

Ka-Band Earth Station – Chandler, AZ

Frequency Coordination Report

28 GHz



Prepared on Behalf of
Iridium Constellation LLC

July 27, 2016



COMSEARCH
A CommScope Company



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1. Summary of Results

On behalf of Iridium Constellation, Comsearch performed a coordination notice for all existing and proposed terrestrial licenses within the coordination contours of their existing Ka-Band earth station in Chandler, Arizona, 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 July 27, 2016.

No objections were received from any of the incumbent 28 GHz licensees. Our notification to the LMDS incumbents was performed under the assumption that the earth station would be operating on a non-interference basis in relation to primary LMDS Block A operations. A contact at Iridium Constellation has been provided in case any concerns may arise in the future.

2. 28 GHz Common Carrier and LTTS Coordination

In accordance with FCC Rules and Regulations, the Ka-Band earth station in Chandler, Arizona was prior-coordinated by Comsearch. A notification letter and datasheets for this earth station were sent to the following 28 GHz common carrier fixed microwave licensee on June 21, 2016. This licensee is authorized to operate temporary fixed operations from 27.5 to 29.5 GHz on a nationwide basis.

Licensee	Authorized Geographic Area
Frontier	Continental US

A notification letter and datasheet for the Ka-Band earth station in Chandler, Arizona were also sent to the following 28 GHz local television transmission licensee on June 21, 2016. This licensee is authorized to operate temporary fixed operations from 27.5 to 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 29.1 – 29.3 GHz portion of the Ka-Band.



3. 28 GHz LMDS Coordination

A Notification letter was sent to the following 28 GHz LMDS licensees on June 21, 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

Licensee	Market	Market Name
EchoStar	BTA347 ²	Phoenix, AZ
Nextlink / XO ³	BTA347	Phoenix, AZ
Nextlink / XO	BTA447	Tucson, AZ

No objections were received from the LMDS incumbents.

² The Iridium Constellation earth station is located inside BTA347.

³ XO Communications is leasing spectrum from EchoStar in the Phoenix, AZ Basic Trading Area (BTA).



4. Earth Station Coordination Data

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



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Date: 07/28/2016
 Job Number: 160623COMSGE01

Administrative Information

Status ENGINEER PROPOSAL
 Call Sign E960244
 Licensee Code IRICON
 Licensee Name Iridium Constellation LLC

Site Information

CHANDLER, AZ

Venue Name
 Latitude (NAD 83) 33° 15' 59.4" N
 Longitude (NAD 83) 111° 52' 56.4" W
 Climate Zone A
 Rain Zone 5
 Ground Elevation (AMSL) 365.76 m / 1200.0 ft

Link Information

Satellite Type Low Earth Orbit
 Mode TR - Transmit-Receive
 Modulation Digital
 Minimum Elevation Angle 5.0°
 Azimuth Range 0.0° to 360°
 Antenna Centerline (AGL) 4.88 m / 16.0 ft

Antenna Information

Manufacturer
 Model
 Gain / Diameter
 3-dB / 15-dB Beamwidth

Receive - FCC32

Scientific-Atlanta
 3.0 meter
 54.0 dBi / 3.0 m
 0.40° / 0.70°

Transmit - FCC32

Scientific-Atlanta
 3.0 meter
 57.4 dBi / 3.0 m
 0.24° / 0.45°

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

(1) -12.3 (2) -23.7
 11.7 0.3

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

45.1 33.7
 69.1 57.7

Interference Objectives: Long Term
 Short Term

-156.0 dBW/MHz 20%
 -150.2 dBW/MHz 0.01%

-151.0 dBW/4 kHz 20%
 -128.0 dBW/4 kHz 0.0025%

Frequency Information

Emission / Frequency Range (MHz)

Receive 18.0 GHz

200KF9D / 19400.2 - 19405.0
 14M0G7W / 19400.0 -19600.0

Transmit 28.0 GHz

(1) 1M00F9D / 29102.0
 (1) 1M00F9D / 29298.0
 (2) 14M0G7W / 29100.0 – 29300.0

Max Great Circle Coordination Distance
 Precipitation Scatter Contour Radius

142.1 km / 88.3 mi
 100.0 km / 62.1 mi

100.0 km / 62.1 mi
 100.0 km / 62.1 mi



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Coordination Values	CHANDLER, AZ		
Licensee Name	Iridium Constellation LLC		
Latitude (NAD 83)	33° 15' 59.4" N		
Longitude (NAD 83)	111° 52' 56.4" W		
Ground Elevation (AMSL)	365.76 m / 1200.0 ft		
Antenna Centerline (AGL)	4.88 m / 16.0 ft		
Antenna Model	Scientific-Atlanta 3 meter		
Antenna Mode	Receive 18.0 GHz		Transmit 28.0 GHz
Interference Objectives:	Long Term	-156.0 dBW/MHz	20% -151.0 dBW/4 kHz
	Short Term	-150.2 dBW/MHz	0.01% -128.0 dBW/4 kHz
Max Available RF Power			0.0025% -23.7 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 18.0 GHz		Transmit 28.0 GHz		Coordination Distance (km)
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)	
0	0.00	78.85	2.60	142.10	11.50	100.00	
5	0.00	74.39	2.60	142.10	11.50	100.00	
10	0.00	69.95	2.60	142.10	11.50	100.00	
15	0.00	65.54	2.60	142.10	11.50	100.00	
20	0.00	61.18	2.60	142.10	11.50	100.00	
25	0.00	56.89	2.60	142.10	11.50	100.00	
30	0.00	52.67	2.60	142.10	11.50	100.00	
35	0.00	48.55	2.60	142.10	11.50	100.00	
40	0.00	44.56	2.60	142.10	11.50	100.00	
45	0.00	40.75	2.60	142.10	11.50	100.00	
50	0.00	37.17	2.60	142.10	11.50	100.00	
55	0.00	33.89	2.60	142.10	11.50	100.00	
60	0.00	31.02	2.60	142.10	11.50	100.00	
65	0.00	28.67	2.60	142.10	11.50	100.00	
70	0.00	26.98	2.60	142.10	11.50	100.00	
75	0.00	26.09	2.60	142.10	11.50	100.00	
80	0.00	26.08	2.60	142.10	11.50	100.00	
85	0.00	26.94	2.60	142.10	11.50	100.00	
90	0.00	28.60	2.60	142.10	11.50	100.00	
95	0.00	30.93	2.60	142.10	11.50	100.00	
100	0.00	33.79	2.60	142.10	11.50	100.00	
105	0.00	37.06	2.60	142.10	11.50	100.00	
110	0.00	40.64	2.60	142.10	11.50	100.00	
115	0.00	44.44	2.60	142.10	11.50	100.00	
120	0.00	48.42	2.60	142.10	11.50	100.00	
125	0.00	52.54	2.60	142.10	11.50	100.00	
130	0.00	56.75	2.60	142.10	11.50	100.00	
135	0.00	61.05	2.60	142.10	11.50	100.00	
140	0.00	65.41	2.60	142.10	11.50	100.00	
145	0.00	69.81	2.60	142.10	11.50	100.00	
150	0.00	74.25	2.60	142.10	11.50	100.00	
155	0.00	78.71	2.60	142.10	11.50	100.00	
160	0.00	83.19	2.60	142.10	11.50	100.00	
165	0.00	87.68	2.60	142.10	11.50	100.00	
170	0.00	92.18	2.60	142.10	11.50	100.00	
175	0.00	96.67	2.60	142.10	11.50	100.00	
180	0.00	101.15	2.60	142.10	11.50	100.00	
185	0.00	105.61	2.60	142.10	11.50	100.00	



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Interference Objectives:	Long Term	-156.0 dBW/MHz	20%
	Short Term	-150.2 dBW/MHz	0.01%
Max Available RF Power			-128.0 dBW/4 kHz 0.0025%
			-23.7 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 18.0 GHz		Transmit 28.0 GHz		Coordination Distance (km)
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)		
190	0.00	110.05	2.60	142.10	11.50		100.00
195	0.00	114.46	2.60	142.10	11.50		100.00
200	0.00	118.82	2.60	142.10	11.50		100.00
205	0.00	123.11	2.60	142.10	11.50		100.00
210	0.00	127.33	2.60	142.10	11.50		100.00
215	0.00	131.45	2.60	142.10	11.50		100.00
220	0.00	135.44	2.60	142.10	11.50		100.00
225	0.00	139.25	2.60	142.10	11.50		100.00
230	0.00	142.83	2.60	142.10	11.50		100.00
235	0.00	146.11	2.60	142.10	11.50		100.00
240	0.00	148.98	2.60	142.10	11.50		100.00
245	0.00	151.33	2.60	142.10	11.50		100.00
250	0.00	153.02	2.60	142.10	11.50		100.00
255	0.00	153.91	2.60	142.10	11.50		100.00
260	0.00	153.92	2.60	142.10	11.50		100.00
265	0.00	153.06	2.60	142.10	11.50		100.00
270	0.00	151.40	2.60	142.10	11.50		100.00
275	0.00	149.07	2.60	142.10	11.50		100.00
280	0.00	146.21	2.60	142.10	11.50		100.00
285	0.00	142.94	2.60	142.10	11.50		100.00
290	0.00	139.36	2.60	142.10	11.50		100.00
295	0.00	135.56	2.60	142.10	11.50		100.00
300	0.00	131.58	2.60	142.10	11.50		100.00
305	0.00	127.46	2.60	142.10	11.50		100.00
310	0.00	123.25	2.60	142.10	11.50		100.00
315	0.00	118.95	2.60	142.10	11.50		100.00
320	0.00	114.60	2.60	142.10	11.50		100.00
325	0.00	110.19	2.60	142.10	11.50		100.00
330	0.00	105.75	2.60	142.10	11.50		100.00
335	0.00	101.29	2.60	142.10	11.50		100.00
340	0.00	96.81	2.60	142.10	11.50		100.00
345	0.00	92.32	2.60	142.10	11.50		100.00
350	0.00	87.82	2.60	142.10	11.50		100.00
355	0.00	83.33	2.60	142.10	11.50		100.00



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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