

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
XM RADIO, INC
ELLENWOOD, GA
(Call Sign E040204)
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
October 15, 2010

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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. 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.

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 09/17/2010.

Company

ALABAMA EDUCATIONAL TELEVISION COMMISSIO
ATLANTA TELEVISION STATION WUPA INC
American Broadcasting Companies, Inc.
COMMUNITY TELEVISION, INC.
Georgia Public Telecomm. Commission
Georgia Television Company
ION MEDIA ATLANTA LICENSE, INC.
MEDIA GENERAL COMMUNICATIONS HOLDINGS, L
MEREDITH CORPORATION
MEREDITH CORPORATION - WGCL-TV
New World Communications of Atlanta, Inc
Pacific and Southern Company, Inc.
SOUTH CAROLINA EDUCATIONAL TELEVISION CO
TV ALABAMA, INC. - WCFT-TV
Trinity Broadcasting Network Inc
UGARF Media Holding, LLC
UNIVISION ATLANTA, LLC
WBRC License Subsidiary, LLC
SBE Coordinator Atlanta Area

3G Wireless, LLC
Broadcast Sports Corp
Broadcast Sports Enterprises Inc.
Casper, John
Citywide News Network, Inc.
Cohen, Elana
FISHMAN BROTHERS ENTERPRISES
GOODYEAR TIRE AND RUBBER COMPANY
Heiden Mr, William
Information Super Station LLC
NSM Surveillance
Onboard Images
Production & Satellite Services, Inc.
Regulus Media Services, Inc.
REMOTE FACILITIES CONSULTING SERVICES
RF Film, Inc
RF Technology, LLC
Total RF Marketing Inc
Universal Satellite Communications Inc.
Village Video Productions Inc
WOLFE AIR AVIATION
Wexler Video, Inc.
Winged Vision Inc

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: 10/15/2010
Job Number: 100917COMSGE01

Administrative Information

Status ENGINEER PROPOSAL
Call Sign E040204
Licensee Code XMSRAD
Licensee Name 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 - FCC32		Transmit - FCC32	
Manufacturer		Vertex RSI		Vertex RSI	
Model		7.2 Meter		7.2 Meter	
Gain / Diameter		41.8 dBi / 7.2 m		52.4 dBi / 7.2 m	
3-dB / 15-dB Beamwidth		0.50° / 1.00°		0.20° / 0.40°	
Max Available RF Power	(dBW/4 kHz) (dBW/MHz)			-1.0 23.0	
Maximum EIRP	(dBW/4 kHz) (dBW/MHz)			51.4 75.4	
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)	1M84G1E / 2332.5 – 2345.0 100KG2D / 2332.5 – 2345.0	800KF2D / 7042.6 – 7074.4 1M84G1E / 7056.845 – 7074.869

Max Great Circle Coordination Distance 303.0 km / 188.3 mi 187.7 km / 116.6 mi
Precipitation Scatter Contour Radius 556.0 km / 345.4 mi 159.4 km / 99.0 mi

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Coordination Values

ELLENWOOD, GA

Licensee Name 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 RSI 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)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 2.0 GHz		Transmit 7.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
0	4.50	121.58	-10.00	140.47	-10.00	100.00
5	4.50	125.51	-10.00	140.47	-10.00	100.00
10	3.59	128.87	-10.00	156.39	-10.00	100.00
15	2.30	127.87	-10.00	187.71	-10.00	100.00
20	1.66	125.58	-10.00	203.61	-10.00	105.73
25	0.97	123.05	-10.00	221.71	-10.00	123.92
30	0.00	120.17	-10.00	285.28	-10.00	177.26
35	0.00	117.83	-10.00	285.28	-10.00	177.26
40	0.28	115.47	-10.00	275.38	-10.00	168.65
45	0.34	112.81	-10.00	268.10	-10.00	160.56
50	0.35	110.00	-10.00	266.48	-10.00	159.14
55	0.42	107.10	-10.00	259.11	-10.00	152.76
60	0.41	104.08	-10.00	260.10	-10.00	153.61
65	0.40	100.99	-10.00	260.77	-10.00	154.18
70	0.30	97.84	-10.00	272.68	-10.00	164.61
75	0.29	94.67	-10.00	274.62	-10.00	167.98
80	0.00	91.48	-10.00	285.28	-10.00	177.26
85	0.39	88.29	-10.00	262.27	-10.00	155.48
90	0.65	85.07	-10.00	240.08	-10.00	137.20
95	0.72	81.87	-10.00	235.91	-10.00	133.94
100	0.55	78.76	-10.00	246.61	-10.00	142.44
105	0.70	75.62	-10.00	237.15	-10.00	134.90
110	0.81	72.55	-10.00	230.99	-10.00	131.38
115	0.85	69.58	-10.00	228.25	-10.00	129.22
120	1.00	66.66	-10.00	220.44	-10.00	122.86
125	1.05	63.91	-10.00	218.88	-10.00	121.56
130	0.97	61.38	-10.00	221.87	-10.00	124.05
135	1.26	58.78	-10.00	212.35	-10.00	115.93
140	1.85	56.13	-10.00	198.54	-10.00	101.07
145	1.68	54.27	-10.00	203.16	-10.00	105.31
150	1.20	52.98	-10.00	214.21	-10.00	117.56
155	1.12	51.65	-10.00	216.47	-10.00	119.51
160	1.06	50.65	-10.00	218.42	-10.00	121.17
165	1.20	49.79	-10.00	214.25	-10.00	117.59
170	0.95	49.67	-10.00	222.75	-10.00	124.77
175	0.72	49.93	-10.00	236.31	-10.00	134.25
180	0.68	50.18	-10.00	238.29	-10.00	135.79
185	0.51	50.04	-10.00	249.03	-10.00	144.42

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Coordination Values

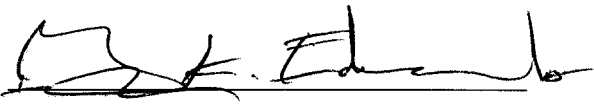
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Short Term -146.0 dBW/MHz 0.01% -131.0 dBW/4 kHz 0.0025%
Max Available RF Power -1.0 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 2.0 GHz		Transmit 7.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
190	0.60	49.05	-10.00	243.67	-10.00	140.07
195	0.56	47.61	-9.94	246.50	-9.94	142.27
200	0.94	45.31	-9.41	226.34	-9.41	127.00
205	1.11	42.80	-8.79	223.13	-8.79	123.66
210	0.62	40.60	-8.21	252.62	-8.21	144.83
215	0.51	38.51	-7.64	263.43	-7.64	152.98
220	0.47	36.82	-7.15	270.41	-7.15	158.23
225	0.41	35.69	-6.81	280.19	-6.81	167.85
230	0.39	35.11	-6.63	283.08	-6.63	170.10
235	0.34	35.17	-6.65	289.05	-6.65	175.23
240	0.27	35.87	-6.87	297.03	-6.87	182.18
245	0.00	37.33	-7.30	303.02	-7.30	187.68
250	0.20	38.87	-7.74	299.84	-7.74	185.82
255	0.32	40.97	-8.31	281.62	-8.31	171.47
260	0.42	43.47	-8.95	264.77	-8.95	156.09
265	0.35	46.43	-9.67	268.29	-9.67	160.23
270	0.70	49.39	-10.00	237.21	-10.00	134.95
275	0.88	52.69	-10.00	226.80	-10.00	128.06
280	1.01	56.22	-10.00	220.13	-10.00	122.60
285	1.34	59.82	-10.00	210.09	-10.00	113.92
290	1.97	63.46	-10.00	195.37	-10.00	100.00
295	1.80	67.49	-10.00	199.98	-10.00	102.38
300	2.70	71.32	-10.00	178.50	-10.00	100.00
305	3.91	75.25	-10.00	149.68	-10.00	100.00
310	3.91	79.47	-10.00	149.68	-10.00	100.00
315	5.30	83.62	-10.00	131.91	-10.00	100.00
320	6.47	87.92	-10.00	120.10	-10.00	100.00
325	6.73	92.30	-10.00	117.28	-10.00	100.00
330	6.97	96.70	-10.00	114.71	-10.00	100.00
335	8.06	101.19	-10.00	103.24	-10.00	100.00
340	7.13	105.46	-10.00	112.98	-10.00	100.00
345	6.23	109.62	-10.00	122.74	-10.00	100.00
350	6.37	113.91	-10.00	121.20	-10.00	100.00
355	5.40	117.82	-10.00	130.95	-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: October 15, 2010