

# FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

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

Prepared By:  
COMSEARCH  
19700 Janelia Farm Boulevard  
Ashburn, VA 20147  
November 13, 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 10/09/2019.

Company

ABC Holding Company Inc.  
AT&T Mobility Spectrum LLC - Arizona  
AT&T Mobility Spectrum LLC - Southern CA  
Air Sites 2000 LLC  
Alltel Comm Southwest Holdings Inc.  
Anaheim City, of  
Arizona Public Service Company (APS)  
Arizona, State Of  
BNSF Railway Company  
California Internet Solutions, Inc.  
California Internet, L.P  
California Internet, L.P.  
California, State of  
Calvary Chapel of Costa Mesa  
Cellco Partnership - Southern California  
City of Los Angeles Dept Water & Power  
City of Montebello  
City of West Covina  
City of Yuma  
Coachella Valley Water District  
Coast Community College District  
Commnet Four Corners, LLC  
DM Ventures, Inc. dba Warp2Biz  
DRS Global Enterprise Solutions, Inc.  
Entravision Holdings, LLC  
Fresno MSA Limited Partnership  
Frontier California Inc.  
Gila River Cellular General Partnership  
Glendale City California  
Global Telecom & Technology Americas, In  
Go Creative Wireless  
GovNET Licenses LLC  
Imperial Irrigation District  
KTLA, LLC  
Kern County Superintendent of Schools  
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 County Metro Transit Auth  
Los Angeles Regional Interoperable Comm  
Los Angeles SMSA Ltd. Partnership  
Los Angeles Unified School District  
MHO Networks  
Maricopa County Wireless Systems  
Metropolitan Water Dist of So California  
Mobile Relay Associates Inc.  
New Cingular Wireless PCS LLC - AZ  
New Cingular Wireless PCS - Los Angeles  
New Cingular Wireless PCS LLC -San Diego  
New Cingular Wireless PCS, LLC - S/E CAL  
Nextel License Holdings 4 Inc.  
Nextel of California Inc.  
Norris, Samuel O  
Northrop Grumman Systems Corp.  
Nrj TV La License Co, LLC  
Olympic Wireless, LLC  
Orange, County of, CA  
Pacific Bell Tel Com dba AT&T California  
Pacific Lightwave Inc  
Qwest Corporation  
Regional 3Cs  
Riverside, County of  
San Bernardino County of California  
San Diego Broadband  
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.  
Spectrum Link, Inc.  
Sprint Spectrum L.P.  
Station Venture Operations, LP  
T-Mobile License LLC  
TV Microwaves Company  
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  
Ventura, County of  
Venture Technologies Group, LLC  
Verizon Wireless (VAW) LLC (Southern CA)  
Verizon Wireless (VAW) LLC-N CA/NV  
Verizon Wireless(VAW) LLC-AZ/CO/NM/NV/UT  
Western Broadband Inc.  
Wiline Spectrum Holdings LLC  
Wisprenn

## **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: 11/13/2019  
Job Number: 191009COMSGE02

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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' 45.1" N  
Longitude (NAD 83) 117° 5' 16.3" W  
Climate Zone A  
Rain Zone 4  
Ground Elevation (AMSL) 566.6 m / 1858.9 ft

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### Link Information

Satellite Type Geostationary  
Mode TR - Transmit-Receive  
Modulation Analog and Digital  
Satellite Arc 44° W to 190° West Longitude  
Azimuth Range 99.6° to 260.3°  
Corresponding Elevation Angles 5.3° / 5.5°  
Antenna Centerline (AGL) 7.32 m / 24.0 ft

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### Antenna Information

#### Receive - FCC32

#### Transmit - FCC32

Manufacturer	Vertex	Vertex	
Model	11 KPC	11 KPC	
Gain / Diameter	51.8 dBi / 11.0 m	55.5 dBi / 11.0 m	
3-dB / 15-dB Beamwidth	0.44° / 0.84°	0.29° / 0.54°	
Max Available RF Power (dBW/4 kHz)		6.6	
(dBW/MHz)		30.6	
Maximum EIRP (dBW/4 kHz)		62.1	
(dBW/MHz)		86.1	
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%

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### Frequency Information

#### Receive 4.0 GHz

#### Transmit 6.1 GHz

Emission / Frequency Range (MHz)	500KG7D - 1M50G7D / 3700.0 - 4200.0	850KF7D - 1M50F7D / 5850.0 - 5930.0 850KF7D - 1M50F7D / 6170.0 - 6180.0 850KF7D - 1M50F7D / 6415.0 - 6425.0
Max Great Circle Coordination Distance	678.7 km / 421.7 mi	511.7 km / 317.9 mi
Precipitation Scatter Contour Radius	429.4 km / 266.8 mi	267.9 km / 166.4 mi



# COMSEARCH

## Earth Station Data Sheet

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### Coordination Values

### NUEVO, CA

Licensee Name: Intelsat License LLC  
Latitude (NAD 83): 33° 47' 45.1" N  
Longitude (NAD 83): 117° 5' 16.3" W  
Ground Elevation (AMSL): 566.6 m / 1858.9 ft  
Antenna Centerline (AGL): 7.32 m / 24.0 ft  
Antenna Model: Vertex 11 meter  
Antenna Mode: Receive 4.0 GHz  
Interference Objectives: Long Term: -156.0 dBW/MHz 20%  
Short Term: -146.0 dBW/MHz 0.01%  
Transmit 6.1 GHz: -154.0 dBW/4 kHz 20%  
-131.0 dBW/4 kHz 0.0025%  
Max Available RF Power: 6.6 (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	1.67	99.58	-10.00	203.43	-10.00	131.01
5	2.33	94.60	-10.00	187.01	-10.00	116.59
10	2.51	89.60	-10.00	182.82	-10.00	113.06
15	2.97	84.61	-10.00	172.10	-10.00	104.29
20	2.91	79.61	-10.00	173.64	-10.00	105.53
25	2.87	74.62	-10.00	174.42	-10.00	106.16
30	3.33	69.61	-10.00	162.01	-10.00	100.00
35	3.55	64.61	-10.00	157.18	-10.00	100.00
40	3.40	59.62	-10.00	160.52	-10.00	100.00
45	3.30	54.63	-10.00	162.76	-10.00	100.00
50	2.96	49.64	-10.00	172.38	-10.00	104.51
55	2.68	44.66	-9.25	182.62	-9.25	112.59
60	2.85	39.67	-7.96	185.16	-7.96	114.21
65	3.71	34.63	-6.49	173.56	-6.49	104.29
70	3.35	29.66	-4.80	190.08	-4.80	117.19
75	3.22	24.69	-2.81	202.89	-2.81	126.90
80	4.02	19.64	-0.33	199.55	-0.33	122.28
85	3.58	14.70	2.81	223.57	2.81	141.06
90	3.63	9.75	7.27	253.55	7.27	161.28
95	2.67	5.31	13.86	337.01	13.86	216.19
100	2.87	2.49	22.11	633.43	22.11	472.47
105	3.59	5.41	13.67	306.66	13.67	197.32
110	3.84	9.29	7.80	252.03	7.80	159.20
115	3.90	13.23	3.96	223.66	3.96	140.10
120	3.97	17.11	1.17	205.95	1.17	128.84
125	3.90	20.98	-1.04	197.94	-1.04	121.42
130	4.02	24.62	-2.78	186.46	-2.78	112.87
135	3.86	28.31	-4.30	181.80	-4.30	110.03
140	3.93	31.69	-5.52	173.88	-5.52	104.29
145	4.30	34.62	-6.48	160.06	-6.48	100.00
150	3.70	38.00	-7.49	166.66	-7.49	100.53
155	2.47	41.61	-8.48	191.21	-8.48	119.53
160	2.26	44.09	-9.11	192.93	-9.11	121.28
165	3.07	45.23	-9.39	172.88	-9.39	104.69
170	3.59	46.07	-9.59	158.37	-9.59	100.00
175	5.00	45.46	-9.44	135.78	-9.44	100.00
180	4.68	46.03	-9.58	139.70	-9.58	100.00
185	5.13	45.33	-9.41	134.61	-9.41	100.00

# COMSEARCH

## Earth Station Data Sheet

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

### Coordination Values

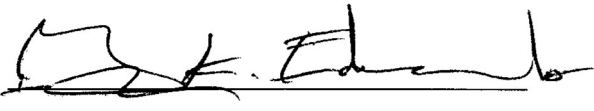
### NUEVO, CA

Licensee Name	Intelsat License LLC			
Latitude (NAD 83)	33° 47' 45.1" N			
Longitude (NAD 83)	117° 5' 16.3" W			
Ground Elevation (AMSL)	566.6 m / 1858.9 ft			
Antenna Centerline (AGL)	7.32 m / 24.0 ft			
Antenna Model	Vertex 11 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			6.6 (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	5.56	44.17	-9.13	132.81	-9.13	100.00
195	5.94	42.61	-8.74	130.77	-8.74	100.00
200	5.88	40.98	-8.31	133.05	-8.31	100.00
205	4.94	39.62	-7.95	142.94	-7.95	100.00
210	5.39	36.70	-7.12	141.60	-7.12	100.00
215	5.35	33.85	-6.24	146.06	-6.24	100.00
220	5.83	30.35	-5.06	146.47	-5.06	100.00
225	5.63	27.12	-3.83	154.71	-3.83	100.00
230	5.55	23.63	-2.34	163.81	-2.34	100.00
235	5.55	19.93	-0.49	176.11	-0.49	103.00
240	5.40	16.22	1.75	190.76	1.75	113.22
245	5.30	12.39	4.67	205.97	4.67	126.06
250	4.90	8.67	8.55	236.44	8.55	145.19
255	4.17	5.06	14.39	297.29	14.39	189.77
260	4.35	1.17	30.32	678.72	30.32	511.73
265	4.03	4.92	14.70	303.10	14.70	193.66
270	3.61	9.88	7.13	252.81	7.13	160.86
275	4.02	14.78	2.76	213.80	2.76	134.23
280	3.54	19.80	-0.41	206.14	-0.41	130.23
285	2.69	24.85	-2.88	211.07	-2.88	134.96
290	0.97	30.01	-4.93	250.76	-4.93	173.94
295	0.43	35.02	-6.61	278.57	-6.61	198.19
300	0.00	40.02	-8.06	297.94	-8.06	212.43
305	0.00	44.97	-9.32	289.62	-9.32	207.40
310	0.00	49.93	-10.00	285.28	-10.00	204.80
315	0.00	54.89	-10.00	285.28	-10.00	204.80
320	0.00	59.86	-10.00	285.28	-10.00	204.80
325	0.00	64.83	-10.00	285.28	-10.00	204.80
330	0.00	69.80	-10.00	285.28	-10.00	204.80
335	0.00	74.78	-10.00	285.28	-10.00	204.80
340	0.00	79.75	-10.00	285.28	-10.00	204.80
345	0.00	84.73	-10.00	285.28	-10.00	204.80
350	0.00	89.71	-10.00	285.28	-10.00	204.80
355	0.75	94.69	-10.00	234.28	-10.00	161.02

## 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 13, 2019