

# FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for  
**TV Guide Networks, LLC**  
**TULSA, OK**  
**Satellite Earth Station**

Prepared By:  
COMSEARCH  
19700 Janelia Farm Boulevard  
Ashburn, VA 20147  
February 27, 2012

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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.

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

Alltel Communications LLC – Oklahoma  
BNSF Railway Company  
Oklahoma Department of Transportation  
Oklahoma City SMSA Limited Partnership  
USCOC of Greater Oklahoma, LLC  
USCOC of Oklahoma RSA #10, 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 02/17/2012.

#### Company

Alltel Communications LLC - Oklahoma  
BNSF Railway Company  
CHEROKEE CONNEX LLC  
Cellular Network Partnership, A Ltd Prtn  
Conterra Ultra Broadband, LLC  
Cox Communications Kansas LLC  
Dobson Cellular Systems LLC - OK Mkt  
GRAND RIVER DAM AUTHORITY  
KAMO Electric Cooperative Inc.  
Kansas #15 Limited Partnership  
NORTHEAST OKLAHOMA ELECTRIC COOPERATIVE  
New Cingular Wireless PCS LLC - N Texas  
New Cingular Wireless PCS, LLC - OK  
OKLAHOMA STATE DEPT OF PUBLIC SAFETY  
Oklahoma City SMSA Limited Partnership  
Oklahoma Department of Transportation  
Oklahoma Gas and Electric Company  
Oklahoma RSA #4 South Partnership  
Oklahoma RSA 3 Limited Partnership  
PUBLIC SERVICE COMPANY OF OKLAHOMA  
US Cellular Telephone of Greater Tulsa  
USCOC of Greater Oklahoma, LLC  
USCOC of Oklahoma RSA #10, 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: 02/20/2012  
Job Number: 120217COMSGE05

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### Administrative Information

Status ENGINEER PROPOSAL  
Call Sign  
Licensee Code UVCORP  
Licensee Name TV Guide Networks, LLC

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### Site Information TULSA, OK

Venue Name  
Latitude (NAD 83) 36° 3' 32.4" N  
Longitude (NAD 83) 95° 57' 43.8" W  
Climate Zone A  
Rain Zone 2  
Ground Elevation (AMSL) 189.59 m / 622.0 ft

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### Link Information

Satellite Type Geostationary  
Mode TR - Transmit-Receive  
Modulation Digital  
Satellite Arc 60° W to 143° West Longitude  
Azimuth Range 129.1° to 241.3°  
Corresponding Elevation Angles 33.6° / 25.6°  
Antenna Centerline (AGL) 5.49 m / 18.0 ft

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### Antenna Information

#### Receive - FCC32

#### Transmit - FCC32

Manufacturer	Andrew	Andrew	
Model	ESA91-46	ESA91-46	
Gain / Diameter	50.5 dBi / 9.1 m	53.9 dBi / 9.1 m	
3-dB / 15-dB Beamwidth	0.50° / 1.00°	0.30° / 0.60°	
Max Available RF Power (dBW/4 kHz)		-20.0	
(dBW/MHz)		4.0	
Maximum EIRP (dBW/4 kHz)		33.9	
(dBW/MHz)		57.9	
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%

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### Frequency Information

#### Receive 4.0 GHz

#### Transmit 6.1 GHz

Emission / Frequency Range (MHz)	16M5G7W - 36M0G7W / 3700.0 - 4200.0	16M5G7W - 36M0G7W / 5925.0 - 6425.0
Max Great Circle Coordination Distance	329.0 km / 204.4 mi	133.1 km / 82.7 mi
Precipitation Scatter Contour Radius	494.6 km / 307.3 mi	100.0 km / 62.1 mi

# COMSEARCH

## Earth Station Data Sheet

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### Coordination Values

### TULSA, OK

Licensee Name	TV Guide Networks, LLC				
Latitude (NAD 83)	36° 3' 32.4" N				
Longitude (NAD 83)	95° 57' 43.8" W				
Ground Elevation (AMSL)	189.59 m / 622.0 ft				
Antenna Centerline (AGL)	5.49 m / 18.0 ft				
Antenna Model	Andrew 9.1 Meter				
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					-20.0 (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	0.28	115.76	-10.00	275.23	-10.00	110.58
5	0.36	117.91	-10.00	266.21	-10.00	104.63
10	0.39	113.96	-10.00	262.37	-10.00	102.06
15	0.31	109.91	-10.00	272.09	-10.00	108.52
20	0.29	105.83	-10.00	273.74	-10.00	109.61
25	0.39	101.72	-10.00	261.72	-10.00	101.63
30	0.60	97.58	-10.00	243.60	-10.00	100.00
35	0.52	93.39	-10.00	248.73	-10.00	100.00
40	0.58	89.21	-10.00	244.40	-10.00	100.00
45	1.08	84.99	-10.00	217.96	-10.00	100.00
50	1.59	80.74	-10.00	205.51	-10.00	100.00
55	1.71	76.52	-10.00	202.33	-10.00	100.00
60	1.64	72.35	-10.00	204.16	-10.00	100.00
65	1.76	68.19	-10.00	200.99	-10.00	100.00
70	2.00	64.04	-10.00	194.50	-10.00	100.00
75	1.93	60.04	-10.00	196.52	-10.00	100.00
80	1.71	56.20	-10.00	202.25	-10.00	100.00
85	1.62	52.46	-10.00	204.81	-10.00	100.00
90	1.46	48.90	-10.00	206.59	-10.00	100.00
95	1.87	45.22	-9.38	200.83	-9.38	100.00
100	1.63	42.16	-8.62	208.25	-8.62	100.00
105	1.34	39.48	-7.91	220.51	-7.91	100.00
110	1.43	36.89	-7.17	221.51	-7.17	100.00
115	1.31	34.94	-6.58	228.31	-6.58	100.00
120	1.29	33.46	-6.11	231.71	-6.11	100.00
125	0.73	33.12	-6.00	258.82	-6.00	100.00
130	0.67	32.98	-5.96	263.25	-5.96	100.00
135	0.41	33.70	-6.19	284.37	-6.19	110.32
140	0.54	34.66	-6.50	268.69	-6.50	100.50
145	0.33	36.52	-7.06	287.59	-7.06	113.88
150	0.28	38.74	-7.70	290.54	-7.70	116.83
155	0.23	41.29	-8.40	291.91	-8.40	118.81
160	0.00	43.75	-9.02	291.57	-9.02	119.58
165	0.00	45.61	-9.48	288.63	-9.48	118.41
170	0.00	47.00	-9.80	286.54	-9.80	117.57
175	0.00	47.86	-10.00	285.28	-10.00	117.07
180	0.00	48.15	-10.00	285.28	-10.00	117.07
185	0.24	47.62	-9.95	280.66	-9.95	114.02



# COMSEARCH

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### Coordination Values

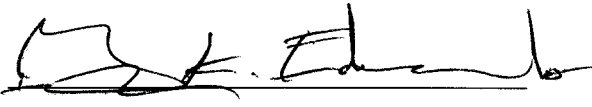
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Antenna Mode	Receive 4.0 GHz		Transmit 6.1 GHz	
Interference Objectives: Long Term	-156.0 dBW/MHz	20%	-154.0 dBW/4 kHz	20%
Short Term	-146.0 dBW/MHz	0.01%	-131.0 dBW/4 kHz	0.0025%
Max Available RF Power			-20.0 (dBW/4 kHz)	

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	47.00	-9.80	286.54	-9.80	117.57
195	0.00	45.61	-9.48	288.63	-9.48	118.41
200	0.00	43.75	-9.02	291.57	-9.02	119.58
205	0.00	41.47	-8.44	295.38	-8.44	121.09
210	0.00	38.84	-7.73	300.12	-7.73	122.95
215	0.00	35.92	-6.88	305.88	-6.88	125.17
220	0.00	32.81	-5.90	313.32	-5.90	127.77
225	0.00	30.03	-4.94	320.12	-4.94	130.33
230	0.00	27.81	-4.10	326.09	-4.10	132.56
235	0.22	26.09	-3.41	329.01	-3.41	133.12
240	0.27	25.36	-3.10	324.50	-3.10	129.76
245	0.29	25.56	-3.19	321.37	-3.19	127.97
250	0.35	26.62	-3.63	309.33	-3.63	121.66
255	0.41	28.46	-4.36	295.87	-4.36	114.47
260	0.58	30.89	-5.24	274.09	-5.24	101.90
265	0.75	33.82	-6.23	256.08	-6.23	100.00
270	0.79	37.25	-7.28	247.25	-7.28	100.00
275	0.78	40.99	-8.32	241.89	-8.32	100.00
280	0.75	44.94	-9.31	237.93	-9.31	100.00
285	0.76	49.02	-10.00	233.68	-10.00	100.00
290	1.57	52.96	-10.00	206.19	-10.00	100.00
295	1.59	57.29	-10.00	205.49	-10.00	100.00
300	1.35	61.75	-10.00	209.84	-10.00	100.00
305	1.01	66.27	-10.00	219.98	-10.00	100.00
310	0.72	70.79	-10.00	236.10	-10.00	100.00
315	0.43	75.31	-10.00	257.44	-10.00	100.00
320	0.20	79.83	-10.00	285.06	-10.00	116.93
325	0.00	84.35	-10.00	285.28	-10.00	117.07
330	0.00	88.86	-10.00	285.28	-10.00	117.07
335	0.00	93.37	-10.00	285.28	-10.00	117.07
340	0.00	97.87	-10.00	285.28	-10.00	117.07
345	0.00	102.36	-10.00	285.28	-10.00	117.07
350	0.00	106.84	-10.00	285.28	-10.00	117.07
355	0.00	111.28	-10.00	285.28	-10.00	117.07

## 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: February 27, 2012