

# FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for  
**Intelsat License LLC**  
**NUEVO, CA**  
**(E040125)**  
**Satellite Earth Station**

Prepared By:  
COMSEARCH  
19700 Janelia Farm Boulevard  
Ashburn, VA 20147  
December 24, 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 11/30/2015.

#### Company

ABC Holding Company Inc.  
AirSites2000, LLC  
Alltel Comm Southwest Holdings Inc.  
Anaheim City, of  
Arizona Public Service Company (APS)  
Arizona, State Of  
BNSF Railway Company  
CCO SoCal I, LLC  
California, State of  
Calvary Chapel of Costa Mesa  
Cellco Partnership - Southern California  
City of Casa Grande  
City of Los Angeles Dept Water & Power  
City of Montebello  
City of Yuma  
Coachella Valley Water District  
Coast Community College District  
Commnet Four Corners, LLC  
DM Ventures, Inc. dba Warp2Biz  
DRS Technical Services  
Encina Communications Company  
Entravision Holdings, LLC  
Fisher Wireless Services, Inc.  
Fresno MSA Limited Partnership  
Gila River Cellular General Partnership  
Glendale, City of  
Global Telecom & Technology Americas, In  
GovNET Licenses LLC  
ION Media Los Angeles License, Inc.  
KTLA, LLC  
Kern Ed Telecom Consortium  
Kern, County of  
LDM Engineering  
Lightwave Broadband LLC  
Los Angeles City Info Technology Agency  
Los Angeles County Dept of Public Works  
Los Angeles County FCC Licensing Section  
Los Angeles SMSA Ltd. Partnership  
MHO Networks  
MOBILE RELAY ASSOCIATES INC

Maricopa County Wireless Systems  
Metropolitan Water Dist of So California  
NRJ TV LA License Co, LLC  
New Cingular Wireless PCS LLC - AZ  
New Cingular Wireless PCS - Los Angeles  
New Cingular Wireless PCS LLC - N CAL  
New Cingular Wireless PCS LLC -San Diego  
Nextel License Holdings 4 Inc.  
Nextel of California Inc.  
Norris, Samuel O  
Northrop Grumman Systems Corp.  
Olympic Wireless, LLC  
Orange, County of, CA  
Pacific Bell Tel Com dba AT&T California  
Phoenix, City of  
QUALCOMM INC.  
Qwest Corporation  
Regional 3Cs  
Riverside, County of  
San Bernardino County of California  
San Diego Broadband  
San Diego County Water Authority  
San Diego Gas & Electric Company  
San Diego, City of  
San Diego, County of  
Skyriver Communications  
Southern California Edison Company  
Southern California Gas Company  
Southern California Regional Rail Auth.  
Sprint Spectrum L.P.  
Sprint Telephony PCS, L.P.  
Station Venture Operations, LP  
T-Mobile License LLC  
TV MICROWAVES CO  
Table Top Telephone Company  
Telink Networks SW, LLC  
Time Warner Cable Pacific West LLC  
Tucson Electric Power Company  
Turn Wireless, LLC  
Ultimate Internet Access, Inc  
Union Pacific Railroad Company  
University of California, HPWREN  
Verizon California Inc.  
Verizon Wireless (VAW) LLC (Southern CA)  
Verizon Wireless (VAW) LLC-N CA/NV  
Verizon Wireless(VAW) LLC-AZ/CO/NM/NV/UT  
Western Technical Services  
White, Fred K

## **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: 12/24/2015  
Job Number: 151130COMSGE04

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### Administrative Information

Status ENGINEER PROPOSAL  
Call Sign E040125  
Licensee Code INTELS  
Licensee Name Intelsat License LLC

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### Site Information

**NUEVO, CA**  
Venue Name  
Latitude (NAD 83) 33° 47' 43.6" N  
Longitude (NAD 83) 117° 5' 20.4" W  
Climate Zone A  
Rain Zone 4  
Ground Elevation (AMSL) 566.62 m / 1859.0 ft

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### Link Information

Satellite Type Geostationary  
Mode TO - Transmit-Only  
Modulation Analog and Digital  
Satellite Arc 45° W to 170° West Longitude  
Azimuth Range 100.2° to 247.2°  
Corresponding Elevation Angles 6.2° / 22.0°  
Antenna Centerline (AGL) 7.32 m / 24.0 ft

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### Antenna Information

**Transmit - FCC32**  
Manufacturer Vertex  
Model 11 KPC  
Gain / Diameter 55.5 dBi / 11.0 m  
3-dB / 15-dB Beamwidth 0.29° / 0.54°

Max Available RF Power (dBW/4 kHz) 8.6  
(dBW/MHz) 32.6

Maximum EIRP (dBW/4 kHz) 64.1  
(dBW/MHz) 88.1  
(dBW) 87.4

Interference Objectives: Long Term -154.0 dBW/4 kHz 20%  
Short Term -131.0 dBW/4 kHz 0.0025%

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### Frequency Information

**Transmit 6.1 GHz**  
Emission / Frequency Range (MHz) 850KFXD - 1M20FXD / 6422.0 - 6424.5

Max Great Circle Coordination Distance 491.7 km / 305.5 mi  
Precipitation Scatter Contour Radius 316.8 km / 196.8 mi



# COMSEARCH

## Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147  
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### Coordination Values

### NUEVO, CA

Licensee Name Intelsat License LLC  
Latitude (NAD 83) 33° 47' 43.6" N  
Longitude (NAD 83) 117° 5' 20.4" W  
Ground Elevation (AMSL) 566.62 m / 1859.0 ft  
Antenna Centerline (AGL) 7.32 m / 24.0 ft  
Antenna Model Vertex 11 meter  
Antenna Mode Transmit 6.1 GHz  
Interference Objectives: Long Term -154.0 dBW/4 kHz 20%  
Short Term -131.0 dBW/4 kHz 0.0025%  
Max Available RF Power 8.6 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 6.1 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
0	0.91	100.15	-10.00	160.90
5	2.23	95.18	-10.00	125.83
10	1.88	90.19	-10.00	133.16
15	2.42	85.20	-10.00	122.25
20	2.49	80.21	-10.00	120.85
25	2.56	75.22	-10.00	119.49
30	3.50	70.22	-10.00	102.07
35	3.34	65.23	-10.00	105.02
40	3.36	60.23	-10.00	104.68
45	3.28	55.24	-10.00	106.09
50	2.88	50.27	-10.00	113.58
55	2.50	45.31	-9.40	122.87
60	2.77	40.31	-8.14	122.67
65	3.44	35.29	-6.69	115.99
70	3.10	30.33	-5.05	128.10
75	3.19	25.36	-3.10	133.79
80	3.76	20.33	-0.70	132.86
85	3.33	15.45	2.28	152.87
90	3.39	10.56	6.41	174.12
95	2.51	6.34	11.94	220.14
100	2.99	3.18	19.45	491.65
105	3.63	5.38	13.72	205.53
110	3.84	9.29	7.80	171.48
115	3.70	13.36	3.86	152.77
120	3.87	17.17	1.13	137.08
125	3.84	21.02	-1.07	130.12
130	4.49	24.32	-2.65	114.61
135	3.88	28.30	-4.29	117.10
140	4.24	31.47	-5.45	107.49
145	4.11	34.76	-6.53	105.27
150	4.48	37.41	-7.32	100.00
155	4.67	39.84	-8.01	100.00
160	4.09	42.53	-8.72	100.00
165	4.55	43.90	-9.06	100.00
170	4.85	44.86	-9.30	100.00
175	5.79	44.68	-9.25	100.00
180	6.19	44.52	-9.21	100.00
185	6.91	43.57	-8.98	100.00

# COMSEARCH

## Earth Station Data Sheet

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

### Coordination Values

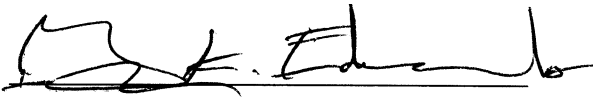
### NUEVO, CA

Licensee Name Intelsat License LLC  
Latitude (NAD 83) 33° 47' 43.6" N  
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Max Available RF Power 8.6 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 6.1 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
190	7.27	42.53	-8.72	100.00
195	6.99	41.64	-8.49	100.00
200	6.27	40.64	-8.22	100.00
205	5.71	38.99	-7.77	100.00
210	5.71	36.45	-7.04	100.00
215	6.70	32.84	-5.91	100.00
220	7.49	29.16	-4.62	100.00
225	7.03	26.16	-3.44	100.00
230	5.65	23.57	-2.31	102.80
235	6.10	19.95	-0.50	105.35
240	5.73	17.76	0.76	114.08
245	5.59	16.57	1.52	118.52
250	5.18	17.07	1.20	121.20
255	4.95	18.72	0.19	119.58
260	4.51	21.57	-1.35	119.32
265	4.74	24.62	-2.78	110.78
270	4.38	28.54	-4.39	109.45
275	4.51	32.48	-5.79	102.47
280	4.14	36.88	-7.17	102.48
285	3.19	41.60	-8.48	113.55
290	2.77	46.16	-9.61	117.06
295	1.04	51.16	-10.00	154.91
300	0.82	55.70	-10.00	165.96
305	0.00	60.40	-10.00	212.66
310	0.00	64.94	-10.00	212.66
315	0.00	69.50	-10.00	212.66
320	0.00	74.10	-10.00	212.66
325	0.00	78.71	-10.00	212.66
330	0.00	83.34	-10.00	212.66
335	0.00	87.97	-10.00	212.66
340	0.00	92.60	-10.00	212.66
345	0.00	97.24	-10.00	212.66
350	0.00	101.86	-10.00	212.66
355	0.00	105.10	-10.00	212.66

## 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: December 24, 2015