

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
Intelsat License LLC
FILMORE, CA
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
November 16, 2015

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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 10/27/2015.

Company

ABC Holding Company Inc.
AirSites2000, LLC
American Tower, LLC
Anaheim City, of
BNS Electronics, Inc.
California, State of
Calvary Chapel of Costa Mesa
City of Los Angeles Dept Water & Power
City of Montebello
Coast Community College District
Communication Services, Inc.
Conterra Ultra Broadband, LLC
DM Ventures, Inc. dba Warp2Biz
Encina Communications Company
Exxon Communications Company
Frazier Mountain Internet Service, Inc.
Freeport-McMoRan Oil & Gas LLC
Fresno MSA Limited Partnership
GTE Mobilnet of California LTD Partnersh
GTE Mobilnet of Santa Barbara LTD Ptsh
Glendale, City of
ION Media Los Angeles License, Inc.
KTLA, LLC
Kern Ed Telecom Consortium
Kern, County of
LDM Engineering
LOS ANGELES UNIFIED SCHOOL DISTRICT
Los Angeles City Info Technology Agency
Los Angeles County Dept of Public Works
Los Angeles County FCC Licensing Section
Los Angeles County Metro Transit Auth
Los Angeles SMSA Ltd. Partnership
MHO Networks
MOBILE RELAY ASSOCIATES INC
Metropolitan Water Dist of So California
NRJ TV LA License Co, LLC
New Cingular Wireless PCS - Los Angeles
New Cingular Wireless PCS LLC - N CAL
Nextel of California Inc.
Nextweb Inc

Northrop Grumman Systems Corp.
Olympic Wireless, LLC
Orange, County of, CA
Pacific Bell Tel Com dba AT&T California
Regents of the University of California
San Bernardino County of California
Santa Barbara Cellular Systems, Ltd.
Santa Barbara, County of
Skyriver Communications
Southern California Edison Company
Southern California Gas Company
Southern California Regional Rail Auth.
TV MICROWAVES CO
Turn Wireless, LLC
Union Pacific Railroad Company
Ventura, County of
Verizon California Inc.
Verizon Wireless (VAW) LLC (Southern CA)
Verizon Wireless (VAW) LLC-N CA/NV
Vintage Production California LLC
Western Technical Services

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: 11/16/2015
Job Number: 151027COMSGE09

Administrative Information

Status ENGINEER PROPOSAL
Call Sign E4132
Licensee Code INTELS
Licensee Name Intelsat License LLC

Site Information FILMORE, CA

Venue Name
Latitude (NAD 83) 34° 24' 22.0" N
Longitude (NAD 83) 118° 53' 37.4" W
Climate Zone A
Rain Zone 4
Ground Elevation (AMSL) 313.94 m / 1030.0 ft

Link Information

Satellite Type Geostationary
Mode TR - Transmit-Receive
Modulation Analog and Digital
Satellite Arc 190° W to 192° West Longitude
Azimuth Range 259.1° to 260.3°
Corresponding Elevation Angles 6.9° / 5.2°
Antenna Centerline (AGL) 8.23 m / 27.0 ft

Antenna Information

Receive - FCC32

Transmit - FCC32

Manufacturer	Scientific-Atlanta	Scientific-Atlanta	
Model	3311	3311	
Gain / Diameter	50.5 dBi / 10.0 m	53.8 dBi / 10.0 m	
3-dB / 15-dB Beamwidth	0.40° / 1.00°	0.40° / 0.60°	
Max Available RF Power (dBW/4 kHz)		10.9	
(dBW/MHz)		34.9	
Maximum EIRP (dBW/4 kHz)		64.7	
(dBW/MHz)		88.7	
(dBW)		88.0	
Interference Objectives:	Long Term	-152.0 dBW/MHz 20%	-154.0 dBW/4 kHz 20%
	Short Term	-131.0 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)	850KFXD - 850KFXD / 3700.0 - 4200.0	850KFXD - 850KFXD / 6173.7 - 6176.3
Max Great Circle Coordination Distance	482.8 km / 300.0 mi	558.6 km / 347.1 mi
Precipitation Scatter Contour Radius	310.8 km / 193.1 mi	394.5 km / 245.1 mi

COMSEARCH

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Coordination Values

FILMORE, CA

Licensee Name Intelsat License LLC
Latitude (NAD 83) 34° 24' 22.0" N
Longitude (NAD 83) 118° 53' 37.4" W
Ground Elevation (AMSL) 313.94 m / 1030.0 ft
Antenna Centerline (AGL) 8.23 m / 27.0 ft
Antenna Model Scientific-Atlanta 10 Meter
Antenna Mode Receive 4.0 GHz Transmit 6.1 GHz
Interference Objectives: Long Term -152.0 dBW/MHz 20% -154.0 dBW/4 kHz 20%
Short Term -131.0 dBW/MHz 0.01% -131.0 dBW/4 kHz 0.0025%
Max Available RF Power 10.9 (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	9.41	99.71	-10.00	100.00	-10.00	100.00
5	9.28	104.70	-10.00	100.00	-10.00	100.00
10	10.39	109.66	-10.00	100.00	-10.00	100.00
15	10.81	114.61	-10.00	100.00	-10.00	100.00
20	11.67	119.53	-10.00	100.00	-10.00	100.00
25	12.11	124.45	-10.00	100.00	-10.00	100.00
30	11.51	129.45	-10.00	100.00	-10.00	100.00
35	10.87	134.46	-10.00	100.00	-10.00	100.00
40	11.36	139.35	-10.00	100.00	-10.00	100.00
45	12.04	144.17	-10.00	100.00	-10.00	100.00
50	12.00	149.06	-10.00	100.00	-10.00	100.00
55	11.61	153.99	-10.00	100.00	-10.00	100.00
60	10.79	159.02	-10.00	100.00	-10.00	100.00
65	9.78	164.09	-10.00	100.00	-10.00	100.00
70	9.99	168.69	-10.00	100.00	-10.00	100.00
75	9.18	173.41	-10.00	100.00	-10.00	100.00
80	8.81	176.39	-10.00	100.00	-10.00	100.00
85	8.14	173.92	-10.00	100.00	-10.00	100.00
90	7.27	169.04	-10.00	100.00	-10.00	100.00
95	5.88	164.02	-10.00	100.00	-10.00	100.00
100	6.25	159.04	-10.00	100.00	-10.00	100.00
105	6.17	154.04	-10.00	100.00	-10.00	100.00
110	4.75	148.99	-10.00	100.00	-10.00	100.00
115	2.86	143.86	-10.00	110.78	-10.00	122.66
120	2.00	138.82	-10.00	127.33	-10.00	137.80
125	1.86	133.84	-10.00	130.63	-10.00	141.30
130	2.45	128.91	-10.00	118.61	-10.00	130.35
135	2.61	123.95	-10.00	115.48	-10.00	127.27
140	2.66	118.97	-10.00	114.69	-10.00	126.50
145	2.81	113.99	-10.00	111.81	-10.00	123.67
150	2.62	109.00	-10.00	115.41	-10.00	127.21
155	3.21	104.02	-10.00	104.26	-10.00	116.24
160	2.93	99.03	-10.00	109.46	-10.00	121.36
165	3.48	94.05	-10.00	100.00	-10.00	111.50
170	3.26	89.05	-10.00	103.43	-10.00	115.42
175	3.12	84.07	-10.00	105.93	-10.00	117.88
180	2.52	79.08	-10.00	117.20	-10.00	128.97
185	2.35	74.10	-10.00	120.64	-10.00	132.35

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Coordination Values

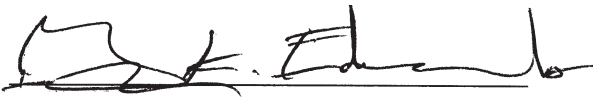
FILMORE, CA

Licensee Name	Intelsat License LLC		
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Antenna Mode	Receive 4.0 GHz		Transmit 6.1 GHz
Interference Objectives: Long Term	-152.0 dBW/MHz	20%	-154.0 dBW/4 kHz 20%
Short Term	-131.0 dBW/MHz	0.01%	-131.0 dBW/4 kHz 0.0025%
Max Available RF Power			10.9 (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	2.28	69.12	-10.00	121.90	-10.00	133.58
195	0.77	64.21	-10.00	164.80	-10.00	180.97
200	0.45	59.27	-10.00	187.48	-10.00	200.70
205	1.20	54.25	-10.00	146.57	-10.00	160.43
210	0.96	49.32	-10.00	154.62	-10.00	170.77
215	0.92	44.37	-9.18	160.18	-9.18	176.63
220	0.00	39.56	-7.93	216.53	-7.93	231.50
225	0.00	34.65	-6.49	222.77	-6.49	238.19
230	0.00	29.78	-4.85	230.35	-4.85	246.16
235	0.00	24.96	-2.93	239.77	-2.93	255.30
240	0.00	20.21	-0.64	251.97	-0.64	267.77
245	0.00	15.61	2.17	267.90	2.17	284.24
250	0.00	11.34	5.63	289.35	5.63	306.58
255	0.00	7.40	10.27	321.62	10.27	339.38
260	0.00	5.22	14.07	482.85	14.07	558.64
265	0.00	7.04	10.81	325.49	10.81	343.43
270	0.00	11.03	5.93	291.28	5.93	308.58
275	1.11	15.29	2.39	204.63	2.39	220.83
280	1.29	20.11	-0.59	188.51	-0.59	203.18
285	2.94	24.84	-2.88	134.89	-2.88	147.88
290	4.19	29.76	-4.84	107.44	-4.84	119.13
295	4.00	34.76	-6.53	103.67	-6.53	115.30
300	4.44	39.75	-7.98	100.00	-7.98	103.88
305	3.70	44.76	-9.27	100.00	-9.27	110.39
310	3.09	49.77	-10.00	106.59	-10.00	118.53
315	2.77	54.78	-10.00	112.48	-10.00	124.33
320	3.24	59.76	-10.00	103.72	-10.00	115.70
325	3.81	64.75	-10.00	100.00	-10.00	105.65
330	5.52	69.74	-10.00	100.00	-10.00	100.00
335	7.47	74.75	-10.00	100.00	-10.00	100.00
340	8.31	79.76	-10.00	100.00	-10.00	100.00
345	8.76	84.75	-10.00	100.00	-10.00	100.00
350	9.64	89.74	-10.00	100.00	-10.00	100.00
355	9.46	94.73	-10.00	100.00	-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: November 16, 2015