0.91	37.95	-7.48	238.77	-7.48	100.00
160	0.00	39.82	-8.00	298.31	-8.00	132.03
165	0.00	41.24	-8.38	295.77	-8.38	131.01
170	0.00	42.88	-8.81	292.99	-8.81	129.88
175	0.00	44.91	-9.31	289.71	-9.31	128.54
180	0.00	47.31	-9.87	286.09	-9.87	127.05

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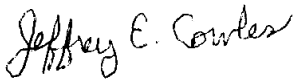
Antenna Mode	Receive 4.0 GHz		Transmit 6.1 GHz	
Interference Objectives: Long Term	-156.0 dBW/MHz	20%	-154.0 dBW/4 kHz	20%
Short Term	-146.0 dBW/MHz	0.01%	-131.0 dBW/4 kHz	0.0025%
Max Available RF Power			-16.3 (dBW/4 kHz)	

			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)
185	0.00	49.99	-10.00	285.28	-10.00	126.71
190	0.00	52.93	-10.00	285.28	-10.00	126.71
195	0.00	56.08	-10.00	285.28	-10.00	126.71
200	0.00	59.40	-10.00	285.28	-10.00	126.71
205	0.00	62.86	-10.00	285.28	-10.00	126.71
210	0.00	66.43	-10.00	285.28	-10.00	126.71
215	0.00	70.09	-10.00	285.28	-10.00	126.71
220	0.00	73.82	-10.00	285.28	-10.00	126.71
225	0.00	77.61	-10.00	285.28	-10.00	126.71
230	0.00	81.44	-10.00	285.28	-10.00	126.71
235	0.00	85.29	-10.00	285.28	-10.00	126.71
240	0.00	89.16	-10.00	285.28	-10.00	126.71
245	0.00	93.03	-10.00	285.28	-10.00	126.71
250	0.00	96.90	-10.00	285.28	-10.00	126.71
255	0.00	100.74	-10.00	285.28	-10.00	126.71
260	0.00	104.55	-10.00	285.28	-10.00	126.71
265	0.00	108.31	-10.00	285.28	-10.00	126.71
270	0.00	112.00	-10.00	285.28	-10.00	126.71
275	0.00	115.61	-10.00	285.28	-10.00	126.71
280	0.00	119.12	-10.00	285.28	-10.00	126.71
285	0.00	122.50	-10.00	285.28	-10.00	126.71
290	0.00	125.73	-10.00	285.28	-10.00	126.71
295	0.00	128.76	-10.00	285.28	-10.00	126.71
300	0.00	131.56	-10.00	285.28	-10.00	126.71
305	0.00	134.09	-10.00	285.28	-10.00	126.71
310	0.00	136.29	-10.00	285.28	-10.00	126.71
315	0.00	138.10	-10.00	285.28	-10.00	126.71
320	0.00	139.49	-10.00	285.28	-10.00	126.71
325	0.00	140.38	-10.00	285.28	-10.00	126.71
330	0.00	140.76	-10.00	285.28	-10.00	126.71
335	0.00	140.61	-10.00	285.28	-10.00	126.71
340	0.00	139.94	-10.00	285.28	-10.00	126.71
345	0.58	139.24	-10.00	244.66	-10.00	100.00
350	1.25	137.87	-10.00	212.66	-10.00	100.00
355	1.97	136.05	-10.00	195.42	-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.



Jeffrey E. Cowles
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COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, Va. 20147

DATED: April 5, 2011