

FM MODEL

KBJF NEPHI Minor Modification of CP

KBJF Nephi proposes the use of a 6 bay, 18 array, transmit antenna: PSIFMP-6-DA directional, .9 waved spaced, H&V, panel antenna. Attached is a proposed plan view and orientation sketch by PSI. KBJF is using a worst case scenario of a similar Jampro JAHD Panel antenna, as seen on the attached FMMODEL.

At the time of this submittal there are no other FM stations operating from this tower site. However, KUDE Nephi has signed a Lease Agreement with the tower owner and will be returning to use the existing 10 Bay, horizontal polarized, omni directional SHI, 6600-10R-SS, 1/2 wave spaced transmit antenna, centered at 54 meters AGL. The emissions below were taken from the 2005 License Renewal RF Statement, using a present FMMODEL reading. KNJQ went into bankruptcy and no longer operates from this site and will not be returning. The antenna system will no longer be shared at this site as the combiner is being removed from the building. There are no other sources of non ionizing radiation at or near this site.

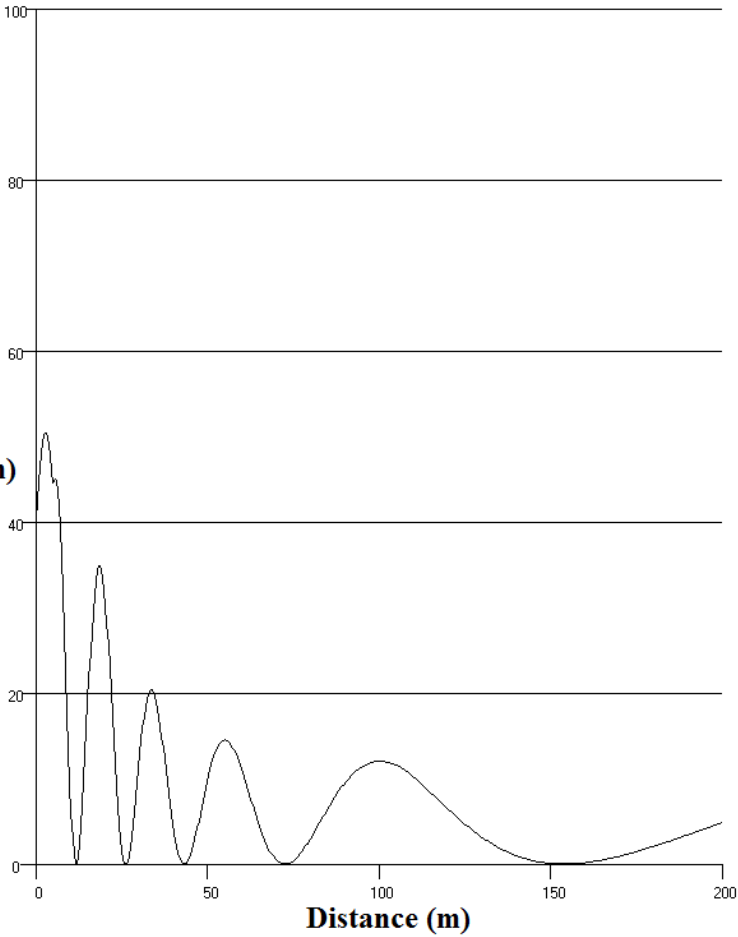
Appendix C of OST Bulletin No. 65 (second edition) specifies the maximum radiation in the 30 MHz to 300 MHz region should be limited to 1000 $\mu\text{W}/\text{cm}^2$ for occupational/controlled exposure and 200 $\mu\text{W}/\text{cm}^2$ for general population/uncontrolled exposure. The application was evaluated with a version of the Commission's own FMMODEL program, acquired from the FCC Office of Engineering and Technology Internet site. The results of these calculations are shown on the "Graph". Since the permitted power density in the FM band is 200 $\mu\text{W}/\text{cm}^2$, as outlined in FCC OET Bulletin No.65, this application complies with the current FCC Standard with regard to uncontrolled exposure to non ionizing radiation.

	Emissions	Percent Occupational	Percent General
KBJF	50.4316 $\mu\text{W}/\text{cm}^2$ @ 2.8meters	5.0 %	25.2%
KUDE	3.27531 $\mu\text{W}/\text{cm}^2$ @ 166meters	0.3%	1.6%
Totals		5.3%	26.8 %

This tower is located on private property and there are three locked gates in which a key must be issued to access, prior to reaching the tower site, which is fully fenced, gated and locked at all times. A tower site survey is attached showing the tower, building and fenced areas. There is a warning sign already located on the locked gate access entrance to the tower and other warning signs placed in appropriate areas inside the compound. All appropriate steps to insure that workers, who climb this tower will not be exposed to levels of non ionizing radiation, will be taken. These steps include a reduction in power or cessation of operation, as appropriate, when work becomes necessary on the tower in the area where the power density levels are in excess of the permitted level for controlled exposure.

Power Density vs Distance

Power
Density
(uW/sq cm)



Modified from FMMODEL, a program written by the FCC Office of Engineering and Technology

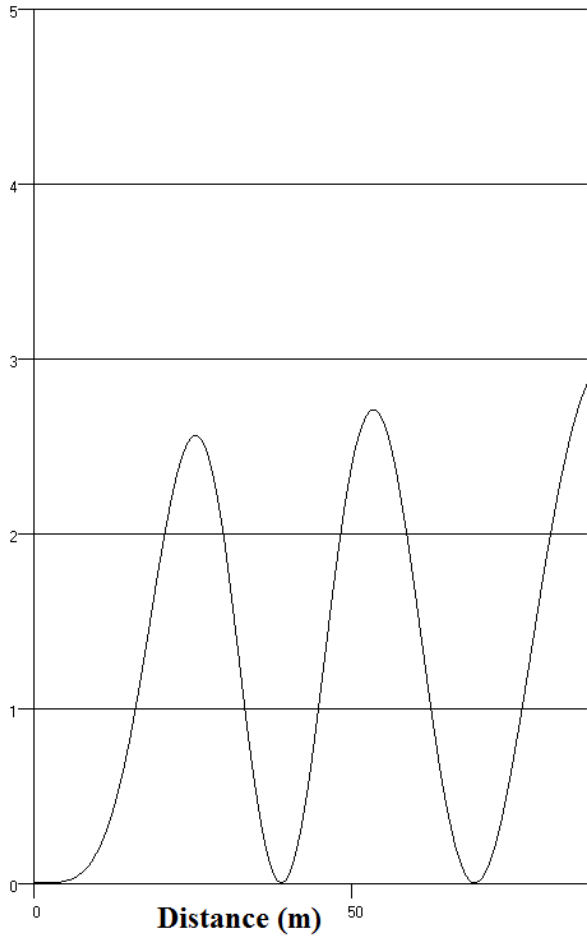
Distance(m):	<input type="text" value="200"/>	Antenna Type:	<input type="text" value="Jampro JAHD Single Panel"/>	KBJF.CP
Horizontal ERP(kW):	<input type="text" value="75"/>	Number of Elements:	<input type="text" value="6"/>	50.4316 uW/sq cm
Vertical ERP(kW):	<input type="text" value="75"/>	Element Spacing:	<input type="text" value="9"/>	at 2.8 Meters
Antenna Height (m):	<input type="text" value="31"/>	5.0% of Occupational Limit 25.2% of General Limit		

Downward Radiofrequency Radiation Study

KUDE Main Facility – this FM Station has not yet returned to ASR 1255962, however A Lease Agreement has been signed with the tower owner and their return is expected. KUDE (FM) Nephi has been evaluated in terms of potential radiofrequency electromagnetic field exposure at ground level in accordance with OET Bulletin No. 65, Evaluating Compliance with FCC Specified Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields (OET Bulletin 65, Second Edition 97-01, August, 1997). KUDE no longer shares a common transmit antenna with KNJQ (FM) 286C, Manti, UT. The Commission's FM Model Power Density Prediction program was employed to determine the Field. Using the Phelps-Dodge "Ring Stub" or Dipole Worst Case EPA Type 1 antenna with 10 sections, 0.5 wavelengths between sections, and the licensed AGL height and ERP of the sum of KUDE (FM) 74 kW, the highest predicted power density 2 meters above ground is less than 2% of the Uncontrolled Standard with a Power Density. See FM Model Power Density vs distance graph attached.

Power Density vs Distance

Power
Density
(uW/sq cm)



Modified from FMMODEL, a program written by the FCC Office of Engineering and Technology

Distance(m):	<input type="text" value="200"/>	Antenna Type:	<input type="text" value="Phelps-Dodge 'Ring Stub' or Dipole (EPA)"/>	KUDE.C
Horizontal ERP(kW):	<input type="text" value="74"/>	Number of Elements:	<input type="text" value="10"/>	3.27531 uW/sq cm
Vertical ERP(kW):	<input type="text" value="0"/>	Element Spacing:	<input type="text" value=".5"/>	at 166 Meters
Antenna Height (m):	<input type="text" value="54"/>	0.3% of Occupational Limit 1.6% of General Limit		