

# FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for  
**GUSA Licensee, LLC**  
**CLIFTON, TX**  
**(CLF 6)**  
**Satellite Earth Station**

Prepared By:  
COMSEARCH  
19700 Janelia Farm Boulevard  
Ashburn, VA 20147  
September 19, 2014

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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

KUVN License Partnership, L.P.

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 08/14/2014.

Company

ALAMO PUBLIC TELECOMMUNICATIONS COUNCIL  
BlueStone License Holdings Inc.  
CBS Stations Group of Texas, Inc  
CENTRAL TEXAS COLLEGE  
CHANNEL 49 ACQUISITION CORPORATION  
CHELSEY BROADCASTING CO OF WICHITA FALLS  
COMCORP OF TEXAS LICENSE CORP  
COMCORP OF TYLER LICENSE CORP.  
COMMUNITY TELEVISION EDUCATORS, INC  
COMMUNITY TV EDUCATORS OF DFW  
CORRIDOR TELEVISION, L.L.P.  
Centex Television Limited Partnership  
Circuit of the Americas  
Comcorp of Bryan License Corp./KWKT  
Community Educational Television, Inc.  
DAIJ Media, LLC  
Deerfield Media (San Antonio)License, LL  
Far Eastern Telecasters  
Fox Television Stations, Inc.  
GRAY TELEVISION LICENSEE, INC (KXII)  
Gray Television Licensee, LLC (KWTX-KBTX  
HIC BROADCAST, INC.  
Hoak Media of Wichita Falls License, LLC  
ION MEDIA SAN ANTONIO LICENSE, INC.  
KAKW LICENSE PARTNERSHIP, L.P.  
KCEB License Company, LLC  
KDAF, LLC  
KENS-TV Inc  
KEYE LICENSEE, LLC  
KHOU-TV, INC  
KIAH, LLC  
KIDY/KXVA License Company, LLC  
KLTV/KTRE License Subsidiary, LLC  
KMOV-TV, Inc.  
KPRC-TV  
KSWO TELEVISION COMPANY, INC.  
KTRK TV, Inc.  
KUVN License Partnership, L.P.  
KVUE TV Inc.  
KWEX License Partnership LP  
KXAN, Inc

KXAN, LLC  
KXLN License Partnership, L.P.  
KZJL License LLC  
Kabb Licensee, LLC  
Lieberman Television of Dallas License  
Mission Broadcasting, Inc.  
NBC Telemundo License LLC  
NEXSTAR BROADCASTING, INC.  
NRJ TV Houston License Co., LLC  
NW Communications of Austin, Inc.  
NW Communications of Texas, Inc.  
Nexstar Broadcasting Group Inc - KTAB-TV  
North Texas Public Broadcasting Inc.  
Northstart Houston License, LLC  
POST NEWSWEEK STATIONS SAN ANTONIO  
Post-Newsweek Stations, Houston, Inc.  
SAN ANTONIO COMMUNITY EDUCATIONAL TV INC  
Saga Broadcasting, LLC  
Station Venture Operations - Ft Worth TX  
TEXOMA BROADCASTING, INC.  
TUCK Properties, Inc.  
Television Station KTXA L.P.  
Trinity Broadcasting of Texas, Inc.  
Unimas Dallas LLC  
Unimas Partnership San Antonio  
University of Houston System  
WARWICK COMMUNICATIONS, INC.  
WFAA-TV, L.P.  
WOAI Licensee, LLC  
WORD OF GOD FELLOWSHIP, INC.

## **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: 09/19/2014  
Job Number: 140814COMSGE02

### Administrative Information

Status: ENGINEER PROPOSAL  
Call Sign:  
Licensee Code: ZAIRSA  
Licensee Name: GUSA Licensee, LLC

### Site Information

#### CLIFTON, TX

Venue Name:  
Latitude (NAD 83): 31° 47' 59.2" N  
Longitude (NAD 83): 97° 36' 46.6" W  
Climate Zone: A  
Rain Zone: 2  
Ground Elevation (AMSL): 217.63 m / 714.0 ft

### Link Information

Satellite Type: Low Earth Orbit  
Mode: TR - Transmit-Receive  
Modulation: Digital  
Minimum Elevation Angle: 5.0°  
Azimuth Range: 0.0° to 360°  
Antenna Centerline (AGL): 4.6 m / 15.1 ft

### Antenna Information

#### Receive - FCC32

#### Transmit - FCC32

|                                                 |                  |                          |
|-------------------------------------------------|------------------|--------------------------|
| Manufacturer                                    | Alcatel          | Alcatel                  |
| Model                                           | 9775             | 9775                     |
| Gain / Diameter                                 | 50.2 dBi / 5.5 m | 47.6 dBi / 5.5 m         |
| 3-dB / 15-dB Beamwidth                          | 1.00° / 1.98°    | 1.32° / 2.66°            |
| Max Available RF Power (dBW/4 kHz)<br>(dBW/MHz) |                  | 11.4<br>35.4             |
| Maximum EIRP (dBW/4 kHz)<br>(dBW/MHz)           |                  | 59.0<br>83.0             |
| Interference Objectives:                        | Long Term        | -153.0 dBW/MHz 20%       |
|                                                 | Short Term       | -143.0 dBW/MHz 0.01%     |
|                                                 |                  | -140.0 dBW/4 kHz 20%     |
|                                                 |                  | -103.0 dBW/4 kHz 0.0025% |

### Frequency Information

#### Receive 7.0 GHz

#### Transmit 5.1 GHz

|                                        |                                     |                                     |
|----------------------------------------|-------------------------------------|-------------------------------------|
| Emission / Frequency Range (MHz)       | 7K00G1D / 6875.0 - 6879.1           | 76K0F2D / 5091.0 - 5092.0           |
|                                        | 1M23G7W - 1M23XXX / 6900.0 - 7055.0 | 1M23G7W - 1M23XXX / 5096.0 - 5250.0 |
|                                        | 50K0N0N / 6900.0 - 7055.0           | 50K0N0N / 5096.0 - 5250.0           |
|                                        | N0N / 6900.0 - 7055.0               | 2M46G7W / 5096.0 - 5250.0           |
|                                        | 2M46G2W - 2M46G7W / 6900.0 - 7055.0 | 40K0G2D / 5091.38 - 5091.62         |
|                                        | 1M23G2W - 2M50G2D / 6900.0 - 7055.0 | 1M23G2W / 5096.0 - 5250.0           |
| Max Great Circle Coordination Distance | 371.0 km / 230.5 mi                 | 410.0 km / 254.7 mi                 |
| Precipitation Scatter Contour Radius   | 471.4 km / 292.9 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

### CLIFTON, TX

|                                    |                     |       |                  |         |  |
|------------------------------------|---------------------|-------|------------------|---------|--|
| Licensee Name                      | GUSA Licensee, LLC  |       |                  |         |  |
| Latitude (NAD 83)                  | 31° 47' 59.2" N     |       |                  |         |  |
| Longitude (NAD 83)                 | 97° 36' 46.6" W     |       |                  |         |  |
| Ground Elevation (AMSL)            | 217.63 m / 714.0 ft |       |                  |         |  |
| Antenna Centerline (AGL)           | 4.6 m / 15.1 ft     |       |                  |         |  |
| Antenna Model                      | Alcatel 5.5 Meter   |       |                  |         |  |
| Antenna Mode                       | Receive 7.0 GHz     |       | Transmit 5.1 GHz |         |  |
| Interference Objectives: Long Term | -153.0 dBW/MHz      | 20%   | -140.0 dBW/4 kHz | 20%     |  |
| Short Term                         | -143.0 dBW/MHz      | 0.01% | -103.0 dBW/4 kHz | 0.0025% |  |
| Max Available RF Power             | 11.4 (dBW/4 kHz)    |       |                  |         |  |

| Azimuth (°) | Horizon<br>Elevation (°) | Antenna<br>Discrimination (°) | Receive 7.0 GHz       |                               | Transmit 5.1 GHz      |                               |
|-------------|--------------------------|-------------------------------|-----------------------|-------------------------------|-----------------------|-------------------------------|
|             |                          |                               | Horizon<br>Gain (dBi) | Coordination<br>Distance (km) | Horizon<br>Gain (dBi) | Coordination<br>Distance (km) |
| 0           | 0.00                     | 86.11                         | 10.10                 | 371.00                        | 10.10                 | 410.00                        |
| 5           | 0.00                     | 81.28                         | 10.10                 | 371.00                        | 10.10                 | 410.00                        |
| 10          | 0.00                     | 76.45                         | 10.10                 | 371.00                        | 10.10                 | 410.00                        |
| 15          | 0.00                     | 71.63                         | 10.10                 | 371.00                        | 10.10                 | 410.00                        |
| 20          | 0.00                     | 66.83                         | 10.10                 | 371.00                        | 10.10                 | 410.00                        |
| 25          | 0.00                     | 62.03                         | 10.10                 | 371.00                        | 10.10                 | 410.00                        |
| 30          | 0.00                     | 57.26                         | 10.10                 | 371.00                        | 10.10                 | 410.00                        |
| 35          | 0.00                     | 52.51                         | 10.10                 | 371.00                        | 10.10                 | 410.00                        |
| 40          | 0.00                     | 47.80                         | 10.10                 | 371.00                        | 10.10                 | 410.00                        |
| 45          | 0.00                     | 43.14                         | 10.10                 | 371.00                        | 10.10                 | 410.00                        |
| 50          | 0.00                     | 38.54                         | 10.10                 | 371.00                        | 10.10                 | 410.00                        |
| 55          | 0.00                     | 34.04                         | 10.10                 | 371.00                        | 10.10                 | 410.00                        |
| 60          | 0.00                     | 29.67                         | 10.10                 | 371.00                        | 10.10                 | 410.00                        |
| 65          | 0.00                     | 25.51                         | 10.10                 | 371.00                        | 10.10                 | 410.00                        |
| 70          | 0.00                     | 21.69                         | 10.10                 | 371.00                        | 10.10                 | 410.00                        |
| 75          | 0.00                     | 18.41                         | 10.10                 | 371.00                        | 10.10                 | 410.00                        |
| 80          | 0.00                     | 16.00                         | 10.10                 | 371.00                        | 10.10                 | 410.00                        |
| 85          | 0.00                     | 14.90                         | 10.10                 | 371.00                        | 10.10                 | 410.00                        |
| 90          | 0.00                     | 15.39                         | 10.10                 | 371.00                        | 10.10                 | 410.00                        |
| 95          | 0.00                     | 17.34                         | 10.10                 | 371.00                        | 10.10                 | 410.00                        |
| 100         | 0.00                     | 20.33                         | 10.10                 | 371.00                        | 10.10                 | 410.00                        |
| 105         | 0.00                     | 23.98                         | 10.10                 | 371.00                        | 10.10                 | 410.00                        |
| 110         | 0.00                     | 28.02                         | 10.10                 | 371.00                        | 10.10                 | 410.00                        |
| 115         | 0.00                     | 32.32                         | 10.10                 | 371.00                        | 10.10                 | 410.00                        |
| 120         | 0.00                     | 36.77                         | 10.10                 | 371.00                        | 10.10                 | 410.00                        |
| 125         | 0.00                     | 41.34                         | 10.10                 | 371.00                        | 10.10                 | 410.00                        |
| 130         | 0.00                     | 45.98                         | 10.10                 | 371.00                        | 10.10                 | 410.00                        |
| 135         | 0.00                     | 50.67                         | 10.10                 | 371.00                        | 10.10                 | 410.00                        |
| 140         | 0.00                     | 55.41                         | 10.10                 | 371.00                        | 10.10                 | 410.00                        |
| 145         | 0.00                     | 60.17                         | 10.10                 | 371.00                        | 10.10                 | 410.00                        |
| 150         | 0.00                     | 64.96                         | 10.10                 | 371.00                        | 10.10                 | 410.00                        |
| 155         | 0.00                     | 69.76                         | 10.10                 | 371.00                        | 10.10                 | 410.00                        |
| 160         | 0.00                     | 74.57                         | 10.10                 | 371.00                        | 10.10                 | 410.00                        |
| 165         | 0.00                     | 79.40                         | 10.10                 | 371.00                        | 10.10                 | 410.00                        |
| 170         | 0.00                     | 84.23                         | 10.10                 | 371.00                        | 10.10                 | 410.00                        |
| 175         | 0.00                     | 89.06                         | 10.10                 | 371.00                        | 10.10                 | 410.00                        |
| 180         | 0.00                     | 93.89                         | 10.10                 | 371.00                        | 10.10                 | 410.00                        |
| 185         | 0.00                     | 98.72                         | 10.10                 | 371.00                        | 10.10                 | 410.00                        |

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## Earth Station Data Sheet

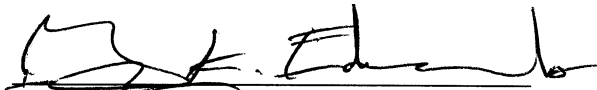
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(703)726-5500 <http://www.comsearch.com>

| Coordination Values                |  | CLIFTON, TX         |       |                  |         |
|------------------------------------|--|---------------------|-------|------------------|---------|
| Licensee Name                      |  | GUSA Licensee, LLC  |       |                  |         |
| Latitude (NAD 83)                  |  | 31° 47' 59.2" N     |       |                  |         |
| Longitude (NAD 83)                 |  | 97° 36' 46.6" W     |       |                  |         |
| Ground Elevation (AMSL)            |  | 217.63 m / 714.0 ft |       |                  |         |
| Antenna Centerline (AGL)           |  | 4.6 m / 15.1 ft     |       |                  |         |
| Antenna Model                      |  | Alcatel 5.5 Meter   |       |                  |         |
| Antenna Mode                       |  | Receive 7.0 GHz     |       | Transmit 5.1 GHz |         |
| Interference Objectives: Long Term |  | -153.0 dBW/MHz      | 20%   | -140.0 dBW/4 kHz | 20%     |
| Short Term                         |  | -143.0 dBW/MHz      | 0.01% | -103.0 dBW/4 kHz | 0.0025% |
| Max Available RF Power             |  | 11.4 (dBW/4 kHz)    |       |                  |         |

| Azimuth (°) | Horizon Elevation (°) | Antenna Discrimination (°) | Receive 7.0 GHz    |                            | Transmit 5.1 GHz   |                            |
|-------------|-----------------------|----------------------------|--------------------|----------------------------|--------------------|----------------------------|
|             |                       |                            | Horizon Gain (dBi) | Coordination Distance (km) | Horizon Gain (dBi) | Coordination Distance (km) |
| 190         | 0.00                  | 103.55                     | 10.10              | 371.00                     | 10.10              | 410.00                     |
| 195         | 0.00                  | 108.37                     | 10.10              | 371.00                     | 10.10              | 410.00                     |
| 200         | 0.00                  | 113.17                     | 10.10              | 371.00                     | 10.10              | 410.00                     |
| 205         | 0.00                  | 117.97                     | 10.10              | 371.00                     | 10.10              | 410.00                     |
| 210         | 0.00                  | 122.74                     | 10.10              | 371.00                     | 10.10              | 410.00                     |
| 215         | 0.00                  | 127.49                     | 10.10              | 371.00                     | 10.10              | 410.00                     |
| 220         | 0.00                  | 132.20                     | 10.10              | 371.00                     | 10.10              | 410.00                     |
| 225         | 0.00                  | 136.86                     | 10.10              | 371.00                     | 10.10              | 410.00                     |
| 230         | 0.00                  | 141.46                     | 10.10              | 371.00                     | 10.10              | 410.00                     |
| 235         | 0.00                  | 145.96                     | 10.10              | 371.00                     | 10.10              | 410.00                     |
| 240         | 0.00                  | 150.33                     | 10.10              | 371.00                     | 10.10              | 410.00                     |
| 245         | 0.00                  | 154.49                     | 10.10              | 371.00                     | 10.10              | 410.00                     |
| 250         | 0.00                  | 158.31                     | 10.10              | 371.00                     | 10.10              | 410.00                     |
| 255         | 0.00                  | 161.59                     | 10.10              | 371.00                     | 10.10              | 410.00                     |
| 260         | 0.00                  | 164.00                     | 10.10              | 371.00                     | 10.10              | 410.00                     |
| 265         | 0.00                  | 165.10                     | 10.10              | 371.00                     | 10.10              | 410.00                     |
| 270         | 0.00                  | 164.61                     | 10.10              | 371.00                     | 10.10              | 410.00                     |
| 275         | 0.00                  | 162.66                     | 10.10              | 371.00                     | 10.10              | 410.00                     |
| 280         | 0.00                  | 159.67                     | 10.10              | 371.00                     | 10.10              | 410.00                     |
| 285         | 0.00                  | 156.02                     | 10.10              | 371.00                     | 10.10              | 410.00                     |
| 290         | 0.00                  | 151.98                     | 10.10              | 371.00                     | 10.10              | 410.00                     |
| 295         | 0.00                  | 147.68                     | 10.10              | 371.00                     | 10.10              | 410.00                     |
| 300         | 0.00                  | 143.23                     | 10.10              | 371.00                     | 10.10              | 410.00                     |
| 305         | 0.00                  | 138.66                     | 10.10              | 371.00                     | 10.10              | 410.00                     |
| 310         | 0.00                  | 134.02                     | 10.10              | 371.00                     | 10.10              | 410.00                     |
| 315         | 0.00                  | 129.33                     | 10.10              | 371.00                     | 10.10              | 410.00                     |
| 320         | 0.00                  | 124.59                     | 10.10              | 371.00                     | 10.10              | 410.00                     |
| 325         | 0.00                  | 119.83                     | 10.10              | 371.00                     | 10.10              | 410.00                     |
| 330         | 0.00                  | 115.04                     | 10.10              | 371.00                     | 10.10              | 410.00                     |
| 335         | 0.00                  | 110.24                     | 10.10              | 371.00                     | 10.10              | 410.00                     |
| 340         | 0.00                  | 105.43                     | 10.10              | 371.00                     | 10.10              | 410.00                     |
| 345         | 0.00                  | 100.60                     | 10.10              | 371.00                     | 10.10              | 410.00                     |
| 350         | 0.00                  | 95.77                      | 10.10              | 371.00                     | 10.10              | 410.00                     |
| 355         | 0.00                  | 90.94                      | 10.10              | 371.00                     | 10.10              | 410.00                     |

## 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: September 19, 2014