

# Ka-Band Earth Station – Vernon Valley, NJ

## Frequency Coordination Report

28 GHz



Prepared on Behalf of  
DENALI 20020, LLC

March 28, 2022





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## 1. Summary of Results

On behalf of DENALI 20020, LLC, Comsearch performed a coordination notice under Section 25.203(c) and Section 25.136(a)(4) of the FCC's rules for all existing and proposed terrestrial licenses within the coordination contours of their proposed Ka-Band earth station in Vernon Valley, NJ, which will transmit at 28 GHz<sup>1</sup>. 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 March 28, 2022.

No objections were received from any of the incumbent 28 GHz licensees.

## 2. 28 GHz Common Carrier and LTTS Coordination

In accordance with FCC Rules and Regulations, the Ka-Band earth station in Vernon Valley, NJ 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 |
|-----------------|----------------------------|
| None Identified |                            |

A notification letter and datasheets for the Ka-Band earth station in Vernon Valley, NJ 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 |
|-----------------|----------------------------|
| None Identified |                            |

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

<sup>1</sup> The proposed earth station will operate in the 27.5 – 29.1 GHz & 29.5 – 30.0 GHz portion of the Ka-Band.

### 3. 28 GHz UMFUS Coordination

There were four 28 GHz UMFUS licensees identified within the coordination distance of the proposed earth station. The proposed earth station will operate on frequencies that overlap Channel L1 & L2 of the UMFUS service. The total frequency allocation for Channels L1 & L2 of the UMFUS spectrum appears below.

**Channel:**    **L1**    27.500 - 27.925 GHz  
                  **L2**    27.925 - 28.350 GHz

| Licensee       | Authorized Geographic Area |
|----------------|----------------------------|
| McKay Brothers | Market Based               |
| T-Mobile       | Market Based               |
| Verizon        | Market Based               |
| Windstream     | Market Based               |

No objections were received from the UMFUS incumbents within coordination distance.



## **4. Earth Station Coordination Data**

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

Job Number: 220131COMSGE01

#### Administrative Information

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

#### Site Information

Venue Name: VERNON VLY, NJ  
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 9.2m        |       | KXKA 9.2m                |
| 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)<br>(dBW/MHz) |                  |       | -36.4<br>-12.4           |
| Maximum EIRP             | (dBW/4 kHz)<br>(dBW/MHz) |                  |       | 29.1<br>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          |





**DENALI 20020, LLC**  
**Ka-Band Earth Station – Vernon Valley, NJ**  
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**28 GHz**

|                            |                       |                          |       |
|----------------------------|-----------------------|--------------------------|-------|
| <b>Coordination Values</b> | <b>VERNON VLY, NJ</b> |                          |       |
| 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      |                          |       |
| Interference Objectives:   | Long Term             | -156.0 dBW/MHz           | 20%   |
|                            | Short Term            | -146.0 dBW/MHz           | 0.01% |
| Max Available RF Power     |                       | -36.4 (dBW/4 kHz)        |       |
|                            |                       | Transmit 28.0 GHz        |       |
|                            |                       | -151.0 dBW/4 kHz 20%     |       |
|                            |                       | -128.0 dBW/4 kHz 0.0025% |       |

| 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                     |

|                                    |                                                                       |
|------------------------------------|-----------------------------------------------------------------------|
| <b>Coordination Values</b>         | <b>VERNON VLY, NJ</b>                                                 |
| 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                                                      |
| Interference Objectives: Long Term | -156.0 dBW/MHz                                                        |
| Short Term                         | -146.0 dBW/MHz                                                        |
| Max Available RF Power             | 20%<br>0.01%<br>-36.4 (dBW/4 kHz)                                     |
|                                    | Transmit 28.0 GHz<br>-151.0 dBW/4 kHz 20%<br>-128.0 dBW/4 kHz 0.0025% |

| Azimuth (°) | Horizon<br>Elevation (°) | Antenna<br>Discrimination (°) | Receive 18.0 GHz      |                               | Transmit 28.0 GHz     |                               |
|-------------|--------------------------|-------------------------------|-----------------------|-------------------------------|-----------------------|-------------------------------|
|             |                          |                               | Horizon<br>Gain (dBi) | Coordination<br>Distance (km) | Horizon<br>Gain (dBi) | Coordination<br>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. Contact Information**

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

|                 |                                                          |
|-----------------|----------------------------------------------------------|
| Contact person: | Gary Edwards                                             |
| Title:          | Senior Manager, Satellite Services                       |
| Company:        | Comsearch                                                |
| Address:        | 19700 Janelia Farm Blvd., Ashburn, VA 20147              |
| Telephone:      | 703-726-5662                                             |
| Fax:            | 703-726-5599                                             |
| Email:          | GEdwards@Comsearch.com                                   |
| Web site:       | <a href="http://www.comsearch.com">www.comsearch.com</a> |