

KFFF Engineering Narrative

January 2014

This application seeks correction of coordinates with specification of correct ASR for KFFF. It has been discovered that the support tower has several antenna registrations, this application seeks to “move on paper” to registration number 1026520. The station is and will continue to be 140 meters above ground with and adjusted power of 8,500 watts, non-directional.

As this location and height results in a Height Above Average Terrain 70 meters greater than the reference 100 meters for a class C3 facility, the FCC “FM Power” tool was utilized to determine equivalent ERP. This location does meet the spacing requirements of Section 73.207; a spacing study is presented below.

The proposed facilities were evaluated in terms of potential radio frequency radiation exposure at ground level in accordance with OET Bulletin No. 65, “Evaluating Compliance With FCC-Specified Guidelines for Human Exposure to Radio frequency Radiation.”

The facility will continue to utilize an ERI MPX-3 full wave 3 section antenna. This antenna has been modeled as proposed mounted 140 meters above ground has been analyzed using the program “ FM Model” set to calculate values for a “Roto Tiller” antenna array with 3 element spaced 1 wavelength operated with an effective radiated power of 8.5 Kilowatts in both the horizontal and vertical planes. At 2 meters above the surface, at 69 meters from the base of the tower, this proposal will contribute worst case, 3.13 microwatts per square centimeter, or 0.31percent of the allowable ANSI limit for controlled exposure, and 1.55 percent of the allowable limit for uncontrolled exposure. This figure is less than 5% of the applicable FCC exposure limit at all locations extending out from the base of the tower. Section 1.1307(b)(3) excludes applications when the calculated level is predicted to be less than 5% of the applicable exposure limit. It is therefore believed that this proposal is in compliance with OET Bulletin Number 65 as required by the Federal Communications Commission.

Further, the applicant will see that signs are posted in the vicinity of the tower, warning of potential radio frequency hazards at the site. The site itself is restricted from public access. The applicant will cooperate with other users of the tower to reduce power of the facility, or discontinue operation, as necessary to limit human exposure to levels less than specified by the Federal Communications Commission should anyone be required to climb the tower for maintenance or inspection.

FM Power Results

Internet Explorer browser window showing the FCC website page for FM Power Results.

URL: <http://transition.fcc.gov/fcc-bin/fmpower>

Page Title: FMpower Results

Navigation: FCC Home, Search, Updates, E-Filing, Initiatives, For Consumers, Find People

Audio Division (202) 418-2700

FCC > MB > Audio Division > FMpower > FM Propagation Curves

FMpower Results

Class C3 facilities for Equivalency Determination:

Reference ERP = 25.000 kW
Reference HAAT = 100.0 meters
F(50,50) 60 dBu protected contour at 39.1 km distance

Equivalent ERP (rounded per 47 CFR 73.212) = 8.500 kW

at **170.0 meters HAAT**

Unrounded ERP = 8.456 kW for 170.0 meters HAAT

Class C3 stations are authorized in AK.

[Enter New Data in FMpower?](#)

Related items: [FM and TV Propagation Curves](#)
This document may be accessed at <http://www.fcc.gov/mb/audio/bickel/fmpower.html>

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If you would like more information pertaining to the Media Bureau, please call: (202) 418-7200.

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Calculation of Antenna Height Above Average Terrain Calculations

Antenna Height Above Average Terrain (HAAT) Calculations (HAAT) Results Audio Division - Internet Explorer

http://transition.fcc.gov/fcc-bin/haat_calculat... Antenna Height Above Aver... transition.fcc.gov

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CDDBS Public Access http://licensing.fcc.gov/prod/cdbacc/prod/cdbacc_pa.html

Audio Division Antenna Height Above Average Terrain (HAAT) / Contour Calculations

(202) 418-2700 FCC > MB > Audio Division > HAAT/Contour Calculations FCC site map

Antenna Height Above Average Terrain Calculations -- Input

Latitude **41 15 26.0 North**
Longitude **95 57 50.9 West** (NAD 27)

Height of antenna radiation center above mean sea level [RCAMSL] = **500.0** meters
Number of Evenly Spaced Radials = 8 0° is referenced to True North

Results:

Calculated HAAT = 170. meters
(Antenna Height Above Average Terrain)
using the 30 second FCC/NGDC terrain data)

Antenna Radiation Center Heights Above Individual Radials:

| | |
|--------|--------------|
| 0.0° | 161.8 meters |
| 45.0° | 176.1 meters |
| 90.0° | 188.4 meters |
| 135.0° | 201.4 meters |
| 180.0° | 159.2 meters |
| 225.0° | 169.4 meters |
| 270.0° | 158.4 meters |
| 315.0° | 143.6 meters |

[New Antenna Height Above Average Terrain \(HAAT\) calculation?](#)

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