

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
NLG Merger Corp.
ST PETERSBURG, FL
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
October 16, 2018

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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 10/09/2018.

Company

Alltel Communications LLC - S Florida
Central Florida Educational Foundation
Charlotte County Board of County Comm
Citicasters Licenses, Inc.
Cox Radio Inc (Orlando, FL)
Daystar Communications
Duke Energy Business Services, LLC.
Echo Technologies
Florida High Speed Internet
Florida Mobile Telecom, Inc.
Florida Rural Broadband Alliance, LLC
Greater Orlando Public Safety Coop
Harris Corporation - Florida
Hernando County Board of Co Commissioner
Hillsborough County Sheriffs Office
Lake, County of
Lee County - BOCC
Manatee, County of
Mosaic Fertilizer LLC
New Cingular Wireless PCS LLC - N FL
Olympic Wireless, LLC
Osceola County Intergovernmental Comm
Pasco, County of
Peace River Electric Cooperative Inc.
Pinellas, County of
Polk, County of
Rapid Systems, Inc
SES Americom, Inc.
Sarasota, County of
South Florida Water Management District
Sumter County Board of County Commission
Sumter Electric Cooperative, Inc.
T-Mobile License LLC
Tampa Electric Company
Verizon Wireless (VAW) LLC - S Florida
Verizon Wireless Personal Comm, LP(S FL)
Villages Public Saftey

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: 10/16/2018
Job Number: 181009COMSGE02

Administrative Information

Status ENGINEER PROPOSAL
Call Sign E872069
Licensee Code HOMESH
Licensee Name NLG Merger Corp.

Site Information

ST PETERSBURG, FL
Venue Name
Latitude (NAD 83) 27° 52' 59.6" N
Longitude (NAD 83) 82° 40' 4.5" W
Climate Zone B
Rain Zone 1
Ground Elevation (AMSL) 1.26 m / 4.1 ft

Link Information

Satellite Type Geostationary
Mode TR - Transmit-Receive
Modulation Digital
Satellite Arc 60° W to 147° West Longitude
Azimuth Range 138.2° to 257.3°
Corresponding Elevation Angles 49.0° / 14.1°
Antenna Centerline (AGL) 5.49 m / 18.0 ft

Antenna Information

		Receive - A40932		Transmit - A60932	
Manufacturer		ANDREW CORPORATION		ANDREW CORPORATION	
Model		ESA93-46		ESA93-46	
Gain / Diameter		50.7 dBi / 9.3 m		53.9 dBi / 9.3 m	
3-dB / 15-dB Beamwidth		0.50° / 1.00°		0.32° / 0.65°	
Max Available RF Power	(dBW/4 kHz) (dBW/MHz)			-14.0 10.0	
Maximum EIRP	(dBW/4 kHz) (dBW/MHz) (dBW)			39.9 63.9	
Interference Objectives:	Long Term Short Term	-156.0 dBW/MHz -146.0 dBW/MHz	20% 0.01%	-154.0 dBW/4 kHz -131.0 dBW/4 kHz	20% 0.0025%

Frequency Information

	Receive 4.0 GHz	Transmit 6.1 GHz
Emission / Frequency Range (MHz)	36M0G7W / 3700.0 - 4200.0	36M0G7W / 5925.0 - 5965.0 36M0G7W / 5985.0 - 6365.0 36M0G7W / 6385.0 - 6425.0
Max Great Circle Coordination Distance	598.5 km / 371.8 mi	180.5 km / 112.1 mi
Precipitation Scatter Contour Radius	603.4 km / 374.9 mi	100.0 km / 62.1 mi

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Coordination Values

ST PETERSBURG, FL

Licensee Name NLG Merger Corp.
Latitude (NAD 83) 27° 52' 59.6" N
Longitude (NAD 83) 82° 40' 4.5" W
Ground Elevation (AMSL) 1.26 m / 4.1 ft
Antenna Centerline (AGL) 5.49 m / 18.0 ft
Antenna Model Andrew Corporation ESA93-46
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 -14.0 (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	102.28	-10.30	408.50	-10.10	145.67
5	0.00	107.12	-10.30	408.50	-10.10	145.67
10	0.00	111.95	-11.08	399.03	-12.05	138.33
15	0.00	111.10	-10.74	403.15	-11.20	141.47
20	0.00	108.10	-10.30	408.50	-10.10	145.67
25	0.00	105.02	-10.30	408.50	-10.10	145.67
30	0.00	101.86	-10.30	408.50	-10.10	145.67
35	0.00	98.65	-10.30	408.50	-10.10	145.67
40	0.00	95.40	-10.30	408.50	-10.10	145.67
45	0.00	92.12	-10.30	408.50	-10.10	145.67
50	0.00	88.84	-10.30	408.50	-10.10	145.67
55	0.00	85.56	-10.30	408.50	-10.10	145.67
60	0.00	82.31	-10.30	408.50	-10.10	145.67
65	0.00	79.08	-10.30	408.50	-10.10	145.67
70	0.00	75.91	-10.30	408.50	-10.10	145.67
75	0.00	72.80	-10.30	408.50	-10.10	145.67
80	0.00	69.78	-10.30	408.50	-10.10	145.67
85	0.00	66.86	-10.30	408.50	-10.10	145.67
90	0.00	64.06	-10.30	408.50	-10.10	145.67
95	0.00	61.42	-10.30	408.50	-10.10	145.67
100	0.00	58.95	-10.30	408.50	-10.10	145.67
105	0.00	56.68	-10.30	408.50	-10.10	145.67
110	0.00	54.65	-10.30	408.50	-10.10	145.67
115	0.00	52.88	-10.30	408.50	-10.10	145.67
120	0.00	51.41	-10.30	408.50	-10.10	145.67
125	0.00	50.26	-10.30	408.50	-10.10	145.67
130	0.00	49.46	-10.19	409.82	-10.10	145.67
135	0.00	49.03	-10.11	410.89	-10.10	145.67
140	0.00	48.97	-10.09	411.03	-10.10	145.67
145	0.00	49.30	-10.16	410.23	-10.10	145.67
150	0.00	49.99	-10.30	408.52	-10.10	145.67
155	0.00	51.04	-10.30	408.50	-10.10	145.67
160	0.00	52.42	-10.30	408.50	-10.10	145.67
165	0.00	54.10	-10.30	408.50	-10.10	145.67
170	0.00	55.89	-10.30	408.50	-10.10	145.67
175	0.00	57.05	-10.30	408.50	-10.10	145.67
180	0.00	57.45	-10.30	408.50	-10.10	145.67
185	0.00	57.05	-10.30	408.50	-10.10	145.67

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Coordination Values

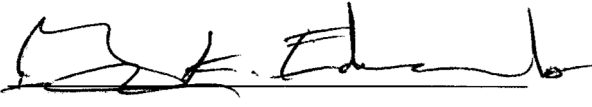
ST PETERSBURG, FL

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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			-14.0 (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	55.89	-10.30	408.50	-10.10	145.67
195	0.00	54.04	-10.30	408.50	-10.10	145.67
200	0.00	51.62	-10.30	408.50	-10.10	145.67
205	0.00	48.74	-10.05	411.60	-10.10	145.67
210	0.00	45.51	-9.40	419.70	-10.10	145.67
215	0.00	41.99	-8.10	436.54	-10.10	145.67
220	0.00	38.26	-6.60	456.62	-10.10	145.67
225	0.00	34.36	-5.04	477.97	-10.10	145.67
230	0.00	30.33	-3.43	501.80	-10.10	145.67
235	0.00	26.20	-1.78	527.44	-10.10	145.67
240	0.00	22.19	-0.74	544.27	-10.10	145.67
245	0.00	18.63	0.25	560.62	-8.18	153.31
250	0.00	15.84	1.37	579.70	-4.27	171.00
255	0.00	14.26	2.44	598.49	-2.36	180.51
260	0.00	14.32	2.38	597.46	-2.42	180.21
265	0.00	15.99	1.30	578.62	-4.49	169.95
270	0.00	18.85	0.16	559.14	-8.49	152.02
275	0.00	22.45	-0.79	543.42	-10.10	145.67
280	0.00	26.49	-1.89	525.64	-10.10	145.67
285	0.00	30.79	-3.62	499.03	-10.10	145.67
290	0.00	35.26	-5.40	472.79	-10.10	145.67
295	0.00	39.84	-7.24	447.98	-10.10	145.67
300	0.00	44.50	-9.10	423.50	-10.10	145.67
305	0.00	49.22	-10.14	410.43	-10.10	145.67
310	0.00	53.97	-10.30	408.50	-10.10	145.67
315	0.00	58.75	-10.30	408.50	-10.10	145.67
320	0.00	63.55	-10.30	408.50	-10.10	145.67
325	0.00	68.37	-10.30	408.50	-10.10	145.67
330	0.00	73.21	-10.30	408.50	-10.10	145.67
335	0.00	78.04	-10.30	408.50	-10.10	145.67
340	0.00	82.89	-10.30	408.50	-10.10	145.67
345	0.00	87.74	-10.30	408.50	-10.10	145.67
350	0.00	92.59	-10.30	408.50	-10.10	145.67
355	0.00	97.44	-10.30	408.50	-10.10	145.67

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: October 16, 2018