

# FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for  
**Intelsat License LLC**  
**HAGERSTOWN, MD**  
**Satellite Earth Station**

Prepared By:  
COMSEARCH  
19700 Janelia Farm Boulevard  
Ashburn, VA 20147  
December 06, 2019

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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 11/20/2019.

Company

ABC, Inc.  
ABC, Inc. - WPVI-TV  
ACC License, LLC  
American Broadcasting Companies, Inc.  
Antietam Cable Television  
C-Span  
CBS Broadcasting Inc  
CBS Television Licenses LLC  
Charlottesville TV LLC  
Fox Television Stations, LLC  
Gray Television Licensee LLC (Gray TV)  
Gray Television Licensee, Inc. (WVLT-TV)  
Gray Television Licensee, LLC  
Harrisburg License, LLC  
Hearst Properties Inc.  
Independence Public Media - Philadelphia  
Ion Media Philadelphia License, Inc.  
Kentucky Authority for Educational TV  
Maryland Public Broadcasting Commission  
NBC Telemundo License Co.  
NBC Telemundo License LLC  
NEXSTAR BROADCASTING, INC.  
NSAC, LLC  
National Cable Satellite Corporation  
Ohio University  
Pennsylvania Educational Comm Systems  
Philadelphia Television Network, Inc.  
Philadelphia Television Station WPSG  
RCN Telecom Services (Lehigh), LLC  
RCN of Pennsylvania, Inc.  
SBE Coordinator  
WBAL Hearst-Argyle TV, Inc. (CA Corp.)  
WCWB Licensee L.L.C.  
WDCW, LLC  
WHYY, Inc.  
WITF Inc.  
WJAC Licensee, LLC  
WPGH Licensee, LLC  
WPXI, LLC  
WRLH Licensee, LLC  
WUSA-TV, Inc

West Virginia Educational Broadcasting  
Wire Tele-View Corporation

## **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: 12/06/2019  
Job Number: 191120COMSGE06

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### Administrative Information

Status ENGINEER PROPOSAL  
Call Sign KA258  
Licensee Code INTELS  
Licensee Name Intelsat License LLC

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### Site Information HAGERSTOWN, MD

Venue Name  
Latitude (NAD 83) 39° 35' 54.0" N  
Longitude (NAD 83) 77° 45' 33.0" W  
Climate Zone A  
Rain Zone 2  
Ground Elevation (AMSL) 175.1 m / 574.5 ft

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### Link Information

Satellite Type Geostationary  
Mode RO - Receive-Only  
Modulation Analog and Digital  
Satellite Arc 6° W to 149° West Longitude  
Azimuth Range 101.9° to 257.8°  
Corresponding Elevation Angles 5.3° / 5.7°  
Antenna Centerline (AGL) 9.45 m / 31.0 ft

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### Antenna Information Receive - FCC32

Manufacturer TIW  
Model 14.2 meter  
Gain / Diameter 62.0 dBi / 14.2 m  
3-dB / 15-dB Beamwidth 0.20° / 0.40°

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

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### Frequency Information Receive 13.0 GHz

Emission / Frequency Range (MHz) 440KG2D / 12749.75

Max Great Circle Coordination Distance 663.4 km / 412.2 mi  
Precipitation Scatter Contour Radius 591.3 km / 367.4 mi



# COMSEARCH

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### Coordination Values

### HAGERSTOWN, MD

Licensee Name Intelsat License LLC  
Latitude (NAD 83) 39° 35' 54.0" N  
Longitude (NAD 83) 77° 45' 33.0" W  
Ground Elevation (AMSL) 175.1 m / 574.5 ft  
Antenna Centerline (AGL) 9.45 m / 31.0 ft  
Antenna Model TIW 14.2 meter  
Antenna Mode Receive 13.0 GHz  
Interference Objectives: Long Term -156.0 dBW/MHz 20%  
Short Term -146.0 dBW/MHz 0.01%

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 13.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
0	0.00	101.81	-10.00	223.20
5	0.00	96.84	-10.00	223.20
10	0.00	91.86	-10.00	223.20
15	0.00	86.88	-10.00	223.20
20	0.00	81.90	-10.00	223.20
25	0.00	76.92	-10.00	223.20
30	0.00	71.95	-10.00	223.20
35	0.00	66.97	-10.00	223.20
40	0.00	62.00	-10.00	223.20
45	0.00	57.03	-10.00	223.20
50	0.00	52.06	-10.00	223.20
55	0.00	47.09	-9.82	223.94
60	0.00	42.14	-8.62	229.16
65	0.00	37.19	-7.26	235.21
70	0.00	32.26	-5.72	242.34
75	0.00	27.34	-3.92	250.96
80	0.00	22.47	-1.79	261.67
85	0.00	17.65	0.83	275.49
90	0.00	12.98	4.17	294.23
95	0.00	8.66	8.56	320.21
100	0.00	5.61	13.27	663.40
105	0.00	6.15	12.28	450.01
110	0.00	9.60	7.45	312.63
115	0.00	13.27	3.93	292.83
120	0.00	16.89	1.31	278.11
125	0.00	20.41	-0.75	267.08
130	0.00	23.83	-2.43	258.41
135	0.00	27.11	-3.83	251.42
140	0.00	30.23	-5.01	245.69
145	0.00	33.14	-6.01	240.97
150	0.00	35.82	-6.85	237.07
155	0.00	38.20	-7.55	233.89
160	0.00	40.26	-8.12	231.34
165	0.00	41.93	-8.56	229.40
170	0.00	43.16	-8.88	228.02
175	0.00	43.92	-9.07	227.20
180	0.00	44.18	-9.13	226.92
185	0.00	43.92	-9.07	227.19

# COMSEARCH

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<b>Coordination Values</b>	<b>HAGERSTOWN, MD</b>
Licensee Name	Intelsat License LLC
Latitude (NAD 83)	39° 35' 54.0" N
Longitude (NAD 83)	77° 45' 33.0" W
Ground Elevation (AMSL)	175.1 m / 574.5 ft
Antenna Centerline (AGL)	9.45 m / 31.0 ft
Antenna Model	TIW 14.2 meter
Antenna Mode	Receive 13.0 GHz
Interference Objectives: Long Term	-156.0 dBW/MHz 20%
Short Term	-146.0 dBW/MHz 0.01%

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 13.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
190	0.00	43.16	-8.88	228.02
195	0.00	41.93	-8.56	229.40
200	0.00	40.26	-8.12	231.35
205	0.00	38.20	-7.55	233.89
210	0.00	35.81	-6.85	237.07
215	0.00	33.14	-6.01	240.97
220	0.00	30.22	-5.01	245.70
225	0.00	27.11	-3.83	251.42
230	0.00	23.83	-2.43	258.40
235	0.00	20.42	-0.75	267.07
240	0.00	16.89	1.31	278.12
245	0.00	13.28	3.92	292.81
250	0.00	9.59	7.46	312.71
255	0.00	6.33	11.96	464.73
260	0.00	6.11	12.35	637.28
265	0.00	9.18	7.93	315.86
270	0.00	13.46	3.77	291.95
275	0.00	18.11	0.55	274.01
280	0.00	22.90	-2.00	260.61
285	0.00	27.76	-4.09	250.16
290	0.00	32.66	-5.85	241.71
295	0.00	37.59	-7.38	234.68
300	0.00	42.53	-8.72	228.72
305	0.00	47.48	-9.91	223.57
310	0.00	52.44	-10.00	223.20
315	0.00	57.40	-10.00	223.20
320	0.00	62.37	-10.00	223.20
325	0.00	67.34	-10.00	223.20
330	0.00	72.31	-10.00	223.20
335	0.00	77.28	-10.00	223.20
340	0.00	82.26	-10.00	223.20
345	0.00	87.23	-10.00	223.20
350	0.00	92.21	-10.00	223.20
355	0.00	97.18	-10.00	223.20

