

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
ESPN Inc.
BRISTOL, CT – B1
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
May 06, 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

There were no great circle interference cases identified during the interference study of the proposed earth station.

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 on 05/06/2018.

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: 05/06/2018
Job Number: 180506COMSTC08

Administrative Information

Licensee Code: ESPN
Licensee Name: ESPN Inc.

Site Information

BRISTOL, CT

Venue Name: B1
Latitude (NAD 83): 41° 38' 52.5" N
Longitude (NAD 83): 72° 53' 50.6" W
Climate Zone: A
Rain Zone: 2
Ground Elevation (AMSL): 94.25 m / 309.2 ft

Link Information

Satellite Type: Geostationary
Mode: RO - Receive-Only
Modulation: Digital
Satellite Arc: 72° W to 143° West Longitude
Azimuth Range: 178.7° to 256.5°
Corresponding Elevation Angles: 41.9° / 6.1°
Antenna Centerline (AGL): 3.66 m / 12.0 ft

Antenna Information

Receive

Manufacturer: General Dynamocs
Model: 700-70TCK
Gain / Diameter: 47.5 dBi / 7.0 m
3-dB / 15-dB Beamwidth: 0.70° / 1.30°

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): 4M50G7W - 72M0G7W / 3700.0 - 4200.0

Max Great Circle Coordination Distance: 503.4 km / 312.8 mi
Precipitation Scatter Contour Radius: 597.4 km / 371.2 mi

COMSEARCH

Earth Station Data Sheet

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

Coordination Values

BRISTOL, CT

Licensee Name ESPN Inc.
Latitude (NAD 83) 41° 38' 52.5" N
Longitude (NAD 83) 72° 53' 50.6" W
Ground Elevation (AMSL) 94.25 m / 309.2 ft
Antenna Centerline (AGL) 3.66 m / 12.0 ft
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	0.00	103.45	-10.00	285.28
5	0.23	108.43	-10.00	281.20
10	0.35	113.40	-10.00	266.96
15	0.43	118.38	-10.00	257.71
20	0.31	123.33	-10.00	271.97
25	0.00	128.27	-10.00	285.28
30	0.00	129.48	-10.00	285.28
35	0.34	127.07	-10.00	268.42
40	0.42	124.23	-10.00	259.13
45	0.41	121.15	-10.00	259.57
50	0.63	118.01	-10.00	241.56
55	0.61	114.61	-10.00	243.00
60	0.72	111.16	-10.00	236.32
65	0.92	107.63	-10.00	224.82
70	1.29	104.06	-10.00	211.43
75	1.56	100.37	-10.00	206.42
80	1.75	96.61	-10.00	201.34
85	1.93	92.80	-10.00	196.30
90	2.06	88.97	-10.00	193.06
95	2.19	85.12	-10.00	190.16
100	2.37	81.27	-10.00	186.03
105	2.49	77.44	-10.00	183.28
110	2.60	73.63	-10.00	180.74
115	2.65	69.89	-10.00	179.62
120	2.63	66.24	-10.00	180.15
125	2.56	62.71	-10.00	181.79
130	2.15	59.46	-10.00	191.07
135	1.75	56.41	-10.00	201.35
140	1.38	53.57	-10.00	208.82
145	1.28	50.80	-10.00	211.95
150	1.05	48.40	-10.00	218.89
155	0.98	46.18	-9.61	223.35
160	0.77	44.45	-9.20	237.31
165	0.54	43.15	-8.87	254.01
170	0.39	42.22	-8.64	270.50
175	0.27	41.74	-8.51	286.42
180	0.00	41.89	-8.55	294.65
185	0.00	41.65	-8.49	295.06

COMSEARCH

Earth Station Data Sheet

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Coordination Values

BRISTOL, CT

Licensee Name ESPN Inc.
Latitude (NAD 83) 41° 38' 52.5" N
Longitude (NAD 83) 72° 53' 50.6" W
Ground Elevation (AMSL) 94.25 m / 309.2 ft
Antenna Centerline (AGL) 3.66 m / 12.0 ft
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	0.00	40.94	-8.30	296.29
195	0.00	39.79	-7.99	298.36
200	0.00	38.23	-7.56	301.28
205	0.44	35.91	-6.88	275.94
210	1.21	33.02	-5.97	235.09
215	1.57	30.22	-5.01	228.67
220	1.91	27.23	-3.87	224.69
225	1.98	24.23	-2.61	229.68
230	2.38	20.83	-0.97	229.07
235	2.37	17.59	0.87	240.87
240	2.79	13.93	3.40	246.92
245	2.97	10.35	6.63	266.25
250	3.28	6.61	11.49	296.89
255	2.62	3.77	17.60	503.39
260	2.68	4.90	14.75	344.66
265	2.70	9.17	7.94	284.46
270	2.92	13.89	3.44	243.87
275	2.98	18.78	0.16	221.39
280	2.81	23.74	-2.39	211.00
285	2.59	28.72	-4.46	205.42
290	1.97	33.75	-6.21	210.64
295	1.13	38.79	-7.72	227.88
300	0.77	43.79	-9.03	238.33
305	0.84	48.74	-10.00	228.98
310	0.76	53.71	-10.00	233.88
315	0.60	58.69	-10.00	243.41
320	0.70	63.65	-10.00	237.39
325	0.78	68.62	-10.00	232.23
330	0.62	73.60	-10.00	242.06
335	0.30	78.59	-10.00	273.29
340	0.00	83.56	-10.00	285.28
345	0.00	88.54	-10.00	285.28
350	0.00	93.51	-10.00	285.28
355	0.00	98.48	-10.00	285.28

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 06, 2018

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
ESPN Inc.
BRISTOL, CT – C4
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
May 06, 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

There were no great circle interference cases identified during the interference study of the proposed earth station.

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 on 05/06/2018.

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: 05/06/2018
Job Number: 180506COMSTC09

Administrative Information

Licensee Code: ESPN
Licensee Name: ESPN Inc.

Site Information

BRISTOL, CT

Venue Name: C4
Latitude (NAD 83): 41° 38' 50.8" N
Longitude (NAD 83): 72° 53' 52.1" W
Climate Zone: A
Rain Zone: 2
Ground Elevation (AMSL): 86.05 m / 282.3 ft

Link Information

Satellite Type: Geostationary
Mode: RO - Receive-Only
Modulation: Digital
Satellite Arc: 43.1° W to 133° West Longitude
Azimuth Range: 139.3° to 249.1°
Corresponding Elevation Angles: 33.2° / 13.4°
Antenna Centerline (AGL): 2.74 m / 9.0 ft

Antenna Information

Receive - S40452

Manufacturer: SCIENTIFIC-ATLANTA, INC
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): 4M50G7W - 72M0G7W / 3700.0 - 4200.0

Max Great Circle Coordination Distance: 287.2 km / 178.4 mi
Precipitation Scatter Contour Radius: 524.8 km / 326.0 mi

COMSEARCH

Earth Station Data Sheet

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

Coordination Values

BRISTOL, CT

Licensee Name ESPN Inc.
Latitude (NAD 83) 41° 38' 50.8" N
Longitude (NAD 83) 72° 53' 52.1" W
Ground Elevation (AMSL) 86.05 m / 282.3 ft
Antenna Centerline (AGL) 2.74 m / 9.0 ft
Antenna Model SCIENTIFIC-ATLANTA, INC 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	0.88	110.39	-11.02	221.40
5	1.16	115.28	-14.81	195.80
10	1.30	120.15	-16.76	182.80
15	1.48	118.62	-16.15	180.26
20	1.57	114.60	-14.38	185.98
25	1.98	110.57	-11.16	189.63
30	2.14	106.41	-9.98	191.46
35	2.61	102.24	-9.70	181.98
40	2.82	97.98	-9.70	177.21
45	2.90	93.67	-9.70	175.36
50	3.04	89.35	-9.70	172.16
55	3.24	85.02	-9.70	165.58
60	3.55	80.67	-9.70	158.76
65	3.84	76.31	-9.70	152.42
70	3.87	72.00	-9.70	151.85
75	4.27	67.64	-9.70	145.06
80	4.38	63.37	-9.70	143.48
85	4.48	59.16	-9.70	141.99
90	4.75	54.96	-9.70	138.16
95	4.57	51.02	-9.70	140.66
100	4.65	47.12	-9.70	139.57
105	4.87	43.29	-9.70	136.57
110	4.74	39.88	-9.70	138.32
115	4.77	36.67	-9.70	137.94
120	4.56	34.01	-9.70	140.83
125	4.39	31.82	-9.70	143.25
130	4.18	30.29	-8.99	149.67
135	3.84	29.59	-8.70	157.34
140	3.36	29.80	-8.70	169.72
145	2.93	30.72	-9.42	176.13
150	2.45	32.36	-9.73	185.61
155	2.22	34.35	-9.74	190.65
160	1.96	36.45	-9.88	196.09
165	1.80	38.09	-10.70	196.60
170	1.58	39.41	-10.70	202.75
175	1.22	40.44	-10.70	210.32
180	0.69	41.20	-10.85	233.45
185	0.41	41.24	-12.70	243.95

COMSEARCH

Earth Station Data Sheet

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

Coordination Values

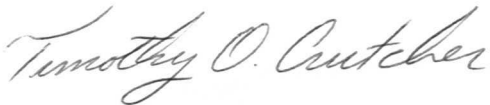
BRISTOL, CT

Licensee Name ESPN Inc.
Latitude (NAD 83) 41° 38' 50.8" N
Longitude (NAD 83) 72° 53' 52.1" W
Ground Elevation (AMSL) 86.05 m / 282.3 ft
Antenna Centerline (AGL) 2.74 m / 9.0 ft
Antenna Model SCIENTIFIC-ATLANTA, INC 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	0.00	40.94	-12.70	268.69
195	0.00	39.79	-12.70	268.69
200	0.25	38.00	-12.39	264.21
205	0.50	35.86	-10.79	245.13
210	1.28	32.96	-10.70	208.44
215	1.66	30.15	-8.85	206.50
220	2.06	27.11	-8.70	199.32
225	2.15	24.10	-8.70	197.12
230	2.54	20.71	-8.70	188.54
235	2.54	17.47	-8.19	191.06
240	2.90	13.86	-6.56	191.01
245	3.27	10.92	-4.70	192.24
250	3.43	10.02	-4.70	188.84
255	2.97	11.98	-4.70	198.58
260	2.99	15.04	-7.71	183.21
265	2.79	19.05	-8.51	183.73
270	3.10	23.21	-8.70	175.83
275	3.15	27.74	-8.70	174.62
280	3.00	32.46	-9.70	173.06
285	2.79	37.25	-9.70	177.92
290	2.25	42.15	-9.70	190.20
295	1.47	47.10	-9.70	207.84
300	0.87	52.02	-9.70	228.91
305	0.90	56.83	-9.70	227.34
310	0.83	61.68	-9.70	230.96
315	0.73	66.54	-9.70	237.21
320	0.78	71.39	-9.70	234.13
325	0.98	76.25	-9.70	222.75
330	0.74	81.14	-9.70	236.37
335	0.35	86.02	-9.70	268.87
340	0.00	90.89	-9.70	287.20
345	0.00	95.75	-9.70	287.20
350	0.25	100.62	-9.70	280.73
355	0.69	105.51	-9.80	238.96

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.

A handwritten signature in cursive script that reads "Timothy O. Crutcher".

Timothy O. Crutcher
Frequency Planner
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147

DATED: May 06, 2018

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
ESPN Inc.
BRISTOL, CT C7
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
May 06, 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.

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 on 05/06/2018.

4. EARTH STATION COORDINATION DATA

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COMSEARCH

Earth Station Data Sheet

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

Date: 05/06/2018
Job Number: 180506COMSTC10

Administrative Information

Licensee Code: ESPN
Licensee Name: ESPN Inc.

Site Information

BRISTOL, CT

Venue Name: C7
Latitude (NAD 83): 41° 38' 49.8" N
Longitude (NAD 83): 72° 53' 51.8" W
Climate Zone: A
Rain Zone: 2
Ground Elevation (AMSL): 87.58 m / 287.4 ft

Link Information

Satellite Type: Geostationary
Mode: RO - Receive-Only
Modulation: Digital
Satellite Arc: 15° W to 139° West Longitude
Azimuth Range: 112.6° to 253.6°
Corresponding Elevation Angles: 15.0° / 9.0°
Antenna Centerline (AGL): 2.74 m / 9.0 ft

Antenna Information

Receive - S40452

Manufacturer: SCIENTIFIC-ATLANTA, INC
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): 4M50G7W - 72M0G7W / 3700.0 - 4200.0

Max Great Circle Coordination Distance: 341.9 km / 212.4 mi
Precipitation Scatter Contour Radius: 551.3 km / 342.5 mi

COMSEARCH

Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147
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Coordination Values

BRISTOL, CT

Licensee Name ESPN Inc.
Latitude (NAD 83) 41° 38' 49.8" N
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Ground Elevation (AMSL) 87.58 m / 287.4 ft
Antenna Centerline (AGL) 2.74 m / 9.0 ft
Antenna Model SCIENTIFIC-ATLANTA, INC 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	0.20	106.21	-9.94	285.21
5	0.56	107.06	-10.11	245.27
10	0.83	102.24	-9.70	231.16
15	1.37	97.42	-9.70	210.72
20	1.58	92.56	-9.70	204.88
25	2.04	87.69	-9.70	195.11
30	2.11	82.82	-9.70	193.35
35	2.23	77.94	-9.70	190.69
40	2.34	73.07	-9.70	188.29
45	2.49	68.19	-9.70	184.70
50	2.74	63.31	-9.70	179.01
55	3.01	58.42	-9.70	172.80
60	3.32	53.53	-9.70	163.72
65	3.65	48.65	-9.70	156.40
70	3.76	43.81	-9.70	154.19
75	4.13	38.95	-9.70	147.23
80	4.16	34.20	-9.70	146.72
85	4.24	29.50	-8.70	150.11
90	4.35	24.89	-8.70	148.40
95	4.45	20.46	-8.70	146.80
100	4.54	16.35	-7.97	148.87
105	4.58	12.89	-5.59	159.97
110	4.48	10.84	-4.70	166.53
115	4.64	10.62	-4.70	163.68
120	4.58	12.74	-5.44	160.84
125	4.35	16.13	-7.93	152.06
130	3.95	19.65	-8.63	155.47
135	3.45	23.10	-8.70	166.01
140	2.93	26.41	-8.70	179.65
145	2.53	29.44	-8.70	188.64
150	2.24	32.15	-9.70	190.38
155	2.11	34.45	-9.72	193.30
160	1.86	36.54	-9.73	199.58
165	1.67	38.22	-9.98	203.51
170	1.32	39.66	-10.70	207.39
175	1.14	40.53	-10.70	212.76
180	0.70	41.19	-10.70	233.66
185	0.36	41.29	-10.70	261.14

COMSEARCH

Earth Station Data Sheet

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

Coordination Values

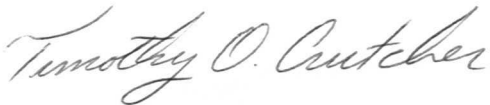
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Short Term -146.0 dBW/MHz 0.01%

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 4.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
190	0.00	40.94	-10.70	280.87
195	0.00	39.79	-10.70	280.87
200	0.24	38.01	-10.21	279.25
205	0.50	35.86	-9.71	251.37
210	1.26	32.98	-9.72	213.61
215	1.60	30.21	-8.91	207.99
220	2.04	27.12	-8.70	199.72
225	2.14	24.11	-8.70	197.39
230	2.50	20.74	-8.70	189.49
235	2.47	17.52	-8.20	192.53
240	2.83	13.90	-6.60	192.33
245	3.23	10.15	-4.70	193.13
250	3.44	6.65	0.65	214.03
255	3.12	6.08	1.22	341.87
260	2.93	8.84	-3.70	204.37
265	2.75	13.00	-5.70	198.43
270	3.05	17.44	-8.19	179.43
275	3.12	22.17	-8.70	175.39
280	2.96	27.05	-8.70	179.00
285	2.80	31.96	-9.70	177.54
290	2.29	36.94	-9.70	189.41
295	1.51	41.96	-9.70	206.62
300	0.88	46.96	-9.70	228.65
305	0.88	51.87	-9.70	228.61
310	0.82	56.80	-9.70	231.90
315	0.72	61.74	-9.70	237.75
320	0.74	66.67	-9.70	236.52
325	1.02	71.60	-9.70	221.33
330	0.73	76.55	-9.70	236.81
335	0.33	81.51	-9.70	271.12
340	0.00	86.45	-9.70	287.20
345	0.00	91.39	-9.70	287.20
350	0.00	96.33	-9.70	287.20
355	0.22	101.27	-9.70	284.98

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.

A handwritten signature in cursive script that reads "Timothy O. Crutcher".

Timothy O. Crutcher
Frequency Planner
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147

DATED: May 06, 2018

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
ESPN Inc.
BRISTOL, CT – C10
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
May 06, 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

There were no great circle interference cases identified during the interference study of the proposed earth station.

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 on 05/06/2018.

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: 05/06/2018
Job Number: 180506COMSTC11

Administrative Information

Licensee Code: ESPN
Licensee Name: ESPN Inc.

Site Information

BRISTOL, CT

Venue Name: C10
Latitude (NAD 83): 41° 38' 48.8" N
Longitude (NAD 83): 72° 53' 51.6" W
Climate Zone: A
Rain Zone: 2
Ground Elevation (AMSL): 88.42 m / 290.1 ft

Link Information

Satellite Type: Geostationary
Mode: RO - Receive-Only
Modulation: Digital
Satellite Arc: 15° W to 139° West Longitude
Azimuth Range: 112.6° to 253.6°
Corresponding Elevation Angles: 15.0° / 9.0°
Antenna Centerline (AGL): 2.74 m / 9.0 ft

Antenna Information

Receive - S40452

Manufacturer: SCIENTIFIC-ATLANTA, INC
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): 4M50G7W - 72M0G7W / 3700.0 - 4200.0

Max Great Circle Coordination Distance: 341.1 km / 212.0 mi
Precipitation Scatter Contour Radius: 551.3 km / 342.5 mi

COMSEARCH

Earth Station Data Sheet

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

Coordination Values

BRISTOL, CT

Licensee Name ESPN Inc.
Latitude (NAD 83) 41° 38' 48.8" N
Longitude (NAD 83) 72° 53' 51.6" W
Ground Elevation (AMSL) 88.42 m / 290.1 ft
Antenna Centerline (AGL) 2.74 m / 9.0 ft
Antenna Model SCIENTIFIC-ATLANTA, INC 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	0.23	106.21	-9.94	281.97
5	0.44	107.05	-10.11	255.88
10	1.15	102.26	-9.70	217.10
15	1.46	97.42	-9.70	207.97
20	1.79	92.56	-9.70	201.51
25	1.85	87.70	-9.70	199.98
30	1.86	82.83	-9.70	199.75
35	1.90	77.96	-9.70	198.55
40	2.06	73.09	-9.70	194.63
45	2.49	68.19	-9.70	184.70
50	2.86	63.29	-9.70	176.20
55	3.21	58.40	-9.70	166.42
60	3.52	53.50	-9.70	159.29
65	3.58	48.66	-9.70	158.06
70	3.82	43.80	-9.70	152.85
75	4.01	38.98	-9.70	149.13
80	4.31	34.15	-9.70	144.44
85	4.40	29.45	-8.70	147.65
90	4.43	24.86	-8.70	147.16
95	4.45	20.46	-8.70	146.86
100	4.52	16.36	-7.97	149.11
105	4.62	12.86	-5.56	159.52
110	4.65	10.67	-4.70	163.54
115	4.43	10.82	-4.70	169.07
120	4.33	12.94	-5.64	164.03
125	3.97	16.41	-7.98	158.17
130	3.55	19.95	-8.69	163.75
135	3.11	23.37	-8.70	175.58
140	2.44	26.81	-8.70	190.82
145	2.19	29.72	-8.70	196.35
150	2.13	32.24	-9.70	192.86
155	1.97	34.57	-9.72	196.59
160	1.78	36.61	-9.73	201.71
165	1.66	38.23	-9.98	203.83
170	1.50	39.49	-10.70	204.99
175	1.01	40.65	-10.70	216.50
180	0.69	41.20	-10.70	233.96
185	0.32	41.34	-10.70	266.62

COMSEARCH

Earth Station Data Sheet

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

Coordination Values

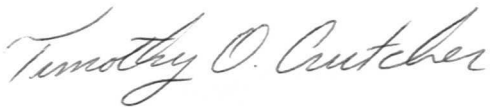
BRISTOL, CT

Licensee Name: ESPN Inc.
Latitude (NAD 83): 41° 38' 48.8" N
Longitude (NAD 83): 72° 53' 51.6" W
Ground Elevation (AMSL): 88.42 m / 290.1 ft
Antenna Centerline (AGL): 2.74 m / 9.0 ft
Antenna Model: SCIENTIFIC-ATLANTA, INC 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	0.00	40.94	-10.70	280.87
195	0.00	39.79	-10.70	280.87
200	0.22	38.02	-10.21	280.95
205	0.51	35.85	-9.71	250.99
210	1.24	33.00	-9.72	214.23
215	1.55	30.25	-8.95	209.21
220	2.01	27.15	-8.70	200.38
225	2.13	24.12	-8.70	197.73
230	2.44	20.78	-8.70	190.74
235	2.41	17.56	-8.21	193.73
240	2.77	13.94	-6.64	193.44
245	3.21	10.17	-4.70	193.61
250	3.40	6.68	0.62	214.63
255	3.19	6.01	1.29	341.14
260	2.85	8.90	-3.70	206.11
265	2.73	13.01	-5.71	198.85
270	3.01	17.45	-8.19	180.42
275	3.11	22.18	-8.70	175.55
280	2.97	27.05	-8.70	178.85
285	2.84	31.95	-9.70	176.72
290	2.34	36.94	-9.70	188.20
295	1.58	41.96	-9.70	204.86
300	0.88	46.96	-9.70	228.25
305	0.86	51.87	-9.70	229.64
310	0.81	56.80	-9.70	232.15
315	0.75	61.73	-9.70	236.07
320	0.71	66.67	-9.70	238.29
325	1.02	71.60	-9.70	221.29
330	0.73	76.55	-9.70	237.09
335	0.31	81.51	-9.70	272.92
340	0.00	86.45	-9.70	287.20
345	0.00	91.39	-9.70	287.20
350	0.00	96.33	-9.70	287.20
355	0.21	101.27	-9.70	286.11

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 06, 2018

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
ESPN Inc.
BRISTOL, CT
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
May 06, 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.

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 receive-only earth station.

Company

<Companies Responding with Cases>

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 05/06/2018.

Company

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: 05/06/2018
Job Number: 180506COMSTC12

Administrative Information

Status ENGINEER PROPOSAL
Call Sign
Licensee Code ESPN
Licensee Name ESPN Inc.

Site Information

BRISTOL, CT
Venue Name C12
Latitude (NAD 83) 41° 38' 48.1" N
Longitude (NAD 83) 72° 53' 51.5" W
Climate Zone A
Rain Zone 2
Ground Elevation (AMSL) 88.35 m / 289.9 ft

Link Information

Satellite Type Geostationary
Mode RO - Receive-Only
Modulation Digital
Satellite Arc 15° W to 139° West Longitude
Azimuth Range 112.6° to 253.6°
Corresponding Elevation Angles 15.0° / 9.0°
Antenna Centerline (AGL) 2.74 m / 9.0 ft

Antenna Information

Receive - S40452
Manufacturer SCIENTIFIC-ATLANTA, INC
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) 4M50G7W - 72M0G7W / 3700.0 - 4200.0

Max Great Circle Coordination Distance 341.0 km / 211.9 mi
Precipitation Scatter Contour Radius 551.3 km / 342.5 mi

COMSEARCH

Earth Station Data Sheet

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

Coordination Values

BRISTOL, CT

Licensee Name ESPN Inc.
Latitude (NAD 83) 41° 38' 48.1" N
Longitude (NAD 83) 72° 53' 51.5" W
Ground Elevation (AMSL) 88.35 m / 289.9 ft
Antenna Centerline (AGL) 2.74 m / 9.0 ft
Antenna Model SCIENTIFIC-ATLANTA, INC 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	0.22	106.21	-9.94	282.53
5	0.86	107.08	-10.12	227.33
10	1.28	102.27	-9.70	213.20
15	1.76	97.43	-9.70	202.47
20	1.84	92.56	-9.70	200.09
25	1.88	87.70	-9.70	199.11
30	1.89	82.83	-9.70	198.76
35	2.07	77.95	-9.70	194.36
40	2.55	73.05	-9.70	183.28
45	2.78	68.17	-9.70	178.17
50	3.12	63.27	-9.70	170.27
55	3.39	58.37	-9.70	162.16
60	3.64	53.49	-9.70	156.66
65	3.93	48.60	-9.70	150.70
70	4.14	43.74	-9.70	147.04
75	4.43	38.88	-9.70	142.77
80	4.46	34.11	-9.70	142.29
85	4.48	29.42	-8.70	146.42
90	4.55	24.81	-8.70	145.32
95	4.67	20.35	-8.70	143.54
100	4.80	16.18	-7.94	145.06
105	4.74	12.76	-5.46	157.97
110	4.52	10.80	-4.70	165.83
115	4.37	10.88	-4.70	170.13
120	4.05	13.17	-5.87	169.51
125	3.67	16.64	-8.03	164.39
130	3.30	20.14	-8.70	171.11
135	2.99	23.46	-8.70	178.35
140	2.71	26.59	-8.70	184.71
145	2.25	29.67	-8.70	194.90
150	2.16	32.22	-9.70	192.31
155	2.03	34.52	-9.72	195.18
160	1.93	36.48	-9.73	197.72
165	1.61	38.28	-9.98	205.24
170	1.73	39.27	-10.70	198.71
175	1.57	40.10	-10.70	203.11
180	0.69	41.20	-10.70	234.05
185	0.30	41.36	-10.70	269.02

COMSEARCH

Earth Station Data Sheet

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

Coordination Values

BRISTOL, CT

Licensee Name: ESPN Inc.
Latitude (NAD 83): 41° 38' 48.1" N
Longitude (NAD 83): 72° 53' 51.5" W
Ground Elevation (AMSL): 88.35 m / 289.9 ft
Antenna Centerline (AGL): 2.74 m / 9.0 ft
Antenna Model: SCIENTIFIC-ATLANTA, INC 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	0.00	40.94	-10.70	280.87
195	0.00	39.79	-10.70	280.87
200	0.20	38.04	-10.21	283.58
205	0.52	35.84	-9.71	250.33
210	1.23	33.01	-9.72	214.56
215	1.51	30.28	-8.98	210.14
220	2.00	27.16	-8.70	200.64
225	2.12	24.13	-8.70	197.90
230	2.38	20.83	-8.70	192.09
235	2.41	17.56	-8.21	193.71
240	2.73	13.97	-6.67	194.19
245	3.24	10.15	-4.70	192.89
250	3.36	6.71	0.59	215.23
255	3.23	5.97	1.38	340.98
260	2.83	8.91	-3.70	206.41
265	2.73	13.02	-5.72	198.90
270	2.99	17.46	-8.19	180.76
275	3.10	22.18	-8.70	175.72
280	2.98	27.05	-8.70	178.55
285	2.86	31.95	-9.70	176.35
290	2.40	36.93	-9.70	186.77
295	1.64	41.95	-9.70	205.71
300	0.90	46.95	-9.70	227.02
305	0.84	51.87	-9.70	230.43
310	0.81	56.80	-9.70	232.44
315	0.75	61.73	-9.70	236.02
320	0.68	66.67	-9.70	240.13
325	1.03	71.60	-9.70	220.79
330	0.73	76.55	-9.70	237.06
335	0.31	81.51	-9.70	273.28
340	0.00	86.45	-9.70	287.20
345	0.00	91.39	-9.70	287.20
350	0.00	96.33	-9.70	287.20
355	0.21	101.27	-9.70	286.03

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: _____

Timothy O. Crutcher
Frequency Planner
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147

DATED: May 06, 2018