

# Ka-Band Earth Station – Brewster, WA

## Frequency Coordination Report

28 GHz



Prepared on Behalf of  
**KUIPER SYSTEMS, LLC**

December 11, 2024





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## 1. Summary of Results

On behalf of KUIPER SYSTEMS, 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 Brewster, WA, 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 December 11, 2024.

There are no unresolved objections from any of the incumbent 28 GHz licensees.

## 2. 28 GHz Common Carrier and LMDS Coordination

In accordance with FCC Rules and Regulations, the Ka-Band earth station in Brewster, WA 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 Brewster, WA were also sent to the following 28 GHz LMDS licensee. This licensee is authorized to operate temporary fixed operations from 29.1 – 29.25 GHz on a market basis.

| Licensee | Authorized Geographic Area |
|----------|----------------------------|
| GeoLinks | Market-Based               |

No objections were received from the common carrier or LMDS incumbents.

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<sup>1</sup> The proposed earth station will operate in the 27.5 – 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 |
|-----------------|----------------------------|
| DISH Network    | Market Based               |
| Inland Cellular | Market Based               |
| T-Mobile        | Market Based               |
| Verizon         | Market Based               |

There were no objections 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 Brewster, WA. This data was circulated to all incumbent licensees in the shared 28 GHz frequency ranges.

Job Number: <PCNJobCode>

### Administrative Information

Status ENGINEER PROPOSAL  
Call Sign <PCNCallSign>  
Licensee Code KUIPER  
Licensee Name Kuiper Systems LLC.

### Site Information

#### BREWSTER, WA

Venue Name  
Latitude (NAD 83) 48° 8' 45.7" N  
Longitude (NAD 83) 119° 42' 2.3" W  
Climate Zone A  
Rain Zone 5  
Ground Elevation (AMSL) 384.03 m / 1259.9 ft

### Link Information

Satellite Type Low Earth Orbit  
Mode TO - Transmit-Only  
Modulation Digital  
Minimum Elevation Angle 20.0°  
Azimuth Range 0.0° to 360°  
Antenna Centerline (AGL) 2.74 m / 9.0 ft

### Antenna Information

#### Transmit - FCC32

Manufacturer Kuiper  
Model Model 24001  
Gain / Diameter 53.0 dBi / 2.4 m  
3-dB / 15-dB Beamwidth 0.49° / 1.17°

|                        |             |          |           |
|------------------------|-------------|----------|-----------|
| Max Available RF Power | (dBW/4 kHz) | (1) 14.0 | (2) -41.0 |
|                        | (dBW/MHz)   | 14.0     | -17.0     |

|              |             |      |      |
|--------------|-------------|------|------|
| Maximum EIRP | (dBW/4 kHz) | 67.0 | 12.0 |
|              | (dBW/MHz)   | 67.0 | 36.0 |

|                          |            |                  |         |
|--------------------------|------------|------------------|---------|
| 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)  
(1) N0N / 27500.0, 29550.0 30000.0  
(2) 500MD7W – 1G00D7W / 27500.0 - 28500.0, 29000.0 – 30000.0

Max Great Circle Coordination Distance 100.0 km / 62.1 mi  
Precipitation Scatter Contour Radius 182.8 km / 113.6 mi





**KUIPER SYSTEMS, LLC**  
**Ka-Band Earth Station – Brewster, WA**  
**Frequency Coordination Report**  
**28 GHz**

**Coordination Values**

**BREWSTER, WA**

|                                    |                          |
|------------------------------------|--------------------------|
| Licensee Name                      | Kuiper Systems LLC.      |
| Latitude (NAD 83)                  | 48° 8' 45.7" N           |
| Longitude (NAD 83)                 | 119° 42' 2.3" W          |
| Ground Elevation (AMSL)            | 384.03 m / 1259.9 ft     |
| Antenna Centerline (AGL)           | 2.74 m / 9.0 ft          |
| Antenna Model                      | 2.4 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             | 14.0 (dBW/4 kHz)         |

| Azimuth (°) | Horizon<br>Elevation (°) | Antenna<br>Discrimination (°) | Transmit 28.0 GHz     |                               |
|-------------|--------------------------|-------------------------------|-----------------------|-------------------------------|
|             |                          |                               | Horizon<br>Gain (dBi) | Coordination<br>Distance (km) |
| 0           | 2.16                     | 70.04                         | -0.50                 | 100.00                        |
| 5           | 1.17                     | 65.55                         | -0.50                 | 100.00                        |
| 10          | 0.90                     | 61.23                         | -0.50                 | 100.00                        |
| 15          | 0.63                     | 56.95                         | -0.50                 | 100.00                        |
| 20          | 1.11                     | 53.02                         | -0.50                 | 100.00                        |
| 25          | 1.60                     | 49.28                         | -0.50                 | 100.00                        |
| 30          | 0.47                     | 44.89                         | -0.50                 | 100.00                        |
| 35          | 0.61                     | 41.30                         | -0.50                 | 100.00                        |
| 40          | 0.75                     | 37.97                         | -0.50                 | 100.00                        |
| 45          | 1.06                     | 35.12                         | -0.50                 | 100.00                        |
| 50          | 0.99                     | 32.42                         | -0.50                 | 100.00                        |
| 55          | 1.03                     | 30.34                         | -0.50                 | 100.00                        |
| 60          | 1.36                     | 29.19                         | -0.50                 | 100.00                        |
| 65          | 1.74                     | 28.85                         | -0.50                 | 100.00                        |
| 70          | 1.89                     | 29.08                         | -0.50                 | 100.00                        |
| 75          | 1.98                     | 30.02                         | -0.50                 | 100.00                        |
| 80          | 2.21                     | 31.78                         | -0.50                 | 100.00                        |
| 85          | 2.32                     | 34.03                         | -0.50                 | 100.00                        |
| 90          | 2.51                     | 36.81                         | -0.50                 | 100.00                        |
| 95          | 2.58                     | 39.88                         | -0.50                 | 100.00                        |
| 100         | 2.41                     | 43.10                         | -0.50                 | 100.00                        |
| 105         | 2.09                     | 46.52                         | -0.50                 | 100.00                        |
| 110         | 2.00                     | 50.27                         | -0.50                 | 100.00                        |
| 115         | 1.75                     | 54.11                         | -0.50                 | 100.00                        |
| 120         | 1.62                     | 58.14                         | -0.50                 | 100.00                        |
| 125         | 1.25                     | 62.20                         | -0.50                 | 100.00                        |
| 130         | 0.77                     | 66.34                         | -0.50                 | 100.00                        |
| 135         | 0.38                     | 70.59                         | -0.50                 | 100.00                        |
| 140         | 0.24                     | 74.95                         | -0.50                 | 100.00                        |
| 145         | 0.00                     | 79.34                         | -0.50                 | 100.00                        |
| 150         | 0.00                     | 83.78                         | -0.50                 | 100.00                        |
| 155         | 0.00                     | 88.23                         | -0.50                 | 100.00                        |
| 160         | 0.00                     | 92.69                         | -0.50                 | 100.00                        |
| 165         | 0.00                     | 97.13                         | -0.50                 | 100.00                        |
| 170         | 0.00                     | 101.57                        | -0.50                 | 100.00                        |
| 175         | 0.00                     | 105.99                        | -0.50                 | 100.00                        |
| 180         | 0.00                     | 110.38                        | -0.50                 | 100.00                        |
| 185         | 0.00                     | 114.73                        | -0.50                 | 100.00                        |

### Coordination Values

**BREWSTER, WA**  
 Licensee Name Kuiper Systems LLC.  
 Latitude (NAD 83) 48° 8' 45.7" N  
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 Ground Elevation (AMSL) 384.03 m / 1259.9 ft  
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 Antenna Model 2.4 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 14.0 (dBW/4 kHz)

| Azimuth (°) | Horizon<br>Elevation (°) | Antenna<br>Discrimination (°) | Transmit 28.0 GHz     |                               |
|-------------|--------------------------|-------------------------------|-----------------------|-------------------------------|
|             |                          |                               | Horizon<br>Gain (dBi) | Coordination<br>Distance (km) |
| 190         | 0.00                     | 119.03                        | -0.50                 | 100.00                        |
| 195         | 0.00                     | 123.27                        | -0.50                 | 100.00                        |
| 200         | 0.00                     | 127.42                        | -0.50                 | 100.00                        |
| 205         | 0.00                     | 131.46                        | -0.50                 | 100.00                        |
| 210         | 0.00                     | 135.35                        | -0.50                 | 100.00                        |
| 215         | 0.00                     | 139.06                        | -0.50                 | 100.00                        |
| 220         | 0.00                     | 142.53                        | -0.50                 | 100.00                        |
| 225         | 0.00                     | 145.68                        | -0.50                 | 100.00                        |
| 230         | 0.00                     | 148.41                        | -0.50                 | 100.00                        |
| 235         | 0.00                     | 150.60                        | -0.50                 | 100.00                        |
| 240         | 0.00                     | 152.13                        | -0.50                 | 100.00                        |
| 245         | 2.03                     | 150.86                        | -0.50                 | 100.00                        |
| 250         | 3.11                     | 149.70                        | -0.50                 | 100.00                        |
| 255         | 3.38                     | 148.63                        | -0.50                 | 100.00                        |
| 260         | 3.17                     | 147.34                        | -0.50                 | 100.00                        |
| 265         | 3.13                     | 145.30                        | -0.50                 | 100.00                        |
| 270         | 3.97                     | 142.07                        | -0.50                 | 100.00                        |
| 275         | 4.24                     | 138.97                        | -0.50                 | 100.00                        |
| 280         | 4.53                     | 135.59                        | -0.50                 | 100.00                        |
| 285         | 4.20                     | 132.34                        | -0.50                 | 100.00                        |
| 290         | 4.30                     | 128.64                        | -0.50                 | 100.00                        |
| 295         | 3.95                     | 124.99                        | -0.50                 | 100.00                        |
| 300         | 3.19                     | 121.32                        | -0.50                 | 100.00                        |
| 305         | 1.96                     | 117.60                        | -0.50                 | 100.00                        |
| 310         | 2.45                     | 113.26                        | -0.50                 | 100.00                        |
| 315         | 2.15                     | 109.07                        | -0.50                 | 100.00                        |
| 320         | 1.65                     | 104.85                        | -0.50                 | 100.00                        |
| 325         | 1.66                     | 100.49                        | -0.50                 | 100.00                        |
| 330         | 1.95                     | 96.10                         | -0.50                 | 100.00                        |
| 335         | 2.42                     | 91.73                         | -0.50                 | 100.00                        |
| 340         | 0.34                     | 87.32                         | -0.50                 | 100.00                        |
| 345         | 0.83                     | 82.92                         | -0.50                 | 100.00                        |
| 350         | 1.72                     | 78.61                         | -0.50                 | 100.00                        |
| 355         | 2.45                     | 74.38                         | -0.50                 | 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  |
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| Web site:       | <a href="http://www.comsearch.com">www.comsearch.com</a> |