

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
Comcast Cable Comm Management LLC
MEMPHIS, TN
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
June 17, 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

No 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 to the below listed carriers with a letter dated 06/16/2018.

<u>Company</u>
Comsearch

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: 06/17/2018
Job Number: 180616COMSGE11

Administrative Information

Status ENGINEER PROPOSAL
Call Sign E2481
Licensee Code CCCMGT
Licensee Name Comcast Cable Comm Management LLC

Site Information

MEMPHIS, TN

Venue Name
Latitude (NAD 83) 35° 3' 3.0" N
Longitude (NAD 83) 89° 52' 55.0" W
Climate Zone A
Rain Zone 1
Ground Elevation (AMSL) 88.09 m / 289.0 ft

Link Information

Satellite Type Geostationary
Mode RO - Receive-Only
Modulation Digital
Satellite Arc 70° W to 140° West Longitude
Azimuth Range 147.8° to 244.4°
Corresponding Elevation Angles 44.1° / 23.7°
Antenna Centerline (AGL) 2.74 m / 9.0 ft

Antenna Information

Receive - FCC32

Manufacturer Patriot
Model 4 meter
Gain / Diameter 42.9 dBi / 4.0 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) 36M0G7W / 3700.0 - 4200.0

Max Great Circle Coordination Distance 333.7 km / 207.3 mi
Precipitation Scatter Contour Radius 571.3 km / 354.9 mi

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Antenna Centerline (AGL) 2.74 m / 9.0 ft
Antenna Model Patriot 4 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	0.00	113.34	-10.00	285.28
5	0.00	117.82	-10.00	285.28
10	0.00	122.14	-10.00	285.28
15	0.00	119.20	-10.00	285.28
20	0.00	116.11	-10.00	285.28
25	0.00	112.89	-10.00	285.28
30	0.00	109.57	-10.00	285.28
35	0.00	106.16	-10.00	285.28
40	0.36	102.76	-10.00	265.38
45	0.50	99.23	-10.00	249.72
50	0.54	95.65	-10.00	246.84
55	0.51	92.03	-10.00	248.92
60	0.46	88.41	-10.00	253.97
65	0.63	84.79	-10.00	241.75
70	0.78	81.16	-10.00	232.73
75	0.79	77.58	-10.00	231.91
80	0.76	74.05	-10.00	233.55
85	0.75	70.59	-10.00	234.38
90	0.76	67.20	-10.00	233.69
95	0.88	63.86	-10.00	226.79
100	0.86	60.71	-10.00	227.79
105	0.70	57.79	-10.00	237.35
110	0.70	54.97	-10.00	237.00
115	0.59	52.44	-10.00	243.92
120	0.64	50.06	-10.00	240.80
125	0.76	47.91	-10.00	233.91
130	0.76	46.18	-9.61	235.73
135	0.77	44.83	-9.29	236.97
140	0.65	44.01	-9.09	245.29
145	0.57	43.61	-8.99	251.41
150	0.44	43.72	-9.02	262.88
155	0.40	44.18	-9.13	266.26
160	0.38	45.07	-9.35	267.65
165	0.35	46.37	-9.66	269.50
170	0.34	47.78	-9.98	268.03
175	0.23	48.76	-10.00	281.64
180	0.23	49.05	-10.00	280.89
185	0.24	48.75	-10.00	280.25

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Antenna Model Patriot 4 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	0.25	47.86	-10.00	279.00
195	0.00	46.66	-9.72	287.04
200	0.00	44.73	-9.27	289.99
205	0.26	42.18	-8.63	286.61
210	0.23	39.52	-7.92	294.83
215	0.00	36.70	-7.12	304.28
220	0.32	33.25	-6.05	296.62
225	0.35	29.99	-4.92	300.44
230	0.35	27.20	-3.87	307.52
235	0.31	25.10	-2.99	319.46
240	0.30	23.79	-2.41	325.83
245	0.31	23.40	-2.23	324.72
250	0.23	24.11	-2.55	333.67
255	0.20	25.67	-3.24	332.35
260	0.22	27.97	-4.17	323.09
265	0.25	30.85	-5.23	310.28
270	0.24	34.21	-6.35	304.73
275	0.26	37.87	-7.46	294.41
280	0.28	41.78	-8.52	284.93
285	0.00	45.99	-9.57	288.06
290	0.00	50.19	-10.00	285.28
295	0.00	54.50	-10.00	285.28
300	0.00	58.88	-10.00	285.28
305	0.00	63.32	-10.00	285.28
310	0.00	67.81	-10.00	285.28
315	0.00	72.33	-10.00	285.28
320	0.00	76.87	-10.00	285.28
325	0.00	81.43	-10.00	285.28
330	0.00	86.01	-10.00	285.28
335	0.00	90.58	-10.00	285.28
340	0.00	95.16	-10.00	285.28
345	0.00	99.73	-10.00	285.28
350	0.00	104.29	-10.00	285.28
355	0.00	108.83	-10.00	285.28

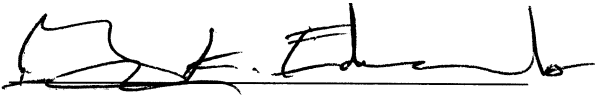
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Earth Station Data Sheet

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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: June 17, 2018

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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

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Coordination data for this earth station was sent to the below listed carriers with a letter dated 06/16/2018.

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Date: 06/17/2018
Job Number: 180616COMSGE07

Administrative Information

Status ENGINEER PROPOSAL
Call Sign E2481
Licensee Code CCCMGT
Licensee Name Comcast Cable Comm Management LLC

Site Information

MEMPHIS, TN

Venue Name
Latitude (NAD 83) 35° 3' 3.0" N
Longitude (NAD 83) 89° 52' 55.0" W
Climate Zone A
Rain Zone 1
Ground Elevation (AMSL) 88.09 m / 289.0 ft

Link Information

Satellite Type Geostationary
Mode RO - Receive-Only
Modulation Digital
Satellite Arc 70° W to 140° West Longitude
Azimuth Range 147.8° to 244.4°
Corresponding Elevation Angles 44.1° / 23.7°
Antenna Centerline (AGL) 2.74 m / 9.0 ft

Antenna Information

Receive - S40463

Manufacturer SCIENTIFIC-ATLANTA, INC
Model 8346PF 4.6-M R/O
Gain / Diameter 43.0 dBi / 4.6 m
3-dB / 15-dB Beamwidth 2.20° / 2.20°

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) 36M0G7W / 3700.0 - 4200.0

Max Great Circle Coordination Distance 333.0 km / 206.9 mi
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130	0.76	46.18	-10.00	233.61
135	0.77	44.83	-9.93	233.45
140	0.65	44.01	-9.60	242.34
145	0.57	43.61	-9.44	248.62
150	0.44	43.72	-9.49	260.02
155	0.40	44.18	-9.67	262.96
160	0.38	45.07	-10.00	263.66
165	0.35	46.37	-10.00	267.39
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175	0.23	48.76	-10.00	281.64
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220	0.32	33.25	-6.30	294.88
225	0.35	29.99	-5.00	299.94
230	0.35	27.20	-3.88	307.40
235	0.31	25.10	-3.04	319.11
240	0.30	23.79	-2.52	325.04
245	0.31	23.40	-2.36	323.77
250	0.23	24.11	-2.64	333.01
255	0.20	25.67	-3.27	332.12
260	0.22	27.97	-4.19	322.94
265	0.25	30.85	-5.34	309.51
270	0.24	34.21	-6.68	302.46
275	0.26	37.87	-7.57	293.63
280	0.28	41.78	-8.71	283.71
285	0.00	45.99	-10.00	285.28
290	0.00	50.19	-10.00	285.28
295	0.00	54.50	-10.00	285.28
300	0.00	58.88	-10.00	285.28
305	0.00	63.32	-10.00	285.28
310	0.00	67.81	-10.00	285.28
315	0.00	72.33	-10.00	285.28
320	0.00	76.87	-10.00	285.28
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330	0.00	86.01	-10.00	285.28
335	0.00	90.58	-10.00	285.28
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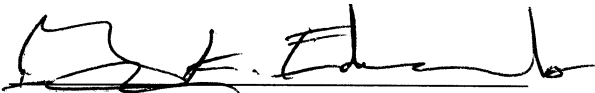
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Licensee Name Comcast Cable Comm Management LLC

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Rain Zone 1
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Link Information

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Modulation Digital
Satellite Arc 70° W to 140° West Longitude
Azimuth Range 147.8° to 244.4°
Corresponding Elevation Angles 44.1° / 23.7°
Antenna Centerline (AGL) 2.74 m / 9.0 ft

Antenna Information

Receive - S40461

Manufacturer SCIENTIFIC-ATLANTA, INC
Model 8005
Gain / Diameter 43.5 dBi / 4.6 m
3-dB / 15-dB Beamwidth 1.12° / 2.20°

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) 36M0G7W / 3700.0 - 4200.0

Max Great Circle Coordination Distance 336.8 km / 209.2 mi
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10	0.00	122.14	-19.50	232.02
15	0.00	119.20	-19.02	234.33
20	0.00	116.11	-17.17	243.69
25	0.00	112.89	-15.24	254.17
30	0.00	109.57	-13.24	265.51
35	0.00	106.16	-11.20	277.79
40	0.36	102.76	-10.50	262.37
45	0.50	99.23	-10.35	247.72
50	0.54	95.65	-9.63	248.98
55	0.51	92.03	-9.51	251.90
60	0.46	88.41	-9.64	256.12
65	0.63	84.79	-9.60	244.01
70	0.78	81.16	-9.59	234.96
75	0.79	77.58	-9.60	234.09
80	0.76	74.05	-9.62	235.62
85	0.75	70.59	-9.65	236.30
90	0.76	67.20	-9.68	235.43
95	0.88	63.86	-9.59	228.92
100	0.86	60.71	-9.55	230.20
105	0.70	57.79	-9.59	239.65
110	0.70	54.97	-9.66	238.86
115	0.59	52.44	-9.59	246.24
120	0.64	50.06	-9.55	243.31
125	0.76	47.91	-9.54	236.44
130	0.76	46.18	-8.97	239.29
135	0.77	44.83	-8.43	241.81
140	0.65	44.01	-8.10	251.19
145	0.57	43.61	-7.94	257.68
150	0.44	43.72	-7.99	269.26
155	0.40	44.18	-8.17	272.25
160	0.38	45.07	-8.53	272.76
165	0.35	46.37	-9.05	273.27
170	0.34	47.78	-9.61	270.30
175	0.23	48.76	-10.01	281.60
180	0.23	49.05	-10.12	280.12
185	0.24	48.75	-10.00	280.25

COMSEARCH

Earth Station Data Sheet

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

Coordination Values

MEMPHIS, TN

Licensee Name Comcast Cable Comm Management LLC
Latitude (NAD 83) 35° 3' 3.0" N
Longitude (NAD 83) 89° 52' 55.0" W
Ground Elevation (AMSL) 88.09 m / 289.0 ft
Antenna Centerline (AGL) 2.74 m / 9.0 ft
Antenna Model SCIENTIFIC-ATLANTA, INC 8005
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	0.25	47.86	-9.65	281.24
195	0.00	46.66	-9.16	290.65
200	0.00	44.73	-8.39	295.70
205	0.26	42.18	-7.37	294.88
210	0.23	39.52	-6.40	305.09
215	0.00	36.70	-5.84	313.75
220	0.32	33.25	-4.80	305.25
225	0.35	29.99	-3.50	310.56
230	0.35	27.20	-2.94	314.83
235	0.31	25.10	-2.52	322.92
240	0.30	23.79	-2.02	328.74
245	0.31	23.40	-1.86	327.47
250	0.23	24.11	-2.14	336.70
255	0.20	25.67	-2.63	336.77
260	0.22	27.97	-3.09	330.87
265	0.25	30.85	-3.84	320.84
270	0.24	34.21	-5.18	313.53
275	0.26	37.87	-6.07	303.81
280	0.28	41.78	-7.21	293.57
285	0.00	45.99	-8.89	292.41
290	0.00	50.19	-9.52	288.34
295	0.00	54.50	-9.54	288.24
300	0.00	58.88	-9.58	287.97
305	0.00	63.32	-9.65	287.49
310	0.00	67.81	-9.57	288.01
315	0.00	72.33	-9.55	288.15
320	0.00	76.87	-9.59	287.91
325	0.00	81.43	-9.52	288.32
330	0.00	86.01	-9.54	288.21
335	0.00	90.58	-9.53	288.28
340	0.00	95.16	-9.53	288.27
345	0.00	99.73	-10.45	282.46
350	0.00	104.29	-10.50	282.12
355	0.00	108.83	-12.80	268.12

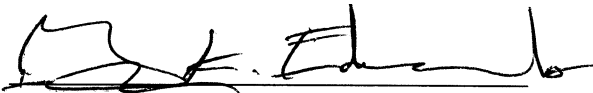
COMSEARCH

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: June 17, 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
Comcast Cable Comm Management LLC
MEMPHIS, TN
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
June 17, 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.

2. SUMMARY OF RESULTS

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

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 06/16/2018.

Company
Comsearch

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: 06/17/2018
Job Number: 180616COMSGE10

Administrative Information

Status ENGINEER PROPOSAL
Call Sign E2481
Licensee Code CCCMGT
Licensee Name Comcast Cable Comm Management LLC

Site Information

MEMPHIS, TN

Venue Name
Latitude (NAD 83) 35° 3' 3.0" N
Longitude (NAD 83) 89° 52' 55.0" W
Climate Zone A
Rain Zone 1
Ground Elevation (AMSL) 88.09 m / 289.0 ft

Link Information

Satellite Type Geostationary
Mode RO - Receive-Only
Modulation Digital
Satellite Arc 70° W to 140° West Longitude
Azimuth Range 147.8° to 244.4°
Corresponding Elevation Angles 44.1° / 23.7°
Antenna Centerline (AGL) 2.74 m / 9.0 ft

Antenna Information

Receive - FCC32

Manufacturer Miralite
Model 3.5 meter
Gain / Diameter 40.0 dBi / 3.5 m
3-dB / 15-dB Beamwidth 1.70° / 3.40°

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) 36M0G7W / 3700.0 - 4200.0

Max Great Circle Coordination Distance 333.7 km / 207.3 mi
Precipitation Scatter Contour Radius 571.3 km / 354.9 mi

COMSEARCH

Earth Station Data Sheet

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

Coordination Values

MEMPHIS, TN

Licensee Name Comcast Cable Comm Management LLC
Latitude (NAD 83) 35° 3' 3.0" N
Longitude (NAD 83) 89° 52' 55.0" W
Ground Elevation (AMSL) 88.09 m / 289.0 ft
Antenna Centerline (AGL) 2.74 m / 9.0 ft
Antenna Model Miralite 3.5 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	0.00	113.34	-10.00	285.28
5	0.00	117.82	-10.00	285.28
10	0.00	122.14	-10.00	285.28
15	0.00	119.20	-10.00	285.28
20	0.00	116.11	-10.00	285.28
25	0.00	112.89	-10.00	285.28
30	0.00	109.57	-10.00	285.28
35	0.00	106.16	-10.00	285.28
40	0.36	102.76	-10.00	265.38
45	0.50	99.23	-10.00	249.72
50	0.54	95.65	-10.00	246.84
55	0.51	92.03	-10.00	248.92
60	0.46	88.41	-10.00	253.97
65	0.63	84.79	-10.00	241.75
70	0.78	81.16	-10.00	232.73
75	0.79	77.58	-10.00	231.91
80	0.76	74.05	-10.00	233.55
85	0.75	70.59	-10.00	234.38
90	0.76	67.20	-10.00	233.69
95	0.88	63.86	-10.00	226.79
100	0.86	60.71	-10.00	227.79
105	0.70	57.79	-10.00	237.35
110	0.70	54.97	-10.00	237.00
115	0.59	52.44	-10.00	243.92
120	0.64	50.06	-10.00	240.80
125	0.76	47.91	-10.00	233.91
130	0.76	46.18	-9.61	235.73
135	0.77	44.83	-9.29	236.97
140	0.65	44.01	-9.09	245.29
145	0.57	43.61	-8.99	251.41
150	0.44	43.72	-9.02	262.88
155	0.40	44.18	-9.13	266.26
160	0.38	45.07	-9.35	267.65
165	0.35	46.37	-9.66	269.50
170	0.34	47.78	-9.98	268.03
175	0.23	48.76	-10.00	281.64
180	0.23	49.05	-10.00	280.89
185	0.24	48.75	-10.00	280.25

COMSEARCH

Earth Station Data Sheet

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

Coordination Values

MEMPHIS, TN

Licensee Name Comcast Cable Comm Management LLC
Latitude (NAD 83) 35° 3' 3.0" N
Longitude (NAD 83) 89° 52' 55.0" W
Ground Elevation (AMSL) 88.09 m / 289.0 ft
Antenna Centerline (AGL) 2.74 m / 9.0 ft
Antenna Model Miralite 3.5 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	0.25	47.86	-10.00	279.00
195	0.00	46.66	-9.72	287.04
200	0.00	44.73	-9.27	289.99
205	0.26	42.18	-8.63	286.61
210	0.23	39.52	-7.92	294.83
215	0.00	36.70	-7.12	304.28
220	0.32	33.25	-6.05	296.62
225	0.35	29.99	-4.92	300.44
230	0.35	27.20	-3.87	307.52
235	0.31	25.10	-2.99	319.46
240	0.30	23.79	-2.41	325.83
245	0.31	23.40	-2.23	324.72
250	0.23	24.11	-2.55	333.67
255	0.20	25.67	-3.24	332.35
260	0.22	27.97	-4.17	323.09
265	0.25	30.85	-5.23	310.28
270	0.24	34.21	-6.35	304.73
275	0.26	37.87	-7.46	294.41
280	0.28	41.78	-8.52	284.93
285	0.00	45.99	-9.57	288.06
290	0.00	50.19	-10.00	285.28
295	0.00	54.50	-10.00	285.28
300	0.00	58.88	-10.00	285.28
305	0.00	63.32	-10.00	285.28
310	0.00	67.81	-10.00	285.28
315	0.00	72.33	-10.00	285.28
320	0.00	76.87	-10.00	285.28
325	0.00	81.43	-10.00	285.28
330	0.00	86.01	-10.00	285.28
335	0.00	90.58	-10.00	285.28
340	0.00	95.16	-10.00	285.28
345	0.00	99.73	-10.00	285.28
350	0.00	104.29	-10.00	285.28
355	0.00	108.83	-10.00	285.28

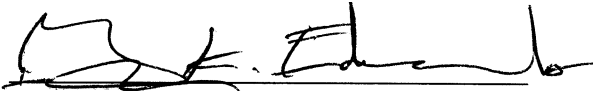
COMSEARCH

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: June 17, 2018

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
Comcast Cable Comm Management LLC
MEMPHIS, TN

COMSEARCH

Earth Station Data Sheet

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

Satellite Earth Station

Prepared By:

COMSEARCH

19700 Janelia Farm Boulevard

Ashburn, VA 20147

June 17, 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.

2. SUMMARY OF RESULTS

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

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 06/16/2018.

Company
Comsearch

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: 06/17/2018
Job Number: 180616COMSGE09

Administrative Information

Status ENGINEER PROPOSAL
Call Sign E2481
Licensee Code CCCMGT
Licensee Name Comcast Cable Comm Management LLC

Site Information

MEMPHIS, TN

Venue Name
Latitude (NAD 83) 35° 3' 3.0" N
Longitude (NAD 83) 89° 52' 55.0" W
Climate Zone A
Rain Zone 1
Ground Elevation (AMSL) 88.09 m / 289.0 ft

Link Information

Satellite Type Geostationary
Mode RO - Receive-Only
Modulation Digital
Satellite Arc 70° W to 140° West Longitude
Azimuth Range 147.8° to 244.4°
Corresponding Elevation Angles 44.1° / 23.7°
Antenna Centerline (AGL) 2.74 m / 9.0 ft

Antenna Information

Receive - S41004

Manufacturer SCIENTIFIC-ATLANTA, INC
Model 8015 (10 METER)
Gain / Diameter 51.2 dBi / 10.0 m
3-dB / 15-dB Beamwidth 0.60° / 1.20°

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) 36M0G7W / 3700.0 - 4200.0

Max Great Circle Coordination Distance 334.6 km / 207.9 mi
Precipitation Scatter Contour Radius 571.3 km / 354.9 mi

COMSEARCH

Earth Station Data Sheet

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

Coordination Values

MEMPHIS, TN

Licensee Name Comcast Cable Comm Management LLC
Latitude (NAD 83) 35° 3' 3.0" N
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Ground Elevation (AMSL) 88.09 m / 289.0 ft
Antenna Centerline (AGL) 2.74 m / 9.0 ft
Antenna Model SCIENTIFIC-ATLANTA, INC 8015 (10 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	0.00	113.34	-9.80	286.56
5	0.00	117.82	-12.62	269.20
10	0.00	122.14	-14.80	256.60
15	0.00	119.20	-14.00	261.10
20	0.00	116.11	-10.91	279.54
25	0.00	112.89	-9.80	286.56
30	0.00	109.57	-9.80	286.56
35	0.00	106.16	-9.80	286.56
40	0.36	102.76	-9.80	266.60
45	0.50	99.23	-9.80	251.01
50	0.54	95.65	-9.80	247.99
55	0.51	92.03	-9.80	250.21
60	0.46	88.41	-9.80	255.15
65	0.63	84.79	-9.80	242.88
70	0.78	81.16	-9.80	233.82
75	0.79	77.58	-9.80	232.99
80	0.76	74.05	-9.80	234.63
85	0.75	70.59	-9.80	235.47
90	0.76	67.20	-9.80	234.77
95	0.88	63.86	-9.80	227.84
100	0.86	60.71	-9.80	228.85
105	0.70	57.79	-9.80	238.45
110	0.70	54.97	-9.80	238.10
115	0.59	52.44	-9.78	245.18
120	0.64	50.06	-8.82	247.52
125	0.76	47.91	-8.38	242.96
130	0.76	46.18	-8.04	244.66
135	0.77	44.83	-7.77	245.67
140	0.65	44.01	-7.60	254.21
145	0.57	43.61	-7.52	260.28
150	0.44	43.72	-7.54	272.07
155	0.40	44.18	-7.64	275.66
160	0.38	45.07	-7.81	277.30
165	0.35	46.37	-8.07	279.47
170	0.34	47.78	-8.36	278.20
175	0.23	48.76	-8.55	290.95
180	0.23	49.05	-8.61	289.80
185	0.24	48.75	-8.55	289.55

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Earth Station Data Sheet

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

Coordination Values

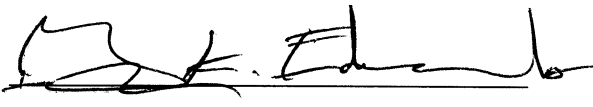
MEMPHIS, TN

Licensee Name Comcast Cable Comm Management LLC
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Longitude (NAD 83) 89° 52' 55.0" W
Ground Elevation (AMSL) 88.09 m / 289.0 ft
Antenna Centerline (AGL) 2.74 m / 9.0 ft
Antenna Model SCIENTIFIC-ATLANTA, INC 8015 (10 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	0.25	47.86	-8.37	289.43
195	0.00	46.66	-8.13	297.44
200	0.00	44.73	-7.75	300.02
205	0.26	42.18	-7.24	295.80
210	0.23	39.52	-6.61	303.69
215	0.00	36.70	-5.48	316.28
220	0.32	33.25	-4.45	307.73
225	0.35	29.99	-3.80	308.40
230	0.35	27.20	-3.24	312.65
235	0.31	25.10	-2.82	320.72
240	0.30	23.79	-2.32	326.52
245	0.31	23.40	-2.16	325.24
250	0.23	24.11	-2.44	334.48
255	0.20	25.67	-2.93	334.57
260	0.22	27.97	-3.39	328.68
265	0.25	30.85	-3.97	319.90
270	0.24	34.21	-4.64	317.38
275	0.26	37.87	-5.95	304.68
280	0.28	41.78	-7.16	293.94
285	0.00	45.99	-8.00	298.34
290	0.00	50.19	-8.88	292.52
295	0.00	54.50	-9.80	286.56
300	0.00	58.88	-9.80	286.56
305	0.00	63.32	-9.80	286.56
310	0.00	67.81	-9.80	286.56
315	0.00	72.33	-9.80	286.56
320	0.00	76.87	-9.80	286.56
325	0.00	81.43	-9.80	286.56
330	0.00	86.01	-9.80	286.56
335	0.00	90.58	-9.80	286.56
340	0.00	95.16	-9.80	286.56
345	0.00	99.73	-9.80	286.56
350	0.00	104.29	-9.80	286.56
355	0.00	108.83	-9.80	286.56

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: June 17, 2018