

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
Intelsat License LLC
NAPA, CA
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
October 03, 2016

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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 09/09/2016.

Company

Amazing Facts, Inc
CBS Broadcasting Inc
CNN America, Inc.
COMCAST OF CALIFORNIA XV, INC.
Calneva Broadband, LLC
Cocola Broadcasting Companies LLC
Comcast Cablevision Corp of California
Comcast of California/MD/PA/VA/WV, LLC
Esteem Broadcasting of California LLC
HORIZON CABLE TV, INC
Hearst Stations, Inc.
Hearst Stations, Inc. (KCRA)
ION MEDIA SACRAMENTO LICENSE, INC.
KDTV License Partnership, G.P.
KGO Television, Inc.
KQED INC
KTVU, Fox Television Stations Inc.
KTXL, LLC
KUVS License Partnership, G.P.
KVIE, Inc.
KXTV, LLC
Lincoln Broadcasting Co, A California LP
Locuspoint KFTL Licensee, LLC
Mediacom California LLC
Midcontinent Communications
NBC Telemundo License Co. - KNTV
NBC Telemundo License Co. - KSTS
NBC Telemundo License LLC
NRJ TV SF License Co, LLC
Sacramento Television Stations, Inc
TTWN Networks, LLC
Young Broadcasting of San Francisco
Yuba Community College District

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: 09/09/2016
Job Number: 160909COMSGE03

Administrative Information

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

Site Information

NAPA, CA

Venue Name
Latitude (NAD 83) 38° 14' 42.7" N
Longitude (NAD 83) 122° 16' 48.9" W
Climate Zone A
Rain Zone 3
Ground Elevation (AMSL) 11.23 m / 36.8 ft

Link Information

Satellite Type Geostationary
Mode TR - Transmit-Receive
Modulation Digital
Satellite Arc 50° W to 194° West Longitude
Azimuth Range 101.2° to 258.4°
Corresponding Elevation Angles 5.2° / 5.6°
Antenna Centerline (AGL) 5.49 m / 18.0 ft

Antenna Information

Receive - FCC32

Transmit - FCC32

Manufacturer	Vertex	Vertex	
Model	8.1 KPK	8.1 KPK	
Gain / Diameter	58.4 dBi / 8.1 m	59.1 dBi / 8.1 m	
3-dB / 15-dB Beamwidth	0.22° / 0.44°	0.20° / 0.38°	
Max Available RF Power (dBW/4 kHz)		-14.0	
(dBW/MHz)		10.0	
Maximum EIRP (dBW/4 kHz)		45.1	
(dBW/MHz)		69.1	
Interference Objectives:	Long Term	-156.0 dBW/MHz 20%	-151.0 dBW/4 kHz 20%
	Short Term	-146.0 dBW/MHz 0.01%	-128.0 dBW/4 kHz 0.0025%

Frequency Information

Receive 12.0 GHz

Transmit 13.0 GHz

Emission / Frequency Range (MHz)	300KG7W / 12747.0 - 12748.0	900KG7W / 13998.0
Max Great Circle Coordination Distance	626.2 km / 389.0 mi	279.8 km / 173.9 mi
Precipitation Scatter Contour Radius	418.5 km / 260.0 mi	100.0 km / 62.1 mi

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Coordination Values

NAPA, CA

Licensee Name	Intelsat License LLC		
Latitude (NAD 83)	38° 14' 42.7" N		
Longitude (NAD 83)	122° 16' 48.9" W		
Ground Elevation (AMSL)	11.23 m / 36.8 ft		
Antenna Centerline (AGL)	5.49 m / 18.0 ft		
Antenna Model	Vertex 8.1 meter		
Antenna Mode	Receive 12.0 GHz		Transmit 13.0 GHz
Interference Objectives:	Long Term	-156.0 dBW/MHz	20%
	Short Term	-146.0 dBW/MHz	0.01%
Max Available RF Power			-128.0 dBW/4 kHz 0.0025%

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 12.0 GHz		Transmit 13.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
0	0.00	101.14	-10.00	227.19	-10.00	115.80
5	0.00	96.17	-10.00	227.19	-10.00	115.80
10	0.84	91.19	-10.00	185.46	-10.00	100.00
15	0.69	86.20	-10.00	193.55	-10.00	100.00
20	0.42	81.22	-10.00	207.34	-10.00	100.00
25	0.42	76.24	-10.00	207.35	-10.00	100.00
30	1.17	71.24	-10.00	171.73	-10.00	100.00
35	2.35	66.22	-10.00	135.58	-10.00	100.00
40	1.70	61.25	-10.00	151.90	-10.00	100.00
45	2.75	56.22	-10.00	129.26	-10.00	100.00
50	2.83	51.23	-10.00	127.71	-10.00	100.00
55	3.36	46.22	-9.62	119.73	-9.62	100.00
60	3.71	41.21	-8.38	118.23	-8.38	100.00
65	4.55	36.20	-6.97	111.38	-6.97	100.00
70	4.72	31.19	-5.35	115.12	-5.35	100.00
75	4.44	26.20	-3.46	126.03	-3.46	100.00
80	4.14	21.21	-1.17	138.43	-1.17	100.00
85	4.01	16.23	1.74	154.54	1.74	100.00
90	3.78	11.28	5.70	183.97	5.70	100.00
95	3.03	6.55	11.60	227.20	11.60	100.00
100	3.36	2.16	23.63	626.17	23.63	279.84
105	3.07	4.26	16.25	344.33	16.25	139.38
110	2.79	8.24	9.10	218.52	9.10	100.00
115	3.78	11.32	5.65	183.71	5.65	100.00
120	4.53	14.47	2.99	152.22	2.99	100.00
125	4.86	17.78	0.75	136.28	0.75	100.00
130	4.29	21.61	-1.37	135.37	-1.37	100.00
135	4.60	24.67	-2.80	126.57	-2.80	100.00
140	4.54	27.81	-4.10	122.21	-4.10	100.00
145	4.68	30.58	-5.14	116.50	-5.14	100.00
150	4.73	33.15	-6.01	112.62	-6.01	100.00
155	4.46	35.68	-6.81	113.02	-6.81	100.00
160	3.97	38.08	-7.52	116.92	-7.52	100.00
165	3.34	40.24	-8.12	125.40	-8.12	100.00
170	3.14	41.60	-8.48	127.68	-8.48	100.00
175	2.95	42.50	-8.71	130.31	-8.71	100.00
180	2.85	42.84	-8.80	130.45	-8.80	100.00
185	2.55	42.90	-8.81	136.22	-8.81	100.00

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Coordination Values

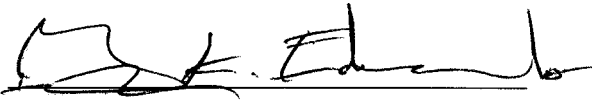
NAPA, CA

Licensee Name	Intelsat License LLC		
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Interference Objectives:	Long Term	-156.0 dBW/MHz	20%
	Short Term	-146.0 dBW/MHz	0.01%
Max Available RF Power		-14.0 (dBW/4 kHz)	-128.0 dBW/4 kHz 0.0025%

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 12.0 GHz		Transmit 13.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
190	2.35	42.36	-8.68	141.05	-8.68	100.00
195	1.96	41.53	-8.46	151.33	-8.46	100.00
200	1.32	40.44	-8.17	175.56	-8.17	100.00
205	1.06	38.57	-7.66	186.01	-7.66	100.00
210	0.73	36.40	-7.03	203.36	-7.03	100.00
215	0.45	33.87	-6.25	220.10	-6.25	105.97
220	0.00	31.20	-5.36	249.22	-5.36	127.55
225	0.00	28.00	-4.18	255.05	-4.18	130.59
230	0.00	24.63	-2.79	262.10	-2.79	133.07
235	0.00	21.13	-1.12	270.77	-1.12	137.83
240	0.00	17.51	0.92	281.72	0.92	144.11
245	0.00	13.82	3.48	296.05	3.48	152.74
250	0.23	9.91	7.10	311.89	7.10	164.20
255	0.00	6.57	11.56	419.79	11.56	200.35
260	0.33	5.50	13.49	601.26	13.49	269.24
265	0.42	8.35	8.95	302.33	8.95	150.32
270	0.51	12.62	4.47	270.11	4.47	130.17
275	0.45	17.32	1.04	256.19	1.04	124.50
280	0.46	22.14	-1.63	240.98	-1.63	116.84
285	0.46	27.02	-3.79	230.04	-3.79	111.07
290	0.85	31.88	-5.59	203.63	-5.59	100.00
295	1.19	36.79	-7.14	184.38	-7.14	100.00
300	0.86	41.78	-8.52	191.08	-8.52	100.00
305	1.13	46.72	-9.74	174.27	-9.74	100.00
310	0.77	51.72	-10.00	189.31	-10.00	100.00
315	0.85	56.69	-10.00	185.31	-10.00	100.00
320	0.99	61.66	-10.00	177.82	-10.00	100.00
325	1.16	66.63	-10.00	172.06	-10.00	100.00
330	0.87	71.62	-10.00	184.09	-10.00	100.00
335	0.00	76.62	-10.00	227.19	-10.00	115.80
340	0.00	81.60	-10.00	227.19	-10.00	115.80
345	0.00	86.58	-10.00	227.19	-10.00	115.80
350	0.00	91.55	-10.00	227.19	-10.00	115.80
355	0.00	96.53	-10.00	227.19	-10.00	115.80

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: October 03, 2016