

# FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for  
**MCI Communications Services Inc.**  
**PEARL HARBOR, HI**  
**Satellite Earth Station**

Prepared By:  
COMSEARCH  
19700 Janelia Farm Boulevard  
Ashburn, VA 20147  
March 21, 2022

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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 losses were found to be sufficient to reduce the signal levels to acceptable magnitudes in every case.

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

Hawaiian Electric Company, Inc.  
Nexstar Media Inc  
University of Hawaii

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 02/21/2022.

Company

AT&T Corp.  
AT&T Mobility Spectrum LLC - Hawaii  
County of Kauai Department of Police  
Harmer Radio and Electronics, Inc.  
Hawaii Electric Light Co Inc  
Hawaii, State of  
Hawaiian Electric Company, Inc.  
Hawaiian Telecom Inc.  
Honolulu City & County Dept of Info Tech  
Maui Electric Company Ltd  
Maui, County of  
New Cingular Wireless PCS LLC - Hawaii  
Nexstar Media Inc.  
Spectrum Oceanic, LLC  
University of Hawaii

## **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: 03/21/2022  
Job Number: 220221COMSGE04

### Administrative Information

Status: ENGINEER PROPOSAL  
Call Sign:  
Licensee Code: P5192  
Licensee Name: MCI Communications Services Inc.

### Site Information

Venue Name: PEARL HARBOR, HI  
Latitude (NAD 83): 21° 21' 20.1" N  
Longitude (NAD 83): 157° 56' 32.6" W  
Climate Zone: C  
Rain Zone: 4  
Ground Elevation (AMSL): 3.0 m / 9.8 ft

### Link Information

Satellite Type: Geostationary  
Mode: TR - Transmit-Receive  
Modulation: Digital  
Satellite Arc: 177° W to 191° West Longitude  
Azimuth Range: 223.5° to 240.8°  
Corresponding Elevation Angles: 56.9° / 45.2°  
Antenna Centerline (AGL): 10.97 m / 36.0 ft

### Antenna Information

Manufacturer: GD Satcom  
Model: 2244  
Gain / Diameter: 38.2 dBi / 2.4 m  
3-dB / 15-dB Beamwidth: 1.90° / 3.80°

### Receive - FCC32

### Transmit - FCC32

GD Satcom  
2244  
42.2 dBi / 2.4 m  
1.10° / 2.60°

Max Available RF Power (dBW/4 kHz)  
(dBW/MHz)

-9.4  
14.6

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

32.8  
56.8

Interference Objectives: Long Term -156.0 dBW/MHz 20%  
Short Term -146.0 dBW/MHz 0.01%

-154.0 dBW/4 kHz 20%  
-131.0 dBW/4 kHz 0.0025%

### Frequency Information

Emission / Frequency Range (MHz): 63K0G7W - 1M77G7W / 3700.0 - 4200.0

### Receive 4.0 GHz

### Transmit 6.1 GHz

63K0G7W - 1M77G7W / 5925.0 - 5986.0  
63K0G7W - 1M77G7W / 6023.0 - 6045.0  
63K0G7W - 1M77G7W / 6082.0 - 6238.0  
63K0G7W - 1M77G7W / 6275.0 - 6297.0  
63K0G7W - 1M77G7W / 6334.0 - 6425.0

Max Great Circle Coordination Distance: 724.1 km / 449.9 mi  
Precipitation Scatter Contour Radius: 100.0 km / 62.1 mi

262.5 km / 163.1 mi  
100.0 km / 62.1 mi

# COMSEARCH

## Earth Station Data Sheet

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### Coordination Values

### PEARL HARBOR, HI

Licensee Name MCI Communications Services Inc.

Latitude (NAD 83) 21° 21' 20.1" N

Longitude (NAD 83) 157° 56' 32.6" W

Ground Elevation (AMSL) 3.0 m / 9.8 ft

Antenna Centerline (AGL) 10.97 m / 36.0 ft

Antenna Model GD Satcom 2.4 meter

Antenna Mode Receive 4.0 GHz

Transmit 6.1 GHz

Interference Objectives: Long Term -156.0 dBW/MHz 20% -154.0 dBW/4 kHz 20%

Short Term -146.0 dBW/MHz 0.01% -131.0 dBW/4 kHz 0.0025%

Max Available RF Power -9.4 (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           | 1.67                     | 110.74                        | -10.00                | 314.75                        | -10.00                | 100.00                        |
| 5           | 1.86                     | 114.15                        | -10.00                | 296.29                        | -10.00                | 100.00                        |
| 10          | 2.21                     | 117.56                        | -10.00                | 267.19                        | -10.00                | 100.00                        |
| 15          | 2.38                     | 120.63                        | -10.00                | 254.46                        | -10.00                | 100.00                        |
| 20          | 2.60                     | 122.31                        | -10.00                | 239.45                        | -10.00                | 100.00                        |
| 25          | 2.91                     | 123.85                        | -10.00                | 218.95                        | -10.00                | 100.00                        |
| 30          | 2.06                     | 124.01                        | -10.00                | 278.09                        | -10.00                | 100.00                        |
| 35          | 2.45                     | 125.06                        | -10.00                | 249.42                        | -10.00                | 100.00                        |
| 40          | 2.91                     | 125.89                        | -10.00                | 218.92                        | -10.00                | 100.00                        |
| 45          | 2.78                     | 125.82                        | -10.00                | 227.35                        | -10.00                | 100.00                        |
| 50          | 2.96                     | 125.74                        | -10.00                | 216.15                        | -10.00                | 100.00                        |
| 55          | 2.58                     | 124.81                        | -10.00                | 240.27                        | -10.00                | 100.00                        |
| 60          | 2.98                     | 124.33                        | -10.00                | 214.84                        | -10.00                | 100.00                        |
| 65          | 1.82                     | 122.13                        | -10.00                | 299.90                        | -10.00                | 100.00                        |
| 70          | 2.07                     | 120.99                        | -10.00                | 276.97                        | -10.00                | 100.00                        |
| 75          | 2.15                     | 119.44                        | -10.00                | 271.17                        | -10.00                | 100.00                        |
| 80          | 2.17                     | 117.61                        | -10.00                | 270.11                        | -10.00                | 100.00                        |
| 85          | 1.90                     | 115.40                        | -10.00                | 292.34                        | -10.00                | 100.00                        |
| 90          | 1.98                     | 113.27                        | -10.00                | 284.94                        | -10.00                | 100.00                        |
| 95          | 1.55                     | 110.70                        | -10.00                | 325.08                        | -10.00                | 100.00                        |
| 100         | 1.41                     | 108.19                        | -10.00                | 339.56                        | -10.00                | 100.96                        |
| 105         | 1.27                     | 105.60                        | -10.00                | 356.04                        | -10.00                | 109.07                        |
| 110         | 0.75                     | 102.81                        | -10.00                | 446.64                        | -10.00                | 154.38                        |
| 115         | 0.53                     | 100.10                        | -10.00                | 511.22                        | -10.00                | 184.59                        |
| 120         | 0.26                     | 97.36                         | -10.00                | 672.23                        | -10.00                | 242.56                        |
| 125         | 0.00                     | 94.62                         | -10.00                | 710.92                        | -10.00                | 257.50                        |
| 130         | 0.00                     | 91.90                         | -10.00                | 710.92                        | -10.00                | 257.50                        |
| 135         | 0.00                     | 89.18                         | -10.00                | 710.92                        | -10.00                | 257.50                        |
| 140         | 0.00                     | 86.45                         | -10.00                | 710.92                        | -10.00                | 257.50                        |
| 145         | 0.00                     | 83.75                         | -10.00                | 710.92                        | -10.00                | 257.50                        |
| 150         | 0.00                     | 81.08                         | -10.00                | 710.92                        | -10.00                | 257.50                        |
| 155         | 0.00                     | 78.46                         | -10.00                | 710.92                        | -10.00                | 257.50                        |
| 160         | 0.00                     | 75.91                         | -10.00                | 710.92                        | -10.00                | 257.50                        |
| 165         | 0.00                     | 73.44                         | -10.00                | 710.92                        | -10.00                | 257.50                        |
| 170         | 0.00                     | 71.06                         | -10.00                | 710.92                        | -10.00                | 257.50                        |
| 175         | 0.00                     | 68.81                         | -10.00                | 710.92                        | -10.00                | 257.50                        |
| 180         | 0.00                     | 66.69                         | -10.00                | 710.92                        | -10.00                | 257.50                        |
| 185         | 0.00                     | 64.73                         | -10.00                | 710.92                        | -10.00                | 257.50                        |

# COMSEARCH

## Earth Station Data Sheet

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### Coordination Values

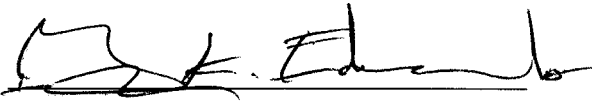
### PEARL HARBOR, HI

Licensee Name MCI Communications Services Inc.  
Latitude (NAD 83) 21° 21' 20.1" N  
Longitude (NAD 83) 157° 56' 32.6" W  
Ground Elevation (AMSL) 3.0 m / 9.8 ft  
Antenna Centerline (AGL) 10.97 m / 36.0 ft  
Antenna Model GD Satcom 2.4 meter  
Antenna Mode Receive 4.0 GHz Transmit 6.1 GHz  
Interference Objectives: Long Term -156.0 dBW/MHz 20% -154.0 dBW/4 kHz 20%  
Short Term -146.0 dBW/MHz 0.01% -131.0 dBW/4 kHz 0.0025%  
Max Available RF Power -9.4 (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                     | 62.90                         | -10.00                | 710.92                        | -10.00                | 257.50                        |
| 195         | 0.00                     | 60.54                         | -10.00                | 710.92                        | -10.00                | 257.50                        |
| 200         | 0.00                     | 57.75                         | -10.00                | 710.92                        | -10.00                | 257.50                        |
| 205         | 0.00                     | 55.13                         | -10.00                | 710.92                        | -10.00                | 257.50                        |
| 210         | 0.00                     | 52.74                         | -10.00                | 710.92                        | -10.00                | 257.50                        |
| 215         | 0.00                     | 50.61                         | -10.00                | 710.92                        | -10.00                | 257.50                        |
| 220         | 0.00                     | 48.79                         | -10.00                | 710.92                        | -10.00                | 257.50                        |
| 225         | 0.00                     | 47.30                         | -9.87                 | 713.64                        | -9.87                 | 258.53                        |
| 230         | 0.00                     | 46.19                         | -9.61                 | 719.10                        | -9.61                 | 260.62                        |
| 235         | 0.00                     | 45.48                         | -9.45                 | 722.66                        | -9.45                 | 261.98                        |
| 240         | 0.00                     | 45.20                         | -9.38                 | 724.10                        | -9.38                 | 262.53                        |
| 245         | 0.00                     | 45.35                         | -9.41                 | 723.33                        | -9.41                 | 262.24                        |
| 250         | 0.00                     | 45.93                         | -9.55                 | 720.41                        | -9.55                 | 261.12                        |
| 255         | 0.00                     | 46.92                         | -9.78                 | 715.51                        | -9.78                 | 259.24                        |
| 260         | 0.00                     | 48.29                         | -10.00                | 710.92                        | -10.00                | 257.50                        |
| 265         | 0.00                     | 50.01                         | -10.00                | 710.92                        | -10.00                | 257.50                        |
| 270         | 0.00                     | 52.05                         | -10.00                | 710.92                        | -10.00                | 257.50                        |
| 275         | 0.00                     | 54.37                         | -10.00                | 710.92                        | -10.00                | 257.50                        |
| 280         | 0.00                     | 56.92                         | -10.00                | 710.92                        | -10.00                | 257.50                        |
| 285         | 0.00                     | 59.67                         | -10.00                | 710.92                        | -10.00                | 257.50                        |
| 290         | 0.00                     | 62.60                         | -10.00                | 710.92                        | -10.00                | 257.50                        |
| 295         | 0.00                     | 65.68                         | -10.00                | 710.92                        | -10.00                | 257.50                        |
| 300         | 0.00                     | 68.87                         | -10.00                | 710.92                        | -10.00                | 257.50                        |
| 305         | 0.00                     | 72.16                         | -10.00                | 710.92                        | -10.00                | 257.50                        |
| 310         | 0.31                     | 75.45                         | -10.00                | 635.71                        | -10.00                | 228.89                        |
| 315         | 0.39                     | 78.88                         | -10.00                | 583.79                        | -10.00                | 213.33                        |
| 320         | 0.35                     | 82.39                         | -10.00                | 609.74                        | -10.00                | 221.84                        |
| 325         | 0.54                     | 85.90                         | -10.00                | 509.58                        | -10.00                | 183.90                        |
| 330         | 0.62                     | 89.45                         | -10.00                | 484.41                        | -10.00                | 173.07                        |
| 335         | 0.76                     | 93.02                         | -10.00                | 442.98                        | -10.00                | 152.66                        |
| 340         | 0.95                     | 96.60                         | -10.00                | 399.60                        | -10.00                | 130.19                        |
| 345         | 0.95                     | 100.14                        | -10.00                | 400.68                        | -10.00                | 130.71                        |
| 350         | 1.20                     | 103.71                        | -10.00                | 363.61                        | -10.00                | 112.74                        |
| 355         | 1.46                     | 107.25                        | -10.00                | 334.38                        | -10.00                | 100.00                        |

## 5. CERTIFICATION

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

BY: 

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

DATED: March 21, 2022