

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for

**DG Consents Sub, Inc.
Rock Springs, Wyoming**

Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, Virginia 20147
July 15, 2014

TABLE OF CONTENTS

1. CONCLUSIONS	3
2. SUMMARY OF RESULTS	4
3. SUPPLEMENTAL SHOWING	5
4. EARTH STATION COORDINATION DATA.....	9
5. CERTIFICATION.....	13

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

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

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 emailed and sent to the below listed carriers with a letter dated May 14, 2014.

Company

3G Wireless, LLC
AERIAL VIDEO SYSTEMS
AIRWAVES, INC
America's Cup Event Authority, LLC
AT&T California
Alascom Inc
Ascent Media Network Services, LLC
Bellsouth Telecommunications, Inc.
Bonneville Holding Company
Bonneville International Corporation
Borgeson, Tom R.
Brigham Young University
Broadcast Sports Inc.
CBS Television Stations
CENTRAL WYOMING COLLEGE/PUBLIC TELEVISIO
CNG Communications, Inc.
Carolina Telephone and Telegraph Co
Casper, John
CenturyTel of the Southwest, Inc.
Chicago Comnet Corp
Cincinnati Bell Wireless LLC
Circuit of the Americas, LLC
Citywide News Network, Inc.
Cohen, Elana
Compass Communications of Idaho, Inc.
Cowboys Stadium LP
CP Communications, LLC
DCI II, INC.
Direct Broadcast Services, Inc.
Entravision Holdings, LLC
Excalibur Grand Junction LLC
Express Lane Traffic LLC
Fishman Brothers Enterprises
GOODYEAR TIRE AND RUBBER COMPANY
GRAY TELEVISION LICENSEE, INC. (KKCO)

Company (Continued)

GSN New, Inc
Global Microwave Systems Inc
Gray Television Licensee LLC (Gray TV)
Gray Television Licensee, LLC
HF Enterprises, Inc
Hallco Unlimited, Inc.
Hawaiian Telcom, Inc.
Heiden, William
IRON COUNTY UTAH
Idaho Broadcast Partners, LLC
Illinois Bell Telephone Company
Indiana Bell Telephone Company
Information & Display Systems, Inc.
Information Super Station, LLC
International Communications Group, Inc.
KRCA License LLC
KSTU License, LLC
KUTV Licensee, LLC
Kentucky RSA #3 Cellular General Partner
Kentucky RSA #4 Cellular General Partner
Lancellotti, Inc
Loop Inc.
MERCURY COMMUNICATIONS
Metro Networks Communications, Inc.
Metrosat Communications Inc.
Michigan Bell Telephone Company
Microwave Video Systems, LLC
Mission Broadcasting, Inc.
Moreen, Steven K
Multimedia Holdings Corporation
NEW ENGLAND DIGITAL DISTRIBUTION, INC.
NEW ENGLAND SATELLITE SYSTEMS INC
NEXSTAR BROADCASTING, INC.
NPG OF IDAHO, INC.
NSM Surveillance
Navajo Communications Company
Neuhoff Family Limited Partnership
New Rushmore Radio, Inc.
NorthWest Suburbs Community Access Corp
Ohio Bell Telephone Company
On Scene Video Production
Onboard Images
Pacific Television Center
Penn Service Microwave Co., Inc.
Pikes Peak Radio, LLC
Pikes Peak Television, Inc.
Plateau Telecommunications, Inc.
Plum Media, LLC
Plum TV, LLC
Production & Satellite Services, Inc.
Public Television Communications Center

Company (Continued)

QUICK LINK CONNECTIONS INC
Qwest Corporation
RCC Minnesota Inc. - MN NE ND SD
REMOTE FACILITIES CONSULTING SERVICES
RF Central, LLC
RF Film, Inc
RF Technology, LLC
Radiofone, Inc.
Randy Hermes Production
Regulus Media Services, Inc.
Remote Broadcasts, Inc.
Rocky Mountain Public Broadcasting Netwo
Rushmore Media Company, Inc
SILVERTON BROADCASTING COMPANY, LLC
SILVERTON BROADCASTING COMPANY, LLC
Scripps Media, Inc. - KMGH TV
Southwestern Bell Telephone L.P.
Speedshotz, Inc
Steinert, Christine
Telemovil del Caribe Inc.
Total RF Marketing Inc
Tribune Broadcasting Denver License, LLC
Unisat, Inc.
United Telephone - Southeast
VERIZON SOUTH INC.
Verizon California Inc.
Verizon Maryland, Inc.
Verizon New England Inc.
Verizon New Jersey, Inc.
Verizon New York, Inc.
Verizon North Inc.
Verizon Northwest Inc.
Verizon Pennsylvania, Inc.
Verizon Virginia, Inc.
Verizon Washington DC, Inc.
Village Video Productions Inc
Vistawest Media, LLC
Vyvx, LLC
Westar Satellite Services LP
Western Technical Services
Wexler Video, Inc.
Winged Vision Inc
Wisconsin Bell, Inc.
Wolfe Air Aviation
Yellowstone Licenseco LLC

Society of Broadcast Engineers (SBE)

Utah – SLC Region (Mr. John Dehnel)
Wyoming – Entire State (Mr. Robert Spain)
Idaho - SW Region (Mr. Jeff Hoffert)
Idaho – SE Region (Mr. David Turnmire)
Idaho – So. Central Region (Mr. Thomas Lowther)
Colorado – Front Range (Mr. James Schoedler)
Colorado – Western Slope (Mr. Robert Bowe)
Nevada – Reno Region (Mr. Steve Weber)
Montana – Billings Area (Mr. Randall Rocks)

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: 07/15/2014
Job Number: 140514COMSJC06

Administrative Information

Status ENGINEER PROPOSAL
Call Sign E120040
Licensee Code DBCONS
Licensee Name DG Consents Sub, Inc.

Site Information

ROCK SPRINGS, WYOMING

Venue Name
Latitude (NAD 83) 41° 32' 12.0" N
Longitude (NAD 83) 109° 21' 11.0" W
Climate Zone A
Rain Zone 5
Ground Elevation (AMSL) 1889.76 m / 6200.0 ft

Link Information

Satellite Type Low Earth Orbit
Mode TO - Transmit-Only
Modulation Analog and Digital
Minimum Elevation Angle 5.0°
Azimuth Range 0.0° to 360°
Antenna Centerline (AGL) 4.88 m / 16.0 ft

Antenna Information

Manufacturer ViaSat
Model 3420
Gain / Diameter 41.0 dBi / 7.3 m
3-dB / 15-dB Beamwidth 1.54° / 2.90°

Transmit

NON 68K0G2D 1M32G1D

Max Available RF Power	(dBW/4 kHz)	20.0	7.7	-5.2
	(dBW/MHz)	44.0	31.7	18.8
Maximum EIRP	(dBW/4 kHz)	61.0	48.7	35.8
	(dBW/MHz)	85.0	72.7	59.8
	(dBW)	61.0	61.0	61.0
Interference Objectives:	Long Term	-154.0 dBW/4 kHz	20%	
	Short Term	-131.0 dBW/4 kHz	0.0025%	

Frequency Information

Transmit 2.0 GHz

Emission / Frequency Range (MHz)
NON / 2042.0
68K0G2D / 2042.0
NON / 2052.0
68K0G2D / 2052.0
1M32G1D / 2052.0
1M32G1D / 2085.6875
NON / 2092.6
1M32G1D / 2092.6

Max Great Circle Coordination Distance 470.8 km / 292.5 mi
Precipitation Scatter Contour Radius 319.6 km / 198.6 mi

COMSEARCH

Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147
(703)726-5500 <http://www.comsearch.com>

Coordination Values

ROCK SPRINGS, WY

Licensee Name DG Consents Sub, Inc.
Latitude (NAD 83) 41° 32' 12.0" N
Longitude (NAD 83) 109° 21' 11.0" W
Ground Elevation (AMSL) 1889.76 m / 6200.0 ft
Antenna Centerline (AGL) 4.88 m / 16.0 ft
Antenna Model ViaSat 3420
Antenna Mode Transmit 2.0 GHz
Interference Objectives: Long Term -154.0 dBW/4 kHz 20%
Short Term -131.0 dBW/4 kHz 0.0025%
Max Available RF Power 20.0 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 2.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
0	0.00	77.90	9.00	470.80
5	0.00	73.30	9.00	470.80
10	0.00	68.72	9.00	470.80
15	0.00	64.18	9.00	470.80
20	0.00	59.67	9.00	470.80
25	0.00	55.21	9.00	470.80
30	0.00	50.82	9.00	470.80
35	0.00	46.51	9.00	470.80
40	0.00	42.32	9.00	470.80
45	0.00	38.28	9.00	470.80
50	0.00	34.46	9.00	470.80
55	0.00	30.92	9.00	470.80
60	0.00	27.79	9.00	470.80
65	0.00	25.22	9.00	470.80
70	0.00	23.39	9.00	470.80
75	0.00	22.48	9.00	470.80
80	0.00	22.60	9.00	470.80
85	0.00	23.75	9.00	470.80
90	0.00	25.78	9.00	470.80
95	0.00	28.51	9.00	470.80
100	0.00	31.75	9.00	470.80
105	0.00	35.36	9.00	470.80
110	0.00	39.25	9.00	470.80
115	0.00	43.33	9.00	470.80
120	0.00	47.55	9.00	470.80
125	0.00	51.88	9.00	470.80
130	0.00	56.29	9.00	470.80
135	0.00	60.76	9.00	470.80
140	0.00	65.28	9.00	470.80
145	0.00	69.84	9.00	470.80
150	0.00	74.42	9.00	470.80
155	0.00	79.02	9.00	470.80
160	0.00	83.63	9.00	470.80
165	0.00	88.25	9.00	470.80
170	0.00	92.87	9.00	470.80
175	0.00	97.49	9.00	470.80
180	0.00	102.10	9.00	470.80

COMSEARCH

Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147
(703)726-5500 <http://www.comsearch.com>

Coordination Values

ROCK SPRINGS, WY

Licensee Name DG Consents Sub, Inc.
Latitude (NAD 83) 41° 32' 12.0" N
Longitude (NAD 83) 109° 21' 11.0" W
Ground Elevation (AMSL) 1889.76 m / 6200.0 ft
Antenna Centerline (AGL) 4.88 m / 16.0 ft
Antenna Model ViaSat 3420
Antenna Mode Transmit 2.0 GHz
Interference Objectives: Long Term -154.0 dBW/4 kHz 20%
Short Term -131.0 dBW/4 kHz 0.0025%
Max Available RF Power 20.0 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 2.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
185	0.00	106.70	9.00	470.80
190	0.00	111.28	9.00	470.80
195	0.00	115.82	9.00	470.80
200	0.00	120.33	9.00	470.80
205	0.00	124.79	9.00	470.80
210	0.00	129.18	9.00	470.80
215	0.00	133.49	9.00	470.80
220	0.00	137.68	9.00	470.80
225	0.00	141.72	9.00	470.80
230	0.00	145.54	9.00	470.80
235	0.00	149.08	9.00	470.80
240	0.00	152.21	9.00	470.80
245	0.00	154.78	9.00	470.80
250	0.00	156.62	9.00	470.80
255	0.00	157.52	9.00	470.80
260	0.00	157.40	9.00	470.80
265	0.00	156.25	9.00	470.80
270	0.00	154.22	9.00	470.80
275	0.00	151.49	9.00	470.80
280	0.00	148.25	9.00	470.80
285	0.00	144.64	9.00	470.80
290	0.00	140.75	9.00	470.80
295	0.00	136.68	9.00	470.80
300	0.00	132.45	9.00	470.80
305	0.00	128.12	9.00	470.80
310	0.00	123.71	9.00	470.80
315	0.00	119.24	9.00	470.80
320	0.00	114.72	9.00	470.80
325	0.00	110.16	9.00	470.80
330	0.00	105.58	9.00	470.80
335	0.00	100.98	9.00	470.80
340	0.00	96.37	9.00	470.80
345	0.00	91.75	9.00	470.80
350	0.00	87.13	9.00	470.80
355	0.00	82.51	9.00	470.80

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
Engineer III, Telecommunications
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, Va. 20147

DATED: July 15, 2014