

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
WXII Hearst Television, Inc.
WINSTON-SALEM, NC
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
May 24, 2018

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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 05/23/2018.

Company

General Dynamics - OTS, 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: 05/24/2018
Job Number: 180523COMSGE06

Administrative Information

Status ENGINEER PROPOSAL
Call Sign
Licensee Code WXII
Licensee Name WXII Hearst Television, Inc.

Site Information

WINSTON-SALE, NC
Venue Name
Latitude (NAD 83) 36° 7' 22.0" N
Longitude (NAD 83) 80° 15' 46.6" W
Climate Zone A
Rain Zone 1
Ground Elevation (AMSL) 283.46 m / 930.0 ft

Link Information

Satellite Type Geostationary
Mode RO - Receive-Only
Modulation Digital
Satellite Arc 60° W to 143° West Longitude
Azimuth Range 147.9° to 253.1°
Corresponding Elevation Angles 42.9° / 13.3°
Antenna Centerline (AGL) 3.66 m / 12.0 ft

Antenna Information

Receive - S40452
Manufacturer SSE
Model 8345 4.5 METER
Gain / Diameter 43.3 dBi / 4.5 m
3-dB / 15-dB Beamwidth 1.20° / 2.50°

Interference Objectives: Long Term -156.0 dBW/MHz 20%
Short Term -146.0 dBW/MHz 0.01%

Frequency Information

Receive 4.0 GHz
Emission / Frequency Range (MHz) 36M0F8F / 3700.0 - 4200.0
2M00G7W - 36M0G7W / 3700.0 - 4200.0

Max Great Circle Coordination Distance 285.2 km / 177.2 mi
Precipitation Scatter Contour Radius 607.6 km / 377.5 mi

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Coordination Values

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Antenna Model SSE 8345 4.5 METER
Antenna Mode Receive 4.0 GHz
Interference Objectives: Long Term -156.0 dBW/MHz 20%
Short Term -146.0 dBW/MHz 0.01%

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 4.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
0	0.43	106.47	-9.99	258.00
5	0.49	111.33	-11.77	241.29
10	0.50	116.19	-15.17	222.24
15	0.56	120.24	-16.79	211.15
20	0.63	117.06	-15.53	213.29
25	0.67	113.74	-13.69	219.88
30	1.21	110.48	-11.09	208.83
35	1.56	107.02	-10.10	205.88
40	2.01	103.47	-9.70	195.64
45	1.98	99.75	-9.70	196.36
50	1.92	95.99	-9.70	198.11
55	1.91	92.22	-9.70	198.23
60	2.07	88.45	-9.70	194.36
65	2.08	84.67	-9.70	193.99
70	2.08	80.91	-9.70	194.19
75	2.06	77.18	-9.70	194.46
80	2.06	73.50	-9.70	194.63
85	2.14	69.85	-9.70	192.81
90	2.19	66.28	-9.70	191.52
95	2.49	62.70	-9.70	184.86
100	2.40	59.39	-9.70	186.90
105	2.21	56.29	-9.70	191.15
110	2.09	53.36	-9.70	193.82
115	1.87	50.73	-9.70	199.42
120	1.48	48.52	-9.70	207.56
125	1.35	46.44	-9.70	211.15
130	1.19	44.76	-9.70	215.93
135	1.13	43.39	-9.70	217.79
140	0.97	42.54	-9.70	223.17
145	1.16	41.84	-9.70	216.92
150	1.30	41.65	-9.70	212.68
155	1.35	42.04	-9.71	211.03
160	1.53	42.79	-9.76	205.82
165	1.72	43.99	-10.07	201.84
170	1.78	45.23	-10.70	197.16
175	1.71	46.10	-10.70	199.22
180	1.70	46.38	-10.70	199.55
185	1.58	46.23	-11.27	200.27

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Coordination Values

WINSTON-SALE, NC

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Antenna Model SSE 8345 4.5 METER
Antenna Mode Receive 4.0 GHz
Interference Objectives: Long Term -156.0 dBW/MHz 20%
 Short Term -146.0 dBW/MHz 0.01%

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 4.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
190	1.50	45.51	-12.70	195.77
195	1.56	44.14	-12.70	194.06
200	1.69	42.24	-12.70	190.37
205	1.74	40.01	-12.37	190.64
210	1.78	37.42	-10.97	196.16
215	1.69	34.63	-10.70	199.77
220	1.83	31.43	-10.13	198.52
225	1.66	28.24	-8.70	207.31
230	1.52	24.85	-8.70	211.09
235	1.41	21.31	-8.70	214.31
240	1.29	17.67	-8.23	220.22
245	1.23	14.46	-7.16	227.75
250	1.09	12.54	-5.24	243.42
255	1.10	12.29	-4.99	244.61
260	1.07	13.98	-6.68	235.91
265	0.66	17.26	-8.15	250.52
270	0.69	20.95	-8.70	245.01
275	1.06	24.92	-8.70	225.15
280	1.10	29.33	-8.70	223.70
285	1.00	33.94	-9.70	221.88
290	0.81	38.66	-9.70	232.59
295	0.77	43.39	-9.70	234.59
300	0.67	48.18	-9.70	240.93
305	0.45	53.01	-9.70	256.98
310	0.37	57.84	-9.70	266.51
315	0.22	62.69	-9.70	285.18
320	0.26	67.52	-9.70	279.50
325	0.25	72.38	-9.70	280.51
330	0.28	77.24	-9.70	277.40
335	0.30	82.11	-9.70	274.31
340	0.31	86.98	-9.70	273.57
345	0.22	91.85	-9.70	284.47
350	0.35	96.73	-9.70	269.01
355	0.37	101.60	-9.70	266.21

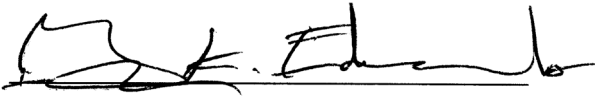
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Earth Station Data Sheet

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

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 24, 2018

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1. CONCLUSIONS

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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

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Coordination data for this earth station was sent to the below listed carriers with a letter dated 05/23/2018.

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General Dynamics - OTS, 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.

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Earth Station Data Sheet

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

Date: 05/24/2018
Job Number: 180523COMSGE05

Administrative Information

Status ENGINEER PROPOSAL
Call Sign
Licensee Code WXII
Licensee Name WXII Hearst Television, Inc.

Site Information

WINSTON-SALEM, NC

Venue Name
Latitude (NAD 83) 36° 7' 22.0" N
Longitude (NAD 83) 80° 15' 46.6" W
Climate Zone A
Rain Zone 1
Ground Elevation (AMSL) 283.46 m / 930.0 ft

Link Information

Satellite Type Geostationary
Mode RO - Receive-Only
Modulation Digital
Satellite Arc 60° W to 143° West Longitude
Azimuth Range 147.9° to 253.1°
Corresponding Elevation Angles 42.9° / 13.3°
Antenna Centerline (AGL) 3.66 m / 12.0 ft

Antenna Information

Receive - FCC32

Manufacturer AFC
Model 3.6 meter
Gain / Diameter 42.5 dBi / 3.6 m
3-dB / 15-dB Beamwidth 1.20° / 4.20°

Interference Objectives: Long Term -156.0 dBW/MHz 20%
Short Term -146.0 dBW/MHz 0.01%

Frequency Information

Receive 4.0 GHz

Emission / Frequency Range (MHz)
36M0F8F / 3700.0 - 4200.0
2M00G7W - 36M0G7W / 3700.0 - 4200.0

Max Great Circle Coordination Distance 315.3 km / 195.9 mi
Precipitation Scatter Contour Radius 607.6 km / 377.5 mi

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Antenna Centerline (AGL) 3.66 m / 12.0 ft
Antenna Model AFC 3.6 meter
Antenna Mode Receive 4.0 GHz
Interference Objectives: Long Term -156.0 dBW/MHz 20%
 Short Term -146.0 dBW/MHz 0.01%

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 4.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
0	0.43	106.47	-10.00	257.96
5	0.49	111.33	-10.00	251.46
10	0.50	116.19	-10.00	250.04
15	0.56	120.24	-10.00	245.73
20	0.63	117.06	-10.00	241.56
25	0.67	113.74	-10.00	239.25
30	1.21	110.48	-10.00	213.92
35	1.56	107.02	-10.00	206.34
40	2.01	103.47	-10.00	194.24
45	1.98	99.75	-10.00	194.96
50	1.92	95.99	-10.00	196.72
55	1.91	92.22	-10.00	196.84
60	2.07	88.45	-10.00	192.95
65	2.08	84.67	-10.00	192.58
70	2.08	80.91	-10.00	192.78
75	2.06	77.18	-10.00	193.05
80	2.06	73.50	-10.00	193.23
85	2.14	69.85	-10.00	191.39
90	2.19	66.28	-10.00	190.10
95	2.49	62.70	-10.00	183.40
100	2.40	59.39	-10.00	185.45
105	2.21	56.29	-10.00	189.72
110	2.09	53.36	-10.00	192.41
115	1.87	50.73	-10.00	198.04
120	1.48	48.52	-10.00	206.19
125	1.35	46.44	-9.67	211.27
130	1.19	44.76	-9.27	218.05
135	1.13	43.39	-8.93	221.66
140	0.97	42.54	-8.72	228.31
145	1.16	41.84	-8.54	222.80
150	1.30	41.65	-8.49	218.63
155	1.35	42.04	-8.59	216.46
160	1.53	42.79	-8.78	210.34
165	1.72	43.99	-9.08	206.30
170	1.78	45.23	-9.39	203.15
175	1.71	46.10	-9.59	204.22
180	1.70	46.38	-9.66	204.26
185	1.58	46.23	-9.62	205.28

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Licensee Name: WXII Hearst Television, Inc.
Latitude (NAD 83): 36° 7' 22.0" N
Longitude (NAD 83): 80° 15' 46.6" W
Ground Elevation (AMSL): 283.46 m / 930.0 ft
Antenna Centerline (AGL): 3.66 m / 12.0 ft
Antenna Model: AFC 3.6 meter
Antenna Mode: Receive 4.0 GHz
Interference Objectives: Long Term: -156.0 dBW/MHz 20%
Short Term: -146.0 dBW/MHz 0.01%

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 4.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
190	1.50	45.51	-9.45	208.17
195	1.56	44.14	-9.12	208.03
200	1.69	42.24	-8.64	206.67
205	1.74	40.01	-8.05	208.16
210	1.78	37.42	-7.33	210.51
215	1.69	34.63	-6.49	217.20
220	1.83	31.43	-5.43	218.53
225	1.66	28.24	-4.27	230.27
230	1.52	24.85	-2.88	243.04
235	1.41	21.31	-1.21	257.85
240	1.29	17.67	0.82	276.52
245	1.23	14.46	3.00	295.22
250	1.09	12.54	4.54	313.84
255	1.10	12.29	4.76	315.26
260	1.07	13.98	3.37	304.77
265	0.66	17.26	1.07	314.35
270	0.69	20.95	-1.03	295.37
275	1.06	24.92	-2.91	259.51
280	1.10	29.33	-4.68	246.51
285	1.00	33.94	-6.27	240.70
290	0.81	38.66	-7.68	243.94
295	0.77	43.39	-8.93	238.83
300	0.67	48.18	-10.00	239.25
305	0.45	53.01	-10.00	255.20
310	0.37	57.84	-10.00	264.69
315	0.22	62.69	-10.00	283.28
320	0.26	67.52	-10.00	277.62
325	0.25	72.38	-10.00	278.62
330	0.28	77.24	-10.00	275.52
335	0.30	82.11	-10.00	272.45
340	0.31	86.98	-10.00	271.71
345	0.22	91.85	-10.00	282.56
350	0.35	96.73	-10.00	267.17
355	0.37	101.60	-10.00	264.38

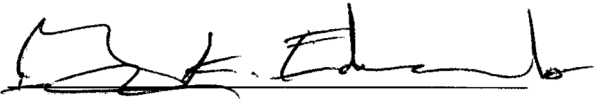
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DATED: May 24, 2018

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Call Sign
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Licensee Name WXII Hearst Television, Inc.

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Rain Zone 1
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Modulation Digital
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Azimuth Range 147.9° to 253.1°
Corresponding Elevation Angles 42.9° / 13.3°
Antenna Centerline (AGL) 3.66 m / 12.0 ft

Antenna Information

Receive - FCC32

Manufacturer Prodeln
Model 3.7 meter
Gain / Diameter 41.7 dBi / 3.7 m
3-dB / 15-dB Beamwidth 1.40° / 2.40°

Interference Objectives: Long Term -156.0 dBW/MHz 20%
Short Term -146.0 dBW/MHz 0.01%

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Receive 4.0 GHz

Emission / Frequency Range (MHz)
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10	0.50	116.19	-10.00	250.04
15	0.56	120.24	-10.00	245.73
20	0.63	117.06	-10.00	241.56
25	0.67	113.74	-10.00	239.25
30	1.21	110.48	-10.00	213.92
35	1.56	107.02	-10.00	206.34
40	2.01	103.47	-10.00	194.24
45	1.98	99.75	-10.00	194.96
50	1.92	95.99	-10.00	196.72
55	1.91	92.22	-10.00	196.84
60	2.07	88.45	-10.00	192.95
65	2.08	84.67	-10.00	192.58
70	2.08	80.91	-10.00	192.78
75	2.06	77.18	-10.00	193.05
80	2.06	73.50	-10.00	193.23
85	2.14	69.85	-10.00	191.39
90	2.19	66.28	-10.00	190.10
95	2.49	62.70	-10.00	183.40
100	2.40	59.39	-10.00	185.45
105	2.21	56.29	-10.00	189.72
110	2.09	53.36	-10.00	192.41
115	1.87	50.73	-10.00	198.04
120	1.48	48.52	-10.00	206.19
125	1.35	46.44	-9.67	211.27
130	1.19	44.76	-9.27	218.05
135	1.13	43.39	-8.93	221.66
140	0.97	42.54	-8.72	228.31
145	1.16	41.84	-8.54	222.80
150	1.30	41.65	-8.49	218.63
155	1.35	42.04	-8.59	216.46
160	1.53	42.79	-8.78	210.34
165	1.72	43.99	-9.08	206.30
170	1.78	45.23	-9.39	203.15
175	1.71	46.10	-9.59	204.22
180	1.70	46.38	-9.66	204.26
185	1.58	46.23	-9.62	205.28

COMSEARCH

Earth Station Data Sheet

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

Coordination Values

WINSTON-SALE, NC

Licensee Name WXII Hearst Television, Inc.
Latitude (NAD 83) 36° 7' 22.0" N
Longitude (NAD 83) 80° 15' 46.6" W
Ground Elevation (AMSL) 283.46 m / 930.0 ft
Antenna Centerline (AGL) 3.66 m / 12.0 ft
Antenna Model Prodelin 3.7 meter
Antenna Mode Receive 4.0 GHz
Interference Objectives: Long Term -156.0 dBW/MHz 20%
 Short Term -146.0 dBW/MHz 0.01%

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 4.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
190	1.50	45.51	-9.45	208.17
195	1.56	44.14	-9.12	208.03
200	1.69	42.24	-8.64	206.67
205	1.74	40.01	-8.05	208.16
210	1.78	37.42	-7.33	210.51
215	1.69	34.63	-6.49	217.20
220	1.83	31.43	-5.43	218.53
225	1.66	28.24	-4.27	230.27
230	1.52	24.85	-2.88	243.04
235	1.41	21.31	-1.21	257.85
240	1.29	17.67	0.82	276.52
245	1.23	14.46	3.00	295.22
250	1.09	12.54	4.54	313.84
255	1.10	12.29	4.76	315.26
260	1.07	13.98	3.37	304.77
265	0.66	17.26	1.07	314.35
270	0.69	20.95	-1.03	295.37
275	1.06	24.92	-2.91	259.51
280	1.10	29.33	-4.68	246.51
285	1.00	33.94	-6.27	240.70
290	0.81	38.66	-7.68	243.94
295	0.77	43.39	-8.93	238.83
300	0.67	48.18	-10.00	239.25
305	0.45	53.01	-10.00	255.20
310	0.37	57.84	-10.00	264.69
315	0.22	62.69	-10.00	283.28
320	0.26	67.52	-10.00	277.62
325	0.25	72.38	-10.00	278.62
330	0.28	77.24	-10.00	275.52
335	0.30	82.11	-10.00	272.45
340	0.31	86.98	-10.00	271.71
345	0.22	91.85	-10.00	282.56
350	0.35	96.73	-10.00	267.17
355	0.37	101.60	-10.00	264.38

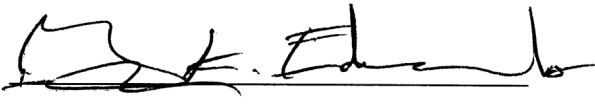
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Earth Station Data Sheet

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

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 24, 2018

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
WXII Hearst Television, Inc.
WINSTON-SALEM, NC
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
May 24, 2018

COMSEARCH

Earth Station Data Sheet

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

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Earth Station Data Sheet

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

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.

COMSEARCH

Earth Station Data Sheet

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

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.

COMSEARCH

Earth Station Data Sheet

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

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 05/23/2018.

Company

General Dynamics - OTS, Inc.

COMSEARCH

Earth Station Data Sheet

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

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: 05/24/2018
Job Number: 180523COMSGE03

Administrative Information

Status ENGINEER PROPOSAL
Call Sign
Licensee Code WXII
Licensee Name WXII Hearst Television, Inc.

Site Information

WINSTON-SALEM, NC

Venue Name
Latitude (NAD 83) 36° 7' 22.0" N
Longitude (NAD 83) 80° 15' 46.6" W
Climate Zone A
Rain Zone 1
Ground Elevation (AMSL) 283.46 m / 930.0 ft

Link Information

Satellite Type Geostationary
Mode RO - Receive-Only
Modulation Digital
Satellite Arc 60° W to 143° West Longitude
Azimuth Range 147.9° to 253.1°
Corresponding Elevation Angles 42.9° / 13.3°
Antenna Centerline (AGL) 3.66 m / 12.0 ft

Antenna Information

Receive - FCC32

Manufacturer Patriot
Model 3.8 meter
Gain / Diameter 42.9 dBi / 3.8 m
3-dB / 15-dB Beamwidth 1.40° / 2.80°

Interference Objectives: Long Term -156.0 dBW/MHz 20%
Short Term -146.0 dBW/MHz 0.01%

Frequency Information

Receive 4.0 GHz

Emission / Frequency Range (MHz)
36M0F8F / 3700.0 - 4200.0
2M00G7W - 36M0G7W / 3700.0 - 4200.0

Max Great Circle Coordination Distance 315.3 km / 195.9 mi
Precipitation Scatter Contour Radius 607.6 km / 377.5 mi

COMSEARCH

Earth Station Data Sheet

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

Coordination Values

WINSTON-SALE, NC

Licensee Name WXII Hearst Television, Inc.
Latitude (NAD 83) 36° 7' 22.0" N
Longitude (NAD 83) 80° 15' 46.6" W
Ground Elevation (AMSL) 283.46 m / 930.0 ft
Antenna Centerline (AGL) 3.66 m / 12.0 ft
Antenna Model Patriot 3.8 meter
Antenna Mode Receive 4.0 GHz
Interference Objectives: Long Term -156.0 dBW/MHz 20%
Short Term -146.0 dBW/MHz 0.01%

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 4.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
0	0.43	106.47	-10.00	257.96
5	0.49	111.33	-10.00	251.46
10	0.50	116.19	-10.00	250.04
15	0.56	120.24	-10.00	245.73
20	0.63	117.06	-10.00	241.56
25	0.67	113.74	-10.00	239.25
30	1.21	110.48	-10.00	213.92
35	1.56	107.02	-10.00	206.34
40	2.01	103.47	-10.00	194.24
45	1.98	99.75	-10.00	194.96
50	1.92	95.99	-10.00	196.72
55	1.91	92.22	-10.00	196.84
60	2.07	88.45	-10.00	192.95
65	2.08	84.67	-10.00	192.58
70	2.08	80.91	-10.00	192.78
75	2.06	77.18	-10.00	193.05
80	2.06	73.50	-10.00	193.23
85	2.14	69.85	-10.00	191.39
90	2.19	66.28	-10.00	190.10
95	2.49	62.70	-10.00	183.40
100	2.40	59.39	-10.00	185.45
105	2.21	56.29	-10.00	189.72
110	2.09	53.36	-10.00	192.41
115	1.87	50.73	-10.00	198.04
120	1.48	48.52	-10.00	206.19
125	1.35	46.44	-9.67	211.27
130	1.19	44.76	-9.27	218.05
135	1.13	43.39	-8.93	221.66
140	0.97	42.54	-8.72	228.31
145	1.16	41.84	-8.54	222.80
150	1.30	41.65	-8.49	218.63
155	1.35	42.04	-8.59	216.46
160	1.53	42.79	-8.78	210.34
165	1.72	43.99	-9.08	206.30
170	1.78	45.23	-9.39	203.15
175	1.71	46.10	-9.59	204.22
180	1.70	46.38	-9.66	204.26
185	1.58	46.23	-9.62	205.28

COMSEARCH

Earth Station Data Sheet

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

Coordination Values

WINSTON-SALE, NC

Licensee Name: WXII Hearst Television, Inc.
Latitude (NAD 83): 36° 7' 22.0" N
Longitude (NAD 83): 80° 15' 46.6" W
Ground Elevation (AMSL): 283.46 m / 930.0 ft
Antenna Centerline (AGL): 3.66 m / 12.0 ft
Antenna Model: Patriot 3.8 meter
Antenna Mode: Receive 4.0 GHz
Interference Objectives: Long Term: -156.0 dBW/MHz 20%
Short Term: -146.0 dBW/MHz 0.01%

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 4.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
190	1.50	45.51	-9.45	208.17
195	1.56	44.14	-9.12	208.03
200	1.69	42.24	-8.64	206.67
205	1.74	40.01	-8.05	208.16
210	1.78	37.42	-7.33	210.51
215	1.69	34.63	-6.49	217.20
220	1.83	31.43	-5.43	218.53
225	1.66	28.24	-4.27	230.27
230	1.52	24.85	-2.88	243.04
235	1.41	21.31	-1.21	257.85
240	1.29	17.67	0.82	276.52
245	1.23	14.46	3.00	295.22
250	1.09	12.54	4.54	313.84
255	1.10	12.29	4.76	315.26
260	1.07	13.98	3.37	304.77
265	0.66	17.26	1.07	314.35
270	0.69	20.95	-1.03	295.37
275	1.06	24.92	-2.91	259.51
280	1.10	29.33	-4.68	246.51
285	1.00	33.94	-6.27	240.70
290	0.81	38.66	-7.68	243.94
295	0.77	43.39	-8.93	238.83
300	0.67	48.18	-10.00	239.25
305	0.45	53.01	-10.00	255.20
310	0.37	57.84	-10.00	264.69
315	0.22	62.69	-10.00	283.28
320	0.26	67.52	-10.00	277.62
325	0.25	72.38	-10.00	278.62
330	0.28	77.24	-10.00	275.52
335	0.30	82.11	-10.00	272.45
340	0.31	86.98	-10.00	271.71
345	0.22	91.85	-10.00	282.56
350	0.35	96.73	-10.00	267.17
355	0.37	101.60	-10.00	264.38

COMSEARCH

Earth Station Data Sheet

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

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 24, 2018

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
WXII Hearst Television, Inc.
WINSTON-SALEM, NC
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
May 24, 2018

COMSEARCH

Earth Station Data Sheet

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

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COMSEARCH

Earth Station Data Sheet

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

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.

COMSEARCH

Earth Station Data Sheet

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

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.

COMSEARCH

Earth Station Data Sheet

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

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 05/23/2018.

Company

General Dynamics - OTS, 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: 05/24/2018
Job Number: 180523COMSGE02

Administrative Information

Status ENGINEER PROPOSAL
Call Sign
Licensee Code WXII
Licensee Name WXII Hearst Television, Inc.

Site Information

WINSTON-SALEM, NC

Venue Name
Latitude (NAD 83) 36° 7' 22.0" N
Longitude (NAD 83) 80° 15' 46.6" W
Climate Zone A
Rain Zone 1
Ground Elevation (AMSL) 283.46 m / 930.0 ft

Link Information

Satellite Type Geostationary
Mode RO - Receive-Only
Modulation Digital
Satellite Arc 60° W to 143° West Longitude
Azimuth Range 147.9° to 253.1°
Corresponding Elevation Angles 42.9° / 13.3°
Antenna Centerline (AGL) 3.66 m / 12.0 ft

Antenna Information

Receive - FCC32

Manufacturer DH
Model 4.5 meter
Gain / Diameter 43.9 dBi / 4.5 m
3-dB / 15-dB Beamwidth 1.27° / 2.37°

Interference Objectives: Long Term -156.0 dBW/MHz 20%
Short Term -146.0 dBW/MHz 0.01%

Frequency Information

Receive 4.0 GHz

Emission / Frequency Range (MHz)
36M0F8F / 3700.0 - 4200.0
2M00G7W - 36M0G7W / 3700.0 - 4200.0

Max Great Circle Coordination Distance 315.3 km / 195.9 mi
Precipitation Scatter Contour Radius 607.6 km / 377.5 mi

COMSEARCH

Earth Station Data Sheet

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

Coordination Values

WINSTON-SALE, NC

Licensee Name WXII Hearst Television, Inc.
Latitude (NAD 83) 36° 7' 22.0" N
Longitude (NAD 83) 80° 15' 46.6" W
Ground Elevation (AMSL) 283.46 m / 930.0 ft
Antenna Centerline (AGL) 3.66 m / 12.0 ft
Antenna Model DH 4.5 meter
Antenna Mode Receive 4.0 GHz
Interference Objectives: Long Term -156.0 dBW/MHz 20%
 Short Term -146.0 dBW/MHz 0.01%

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 4.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
0	0.43	106.47	-10.00	257.96
5	0.49	111.33	-10.00	251.46
10	0.50	116.19	-10.00	250.04
15	0.56	120.24	-10.00	245.73
20	0.63	117.06	-10.00	241.56
25	0.67	113.74	-10.00	239.25
30	1.21	110.48	-10.00	213.92
35	1.56	107.02	-10.00	206.34
40	2.01	103.47	-10.00	194.24
45	1.98	99.75	-10.00	194.96
50	1.92	95.99	-10.00	196.72
55	1.91	92.22	-10.00	196.84
60	2.07	88.45	-10.00	192.95
65	2.08	84.67	-10.00	192.58
70	2.08	80.91	-10.00	192.78
75	2.06	77.18	-10.00	193.05
80	2.06	73.50	-10.00	193.23
85	2.14	69.85	-10.00	191.39
90	2.19	66.28	-10.00	190.10
95	2.49	62.70	-10.00	183.40
100	2.40	59.39	-10.00	185.45
105	2.21	56.29	-10.00	189.72
110	2.09	53.36	-10.00	192.41
115	1.87	50.73	-10.00	198.04
120	1.48	48.52	-10.00	206.19
125	1.35	46.44	-9.67	211.27
130	1.19	44.76	-9.27	218.05
135	1.13	43.39	-8.93	221.66
140	0.97	42.54	-8.72	228.31
145	1.16	41.84	-8.54	222.80
150	1.30	41.65	-8.49	218.63
155	1.35	42.04	-8.59	216.46
160	1.53	42.79	-8.78	210.34
165	1.72	43.99	-9.08	206.30
170	1.78	45.23	-9.39	203.15
175	1.71	46.10	-9.59	204.22
180	1.70	46.38	-9.66	204.26
185	1.58	46.23	-9.62	205.28

COMSEARCH

Earth Station Data Sheet

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

Coordination Values		WINSTON-SALE, NC	
Licensee Name		WXII Hearst Television, Inc.	
Latitude (NAD 83)		36° 7' 22.0" N	
Longitude (NAD 83)		80° 15' 46.6" W	
Ground Elevation (AMSL)		283.46 m / 930.0 ft	
Antenna Centerline (AGL)		3.66 m / 12.0 ft	
Antenna Model		DH 4.5 meter	
Antenna Mode		Receive 4.0 GHz	
Interference Objectives:	Long Term	-156.0 dBW/MHz	20%
	Short Term	-146.0 dBW/MHz	0.01%

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 4.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
190	1.50	45.51	-9.45	208.17
195	1.56	44.14	-9.12	208.03
200	1.69	42.24	-8.64	206.67
205	1.74	40.01	-8.05	208.16
210	1.78	37.42	-7.33	210.51
215	1.69	34.63	-6.49	217.20
220	1.83	31.43	-5.43	218.53
225	1.66	28.24	-4.27	230.27
230	1.52	24.85	-2.88	243.04
235	1.41	21.31	-1.21	257.85
240	1.29	17.67	0.82	276.52
245	1.23	14.46	3.00	295.22
250	1.09	12.54	4.54	313.84
255	1.10	12.29	4.76	315.26
260	1.07	13.98	3.37	304.77
265	0.66	17.26	1.07	314.35
270	0.69	20.95	-1.03	295.37
275	1.06	24.92	-2.91	259.51
280	1.10	29.33	-4.68	246.51
285	1.00	33.94	-6.27	240.70
290	0.81	38.66	-7.68	243.94
295	0.77	43.39	-8.93	238.83
300	0.67	48.18	-10.00	239.25
305	0.45	53.01	-10.00	255.20
310	0.37	57.84	-10.00	264.69
315	0.22	62.69	-10.00	283.28
320	0.26	67.52	-10.00	277.62
325	0.25	72.38	-10.00	278.62
330	0.28	77.24	-10.00	275.52
335	0.30	82.11	-10.00	272.45
340	0.31	86.98	-10.00	271.71
345	0.22	91.85	-10.00	282.56
350	0.35	96.73	-10.00	267.17
355	0.37	101.60	-10.00	264.38

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Earth Station Data Sheet

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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 24, 2018

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FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
WXII Hearst Television, Inc.
WINSTON-SALEM, NC
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
May 24, 2018

COMSEARCH

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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 05/23/2018.

Company

General Dynamics - OTS, 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.

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Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147
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Date: 05/24/2018
Job Number: 180523COMSGE01

Administrative Information

Status ENGINEER PROPOSAL
Call Sign
Licensee Code WXII
Licensee Name WXII Hearst Television, Inc.

Site Information

WINSTON-SALEM, NC

Venue Name
Latitude (NAD 83) 36° 7' 22.0" N
Longitude (NAD 83) 80° 15' 46.6" W
Climate Zone A
Rain Zone 1
Ground Elevation (AMSL) 283.46 m / 930.0 ft

Link Information

Satellite Type Geostationary
Mode RO - Receive-Only
Modulation Digital
Satellite Arc 60° W to 143° West Longitude
Azimuth Range 147.9° to 253.1°
Corresponding Elevation Angles 42.9° / 13.3°
Antenna Centerline (AGL) 3.66 m / 12.0 ft

Antenna Information

Receive - FCC32

Manufacturer DH
Model 4.2 meter
Gain / Diameter 43.5 dBi / 4.2 m
3-dB / 15-dB Beamwidth 1.20° / 2.40°

Interference Objectives: Long Term -156.0 dBW/MHz 20%
Short Term -146.0 dBW/MHz 0.01%

Frequency Information

Receive 4.0 GHz

Emission / Frequency Range (MHz) 36M0F8F / 3700.0 - 4200.0
2M00G7W - 36M0G7W / 3700.0 - 4200.0

Max Great Circle Coordination Distance 315.3 km / 195.9 mi
Precipitation Scatter Contour Radius 607.6 km / 377.5 mi

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Earth Station Data Sheet

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Coordination Values

WINSTON-SALE, NC

Licensee Name WXII Hearst Television, Inc.
Latitude (NAD 83) 36° 7' 22.0" N
Longitude (NAD 83) 80° 15' 46.6" W
Ground Elevation (AMSL) 283.46 m / 930.0 ft
Antenna Centerline (AGL) 3.66 m / 12.0 ft
Antenna Model DH 4.2 meter
Antenna Mode Receive 4.0 GHz
Interference Objectives: Long Term -156.0 dBW/MHz 20%
 Short Term -146.0 dBW/MHz 0.01%

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 4.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
0	0.43	106.47	-10.00	257.96
5	0.49	111.33	-10.00	251.46
10	0.50	116.19	-10.00	250.04
15	0.56	120.24	-10.00	245.73
20	0.63	117.06	-10.00	241.56
25	0.67	113.74	-10.00	239.25
30	1.21	110.48	-10.00	213.92
35	1.56	107.02	-10.00	206.34
40	2.01	103.47	-10.00	194.24
45	1.98	99.75	-10.00	194.96
50	1.92	95.99	-10.00	196.72
55	1.91	92.22	-10.00	196.84
60	2.07	88.45	-10.00	192.95
65	2.08	84.67	-10.00	192.58
70	2.08	80.91	-10.00	192.78
75	2.06	77.18	-10.00	193.05
80	2.06	73.50	-10.00	193.23
85	2.14	69.85	-10.00	191.39
90	2.19	66.28	-10.00	190.10
95	2.49	62.70	-10.00	183.40
100	2.40	59.39	-10.00	185.45
105	2.21	56.29	-10.00	189.72
110	2.09	53.36	-10.00	192.41
115	1.87	50.73	-10.00	198.04
120	1.48	48.52	-10.00	206.19
125	1.35	46.44	-9.67	211.27
130	1.19	44.76	-9.27	218.05
135	1.13	43.39	-8.93	221.66
140	0.97	42.54	-8.72	228.31
145	1.16	41.84	-8.54	222.80
150	1.30	41.65	-8.49	218.63
155	1.35	42.04	-8.59	216.46
160	1.53	42.79	-8.78	210.34
165	1.72	43.99	-9.08	206.30
170	1.78	45.23	-9.39	203.15
175	1.71	46.10	-9.59	204.22
180	1.70	46.38	-9.66	204.26
185	1.58	46.23	-9.62	205.28

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Coordination Values

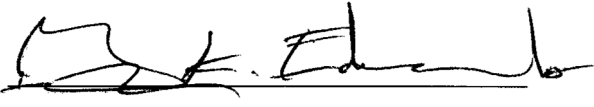
WINSTON-SALE, NC

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Antenna Mode Receive 4.0 GHz
Interference Objectives: Long Term -156.0 dBW/MHz 20%
 Short Term -146.0 dBW/MHz 0.01%

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 4.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
190	1.50	45.51	-9.45	208.17
195	1.56	44.14	-9.12	208.03
200	1.69	42.24	-8.64	206.67
205	1.74	40.01	-8.05	208.16
210	1.78	37.42	-7.33	210.51
215	1.69	34.63	-6.49	217.20
220	1.83	31.43	-5.43	218.53
225	1.66	28.24	-4.27	230.27
230	1.52	24.85	-2.88	243.04
235	1.41	21.31	-1.21	257.85
240	1.29	17.67	0.82	276.52
245	1.23	14.46	3.00	295.22
250	1.09	12.54	4.54	313.84
255	1.10	12.29	4.76	315.26
260	1.07	13.98	3.37	304.77
265	0.66	17.26	1.07	314.35
270	0.69	20.95	-1.03	295.37
275	1.06	24.92	-2.91	259.51
280	1.10	29.33	-4.68	246.51
285	1.00	33.94	-6.27	240.70
290	0.81	38.66	-7.68	243.94
295	0.77	43.39	-8.93	238.83
300	0.67	48.18	-10.00	239.25
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BY: 

Gary K. Edwards
Senior Manager
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147

DATED: May 24, 2018

