

# FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for  
**GCI Communications Corp.**  
**ANCHORAGE, AK**  
**Satellite Earth Station**

Prepared By:  
COMSEARCH  
19700 Janelia Farm Boulevard  
Ashburn, VA 20147  
June 17, 2021

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## **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 transmit frequencies will be limited to the bandwidth shown in Section 4 of the report.

The following companies reported potential great circle interference conflicts that did not meet the objectives on a line-of-sight basis. When over-the-horizon losses are considered on the interfering paths, sufficient blockage exists to negate harmful interference from occurring with the proposed transmit-receive earth station.

### Company

Alaska State of  
Chugach Electric Association, Inc.

No other carriers reported potential interference cases.

### 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 06/17/2021.

Company

ACS Wireless License Sub, Inc.  
ACS of Anchorage License Sub, Inc.  
AT&T Mobility Spectrum LLC - AK  
Alascom Inc  
Alaska Pipeline Company  
Alaska Public Telecommunications, Inc.  
Alaska Railroad Corporation  
Alaska State of  
Alaska Wireless Network, LLC  
Anchorage, Municipality of  
Cellco Partnership - Alaska  
Chugach Electric Association, Inc.  
Enstar Natural Gas Company  
GCI Communications Corp.  
Homer Electric Association  
MATANUSKA KENAI INC  
Matanuska Telephone Association, Inc.  
Matanuska-Susitna, Borough of  
Norstar Pipeline Company  
Verizon Wireless (VAW) LLC - Alaska

## **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: 06/17/2021  
Job Number: 210617COMSTC07

### Administrative Information

Licensee Code P3203  
Licensee Name GCI Communications Corp.

### Site Information ANCHORAGE, AK

Latitude (NAD 83) 61° 12' 45.7" N  
Longitude (NAD 83) 149° 48' 38.1" W  
Climate Zone A  
Rain Zone 2  
Ground Elevation (AMSL) 42.4 m / 139.1 ft

### Link Information

Satellite Type Geostationary  
Mode TR - Transmit-Receive  
Modulation Digital  
Satellite Arc 115° W to 119° West Longitude  
Azimuth Range 141.6° to 145.8°  
Corresponding Elevation Angles 14.9° / 16.1°  
Antenna Centerline (AGL) 10.93 m / 35.9 ft

### Antenna Information

Manufacturer GD Satcom  
Model 3.8  
Gain / Diameter 42.3 dBi / 3.8 m  
3-dB / 15-dB Beamwidth 1.50° / 3.00°

### Receive

### Transmit

GD Satcom  
3.8  
46.2 dBi / 3.8 m  
0.80° / 1.60°

|                        |  | 45K0G7W - 36M0G7W |           | 60K0D7W - 36M0D7W |           |
|------------------------|--|-------------------|-----------|-------------------|-----------|
|                        |  | (dBW/4 kHz)       | (dBW/MHz) | (dBW/4 kHz)       | (dBW/MHz) |
| Max Available RF Power |  | -16.5             | -16.5     | -16.5             | -16.5     |
|                        |  | -6.0              | 7.5       | -4.7              | 7.5       |
| Maximum EIRP           |  | 29.7              | 29.7      | 29.7              | 29.7      |
|                        |  | 40.21             | 53.7      | 41.46             | 53.7      |
|                        |  | 40.21             | 69.24     | 41.46             | 69.24     |

|                          |            |                |       |                  |         |
|--------------------------|------------|----------------|-------|------------------|---------|
| Interference Objectives: | Long Term  | -158.0 dBW/MHz | 20%   | -154.0 dBW/4 kHz | 20%     |
|                          | Short Term | -148.0 dBW/MHz | 0.01% | -131.0 dBW/4 kHz | 0.0025% |

### Frequency Information

#### Receive 4.0 GHz

Emission / Frequency Range (MHz)  
45K0G7W - 36M0G7W / 3700.0 - 4200.0  
60K0D7W - 36M0D7W / 3700.0 - 4200.0

#### Transmit 6.1 GHz

45K0G7W - 36M0G7W / 5925.0 - 6063.0  
60K0D7W - 36M0D7W / 5925.0 - 6063.0  
45K0G7W - 36M0G7W / 6287.0 - 6383.0  
60K0D7W - 36M0G7W / 6287.0 - 6383.0

|                                        |                     |                    |
|----------------------------------------|---------------------|--------------------|
| Max Great Circle Coordination Distance | 338.7 km / 210.5 mi | 133.3 km / 82.8 mi |
| Precipitation Scatter Contour Radius   | 521.3 km / 323.9 mi | 100.0 km / 62.1 mi |

# COMSEARCH

## Earth Station Data Sheet

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

### Coordination Values

### ANCHORAGE, AK

|                                    |                          |       |                   |         |  |
|------------------------------------|--------------------------|-------|-------------------|---------|--|
| Licensee Name                      | GCI Communications Corp. |       |                   |         |  |
| Latitude (NAD 83)                  | 61° 12' 45.7" N          |       |                   |         |  |
| Longitude (NAD 83)                 | 149° 48' 38.1" W         |       |                   |         |  |
| Ground Elevation (AMSL)            | 42.4 m / 139.1 ft        |       |                   |         |  |
| Antenna Centerline (AGL)           | 10.93 m / 35.9 ft        |       |                   |         |  |
| Antenna Mode                       | Receive 4.0 GHz          |       | Transmit 6.1 GHz  |         |  |
| Interference Objectives: Long Term | -158.0 dBW/MHz           | 20%   | -154.0 dBW/4 kHz  | 20%     |  |
| Short Term                         | -148.0 dBW/MHz           | 0.01% | -131.0 dBW/4 kHz  | 0.0025% |  |
| Max Available RF Power             |                          |       | -16.5 (dBW/4 kHz) |         |  |

| Azimuth (°) | Horizon<br>Elevation (°) | Antenna<br>Discrimination (°) | Receive 4.0 GHz       |                               | Transmit 6.1 GHz      |                               |
|-------------|--------------------------|-------------------------------|-----------------------|-------------------------------|-----------------------|-------------------------------|
|             |                          |                               | Horizon<br>Gain (dBi) | Coordination<br>Distance (km) | Horizon<br>Gain (dBi) | Coordination<br>Distance (km) |
| 0           | 0.46                     | 139.35                        | -10.00                | 266.80                        | -10.00                | 105.62                        |
| 5           | 0.42                     | 134.69                        | -10.00                | 271.02                        | -10.00                | 108.46                        |
| 10          | 0.32                     | 129.96                        | -10.00                | 283.52                        | -10.00                | 116.70                        |
| 15          | 0.34                     | 125.22                        | -10.00                | 281.07                        | -10.00                | 115.10                        |
| 20          | 0.40                     | 120.46                        | -10.00                | 272.84                        | -10.00                | 109.67                        |
| 25          | 0.33                     | 115.66                        | -10.00                | 281.26                        | -10.00                | 115.22                        |
| 30          | 0.43                     | 110.86                        | -10.00                | 270.11                        | -10.00                | 107.85                        |
| 35          | 0.24                     | 106.02                        | -10.00                | 292.58                        | -10.00                | 122.53                        |
| 40          | 0.24                     | 101.20                        | -10.00                | 293.26                        | -10.00                | 122.97                        |
| 45          | 0.25                     | 96.36                         | -10.00                | 291.41                        | -10.00                | 121.79                        |
| 50          | 0.26                     | 91.53                         | -10.00                | 290.49                        | -10.00                | 121.19                        |
| 55          | 0.30                     | 86.69                         | -10.00                | 285.38                        | -10.00                | 117.90                        |
| 60          | 0.30                     | 81.85                         | -10.00                | 284.93                        | -10.00                | 117.61                        |
| 65          | 0.45                     | 77.01                         | -10.00                | 266.97                        | -10.00                | 105.73                        |
| 70          | 0.43                     | 72.18                         | -10.00                | 269.40                        | -10.00                | 107.37                        |
| 75          | 0.51                     | 67.35                         | -10.00                | 261.32                        | -10.00                | 101.90                        |
| 80          | 0.66                     | 62.52                         | -10.00                | 251.46                        | -10.00                | 100.00                        |
| 85          | 0.71                     | 57.72                         | -10.00                | 247.81                        | -10.00                | 100.00                        |
| 90          | 0.88                     | 52.92                         | -10.00                | 237.82                        | -10.00                | 100.00                        |
| 95          | 1.02                     | 48.14                         | -10.00                | 230.10                        | -10.00                | 100.00                        |
| 100         | 1.26                     | 43.36                         | -8.93                 | 228.02                        | -8.93                 | 100.00                        |
| 105         | 1.41                     | 38.65                         | -7.68                 | 230.11                        | -7.68                 | 100.00                        |
| 110         | 1.48                     | 34.03                         | -6.30                 | 235.84                        | -6.30                 | 100.00                        |
| 115         | 1.56                     | 29.51                         | -4.75                 | 242.63                        | -4.75                 | 100.00                        |
| 120         | 1.58                     | 25.18                         | -3.03                 | 253.08                        | -3.03                 | 100.00                        |
| 125         | 1.56                     | 21.15                         | -1.13                 | 266.61                        | -1.13                 | 100.00                        |
| 130         | 1.46                     | 17.66                         | 0.83                  | 284.96                        | 0.83                  | 100.00                        |
| 135         | 1.28                     | 15.09                         | 2.53                  | 305.71                        | 2.53                  | 106.68                        |
| 140         | 1.05                     | 13.92                         | 3.41                  | 322.81                        | 3.41                  | 115.14                        |
| 145         | 0.83                     | 14.46                         | 3.00                  | 333.55                        | 3.00                  | 122.86                        |
| 150         | 0.63                     | 16.00                         | 1.90                  | 338.75                        | 1.90                  | 128.59                        |
| 155         | 0.59                     | 17.97                         | 0.64                  | 331.51                        | 0.64                  | 126.76                        |
| 160         | 0.45                     | 21.01                         | -1.06                 | 330.73                        | -1.06                 | 129.83                        |
| 165         | 0.37                     | 24.64                         | -2.79                 | 327.99                        | -2.79                 | 131.60                        |
| 170         | 0.38                     | 28.61                         | -4.41                 | 315.37                        | -4.41                 | 126.83                        |
| 175         | 0.27                     | 32.90                         | -5.93                 | 318.03                        | -5.93                 | 131.28                        |
| 180         | 0.00                     | 37.40                         | -7.32                 | 317.40                        | -7.32                 | 133.33                        |
| 185         | 0.00                     | 41.90                         | -8.56                 | 308.14                        | -8.56                 | 130.02                        |



# COMSEARCH

## Earth Station Data Sheet

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### Coordination Values

### ANCHORAGE, AK

Licensee Name GCI Communications Corp.  
Latitude (NAD 83) 61° 12' 45.7" N  
Longitude (NAD 83) 149° 48' 38.1" W  
Ground Elevation (AMSL) 42.4 m / 139.1 ft  
Antenna Centerline (AGL) 10.93 m / 35.9 ft

Antenna Mode Receive 4.0 GHz Transmit 6.1 GHz  
Interference Objectives: Long Term -158.0 dBW/MHz 20% -154.0 dBW/4 kHz 20%  
Short Term -148.0 dBW/MHz 0.01% -131.0 dBW/4 kHz 0.0025%  
Max Available RF Power -16.5 (dBW/4 kHz)

| Azimuth (°) | Horizon<br>Elevation (°) | Antenna<br>Discrimination (°) | Receive 4.0 GHz       |                               | Transmit 6.1 GHz      |                               |
|-------------|--------------------------|-------------------------------|-----------------------|-------------------------------|-----------------------|-------------------------------|
|             |                          |                               | Horizon<br>Gain (dBi) | Coordination<br>Distance (km) | Horizon<br>Gain (dBi) | Coordination<br>Distance (km) |
| 190         | 0.00                     | 46.49                         | -9.68                 | 300.44                        | -9.68                 | 127.02                        |
| 195         | 0.00                     | 51.14                         | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 200         | 0.00                     | 55.83                         | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 205         | 0.00                     | 60.56                         | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 210         | 0.00                     | 65.31                         | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 215         | 0.00                     | 70.08                         | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 220         | 0.00                     | 74.86                         | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 225         | 0.00                     | 79.66                         | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 230         | 0.00                     | 84.46                         | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 235         | 0.00                     | 89.26                         | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 240         | 0.00                     | 94.07                         | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 245         | 0.00                     | 98.87                         | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 250         | 0.00                     | 103.66                        | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 255         | 0.00                     | 108.45                        | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 260         | 0.00                     | 113.23                        | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 265         | 0.00                     | 117.99                        | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 270         | 0.00                     | 122.72                        | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 275         | 0.00                     | 127.43                        | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 280         | 0.00                     | 132.09                        | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 285         | 0.00                     | 136.70                        | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 290         | 0.00                     | 141.23                        | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 295         | 0.00                     | 145.65                        | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 300         | 0.00                     | 149.92                        | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 305         | 0.00                     | 153.96                        | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 310         | 0.00                     | 157.63                        | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 315         | 0.00                     | 160.73                        | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 320         | 0.00                     | 162.95                        | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 325         | 0.00                     | 163.91                        | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 330         | 0.25                     | 163.16                        | -10.00                | 292.05                        | -10.00                | 122.20                        |
| 335         | 0.32                     | 160.29                        | -10.00                | 282.46                        | -10.00                | 116.00                        |
| 340         | 0.36                     | 156.70                        | -10.00                | 278.02                        | -10.00                | 113.10                        |
| 345         | 0.41                     | 152.68                        | -10.00                | 272.49                        | -10.00                | 109.43                        |
| 350         | 0.48                     | 148.41                        | -10.00                | 263.92                        | -10.00                | 103.67                        |
| 355         | 0.36                     | 143.90                        | -10.00                | 277.90                        | -10.00                | 113.02                        |

## 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.

A handwritten signature in cursive script that reads "Timothy O. Crutcher".

Timothy O. Crutcher  
Frequency Planner  
COMSEARCH  
19700 Janelia Farm Boulevard  
Ashburn, VA 20147

DATED: June 17, 2021

# FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for  
**GCI Communications Corp.**  
**ANCHORAGE, AK**  
**Satellite Earth Station**

Prepared By:  
COMSEARCH  
19700 Janelia Farm Boulevard  
Ashburn, VA 20147  
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## **1. CONCLUSIONS**

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## 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 transmit band will be limited to the bandwidths shown in Section 4 of this report.

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Chugach Electric Association, Inc.

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Coordination data for this earth station was sent to the below listed carriers with a letter dated 05/28/2021.

Company

ACS Wireless License Sub, Inc.  
ACS of Anchorage License Sub, Inc.  
AT&T Mobility Spectrum LLC - AK  
Alascom Inc  
Alaska Pipeline Company  
Alaska Public Telecommunications, Inc.  
Alaska Railroad Corporation  
Alaska State of  
Alaska Wireless Network, LLC  
Anchorage, Municipality of  
Cellco Partnership - Alaska  
Chugach Electric Association, Inc.  
Enstar Natural Gas Company  
GCI Communications Corp.  
Homer Electric Association  
MATANUSKA KENAI INC  
Matanuska Telephone Association, Inc.  
Matanuska-Susitna, Borough of  
Norstar Pipeline Company  
Verizon Wireless (VAW) LLC - Alaska

## **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: 05/28/2021  
Job Number: 210528COMSTC03

### Administrative Information

Licensee Code P3203  
Licensee Name GCI Communications Corp.

### Site Information

#### ANCHORAGE, AK

Venue Name  
Latitude (NAD 83) 61° 12' 45.7" N  
Longitude (NAD 83) 149° 48' 38.1" W  
Climate Zone A  
Rain Zone 2  
Ground Elevation (AMSL) 42.4 m / 139.1 ft

### Link Information

Satellite Type Geostationary  
Mode TR - Transmit-Receive  
Modulation Digital  
Satellite Arc 123° W to 127° West Longitude  
Azimuth Range 150.0° to 154.4°  
Corresponding Elevation Angles 17.1° / 18.1°  
Antenna Centerline (AGL) 10.93 m / 35.9 ft

### Antenna Information

#### Receive

Manufacturer GD Satcom  
Model 3.8  
Gain / Diameter 42.3 dBi / 3.8 m  
3-dB / 15-dB Beamwidth 1.50° / 3.00°

#### Transmit

GD Satcom  
3.8  
46.2 dBi / 3.8 m  
0.80° / 1.60°

|                          |             | 45K0G7W - 36M0G7W |       | 60K0D7W - 36M0D7W |         |
|--------------------------|-------------|-------------------|-------|-------------------|---------|
| Max Available RF Power   | (dBW/4 kHz) | -16.5             | -16.5 | -16.5             | -16.5   |
|                          | (dBW/MHz)   | -6.0              | 7.5   | -4.7              | 7.5     |
| Maximum EIRP             | (dBW/4 kHz) | 29.7              | 29.7  | 29.7              | 29.7    |
|                          | (dBW/MHz)   | 40.21             | 53.7  | 41.46             | 53.7    |
|                          | (dBW)       | 40.21             | 69.24 | 41.46             | 69.24   |
| Interference Objectives: | Long Term   | -158.0 dBW/MHz    | 20%   | -154.0 dBW/4 kHz  | 20%     |
|                          | Short Term  | -148.0 dBW/MHz    | 0.01% | -131.0 dBW/4 kHz  | 0.0025% |

### Frequency Information

#### Receive 4.0 GHz

Emission / Frequency Range (MHz)  
45K0G7W - 36M0G7W / 3700.0 - 4200.0  
60K0D7W - 36M0D7W / 3700.0 - 4200.0

#### Transmit 6.1 GHz

45K0G7W - 36M0G7W / 5925.0 - 6063.0  
60K0D7W - 36M0D7W / 5925.0 - 6063.0  
45K0G7W - 36M0G7W / 6287.0 - 6383.0  
60K0D7W - 36M0G7W / 6287.0 - 6383.0

Max Great Circle Coordination Distance 343.0 km / 213.1 mi 137.7 km / 85.6 mi  
Precipitation Scatter Contour Radius 513.7 km / 319.2 mi 100.0 km / 62.1 mi

# COMSEARCH

## Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147  
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### Coordination Values

### ANCHORAGE, AK

|                                    |                          |       |                   |         |  |
|------------------------------------|--------------------------|-------|-------------------|---------|--|
| Licensee Name                      | GCI Communications Corp. |       |                   |         |  |
| Latitude (NAD 83)                  | 61° 12' 45.7" N          |       |                   |         |  |
| Longitude (NAD 83)                 | 149° 48' 38.1" W         |       |                   |         |  |
| Ground Elevation (AMSL)            | 42.4 m / 139.1 ft        |       |                   |         |  |
| Antenna Centerline (AGL)           | 10.93 m / 35.9 ft        |       |                   |         |  |
| Antenna Mode                       | Receive 4.0 GHz          |       | Transmit 6.1 GHz  |         |  |
| Interference Objectives: Long Term | -158.0 dBW/MHz           | 20%   | -154.0 dBW/4 kHz  | 20%     |  |
| Short Term                         | -148.0 dBW/MHz           | 0.01% | -131.0 dBW/4 kHz  | 0.0025% |  |
| Max Available RF Power             |                          |       | -16.5 (dBW/4 kHz) |         |  |

| Azimuth (°) | Horizon<br>Elevation (°) | Antenna<br>Discrimination (°) | Receive 4.0 GHz       |                               | Transmit 6.1 GHz      |                               |
|-------------|--------------------------|-------------------------------|-----------------------|-------------------------------|-----------------------|-------------------------------|
|             |                          |                               | Horizon<br>Gain (dBi) | Coordination<br>Distance (km) | Horizon<br>Gain (dBi) | Coordination<br>Distance (km) |
| 0           | 0.46                     | 146.08                        | -10.00                | 266.80                        | -10.00                | 105.62                        |
| 5           | 0.42                     | 141.70                        | -10.00                | 271.02                        | -10.00                | 108.46                        |
| 10          | 0.32                     | 137.19                        | -10.00                | 283.52                        | -10.00                | 116.70                        |
| 15          | 0.34                     | 132.63                        | -10.00                | 281.07                        | -10.00                | 115.10                        |
| 20          | 0.40                     | 128.02                        | -10.00                | 272.84                        | -10.00                | 109.67                        |
| 25          | 0.33                     | 123.33                        | -10.00                | 281.26                        | -10.00                | 115.22                        |
| 30          | 0.43                     | 118.64                        | -10.00                | 270.11                        | -10.00                | 107.85                        |
| 35          | 0.24                     | 113.88                        | -10.00                | 292.58                        | -10.00                | 122.53                        |
| 40          | 0.24                     | 109.13                        | -10.00                | 293.26                        | -10.00                | 122.97                        |
| 45          | 0.25                     | 104.37                        | -10.00                | 291.41                        | -10.00                | 121.79                        |
| 50          | 0.26                     | 99.60                         | -10.00                | 290.49                        | -10.00                | 121.19                        |
| 55          | 0.30                     | 94.82                         | -10.00                | 285.38                        | -10.00                | 117.90                        |
| 60          | 0.30                     | 90.03                         | -10.00                | 284.93                        | -10.00                | 117.61                        |
| 65          | 0.45                     | 85.24                         | -10.00                | 266.97                        | -10.00                | 105.73                        |
| 70          | 0.43                     | 80.46                         | -10.00                | 269.40                        | -10.00                | 107.37                        |
| 75          | 0.51                     | 75.67                         | -10.00                | 261.32                        | -10.00                | 101.90                        |
| 80          | 0.66                     | 70.89                         | -10.00                | 251.46                        | -10.00                | 100.00                        |
| 85          | 0.71                     | 66.12                         | -10.00                | 247.81                        | -10.00                | 100.00                        |
| 90          | 0.88                     | 61.35                         | -10.00                | 237.82                        | -10.00                | 100.00                        |
| 95          | 1.02                     | 56.60                         | -10.00                | 230.10                        | -10.00                | 100.00                        |
| 100         | 1.26                     | 51.84                         | -10.00                | 222.29                        | -10.00                | 100.00                        |
| 105         | 1.41                     | 47.14                         | -9.83                 | 218.55                        | -9.83                 | 100.00                        |
| 110         | 1.48                     | 42.50                         | -8.71                 | 222.32                        | -8.71                 | 100.00                        |
| 115         | 1.56                     | 37.94                         | -7.48                 | 226.64                        | -7.48                 | 100.00                        |
| 120         | 1.58                     | 33.49                         | -6.12                 | 233.69                        | -6.12                 | 100.00                        |
| 125         | 1.56                     | 29.22                         | -4.64                 | 243.04                        | -4.64                 | 100.00                        |
| 130         | 1.46                     | 25.24                         | -3.05                 | 257.02                        | -3.05                 | 100.00                        |
| 135         | 1.28                     | 21.73                         | -1.42                 | 275.28                        | -1.42                 | 100.00                        |
| 140         | 1.05                     | 18.90                         | 0.09                  | 295.51                        | 0.09                  | 105.43                        |
| 145         | 0.83                     | 17.06                         | 1.20                  | 318.91                        | 1.20                  | 117.59                        |
| 150         | 0.63                     | 16.51                         | 1.55                  | 335.95                        | 1.55                  | 127.59                        |
| 155         | 0.59                     | 17.23                         | 1.09                  | 335.14                        | 1.09                  | 128.08                        |
| 160         | 0.45                     | 18.48                         | 0.33                  | 341.67                        | 0.33                  | 133.81                        |
| 165         | 0.37                     | 20.57                         | -0.83                 | 343.04                        | -0.83                 | 135.90                        |
| 170         | 0.38                     | 23.46                         | -2.26                 | 331.52                        | -2.26                 | 132.75                        |
| 175         | 0.27                     | 27.00                         | -3.79                 | 333.74                        | -3.79                 | 135.94                        |
| 180         | 0.00                     | 31.02                         | -5.29                 | 332.00                        | -5.29                 | 137.73                        |
| 185         | 0.00                     | 35.12                         | -6.64                 | 322.25                        | -6.64                 | 133.92                        |

# COMSEARCH

## Earth Station Data Sheet

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

### Coordination Values

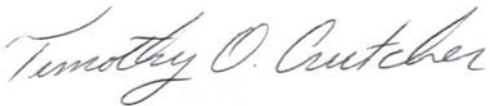
### ANCHORAGE, AK

|                                    |                          |       |                   |         |  |
|------------------------------------|--------------------------|-------|-------------------|---------|--|
| Licensee Name                      | GCI Communications Corp. |       |                   |         |  |
| Latitude (NAD 83)                  | 61° 12' 45.7" N          |       |                   |         |  |
| Longitude (NAD 83)                 | 149° 48' 38.1" W         |       |                   |         |  |
| Ground Elevation (AMSL)            | 42.4 m / 139.1 ft        |       |                   |         |  |
| Antenna Centerline (AGL)           | 10.93 m / 35.9 ft        |       |                   |         |  |
| Antenna Mode                       | Receive 4.0 GHz          |       | Transmit 6.1 GHz  |         |  |
| Interference Objectives: Long Term | -158.0 dBW/MHz           | 20%   | -154.0 dBW/4 kHz  | 20%     |  |
| Short Term                         | -148.0 dBW/MHz           | 0.01% | -131.0 dBW/4 kHz  | 0.0025% |  |
| Max Available RF Power             |                          |       | -16.5 (dBW/4 kHz) |         |  |

| Azimuth (°) | Horizon<br>Elevation (°) | Antenna<br>Discrimination (°) | Receive 4.0 GHz       |                               | Transmit 6.1 GHz      |                               |
|-------------|--------------------------|-------------------------------|-----------------------|-------------------------------|-----------------------|-------------------------------|
|             |                          |                               | Horizon<br>Gain (dBi) | Coordination<br>Distance (km) | Horizon<br>Gain (dBi) | Coordination<br>Distance (km) |
| 190         | 0.00                     | 39.41                         | -7.89                 | 313.39                        | -7.89                 | 131.79                        |
| 195         | 0.00                     | 43.83                         | -9.04                 | 304.78                        | -9.04                 | 128.71                        |
| 200         | 0.00                     | 48.34                         | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 205         | 0.00                     | 52.92                         | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 210         | 0.00                     | 57.55                         | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 215         | 0.00                     | 62.21                         | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 220         | 0.00                     | 66.91                         | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 225         | 0.00                     | 71.63                         | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 230         | 0.00                     | 76.36                         | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 235         | 0.00                     | 81.10                         | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 240         | 0.00                     | 85.85                         | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 245         | 0.00                     | 90.60                         | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 250         | 0.00                     | 95.35                         | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 255         | 0.00                     | 100.10                        | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 260         | 0.00                     | 104.84                        | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 265         | 0.00                     | 109.57                        | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 270         | 0.00                     | 114.28                        | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 275         | 0.00                     | 118.97                        | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 280         | 0.00                     | 123.63                        | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 285         | 0.00                     | 128.25                        | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 290         | 0.00                     | 132.81                        | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 295         | 0.00                     | 137.30                        | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 300         | 0.00                     | 141.69                        | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 305         | 0.00                     | 145.94                        | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 310         | 0.00                     | 149.99                        | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 315         | 0.00                     | 153.74                        | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 320         | 0.00                     | 157.05                        | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 325         | 0.00                     | 159.70                        | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 330         | 0.25                     | 161.65                        | -10.00                | 292.05                        | -10.00                | 122.20                        |
| 335         | 0.32                     | 162.23                        | -10.00                | 282.46                        | -10.00                | 116.00                        |
| 340         | 0.36                     | 160.55                        | -10.00                | 278.02                        | -10.00                | 113.10                        |
| 345         | 0.41                     | 157.69                        | -10.00                | 272.49                        | -10.00                | 109.43                        |
| 350         | 0.48                     | 154.21                        | -10.00                | 263.92                        | -10.00                | 103.67                        |
| 355         | 0.36                     | 150.22                        | -10.00                | 277.90                        | -10.00                | 113.02                        |

## 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.

A handwritten signature in cursive script that reads "Timothy O. Crutcher".

Timothy O. Crutcher  
Frequency Planner  
COMSEARCH  
19700 Janelia Farm Boulevard  
Ashburn, VA 20147

DATED: June 17, 2021

# FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for  
**GCI Communications Corp.**  
**ANCHORAGE, AK**  
**Satellite Earth Station**

Prepared By:  
COMSEARCH  
19700 Janelia Farm Boulevard  
Ashburn, VA 20147  
June 17, 2021

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## **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 transmit bandwidth is limited to the bandwidths shown in Section 4 of this report.

The following companies reported potential great circle interference conflicts that did not meet the objectives on a line-of-sight basis. When over-the-horizon losses are considered on the interfering paths, sufficient blockage exists to negate harmful interference from occurring with the proposed transmit-receive earth station.

### Company

Alaska State of  
Chugach Electric Association, Inc.

No other carriers reported potential interference cases.



### 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 05/28/2021.

Company

ACS Wireless License Sub, Inc.  
ACS of Anchorage License Sub, Inc.  
AT&T Mobility Spectrum LLC - AK  
Alascom Inc  
Alaska Pipeline Company  
Alaska Public Telecommunications, Inc.  
Alaska Railroad Corporation  
Alaska State of  
Alaska Wireless Network, LLC  
Anchorage, Municipality of  
Cellco Partnership - Alaska  
Chugach Electric Association, Inc.  
Enstar Natural Gas Company  
GCI Communications Corp.  
Homer Electric Association  
MATANUSKA KENAI INC  
Matanuska Telephone Association, Inc.  
Matanuska-Susitna, Borough of  
Norstar Pipeline Company  
Verizon Wireless (VAW) LLC - Alaska

## **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: 05/28/2021

Job Number: 210528COMSTC04

### Administrative Information

Licensee Code P3203  
Licensee Name GCI Communications Corp.

### Site Information

#### ANCHORAGE, AK

Latitude (NAD 83) 61° 12' 45.7" N  
Longitude (NAD 83) 149° 48' 38.1" W  
Climate Zone A  
Rain Zone 2  
Ground Elevation (AMSL) 42.4 m / 139.1 ft

### Link Information

Satellite Type Geostationary  
Mode TR - Transmit-Receive  
Modulation Digital  
Satellite Arc 191° W to 191° West Longitude  
Azimuth Range 225.0° to 225.0°  
Corresponding Elevation Angles 12.8° / 12.8°  
Antenna Centerline (AGL) 10.93 m / 35.9 ft

### Antenna Information

#### Receive

Manufacturer GD Satcom  
Model 3.8  
Gain / Diameter 42.3 dBi / 3.8 m  
3-dB / 15-dB Beamwidth 1.50° / 3.00°

#### Transmit

GD Satcom  
3.8  
46.2 dBi / 3.8 m  
0.80° / 1.60°

|                          |             | <u>45K0G7W - 36M0G7W</u> |       | <u>60K0D7W - 36M0D7W</u> |         |
|--------------------------|-------------|--------------------------|-------|--------------------------|---------|
| Max Available RF Power   | (dBW/4 kHz) | -16.5                    | -16.5 | -16.5                    | -16.5   |
|                          | (dBW/MHz)   | -6.0                     | 7.5   | -4.7                     | 7.5     |
| Maximum EIRP             | (dBW/4 kHz) | 29.7                     | 29.7  | 29.7                     | 29.7    |
|                          | (dBW/MHz)   | 40.21                    | 53.7  | 41.46                    | 53.7    |
|                          | (dBW)       | 40.21                    | 69.24 | 41.46                    | 69.24   |
| Interference Objectives: | Long Term   | -158.0 dBW/MHz           | 20%   | -154.0 dBW/4 kHz         | 20%     |
|                          | Short Term  | -148.0 dBW/MHz           | 0.01% | -131.0 dBW/4 kHz         | 0.0025% |

### Frequency Information

#### Receive 4.0 GHz

Emission / Frequency Range (MHz) 45K0G7W - 36M0G7W / 3700.0 - 4200.0  
60K0D7W - 36M0D7W / 3700.0 - 4200.0

#### Transmit 6.1 GHz

45K0G7W - 36M0G7W / 6187.0 - 6323.0  
60K0D7W - 36M0D7W / 6187.0 - 6323.0

Max Great Circle Coordination Distance 407.0 km / 252.9 mi 172.8 km / 107.4 mi  
Precipitation Scatter Contour Radius 529.6 km / 329.0 mi 100.0 km / 62.1 mi

# COMSEARCH

## Earth Station Data Sheet

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

### Coordination Values

### ANCHORAGE, AK

|                                    |                          |       |                   |         |  |
|------------------------------------|--------------------------|-------|-------------------|---------|--|
| Licensee Name                      | GCI Communications Corp. |       |                   |         |  |
| Latitude (NAD 83)                  | 61° 12' 45.7" N          |       |                   |         |  |
| Longitude (NAD 83)                 | 149° 48' 38.1" W         |       |                   |         |  |
| Ground Elevation (AMSL)            | 42.4 m / 139.1 ft        |       |                   |         |  |
| Antenna Centerline (AGL)           | 10.93 m / 35.9 ft        |       |                   |         |  |
| Antenna Mode                       | Receive 4.0 GHz          |       | Transmit 6.1 GHz  |         |  |
| Interference Objectives: Long Term | -158.0 dBW/MHz           | 20%   | -154.0 dBW/4 kHz  | 20%     |  |
| Short Term                         | -148.0 dBW/MHz           | 0.01% | -131.0 dBW/4 kHz  | 0.0025% |  |
| Max Available RF Power             |                          |       | -16.5 (dBW/4 kHz) |         |  |

| Azimuth (°) | Horizon<br>Elevation (°) | Antenna<br>Discrimination (°) | Receive 4.0 GHz       |                               | Transmit 6.1 GHz      |                               |
|-------------|--------------------------|-------------------------------|-----------------------|-------------------------------|-----------------------|-------------------------------|
|             |                          |                               | Horizon<br>Gain (dBi) | Coordination<br>Distance (km) | Horizon<br>Gain (dBi) | Coordination<br>Distance (km) |
| 0           | 0.46                     | 133.74                        | -10.00                | 266.80                        | -10.00                | 105.62                        |
| 5           | 0.42                     | 138.49                        | -10.00                | 271.02                        | -10.00                | 108.46                        |
| 10          | 0.32                     | 143.16                        | -10.00                | 283.52                        | -10.00                | 116.70                        |
| 15          | 0.34                     | 147.79                        | -10.00                | 281.07                        | -10.00                | 115.10                        |
| 20          | 0.40                     | 152.33                        | -10.00                | 272.84                        | -10.00                | 109.67                        |
| 25          | 0.33                     | 156.63                        | -10.00                | 281.26                        | -10.00                | 115.22                        |
| 30          | 0.43                     | 160.70                        | -10.00                | 270.11                        | -10.00                | 107.85                        |
| 35          | 0.24                     | 164.05                        | -10.00                | 292.58                        | -10.00                | 122.53                        |
| 40          | 0.24                     | 166.54                        | -10.00                | 293.26                        | -10.00                | 122.97                        |
| 45          | 0.25                     | 167.49                        | -10.00                | 291.41                        | -10.00                | 121.79                        |
| 50          | 0.26                     | 166.53                        | -10.00                | 290.49                        | -10.00                | 121.19                        |
| 55          | 0.30                     | 164.04                        | -10.00                | 285.38                        | -10.00                | 117.90                        |
| 60          | 0.30                     | 160.56                        | -10.00                | 284.93                        | -10.00                | 117.61                        |
| 65          | 0.45                     | 156.61                        | -10.00                | 266.97                        | -10.00                | 105.73                        |
| 70          | 0.43                     | 152.26                        | -10.00                | 269.40                        | -10.00                | 107.37                        |
| 75          | 0.51                     | 147.77                        | -10.00                | 261.32                        | -10.00                | 101.90                        |
| 80          | 0.66                     | 143.18                        | -10.00                | 251.46                        | -10.00                | 100.00                        |
| 85          | 0.71                     | 138.47                        | -10.00                | 247.81                        | -10.00                | 100.00                        |
| 90          | 0.88                     | 133.74                        | -10.00                | 237.82                        | -10.00                | 100.00                        |
| 95          | 1.02                     | 128.96                        | -10.00                | 230.10                        | -10.00                | 100.00                        |
| 100         | 1.26                     | 124.15                        | -10.00                | 222.29                        | -10.00                | 100.00                        |
| 105         | 1.41                     | 119.31                        | -10.00                | 217.71                        | -10.00                | 100.00                        |
| 110         | 1.48                     | 114.44                        | -10.00                | 215.68                        | -10.00                | 100.00                        |
| 115         | 1.56                     | 109.56                        | -10.00                | 213.46                        | -10.00                | 100.00                        |
| 120         | 1.58                     | 104.66                        | -10.00                | 212.87                        | -10.00                | 100.00                        |
| 125         | 1.56                     | 99.76                         | -10.00                | 213.23                        | -10.00                | 100.00                        |
| 130         | 1.46                     | 94.86                         | -10.00                | 216.24                        | -10.00                | 100.00                        |
| 135         | 1.28                     | 89.96                         | -10.00                | 221.86                        | -10.00                | 100.00                        |
| 140         | 1.05                     | 85.06                         | -10.00                | 229.14                        | -10.00                | 100.00                        |
| 145         | 0.83                     | 80.17                         | -10.00                | 240.74                        | -10.00                | 100.00                        |
| 150         | 0.63                     | 75.30                         | -10.00                | 253.11                        | -10.00                | 100.00                        |
| 155         | 0.59                     | 70.42                         | -10.00                | 255.69                        | -10.00                | 100.00                        |
| 160         | 0.45                     | 65.57                         | -10.00                | 267.05                        | -10.00                | 105.79                        |
| 165         | 0.37                     | 60.72                         | -10.00                | 276.77                        | -10.00                | 112.27                        |
| 170         | 0.38                     | 55.89                         | -10.00                | 276.28                        | -10.00                | 111.95                        |
| 175         | 0.27                     | 51.09                         | -10.00                | 289.28                        | -10.00                | 120.42                        |
| 180         | 0.00                     | 46.36                         | -9.65                 | 300.65                        | -9.65                 | 127.10                        |
| 185         | 0.00                     | 41.62                         | -8.48                 | 308.65                        | -8.48                 | 130.21                        |

# COMSEARCH

## Earth Station Data Sheet

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

### Coordination Values

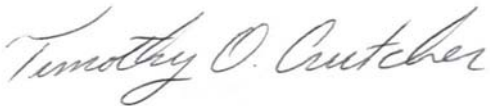
### ANCHORAGE, AK

|                                    |                          |       |                   |         |  |
|------------------------------------|--------------------------|-------|-------------------|---------|--|
| Licensee Name                      | GCI Communications Corp. |       |                   |         |  |
| Latitude (NAD 83)                  | 61° 12' 45.7" N          |       |                   |         |  |
| Longitude (NAD 83)                 | 149° 48' 38.1" W         |       |                   |         |  |
| Ground Elevation (AMSL)            | 42.4 m / 139.1 ft        |       |                   |         |  |
| Antenna Centerline (AGL)           | 10.93 m / 35.9 ft        |       |                   |         |  |
| Antenna Mode                       | Receive 4.0 GHz          |       | Transmit 6.1 GHz  |         |  |
| Interference Objectives: Long Term | -158.0 dBW/MHz           | 20%   | -154.0 dBW/4 kHz  | 20%     |  |
| Short Term                         | -148.0 dBW/MHz           | 0.01% | -131.0 dBW/4 kHz  | 0.0025% |  |
| Max Available RF Power             |                          |       | -16.5 (dBW/4 kHz) |         |  |

| Azimuth (°) | Horizon<br>Elevation (°) | Antenna<br>Discrimination (°) | Receive 4.0 GHz       |                               | Transmit 6.1 GHz      |                               |
|-------------|--------------------------|-------------------------------|-----------------------|-------------------------------|-----------------------|-------------------------------|
|             |                          |                               | Horizon<br>Gain (dBi) | Coordination<br>Distance (km) | Horizon<br>Gain (dBi) | Coordination<br>Distance (km) |
| 190         | 0.00                     | 36.93                         | -7.19                 | 318.37                        | -7.19                 | 133.69                        |
| 195         | 0.00                     | 32.33                         | -5.74                 | 328.73                        | -5.74                 | 136.44                        |
| 200         | 0.00                     | 27.84                         | -4.12                 | 340.63                        | -4.12                 | 141.21                        |
| 205         | 0.00                     | 23.55                         | -2.30                 | 354.32                        | -2.30                 | 146.95                        |
| 210         | 0.00                     | 19.57                         | -0.29                 | 369.88                        | -0.29                 | 153.75                        |
| 215         | 0.00                     | 16.14                         | 1.80                  | 386.54                        | 1.80                  | 161.34                        |
| 220         | 0.00                     | 13.68                         | 3.60                  | 400.66                        | 3.60                  | 169.88                        |
| 225         | 0.00                     | 12.77                         | 4.35                  | 406.97                        | 4.35                  | 172.79                        |
| 230         | 0.00                     | 13.71                         | 3.57                  | 400.44                        | 3.57                  | 169.78                        |
| 235         | 0.00                     | 16.19                         | 1.77                  | 386.24                        | 1.77                  | 161.20                        |
| 240         | 0.00                     | 19.64                         | -0.33                 | 369.58                        | -0.33                 | 153.62                        |
| 245         | 0.00                     | 23.62                         | -2.33                 | 354.06                        | -2.33                 | 146.84                        |
| 250         | 0.00                     | 27.92                         | -4.15                 | 340.40                        | -4.15                 | 141.12                        |
| 255         | 0.00                     | 32.41                         | -5.77                 | 328.53                        | -5.77                 | 136.36                        |
| 260         | 0.00                     | 37.02                         | -7.21                 | 318.19                        | -7.21                 | 133.62                        |
| 265         | 0.00                     | 41.70                         | -8.50                 | 308.49                        | -8.50                 | 130.15                        |
| 270         | 0.00                     | 46.44                         | -9.67                 | 300.51                        | -9.67                 | 127.05                        |
| 275         | 0.00                     | 51.22                         | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 280         | 0.00                     | 56.03                         | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 285         | 0.00                     | 60.86                         | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 290         | 0.00                     | 65.70                         | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 295         | 0.00                     | 70.56                         | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 300         | 0.00                     | 75.42                         | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 305         | 0.00                     | 80.29                         | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 310         | 0.00                     | 85.17                         | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 315         | 0.00                     | 90.04                         | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 320         | 0.00                     | 94.92                         | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 325         | 0.00                     | 99.79                         | -10.00                | 298.32                        | -10.00                | 126.18                        |
| 330         | 0.25                     | 104.68                        | -10.00                | 292.05                        | -10.00                | 122.20                        |
| 335         | 0.32                     | 109.56                        | -10.00                | 282.46                        | -10.00                | 116.00                        |
| 340         | 0.36                     | 114.42                        | -10.00                | 278.02                        | -10.00                | 113.10                        |
| 345         | 0.41                     | 119.28                        | -10.00                | 272.49                        | -10.00                | 109.43                        |
| 350         | 0.48                     | 124.13                        | -10.00                | 263.92                        | -10.00                | 103.67                        |
| 355         | 0.36                     | 128.93                        | -10.00                | 277.90                        | -10.00                | 113.02                        |

## 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: \_\_\_\_\_

Timothy O. Crutcher  
Frequency Planner  
COMSEARCH  
19700 Janelia Farm Boulevard  
Ashburn, VA 20147

DATED: June 17, 2021