

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
Vyvx, LLC - Atlanta
ATLANTA, GA
E970447
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
November 07, 2011

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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-receive earth station.

Company

Athens Cellular, Inc.
Cellco Partnership - Georgia Mkt
County of Forsyth
COBB COUNTY
FULTON, COUNTY OF
Norfolk Southern Railway
Southwestco Wireless LP (Georgia 5)
Verizon Wireless (VAW) LLC (Georgia)

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 10/12/2011.

Company

Alabama Great Southern Railroad Company
Allied Wireless Communications Corp.
Alltel Communications LLC - Georgia
Alltel Communications, LLC - Arkansas
Athens Cellular, Inc.
Bell Atlantic Mobile Allentown-Verizon W
CALHOUN COUNTY COMMISSIONERS
CALHOUN, COUNTY OF
COBB COUNTY
Calhoun, County of - Emergency Managemen
Cellco Partnership - Alabama
Cellco Partnership - Georgia Mkt
Cellco Partnership-Newark-Dallas Verizon
Conterra Ultra Broadband, LLC
County of Forsyth
Coweta County
DeKalb County Police Department
FULTON, COUNTY OF
GWINNETT, COUNTY OF
Gadsden Celltelco Partnership
Georgia System Operations Corporation
Greene County EOC/E-911
Hall County 9-1-1
Jackson Electric Membership Corporation
New Cingular Wireless PCS LLC - AL, MS,
Norfolk Southern Railway
Oconee County Sheriffs Office
Open Range Communications
Public Service Telephone Company
SOUTHERN COMPANY SERVICES INC
Southwestco Wireless LP (Georgia 5)
Verizon Wireless (VAW) LLC (Georgia)
Verizon Wireless of The East LP - (GA)

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: 11/07/2011
Job Number: 111012COMSGE01

Administrative Information

Status ENGINEER PROPOSAL
Call Sign E970447
Licensee Code VYVXUP
Licensee Name Vyvx, LLC - Atlanta

Site Information ATLANTA, GA

Venue Name
Latitude (NAD 83) 33° 48' 25.4" N
Longitude (NAD 83) 84° 20' 27.7" W
Climate Zone A
Rain Zone 1
Ground Elevation (AMSL) 262.13 m / 860.0 ft

Link Information

Satellite Type Geostationary
Mode TR - Transmit-Receive
Modulation Digital
Satellite Arc 65° W to 143° West Longitude
Azimuth Range 147.8° to 251.3°
Corresponding Elevation Angles 45.6° / 17.3°
Antenna Centerline (AGL) 3.66 m / 12.0 ft

Antenna Information

Receive - FCC32

Transmit - FCC32

Manufacturer	Andrew	Andrew
Model	ES45MPJ	ES45MPJ
Gain / Diameter	43.9 dBi / 4.5 m	46.2 dBi / 4.5 m
3-dB / 15-dB Beamwidth	1.20° / 2.40°	0.94° / 1.90°
Max Available RF Power (dBW/4 kHz)		-9.1
(dBW/MHz)		14.9
Maximum EIRP (dBW/4 kHz)		37.1
(dBW/MHz)		61.1
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

Transmit 6.1 GHz

Emission / Frequency Range (MHz)	24M0G7W - 36M0F8F / 3700.0 - 4200.0	24M0G7W - 36M0F8F / 5925.0 - 6425.0
Max Great Circle Coordination Distance	345.7 km / 214.8 mi	174.6 km / 108.5 mi
Precipitation Scatter Contour Radius	589.1 km / 366.0 mi	100.0 km / 62.1 mi

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Coordination Values

ATLANTA, GA

Licensee Name Vyvx, LLC - Atlanta
Latitude (NAD 83) 33° 48' 25.4" N
Longitude (NAD 83) 84° 20' 27.7" W
Ground Elevation (AMSL) 262.13 m / 860.0 ft
Antenna Centerline (AGL) 3.66 m / 12.0 ft
Antenna Model Andrew 4.5 Meter
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 -9.1 (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	1.87	108.02	-10.00	198.12	-10.00	100.00
5	2.64	112.90	-10.00	179.92	-10.00	100.00
10	3.45	117.81	-10.00	159.47	-10.00	100.00
15	4.17	120.62	-10.00	145.24	-10.00	100.00
20	4.84	117.65	-10.00	135.72	-10.00	100.00
25	4.86	114.22	-10.00	135.45	-10.00	100.00
30	5.16	110.78	-10.00	133.27	-10.00	100.00
35	4.76	107.03	-10.00	136.81	-10.00	100.00
40	4.56	103.31	-10.00	139.59	-10.00	100.00
45	3.97	99.51	-10.00	148.44	-10.00	100.00
50	3.97	95.79	-10.00	148.43	-10.00	100.00
55	3.97	92.06	-10.00	148.42	-10.00	100.00
60	2.26	88.37	-10.00	188.64	-10.00	100.00
65	2.03	84.75	-10.00	193.87	-10.00	100.00
70	2.19	81.13	-10.00	190.20	-10.00	100.00
75	2.18	77.56	-10.00	190.44	-10.00	100.00
80	2.27	74.00	-10.00	188.34	-10.00	100.00
85	1.63	70.75	-10.00	204.46	-10.00	100.00
90	1.38	67.50	-10.00	208.97	-10.00	100.00
95	1.18	64.37	-10.00	214.87	-10.00	100.00
100	0.88	61.44	-10.00	226.88	-10.00	104.53
105	1.11	58.39	-10.00	216.92	-10.00	100.00
110	0.95	55.74	-10.00	223.19	-10.00	101.55
115	1.31	52.95	-10.00	211.00	-10.00	100.00
120	1.50	50.50	-10.00	205.49	-10.00	100.00
125	1.30	48.66	-10.00	211.30	-10.00	100.00
130	0.79	47.45	-9.91	232.44	-9.91	108.78
135	0.50	46.45	-9.67	252.13	-9.67	123.06
140	0.62	45.45	-9.44	245.21	-9.44	117.76
145	0.75	44.87	-9.30	237.98	-9.30	112.14
150	0.69	44.91	-9.31	241.68	-9.31	114.94
155	0.89	45.12	-9.36	229.73	-9.36	105.83
160	1.06	45.80	-9.52	220.74	-9.52	100.00
165	0.93	47.17	-9.84	224.81	-9.84	102.63
170	0.79	48.71	-10.00	231.74	-10.00	108.38
175	0.95	49.45	-10.00	222.86	-10.00	101.28
180	0.94	49.76	-10.00	223.68	-10.00	101.95
185	0.81	49.58	-10.00	230.64	-10.00	107.52

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Coordination Values

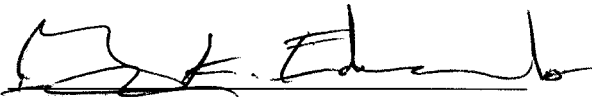
ATLANTA, GA

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Short Term -146.0 dBW/MHz 0.01% -131.0 dBW/4 kHz 0.0025%
Max Available RF Power -9.1 (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	0.76	48.74	-10.00	233.63	-10.00	109.85
195	0.65	47.38	-9.89	240.64	-9.89	115.03
200	0.63	45.44	-9.44	244.94	-9.44	117.55
205	0.91	42.82	-8.79	231.50	-8.79	106.42
210	0.90	40.07	-8.07	235.99	-8.07	108.88
215	1.06	36.91	-7.18	233.29	-7.18	105.51
220	0.86	33.77	-6.21	249.69	-6.21	116.35
225	0.79	30.32	-5.04	261.54	-5.04	122.92
230	0.80	26.67	-3.65	269.93	-3.65	126.55
235	0.48	23.25	-2.16	303.75	-2.16	146.10
240	0.41	20.22	-0.64	323.67	-0.64	157.75
245	0.31	18.08	0.57	345.75	0.57	174.64
250	0.37	16.98	1.25	343.49	1.25	171.28
255	0.52	17.18	1.13	324.67	1.13	154.75
260	0.54	18.84	0.12	315.89	0.12	150.13
265	0.30	21.72	-1.42	333.05	-1.42	168.71
270	0.00	25.28	-3.07	333.61	-3.07	172.72
275	0.41	28.84	-4.50	295.87	-4.50	144.58
280	0.41	32.95	-5.95	285.96	-5.95	139.86
285	1.18	36.96	-7.19	229.34	-7.19	102.44
290	1.54	41.33	-8.41	211.86	-8.41	100.00
295	1.68	45.89	-9.54	205.09	-9.54	100.00
300	1.68	50.55	-10.00	203.05	-10.00	100.00
305	1.54	55.29	-10.00	204.47	-10.00	100.00
310	1.42	60.04	-10.00	207.80	-10.00	100.00
315	1.64	64.77	-10.00	204.35	-10.00	100.00
320	1.87	69.52	-10.00	198.14	-10.00	100.00
325	2.08	74.31	-10.00	192.64	-10.00	100.00
330	1.95	79.13	-10.00	195.94	-10.00	100.00
335	1.73	83.95	-10.00	201.80	-10.00	100.00
340	1.65	88.77	-10.00	203.98	-10.00	100.00
345	1.36	93.58	-10.00	209.57	-10.00	100.00
350	1.67	98.40	-10.00	203.37	-10.00	100.00
355	1.95	103.22	-10.00	195.97	-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: November 07, 2011