

Ka-Band Earth Station – Nuevo, CA

Frequency Coordination Report

28 GHz



Prepared on Behalf of
Intelsat License LLC

December 16, 2016



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1. Summary of Results

On behalf of Intelsat, Comsearch performed a coordination notice for all existing and proposed terrestrial licenses within the coordination contours of their proposed Ka-Band earth station in Nuevo, CA, which will transmit at 28 GHz¹. Prior-notification letters were sent to the licensees and a copy of the notification data is provided in section four of this report. The earth station coordination was finalized on December 15, 2016.

No objections were received from any of the incumbent 28 GHz licensees.

2. 28 GHz Common Carrier and LTTS Coordination

In accordance with FCC Rules and Regulations, the Ka-Band earth station in Nuevo, CA was prior-coordinated by Comsearch. A notification letter and datasheet for this earth station were sent to the following 28 GHz common carrier fixed microwave licensees on November 15, 2016. These licensees are authorized to operate temporary fixed operations from 27.5 – 29.5 GHz over a designated geographic area.

Licensee	Authorized Geographic Area
Frontier	Continental US
M.U.T. Licensing, LLC	Statewide: California

A notification letter and datasheet for the Ka-Band earth station in Nuevo, CA were also sent to the following 28 GHz local television transmission licensee on November 15, 2016. This licensee is authorized to operate temporary fixed operations from 27.5 – 29.5 GHz on a nationwide basis.

Licensee	Authorized Geographic Area
Information Super Station, LLC	Continental US

No objections were received from the common carrier or local television transmission service incumbents.

¹ The proposed earth station will operate in the 27.2 – 30.0 GHz portion of the Ka-Band.

3. 28 GHz LMDS Coordination

A Notification letter was sent to the following 28 GHz LMDS licensees on November 15, 2016. The proposed earth station will operate on frequencies that overlap Block A of the LMDS service. The total frequency allocation for Block A of the LMDS spectrum appears below.

Block A: 27.500-28.350 GHz
29.100-29.250 GHz
31.075-31.225 GHz

Market	Market Name	Licensee
BTA262 ²	Los Angeles, CA	Nextlink/XO
BTA262	Los Angeles, CA	T-Mobile ³
BTA262	Los Angeles, CA	TelePacific Communications ⁴
BTA262	Los Angeles, CA	Towerstream ⁵
BTA262	Los Angeles, CA	Verizon ⁶
BTA402	San Diego, CA	EchoStar
BTA402	San Diego, CA	Nextlink/XO ⁷

No objections were received from the LMDS incumbents.

² The proposed earth station will be located inside BTA262.

³ T-Mobile has acquired spectrum from Nextlink/XO in the Los Angeles, CA Basic Trading Area (BTA).

⁴ TelePacific is leasing spectrum from Nextlink/XO in the Los Angeles, CA BTA.

⁵ Towerstream is leasing spectrum from Nextlink/XO in the Los Angeles, CA BTA.

⁶ Verizon is leasing spectrum from Nextlink/XO in the Los Angeles, CA BTA.

⁷ Nextlink/XO is leasing spectrum from EchoStar in the San Diego, CA BTA.

4. Earth Station Coordination Data

This section presents the data pertinent to the proposed Ka-Band earth station in Nuevo, CA. This data was circulated to all incumbent licensees in the shared 28 GHz frequency ranges.

COMSEARCH**Earth Station Data Sheet**

19700 Janelia Farm Boulevard, Ashburn, VA 20147
 (703)726-5662 <http://www.comsearch.com>

Date: 11/14/2016
 Job Number: <PCNJobCode>

Administrative Information

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

Site Information**NUEVO, CA**

Venue Name
 Latitude (NAD 83) 33° 47' 44.0" N
 Longitude (NAD 83) 117° 5' 20.0" W
 Climate Zone A
 Rain Zone 4
 Ground Elevation (AMSL) 567.74 m / 1862.7 ft

Link Information

Satellite Type Geostationary
 Mode TO - Transmit-Only
 Modulation Digital
 Satellite Arc 84° W to 84° West Longitude
 Azimuth Range 130.5° to 130.5°
 Corresponding Elevation Angles 37.2° / 37.2°
 Antenna Centerline (AGL) 5.49 m / 18.0 ft

Antenna Information**Transmit - FCC32**

Manufacturer General Dynamics
 Model 9.2m KAFMA
 Gain / Diameter 65.4 dBi / 9.2 m
 3-dB / 15-dB Beamwidth 0.08° / 0.16°

Max Available RF Power (dBW/4 kHz) 19.6
 (dBW/MHz) 43.6

Maximum EIRP (dBW/4 kHz) 85.0
 (dBW/MHz) 109.0

Interference Objectives: Long Term -151.0 dBW/4 kHz 20%
 Short Term -128.0 dBW/4 kHz 0.0025%

Frequency Information**Transmit 28.0 GHz**

Emission / Frequency Range (MHz) 1K00FXD / 27200.0 - 30000.0

Max Great Circle Coordination Distance 186.3 km / 115.8 mi
 Precipitation Scatter Contour Radius 340.8 km / 211.7 mi

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Coordination Values**NUEVO, CA**

Licensee Name Intelsat License LLC
 Latitude (NAD 83) 33° 47' 44.0" N
 Longitude (NAD 83) 117° 5' 20.0" W
 Ground Elevation (AMSL) 567.74 m / 1862.7 ft
 Antenna Centerline (AGL) 5.49 m / 18.0 ft
 Antenna Model General Dynamics 9.2 meter
 Antenna Mode Transmit 28.0 GHz
 Interference Objectives: Long Term -151.0 dBW/4 kHz 20%
 Short Term -128.0 dBW/4 kHz 0.0025%
 Max Available RF Power 19.6 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 28.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
0	0.99	121.59	-10.00	143.86
5	2.19	118.39	-10.00	117.87
10	2.01	114.49	-10.00	121.13
15	2.63	110.75	-10.00	110.01
20	2.71	106.77	-10.00	108.58
25	2.54	102.69	-10.00	111.76
30	3.50	98.71	-10.00	100.00
35	3.38	94.56	-10.00	100.00
40	3.31	90.40	-10.00	100.00
45	3.26	86.26	-10.00	100.00
50	2.98	82.15	-10.00	103.88
55	2.54	78.11	-10.00	111.64
60	2.79	74.01	-10.00	107.31
65	3.31	69.86	-10.00	100.00
70	3.10	65.93	-10.00	101.66
75	3.27	61.96	-10.00	100.00
80	3.69	57.96	-10.00	100.00
85	3.38	54.38	-10.00	100.00
90	3.38	50.82	-10.00	100.00
95	2.64	47.89	-10.00	109.83
100	3.01	44.54	-9.22	106.12
105	3.62	41.24	-8.38	100.00
110	3.68	38.66	-7.68	100.24
115	3.70	36.53	-7.07	102.21
120	3.97	34.67	-6.50	100.00
125	3.88	33.73	-6.20	102.46
130	4.48	32.74	-5.88	100.00
135	3.90	33.58	-6.15	102.25
140	4.20	34.20	-6.35	100.00
145	4.16	35.76	-6.84	100.00
150	3.73	38.17	-7.54	100.00
155	4.29	40.20	-8.11	100.00
160	4.08	43.22	-8.89	100.00
165	4.77	45.94	-9.55	100.00
170	4.81	49.35	-10.00	100.00
175	5.53	52.64	-10.00	100.00
180	5.93	56.30	-10.00	100.00
185	6.80	59.96	-10.00	100.00

COMSEARCH

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Coordination Values	NUEVO, CA
Licensee Name	Intelsat License LLC
Latitude (NAD 83)	33° 47' 44.0" N
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Ground Elevation (AMSL)	567.74 m / 1862.7 ft
Antenna Centerline (AGL)	5.49 m / 18.0 ft
Antenna Model	General Dynamics 9.2 meter
Antenna Mode	Transmit 28.0 GHz
Interference Objectives: Long Term	-151.0 dBW/4 kHz 20%
Short Term	-128.0 dBW/4 kHz 0.0025%
Max Available RF Power	19.6 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 28.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
190	6.85	64.04	-10.00	100.00
195	6.57	68.27	-10.00	100.00
200	6.33	72.52	-10.00	100.00
205	5.63	76.85	-10.00	100.00
210	6.06	81.04	-10.00	100.00
215	6.49	85.28	-10.00	100.00
220	8.12	89.57	-10.00	100.00
225	7.26	93.91	-10.00	100.00
230	5.67	98.10	-10.00	100.00
235	5.85	102.36	-10.00	100.00
240	5.72	106.55	-10.00	100.00
245	5.64	110.70	-10.00	100.00
250	5.18	114.69	-10.00	100.00
255	5.02	118.65	-10.00	100.00
260	4.64	122.42	-10.00	100.00
265	4.53	126.16	-10.00	100.00
270	4.44	129.76	-10.00	100.00
275	4.58	133.30	-10.00	100.00
280	3.98	136.12	-10.00	100.00
285	2.97	138.27	-10.00	104.01
290	2.63	140.46	-10.00	110.16
295	0.84	140.90	-10.00	150.18
300	0.57	142.09	-10.00	163.66
305	0.00	142.45	-10.00	186.32
310	0.00	142.79	-10.00	186.32
315	0.00	142.56	-10.00	186.32
320	0.00	141.76	-10.00	186.32
325	0.00	140.44	-10.00	186.32
330	0.00	138.65	-10.00	186.32
335	0.00	136.44	-10.00	186.32
340	0.00	133.87	-10.00	186.32
345	0.00	131.01	-10.00	186.32
350	0.00	127.91	-10.00	186.32
355	0.00	124.61	-10.00	186.32



5. Contact Information

For questions or information regarding the 28 GHz Frequency Coordination Report, please contact:

Contact person:	Joanna Lynch
Title:	Manager, Spectrum & Data Solutions
Company:	Comsearch
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