

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
Radiant Life Ministries, Inc.
AKRON, OH
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
December 07, 2020

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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.

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

New Par - Ohio Region

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 09/08/2020.

Company

AQ2AT
AQ2AT LLC
Agile Network Builders LLC
Alltel Communications LLC-E OH WV
American Electric Power Service Corp
Austintown Township
Blue Chip Broadcasting Licenses LTD
Blueline Communications
Butler, County of
Cellco Partnership - Ohio
Citynet Holdings, LLC
Cleveland, City of
Commonwealth of Pennsylvania-Radio Proj.
Comprehensive Wireless LLC
Conterra Ultra Broadband, LLC
County of Summit, Ohio
DC2A LLC
Dominion Energy Transmission, Inc.
ECW Wireless, LLC
East Ohio Gas Company
Electric Railroad, LLC
FELHC, Inc.
GTT Americas LLC
Geauga, County of
Geodesic Networks LLC
High Voltage Communications LLC (CFN)
Jefferson, County Of
Kryptick Technologies
Lake County of - Radio Department
Lawrence County Dept of Public Safety
New Cingular Wireless PCS LLC - Ohio
New Cingular Wireless PCS LLC - WV,NC,SC
New Cingular Wireless PCS, LLC - PA
New Line Networks, LLC
New Par - Ohio Region
Norfolk Southern Railway Company
North Coast Wireless Communications LLC
Ohio RSA 6 Limited Partnership
Ohio Turnpike Commission
Pennsylvania Turnpike Commission

SW Networks
Standard Backhaul Communications LLC
Texas Eastern Communications, LLC
Torellco LLC
Uniti Fiber LLC
WV DHSEM, SIRM System
Weblin Holdings LLC
Williams Energy Services
Winston World Wide
Wireless Internetwork LLC
World Class Wireless, LLC
xWave Engineering LLC

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: 12/07/2020
Job Number: 200908COMSGE01

Administrative Information

Status: ENGINEER PROPOSAL
Call Sign: E140112
Licensee Code: RADLIF
Licensee Name: Radiant Life Ministries, Inc.

Site Information AKRON, OH

Venue Name
Latitude (NAD 83): 41° 6' 55.2" N
Longitude (NAD 83): 81° 27' 53.7" W
Climate Zone: A
Rain Zone: 2
Ground Elevation (AMSL): 353.0 m / 1158.0 ft

Link Information

Satellite Type: Geostationary
Mode: TO - Transmit-Only
Modulation: Digital
Satellite Arc: 61° W to 137° West Longitude
Azimuth Range: 150.4° to 245.7°
Corresponding Elevation Angles: 38.1° / 16.9°
Antenna Centerline (AGL): 3.66 m / 12.0 ft

Antenna Information Transmit - FCC32

Manufacturer: General Dynamics
Model: 4.8 meter
Gain / Diameter: 45.9 dBi / 4.8 m
3-dB / 15-dB Beamwidth: 0.65° / 1.30°

Max Available RF Power	(dBW/4 kHz)	-16.1	
	(dBW/MHz)	7.9	
Maximum EIRP	(dBW/4 kHz)	29.8	
	(dBW/MHz)	53.8	
Interference Objectives:	Long Term	-154.0 dBW/4 kHz	20%
	Short Term	-131.0 dBW/4 kHz	0.0025%

Frequency Information Transmit 6.1 GHz

Emission / Frequency Range (MHz):
6M60G7W - 7M00G7W / 5925.0 - 5944.0
6M60G7W - 7M00G7W / 6035.0 - 6225.0
6M60G7W - 7M00G7W / 6287.0 - 6425.0

Max Great Circle Coordination Distance: 133.9 km / 83.2 mi
Precipitation Scatter Contour Radius: 100.0 km / 62.1 mi

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Coordination Values

AKRON, OH

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Antenna Centerline (AGL) 3.66 m / 12.0 ft
Antenna Model General Dynamics 4.8 meter
Antenna Mode Transmit 6.1 GHz
Interference Objectives: Long Term -154.0 dBW/4 kHz 20%
Short Term -131.0 dBW/4 kHz 0.0025%
Max Available RF Power -16.1 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 6.1 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
0	0.00	113.18	-10.00	127.24
5	0.00	117.91	-10.00	127.24
10	0.00	122.62	-10.00	127.24
15	0.00	124.12	-10.00	127.24
20	0.00	120.70	-10.00	127.24
25	0.00	117.16	-10.00	127.24
30	0.00	113.50	-10.00	127.24
35	0.00	109.76	-10.00	127.24
40	0.00	105.95	-10.00	127.24
45	0.00	102.09	-10.00	127.24
50	0.00	98.19	-10.00	127.24
55	0.00	94.27	-10.00	127.24
60	0.00	90.34	-10.00	127.24
65	0.00	86.40	-10.00	127.24
70	0.00	82.48	-10.00	127.24
75	0.24	78.53	-10.00	123.70
80	0.00	74.71	-10.00	127.24
85	0.20	70.83	-10.00	126.96
90	0.00	67.13	-10.00	127.24
95	0.00	63.46	-10.00	127.24
100	0.00	59.89	-10.00	127.24
105	0.00	56.45	-10.00	127.24
110	0.00	53.17	-10.00	127.24
115	0.00	50.09	-10.00	127.24
120	0.00	47.24	-9.86	127.62
125	0.00	44.68	-9.25	129.23
130	0.00	42.45	-8.70	130.71
135	0.00	40.62	-8.22	131.99
140	0.00	39.25	-7.85	132.99
145	0.00	38.39	-7.60	133.64
150	0.00	38.06	-7.51	133.89
155	0.00	38.29	-7.58	133.71
160	0.00	39.07	-7.80	133.13
165	0.00	40.34	-8.14	132.19
170	0.00	41.52	-8.46	131.35
175	0.00	42.24	-8.64	130.85
180	0.67	41.81	-8.53	100.00
185	0.65	41.60	-8.48	100.47

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Coordination Values

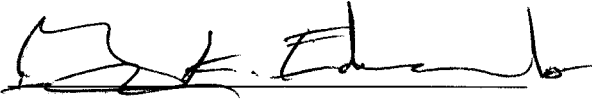
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Max Available RF Power -16.1 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 6.1 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
190	0.57	40.97	-8.31	104.48
195	0.58	39.80	-8.00	104.70
200	0.52	38.29	-7.58	108.64
205	0.44	36.41	-7.03	115.77
210	0.39	34.17	-6.34	121.48
215	0.43	31.58	-5.49	120.77
220	0.53	28.71	-4.45	116.55
225	0.53	25.70	-3.25	119.62
230	0.51	22.55	-1.83	124.78
235	0.63	19.41	-0.20	123.85
240	0.73	17.14	1.15	123.29
245	0.73	16.20	1.76	124.81
250	0.75	16.71	1.42	123.08
255	0.76	18.58	0.27	119.27
260	0.73	21.47	-1.29	115.95
265	0.72	24.99	-2.95	111.98
270	0.72	28.92	-4.53	107.70
275	0.70	33.13	-6.01	104.79
280	0.68	37.51	-7.35	101.71
285	0.69	42.01	-8.58	100.00
290	0.65	46.60	-9.71	100.00
295	0.49	51.28	-10.00	103.73
300	0.40	55.98	-10.00	111.17
305	0.31	60.70	-10.00	118.46
310	0.29	65.44	-10.00	119.61
315	0.34	70.19	-10.00	116.01
320	0.45	74.95	-10.00	107.04
325	0.51	79.74	-10.00	102.99
330	0.53	84.53	-10.00	102.06
335	0.54	89.32	-10.00	101.32
340	0.49	94.12	-10.00	103.89
345	0.00	98.89	-10.00	127.24
350	0.00	103.66	-10.00	127.24
355	0.00	108.43	-10.00	127.24

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: January 11, 2021