

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
Kenneth Copeland Ministries
NEWARK, TX
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
May 9, 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. Operation will be restricted to the bandwidth 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

Fort Worth, City of
New Cingular Wireless PCS LLC - N Texas
Texas RSA 9B1 Limited Partnership
T-Mobile License LLC
Verizon Wireless (VAW) LLC-C TX/LA/AR

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 12/14/2015. Minor change sent to all carriers on 05/01/2016.

Company

AMG Technology Investment Group LLC
Access MLP Operating LLC
Aircanopy Internet Services, Inc.
Alltel Communications LLC - C TX/N LA/AR
BNSF Railway Company
BelWave Communications
BorderCOMM Partners LP
Brazos Electric Power Cooperative Inc
CBS Communication Services Inc
CITY OF ARLINGTON
Carrollton City of Texas/ACS
Central Telephone Company of Texas
Choice wireless LLC
City of Dallas
City of McKinney
City of Plano
Comanche Electric Cooperative Assn
Conterra Ultra Broadband, LLC
Cumulus Licensing LLC
Dallas MTA, L.P.
Dallas MTA, L.P. - Central Texas
Denton County
ENBRIDGE ENERGY COMPANY, INC.
FiberLight LLC
Fort Worth, City of
Global Telecom & Technology Americas
Grand Prairie, City of
HARRIS METHODIST HEALTH SERVICES
HILCO Electric Cooperative, Inc.
KECS-FM License Corporation
Kaufman County Sheriff Department
Legacy ISP, LLC
New Cingular Wireless PCS LLC - N Texas
New Cingular Wireless PCS LLC - S Texas
North Texas Public Broadcasting Inc.
Oklahoma RSA 9 Limited Partnership
Olympic Wireless, LLC
One Ring Networks, Inc.
PEG Bandwidth, LLC
RAYTHEON COMPANY

Radio One Licenses, LLC
Rayburn Country Electric Cooperative Inc
Station Venture Operations - Ft Worth TX
T-Mobile License LLC
TEXAS HEALTH RESOURCES
TEXAS STATE DEPT. OF TRANSPORTATION
Tarrant Regional Water District
Texahoma Cellular Limited Partnership
Texas RSA 20B1 LTD Partnership
Texas RSA 6 Limited Partnership
Texas RSA 7B1 Limited Partnership
Texas RSA 9B1 Limited Partnership
UNITED COOPERATIVE SERVICES
USCOC of Greater Oklahoma, LLC
United Electric Cooperative Services Inc
Verizon Wireless (VAW) LLC-C TX/LA/AR
West Central Wireless LP

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: 05/03/2016
Job Number: 160503COMSTC03

Administrative Information

Licensee Name Kenneth Copeland Ministries

Site Information

NEWARK, TX

Venue Name KCMTV
Latitude (NAD 83) 32° 59' 21.0" N
Longitude (NAD 83) 97° 29' 7.0" W
Climate Zone A
Rain Zone 2
Ground Elevation (AMSL) 235.92 m / 774.0 ft

Link Information

Satellite Type Geostationary
Mode TR - Transmit-Receive
Modulation Digital
Satellite Arc 60° W to 139° West Longitude
Azimuth Range 125.4° to 238.4°
Corresponding Elevation Angles 34.6° / 31.5°
Antenna Centerline (AGL) 2.13 m / 7.0 ft

Antenna Information

Receive

Manufacturer ASC Signal
Gain / Diameter 42.2 dBi / 4.9 m
3-dB / 15-dB Beamwidth 1.00° / 2.00°

Transmit

ASC Signal
46.2 dBi / 4.9 m
0.60° / 1.60°

		<u>1M23G7W - 36M0G7W</u>			
Max Available RF Power	(dBW/4 kHz)	-14.0	-14.1		
	(dBW/MHz)	10.0	9.9		
Maximum EIRP	(dBW/4 kHz)	32.2	32.1		
	(dBW/MHz)	56.2	56.2		
	(dBW)	57.1	71.64		
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

Emission / Frequency Range (MHz) 1M23G7W - 36M0G7W / 3700.0 - 4200.0

Transmit 6.1 GHz

1M23G7W - 36M0G7W / 5985.0 - 6085.0 – Band Edges
1M23G7W - 36M0G7W / 6245.0 - 6325.0 – Band Edges

Max Great Circle Coordination Distance 316.4 km / 196.5 mi 144.8 km / 90.0 mi
Precipitation Scatter Contour Radius 488.1 km / 303.2 mi 100.0 km / 62.1 mi

COMSEARCH

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Coordination Values

NEWARK, TX

Licensee Name Kenneth Copeland Ministries
Latitude (NAD 83) 32° 59' 21.0" N
Longitude (NAD 83) 97° 29' 7.0" W
Ground Elevation (AMSL) 235.92 m / 774.0 ft
Antenna Centerline (AGL) 2.13 m / 7.0 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 -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	116.54	-10.00	285.28	-10.00	132.84
5	0.27	114.69	-10.00	277.06	-10.00	127.44
10	0.37	110.76	-10.00	263.98	-10.00	118.63
15	0.36	106.73	-10.00	265.41	-10.00	119.61
20	0.34	102.66	-10.00	267.74	-10.00	121.19
25	0.40	98.57	-10.00	261.46	-10.00	116.89
30	0.48	94.45	-10.00	252.00	-10.00	110.28
35	0.50	90.31	-10.00	250.25	-10.00	109.03
40	0.42	86.17	-10.00	258.53	-10.00	114.86
45	0.36	82.05	-10.00	265.87	-10.00	119.92
50	0.33	77.95	-10.00	268.78	-10.00	121.89
55	0.36	73.87	-10.00	265.44	-10.00	119.63
60	0.36	69.84	-10.00	265.31	-10.00	119.54
65	0.36	65.87	-10.00	265.30	-10.00	119.53
70	0.42	61.95	-10.00	258.77	-10.00	115.03
75	0.30	58.19	-10.00	272.24	-10.00	124.23
80	0.25	54.54	-10.00	278.47	-10.00	128.38
85	0.23	51.02	-10.00	281.87	-10.00	130.61
90	0.20	47.70	-9.96	285.23	-9.96	132.76
95	0.00	44.74	-9.27	289.99	-9.27	133.58
100	0.20	41.77	-8.52	294.41	-8.52	135.34
105	0.00	39.48	-7.91	298.93	-7.91	137.39
110	0.00	37.45	-7.34	302.80	-7.34	139.06
115	0.23	35.69	-6.81	301.79	-6.81	137.50
120	0.24	34.70	-6.51	302.67	-6.51	137.57
125	0.28	34.30	-6.38	299.40	-6.38	135.18
130	0.29	34.56	-6.46	297.31	-6.46	133.95
135	0.22	35.51	-6.76	303.50	-6.76	138.57
140	0.00	37.18	-7.26	303.32	-7.26	139.29
145	0.23	38.95	-7.76	296.27	-7.76	135.37
150	0.21	41.37	-8.42	294.04	-8.42	134.94
155	0.00	44.25	-9.15	290.75	-9.15	133.90
160	0.00	46.74	-9.74	286.92	-9.74	133.54
165	0.00	48.80	-10.00	285.28	-10.00	132.84
170	0.00	50.34	-10.00	285.28	-10.00	132.84
175	0.00	51.30	-10.00	285.28	-10.00	132.84
180	0.00	51.63	-10.00	285.28	-10.00	132.84
185	0.00	51.30	-10.00	285.28	-10.00	132.84

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Coordination Values

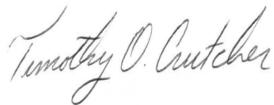
NEWARK, TX

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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 -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	50.34	-10.00	285.28	-10.00	132.84
195	0.00	48.80	-10.00	285.28	-10.00	132.84
200	0.00	46.74	-9.74	286.92	-9.74	133.54
205	0.00	44.25	-9.15	290.75	-9.15	133.90
210	0.00	41.41	-8.43	295.48	-8.43	135.90
215	0.00	38.51	-7.64	300.74	-7.64	138.17
220	0.00	36.00	-6.91	305.72	-6.91	140.34
225	0.00	33.96	-6.27	310.09	-6.27	142.27
230	0.00	32.49	-5.79	314.07	-5.79	143.76
235	0.00	31.66	-5.51	316.04	-5.51	144.65
240	0.00	31.54	-5.47	316.35	-5.47	144.79
245	0.00	32.11	-5.67	314.96	-5.67	144.16
250	0.00	33.36	-6.08	311.44	-6.08	142.87
255	0.00	35.20	-6.66	307.39	-6.66	141.07
260	0.00	37.55	-7.37	302.59	-7.37	138.97
265	0.00	40.32	-8.14	297.39	-8.14	136.72
270	0.00	43.43	-8.94	292.08	-8.94	134.46
275	0.00	46.80	-9.76	286.83	-9.76	133.50
280	0.00	50.38	-10.00	285.28	-10.00	132.84
285	0.00	54.14	-10.00	285.28	-10.00	132.84
290	0.00	58.02	-10.00	285.28	-10.00	132.84
295	0.00	62.01	-10.00	285.28	-10.00	132.84
300	0.00	66.07	-10.00	285.28	-10.00	132.84
305	0.00	70.21	-10.00	285.28	-10.00	132.84
310	0.00	74.39	-10.00	285.28	-10.00	132.84
315	0.00	78.60	-10.00	285.28	-10.00	132.84
320	0.00	82.84	-10.00	285.28	-10.00	132.84
325	0.00	87.10	-10.00	285.28	-10.00	132.84
330	0.00	91.36	-10.00	285.28	-10.00	132.84
335	0.00	95.62	-10.00	285.28	-10.00	132.84
340	0.00	99.87	-10.00	285.28	-10.00	132.84
345	0.00	104.10	-10.00	285.28	-10.00	132.84
350	0.00	108.29	-10.00	285.28	-10.00	132.84
355	0.00	112.44	-10.00	285.28	-10.00	132.84

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: May 9, 2016