

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
Denali 20020, LLC
VERNON VLY, NJ
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
May 18, 2022

TABLE OF CONTENTS

1. CONCLUSIONS	3
2. SUMMARY OF RESULTS	4
3. SUPPLEMENTAL SHOWING	5
4. EARTH STATION COORDINATION DATA.....	8
5. CERTIFICATION.....	12

1. CONCLUSIONS

An interference study considering all existing, proposed and prior coordinated microwave facilities within the coordination contours of the proposed earth station demonstrates that this site will operate satisfactorily with the common carrier microwave environment. Further, there will be no restrictions of its operation due to interference considerations.

2. SUMMARY OF RESULTS

A number of great circle interference cases were identified during the interference study of the proposed earth station. Each of the cases, which exceeded the interference objective on a line-of-sight basis, was profiled and the propagation losses estimated using NBS TN101 (Revised) techniques. The losses were found to be sufficient to reduce the signal levels to acceptable magnitudes in every case.

3. SUPPLEMENTAL SHOWING

Pursuant to Part 25.203(c) of the FCC Rules and Regulations, the satellite earth station proposed in this application was coordinated by Comsearch using computer techniques and in accordance with Part 25 of the FCC Rules and Regulations.

Coordination data for this earth station was sent to the below listed carriers with a letter dated 01/31/2022.

Company

AT&T Corp.
AT&T Mobility Spectrum LLC - NY & NJ
Bergen, County of
Blue Blazer (DE) LLC
Blueline Communications
Borough of Fort Lee, New Jersey
Borough of Sayreville
Business Only Broadband, LLC
CBS Communications Services Inc
Cablevision Lightpath, Inc.
Cellco Partnership - (W-NY)
Cellco Partnership - E-MA, NH, RI
Cellco Partnership- PA Region
Cellco Partnership-Northern New Jersey
Central Hudson Gas & Electric Corp.
Chevra Hatzalah Inc.
City of Bethlehem
City of Jersey City
City of New York
City of Yonkers,NY(Dept of Public Works)
Clearwire Spectrum Holdings III, LLC
Community Products, LLC
County of Hunterdon
ECW Wireless, LLC
Electric Railroad, LLC
Entercom License, LLC
Federal Home Loan Bank of New York
Geodesic Networks LLC
Greenwich, Town of (CT)
High Voltage Communications LLC (CFN)
Highway Networks, LLC
Hispanic Information and Telecomm Netwrk
Hoboken Fire Department
Holtec Decommissioning International, LL
ICON Technologies Inc.
Jefferson Microwave, LLC
Lackawanna, County of
Lawrence School District
Lehman College
MTA - Long Island Railroad

Mahwah Township New Jersey
Middlesex, County of
Mineola Union Free School District
Mount Sinai Hospital
NBC Telemundo License LLC
NW Technologies, LLC
NYC DOT Staten Island Ferry
Nassau County Government
Nassau County Police Department
New Cingular Wireless PCS LLC - NJ
New Cingular Wireless PCS, LLC (NY)
New Cingular Wireless PCS, LLC - PA
New Jersey, State of -NJ Transit
New Line Networks, LLC
New York City Police Department
New York City Police TARU
New York City Transit Authority
New York Communications Co., Inc
New York Methodist Hospital
New York Power Authority
New York SMSA Limited Partnership
New York State Electric & Gas Corp
New York, State of Div of State Police
Office of Emergency Mng, City of Newark
Parsippany Troy Hills Township
Philadelphia, City of
Pierce Broadband, LLC
Rutgers, The State University of N.J.
Sesame Workshop
Somerset County (M.I.S.)
Sprint Spectrum LLC
Sprintcom, Inc
St. Lukes Cornwall Hospital
Standard Backhaul Communications LLC
Sullivan County DPW
T-Mobile License LLC
The Center for Discovery
The Goldman Sachs Group, Inc.
Total Recall Corp
Towerstream Corp.
Town of Greenburgh
Town of North Hempstead
Town of Westport Connecticut
Township of Aberdeen
Township of Middletown
Verizon Wireless (VAW) LLC (NY)
WABC Television (New York), LLC
Weblin Holdings LLC
Weehawken, Township of
West Orange, Township of
Westchester, County of
Widmo Holdings LLC
William Paterson University
Wireless Internetwork LLC
XMG Inc.
Xchange Telecom Corporation

Zen Networks, Inc
xWave Engineering LLC

4. EARTH STATION COORDINATION DATA

This section presents the data pertinent to frequency coordination of the proposed earth station that was circulated to all carriers within its coordination contours.

COMSEARCH

Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147
(703)726-5500 <http://www.comsearch.com>

Date: 05/18/2022
Job Number: 220131COMSGE01

Administrative Information

Status: ENGINEER PROPOSAL
Call Sign:
Licensee Code: DENALI
Licensee Name: Denali 20020, LLC

Site Information

VERNON VLY, NJ

Venue Name:
Latitude (NAD 83): 41° 12' 4.3" N
Longitude (NAD 83): 74° 31' 40.2" W
Climate Zone: A
Rain Zone: 2
Ground Elevation (AMSL): 195.96 m / 642.9 ft

Link Information

Satellite Type: Geostationary
Mode: TR - Transmit-Receive
Modulation: Digital
Satellite Arc: 61° W to 61° West Longitude
Azimuth Range: 159.9° to 159.9°
Corresponding Elevation Angles: 40.4° / 40.4°
Antenna Centerline (AGL): 5.0 m / 16.4 ft

Antenna Information

Receive - FCC32

Transmit - FCC32

Manufacturer	CPI	CPI	
Model	KXKA 9.2 meter	KXKA 9.2 meter	
Gain / Diameter	61.8 dBi / 9.2 m	65.5 dBi / 9.2 m	
3-dB / 15-dB Beamwidth	0.12° / 0.24°	0.08° / 0.18°	
Max Available RF Power (dBW/4 kHz)	-36.4	-36.4	
(dBW/MHz)	-12.4	-12.4	
Maximum EIRP (dBW/4 kHz)	29.1	29.1	
(dBW/MHz)	53.1	53.1	
Interference Objectives:	Long Term	-156.0 dBW/MHz 20%	-151.0 dBW/4 kHz 20%
	Short Term	-146.0 dBW/MHz 0.01%	-128.0 dBW/4 kHz 0.0025%

Frequency Information

Receive 18.0 GHz

Transmit 28.0 GHz

Emission / Frequency Range (MHz)	125MD7W / 17850.0 - 18800.0	125MD7W / 27500.0 - 28600.0
Max Great Circle Coordination Distance	136.2 km / 84.6 mi	100.0 km / 62.1 mi
Precipitation Scatter Contour Radius	100.0 km / 62.1 mi	100.0 km / 62.1 mi

COMSEARCH

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Coordination Values

VERNON VLY, NJ

Licensee Name Denali 20020, LLC
Latitude (NAD 83) 41° 12' 4.3" N
Longitude (NAD 83) 74° 31' 40.2" W
Ground Elevation (AMSL) 195.96 m / 642.9 ft
Antenna Centerline (AGL) 5.0 m / 16.4 ft
Antenna Model CPI 9.2 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 20%
Short Term -146.0 dBW/MHz 0.01% -128.0 dBW/4 kHz 0.0025%
Max Available RF Power -36.4 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 18.0 GHz		Transmit 28.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
0	5.19	140.12	-10.00	100.00	-10.00	100.00
5	4.32	137.06	-10.00	100.00	-10.00	100.00
10	3.51	133.80	-10.00	100.00	-10.00	100.00
15	2.08	129.95	-10.00	100.00	-10.00	100.00
20	1.59	126.61	-10.00	100.00	-10.00	100.00
25	2.48	123.86	-10.00	100.00	-10.00	100.00
30	3.06	120.69	-10.00	100.00	-10.00	100.00
35	1.60	116.51	-10.00	100.00	-10.00	100.00
40	0.44	112.49	-10.00	118.63	-10.00	100.00
45	0.00	108.73	-10.00	136.18	-10.00	100.00
50	0.00	105.05	-10.00	136.18	-10.00	100.00
55	0.00	101.32	-10.00	136.18	-10.00	100.00
60	0.00	97.55	-10.00	136.18	-10.00	100.00
65	0.00	93.76	-10.00	136.18	-10.00	100.00
70	0.00	89.95	-10.00	136.18	-10.00	100.00
75	0.95	86.09	-10.00	100.00	-10.00	100.00
80	1.66	82.17	-10.00	100.00	-10.00	100.00
85	1.83	78.28	-10.00	100.00	-10.00	100.00
90	2.17	74.37	-10.00	100.00	-10.00	100.00
95	2.20	70.56	-10.00	100.00	-10.00	100.00
100	2.51	66.71	-10.00	100.00	-10.00	100.00
105	2.59	63.01	-10.00	100.00	-10.00	100.00
110	2.58	59.44	-10.00	100.00	-10.00	100.00
115	2.67	55.96	-10.00	100.00	-10.00	100.00
120	2.82	52.58	-10.00	100.00	-10.00	100.00
125	2.84	49.47	-10.00	100.00	-10.00	100.00
130	3.34	46.25	-9.63	100.00	-9.63	100.00
135	3.73	43.34	-8.92	100.00	-8.92	100.00
140	4.10	40.75	-8.25	100.00	-8.25	100.00
145	3.91	39.03	-7.79	100.00	-7.79	100.00
150	4.28	37.29	-7.29	100.00	-7.29	100.00
155	4.44	36.26	-6.98	100.00	-6.98	100.00
160	3.39	37.01	-7.21	100.00	-7.21	100.00
165	3.17	37.53	-7.36	100.00	-7.36	100.00
170	2.89	38.64	-7.68	100.00	-7.68	100.00
175	3.33	39.61	-7.94	100.00	-7.94	100.00
180	2.66	42.03	-8.59	100.00	-8.59	100.00
185	2.47	44.40	-9.18	100.00	-9.18	100.00

COMSEARCH

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Coordination Values

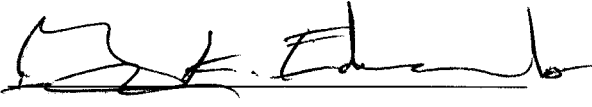
VERNON VLY, NJ

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Short Term -146.0 dBW/MHz 0.01% -128.0 dBW/4 kHz 0.0025%
Max Available RF Power -36.4 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 18.0 GHz		Transmit 28.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
190	1.40	47.74	-9.97	100.00	-9.97	100.00
195	0.26	51.26	-10.00	131.20	-10.00	100.00
200	0.00	54.35	-10.00	136.18	-10.00	100.00
205	0.58	57.15	-10.00	110.93	-10.00	100.00
210	1.60	59.98	-10.00	100.00	-10.00	100.00
215	1.82	63.41	-10.00	100.00	-10.00	100.00
220	2.22	66.90	-10.00	100.00	-10.00	100.00
225	2.89	70.46	-10.00	100.00	-10.00	100.00
230	3.59	74.16	-10.00	100.00	-10.00	100.00
235	3.97	78.03	-10.00	100.00	-10.00	100.00
240	4.25	81.99	-10.00	100.00	-10.00	100.00
245	4.58	86.00	-10.00	100.00	-10.00	100.00
250	4.85	90.05	-10.00	100.00	-10.00	100.00
255	5.18	94.13	-10.00	100.00	-10.00	100.00
260	6.81	98.37	-10.00	100.00	-10.00	100.00
265	7.48	102.60	-10.00	100.00	-10.00	100.00
270	7.48	106.74	-10.00	100.00	-10.00	100.00
275	8.03	110.96	-10.00	100.00	-10.00	100.00
280	9.28	115.40	-10.00	100.00	-10.00	100.00
285	11.32	120.13	-10.00	100.00	-10.00	100.00
290	12.05	124.50	-10.00	100.00	-10.00	100.00
295	12.64	128.78	-10.00	100.00	-10.00	100.00
300	12.74	132.77	-10.00	100.00	-10.00	100.00
305	12.12	136.21	-10.00	100.00	-10.00	100.00
310	11.15	139.12	-10.00	100.00	-10.00	100.00
315	11.14	142.28	-10.00	100.00	-10.00	100.00
320	9.99	144.16	-10.00	100.00	-10.00	100.00
325	8.89	145.46	-10.00	100.00	-10.00	100.00
330	8.45	146.69	-10.00	100.00	-10.00	100.00
335	8.45	147.71	-10.00	100.00	-10.00	100.00
340	7.78	147.38	-10.00	100.00	-10.00	100.00
345	8.45	147.70	-10.00	100.00	-10.00	100.00
350	8.38	146.59	-10.00	100.00	-10.00	100.00
355	6.46	143.23	-10.00	100.00	-10.00	100.00

5. CERTIFICATION

I HEREBY CERTIFY THAT I AM THE TECHNICALLY QUALIFIED PERSON RESPONSIBLE FOR THE PREPARATION OF THE FREQUENCY COORDINATION DATA CONTAINED IN THIS APPLICATION, THAT I AM FAMILIAR WITH PARTS 101 AND 25 OF THE FCC RULES AND REGULATIONS, THAT I HAVE EITHER PREPARED OR REVIEWED THE FREQUENCY COORDINATION DATA SUBMITTED WITH THIS APPLICATION, AND THAT IT IS COMPLETE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

BY: 

Gary K. Edwards
Senior Manager
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147

DATED: May 18, 2022