September 2021
KPSA-FM   Channel 249A
Lordsburg, NM
Allocation Study

Purpose of Application

The instant application is being filed solely to correct the coordinates of the licensed KPSA-FM facility on Channel 249A. At the same time, antenna model information is being provided since the 1986 license database entry lacks that information.

Spacing Study

The following spacing study shows that the proposed operation meets the co-channel and adjacent channel spacing requirements for Class A stations as prescribed in §73.207 of the Commission's Rules.

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FMSTUDY.EXE     Copyright 2021, Hatfield & Dawson, LLC          Version 5.10
===============================================================================
SEARCH PARAMETERS                              FM Database Date: 20210830
        Channel: 249A     97.7 MHz                                Page   1
       Latitude:  32 20 56.5  (NAD83)
      Longitude: 108 42 22.0
    Safety Zone:  32 km
      Job Title: KPSA-FM COORDINATE CORRECTION


Call    City              Channel ERP(kW)    Latitude Bearing    Dist   Req
Status   St  FCC File No.   Freq. HAAT(m)   Longitude deg-True    (km)  (km)
===============================================================================
KFMR    VIRDEN            247C1   1.700 DA 32 53 22.2  316.3    83.38    75
 LIC    NM  BLH-20190412ABK 97.3   682.0   109 19 25.3      SS    8.38 CLOSE

KPSA-FM LORDSBURG         249A    0.250    32 20 57.2   66.4     0.05   115
 LIC    NM  BLH-19860729KA  97.7   -41.0   108 42 20.1         -114.95 SHORT

KAVV    BENSON            249A    6.000    31 59 29.2  254.3   143.94   115
 LIC    AZ  BLH-20000303ACT 97.7    45.0   110 10 23.2           28.94 CLEAR

KPSA    LORDSBURG         250C    0.000    32 19  4.3   98.8    22.65   165
 ALC    NM                  97.9     0.0   108 28  6.2         -142.35 SHORT

        =====  END OF FM SPACING STUDY FOR CHANNEL 249  =====
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Facilities Proposed

KPSA-FM operates on Channel 249A (97.7 MHz) with an effective radiated power of 0.25 kilowatts. The 2-element antenna is side-mounted on a uniform cross-section guyed tower located in Lordsburg.

The antenna support structure does not exceed 60.96 meters (200 feet) above ground and does not require notification to the Federal Aviation Administration. Therefore, this structure does not require an Antenna Structure Registration Number.

DETERMINATION Results

PASS SLOPE(100:1)NO FAA REQ - 1784.0 Meters (5852.94 Feet)away & below slope by 2.0 Meters (6.55999 Feet)

Type	C/R	Latitude	Longitude	Name	Address	Lowest Elevation (m)	Runway Length (m)
AIRP	R	32-20-19.00N	108-41-30.00W	LORDSBURG MUNI	HIDALGO LORDSBURG, NM	1297.5	1527.3

PASS SLOPE(100:1)NO FAA REQ - 1553.0 Meters (5095.07 Feet)away & below slope by 0.0 Meters (0.0 Feet)

Type	C/R	Latitude	Longitude	Name	Address	Lowest Elevation (m)	Runway Length (m)
AIRP	R	32-20-14.00N	108-41-50.00W	LORDSBURG MUNI	HIDALGO LORDSBURG, NM	1297.5	1527.3

Your Specifications

NAD83 Coordinates

Latitude	32-20-56.5 north
Longitude	108-42-22.0 west

Measurements (Meters)

Overall Structure Height (AGL)	17.7
Support Structure Height (AGL)	17.7
Site Elevation (AMSL)	1296

Structure Type

GTOWER - Guyed Structure Used for Communication Purposes

RF Exposure Calculations

The power density calculations shown below were made using the techniques outlined in OET Bulletin No. 65. "Ground level" calculations in this report have been made at a reference height of 2 meters above ground to provide a worst-case estimate of exposure for persons standing on the ground in the vicinity of the tower. The equation shown below was used to calculate the ground

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level power density figures from each antenna.

$$S(\mu W / cm^2) = \frac{33.40981 \times AdjERP(Watts)}{D^2}$$

Where: *AdjERP(Watts)* is the maximum lobe effective radiated power times the element pattern factor times the array pattern factor.
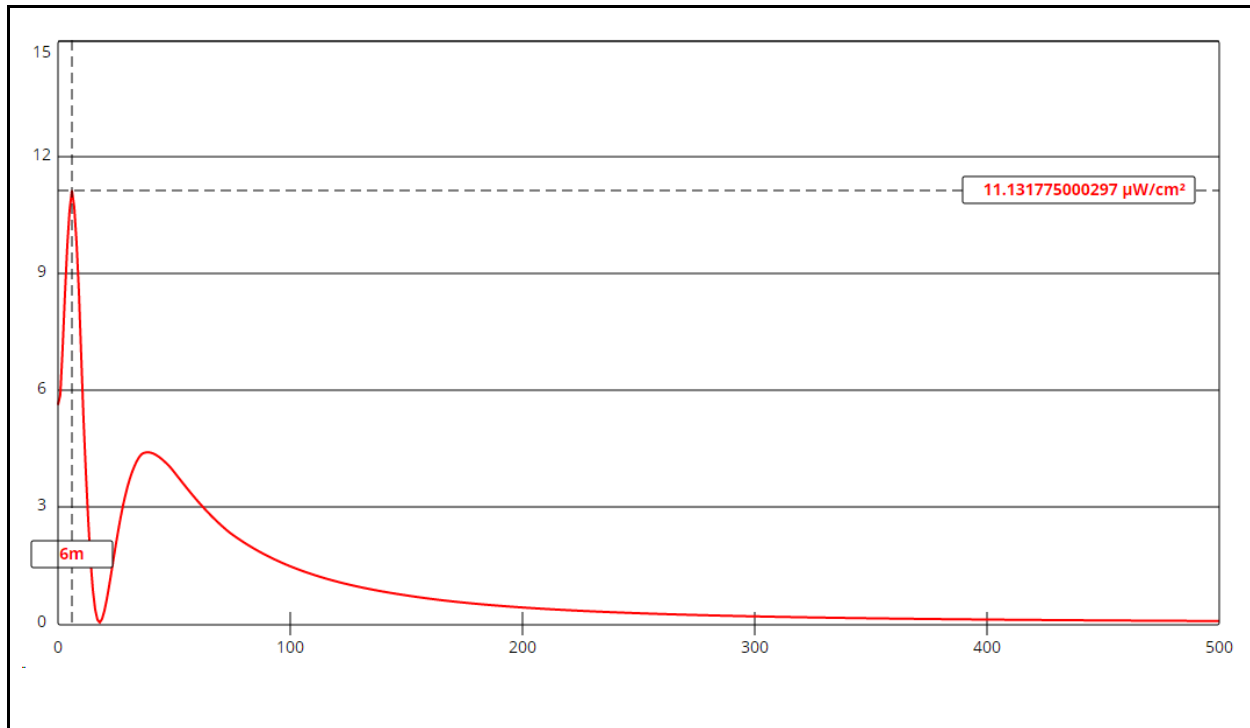
D is the distance in meters from the center of radiation to the calculation point.

Ground level power densities have been calculated for locations extending from the base of the tower to a distance of 500 meters. Values past this point are increasingly negligible.

Calculations of the power density produced by the KPSA-FM antenna system assume a Type 2 element pattern, which is the element pattern for the Bext TFC2K-2 antenna in use. The highest calculated ground level power density occurs at a distance of 6 meters from the base of the antenna support structure. At this point the power density is calculated to be 11.1 μW/cm², which is 5.6% of 200 μW/cm² (the FCC standard for uncontrolled environments). There are no other users of this site.

While the transmitter site is located within a town on a comparatively short tower, by using the equation above it is possible to solve for D to determine the minimum distance which must be maintained in the main lobe in order to ensure compliance with the FCC standard for uncontrolled environments. That value of D is 9.2 meters. The transmitting antenna is at least 16 meters from any multi-story building.

The permittee/licensee in coordination with other users of the site must reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency exposure in excess of FCC guidelines.

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Ground-Level RF Exposure   **OET FMModel**

KPSA-FM 249A Lordsburg
Antenna Type: Bext TFC2K-2 (Type 2)
No. of Elements: 2
Element Spacing: 0.85 wavelength

Distance: 500 meters
Horizontal ERP: 0.250 kW
Vertical ERP: 0.250 kW

Antenna Height: 15 meters AGL

Maximum Calculated Power Density is 11.1 µW/cm^2 at 6 meters from the antenna structure.

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