

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
Shell Communications Inc
FOURCHON, LA
(E060224)
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

Alltel Communications LLC - LA/MS/AR/FL
Cleco Power LLC
ENERGY XXI LLC
Entergy Services Inc
Greater Lafourche Port Commission
Infrastructure Networks, Inc.
Jefferson Parish Sheriff's Office
LOOP LLC
Louisiana Dept of Transportation and Dev
Louisiana, State Of
NEW ORLEANS CITY POLICE DEPARTMENT
New Cingular Wireless PCS, LLC - LA, GM
New Orleans City
Plaquemines Parish Government
RigNet SatCom, Inc.
Southern Light, LLC
Sprint Spectrum L.P.
Sprint Spectrum LP Louisiana
T-Mobile License LLC
TELELINK INC.
Transcontinental Gas Pipeline Corp.
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: 151215COMSGE17

Administrative Information

Status ENGINEER PROPOSAL
Call Sign E060224
Licensee Code S00876
Licensee Name Shell Communications Inc

Site Information FOURCHON, LA

Venue Name
Latitude (NAD 83) 29° 7' 22.8" N
Longitude (NAD 83) 90° 11' 55.4" W
Climate Zone A
Rain Zone 1
Ground Elevation (AMSL) 1.01 m / 3.3 ft

Link Information

Satellite Type Geostationary
Mode TR - Transmit-Receive
Modulation Digital
Satellite Arc 60° W to 143° West Longitude
Azimuth Range 129.9° to 249.7°
Corresponding Elevation Angles 42.6° / 23.9°
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)		-19.6	
(dBW/MHz)		4.4	
Maximum EIRP (dBW/4 kHz)		22.4	
(dBW/MHz)		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 - 6018.0
		1M81G7W - 4M30G7W / 6051.0 - 6270.0
		1M81G7W - 4M30G7W / 6303.0 - 6425.0
Max Great Circle Coordination Distance	338.0 km / 210.0 mi	136.3 km / 84.7 mi
Precipitation Scatter Contour Radius	570.8 km / 354.6 mi	100.0 km / 62.1 mi

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Coordination Values

FOURCHON, LA

Licensee Name Shell Communications Inc
Latitude (NAD 83) 29° 7' 22.8" N
Longitude (NAD 83) 90° 11' 55.4" W
Ground Elevation (AMSL) 1.01 m / 3.3 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	108.47	-10.00	285.28	-10.00	117.58
5	0.00	112.97	-10.00	285.28	-10.00	117.58
10	0.00	111.52	-10.00	285.28	-10.00	117.58
15	0.00	108.05	-10.00	285.28	-10.00	117.58
20	0.00	104.51	-10.00	285.28	-10.00	117.58
25	0.00	100.91	-10.00	285.28	-10.00	117.58
30	0.00	97.27	-10.00	285.28	-10.00	117.58
35	0.00	93.61	-10.00	285.28	-10.00	117.58
40	0.00	89.93	-10.00	285.28	-10.00	117.58
45	0.00	86.26	-10.00	285.28	-10.00	117.58
50	0.00	82.59	-10.00	285.28	-10.00	117.58
55	0.00	78.96	-10.00	285.28	-10.00	117.58
60	0.00	75.36	-10.00	285.28	-10.00	117.58
65	0.00	71.82	-10.00	285.28	-10.00	117.58
70	0.00	68.36	-10.00	285.28	-10.00	117.58
75	0.00	64.98	-10.00	285.28	-10.00	117.58
80	0.00	61.72	-10.00	285.28	-10.00	117.58
85	0.00	58.60	-10.00	285.28	-10.00	117.58
90	0.00	55.65	-10.00	285.28	-10.00	117.58
95	0.00	52.90	-10.00	285.28	-10.00	117.58
100	0.00	50.38	-10.00	285.28	-10.00	117.58
105	0.00	48.15	-10.00	285.28	-10.00	117.58
110	0.00	46.24	-9.62	287.68	-9.62	118.55
115	0.00	44.70	-9.26	290.05	-9.26	119.50
120	0.00	43.56	-8.98	291.87	-8.98	120.22
125	0.00	42.87	-8.80	293.01	-8.80	120.67
130	0.00	42.64	-8.75	293.38	-8.75	120.82
135	0.00	42.89	-8.81	292.98	-8.81	120.66
140	0.00	43.60	-8.99	291.81	-8.99	120.20
145	0.00	44.75	-9.27	289.97	-9.27	119.47
150	0.00	46.30	-9.64	287.58	-9.64	118.51
155	0.00	48.23	-10.00	285.28	-10.00	117.58
160	0.00	50.47	-10.00	285.28	-10.00	117.58
165	0.00	52.78	-10.00	285.28	-10.00	117.58
170	0.00	54.54	-10.00	285.28	-10.00	117.58
175	0.00	55.65	-10.00	285.28	-10.00	117.58
180	0.00	56.03	-10.00	285.28	-10.00	117.58
185	0.00	55.65	-10.00	285.28	-10.00	117.58

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Coordination Values

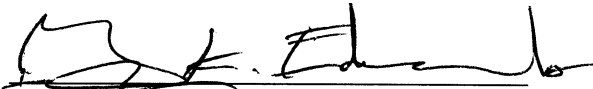
FOURCHON, LA

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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)
190	0.00	54.54	-10.00	285.28	-10.00	117.58
195	0.00	52.77	-10.00	285.28	-10.00	117.58
200	0.00	50.45	-10.00	285.28	-10.00	117.58
205	0.00	47.67	-9.96	285.56	-9.96	117.69
210	0.00	44.53	-9.22	290.31	-9.22	119.60
215	0.00	41.11	-8.35	296.00	-8.35	121.86
220	0.00	37.46	-7.34	302.76	-7.34	124.50
225	0.00	33.88	-6.25	310.27	-6.25	127.38
230	0.00	30.64	-5.16	318.56	-5.16	130.28
235	0.00	27.87	-4.13	325.91	-4.13	133.03
240	0.00	25.73	-3.26	332.22	-3.26	134.14
245	0.00	24.37	-2.67	336.53	-2.67	135.78
250	0.00	23.94	-2.48	337.97	-2.48	136.33
255	0.00	24.48	-2.72	336.19	-2.72	135.65
260	0.00	25.93	-3.34	331.60	-3.34	133.91
265	0.00	28.15	-4.24	325.13	-4.24	132.74
270	0.00	30.98	-5.28	317.72	-5.28	129.96
275	0.00	34.26	-6.37	309.42	-6.37	127.06
280	0.00	37.88	-7.46	301.96	-7.46	124.18
285	0.00	41.74	-8.51	294.91	-8.51	121.43
290	0.00	45.79	-9.52	288.36	-9.52	118.82
295	0.00	49.97	-10.00	285.28	-10.00	117.58
300	0.00	54.26	-10.00	285.28	-10.00	117.58
305	0.00	58.63	-10.00	285.28	-10.00	117.58
310	0.00	63.05	-10.00	285.28	-10.00	117.58
315	0.00	67.53	-10.00	285.28	-10.00	117.58
320	0.00	72.03	-10.00	285.28	-10.00	117.58
325	0.00	76.57	-10.00	285.28	-10.00	117.58
330	0.00	81.12	-10.00	285.28	-10.00	117.58
335	0.00	85.68	-10.00	285.28	-10.00	117.58
340	0.00	90.25	-10.00	285.28	-10.00	117.58
345	0.00	94.82	-10.00	285.28	-10.00	117.58
350	0.00	99.38	-10.00	285.28	-10.00	117.58
355	0.00	103.93	-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