

Ka-Band Earth Station – Manassas, VA

Frequency Coordination Report

28 GHz



Prepared on Behalf of
O3b Networks USA, LLC

October 19, 2017



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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 Manassas, VA, 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 October 18, 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 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 Bristow, VA 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. These licensees are 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
Verizon Maryland LLC	Maryland; DC and vicinity

A notification letter and datasheets for the Ka-Band earth station in Bristow, VA 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
Cellco Partnership	BTA461 BTA029 BTA374	Washington, DC Baltimore, MD Richmond-Petersburg, VA
Nextlink Wireless, LLC	BTA461 BTA029 BTA374	Washington, DC Baltimore, MD Richmond-Petersburg, VA
NSAC, LLC	BTA029	Baltimore, MD
Vivint Wireless, Inc.	BTA374	Richmond-Petersburg, VA

No objections were received from the LMDS incumbents.

4. Earth Station Coordination Data

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

Date: 09/13/2017
Job Number: <PCNJobCode>

Administrative Information

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

Site Information **MANASSAS, VA**

Venue Name
Latitude (NAD 83) 38° 46' 59.9" N
Longitude (NAD 83) 77° 34' 25.3" W
Climate Zone A
Rain Zone 2
Ground Elevation (AMSL) 86.32 m / 283.2 ft

Link Information

Satellite Type Medium Earth Orbit
Mode TO - Transmit-Only
Modulation Digital
Minimum Elevation Angle 10.0°
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 49.2 dBi / 1.2 m
3-dB / 15-dB Beamwidth 0.23° / 0.60°

Max Available RF Power (dBW/4 kHz) -31.3
(dBW/MHz) -7.3

Maximum EIRP (dBW/4 kHz) 17.9
(dBW/MHz) 41.9

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) 216MG7W / 27600.0 - 28350.0

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

Coordination Values	MANASSAS, VA
Licensee Name	O3b Networks USA, LLC.
Latitude (NAD 83)	38° 46' 59.9" N
Longitude (NAD 83)	77° 34' 25.3" W
Ground Elevation (AMSL)	86.32 m / 283.2 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	-31.3 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 28.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
0	0.00	97.86	-10.00	100.00
5	0.00	92.86	-10.00	100.00
10	0.00	87.86	-10.00	100.00
15	0.00	82.86	-10.00	100.00
20	0.00	77.86	-10.00	100.00
25	0.00	72.86	-10.00	100.00
30	0.00	67.86	-10.00	100.00
35	0.00	62.86	-10.00	100.00
40	0.00	57.87	-10.00	100.00
45	0.00	52.87	-10.00	100.00
50	0.00	47.87	-10.00	100.00
55	0.00	42.87	-10.00	100.00
60	0.00	37.87	-9.75	100.00
65	0.00	32.87	-8.56	100.00
70	0.00	27.88	-7.24	100.00
75	0.00	22.88	-5.76	100.00
80	0.00	17.89	-4.06	100.00
85	0.00	12.90	-2.04	100.00
90	0.00	7.92	0.34	100.00
95	0.00	3.02	3.08	100.00
100	0.00	2.34	6.03	100.00
105	0.00	7.20	7.93	100.00
110	0.00	12.18	6.95	100.00
115	0.00	17.17	4.31	100.00
120	0.00	22.16	1.63	100.00
125	0.00	27.15	-0.48	100.00
130	0.00	32.15	-2.17	100.00
135	0.00	37.15	-3.59	100.00
140	0.00	42.15	-4.79	100.00
145	0.00	47.15	-5.85	100.00
150	0.00	52.15	-6.86	100.00
155	0.00	57.14	-7.56	100.00
160	0.00	62.14	-8.17	100.00
165	0.00	67.14	-8.62	100.00
170	0.00	72.14	-8.94	100.00
175	0.00	77.14	-9.12	100.00
180	0.00	82.14	-9.24	100.00
185	0.00	87.14	-9.14	100.00

Coordination Values		MANASSAS, VA
Licensee Name		O3b Networks USA, LLC.
Latitude (NAD 83)		38° 46' 59.9" N
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Ground Elevation (AMSL)		86.32 m / 283.2 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	-31.3 (dBW/4 kHz)	

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 28.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
190	0.00	92.14	-8.92	100.00
195	0.00	97.14	-8.68	100.00
200	0.00	102.14	-8.34	100.00
205	0.00	107.14	-7.77	100.00
210	0.00	112.14	-7.01	100.00
215	0.00	117.14	-6.15	100.00
220	0.00	122.13	-5.14	100.00
225	0.00	127.13	-3.95	100.00
230	0.00	132.13	-2.56	100.00
235	0.00	137.13	-0.83	100.00
240	0.00	142.13	1.28	100.00
245	0.00	147.13	3.89	100.00
250	0.00	152.12	6.33	100.00
255	0.00	157.12	7.11	100.00
260	0.00	162.11	5.48	100.00
265	0.00	167.10	2.84	100.00
270	0.00	172.08	0.24	100.00
275	0.00	176.98	-2.06	100.00
280	0.00	177.66	-4.04	100.00
285	0.00	172.80	-5.75	100.00
290	0.00	167.82	-7.23	100.00
295	0.00	162.83	-8.55	100.00
300	0.00	157.84	-9.74	100.00
305	0.00	152.85	-10.00	100.00
310	0.00	147.85	-10.00	100.00
315	0.00	142.85	-10.00	100.00
320	0.00	137.85	-10.00	100.00
325	0.00	132.85	-10.00	100.00
330	0.00	127.85	-10.00	100.00
335	0.00	122.86	-10.00	100.00
340	0.00	117.86	-10.00	100.00
345	0.00	112.86	-10.00	100.00
350	0.00	107.86	-10.00	100.00
355	0.00	102.86	-10.00	100.00