FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
Sirius XM Radio Inc.
ELLENWOOD, GA
(7.2 Meter)
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
March 18, 2013

TABLE OF CONTENTS

1. CONCLUSIONS

An interference study considering all existing, proposed and prior coordinated microwave facilities within the coordination contours of the existing 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 modifications to the existing 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 modifications to the existing transmit-receive earth station.

Company

COMMUNITY TELEVISION, INC.
Pacific and Southern Company, Inc.
Trinity Broadcasting Network Inc

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 02/14/2013.

Company
3G Wireless, LLC
AERIAL VIDEO SYSTEMS
AT&T California
ATLANTA TELEVISION STATION WUPA INC
Alascom Inc
American Broadcasting Companies, Inc.
Ascent Media Network Services, LLC
Bellsouth Telecommunications, Inc.
Borgeson, Tom R.
Broadcast Sports Inc.
CNG Communications, Inc.
COMMUNITY TELEVISION, INC.
Carolina Telephone and Telegraph Co
Casper, John
CenturyTel of the Southwest, Inc.
Chicago Comnet Corp
Cincinnati Bell Wireless LLC
Citywide News Network, Inc.
Cohen, Elana
Cowboys Stadium LP
DCI II, INC.
Direct Broadcast Services, Inc.
GOODYEAR TIRE AND RUBBER COMPANY
GSN New, Inc
Georgia Television Company
Global Microwave Systems Inc
HF Enterprises, Inc
Hallco Unlimited, Inc.
Hawaiian Telcom, Inc.
Heiden, William
ION MEDIA ATLANTA LICENSE, INC.
Illinois Bell Telephone Company
Indiana Bell Telephone Company
Information & Display Systems, Inc.
Information Super Station, LLC
International Communications Group, Inc.
Kentucky RSA #3 Cellular General Partner
Kentucky RSA #4 Cellular General Partner
MERCURY COMMUNICATIONS
MEREDITH CORPORATION - WGCL-TV
Metro Networks Communications, Inc.
Michigan Bell Telephone Company
Moreen, Steven K

NEW ENGLAND DIGITAL DISTRIBUTION, INC.
NEW ENGLAND SATELLITE SYSTEMS INC
NSM Surveillance
Navajo Communications Company
New World Communications of Atlanta, Inc
NorthWest Suburbs Community Access Corp
Ohio Bell Telephone Company
On Scene Video Production
Onboard Images
Pacific and Southern Company, Inc.
Penn Service Microwave Co., Inc.
Plateau Telecommunications, Inc.
Plum TV, LLC
Production & Satellite Services, Inc.
Public Television Communications Center
QUICK LINK CONNECTIONS INC
QWEST CORPORATION
RCC Minnesota Inc. - MN NE ND SD
REMOTE FACILITIES CONSULTING SERVICES
RF Central, LLC
RF Film, Inc
Radiofone, Inc.
Randy Hermes Production
Regulus Media Services, Inc.
Remote Broadcasts, Inc.
Sagamorehill Broadcasting of Georgia,LLC
SBE Regional Coordinator
Southwestern Bell Telephone L.P.
Speedshotz, Inc
Total RF Marketing Inc
Trinity Broadcasting Network Inc
UNIVERSITY OF GEORGIA
UNIVISION ATLANTA, 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
Vyvx, LLC
WTVM License Subsidiary, LLC
Westar Satellite Services LP
Western Technical Services
Wexler Video, Inc.
Winged Vision Inc
Wisconsin Bell, Inc.
Wolfe Air Aviation

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:	03/15/2013
Job Number:	130214COMSGE02

Administrative Information

Status	ENGINEER PROPOSAL
Call Sign	E040204
Licensee Code	SIRSAT
Licensee Name	Sirius XM Radio Inc.

Site Information — ELLENWOOD, GA

Venue Name	
Latitude (NAD 83)	33° 39' 51.0" N
Longitude (NAD 83)	84° 16' 24.0" W
Climate Zone	A
Rain Zone	1
Ground Elevation (AMSL)	242.32 m / 795.0 ft

Link Information

Satellite Type	Geostationary
Mode	TR - Transmit-Receive
Modulation	Digital
Satellite Arc	80° W to 120° West Longitude
Azimuth Range	172.3° to 232.4°
Corresponding Elevation Angles	50.6° / 35.4°
Antenna Centerline (AGL)	4.57 m / 15.0 ft

Antenna Information		Receive – FCC 32		Transmit - FCC32	
Manufacturer		Vertex		Vertex	
Model		KPCX/KPKX		KPCX/KPKX	
Gain / Diameter		42.1 dBi / 7.2 m		52.4 dBi / 7.2 m	
3-dB / 15-dB Beamwidth		1.30° / 2.60°		0.40° / 0.80°	
Max Available RF Power	(dBW/4 kHz)			1.0	
	(dBW/MHz)			25.0	
Maximum EIRP	(dBW/4 kHz)			53.4	
	(dBW/MHz)			77.4	
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 2.0 GHz	Transmit 7.0 GHz
Emission / Frequency Range (MHz)	100KG2D – 1M84G1W / 2332.5 – 2345.0	800KF2D – 1M84G1E / 7040.0 – 7075.0
Max Great Circle Coordination Distance	293.8 km / 182.5 mi	187.5 km / 116.5 mi
Precipitation Scatter Contour Radius	556.0 km / 345.4 mi	202.0 km / 125.5 mi

COMSEARCH

Earth Station Data Sheet

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

Coordination Values	**ELLENWOOD, GA**			
Licensee Name	Sirius XM Radio Inc.			
Latitude (NAD 83)	33° 39' 51.0" N			
Longitude (NAD 83)	84° 16' 24.0" W			
Ground Elevation (AMSL)	242.32 m / 795.0 ft			
Antenna Centerline (AGL)	4.57 m / 15.0 ft			
Antenna Model	Vertex 7.2 Meter			
Antenna Mode	Receive 2.0 GHz		Transmit 7.0 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			1.0 (dBW/4 kHz)	

			Receive 2.0 GHz		Transmit 7.0 GHz	
Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
0	5.11	121.80	-10.00	133.80	-10.00	100.00
5	4.84	125.66	-10.00	135.72	-10.00	100.00
10	4.12	129.14	-10.00	145.99	-10.00	100.00
15	3.01	128.49	-10.00	171.30	-10.00	100.00
20	1.66	125.58	-10.00	203.61	-10.00	111.86
25	1.08	123.13	-10.00	217.86	-10.00	126.81
30	0.31	120.38	-10.00	271.85	-10.00	173.50
35	0.39	118.07	-10.00	262.26	-10.00	163.21
40	0.32	115.49	-10.00	270.06	-10.00	171.90
45	0.41	112.85	-10.00	259.84	-10.00	161.03
50	0.46	110.05	-10.00	254.32	-10.00	156.09
55	0.56	107.15	-10.00	246.13	-10.00	149.03
60	0.53	104.12	-10.00	247.61	-10.00	150.31
65	0.48	101.01	-10.00	251.90	-10.00	153.95
70	0.33	97.84	-10.00	269.06	-10.00	171.01
75	0.30	94.67	-10.00	273.02	-10.00	174.52
80	0.00	91.48	-10.00	285.28	-10.00	184.99
85	0.55	88.28	-10.00	246.43	-10.00	149.29
90	0.86	85.05	-10.00	228.09	-10.00	133.95
95	0.97	81.83	-10.00	221.71	-10.00	130.03
100	1.10	78.63	-10.00	217.21	-10.00	126.27
105	0.92	75.55	-10.00	224.37	-10.00	132.21
110	0.86	72.53	-10.00	228.11	-10.00	133.96
115	0.95	69.53	-10.00	222.73	-10.00	130.87
120	1.12	66.60	-10.00	216.66	-10.00	125.80
125	1.15	63.85	-10.00	215.81	-10.00	125.07
130	1.44	61.08	-10.00	207.30	-10.00	117.51
135	1.99	58.27	-10.00	194.68	-10.00	103.70
140	2.60	55.56	-10.00	180.72	-10.00	100.00
145	1.94	54.06	-10.00	196.18	-10.00	105.05
150	1.36	52.84	-10.00	209.55	-10.00	119.57
155	1.16	51.62	-10.00	215.44	-10.00	124.75
160	1.06	50.65	-10.00	218.42	-10.00	127.29
165	1.20	49.79	-10.00	214.25	-10.00	123.72
170	0.99	49.64	-10.00	220.94	-10.00	129.39
175	0.75	49.89	-10.00	234.46	-10.00	139.15
180	0.68	50.18	-10.00	238.29	-10.00	142.34
185	0.56	49.99	-10.00	246.06	-10.00	148.98

COMSEARCH

Earth Station Data Sheet

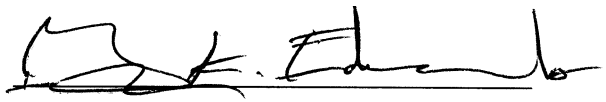
19700 Janelia Farm Boulevard, Ashburn, VA 20147
(703)726-5500 http://www.comsearch.com

Coordination Values	**ELLENWOOD, GA**			
Licensee Name	Sirius XM Radio Inc.			
Latitude (NAD 83)	33° 39' 51.0" N			
Longitude (NAD 83)	84° 16' 24.0" W			
Ground Elevation (AMSL)	242.32 m / 795.0 ft			
Antenna Centerline (AGL)	4.57 m / 15.0 ft			
Antenna Model	Vertex 7.2 Meter			
Antenna Mode	Receive 2.0 GHz		Transmit 7.0 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			1.0 (dBW/4 kHz)	

			Receive 2.0 GHz		Transmit 7.0 GHz	
Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
190	0.64	49.01	-10.00	240.90	-10.00	144.55
195	0.82	47.38	-9.89	230.86	-9.89	136.07
200	0.94	45.31	-9.41	226.34	-9.41	133.16
205	1.11	42.80	-8.79	223.13	-8.79	130.00
210	0.66	40.57	-8.20	249.78	-8.20	150.00
215	0.54	38.48	-7.63	261.23	-7.63	159.12
220	0.48	36.81	-7.15	269.46	-7.15	165.77
225	0.41	35.69	-6.81	280.19	-6.81	176.27
230	0.40	35.10	-6.63	282.52	-6.63	177.99
235	0.36	35.15	-6.65	287.07	-6.65	181.79
240	0.29	35.85	-6.86	293.80	-6.86	187.53
245	0.46	36.90	-7.18	271.87	-7.18	169.57
250	0.64	38.49	-7.63	254.81	-7.63	153.53
255	1.09	40.34	-8.14	226.91	-8.14	132.48
260	1.19	42.91	-8.81	220.49	-8.81	127.86
265	1.04	45.97	-9.56	221.27	-9.56	129.18
270	1.02	49.19	-10.00	219.57	-10.00	128.25
275	1.17	52.54	-10.00	215.09	-10.00	124.45
280	1.34	56.07	-10.00	210.20	-10.00	120.15
285	1.48	59.76	-10.00	206.18	-10.00	116.48
290	1.97	63.46	-10.00	195.37	-10.00	104.32
295	2.20	67.38	-10.00	189.97	-10.00	100.00
300	2.96	71.26	-10.00	172.42	-10.00	100.00
305	3.91	75.25	-10.00	149.68	-10.00	100.00
310	4.31	79.43	-10.00	143.14	-10.00	100.00
315	5.57	83.61	-10.00	129.35	-10.00	100.00
320	6.84	87.91	-10.00	116.06	-10.00	100.00
325	7.53	92.32	-10.00	108.73	-10.00	100.00
330	8.00	96.76	-10.00	103.78	-10.00	100.00
335	8.06	101.19	-10.00	103.24	-10.00	100.00
340	7.95	105.58	-10.00	104.33	-10.00	100.00
345	8.26	110.01	-10.00	101.47	-10.00	100.00
350	6.96	114.05	-10.00	114.80	-10.00	100.00
355	6.24	118.08	-10.00	122.63	-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.

BY: _ 

Gary K. Edwards
Senior Manager
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147

DATED: March 18, 2013