

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
Shell Communications Inc
ROBERT TC, LA
(E060226)
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
January 07, 2016

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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 12/15/2015.

Company

Acadiana Cellular General Partnership
Alltel Communications LLC - LA/MS/AR/FL
Alltel Communications Wireless of LA, In
Cellular South Licenses, LLC
Cleco Power LLC
Dixie Electric Membership Corporation
ENERGY XXI LLC
Entergy Services Inc
Greater Lafourche Port Commission
HANCOCK, COUNTY OF
Hancock County Sheriff's Office
Harrison County Emergency Communications
Jefferson Parish Sheriff's Office
LOOP LLC
Lafayette MSA Limited Partnership
Louisiana Dept of Transportation and Dev
Louisiana Generating, LLC
Louisiana RSA #7 Cell Gen Partnership
Louisiana, State Of
MISSISSIPPI STATE DEPT OF TRANSPORTATION
Mississippi Authority for ED TV
NEW ORLEANS CITY POLICE DEPARTMENT
NEW ORLEANS EDUCATIONAL TELECOMM
New Cingular Wireless PCS LLC - AL, MS,
New Cingular Wireless PCS, LLC - LA, GM
New Orleans City
PEG Bandwidth, LLC
Plaquemines Parish Government
RigNet SatCom, Inc.
STAR TELEPHONE COMPANY
South Mississippi Electric Power Assn
Southern Company Services Inc
Southern Light, LLC
Sprint Spectrum L.P.
Sprint Spectrum LP DBA Sprint PCS
Sprint Spectrum LP Louisiana
St. Tammany Parish Sheriff's Office
State of Mississippi Wireless Communicat
T-Mobile License LLC
TELELINK INC.

Texas Eastern Communications, LLC
Transcontinental Gas Pipeline Corp.
Verizon Wireless (VAW) / LA
Verizon Wireless (VAW) LLC - Mississippi
Verizon Wireless Louisiana LLC
Verizon Wireless Personal Comm LP-LA/MS
WWL-TV, Inc.

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: 01/07/2016
Job Number: 151215COMSGE16

Administrative Information

Status ENGINEER PROPOSAL
Call Sign E060226
Licensee Code S00876
Licensee Name Shell Communications Inc

Site Information ROBERT TC, LA

Venue Name
Latitude (NAD 83) 30° 30' 54.4" N
Longitude (NAD 83) 90° 20' 21.7" W
Climate Zone A
Rain Zone 1
Ground Elevation (AMSL) 10.21 m / 33.5 ft

Link Information

Satellite Type Geostationary
Mode TR - Transmit-Receive
Modulation Digital
Satellite Arc 60° W to 143° West Longitude
Azimuth Range 130.9° to 248.8°
Corresponding Elevation Angles 41.5° / 23.5°
Antenna Centerline (AGL) 61.8 m / 202.8 ft

Antenna Information

		Receive - FCC32	Transmit - FCC32		
Manufacturer		Andrew	Andrew		
Model		243	243		
Gain / Diameter		38.5 dBi / 2.4 m	42.0 dBi / 2.4 m		
3-dB / 15-dB Beamwidth		1.00° / 2.00°	1.50° / 3.00°		
Max Available RF Power	(dBW/4 kHz) (dBW/MHz)		-19.6	4.4	
Maximum EIRP	(dBW/4 kHz) (dBW/MHz)		22.4	46.4	
Interference Objectives:	Long Term	-156.0 dBW/MHz	20%	-151.8 dBW/4 kHz	20%
	Short Term	-146.0 dBW/MHz	0.01%	-130.8 dBW/4 kHz	0.0025%

Frequency Information

	Receive 4.0 GHz	Transmit 6.1 GHz
Emission / Frequency Range (MHz)	1M81G7W - 4M30G7W / 3700.0 - 4200.0	1M81G7W - 4M30G7W / 5925.0 - 5958.0 1M81G7W - 4M30G7W / 5991.0 - 6018.0 1M81G7W - 4M30G7W / 6051.0 - 6077.0 1M81G7W - 4M30G7W / 6110.0 - 6136.0 1M81G7W - 4M30G7W / 6169.0 - 6182.0 1M81G7W - 4M30G7W / 6332.0 - 6359.0 1M81G7W - 4M30G7W / 6421.0 - 6425.0
Max Great Circle Coordination Distance	339.2 km / 210.8 mi	136.8 km / 85.0 mi
Precipitation Scatter Contour Radius	571.6 km / 355.1 mi	100.0 km / 62.1 mi

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Coordination Values

ROBERT TC, LA

Licensee Name Shell Communications Inc
Latitude (NAD 83) 30° 30' 54.4" N
Longitude (NAD 83) 90° 20' 21.7" W
Ground Elevation (AMSL) 10.21 m / 33.5 ft
Antenna Centerline (AGL) 61.8 m / 202.8 ft
Antenna Model Andrew 2.4 meter
Antenna Mode Receive 4.0 GHz Transmit 6.1 GHz
Interference Objectives: Long Term -156.0 dBW/MHz 20% -151.8 dBW/4 kHz 20%
Short Term -146.0 dBW/MHz 0.01% -130.8 dBW/4 kHz 0.0025%
Max Available RF Power -19.6 (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	109.34	-10.00	285.28	-10.00	117.58
5	0.00	113.86	-10.00	285.28	-10.00	117.58
10	0.00	112.64	-10.00	285.28	-10.00	117.58
15	0.00	109.12	-10.00	285.28	-10.00	117.58
20	0.00	105.52	-10.00	285.28	-10.00	117.58
25	0.00	101.87	-10.00	285.28	-10.00	117.58
30	0.00	98.17	-10.00	285.28	-10.00	117.58
35	0.00	94.45	-10.00	285.28	-10.00	117.58
40	0.00	90.71	-10.00	285.28	-10.00	117.58
45	0.00	86.97	-10.00	285.28	-10.00	117.58
50	0.00	83.23	-10.00	285.28	-10.00	117.58
55	0.00	79.53	-10.00	285.28	-10.00	117.58
60	0.00	75.85	-10.00	285.28	-10.00	117.58
65	0.00	72.23	-10.00	285.28	-10.00	117.58
70	0.00	68.68	-10.00	285.28	-10.00	117.58
75	0.00	65.22	-10.00	285.28	-10.00	117.58
80	0.00	61.86	-10.00	285.28	-10.00	117.58
85	0.00	58.63	-10.00	285.28	-10.00	117.58
90	0.00	55.57	-10.00	285.28	-10.00	117.58
95	0.00	52.70	-10.00	285.28	-10.00	117.58
100	0.00	50.06	-10.00	285.28	-10.00	117.58
105	0.00	47.69	-9.96	285.53	-9.96	117.68
110	0.00	45.64	-9.48	288.58	-9.48	118.91
115	0.00	43.96	-9.08	291.22	-9.08	119.96
120	0.00	42.70	-8.76	293.29	-8.76	120.79
125	0.00	41.88	-8.55	294.67	-8.55	121.33
130	0.00	41.54	-8.46	295.25	-8.46	121.56
135	0.00	41.69	-8.50	294.99	-8.50	121.46
140	0.00	42.33	-8.67	293.90	-8.67	121.03
145	0.00	43.43	-8.95	292.08	-8.95	120.31
150	0.00	44.96	-9.32	289.63	-9.32	119.33
155	0.00	46.88	-9.77	286.72	-9.77	118.16
160	0.00	49.13	-10.00	285.28	-10.00	117.58
165	0.00	51.35	-10.00	285.28	-10.00	117.58
170	0.00	53.03	-10.00	285.28	-10.00	117.58
175	0.00	54.08	-10.00	285.28	-10.00	117.58
180	0.00	54.44	-10.00	285.28	-10.00	117.58
185	0.00	54.08	-10.00	285.28	-10.00	117.58

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Coordination Values

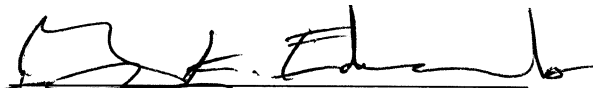
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Interference Objectives: Long Term -156.0 dBW/MHz 20% -151.8 dBW/4 kHz 20%
Short Term -146.0 dBW/MHz 0.01% -130.8 dBW/4 kHz 0.0025%
Max Available RF Power -19.6 (dBW/4 kHz)

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	53.03	-10.00	285.28	-10.00	117.58
195	0.00	51.35	-10.00	285.28	-10.00	117.58
200	0.00	49.12	-10.00	285.28	-10.00	117.58
205	0.00	46.45	-9.68	287.35	-9.68	118.42
210	0.00	43.42	-8.94	292.10	-8.94	120.31
215	0.00	40.10	-8.08	297.79	-8.08	122.56
220	0.00	36.56	-7.07	304.58	-7.07	125.20
225	0.00	32.99	-5.96	312.90	-5.96	128.14
230	0.00	29.80	-4.85	320.72	-4.85	131.09
235	0.00	27.09	-3.82	328.14	-3.82	133.87
240	0.00	25.04	-2.97	334.36	-2.97	134.95
245	0.00	23.82	-2.42	338.35	-2.42	136.48
250	0.00	23.56	-2.30	339.25	-2.30	136.82
255	0.00	24.28	-2.63	336.82	-2.63	135.89
260	0.00	25.91	-3.34	331.64	-3.34	133.92
265	0.00	28.29	-4.29	324.74	-4.29	132.60
270	0.00	31.25	-5.37	317.05	-5.37	129.71
275	0.00	34.63	-6.49	308.61	-6.49	126.74
280	0.00	38.33	-7.59	301.08	-7.59	123.84
285	0.00	42.26	-8.65	294.02	-8.65	121.08
290	0.00	46.36	-9.65	287.49	-9.65	118.47
295	0.00	50.59	-10.00	285.28	-10.00	117.58
300	0.00	54.92	-10.00	285.28	-10.00	117.58
305	0.00	59.31	-10.00	285.28	-10.00	117.58
310	0.00	63.77	-10.00	285.28	-10.00	117.58
315	0.00	68.26	-10.00	285.28	-10.00	117.58
320	0.00	72.79	-10.00	285.28	-10.00	117.58
325	0.00	77.35	-10.00	285.28	-10.00	117.58
330	0.00	81.92	-10.00	285.28	-10.00	117.58
335	0.00	86.50	-10.00	285.28	-10.00	117.58
340	0.00	91.08	-10.00	285.28	-10.00	117.58
345	0.00	95.66	-10.00	285.28	-10.00	117.58
350	0.00	100.24	-10.00	285.28	-10.00	117.58
355	0.00	104.80	-10.00	285.28	-10.00	117.58

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: January 07, 2016