FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
Pensacola Christian College, Inc.
PENSACOLA, FL
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
March 01, 2017

TABLE OF CONTENTS

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. Operation in the 6 GHz band will be limited to the bandwidths shown in Section 4 of this report.

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

Baldwin County Commission
Escambia, County of
Exxon Communications Company
New Cingular Wireless PCS LLC - AL, MS
Olympic Wireless, LLC
PowerSouth Energy Cooperative
SOUTHERN COMPANY SERVICES INC

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 01/30/2017.

Company
Alabama State Port Authority
Alltel Communications LLC - Alabama
Alltel Communications LLC - LA/MS/AR/FL
Alltel Communications LLC - S Florida
Baldwin County Commission
Baldwin County Electric Membership Corp
Blab Network Inc.
Cellular South Licenses, LLC
CenturyTel of Alabama, LLC.
Escambia River Electric Cooperative, Inc
Escambia, County of
Exxon Communications Company
Harris Corporation - Florida
Mobile County Alabama
Mobile County Communications District
New Cingular Wireless PCS LLC - AL, MS
New Cingular Wireless PCS LLC - N FL
New Cingular Wireless PCS, LLC - LA, GM
Olympic Wireless, LLC
PowerSouth Energy Cooperative
SOUTHERN COMPANY SERVICES INC
South Missisippi Electric Power Assn
Southern Light, LLC
State of Mississippi Wireless Communicat
T-Mobile License LLC
TELELINK INC.
Verizon Wireless (VAW) LLC - Alabama
Verizon Wireless (VAW) LLC - S Florida

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:	03/01/2017
Job Number:	170130COMSTC01

Administrative Information

Licensee Name	Pensacola Christian College, Inc.

Site Information — PENSACOLA, FL

Latitude (NAD 83)	30° 28' 22.8" N
Longitude (NAD 83)	87° 14' 6.7" W
Climate Zone	A
Rain Zone	1
Ground Elevation (AMSL)	30.96 m / 101.6 ft

Link Information

Satellite Type	Geostationary
Mode	TR - Transmit-Receive
Modulation	Digital
Satellite Arc	58° W to 139° West Longitude
Azimuth Range	132.2° to 248.2°
Corresponding Elevation Angles	42.4° / 24.3°
Antenna Centerline (AGL)	8.7 m / 28.5 ft

Antenna Information

	Receive	Transmit
Manufacturer	Prodelin	Prodelin
Model	1385	1385
Gain / Diameter	41.9 dBi / 3.8 m	45.9 dBi / 3.8 m
3-dB / 15-dB Beamwidth	1.60° / 3.20°	0.80° / 1.60°

	154KG7W	230KG7W	307KG7W	461KG7W
Max Available RF Power (dBW/4 kHz)	-14.08	-12.83	-14.08	-12.83
(dBW/MHz)	9.9	11.14	9.90	11.14
Maximum EIRP (dBW/4 kHz)	31.82	33.07	31.82	33.07
(dBW/MHz)	55.80	57.04	55.80	57.04
(dBW)	47.66	50.67	50.67	53.68

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)	154KG7W / 3700.0 - 4200.0 230KG7W / 3700.0 - 4200.0 307KG7W / 3700.0 - 4200.0 461KG7W / 3700.0 - 4200.0	154KG7W / 5925.00 - 6211.79 154KG7W / 6241.99 - 6425.00 230KG7W / 5925.00 - 6211.79 230KG7W / 6241.99 - 6425.00 307KG7W / 5925.00 - 6211.79 307KG7W / 6241.99 - 6425.00 461KG7W / 5925.00 - 6211.79 461KG7W / 6241.99 - 6425.00
Max Great Circle Coordination Distance	336.5 km / 209.1 mi	158.5 km / 98.4 mi
Precipitation Scatter Contour Radius	570.0 km / 354.2 mi	100.0 km / 62.1 mi

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Coordination Values	**PENSACOLA, FL**			
Licensee Name	Pensacola Christian College, Inc.			
Latitude (NAD 83)	30° 28' 22.8" N			
Longitude (NAD 83)	87° 14' 6.7" W			
Ground Elevation (AMSL)	30.96 m / 101.6 ft			
Antenna Centerline (AGL)	8.7 m / 28.5 ft			
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			-12.8 (dBW/4 kHz)	

			Receive 4.0 GHz		Transmit 6.1 GHz	
Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
0	0.00	109.77	-10.00	285.28	-10.00	134.86
5	0.00	114.25	-10.00	285.28	-10.00	134.86
10	0.00	113.18	-10.00	285.28	-10.00	134.86
15	0.00	109.73	-10.00	285.28	-10.00	134.86
20	0.00	106.20	-10.00	285.28	-10.00	134.86
25	0.00	102.61	-10.00	285.28	-10.00	134.86
30	0.00	98.97	-10.00	285.28	-10.00	134.86
35	0.00	95.30	-10.00	285.28	-10.00	134.86
40	0.00	91.61	-10.00	285.28	-10.00	134.86
45	0.00	87.92	-10.00	285.28	-10.00	134.86
50	0.00	84.23	-10.00	285.28	-10.00	134.86
55	0.00	80.56	-10.00	285.28	-10.00	134.86
60	0.00	76.93	-10.00	285.28	-10.00	134.86
65	0.00	73.35	-10.00	285.28	-10.00	134.86
70	0.00	69.83	-10.00	285.28	-10.00	134.86
75	0.00	66.39	-10.00	285.28	-10.00	134.86
80	0.00	63.06	-10.00	285.28	-10.00	134.86
85	0.00	59.85	-10.00	285.28	-10.00	134.86
90	0.00	56.80	-10.00	285.28	-10.00	134.86
95	0.00	53.93	-10.00	285.28	-10.00	134.86
100	0.00	51.29	-10.00	285.28	-10.00	134.86
105	0.00	48.90	-10.00	285.28	-10.00	134.86
110	0.00	46.82	-9.76	286.81	-9.76	135.53
115	0.00	45.09	-9.35	289.44	-9.35	136.69
120	0.00	43.75	-9.02	291.56	-9.02	137.63
125	0.00	42.85	-8.80	293.04	-8.80	138.29
130	0.00	42.40	-8.68	293.79	-8.68	138.62
135	0.00	42.43	-8.69	293.73	-8.69	138.60
140	0.00	42.94	-8.82	292.89	-8.82	138.22
145	0.00	43.90	-9.06	291.32	-9.06	137.52
150	0.00	45.29	-9.40	289.13	-9.40	136.55
155	0.00	47.07	-9.82	286.44	-9.82	135.37
160	0.00	49.19	-10.00	285.28	-10.00	134.86
165	0.00	51.39	-10.00	285.28	-10.00	134.86
170	0.00	53.08	-10.00	285.28	-10.00	134.86
175	0.00	54.13	-10.00	285.28	-10.00	134.86
180	0.00	54.49	-10.00	285.28	-10.00	134.86
185	0.00	54.13	-10.00	285.28	-10.00	134.86

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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			-12.8 (dBW/4 kHz)	

			Receive 4.0 GHz		Transmit 6.1 GHz	
Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
190	0.00	53.08	-10.00	285.28	-10.00	134.86
195	0.00	51.39	-10.00	285.28	-10.00	134.86
200	0.00	49.16	-10.00	285.28	-10.00	134.86
205	0.00	46.49	-9.68	287.30	-9.68	135.74
210	0.00	43.45	-8.95	292.04	-8.95	137.84
215	0.00	40.13	-8.09	297.74	-8.09	140.40
220	0.00	36.58	-7.08	304.52	-7.08	143.49
225	0.00	33.12	-6.00	311.98	-6.00	146.93
230	0.00	30.05	-4.94	320.07	-4.94	150.45
235	0.00	27.48	-3.98	327.02	-3.98	153.79
240	0.00	25.59	-3.20	332.66	-3.20	156.55
245	0.00	24.51	-2.74	336.07	-2.74	158.23
250	0.00	24.38	-2.67	336.52	-2.67	158.46
255	0.00	25.19	-3.03	333.90	-3.03	157.16
260	0.00	26.86	-3.73	328.81	-3.73	154.66
265	0.00	29.25	-4.65	322.15	-4.65	151.44
270	0.00	32.20	-5.70	314.77	-5.70	147.94
275	0.00	35.56	-6.77	306.64	-6.77	144.46
280	0.00	39.23	-7.84	299.39	-7.84	141.15
285	0.00	43.12	-8.87	292.58	-8.87	138.08
290	0.00	47.19	-9.85	286.26	-9.85	135.29
295	0.00	51.39	-10.00	285.28	-10.00	134.86
300	0.00	55.68	-10.00	285.28	-10.00	134.86
305	0.00	60.05	-10.00	285.28	-10.00	134.86
310	0.00	64.48	-10.00	285.28	-10.00	134.86
315	0.00	68.95	-10.00	285.28	-10.00	134.86
320	0.00	73.45	-10.00	285.28	-10.00	134.86
325	0.00	77.97	-10.00	285.28	-10.00	134.86
330	0.00	82.52	-10.00	285.28	-10.00	134.86
335	0.00	87.07	-10.00	285.28	-10.00	134.86
340	0.00	91.62	-10.00	285.28	-10.00	134.86
345	0.00	96.18	-10.00	285.28	-10.00	134.86
350	0.00	100.72	-10.00	285.28	-10.00	134.86
355	0.00	105.26	-10.00	285.28	-10.00	134.86

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.

Timothy O. Crutcher
Frequency Planner
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147

DATED: March 01, 2017