

**KJZX-LP – Austin, Texas - Facility ID# 195044**

**Second Adjacent Exhibit & Waiver Request**

September 2019

Minor modification requests second adjacent waiver. Exhibit is provided demonstrating no interference will be caused to any population.

The attached D/U Ratio Study dataset exported from V-Soft FM Probe 4 software calculates KAZI with an estimated signal strength of 84.21 dBuV/m at the site, and KFMA at 0.6 dBuV/m. With an additional 40 dBu, KAZI is protected to 124.21 dBuV/m.

Height of radiation center will be 15.3 meters above ground level.

At 80 watts ERP, a worst-case interference radius is contained to 23 meters at 2m AGL.

Interference will remain cleared of occupied areas. No population will be subject to interference from the proposed station according to the undesired-to-desired ratio method.

The full data export of engineering parameters are attached with this exhibit.

**Export of calculations from Engineering Study**  
**V-Soft Probe 4 software**

Signal calculations at reference point:

Point Information Report

Latitude: 30-18-10.95 N

Longitude: 097-41-29.53 W

**Signal Strength: 84.211 dBuV/m**

Elevation: 185.14 m

Distance From Transmitter: 13.263 km

Azimuth From Transmitter: 77.4 degrees

Call Letters: KAZI

File Number: BLED20180522AAR

Latitude: 30-16-37 N

Longitude: 097-49-34 W

ERP: 1.70 kW

Channel: 204

Frequency: 88.7 MHz

AMSL Height: 328.0 m

Elevation: 281.0 m

Horiz. Antenna Pattern: Omni

Vert. Elevation Pattern: No

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Point Information Report

Latitude: 30-18-10.95 N

Longitude: 097-41-29.53 W

Signal Strength: 0.6 dBuV/m

Elevation: 185.14 m

Distance From Transmitter: 1284.741 km

Azimuth From Transmitter: 96.33 degrees

Call Letters: KFMA

File Number: BLH20050510ABX

Latitude: 32-17-23 N

Longitude: 111-01-06 W

ERP: 100.00 kW

Channel: 271

Frequency: 102.1 MHz

AMSL Height: 886.0 m

Elevation: 688.0 m

Horiz. Antenna Pattern: Directional

Vert. Elevation Pattern: No

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Study Information:

D/U Ratio Study

Signal Resolution: 0.5 km

Study Date: 9/12/2019

Land Cover was not considered in this study.

Primary Terrain: V-Soft 30 Second US Database

Secondary Terrain: V-Soft 3 Second Alaska Terrain

Coordinate System: NAD27

Transmitters:

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Transmitter Information:

Call Letters: KJZX-LP

File Number: BPL20180510AAW

Latitude: 30-18-10.95 N

Longitude: 097-41-29.53 W

ERP: 0.08 kW

Channel: 206

Frequency: 89.1 MHz

AMSL Height: 195.8 m

Elevation: 178.4 m

Horiz. Antenna Pattern: Omni

Vert. Elevation Pattern: No

Propagation Model: Longley-Rice

Climate: Continental temperate

Conductivity: 0.0050

Dielectric Constant: 15.0

Refractivity: 311.0

Receiver Height AG: 9.1 m

Receiver Gain: 0 dB

Time Variability: 50.0%

Situation Variability: 50.0%

ITM Mode: Broadcast  
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Transmitter Information:

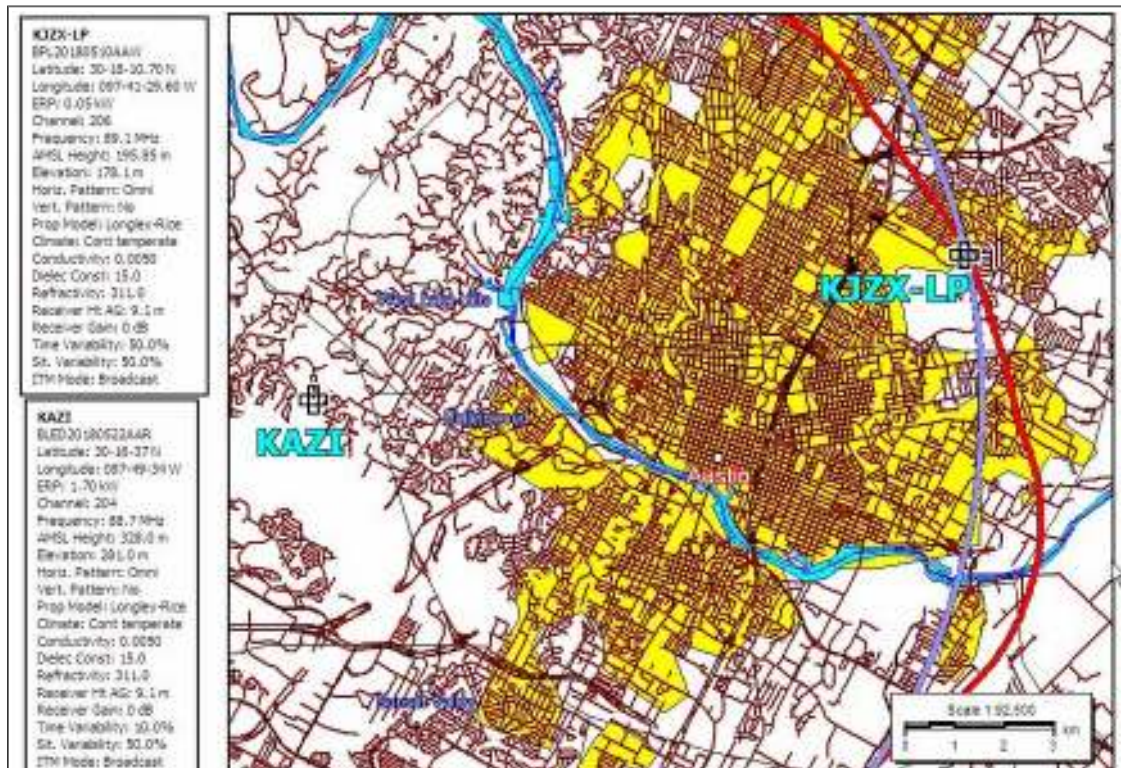
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Transmitter Information:

Call Letters: KAZI  
File Number: BLED20180522AAR  
Latitude: 30-16-37 N  
Longitude: 097-49-34 W  
ERP: 1.70 kW  
Channel: 204  
Frequency: 88.7 MHz  
AMSL Height: 328.0 m  
Elevation: 281.0 m  
Horiz. Antenna Pattern: Omni  
Vert. Elevation Pattern: No  
Propagation Model: Longley-Rice  
Climate: Continental temperate  
Conductivity: 0.0050  
Dielectric Constant: 15.0  
Refractivity: 311.0  
Receiver Height AG: 9.1 m  
Receiver Gain: 0 dB  
Time Variability: 10.0%  
Situation Variability: 50.0%  
ITM Mode: Broadcast  
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Transmitter Information:

Call Letters: KFMA  
File Number: BLH20050510ABX  
Latitude: 32-17-23 N  
Longitude: 111-01-06 W  
ERP: 100.00 kW  
Channel: 271  
Frequency: 102.1 MHz  
AMSL Height: 886.0 m  
Elevation: 688.0 m  
Horiz. Antenna Pattern: Directional  
Vert. Elevation Pattern: No  
Propagation Model: Longley-Rice  
Climate: Continental temperate  
Conductivity: 0.0050  
Dielectric Constant: 15.0  
Refractivity: 311.0  
Receiver Height AG: 9.1 m  
Receiver Gain: 0 dB  
Time Variability: 10.0%  
Situation Variability: 50.0%  
ITM Mode: Broadcast  
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## KAZI – Elevation profile and 84.21 dBu signal at antenna site:



## KAZI – Elevation to KJZX-LP



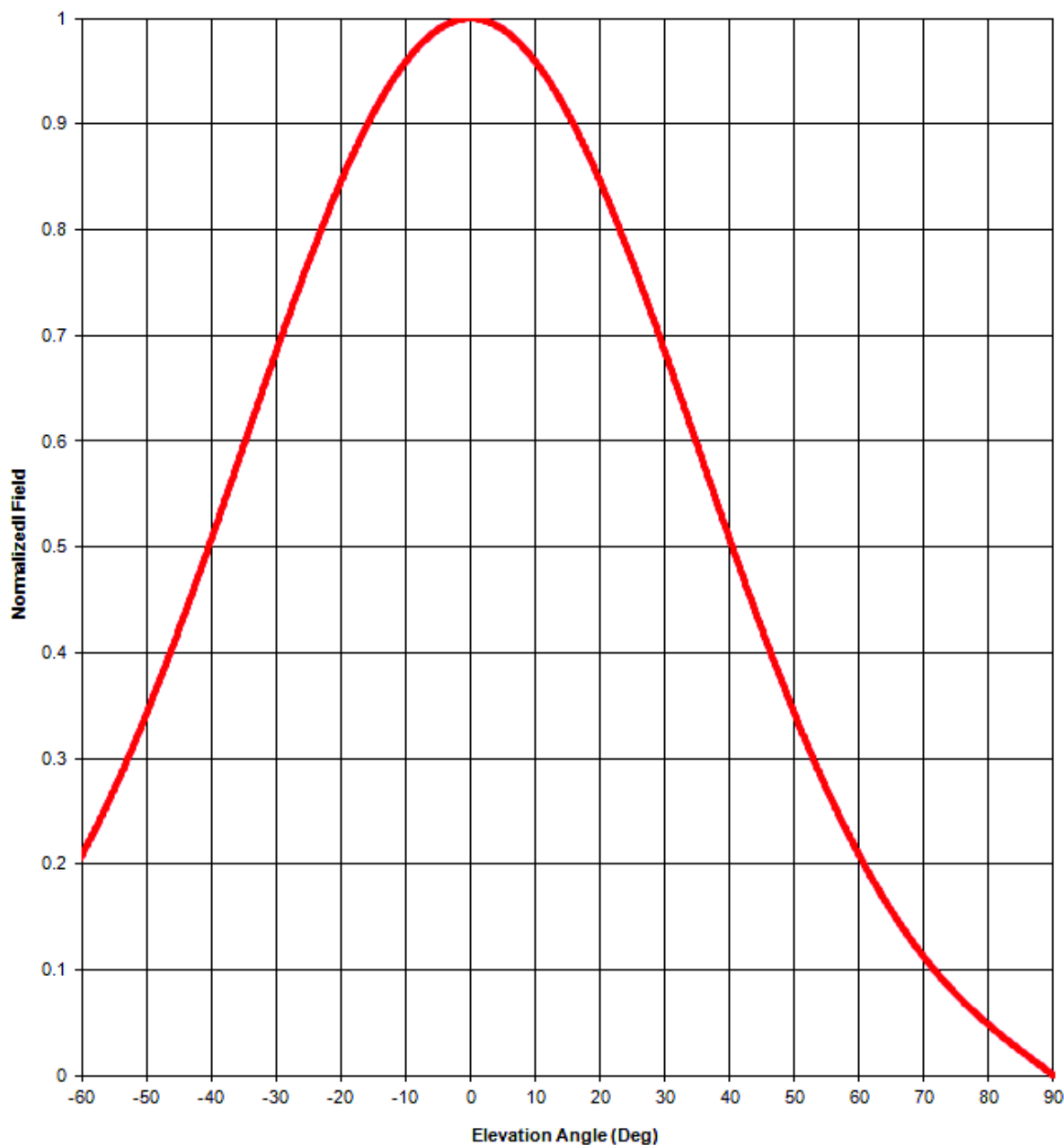
## Depression Angle Calculations

Shively 2-bay half-wave array

80 watts ERP

| depression<br>angle<br>below<br>horizon | relative<br>field | db from<br>relative | ERP   | angular<br>distance<br>to contour | vertical<br>distance | horizontal<br>distance | clearance<br>above<br>ground |
|---|-------------------|---------------------|-------|-----------------------------------|----------------------|------------------------|------------------------------|
| 0                                       | 1.000             | 0.00                | 80.00 | 38.611                            | 0.000                | 38.611                 | 15.300                       |
| 5                                       | 0.990             | -0.09               | 78.41 | 38.225                            | 3.332                | 38.080                 | 11.968                       |
| 10                                      | 0.959             | -0.36               | 73.57 | 37.028                            | 6.430                | 36.466                 | 8.870                        |
| 15                                      | 0.910             | -0.82               | 66.25 | 35.136                            | 9.094                | 33.939                 | 6.206                        |
| 20                                      | 0.846             | -1.45               | 57.26 | 32.665                            | 11.172               | 30.695                 | 4.128                        |
| 25                                      | 0.770             | -2.27               | 47.43 | 29.731                            | 12.565               | 26.945                 | 2.735                        |
| 30                                      | 0.685             | -3.29               | 37.54 | 26.449                            | 13.224               | 22.905                 | 2.076                        |
| 35                                      | 0.596             | -4.50               | 28.42 | 23.012                            | 13.199               | 18.851                 | 2.101                        |
| 40                                      | 0.508             | -5.88               | 20.65 | 19.614                            | 12.608               | 15.026                 | 2.692                        |
| 45                                      | 0.422             | -7.49               | 14.25 | 16.294                            | 11.522               | 11.522                 | 3.778                        |
| 50                                      | 0.342             | -9.32               | 9.36  | 13.205                            | 10.116               | 8.488                  | 5.184                        |
| 55                                      | 0.271             | -11.34              | 5.88  | 10.464                            | 8.571                | 6.002                  | 6.729                        |
| 60                                      | 0.208             | -13.64              | 3.46  | 8.031                             | 6.955                | 4.016                  | 8.345                        |
| 65                                      | 0.156             | -16.14              | 1.95  | 6.023                             | 5.459                | 2.546                  | 9.841                        |
| 70                                      | 0.112             | -19.02              | 1.00  | 4.324                             | 4.064                | 1.479                  | 11.236                       |
| 75                                      | 0.077             | -22.27              | 0.47  | 2.973                             | 2.872                | 0.769                  | 12.428                       |
| 80                                      | 0.048             | -26.38              | 0.18  | 1.853                             | 1.825                | 0.322                  | 13.475                       |
| 85                                      | 0.023             | -32.77              | 0.04  | 0.888                             | 0.885                | 0.077                  | 14.415                       |
| 90                                      | 0.001             | -60.00              | 0.00  | 0.039                             | 0.039                | 0.000                  | 15.261                       |

## Elevation pattern



Antenna model: 6812b, 2-bay half-wave-spaced

Test frequency: 98.1 MHz

Gain (maximum):

| Power | dB       |
|-------|----------|
| 0.63  | -1.97 dB |

Document No. 6812b 2-bay hw (130701)

| Degrees | Rel. Field | Degrees | Rel. Field | Degrees | Rel. Field | Degrees | Rel. Field | Degrees | Rel. Field |
|---------|------------|---------|------------|---------|------------|---------|------------|---------|------------|
| 1       | 1.000      | 19      | 0.860      | 37      | 0.561      | 55      | 0.271      | 73      | 0.090      |
| 2       | 0.998      | 20      | 0.846      | 38      | 0.543      | 56      | 0.258      | 74      | 0.083      |
| 3       | 0.996      | 21      | 0.832      | 39      | 0.525      | 57      | 0.245      | 75      | 0.077      |
| 4       | 0.993      | 22      | 0.817      | 40      | 0.508      | 58      | 0.232      | 76      | 0.070      |
| 5       | 0.990      | 23      | 0.801      | 41      | 0.490      | 59      | 0.220      | 77      | 0.064      |
| 6       | 0.985      | 24      | 0.786      | 42      | 0.473      | 60      | 0.208      | 78      | 0.059      |
| 7       | 0.980      | 25      | 0.770      | 43      | 0.456      | 61      | 0.197      | 79      | 0.053      |
| 8       | 0.974      | 26      | 0.753      | 44      | 0.439      | 62      | 0.186      | 80      | 0.048      |
| 9       | 0.967      | 27      | 0.736      | 45      | 0.422      | 63      | 0.176      | 81      | 0.043      |
| 10      | 0.959      | 28      | 0.720      | 46      | 0.405      | 64      | 0.165      | 82      | 0.038      |
| 11      | 0.951      | 29      | 0.702      | 47      | 0.389      | 65      | 0.156      | 83      | 0.033      |
| 12      | 0.942      | 30      | 0.685      | 48      | 0.373      | 66      | 0.146      | 84      | 0.028      |
| 13      | 0.932      | 31      | 0.667      | 49      | 0.358      | 67      | 0.137      | 85      | 0.023      |
| 14      | 0.921      | 32      | 0.650      | 50      | 0.342      | 68      | 0.128      | 86      | 0.019      |
| 15      | 0.910      | 33      | 0.632      | 51      | 0.327      | 69      | 0.120      | 87      | 0.014      |
| 16      | 0.899      | 34      | 0.614      | 52      | 0.313      | 70      | 0.112      | 88      | 0.009      |
| 17      | 0.886      | 35      | 0.596      | 53      | 0.298      | 71      | 0.104      | 89      | 0.005      |
| 18      | 0.873      | 36      | 0.578      | 54      | 0.284      | 72      | 0.097      | 90      | 0.000      |

## Elevation Pattern Tabulation

Antenna model: 6812b, 2-bay half-wave-spaced

Relative Field at 0° Depression = 1.000