

Ka-Band Earth Station – Port St Lucie, FL

Frequency Coordination Report

28 GHz



Prepared on Behalf of
O3b Networks USA, LLC

January 18, 2018



COMSEARCH
A CommScope Company

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1. Summary of Results

On behalf of Ob3 Networks, Comsearch performed a coordination notice for all existing and proposed terrestrial licenses within the coordination contours of their proposed Ka-Band earth station in Port St Lucie, FL, 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 January 15, 2018.

No objections were received from any of the incumbent 28 GHz licensees. Our notification to the incumbents was performed under the assumption that the earth station would be operating on a secondary basis to LMDS Block A operations and a contact at O3b Networks 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 Port St Lucie, FL 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 licensees. This licensee is authorized to operate temporary fixed operations from 27.5 – 29.5 GHz on a nationwide basis or local basis.

Licensee	Authorized Geographic Area
Frontier Southwest Incorporated	Nationwide

A notification letter and datasheets for the Ka-Band earth station in Port St Lucie, FL were also sent to the following 28 GHz local television transmission licensee. 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 27.6 – 28.35 GHz portion of the Ka-Band.

3. 28 GHz LMDS Coordination

A Notification letter was sent to the following 28 GHz LMDS licensees. 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
Nextlink Wireless	BTA293	Miami-Ft. Lauderdale, FL
Nextlink Wireless	BTA440	Tampa-St. Petersburg-Clearwater, FL
Nextlink Wireless	BTA469	West Palm Beach-Boca Raton, FL
Straight Path Spectrum	BTA336	Orlando, FL
T-Mobile	BTA293	Miami-Ft. Lauderdale, FL
T-Mobile	BTA336	Orlando, FL
T-Mobile	BTA440	Tampa-St. Petersburg-Clearwater, FL
T-Mobile	BTA469	West Palm Beach-Boca Raton, FL
Verizon ²	BTA293	Miami-Ft. Lauderdale, FL
Verizon ²	BTA440	Tampa-St. Petersburg-Clearwater, FL
Verizon ²	BTA469	West Palm Beach-Boca Raton, FL
Wireless Distribution Services	BTA239	Lakeland-Winter Haven, FL

² Leased from Netlink
Comsearch Proprietary

4. Earth Station Coordination Data

This section presents the data pertinent to the proposed Ka-Band earth station in Port St Lucie, FL. 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: 12/06/2017
Job Number: <PCNJobCode>

Administrative Information

Status ENGINEER PROPOSAL
Call Sign <PCNCallSign>
Licensee Code O3BNET
Licensee Name O3b Networks USA, LLC.

Site Information PORT ST LUCIE, FL

Venue Name
Latitude (NAD 83) 27° 16' 55.8" N
Longitude (NAD 83) 80° 28' 59.0" W
Climate Zone B
Rain Zone 1
Ground Elevation (AMSL) 7.46 m / 24.5 ft

Link Information

Satellite Type Medium Earth Orbit
Mode TO - Transmit-Only
Modulation Digital
Minimum Elevation Angle 7.0°
Azimuth Range 0.0° to 360°
Antenna Centerline (AGL) 2.74 m / 9.0 ft

Antenna Information

Transmit - FCC32
Manufacturer ApexSat
Model 1.2 meter
Gain / Diameter 49.1 dBi / 1.2 m
3-dB / 15-dB Beamwidth 0.60° / 1.40°

Max Available RF Power (dBW/4 kHz) -15.0
(dBW/MHz) 9.0

Maximum EIRP (dBW/4 kHz) 34.1
(dBW/MHz) 58.1

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) 5M00G7D - 216MG7D / 27600.0 - 28350.0

Max Great Circle Coordination Distance 153.0 km / 95.1 mi
Precipitation Scatter Contour Radius 100.0 km / 62.1 mi

**COMSEARCH
Earth Station Data Sheet**

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Coordination Values		PORT ST LUCIE, FL	
Licensee Name		O3b Networks USA, LLC.	
Latitude (NAD 83)		27° 16' 55.8" N	
Longitude (NAD 83)		80° 28' 59.0" W	
Ground Elevation (AMSL)		7.46 m / 24.5 ft	
Antenna Centerline (AGL)		2.74 m / 9.0 ft	
Antenna Model		ApexSat 1.2 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		-15.0 (dBW/4 kHz)	

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 28.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
0	0.00	94.40	-10.00	100.00
5	0.00	89.40	-10.00	100.00
10	0.00	84.40	-10.00	100.00
15	0.00	79.40	-10.00	100.00
20	0.00	74.40	-10.00	100.00
25	0.00	69.40	-10.00	100.00
30	0.00	64.40	-10.00	100.00
35	0.00	59.40	-10.00	100.00
40	0.00	54.40	-10.00	100.00
45	0.00	49.40	-10.00	100.00
50	0.00	44.40	-10.00	100.00
55	0.00	39.40	-9.15	100.00
60	0.00	34.40	-7.88	100.00
65	0.00	29.40	-6.45	106.70
70	0.00	24.40	-4.81	112.40
75	0.00	19.40	-2.91	118.60
80	0.00	14.40	-0.65	125.50
85	0.00	9.40	2.07	133.20
90	0.00	4.40	5.32	139.20
95	0.00	0.65	8.61	149.50
100	0.00	5.61	9.59	152.80
105	0.00	10.61	7.02	144.40
110	0.00	15.61	3.61	134.40
115	0.00	20.61	0.65	129.30
120	0.00	25.60	-1.68	122.40
125	0.00	30.60	-3.57	116.50
130	0.00	35.60	-5.16	111.20
135	0.00	40.60	-6.51	106.50
140	0.00	45.60	-7.68	100.00
145	0.00	50.60	-8.69	100.00
150	0.00	55.60	-9.56	100.00
155	0.00	60.60	-10.00	100.00
160	0.00	65.60	-10.00	100.00
165	0.00	70.60	-10.00	100.00
170	0.00	75.60	-10.00	100.00
175	0.00	80.60	-10.00	100.00
180	0.00	85.60	-10.00	100.00
185	0.00	90.60	-10.00	100.00



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Latitude (NAD 83)	27° 16' 55.8" N
Longitude (NAD 83)	80° 28' 59.0" W
Ground Elevation (AMSL)	7.46 m / 24.5 ft
Antenna Centerline (AGL)	2.74 m / 9.0 ft
Antenna Model	ApexSat 1.2 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	-15.0 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 28.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
190	0.00	95.60	-10.00	100.00
195	0.00	100.60	-10.00	100.00
200	0.00	105.60	-10.00	100.00
205	0.00	110.60	-10.00	100.00
210	0.00	115.60	-9.56	100.00
215	0.00	120.60	-8.69	100.00
220	0.00	125.60	-7.68	100.00
225	0.00	130.60	-6.51	106.50
230	0.00	135.60	-5.16	111.20
235	0.00	140.60	-3.57	116.50
240	0.00	145.60	-1.68	122.40
245	0.00	150.60	0.65	129.30
250	0.00	155.60	3.61	134.40
255	0.00	160.60	7.04	144.40
260	0.00	165.60	9.63	153.00
265	0.00	170.60	8.66	149.70
270	0.00	175.60	5.35	139.30
275	0.00	179.35	2.09	133.20
280	0.00	174.39	-0.63	125.60
285	0.00	169.39	-2.89	118.70
290	0.00	164.39	-4.80	112.40
295	0.00	159.40	-6.44	106.80
300	0.00	154.40	-7.88	100.00
305	0.00	149.40	-9.15	100.00
310	0.00	144.40	-10.00	100.00
315	0.00	139.40	-10.00	100.00
320	0.00	134.40	-10.00	100.00
325	0.00	129.40	-10.00	100.00
330	0.00	124.40	-10.00	100.00
335	0.00	119.40	-10.00	100.00
340	0.00	114.40	-10.00	100.00
345	0.00	109.40	-10.00	100.00
350	0.00	104.40	-10.00	100.00
355	0.00	99.40	-10.00	100.00

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Date: 12/06/2017
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Climate Zone B
Rain Zone 1
Ground Elevation (AMSL) 7.46 m / 24.5 ft

Link Information

Satellite Type Medium Earth Orbit
Mode TO - Transmit-Only
Modulation Digital
Minimum Elevation Angle 7.0°
Azimuth Range 0.0° to 360°
Antenna Centerline (AGL) 2.74 m / 9.0 ft

Antenna Information Transmit - FCC32

Manufacturer ViaSat/Orbit
Model 2.4 meter
Gain / Diameter 51.3 dBi / 2.4 m
3-dB / 15-dB Beamwidth 0.14° / 0.32°

Max Available RF Power (dBW/4 kHz) -31.5
(dBW/MHz) -7.5

Maximum EIRP (dBW/4 kHz) 19.8
(dBW/MHz) 43.8

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) 216MG7D / 27600.0 - 28350.0

Max Great Circle Coordination Distance 105.0 km / 65.2 mi
Precipitation Scatter Contour Radius 100.0 km / 62.1 mi

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Max Available RF Power	-31.5 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 28.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
0	0.00	94.40	-10.00	100.00
5	0.00	89.40	-10.00	100.00
10	0.00	84.40	-10.00	100.00
15	0.00	79.40	-10.00	100.00
20	0.00	74.40	-10.00	100.00
25	0.00	69.40	-10.00	100.00
30	0.00	64.40	-10.00	100.00
35	0.00	59.40	-10.00	100.00
40	0.00	54.40	-10.00	100.00
45	0.00	49.40	-10.00	100.00
50	0.00	44.40	-10.00	100.00
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60	0.00	34.40	-7.88	100.00
65	0.00	29.40	-6.45	100.00
70	0.00	24.40	-4.81	100.00
75	0.00	19.40	-2.91	100.00
80	0.00	14.40	-0.65	100.00
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90	0.00	4.40	5.32	100.00
95	0.00	0.65	8.61	100.00
100	0.00	5.61	9.59	104.80
105	0.00	10.61	7.02	100.00
110	0.00	15.61	3.61	100.00
115	0.00	20.61	0.65	100.00
120	0.00	25.60	-1.68	100.00
125	0.00	30.60	-3.57	100.00
130	0.00	35.60	-5.16	100.00
135	0.00	40.60	-6.51	100.00
140	0.00	45.60	-7.68	100.00
145	0.00	50.60	-8.69	100.00
150	0.00	55.60	-9.56	100.00
155	0.00	60.60	-10.00	100.00
160	0.00	65.60	-10.00	100.00
165	0.00	70.60	-10.00	100.00
170	0.00	75.60	-10.00	100.00
175	0.00	80.60	-10.00	100.00
180	0.00	85.60	-10.00	100.00
185	0.00	90.60	-10.00	100.00

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230	0.00	135.60	-5.16	100.00
235	0.00	140.60	-3.57	100.00
240	0.00	145.60	-1.68	100.00
245	0.00	150.60	0.65	100.00
250	0.00	155.60	3.61	100.00
255	0.00	160.60	7.04	100.00
260	0.00	165.60	9.63	105.00
265	0.00	170.60	8.66	100.00
270	0.00	175.60	5.35	100.00
275	0.00	179.35	2.09	100.00
280	0.00	174.39	-0.63	100.00
285	0.00	169.39	-2.89	100.00
290	0.00	164.39	-4.80	100.00
295	0.00	159.40	-6.44	100.00
300	0.00	154.40	-7.88	100.00
305	0.00	149.40	-9.15	100.00
310	0.00	144.40	-10.00	100.00
315	0.00	139.40	-10.00	100.00
320	0.00	134.40	-10.00	100.00
325	0.00	129.40	-10.00	100.00
330	0.00	124.40	-10.00	100.00
335	0.00	119.40	-10.00	100.00
340	0.00	114.40	-10.00	100.00
345	0.00	109.40	-10.00	100.00
350	0.00	104.40	-10.00	100.00
355	0.00	99.40	-10.00	100.00

5. Contact Information

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

Contact person:	Dennis Jimeno
Title:	Engineer III, Telecommunications
Company:	Comsearch
Address:	19700 Janelia Farm Blvd., Ashburn, VA 20147
Telephone:	703-726-5858
Fax:	703-726-5599
Email:	DJimeno@Comsearch.com
Web site:	www.comsearch.com