

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for

**University of South Florida
Tampa, Florida**

Satellite Earth Station

Prepared By:
COMSEARCH

19700 Janelia Farm Boulevard
Ashburn, Virginia 20147
December 1, 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.

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

None

No 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.

Expedited coordination data for this earth station was e-mailed and sent to the below listed carriers with a letter dated November 24, 2010.

Company

Airband Communications Inc
American Telecasting Development, Inc.
BETHESDA MEMORIAL HOSPITAL
COLLIER, COUNTY OF
COMLINK INC.
Cape Coral, City of
City of West Palm Beach
Clearwire Spectrum Holdings II, LLC
Clearwire Spectrum Holdings III, LLC
Clearwire Spectrum Holdings LLC
Cyprex
EMBRAER - Empresa Brasileira de Aeronaut
FLORIDA MOBILE TELECOM, INC.
FUZION WIRELESS COMMUNICATIONS, INC.
FiberTower Network Services Corp.
Fixed Wireless Holdings, LLC
Florida High Speed Internet
Fort Lauderdale City Florida
HIALEAH CITY FIRE DEPARTMENT
Hardee County - IDA
Hillsborough County Clerk Circuit Court
Hillsborough County Tax Collector
Hometown Broadband Orlando, LLC
JACKSONVILLE CITY OF
METROPOLITAN AREA NETWORKS, INC.
MIAMI BEACH CITY FLORIDA
Miami-Dade County
Mid-Florida Bank
New Cingular Wireless PCS LLC - N FL
ORLANDO CITY POLICE DEPARTMENT
ORLANDO UTILITIES COMMISSION
Orlando SMSA Ltd Partnership
PINELLAS COUNTY

Company (Continued)

Sago Networks
Sling Broadband, LLC
South Florida Water Management District
Sprint Communications Company, LP
St. Lucie County Fire District
T3 Communications, Inc.
TOWER CLOUD, INC
Towerstream Corp
Towerstream Corp
Trillion Partners, Inc.
Trillion Partners, Inc.
Verizon Wireless Personal Comm, LP(S FL)

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: 12/01/2010
Job Number: 101124COMSJC01

Administrative Information

Status: ENGINEER PROPOSAL
Call Sign:
Licensee Code: S10286
Licensee Name: UNIVERSITY OF SOUTH FLORIDA

Site Information TAMPA, FLORIDA

Venue Name:
Latitude (NAD 83): 28° 4' 2.3" N
Longitude (NAD 83): 82° 24' 58.1" W
Climate Zone: B
Rain Zone: 1
Ground Elevation (AMSL): 15.54 m / 51.0 ft

Link Information

Satellite Type: Geostationary
Mode: TR - Transmit-Receive
Modulation: Analog and Digital
Satellite Arc: 8° W to 155° West Longitude
Azimuth Range: 97.5° to 261.6°
Corresponding Elevation Angles: 5.0° / 6.7°
Antenna Centerline (AGL): 5.49 m / 18.0 ft

Antenna Information

Manufacturer: Vertex
Model: 8.1 KPK
Gain / Diameter: 57.7 dBi / 8.1 m
3-dB / 15-dB Beamwidth: 0.22° / 0.42°

Receive

Vertex
8.1 KPK
57.7 dBi / 8.1 m
0.22° / 0.42°

Transmit

Vertex
8.1 KPK
59.8 dBi / 8.1 m
0.17° / 0.32°

Max Available RF Power (dBW/4 kHz): 0.0
(dBW/MHz): 24.0

Maximum EIRP (dBW/4 kHz): 59.8
(dBW/MHz): 83.8

Interference Objectives:	Long Term	-156.0 dBW/MHz	20%	-151.0 dBW/4 kHz	20%
	Short Term	-146.0 dBW/MHz	0.01%	-128.0 dBW/4 kHz	0.0025%

Frequency Information

Emission / Frequency Range (MHz)

Receive 11.0 GHz

36M0F8W / 10950.0 - 11200.0
36M0F8W / 11450.0 - 12200.0
36M0F3W / 10950.0 - 11200.0
36M0F3W / 11450.0 - 12200.0
36M0G7W / 10950.0 - 11200.0
36M0G7W / 11450.0 - 12200.0
28M0G7W / 10950.0 - 11200.0
28M0G7W / 11450.0 - 12200.0
21M0G7W / 10950.0 - 11200.0
21M0G7W / 11450.0 - 12200.0
18M0G7W / 10950.0 - 11200.0
18M0G7W / 11450.0 - 12200.0
14M0G7W / 10950.0 - 11200.0
14M0G7W / 11450.0 - 12200.0
8M00G7W / 10950.0 - 11200.0
8M00G7W / 11450.0 - 12200.0

Transmit 14.0 GHz

36M0F8W / 14000.0 - 14500.0
36M0F3W / 14000.0 - 14500.0
36M0G7W / 14000.0 - 14500.0
28M0G7W / 14000.0 - 14500.0
21M0G7W / 14000.0 - 14500.0
18M0G7W / 14000.0 - 14500.0
14M0G7W / 14000.0 - 14500.0
8M00G7W / 14000.0 - 14500.0

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Max Great Circle Coordination Distance	642.9 km / 399.4 mi	423.5 km / 263.2 mi
Precipitation Scatter Contour Radius	671.3 km / 417.1 mi	148.5 km / 92.2 mi

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Earth Station Data Sheet

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Coordination Values

TAMPA, FL

Licensee Name UNIVERSITY OF SOUTH FLORIDA

Latitude (NAD 83) 28° 4' 2.3" N

Longitude (NAD 83) 82° 24' 58.1" W

Ground Elevation (AMSL) 15.54 m / 51.0 ft

Antenna Centerline (AGL) 5.49 m / 18.0 ft

Antenna Model Vertex 8.1 KPK

Antenna Mode Receive 11.0 GHz

Transmit 14.0 GHz

Interference Objectives: Long Term -156.0 dBW/MHz 20% -151.0 dBW/4 kHz 20%

Short Term -146.0 dBW/MHz 0.01% -128.0 dBW/4 kHz 0.0025%

Max Available RF Power 0.0 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 11.0 GHz		Transmit 14.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
0	0.00	97.45	-10.00	307.68	-10.00	179.73
5	0.00	92.47	-10.00	307.68	-10.00	179.73
10	0.00	87.49	-10.00	307.68	-10.00	179.73
15	0.00	82.51	-10.00	307.68	-10.00	179.73
20	0.00	77.53	-10.00	307.68	-10.00	179.73
25	0.00	72.55	-10.00	307.68	-10.00	179.73
30	0.00	67.57	-10.00	307.68	-10.00	179.73
35	0.00	62.59	-10.00	307.68	-10.00	179.73
40	0.00	57.62	-10.00	307.68	-10.00	179.73
45	0.00	52.65	-10.00	307.68	-10.00	179.73
50	0.00	47.68	-9.96	308.02	-9.96	179.95
55	0.00	42.72	-8.77	318.09	-8.77	186.54
60	0.00	37.77	-7.43	329.83	-7.43	196.64
65	0.00	32.83	-5.91	343.51	-5.91	205.54
70	0.00	27.90	-4.14	360.47	-4.14	215.93
75	0.00	23.01	-2.05	381.73	-2.05	228.39
80	0.00	18.17	0.52	409.43	0.52	243.82
85	0.00	13.45	3.79	445.51	3.79	261.02
90	0.00	9.01	8.13	502.78	8.13	292.63
95	0.00	5.62	13.25	642.87	13.25	423.55
100	0.00	5.64	13.21	583.71	13.21	339.14
105	0.00	9.05	8.08	502.17	8.08	292.28
110	0.00	13.36	3.85	446.32	3.85	261.46
115	0.00	17.67	0.82	412.81	0.82	245.65
120	0.00	21.92	-1.52	387.24	-1.52	231.53
125	0.00	26.12	-3.42	367.61	-3.42	220.18
130	0.00	30.24	-5.01	351.97	-5.01	210.77
135	0.00	34.25	-6.37	339.21	-6.37	202.83
140	0.00	38.14	-7.53	328.87	-7.53	196.02
145	0.00	41.86	-8.54	320.00	-8.54	187.80
150	0.00	45.36	-9.42	312.55	-9.42	182.90
155	0.00	48.59	-10.00	307.68	-10.00	179.73
160	0.00	51.45	-10.00	307.68	-10.00	179.73
165	0.00	53.85	-10.00	307.68	-10.00	179.73
170	0.00	55.69	-10.00	307.68	-10.00	179.73
175	0.00	56.84	-10.00	307.68	-10.00	179.73
180	0.00	57.24	-10.00	307.68	-10.00	179.73
185	0.00	56.84	-10.00	307.68	-10.00	179.73

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Ground Elevation (AMSL)		15.54 m / 51.0 ft			
Antenna Centerline (AGL)		5.49 m / 18.0 ft			
Antenna Model		Vertex 8.1 KPK			
Antenna Mode		Receive 11.0 GHz		Transmit 14.0 GHz	
Interference Objectives: Long Term		-156.0 dBW/MHz	20%	-151.0 dBW/4 kHz	20%
Short Term		-146.0 dBW/MHz	0.01%	-128.0 dBW/4 kHz	0.0025%
Max Available RF Power		0.0 (dBW/4 kHz)			

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 11.0 GHz		Transmit 14.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
190	0.00	55.69	-10.00	307.68	-10.00	179.73
195	0.00	53.85	-10.00	307.68	-10.00	179.73
200	0.00	51.45	-10.00	307.68	-10.00	179.73
205	0.00	48.58	-10.00	307.68	-10.00	179.73
210	0.00	45.36	-9.42	312.55	-9.42	182.90
215	0.00	41.86	-8.54	320.00	-8.54	187.80
220	0.00	38.14	-7.53	328.87	-7.53	196.02
225	0.00	34.25	-6.37	339.21	-6.37	202.83
230	0.00	30.24	-5.01	351.96	-5.01	210.77
235	0.00	26.12	-3.43	367.60	-3.43	220.18
240	0.00	21.93	-1.52	387.23	-1.52	231.52
245	0.00	17.67	0.82	412.82	0.82	245.66
250	0.00	13.36	3.85	446.33	3.85	261.47
255	0.00	9.38	7.70	496.75	7.70	289.26
260	0.00	6.86	11.09	548.65	11.09	326.84
265	0.00	7.49	10.14	532.21	10.14	309.17
270	0.00	10.71	6.25	477.04	6.25	278.31
275	0.00	14.94	2.64	433.78	2.64	253.59
280	0.00	19.53	-0.27	400.75	-0.27	239.08
285	0.00	24.28	-2.63	375.68	-2.63	224.90
290	0.00	29.11	-4.60	355.97	-4.60	213.22
295	0.00	33.98	-6.28	340.01	-6.28	203.33
300	0.00	38.89	-7.74	327.00	-7.74	194.80
305	0.00	43.81	-9.04	315.76	-9.04	185.01
310	0.00	48.74	-10.00	307.68	-10.00	179.73
315	0.00	53.69	-10.00	307.68	-10.00	179.73
320	0.00	58.64	-10.00	307.68	-10.00	179.73
325	0.00	63.59	-10.00	307.68	-10.00	179.73
330	0.00	68.55	-10.00	307.68	-10.00	179.73
335	0.00	73.51	-10.00	307.68	-10.00	179.73
340	0.00	78.48	-10.00	307.68	-10.00	179.73
345	0.00	83.44	-10.00	307.68	-10.00	179.73
350	0.00	88.41	-10.00	307.68	-10.00	179.73
355	0.00	93.38	-10.00	307.68	-10.00	179.73

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.



Jeffrey E. Cowles
Engineer III, Telecommunications
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, Va. 20147

DATED: December 1, 2010