

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
Scripps Network, Inc.
KNOXVILLE, TN
(7.6 meter)
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
May 09, 2017

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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 03/23/2017.

Company

Bellsouth Telecommunications, Inc.
Blount County, TN
Cellco Partnership - Kentucky
Cincinnati New Orleans and Texas Pacific
City of Chattanooga
Conterra Ultra Broadband, LLC
Duke Energy Business Services, LLC.
Ion Media of Knoxville, Inc.
Kentucky Utilities Company
Knox County Emergency Comm District
London Radio Service, Inc
Norfolk Southern Railway
North Carolina RSA 1 Partnership
Scripps Broadcasting Holdings - WKHT
T-Mobile License LLC
Tennessee Dept. Of Safety & Homeland Sec
Tennessee RSA No. 3 Limited Partnership
US Cellular Telephone Co-Grtr Knoxville
USCOC of Greater North Carolina, LLC
University of North Carolina
Verizon Wireless (VAW) LLC- Tennessee
Verizon Wireless (VAW) LLC-NC&SC Mkts
Verizon Wireless Tennessee Partnership

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: 05/09/2017
Job Number: 170323COMSGE03

Administrative Information

Status ENGINEER PROPOSAL
Call Sign E940452
Licensee Code SCRNET
Licensee Name Scripps Network, Inc.

Site Information

KNOXVILLE, TN
Venue Name
Latitude (NAD 83) 35° 54' 57.5" N
Longitude (NAD 83) 84° 6' 40.8" W
Climate Zone A
Rain Zone 1
Ground Elevation (AMSL) 291.69 m / 957.0 ft

Link Information

Satellite Type Geostationary
Mode TR - Transmit-Receive
Modulation Digital
Satellite Arc 40.5° W to 143° West Longitude
Azimuth Range 121.6° to 250.5°
Corresponding Elevation Angles 28.2° / 16.4°
Antenna Centerline (AGL) 3.66 m / 12.0 ft

Antenna Information

		Receive - FCC32		Transmit - FCC32	
Manufacturer		Andrew		Andrew	
Model		ES76		ES76	
Gain / Diameter		49.0 dBi / 7.6 m		52.7 dBi / 7.6 m	
3-dB / 15-dB Beamwidth		1.22° / 2.44°		0.80° / 1.60°	
Max Available RF Power	(dBW/4 kHz) (dBW/MHz)			-13.0 11.0	
Maximum EIRP	(dBW/4 kHz) (dBW/MHz)			39.7 63.7	
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)	36M0G7W / 3700.0 - 4200.0	36M0G7W / 5850.0 - 6425.0
Max Great Circle Coordination Distance	307.8 km / 191.2 mi	144.3 km / 89.7 mi
Precipitation Scatter Contour Radius	592.8 km / 368.3 mi	100.0 km / 62.1 mi

COMSEARCH

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Coordination Values

KNOXVILLE, TN

Licensee Name Scripps Network, Inc.
Latitude (NAD 83) 35° 54' 57.5" N
Longitude (NAD 83) 84° 6' 40.8" W
Ground Elevation (AMSL) 291.69 m / 957.0 ft
Antenna Centerline (AGL) 3.66 m / 12.0 ft
Antenna Model Andrew 7.6 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 -13.0 (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	1.15	108.78	-10.00	215.63	-10.00	100.00
5	1.06	113.49	-10.00	218.42	-10.00	100.00
10	1.27	109.17	-10.00	212.01	-10.00	100.00
15	1.07	104.75	-10.00	218.01	-10.00	100.00
20	0.86	100.31	-10.00	228.20	-10.00	100.00
25	0.98	95.89	-10.00	221.45	-10.00	100.00
30	0.80	91.44	-10.00	231.14	-10.00	100.00
35	0.88	87.00	-10.00	226.91	-10.00	100.00
40	0.54	82.59	-10.00	247.36	-10.00	109.69
45	0.42	78.20	-10.00	258.69	-10.00	117.64
50	0.45	73.81	-10.00	255.10	-10.00	115.12
55	0.58	69.43	-10.00	244.64	-10.00	107.71
60	0.61	65.10	-10.00	242.97	-10.00	106.48
65	1.19	60.67	-10.00	214.59	-10.00	100.00
70	1.34	56.38	-10.00	210.09	-10.00	100.00
75	0.82	52.44	-10.00	230.38	-10.00	100.00
80	0.79	48.45	-10.00	231.90	-10.00	100.00
85	0.45	44.77	-9.27	259.89	-9.27	117.37
90	0.33	41.20	-8.37	278.98	-8.37	128.97
95	0.33	37.82	-7.44	285.43	-7.44	131.78
100	0.00	35.02	-6.61	307.77	-6.61	144.35
105	0.26	32.21	-5.70	306.57	-5.70	141.84
110	0.36	30.03	-4.94	298.46	-4.94	134.96
115	0.70	28.27	-4.28	272.07	-4.28	117.65
120	0.86	27.43	-3.96	263.73	-3.96	111.36
125	1.09	27.35	-3.92	251.79	-3.92	102.88
130	0.91	28.49	-4.37	257.92	-4.37	107.98
135	0.66	30.43	-5.08	269.54	-5.08	117.23
140	1.15	32.34	-5.74	238.37	-5.74	100.00
145	1.31	35.08	-6.63	228.07	-6.63	100.00
150	1.30	37.97	-7.49	223.77	-7.49	100.00
155	1.47	40.42	-8.16	215.20	-8.16	100.00
160	1.91	42.26	-8.65	203.09	-8.65	100.00
165	1.63	44.29	-9.16	205.94	-9.16	100.00
170	1.35	45.87	-9.54	211.86	-9.54	100.00
175	1.52	46.52	-9.69	206.38	-9.69	100.00
180	1.24	47.08	-9.82	213.94	-9.82	100.00
185	1.54	46.50	-9.69	205.92	-9.69	100.00

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Earth Station Data Sheet

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(703)726-5500 <http://www.comsearch.com>

Coordination Values

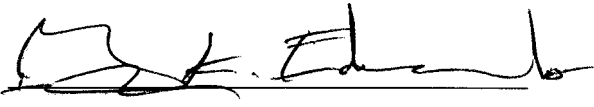
KNOXVILLE, TN

Licensee Name	Scripps Network, Inc.			
Latitude (NAD 83)	35° 54' 57.5" N			
Longitude (NAD 83)	84° 6' 40.8" W			
Ground Elevation (AMSL)	291.69 m / 957.0 ft			
Antenna Centerline (AGL)	3.66 m / 12.0 ft			
Antenna Model	Andrew 7.6 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			-13.0 (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	1.74	45.50	-9.45	204.04	-9.45	100.00
195	1.88	44.07	-9.10	201.95	-9.10	100.00
200	2.11	42.08	-8.60	198.50	-8.60	100.00
205	2.23	39.80	-8.00	198.83	-8.00	100.00
210	2.29	37.20	-7.26	200.86	-7.26	100.00
215	2.39	34.28	-6.38	202.96	-6.38	100.00
220	2.46	31.13	-5.33	206.44	-5.33	100.00
225	2.27	27.95	-4.16	213.86	-4.16	100.00
230	1.97	24.67	-2.80	228.73	-2.80	100.00
235	1.88	21.12	-1.12	242.16	-1.12	100.00
240	1.85	17.87	0.69	255.15	0.69	100.00
245	1.79	15.59	2.18	267.93	2.18	103.17
250	1.91	14.49	2.97	269.23	2.97	102.50
255	1.99	15.07	2.54	263.27	2.54	100.00
260	2.08	17.12	1.16	250.92	1.16	100.00
265	2.22	20.17	-0.62	235.48	-0.62	100.00
270	2.16	23.97	-2.49	225.62	-2.49	100.00
275	1.90	28.23	-4.27	222.68	-4.27	100.00
280	1.66	32.67	-5.85	221.29	-5.85	100.00
285	1.57	37.18	-7.26	216.89	-7.26	100.00
290	1.46	41.79	-8.53	213.54	-8.53	100.00
295	1.48	46.43	-9.67	207.66	-9.67	100.00
300	1.36	51.15	-10.00	209.44	-10.00	100.00
305	1.55	55.85	-10.00	206.67	-10.00	100.00
310	1.63	60.61	-10.00	204.49	-10.00	100.00
315	1.60	65.40	-10.00	205.26	-10.00	100.00
320	1.40	70.23	-10.00	208.51	-10.00	100.00
325	1.21	75.05	-10.00	213.79	-10.00	100.00
330	1.00	79.88	-10.00	220.41	-10.00	100.00
335	1.18	84.69	-10.00	214.74	-10.00	100.00
340	1.21	89.51	-10.00	213.89	-10.00	100.00
345	1.07	94.34	-10.00	218.22	-10.00	100.00
350	1.19	99.16	-10.00	214.33	-10.00	100.00
355	0.99	103.97	-10.00	221.06	-10.00	100.00

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: May 09, 2017

COMSEARCH

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Date: 05/09/2017
Job Number: 170323COMSGE02

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Call Sign E940452
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Link Information

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Modulation Digital
Satellite Arc 40.5° W to 143° West Longitude
Azimuth Range 121.6° to 250.5°
Corresponding Elevation Angles 28.2° / 16.4°
Antenna Centerline (AGL) 3.66 m / 12.0 ft

Antenna Information

		Receive - FCC32		Transmit - FCC32	
Manufacturer		Vertex		Vertex	
Model		8.1 KPC		8.1 KPC	
Gain / Diameter		49.2 dBi / 8.1 m		53.1 dBi / 8.1 m	
3-dB / 15-dB Beamwidth		1.22° / 2.44°		0.80° / 1.60°	
Max Available RF Power	(dBW/4 kHz) (dBW/MHz)			-13.4 10.6	
Maximum EIRP	(dBW/4 kHz) (dBW/MHz)			39.7 63.7	
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

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Emission / Frequency Range (MHz)	36M0G7W / 3700.0 - 4200.0	36M0G7W / 5850.0 - 6425.0
Max Great Circle Coordination Distance	307.8 km / 191.2 mi	143.1 km / 88.9 mi
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Antenna Model Vertex 8.1 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 -13.4 (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	1.15	108.78	-10.00	215.63	-10.00	100.00
5	1.06	113.49	-10.00	218.42	-10.00	100.00
10	1.27	109.17	-10.00	212.01	-10.00	100.00
15	1.07	104.75	-10.00	218.01	-10.00	100.00
20	0.86	100.31	-10.00	228.20	-10.00	100.00
25	0.98	95.89	-10.00	221.45	-10.00	100.00
30	0.80	91.44	-10.00	231.14	-10.00	100.00
35	0.88	87.00	-10.00	226.91	-10.00	100.00
40	0.54	82.59	-10.00	247.36	-10.00	108.63
45	0.42	78.20	-10.00	258.69	-10.00	116.57
50	0.45	73.81	-10.00	255.10	-10.00	114.05
55	0.58	69.43	-10.00	244.64	-10.00	106.66
60	0.61	65.10	-10.00	242.97	-10.00	105.43
65	1.19	60.67	-10.00	214.59	-10.00	100.00
70	1.34	56.38	-10.00	210.09	-10.00	100.00
75	0.82	52.44	-10.00	230.38	-10.00	100.00
80	0.79	48.45	-10.00	231.90	-10.00	100.00
85	0.45	44.77	-9.27	259.89	-9.27	116.30
90	0.33	41.20	-8.37	278.98	-8.37	127.88
95	0.33	37.82	-7.44	285.43	-7.44	130.69
100	0.00	35.02	-6.61	307.77	-6.61	143.09
105	0.26	32.21	-5.70	306.57	-5.70	140.61
110	0.36	30.03	-4.94	298.46	-4.94	133.81
115	0.70	28.27	-4.28	272.07	-4.28	116.50
120	0.86	27.43	-3.96	263.73	-3.96	110.21
125	1.09	27.35	-3.92	251.79	-3.92	101.73
130	0.91	28.49	-4.37	257.92	-4.37	106.84
135	0.66	30.43	-5.08	269.54	-5.08	116.10
140	1.15	32.34	-5.74	238.37	-5.74	100.00
145	1.31	35.08	-6.63	228.07	-6.63	100.00
150	1.30	37.97	-7.49	223.77	-7.49	100.00
155	1.47	40.42	-8.16	215.20	-8.16	100.00
160	1.91	42.26	-8.65	203.09	-8.65	100.00
165	1.63	44.29	-9.16	205.94	-9.16	100.00
170	1.35	45.87	-9.54	211.86	-9.54	100.00
175	1.52	46.52	-9.69	206.38	-9.69	100.00
180	1.24	47.08	-9.82	213.94	-9.82	100.00
185	1.54	46.50	-9.69	205.92	-9.69	100.00

COMSEARCH

Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147
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Coordination Values

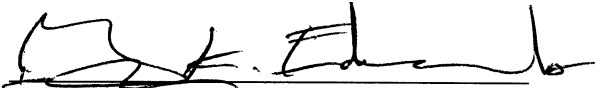
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Antenna Model Vertex 8.1 meter
Antenna Mode Receive 4.0 GHz Transmit 6.1 GHz
Interference Objectives: Long Term -156.0 dBW/MHz 20% -154.0 dBW/4 kHz 20%
Short Term -146.0 dBW/MHz 0.01% -131.0 dBW/4 kHz 0.0025%
Max Available RF Power -13.4 (dBW/4 kHz)

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	1.74	45.50	-9.45	204.04	-9.45	100.00
195	1.88	44.07	-9.10	201.95	-9.10	100.00
200	2.11	42.08	-8.60	198.50	-8.60	100.00
205	2.23	39.80	-8.00	198.83	-8.00	100.00
210	2.29	37.20	-7.26	200.86	-7.26	100.00
215	2.39	34.28	-6.38	202.96	-6.38	100.00
220	2.46	31.13	-5.33	206.44	-5.33	100.00
225	2.27	27.95	-4.16	213.86	-4.16	100.00
230	1.97	24.67	-2.80	228.73	-2.80	100.00
235	1.88	21.12	-1.12	242.16	-1.12	100.00
240	1.85	17.87	0.69	255.15	0.69	100.00
245	1.79	15.59	2.18	267.93	2.18	101.96
250	1.91	14.49	2.97	269.23	2.97	101.27
255	1.99	15.07	2.54	263.27	2.54	100.00
260	2.08	17.12	1.16	250.92	1.16	100.00
265	2.22	20.17	-0.62	235.48	-0.62	100.00
270	2.16	23.97	-2.49	225.62	-2.49	100.00
275	1.90	28.23	-4.27	222.68	-4.27	100.00
280	1.66	32.67	-5.85	221.29	-5.85	100.00
285	1.57	37.18	-7.26	216.89	-7.26	100.00
290	1.46	41.79	-8.53	213.54	-8.53	100.00
295	1.48	46.43	-9.67	207.66	-9.67	100.00
300	1.36	51.15	-10.00	209.44	-10.00	100.00
305	1.55	55.85	-10.00	206.67	-10.00	100.00
310	1.63	60.61	-10.00	204.49	-10.00	100.00
315	1.60	65.40	-10.00	205.26	-10.00	100.00
320	1.40	70.23	-10.00	208.51	-10.00	100.00
325	1.21	75.05	-10.00	213.79	-10.00	100.00
330	1.00	79.88	-10.00	220.41	-10.00	100.00
335	1.18	84.69	-10.00	214.74	-10.00	100.00
340	1.21	89.51	-10.00	213.89	-10.00	100.00
345	1.07	94.34	-10.00	218.22	-10.00	100.00
350	1.19	99.16	-10.00	214.33	-10.00	100.00
355	0.99	103.97	-10.00	221.06	-10.00	100.00

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: May 09, 2017

COMSEARCH

Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147
(703)726-5500 <http://www.comsearch.com>

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
Scripps Network, Inc.
KNOXVILLE, TN
(9 meter)
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
May 09, 2017

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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.

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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.

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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 03/23/2017.

Company

Bellsouth Telecommunications, Inc.
Blount County, TN
Cellco Partnership - Kentucky
Cincinnati New Orleans and Texas Pacific
City of Chattanooga
Conterra Ultra Broadband, LLC
Duke Energy Business Services, LLC.
Ion Media of Knoxville, Inc.
Kentucky Utilities Company
Knox County Emergency Comm District
London Radio Service, Inc
Norfolk Southern Railway
North Carolina RSA 1 Partnership
Scripps Broadcasting Holdings - WKHT
T-Mobile License LLC
Tennessee Dept. Of Safety & Homeland Sec
Tennessee RSA No. 3 Limited Partnership
US Cellular Telephone Co-Grtr Knoxville
USCOC of Greater North Carolina, LLC
University of North Carolina
Verizon Wireless (VAW) LLC- Tennessee
Verizon Wireless (VAW) LLC-NC&SC Mkts
Verizon Wireless Tennessee Partnership

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.

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Date: 05/09/2017
Job Number: 170323COMSGE01

Administrative Information

Status ENGINEER PROPOSAL
Call Sign E940452
Licensee Code SCRNET
Licensee Name Scripps Network, Inc.

Site Information

KNOXVILLE, TN
Venue Name
Latitude (NAD 83) 35° 54' 57.5" N
Longitude (NAD 83) 84° 6' 40.8" W
Climate Zone A
Rain Zone 1
Ground Elevation (AMSL) 291.69 m / 957.0 ft

Link Information

Satellite Type Geostationary
Mode TR - Transmit-Receive
Modulation Digital
Satellite Arc 40.5° W to 143° West Longitude
Azimuth Range 121.6° to 250.5°
Corresponding Elevation Angles 28.2° / 16.4°
Antenna Centerline (AGL) 4.88 m / 16.0 ft

Antenna Information

		Receive - FCC32		Transmit - FCC32	
Manufacturer		Vertex		Vertex	
Model		9.0 KXC		9.0 KXC	
Gain / Diameter		50.1 dBi / 9.0 m		53.5 dBi / 9.0 m	
3-dB / 15-dB Beamwidth		0.55° / 1.20°		0.40° / 0.80°	
Max Available RF Power	(dBW/4 kHz) (dBW/MHz)			-13.8 10.2	
Maximum EIRP	(dBW/4 kHz) (dBW/MHz)			39.7 63.7	
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)	36M0G7W / 3700.0 - 4200.0	36M0G7W / 5850.0 - 6425.0
Max Great Circle Coordination Distance	308.4 km / 191.6 mi	141.9 km / 88.1 mi
Precipitation Scatter Contour Radius	592.8 km / 368.3 mi	100.0 km / 62.1 mi

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Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147
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Coordination Values

KNOXVILLE, TN

Licensee Name Scripps Network, Inc.
Latitude (NAD 83) 35° 54' 57.5" N
Longitude (NAD 83) 84° 6' 40.8" W
Ground Elevation (AMSL) 291.69 m / 957.0 ft
Antenna Centerline (AGL) 4.88 m / 16.0 ft
Antenna Model Vertex 9 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 -13.8 (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	1.13	108.78	-10.00	216.42	-10.00	100.00
5	1.04	113.49	-10.00	219.19	-10.00	100.00
10	1.17	109.16	-10.00	214.94	-10.00	100.00
15	1.06	104.74	-10.00	218.58	-10.00	100.00
20	0.84	100.30	-10.00	229.24	-10.00	100.00
25	0.96	95.89	-10.00	222.19	-10.00	100.00
30	0.79	91.44	-10.00	231.93	-10.00	100.00
35	0.87	87.00	-10.00	227.48	-10.00	100.00
40	0.52	82.59	-10.00	248.27	-10.00	108.23
45	0.41	78.20	-10.00	260.07	-10.00	116.46
50	0.38	73.82	-10.00	263.15	-10.00	118.59
55	0.53	69.44	-10.00	247.80	-10.00	107.89
60	0.56	65.11	-10.00	246.08	-10.00	106.65
65	1.13	60.68	-10.00	216.25	-10.00	100.00
70	1.28	56.40	-10.00	211.67	-10.00	100.00
75	0.75	52.47	-10.00	233.97	-10.00	100.00
80	0.71	48.48	-10.00	236.75	-10.00	100.00
85	0.37	44.81	-9.29	269.37	-9.29	121.76
90	0.32	41.21	-8.37	281.12	-8.37	128.22
95	0.32	37.83	-7.45	286.91	-7.45	130.57
100	0.00	35.02	-6.61	307.77	-6.61	141.85
105	0.24	32.22	-5.70	308.39	-5.70	140.67
110	0.35	30.04	-4.94	299.92	-4.94	133.64
115	0.67	28.29	-4.29	273.87	-4.29	116.60
120	0.83	27.46	-3.97	265.54	-3.97	110.35
125	1.06	27.38	-3.93	252.84	-3.93	101.37
130	0.88	28.53	-4.38	259.93	-4.38	107.14
135	0.63	30.45	-5.09	271.70	-5.09	116.50
140	1.12	32.37	-5.75	239.53	-5.75	100.00
145	1.27	35.11	-6.64	229.36	-6.64	100.00
150	1.26	38.00	-7.50	225.03	-7.50	100.00
155	1.43	40.45	-8.17	216.29	-8.17	100.00
160	1.88	42.29	-8.66	204.05	-8.66	100.00
165	1.59	44.33	-9.17	206.93	-9.17	100.00
170	1.32	45.90	-9.55	212.85	-9.55	100.00
175	1.49	46.55	-9.70	207.31	-9.70	100.00
180	0.74	47.57	-9.93	235.09	-9.93	100.00
185	1.05	46.99	-9.80	219.86	-9.80	100.00

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Coordination Values

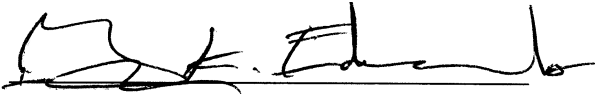
KNOXVILLE, TN

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Longitude (NAD 83) 84° 6' 40.8" W
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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 -13.8 (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	1.25	45.98	-9.56	214.94	-9.56	100.00
195	1.38	44.51	-9.21	212.58	-9.21	100.00
200	1.62	42.51	-8.71	208.28	-8.71	100.00
205	1.73	40.21	-8.11	208.00	-8.11	100.00
210	1.80	37.59	-7.38	209.70	-7.38	100.00
215	1.89	34.65	-6.49	211.32	-6.49	100.00
220	1.96	31.48	-5.45	214.62	-5.45	100.00
225	1.78	28.29	-4.29	226.26	-4.29	100.00
230	1.65	24.89	-2.90	238.62	-2.90	100.00
235	1.63	21.29	-1.20	250.14	-1.20	100.00
240	1.60	18.07	0.57	263.08	0.57	100.54
245	1.54	15.82	2.02	275.85	2.02	106.45
250	1.67	14.74	2.79	276.90	2.79	105.62
255	1.75	15.31	2.38	270.90	2.38	102.39
260	1.83	17.33	1.03	258.06	1.03	100.00
265	1.97	20.34	-0.71	241.69	-0.71	100.00
270	1.92	24.12	-2.56	232.01	-2.56	100.00
275	1.65	28.35	-4.32	230.06	-4.32	100.00
280	1.17	32.88	-5.92	236.83	-5.92	100.00
285	1.07	37.36	-7.31	232.26	-7.31	100.00
290	0.97	41.94	-8.57	229.47	-8.57	100.00
295	0.99	46.56	-9.70	222.61	-9.70	100.00
300	0.98	51.24	-10.00	221.29	-10.00	100.00
305	1.05	55.94	-10.00	218.61	-10.00	100.00
310	1.14	60.68	-10.00	216.11	-10.00	100.00
315	1.11	65.46	-10.00	216.98	-10.00	100.00
320	0.91	70.27	-10.00	225.15	-10.00	100.00
325	1.01	75.07	-10.00	219.86	-10.00	100.00
330	0.97	79.88	-10.00	221.95	-10.00	100.00
335	1.15	84.69	-10.00	215.56	-10.00	100.00
340	1.18	89.51	-10.00	214.76	-10.00	100.00
345	1.03	94.34	-10.00	219.25	-10.00	100.00
350	1.17	99.16	-10.00	215.16	-10.00	100.00
355	0.96	103.96	-10.00	222.44	-10.00	100.00

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.

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DATED: May 09, 2017