# Ka-Band Earth Station – Oakland City, IN Frequency Coordination Report 28 GHz



Prepared on Behalf of ViaSat, Inc.

February 27, 2021





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# 1. Summary of Results

On behalf of ViaSat. Inc., Comsearch issued 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 Oakland City-IN, which will transmit at 28 GHz<sup>1</sup>. Prior-notification emails 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 18, 2020.

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

### 2. 28 GHz Common Carrier and LTTS Coordination

In accordance with FCC Rules and Regulations, the Ka-Band earth station in Oakland City, IN was prior-coordinated by Comsearch. A notification email, datasheet and Google Earth file showing the area around the site outside which the -77.6 dBm/m2 per MHz threshold value is not exceeded 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 |
|----------|----------------------------|
| Frontier | Nationwide                 |

A notification email, datasheet and Google Earth file showing the area around the site outside which the -77.6 dBm/m2 per MHz threshold value is not exceeded for the Ka-Band earth station in Oakland City, IN were also sent to the following 28 GHz local television transmission licensee. This licensee is authorized to operate temporary fixed operations from 27.5 – 29.5 GHz on a nationwide basis.

| Licensee                       | Authorized Geographic Area |
|--------------------------------|----------------------------|
| Information Super Station, LLC | Continental US             |

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

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 $<sup>^{1}</sup>$  The proposed earth station will operate in the 27.5 – 29.1 GHz & 29.5 – 30.0 GHz portion of the KaBand.



## 3. 28 GHz UMFUS Coordination

Two 28 GHz UMFUS licensees were 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 |
|---------------------------------------|----------------------------|
| Straight Path Spectrum, LLC (Verizon) | Market Based               |

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



# 4. Earth Station Coordination Data

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

| Date:   |                                  |                                       |                             |  |  |  |
|---|----------------------------------|---------------------------------------|-----------------------------|--|--|--|
| Administrative Information Status ENGINEER PROPOSAL Call Sign Licensee Code VIASAT Licensee Name ViaSat, Inc Site Information OAKLAND CITY, IN Venue Name Latitude (NAD 83) 38" 20" 24.3" N Longitude (NAD 83) 87" 22" 12.9" W Climate Zone A Rain Zone 2 Ground Elevation (AMSL) 153.23 m / 502.7 ft  Link Information Satellite Type Geostationary Mode TO - Transmit-Only Modulation Digital 78" W to 91" West Longitude Azimuth Range 165.1" to 185.8" Corresponding Elevation Angles 44.5" / 45.4" Antenna Centerline (AGL) 1.5 m / 4.9 ft  Antenna Information  Manufacturer Model 13001XX Gain / Diameter 3-dB Beamwidth 0.40" / 0.80"  Max Available RF Power (dBW/4 kHz) 42.5 (dBW/MHz) 18.5  Maximum EIRP (dBW/4 kHz) 9.5 (dBW/MHz) 33.5  Interference Objectives: Long Term  |                                  |                                       | 8/2020                      |  |  |  |
| Status  | Job Number: 2                    |                                       | 118COMSNR29                 |  |  |  |
| Call Sign   Licensee Code   Licensee Name   ViaSat, Inc   | Administrative Info              | rmation                               |                             |  |  |  |
| Licensee Code   | Call Sign                        |                                       | ENGINEER PROPOSAL           |  |  |  |
| Site Information         OAKLAND CITY, IN           Venue Name         38° 20′ 24.3° N           Longitude (NAD 83)         87° 22′ 12.9° W           Climate Zone         A           Rain Zone         2           Ground Elevation (AMSL)         153.23 m / 502.7 ft           Link Information         Satellite Type           Satellite Type         Geostationary           Mode         TO - Transmit-Only           Modulation         Digital           Satellite Arc         78° W to 91° West Longitude           Azimuth Range         165.1° to 185.8°           Corresponding Elevation Angles         44.5° / 45.4°           Antenna Centerline (AGL)         1.5 m / 4.9 ft           Antenna Information         Transmit - VES001           Manufacturer         VIASAT INC.           Model         13001XX           Gain / Diameter         52.6 dBi / 2.4 m           3-dB / 15-dB Beanwidth         0.40° / 0.80°           Max Available RF Power         (dBW/4 kHz)         42.5           (dBW/MHz)         -18.5           Maximum EIRP         (dBW/4 kHz)         20°           (dBW/MHz)         -18.0 dBW/4 kHz         20%           (dBW/M kHz)         -18.0 dBW/4 kHz  |                                  |                                       | AT                          |  |  |  |
| Venue Name Latitude (NAD 83)  | Licensee Name                    | ViaS                                  | Sat, Inc                    |  |  |  |
| Latitude (NAD 83) 38° 20' 24.3" N Longitude (NAD 83) 87° 22' 12.9" W Climate Zone A Rain Zone 2 Ground Elevation (AMSL) 153.23 m / 502.7 ft  Link Information Satellite Type Geostationary Mode TO - Transmit-Only Modulation Digital Satellite Arc 78° W to 91° West Longitude Azimuth Range 165.1° to 185.8° Corresponding Elevation Angles 44.5° / 45.4° Antenna Centerline (AGL) 1.5 m / 4.9 ft  Antenna Information Manufacturer VASATINC. Model 13001XX Gain / Diameter 52.6 dBi / 2.4 m 3-dB / 15-dB Beamwidth 0.40° / 0.80°  Max Available RF Power (dBW/4 kHz) 42.5 (dBW/MHz) -18.5  Maximum EIRP (dBW/4 kHz) 9.5 (dBW/4 kHz) 33.5  Interference Objectives: Long Term -141.0 dBW/4 kHz 20% Short Term -118.0 dBW/4 kHz 0.0025%  Frequency Information Emission / Frequency Range (MHz)  Transmit 28.0 GHz   |                                  | OAK                                   | (LAND CITY, IN              |  |  |  |
| Longitude (NAD 83)  |                                  | 38° 2                                 | 00' 24 3" N                 |  |  |  |
| Rain Zone   2   153.23 m / 502.7 ft   | ,                                |                                       |                             |  |  |  |
| Street  |                                  |                                       |                             |  |  |  |
| Link Information           Satellite Type         Geostationary           Mode         TO - Transmit-Only           Modulation         Digital           Satellite Arc         78° W to 91° West Longitude           Azimuth Range         165.1° to 185.8°           Corresponding Elevation Angles         44.5° / 45.4°           Antenna Centerline (AGL)         1.5 m / 4.9 ft           Antenna Information         Transmit - VES001           Manufacturer         VIASATINC.           Model         13001XX           Gain / Diameter         52.6 dBi / 2.4 m           3-dB / 15-dB Beamwidth         0.40° / 0.80°           Max Available RF Power         (dBW/4 kHz)         42.5           (dBW/MHz)         -18.5           Maximum EIRP         (dBW/4 kHz)         9.5           (dBW/MHz)         33.5           Interference Objectives:         Long Term         -141.0 dBW/4 kHz         20%           Short Term         -118.0 dBW/4 kHz         0.0025%           Frequency Information           Emission / Frequency Range (MHz)         464MG7D / 27500.0 - 29500.0   |                                  | _                                     | -                           |  |  |  |
| Satellite Type  |                                  | , ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, |                             |  |  |  |
| Mode Modulation         TO - Transmit-Only Digital           Satellite Arc         78° W to 91° West Longitude           Azimuth Range         165.1° to 185.8°           Corresponding Elevation Angles         44.5° / 45.4°           Antenna Centerline (AGL)         1.5 m / 4.9 ft           Antenna Information         Transmit - VES001           Manufacturer         VIASAT INC.           Model         13001XX           Gain / Diameter         52.6 dBi / 2.4 m           3-dB / 15-dB Beamwidth         0.40° / 0.80°           Max Available RF Power         (dBW/4 kHz)         42.5           (dBW/MHz)         -18.5           Maximum EIRP         (dBW/4 kHz)         9.5           (dBW/MHz)         33.5           Interference Objectives:         Long Term Short Term         -141.0 dBW/4 kHz 20%           -118.0 dBW/4 kHz         0.0025%           Frequency Information Emission / Frequency Range (MHz)         Transmit 28.0 GHz           Emission / Frequency Range (MHz)         464Mg7D / 27500.0 - 29500.0   |                                  | Geos                                  | stationary                  |  |  |  |
| Satellite Arc   78° W to 91° West Longitude   165.1° to 185.8°   44.5° / 45.4°   44.5° / 45.4°   44.5° / 45.4°   44.9°     |                                  | TO -                                  | Transmit-Only               |  |  |  |
| Azimuth Range Corresponding Elevation Angles Antenna Centerline (AGL)  Antenna Information  Manufacturer Model Gain / Diameter 3-dB / 15-dB Beamwidth  Max Available RF Power  (dBW/4 kHz) (dBW/MHz)  Maximum EIRP  (dBW/4 kHz) (dBW/MHz)  Interference Objectives:  Long Term Short Term  Short Term  Errequency Information  Transmit - VES001  VIASATI INC. VIASA  |                                  |                                       |                             |  |  |  |
| Corresponding Elevation Angles  |                                  |                                       |                             |  |  |  |
| Antenna Information  Manufacturer  Model  Gain / Diameter  3-dB / 15-dB Beamwidth  Max Available RF Power  (dBW/4 kHz) (dBW/MHz)  (dBW/MHz)  (dBW/MHz)  Interference Objectives:  Long Term Short Term  Emission / Frequency Range (MHz)  1.5 m / 4.9 ft  Transmit - VE \$001  VIASAT INC.  VIASAT I |                                  |                                       |                             |  |  |  |
| Manufacturer         VASAT INC.           Model         13001XX           Gain / Diameter         52.6 dBi / 2.4 m           3-dB / 15-dB Beamwidth         0.40° / 0.80°           Max Available RF Power         (dBW/4 kHz)         42.5           (dBW/MHz)         -18.5           Maximum EIRP         (dBW/4 kHz)         9.5           (dBW/MHz)         33.5           Interference Objectives:         Long Term Short Term         -141.0 dBW/4 kHz 20% -118.0 dBW/4 kHz 0.0025%           Frequency Information Emission / Frequency Range (MHz)         Transmit 28.0 GHz 464MG7D / 27500.0 - 29500.0  |                                  |                                       |                             |  |  |  |
| Model   | Antenna Informatio               | n                                     | Transmit - VES001           |  |  |  |
| Sain / Diameter   52.6 dBi / 2.4 m   0.40° / 0.80°  | Manufacturer                     |                                       | VIASAT INC.                 |  |  |  |
| 3-dB / 15-dB Beamwidth  |                                  |                                       | 13001XX                     |  |  |  |
| Max Available RF Power         (dBW/4 kHz) (dBW/MHz)         -42.5 (dBW/MHz)           Maximum EIRP         (dBW/4 kHz) 9.5 (dBW/MHz)         9.5 (dBW/MHz)           Interference Objectives:         Long Term Short Term         -141.0 dBW/4 kHz 20% -118.0 dBW/4 kHz 0.0025%           Frequency Information Emission / Frequency Range (MHz)         Transmit 28.0 GHz 464MG7D / 27500.0 - 29500.0  | Canti Diameter                   |                                       |                             |  |  |  |
| Maximum EIRP   (dBW/MHz)   9.5   (dBW/MHz)   33.5   | 3-dB / 15-dB Beamwid             | th                                    | 0.40° / 0.80°               |  |  |  |
| Maximum EIRP  | Max Available RF Power           |                                       |                             |  |  |  |
| Interference Objectives:  |                                  | (dBW/MHz)                             | -18.5                       |  |  |  |
| Interference Objectives: Long Term  | Maximum EIRP                     | (dBW/4 kHz)                           | 9.5                         |  |  |  |
| Short Term  |                                  | (dBW/MHz)                             | 33.5                        |  |  |  |
| Short Term  |                                  |                                       |                             |  |  |  |
| Frequency Information Transmit 28.0 GHz Emission / Frequency Range (MHz) 464MG7D / 27500.0 - 29500.0  | Interference Objectives:         |                                       |                             |  |  |  |
| Emission / Frequency Range (MHz) 464MG7D / 27500.0 - 29500.0  |                                  | Short Term                            | -118.0 dBW/4 kHz 0.0025%    |  |  |  |
|   |                                  |                                       |                             |  |  |  |
| Coordination Distance 0.4 km / 0.25 mi  | Emission / Frequency Range (MHz) |                                       | 464MG/D / 27500.0 - 29500.0 |  |  |  |
| Coordination Distance U.4 km / U.25 mil   | Coordination Distance            |                                       | 0.4 km / 0.25 mi            |  |  |  |
|   | Coordination Distance            |                                       | U.1 GZ.U 1 IIII 4.U         |  |  |  |



### 5. Contact Information

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

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