

Ka-Band Earth Station – Doral, FL

Frequency Coordination Report

28 GHz



Prepared on Behalf of
O3b Networks USA, LLC

May 22, 2017



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1. Summary of Results

On behalf of O3b 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 Doral, Florida, 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 May 22, 2017.

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 O3b Networks has been provided in case any concerns may arise in the future.

Verizon Wireless, while clearing the earth station for operation, noted that they have a pending 28 GHz 5G trial site in Doral, about a mile south-southeast of the earth station site, which is slated for June or July. At present, Verizon believes that the new Residence Inn by Marriot Miami Airport West/Doral immediately south of the earth station site should block any interference to their 5G test, but have forwarded this information in advance to the O3b NOC contact as well as their contacts at Ericsson, who will be performing the 5G test on their behalf.

2. 28 GHz Common Carrier and LTTS Coordination

In accordance with FCC Rules and Regulations, the Ka-Band earth station in Doral, Florida 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 April 20, 2017. This licensee is authorized to operate temporary fixed operations from 27.5 to 29.5 GHz on a statewide or nationwide basis.

Licensee	Authorized Geographic Area
Verizon	Continental US

A notification letter and datasheets for the Ka-Band earth station in Doral, Florida were also sent to the following 28 GHz local television transmission licensee on April 20, 2017. 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

¹ The proposed earth station will operate in the 27.6 – 28.35 GHz portion of the Ka-Band.

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

3. 28 GHz LMDS Coordination

A Notification letter was sent to the following 28 GHz LMDS licensees on April 20, 2017. 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 ²	Miami-Ft. Lauderdale, FL
Nextlink Wireless	BTA469	West Palm Beach-Boca Raton, FL
T-Mobile ³	BTA293	Miami-Ft. Lauderdale, FL
T-Mobile	BTA469	West Palm Beach-Boca Raton, FL
Verizon ⁴	BTA293	Miami-Ft. Lauderdale, FL
Verizon	BTA469	West Palm Beach-Boca Raton, FL

No objections were received from the LMDS incumbents.

² The proposed earth station will be located inside the Miami—Ft. Lauderdale, Florida Basic Trading Area (BTA).

³ T-Mobile has acquired spectrum from Nextlink Wireless in the Miami—Ft. Lauderdale, Florida and West Palm Beach—Boca Raton, Florida BTAs.

⁴ Verizon is leasing spectrum from Nextlink Wireless in the Miami—Ft. Lauderdale, Florida and West Palm Beach—Boca Raton, Florida BTAs.

4. Earth Station Coordination Data

This section presents the data pertinent to the proposed Ka-Band earth station in Doral, Florida. 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: 04/19/2017
 Job Number: <PCNJobCode>

Administrative Information

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

Site Information**DORAL, FL**

Venue Name
 Latitude (NAD 83) 25° 48' 23.3" N
 Longitude (NAD 83) 80° 20' 43.0" W
 Climate Zone B
 Rain Zone 1
 Ground Elevation (AMSL) 1.02 m / 3.4 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 Orbit
 Model 1.2 meter
 Gain / Diameter 48.0 dBi / 1.2 m
 3-dB / 15-dB Beamwidth 0.60° / 1.40°

Max Available RF Power (dBW/4 kHz) -28.7
 (dBW/MHz) -4.7

Maximum EIRP (dBW/4 kHz) 19.3
 (dBW/MHz) 43.3

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 116.2 km / 72.2 mi
 Precipitation Scatter Contour Radius 100.0 km / 62.1 mi

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Coordination Values**DORAL, FL**

Licensee Name O3b Networks USA, LLC.
 Latitude (NAD 83) 25° 48' 23.3" N
 Longitude (NAD 83) 80° 20' 43.0" W
 Ground Elevation (AMSL) 1.02 m / 3.4 ft
 Antenna Centerline (AGL) 2.74 m / 9.0 ft
 Antenna Model Orbit 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 -28.7 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 28.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
0	0.00	94.24	-10.00	100.00
5	0.00	89.24	-10.00	100.00
10	0.00	84.24	-10.00	100.00
15	0.00	79.24	-10.00	100.00
20	0.00	74.24	-10.00	100.00
25	0.00	69.24	-10.00	100.00
30	0.00	64.24	-10.00	100.00
35	0.00	59.24	-10.00	100.00
40	0.00	54.24	-10.00	100.00
45	0.00	49.24	-10.00	100.00
50	0.00	44.24	-10.00	100.00
55	0.00	39.24	-8.93	100.00
60	0.00	34.24	-7.63	100.00
65	0.00	29.24	-6.15	100.00
70	0.00	24.24	-4.46	100.00
75	0.00	19.24	-2.48	100.00
80	0.00	14.24	-0.11	100.00
85	0.00	9.24	2.79	100.00
90	0.00	4.24	6.29	100.00
95	0.00	0.76	9.74	115.10
100	0.00	5.76	10.10	116.20
105	0.00	10.76	6.87	105.20
110	0.00	15.76	3.29	100.00
115	0.00	20.76	0.35	100.00
120	0.00	25.76	-1.96	100.00
125	0.00	30.76	-3.84	100.00
130	0.00	35.76	-5.41	100.00
135	0.00	40.76	-6.76	100.00
140	0.00	45.76	-7.93	100.00
145	0.00	50.76	-8.94	100.00
150	0.00	55.76	-9.82	100.00
155	0.00	60.76	-10.00	100.00
160	0.00	65.76	-10.00	100.00
165	0.00	70.76	-10.00	100.00
170	0.00	75.76	-10.00	100.00
175	0.00	80.76	-10.00	100.00
180	0.00	85.76	-10.00	100.00
185	0.00	90.76	-10.00	100.00

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 Short Term -128.0 dBW/4 kHz 0.0025%
 Max Available RF Power -28.7 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 28.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
190	0.00	95.76	-10.00	100.00
195	0.00	100.76	-10.00	100.00
200	0.00	105.76	-10.00	100.00
205	0.00	110.76	-10.00	100.00
210	0.00	115.76	-9.83	100.00
215	0.00	120.76	-8.94	100.00
220	0.00	125.76	-7.93	100.00
225	0.00	130.76	-6.76	100.00
230	0.00	135.76	-5.41	100.00
235	0.00	140.76	-3.84	100.00
240	0.00	145.76	-1.96	100.00
245	0.00	150.76	0.35	100.00
250	0.00	155.76	3.25	100.00
255	0.00	160.76	6.62	104.30
260	0.00	165.76	9.36	113.80
265	0.00	170.76	8.80	111.90
270	0.00	175.76	5.63	100.00
275	0.00	179.24	2.36	100.00
280	0.00	174.24	-0.41	100.00
285	0.00	169.24	-2.70	100.00
290	0.00	164.24	-4.63	100.00
295	0.00	159.24	-6.30	100.00
300	0.00	154.24	-7.75	100.00
305	0.00	149.24	-9.03	100.00
310	0.00	144.24	-10.00	100.00
315	0.00	139.24	-10.00	100.00
320	0.00	134.24	-10.00	100.00
325	0.00	129.24	-10.00	100.00
330	0.00	124.24	-10.00	100.00
335	0.00	119.24	-10.00	100.00
340	0.00	114.24	-10.00	100.00
345	0.00	109.24	-10.00	100.00
350	0.00	104.24	-10.00	100.00
355	0.00	99.24	-10.00	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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