



**Kessler and Gehman Associates**  
Consultants • Broadcast • Wireless

# APPLICATION FOR MINOR MODIFICATION OF AN FM AUXILIARY BROADCAST STATION

**CALL SIGN: KUHF(FM)**  
**FACILITY ID: 69150**  
**LOCATION: HOUSTON, TX**

## **Prepared For:**

University of Houston System  
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## **Prepared By:**

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July 25, 2023

## **1.0 EXECUTIVE SUMMARY**

Kessler and Gehman Associates, Inc. has been retained by University of Houston System, licensee of full-power FM broadcast station KUHF(FM) to prepare a minor modification to an existing<sup>1</sup> broadcast auxiliary facility for emergency, maintenance, and test operations. It is herein proposed to modify the KUHF(FM) broadcast auxiliary facility to co-located it with an existing antenna being shared by the following FM auxiliary broadcast stations KILT-FM<sup>2</sup>, KKHH(FM)<sup>3</sup>, and KRBE(FM)<sup>4</sup>.

## **2.0 ALLOCATION ANALYSIS**

Appendix A demonstrates that the proposed broadcast auxiliary facility has a service contour which is 100 percent subsumed by the license KUHF(FM) contour as required by 47 C.F.R Section 73.1675. The broadcast auxiliary facility shall also provide Section 73.515 60-dB $\mu$ V/m F(50,50) principal community coverage to the entire Houston, TX incorporated boundaries. The Appendix A predicted coverage contours were generated using V-Soft Probe-5 software in accordance with § 73.333 methodology using F(50,50) propagation curves. The average terrain was extracted from three arc second terrain along eight equally spaced cardinal radials from 3 kilometers to 16 kilometers from the site and beginning from true north.

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<sup>1</sup> FCC File No.: BLED-19980619KB

<sup>2</sup> Facility ID.: 25439 FCC File No.: BXLH-20050816AAE

<sup>3</sup> Facility ID.: 25449 FCC File No.: BXLH-20050816AAG

<sup>4</sup> Facility ID.: 35524 FCC File No.: BXLH-20050927AEI

### **3.0 National Environmental Policy Act (NEPA)**

#### **3.1 General Environmental Requirements**

The proposed antenna is existing and currently side mounted to an existing tower which is registered with the FAA and FCC and will not require modification since there is no change in overall height. Since the existing structure has been previously accepted by the FAA and the FCC, it is thus presumed that the following has already been mitigated:

- Require high intensity white lighting.
- Is not located in an official designated wilderness area or wildlife preserve.
- Does not threaten the existence or habitat of endangered species.
- Does not affect districts, sites, buildings, structures or objects significant in American history, architecture, archaeology, engineering or culture that are listed in the National Register of Historic Places or are eligible for listing.
- Does not affect Indian religious sites.
- Is not located in a floodplain
- Does not require construction that involves significant changes in surface features (e.g., wetland fill, deforestation, or water diversion).

#### **3.2 Radio Frequency Radiation (RFR) Compliance.**

A theoretical analysis has been conducted of the human exposure to radio frequency radiation (“RFR”) using the calculation methodology described in OET Bulletin 65, Edition 97-01. The RFR analysis is conducted pursuant to the following methodology:

Terrain extraction is compiled from the support structure site, if the support structure is on a rooftop with no higher elevations (e.g.,

elevator shaft) then flat terrain is compiled. Terrain is extracted using radial lengths of 0.25 miles in 0.001-mile increments for 360 radials. The power density is calculated for each terrain point at 6 feet above ground level using the elevation and azimuth pattern of the proposed broadcast antenna. The power density calculations are conducted using the lower edge of the proposed channel frequency. To account for ground reflections, a coefficient of 1.6 was included in the calculation.

The resulting cylindrical polar analysis is then summarized into a coordinate plane graph using the following methodology:

Starting from the origin the maximum calculated RFR value is determined among the 360-degree radials for each 0.001 mile increment, the value is then converted into a percentage of the maximum allowable general population or uncontrolled exposure and plotted as a function of perpendicular distance from the tower.

Appendix B is an RFR analysis which demonstrates that the peak RFR exposure is less than 5% of the most restrictive permissible exposure threshold standing anywhere at ground level and in any proximity to the proposed support structure. Pursuant to OET Bulletin 65, since the proposed operation does not exceed 5% of the most permissible exposure at any location 2 meters above the ground, it is not considered a significant contributor to RFR and other sources of RFR need not be taken into consideration for a net effect. The instant application is compliant with the FCC limits for human exposure to RFR and thus is excluded from further environmental processing.

#### **4.0 CERTIFICATION**

The foregoing statement and the report regarding the aforementioned engineering work are true and correct to the best of my knowledge.

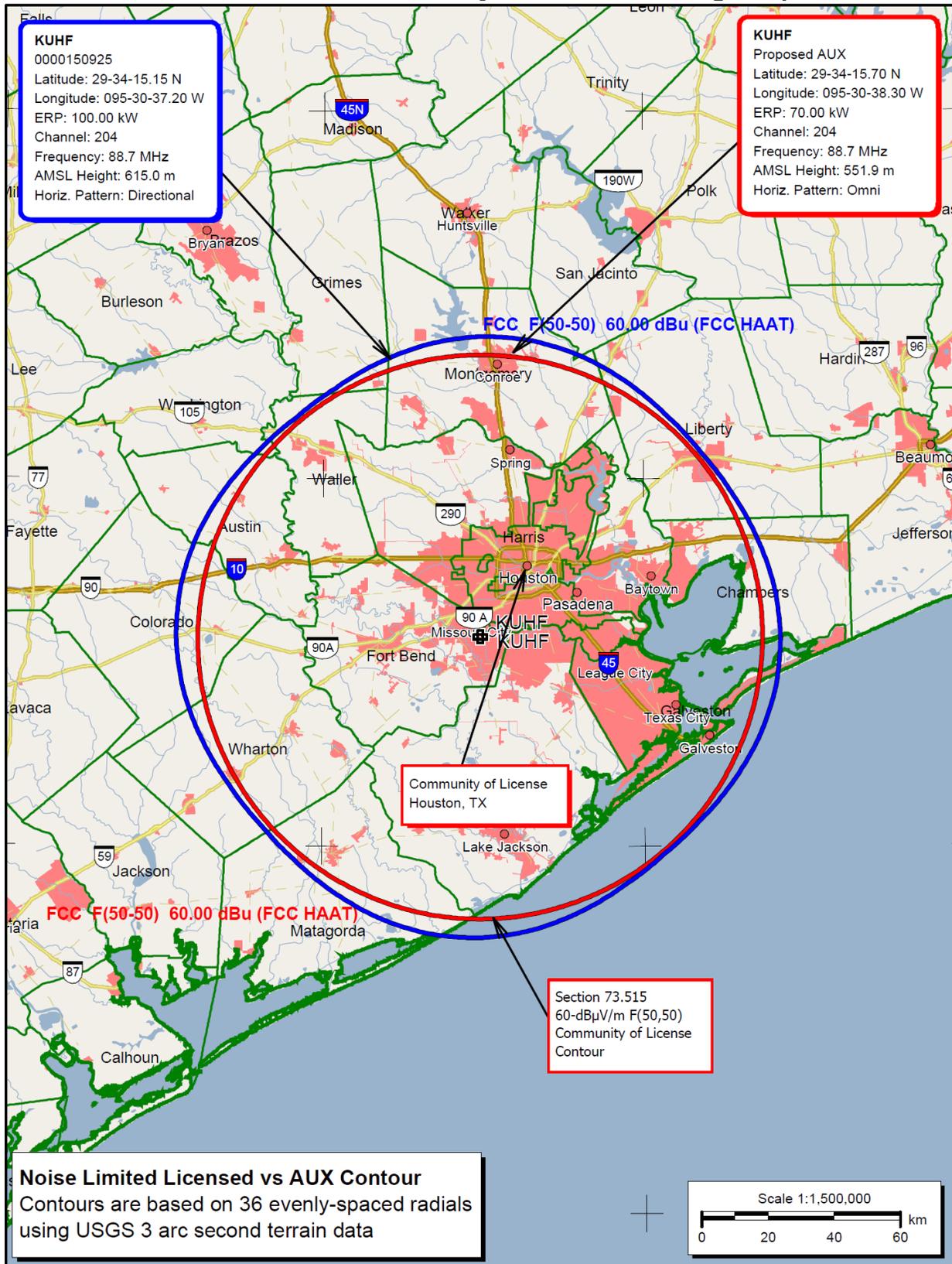
Ryan Wilhour



Consulting Engineer

July 25, 2023

**APPENDIX A – Section 73.515 Community of License Coverage Map**



APPENDIX B – Far Field Exposure to RF Emissions

