

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
Intelsat License LLC
ELLENWOOD, GA
(E030306)
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
April 03, 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 03/19/2018.

Company

4 County Electric Power Association
AT&T Mobility Spectrum LLC-GA/WV/NC/SC
ATG Communications, LLC
Alabama Great Southern Railroad Company
Alabama Power Company
Alabama Regional Communications System
Alltel Communications LLC - Alabama
Athens Cellular, Inc.
Athens-Clark County Unified Government
Baldwin County Sheriffs Office
Barrow County Emergency Services
Bartow, County of
Berkeley Electric Cooperative, Inc.
Birmingham, City of
Blue Ridge Electric Cooperative Inc
Calhoun County 911
Cellco Partnership - Alabama
Cellco Partnership - Georgia Mkt
Cellular South Licenses, LLC
Central of Georgia Railway Company
Charleston, County of
Citicasters Licenses, Inc.
City of Hoover
Clayton, County of
Cobb, County of
Conterra Ultra Broadband, LLC
Conyers, City of
Coweta County
DeKalb County Police Department
Diverse Power Inc
Etowah County Communications
Flint Electric Membership Corporation
Floyd County
Forsyth, County of
Fulton, County of
Gadsden Celltelco Partnership
Georgia Public Web
Georgia Southern and Florida Railway Co
Georgia System Operations Corporation
Greene County E911
Gwinnett County Government

Hall County 9-1-1
Henry County Emergency Communications
Houston County Water Department
JKM Consulting, Inc
Jackson Electric Membership Corporation
Jefferson County Commission
Macon-Bibb County Government
Monroe, County of (GA)
New Cingular Wireless PCS LLC - AL, MS
New Cingular Wireless PCS LLC - Georgia
New Cingular Wireless PCS LLC - WV,NC,SC
Norfolk Southern Railway
Northeastern Georgia RSA Limited Partner
Oconee County Sheriffs Office
Olympic Wireless, LLC
One Ring Networks, Inc.
Pelham, City of
PowerSouth Energy Cooperative
Public Service Telephone Company
Public Service Towers, Inc.
Saga Quad States Communications, LLC
Shelby, County of (AL)
South Carolina Electric & Gas Company
South Carolina Public Service Authority
Southern Company Services Inc.
Southwestco Wireless LP (Georgia 5)
State of Mississippi Wireless Communicat
T-Mobile License LLC
Tallapoosa, County of
Tuscaloosa Cellular Partnership
USCOC of Greater North Carolina, LLC
Verizon Wireless (VAW) LLC (Georgia)
Verizon Wireless (VAW) LLC - Alabama
Verizon Wireless (VAW) LLC-NC&SC Mkts
Verizon Wireless of The East LP - (GA)
Verizon Wireless of the East LP- Alabama
Verizon Wireless of the East, LP (SC)
WVTM HearstTelevision Inc
Walton County Georgia

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: 04/03/2018
Job Number: 180319COMSGE08

Administrative Information

Status ENGINEER PROPOSAL
Call Sign E030306
Licensee Code INTELS
Licensee Name Intelsat License LLC

Site Information ELLENWOOD, GA

Venue Name
Latitude (NAD 83) 33° 39' 50.0" N
Longitude (NAD 83) 84° 16' 22.0" W
Climate Zone A
Rain Zone 1
Ground Elevation (AMSL) 239.27 m / 785.0 ft

Link Information

Satellite Type Geostationary
Mode TR - Transmit-Receive
Modulation Analog and Digital
Satellite Arc 11° W to 157° West Longitude
Azimuth Range 99.5° to 260.2°
Corresponding Elevation Angles 5.2° / 5.7°
Antenna Centerline (AGL) 5.49 m / 18.0 ft

Antenna Information

		Receive - FCC32		Transmit - FCC32	
Manufacturer		Vertex		Vertex	
Model		9 KPC		9 KPC	
Gain / Diameter		50.2 dBi / 9.0 m		53.8 dBi / 9.0 m	
3-dB / 15-dB Beamwidth		0.55° / 1.20°		0.35° / 0.74°	
Max Available RF Power	(dBW/4 kHz) (dBW/MHz)			3.7 27.7	
Maximum EIRP	(dBW/4 kHz) (dBW/MHz)			57.5 81.5	
Interference Objectives:	Long Term	-156.0 dBW/MHz	20%	-154.0 dBW/4 kHz	20%
	Short Term	-146.0 dBW/MHz	0.01%	-131.0 dBW/4 kHz	0.0025%

Frequency Information

	Receive 4.0 GHz	Transmit 6.1 GHz
Emission / Frequency Range (MHz)	64K0G7W - 36M0G7W / 3700.0 - 4200.0	850KF7D / 6173.7 850KF7D / 6176.3
Max Great Circle Coordination Distance	641.5 km / 398.5 mi	448.8 km / 278.9 mi
Precipitation Scatter Contour Radius	724.7 km / 450.2 mi	328.4 km / 204.0 mi

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Earth Station Data Sheet

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

Coordination Values

ELLENWOOD, GA

Licensee Name: Intelsat License LLC
Latitude (NAD 83): 33° 39' 50.0" N
Longitude (NAD 83): 84° 16' 22.0" W
Ground Elevation (AMSL): 239.27 m / 785.0 ft
Antenna Centerline (AGL): 5.49 m / 18.0 ft
Antenna Model: Vertex 9 meter
Antenna Mode: Receive 4.0 GHz Transmit 6.1 GHz
Interference Objectives: Long Term -156.0 dBW/MHz 20% -154.0 dBW/4 kHz 20%
Short Term -146.0 dBW/MHz 0.01% -131.0 dBW/4 kHz 0.0025%
Max Available RF Power 3.7 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 4.0 GHz		Transmit 6.1 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
0	4.53	99.46	-10.00	140.03	-10.00	100.00
5	3.87	94.46	-10.00	150.58	-10.00	100.00
10	2.37	89.46	-10.00	186.10	-10.00	105.39
15	0.75	84.48	-10.00	234.31	-10.00	148.94
20	0.44	79.50	-10.00	256.34	-10.00	170.71
25	0.39	74.52	-10.00	262.55	-10.00	176.32
30	0.50	69.53	-10.00	250.19	-10.00	163.37
35	0.33	64.56	-10.00	268.90	-10.00	181.86
40	0.33	59.58	-10.00	269.53	-10.00	182.40
45	0.45	54.60	-10.00	255.31	-10.00	169.77
50	0.61	49.62	-10.00	242.48	-10.00	156.36
55	0.51	44.66	-9.25	253.87	-9.25	165.94
60	0.68	39.68	-7.96	250.50	-7.96	161.42
65	0.42	34.75	-6.52	280.49	-6.52	187.48
70	0.39	29.82	-4.86	295.47	-4.86	197.30
75	0.48	24.88	-2.90	297.68	-2.90	196.87
80	0.42	20.02	-0.53	323.22	-0.53	210.43
85	0.74	15.12	2.51	319.69	2.51	205.91
90	1.12	10.29	6.68	330.74	6.68	206.69
95	1.07	6.07	12.42	382.84	12.42	236.74
100	1.16	4.07	16.76	620.26	16.76	430.44
105	1.04	6.92	10.99	371.54	10.99	230.23
110	1.15	10.92	6.05	324.17	6.05	204.60
115	1.18	14.91	2.66	294.54	2.66	188.00
120	1.38	18.74	0.18	268.48	0.18	170.27
125	1.29	22.68	-1.89	257.82	-1.89	161.96
130	1.49	26.32	-3.51	240.29	-3.51	148.52
135	2.04	29.60	-4.78	216.19	-4.78	130.85
140	2.75	32.59	-5.83	197.84	-5.83	113.21
145	2.08	36.31	-7.00	206.68	-7.00	121.85
150	1.40	39.83	-8.01	218.13	-8.01	133.29
155	1.29	42.66	-8.75	217.72	-8.75	133.47
160	1.14	45.16	-9.37	219.12	-9.37	135.10
165	1.18	47.06	-9.82	215.69	-9.82	133.78
170	1.08	48.60	-10.00	217.91	-10.00	134.55
175	0.80	49.76	-10.00	231.54	-10.00	146.46
180	0.73	50.13	-10.00	235.41	-10.00	149.93
185	0.62	49.93	-10.00	241.82	-10.00	155.76

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Coordination Values

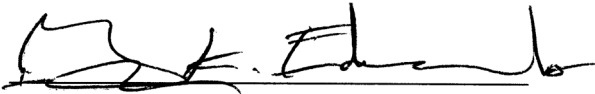
ELLENWOOD, GA

Licensee Name	Intelsat License LLC			
Latitude (NAD 83)	33° 39' 50.0" N			
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Antenna Model	Vertex 9 meter			
Antenna Mode	Receive 4.0 GHz		Transmit 6.1 GHz	
Interference Objectives: Long Term	-156.0 dBW/MHz	20%	-154.0 dBW/4 kHz	20%
Short Term	-146.0 dBW/MHz	0.01%	-131.0 dBW/4 kHz	0.0025%
Max Available RF Power			3.7 (dBW/4 kHz)	

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 4.0 GHz		Transmit 6.1 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
190	0.67	48.98	-10.00	238.90	-10.00	153.09
195	0.71	47.48	-9.91	237.27	-9.91	151.53
200	0.79	45.44	-9.44	234.71	-9.44	148.77
205	1.07	42.82	-8.79	224.24	-8.79	139.03
210	1.04	40.09	-8.08	228.98	-8.08	142.54
215	0.71	37.27	-7.28	252.62	-7.28	162.64
220	0.56	34.06	-6.31	268.15	-6.31	177.02
225	0.46	30.62	-5.15	284.89	-5.15	189.48
230	0.45	26.97	-3.77	296.01	-3.77	196.54
235	0.38	23.22	-2.15	316.31	-2.15	207.37
240	0.34	19.37	-0.18	336.50	-0.18	219.71
245	0.45	15.34	2.35	342.45	2.35	220.87
250	0.35	11.39	5.59	381.50	5.59	246.59
255	0.48	7.34	10.35	405.58	10.35	258.31
260	0.78	4.88	14.80	641.47	14.80	448.84
265	0.94	6.71	11.33	380.58	11.33	236.69
270	0.89	10.87	6.10	338.32	6.10	212.84
275	0.91	15.51	2.24	305.12	2.24	196.38
280	1.10	20.28	-0.68	273.08	-0.68	175.18
285	1.23	25.15	-3.01	252.41	-3.01	158.35
290	1.63	30.03	-4.94	227.35	-4.94	138.78
295	2.17	34.93	-6.58	206.61	-6.58	121.53
300	2.59	39.88	-8.02	190.73	-8.02	108.22
305	3.30	44.83	-9.29	166.38	-9.29	100.00
310	4.52	49.79	-10.00	140.13	-10.00	100.00
315	6.11	54.78	-10.00	124.01	-10.00	100.00
320	7.16	59.79	-10.00	112.59	-10.00	100.00
325	7.22	64.79	-10.00	111.99	-10.00	100.00
330	7.12	69.79	-10.00	113.08	-10.00	100.00
335	6.90	74.79	-10.00	115.40	-10.00	100.00
340	6.69	79.78	-10.00	117.72	-10.00	100.00
345	6.08	84.78	-10.00	124.32	-10.00	100.00
350	5.64	89.78	-10.00	128.68	-10.00	100.00
355	5.23	94.78	-10.00	132.63	-10.00	100.00

5. CERTIFICATION

I HEREBY CERTIFY THAT I AM THE TECHNICALLY QUALIFIED PERSON RESPONSIBLE FOR THE PREPARATION OF THE FREQUENCY COORDINATION DATA CONTAINED IN THIS APPLICATION, THAT I AM FAMILIAR WITH PARTS 101 AND 25 OF THE FCC RULES AND REGULATIONS, THAT I HAVE EITHER PREPARED OR REVIEWED THE FREQUENCY COORDINATION DATA SUBMITTED WITH THIS APPLICATION, AND THAT IT IS COMPLETE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

BY: 

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

DATED: April 03, 2018