

KXMG-FM
Facility ID: 25520
Channel: 298
Modification of Application for STA

Background:

On 10 August 2011, Radio Station KXMG-FM [Facility ID: 25520] was granted an STA by the Commission, with the following parameters:

- 10 kW
- COR – HAAT: 274.0 Meters
- ASRN 1022410

This was granted under File Number: BSTA – 20110809AAK

Installation Item:

An unexpected circumstance occurred at installation. Specifically, the tower legs had a variation in size within the aperture and normal mounting positions of the antenna system. This was unanticipated by the Antenna Manufacturer, who designed the brackets. The variations in round member leg size occur right in the aperture the intended antenna installation area and the antenna brackets would not fit as intended because of this size difference. It was possible to accommodate the tower leg size variations, by moving the antenna up by 3.04 meters and shimming one of the brackets.

Therefore, Radio Station KXMG-FM [Facility ID: 25520] wishes to reduce power, to compensate for the three meter height variation, to make the station equivalent to the original STA grant.

Calculations show the proper and equivalent power for this elevation, to be 9.8kW (9,800 watts) for an HAAT of 277.0 Meters.

7.4 - 7.7 Inclusive Height Calculations including Rounding

COR – AGL: 275.8 Meters

Ground Elevation

Base of Tower – AMSL + 0.9 Meters

COR – AMSL: 276.7 Meters

COR – AMSL: 276.7 Meters

Subtract Height of Average Terrain

(from FCC 30 Second Data Calc) - 0.2 Meters

COR – HAAT: 276.5 Meters

Therefore:

COR – HAAT Rounds to: 277.0 Meters

7.8 ERP

9.8kW

Calculation performed utilizing FCC "FM Curves" tool,
- please see attached scan.

Exhibit 3:**7.11 Environmental Protection Act.**

Antenna: Dielectric DCR-H

The FCC's "FM Model for Windows" was run utilizing the following parameters:

Distance:	200 Meters (to capture the peak),
Antenna Type:	Dielectric DCRC (to most closely emulate the proposed Dielectric DCR-H, because both the "C" and the "H" versions utilize the same dipole)
Horizontal ERP:	9,800 Watts
Vertical ERP:	9,800 Watts
Antenna Height:	275.8 Meters (AGL)
Number of elements:	4
Spacing:	1 (full wave)
The "Update Graph" command calculates:	Approximately $0.72\mu\text{W}/\text{cm}^2$ peaking at approximately 120 Meters from the antenna.

- The calculated power density at peak, is well below the $200\mu\text{W}/\text{cm}^2$ limit for the general population in an uncontrolled exposure circumstance.
- The proposed FM antenna is on an existing structure with WVUE-DT (Facility ID: 4149) operating at 850kW.
- The proposed station KXMG-FM, is well below the five percent threshold.
- The applicant will use coordination and proper procedures with other users of the site, including the reduction of power or cessation of operation, to protect persons having access to the site, tower, or antenna, from radiofrequency electromagnetic exposure in excess of FCC guidelines.

Graphical Submissions Summary:

- FCC – FM Curves Calculation at originally authorized STA - 10kW @ 274m,
- FCC – FM Curves Calculation at 9.8kW @ 277m.

FM Contour runs – Following Two Pages – showing, relative equivalency of 60dBu coverage for KXMG-FM' STA from two elevations on the same tower:

- **10kW 274 meters HAAT – Original STA Grant,**
- **9.8kW at 277 meters HAAT – Mounting Position necessitated by the mechanics of the tower leg dimensions and antenna brackets.**



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FM and TV Propagations Curves Calculations

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Results -- FM and TV Propagation Curves Calculations

Results of Calculation

Field Strength = 59.969 dBu

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For input data from Pages 1 and 2:

ERP entered = 10.000 kW
 HAAT entered = 274.00 meters
 Distance entered = 48.370 kilometers
 Find the Field Strength, Given a Distance to the Contour
 F(50,50) curves for service contours
 FM and NTSC analog TV Channels 2 through 6

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<http://transition.fcc.gov/fcc-bin/fmtvcur2?l=1&k=1&m=1&s=1&f=1&o=1&e=501&a=10k...> 10/4/2011

10kW @ 274 Meters



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Results -- FM and TV Propagation Curves Calculations

Results of Calculation

Field Strength = 59.981 dBu

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For input data from Pages 1 and 2:

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 HAAT entered = 277.00 meters
 Distance entered = 48.370 kilometers
 Find the Field Strength, Given a Distance to the Contour
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9.8kW @ 277.0 Meters