

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
Kratos/RT Logic
MELBOURNE, FL
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
March 20, 2017

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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 02/20/2017.

Company

AB Indiana, LLC
Affiniti LLC
Alltel Communications LLC - S Florida
Alternative Choice Wireless, LLC
Altius Communications
Apopka, City of
Beasley Media Group, Inc
Beasley Media Group, LLC
Bethesda Memorial Hospital
CBS Radio Stations Inc.
COLLIER, COUNTY OF
Cape Coral, City of
Cape Coral, City of
Charlotte County Board of County Comm
Chesapeake-Portsmouth Broadcasting Corp
Citrus County Sheriff's Office
City of Hollywood, Florida
City of Leesburg
City of Melbourne
City of Miami Beach
City of Palm Bay
City of Pompano Beach Florida
Clay County of (FL)
Clear Channel Broadcasting Licenses, Inc
Clearsurf International
Clearwater, City of
Clearwire Spectrum Holdings II, LLC
Clearwire Spectrum Holdings III, LLC
Clearwire Spectrum Holdings LLC
Coconut Creek, City of
Computer Office Solutions, Inc.
Coral Gables, City of
Cyprex
Embarq Florida, Inc.
Entercom License, LLC
Entercom Miami License, LLC
FL Courts 18th Judicial Circuit
Fixed Wireless Holdings, LLC
Florida Department of Transportation
Florida High Speed Internet

Florida Mobile Telecom, Inc.
Florida Rural Broadband Alliance, LLC
Florida State
Florida, State of
Fort Lauderdale City Florida
Gigabit Squared Telecom LLC
Global Telecom & Technology Americas
Graham Media Group, Florida, Inc.
HARRIS CORPORATION
Hardee County - IDA
Harris Corporation - Florida
HiQ Data Corporation
Hialeah City Fire Department
Highlands County
Hillsborough County Sheriffs Office
Hollywood, City of
Hometown Broadband Orlando, LLC
Indian River Community College
Indian River, County of
Jacksonville, City of
Mb Development I/C Grand Beach Hotel
Miami City of
Miami-Dade County
Mosaic Fertilizer LLC
Mun Public Safety Comm Consortium(MPSCC)
New Cingular Wireless PCS LLC - Georgia
New Cingular Wireless PCS LLC - N FL
New Cingular Wireless PCS LLC - S FL
Nextlink Wireless, LLC
North Florida Broadband Authority
Olympic Wireless, LLC
Orange County Government
Orlando City Police Department
Orlando Utilities Commission
Palm Beach, County of
Pdmnet Inc.
Pinellas Park Police Department
Pinellas, County of
Plantation, City of
Rapid Systems, Inc
Reedy Creek Improvement District
SkyNet360
Sling Broadband, LLC
South Florida Water Management District
Southern Company Services Inc.
Sprint Communications Company, LP
Sprint Spectrum L.P.
Sprint Telephony PCS, L.P.
Sprintcom, Inc
St. Lucie County Fire District
Sumter County Board of County Commission
T-Mobile License LLC
T3 Communications, Inc.
Tampa City of
Tower Cloud, Inc.
Towerstream Corp.

Verizon Wireless (VAW) LLC (Georgia)
Verizon Wireless (VAW) LLC - S Florida
Verizon Wireless Personal Comm, LP(S FL)
Wavetech Systems, LLC
Webpass Inc.
West Palm Beach, City of
XO Communications, 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: 03/20/2017
Job Number: 170220COMSGE01

Administrative Information

Status ENGINEER PROPOSAL
Call Sign
Licensee Code KRATOS
Licensee Name Kratos/RT Logic

Site Information MELBOURNE, FL

Venue Name
Latitude (NAD 83) 28° 5' 54.2" N
Longitude (NAD 83) 80° 41' 49.6" W
Climate Zone B
Rain Zone 1
Ground Elevation (AMSL) 5.68 m / 18.7 ft

Link Information

Satellite Type Geostationary
Mode TR - Transmit-Receive
Modulation Digital
Satellite Arc 8° W to 139° West Longitude
Azimuth Range 98.3° to 253.8°
Corresponding Elevation Angles 6.6° / 19.4°
Antenna Centerline (AGL) 8.84 m / 29.0 ft

Antenna Information

	Receive - FCC32	Transmit - FCC32
Manufacturer	GD Satcom	GD Satcom
Model	1184	1184
Gain / Diameter	45.0 dBi / 1.8 m	46.5 dBi / 1.8 m
3-dB / 15-dB Beamwidth	1.50° / 3.00°	1.00° / 2.00°
Max Available RF Power (dBW/4 kHz)		-14.0
(dBW/MHz)		10.0
Maximum EIRP (dBW/4 kHz)		32.5
(dBW/MHz)		56.5
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

	Receive 11.0 GHz	Transmit 14.0 GHz
Emission / Frequency Range (MHz)	NON - 5M00G7W / 10950.0 - 11200.0 NON - 5M00G7W / 11450.0 - 12200.0 NON - 5M00G7W / 12250.0 - 12700.0	NON - 5M00G7W / 14000.0 - 14500.0
Max Great Circle Coordination Distance	548.8 km / 341.0 mi	224.1 km / 139.2 mi
Precipitation Scatter Contour Radius	636.4 km / 395.4 mi	100.0 km / 62.1 mi

COMSEARCH

Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147
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Coordination Values

MELBOURNE, FL

Licensee Name Kratos/RT Logic
Latitude (NAD 83) 28° 5' 54.2" N
Longitude (NAD 83) 80° 41' 49.6" W
Ground Elevation (AMSL) 5.68 m / 18.7 ft
Antenna Centerline (AGL) 8.84 m / 29.0 ft
Antenna Model GD Satcom 1.8 meter
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 -14.0 (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	98.29	-10.00	307.68	-10.00	125.11
5	0.00	93.33	-10.00	307.68	-10.00	125.11
10	0.00	88.36	-10.00	307.68	-10.00	125.11
15	0.00	83.39	-10.00	307.68	-10.00	125.11
20	0.00	78.43	-10.00	307.68	-10.00	125.11
25	0.00	73.46	-10.00	307.68	-10.00	125.11
30	0.00	68.50	-10.00	307.68	-10.00	125.11
35	0.00	63.54	-10.00	307.68	-10.00	125.11
40	0.00	58.58	-10.00	307.68	-10.00	125.11
45	0.00	53.63	-10.00	307.68	-10.00	125.11
50	0.00	48.68	-10.00	307.68	-10.00	125.11
55	0.00	43.75	-9.02	315.88	-9.02	128.31
60	0.00	38.82	-7.73	327.16	-7.73	132.65
65	0.00	33.92	-6.26	340.20	-6.26	137.68
70	0.00	29.04	-4.57	356.22	-4.57	143.62
75	0.00	24.21	-2.60	376.02	-2.60	148.98
80	0.00	19.45	-0.22	401.24	-0.22	158.94
85	0.00	14.85	2.71	434.54	2.71	172.94
90	0.00	10.61	6.36	478.44	6.36	195.39
95	0.00	7.37	10.31	534.76	10.31	218.62
100	0.00	6.77	11.23	548.82	11.23	224.08
105	0.00	9.34	7.74	497.40	7.74	203.48
110	0.00	13.35	3.86	446.42	3.86	178.98
115	0.00	17.66	0.83	412.91	0.83	163.74
120	0.00	21.92	-1.52	387.29	-1.52	153.35
125	0.00	26.11	-3.42	367.65	-3.42	145.82
130	0.00	30.22	-5.01	352.02	-5.01	142.07
135	0.00	34.24	-6.36	339.26	-6.36	137.32
140	0.00	38.12	-7.53	328.92	-7.53	133.32
145	0.00	41.84	-8.54	320.04	-8.54	129.92
150	0.00	45.34	-9.41	312.59	-9.41	127.04
155	0.00	48.56	-10.00	307.68	-10.00	125.11
160	0.00	51.42	-10.00	307.68	-10.00	125.11
165	0.00	53.82	-10.00	307.68	-10.00	125.11
170	0.00	55.65	-10.00	307.68	-10.00	125.11
175	0.00	56.81	-10.00	307.68	-10.00	125.11
180	0.00	57.21	-10.00	307.68	-10.00	125.11
185	0.00	56.81	-10.00	307.68	-10.00	125.11

COMSEARCH

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Coordination Values

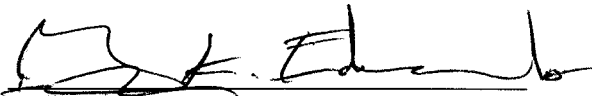
MELBOURNE, FL

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Short Term -146.0 dBW/MHz 0.01% -128.0 dBW/4 kHz 0.0025%
Max Available RF Power -14.0 (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	55.65	-10.00	307.68	-10.00	125.11
195	0.00	53.82	-10.00	307.68	-10.00	125.11
200	0.00	51.42	-10.00	307.68	-10.00	125.11
205	0.00	48.56	-10.00	307.68	-10.00	125.11
210	0.00	45.34	-9.41	312.60	-9.41	127.04
215	0.00	41.84	-8.54	320.05	-8.54	129.92
220	0.00	38.12	-7.53	328.92	-7.53	133.32
225	0.00	34.24	-6.36	339.26	-6.36	137.32
230	0.00	30.34	-5.05	351.63	-5.05	141.93
235	0.00	26.76	-3.69	364.99	-3.69	144.83
240	0.00	23.65	-2.35	378.62	-2.35	149.97
245	0.00	21.24	-1.18	390.93	-1.18	154.79
250	0.00	19.76	-0.40	399.35	-0.40	158.17
255	0.00	19.45	-0.22	401.26	-0.22	158.94
260	0.00	20.35	-0.71	395.92	-0.71	156.79
265	0.00	22.31	-1.71	385.23	-1.71	152.54
270	0.00	25.09	-2.99	372.01	-2.99	147.46
275	0.00	28.45	-4.35	358.38	-4.35	144.41
280	0.00	32.21	-5.70	345.44	-5.70	139.63
285	0.00	36.24	-6.98	333.62	-6.98	135.20
290	0.00	40.46	-8.17	323.22	-8.17	131.14
295	0.00	44.81	-9.28	313.66	-9.28	127.45
300	0.00	49.26	-10.00	307.68	-10.00	125.11
305	0.00	53.79	-10.00	307.68	-10.00	125.11
310	0.00	58.37	-10.00	307.68	-10.00	125.11
315	0.00	62.99	-10.00	307.68	-10.00	125.11
320	0.00	67.65	-10.00	307.68	-10.00	125.11
325	0.00	72.32	-10.00	307.68	-10.00	125.11
330	0.00	77.02	-10.00	307.68	-10.00	125.11
335	0.00	81.72	-10.00	307.68	-10.00	125.11
340	0.00	86.43	-10.00	307.68	-10.00	125.11
345	0.00	91.15	-10.00	307.68	-10.00	125.11
350	0.00	95.86	-10.00	307.68	-10.00	125.11
355	0.00	100.57	-10.00	307.68	-10.00	125.11

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: March 21, 2017