

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
RADIOHIO INC
COLUMBUS, OH
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
October 12, 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. Operation will be restricted to the bandwidth shown in Section 4 of this report.

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-receive earth station.

Company

American Electric Power Service Corp.
Dayton Power & Light Company
Intelliwave, LLC
New Par

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 6/18/2010.

Company

AB Services LLC
ALLTEL Communications, LLC
AMERICAN ELECTRIC POWER SERVICE CORP.
Allied Wireless Communications Corp.
Butler County Sheriff - Communications
COMWAVZ
Cellco Partnership - Ohio
City of Cincinnati
DAYTON POWER & LIGHT COMPANY
FELHC, Inc.
Intelliwave, LLC
International Communications Group, Inc.
KENTUCKY POWER COMPANY
LB Tower Company LLC
MCI Communications Services Inc.
METROPOLITAN AREA NETWORKS, INC.
National Radio Astronomy Observatory
New Cingular Wireless PCS LLC - Ohio
New Cingular Wireless PCS-Southern Ohio
New Par
Norfolk Southern Railway
OHIO VALLEY ELECTRIC COMPANY
Ohio RSA 2 Limited Partnership
Ohio RSA 5 Limited Partnership
Ohio RSA 6 Limited Partnership
Open Range Communications
Springfield Cellular Telephone Company
Texas Eastern Communications, Inc.
Watch TV Company, 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: 10/12/2010
Job Number: 101012COMSTC01

Administrative Information

Licensee Name RADIOHIO INC

Site Information

COLUMBUS, OH

Venue Name RSN ROOF
Latitude (NAD 83) 39° 58' 12.0" N
Longitude (NAD 83) 83° 1' 25.0" W
Climate Zone A
Rain Zone 2
Ground Elevation (AMSL) 221.6 m / 727.0 ft

Link Information

Satellite Type Geostationary
Mode TR - Transmit-Receive
Modulation Digital
Satellite Arc 60°W to 143° West Longitude
Azimuth Range 146.5° to 249.6°
Corresponding Elevation Angles 38.0° / 14.1°
Antenna Centerline (AGL) 12.19 m / 40.0 ft

Antenna Information

Receive

Manufacturer Prodelin 1251
Gain / Diameter 38.0 dBi / 2.4 m
3-dB / 15-dB Beamwidth 1.00° / 2.00°

Transmit

Prodelin 1251
42.0 dBi / 2.4 m
1.00° / 2.00°

		<u>51K2G7W - 3M00G7W</u>			
Max Available RF Power	(dBW/4 kHz)	-16.0	-16.0		
	(dBW/MHz)	8.0	8.0		
Maximum EIRP	(dBW/4 kHz)	26.0	26.0		
	(dBW/MHz)	37.07	50.0		
	(dBW)	37.07	54.75		
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

Emission / Frequency Range (MHz) 51K2G7W – 3M00G7W / 3700.0 - 4200.0

Transmit 6.1 GHz

51K2G7W - 3M00G7W / 5925.0 - 5930.0
51K2G7W - 3M00G7W / 6020.0 - 6048.0
51K2G7W - 3M00G7W / 6079.0 - 6137.0
51K2G7W - 3M00G7W / 6242.0 - 6271.0
51K2G7W - 3M00G7W / 6302.0 - 6330.0
51K2G7W - 3M00G7W / 6391.0 - 6425.0

Max Great Circle Coordination Distance 382.6 km / 237.7 mi 170.4 km / 105.9 mi
Precipitation Scatter Contour Radius 522.0 km / 324.3 mi 100.0 km / 62.1 mi

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Coordination Values

COLUMBUS, OH

Licensee Name RADIOHIO INC
Latitude (NAD 83) 39° 58' 12.0" N
Longitude (NAD 83) 83° 1' 25.0" W
Ground Elevation (AMSL) 221.6 m / 727.0 ft
Antenna Centerline (AGL) 12.19 m / 40.0 ft
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 -16.0 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 4.0 GHz		Transmit 6.1 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
0	0.00	109.73	-10.00	285.28	-10.00	127.50
5	0.00	114.55	-10.00	285.28	-10.00	127.50
10	0.00	119.36	-10.00	285.28	-10.00	127.50
15	0.21	121.58	-10.00	284.35	-10.00	126.90
20	0.25	118.06	-10.00	279.51	-10.00	123.74
25	0.26	114.41	-10.00	277.98	-10.00	122.73
30	0.24	110.67	-10.00	279.86	-10.00	123.97
35	0.28	106.86	-10.00	275.29	-10.00	120.95
40	0.25	102.99	-10.00	278.67	-10.00	123.19
45	0.29	99.09	-10.00	273.96	-10.00	120.07
50	0.27	95.15	-10.00	276.38	-10.00	121.68
55	0.25	91.20	-10.00	278.41	-10.00	123.01
60	0.26	87.25	-10.00	277.57	-10.00	122.46
65	0.26	83.30	-10.00	278.06	-10.00	122.79
70	0.24	79.38	-10.00	280.09	-10.00	124.12
75	0.23	75.49	-10.00	281.97	-10.00	125.35
80	0.21	71.65	-10.00	284.16	-10.00	126.78
85	0.00	67.93	-10.00	285.28	-10.00	127.50
90	0.00	64.24	-10.00	285.28	-10.00	127.50
95	0.00	60.64	-10.00	285.28	-10.00	127.50
100	0.00	57.17	-10.00	285.28	-10.00	127.50
105	0.00	53.85	-10.00	285.28	-10.00	127.50
110	0.00	50.71	-10.00	285.28	-10.00	127.50
115	0.00	47.81	-9.99	285.36	-9.99	127.54
120	0.00	45.17	-9.37	289.31	-9.37	129.17
125	0.00	42.87	-8.80	293.01	-8.80	130.69
130	0.00	40.94	-8.30	296.29	-8.30	132.02
135	0.00	39.47	-7.91	298.95	-7.91	133.10
140	0.00	38.49	-7.63	300.79	-7.63	133.83
145	0.00	38.04	-7.51	301.64	-7.51	134.17
150	0.00	38.15	-7.54	301.43	-7.54	134.09
155	0.00	38.81	-7.72	300.17	-7.72	133.59
160	0.00	39.99	-8.05	297.99	-8.05	132.71
165	0.00	41.54	-8.46	295.26	-8.46	131.61
170	0.00	42.76	-8.78	293.19	-8.78	130.76
175	0.00	43.51	-8.96	291.95	-8.96	130.26
180	0.00	43.76	-9.03	291.54	-9.03	130.09
185	0.00	43.51	-8.96	291.95	-8.96	130.26

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Interference Objectives: Long Term	-156.0 dBW/MHz	20%	-154.0 dBW/4 kHz
Short Term	-146.0 dBW/MHz	0.01%	-131.0 dBW/4 kHz
Max Available RF Power			-16.0 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 4.0 GHz		Transmit 6.1 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
190	0.00	42.76	-8.78	293.19	-8.78	130.76
195	0.00	41.54	-8.46	295.26	-8.46	131.61
200	0.00	39.89	-8.02	298.18	-8.02	132.79
205	0.00	37.86	-7.45	301.99	-7.45	133.07
210	0.00	35.49	-6.75	306.77	-6.75	134.99
215	0.00	32.84	-5.91	313.25	-5.91	137.38
220	0.00	29.95	-4.91	320.31	-4.91	140.33
225	0.00	26.87	-3.73	328.79	-3.73	143.96
230	0.00	23.61	-2.33	339.07	-2.33	148.50
235	0.00	20.22	-0.65	351.68	-0.65	154.25
240	0.00	17.03	1.22	366.02	1.22	161.02
245	0.00	14.84	2.71	377.80	2.71	168.37
250	0.21	13.91	3.41	382.60	3.41	170.44
255	0.21	14.88	2.68	375.72	2.68	165.11
260	0.23	17.27	1.07	361.33	1.07	157.65
265	0.22	20.60	-0.85	347.02	-0.85	151.16
270	0.22	24.49	-2.73	334.08	-2.73	145.69
275	0.21	28.71	-4.45	322.33	-4.45	140.84
280	0.00	33.20	-6.03	311.80	-6.03	137.04
285	0.00	37.74	-7.42	302.23	-7.42	133.16
290	0.00	42.36	-8.67	293.85	-8.67	131.03
295	0.23	47.00	-9.80	283.03	-9.80	125.75
300	0.26	51.74	-10.00	278.31	-10.00	122.95
305	0.26	56.51	-10.00	277.42	-10.00	122.36
310	0.26	61.31	-10.00	277.21	-10.00	122.23
315	0.27	66.13	-10.00	276.66	-10.00	121.86
320	0.27	70.96	-10.00	276.93	-10.00	122.04
325	0.26	75.80	-10.00	278.02	-10.00	122.76
330	0.27	80.65	-10.00	275.95	-10.00	121.40
335	0.23	85.50	-10.00	281.57	-10.00	125.09
340	0.00	90.36	-10.00	285.28	-10.00	127.50
345	0.00	95.21	-10.00	285.28	-10.00	127.50
350	0.00	100.05	-10.00	285.28	-10.00	127.50
355	0.00	104.89	-10.00	285.28	-10.00	127.50

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.



Timothy O. Crutcher
Frequency Planner
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147

DATED: October 12, 2010