

**April 2011
KXZM(FM) Channel 229B1
Felton, California
RF Exposure Study**

Facilities Proposed

The proposed operation will be on Channel 229B1 (93.7 MHz) with an effective radiated power of 0.42 kilowatts. Operation is proposed with a 1-element circularly-polarized directional antenna, which will be side-mounted on an existing tower located at Mount Thayer. The FCC Antenna Structure Registration Number for the tower is 1223487.

RF Exposure Calculations

There are no other broadcast users of this site. Precise calculations are made only with regard to the levels from this proposal.

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 level power density figures from each antenna.

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

Where: *AdjERP(Watts)* is the maximum lobe effective radiated power times the element pattern factor times the array pattern factor.

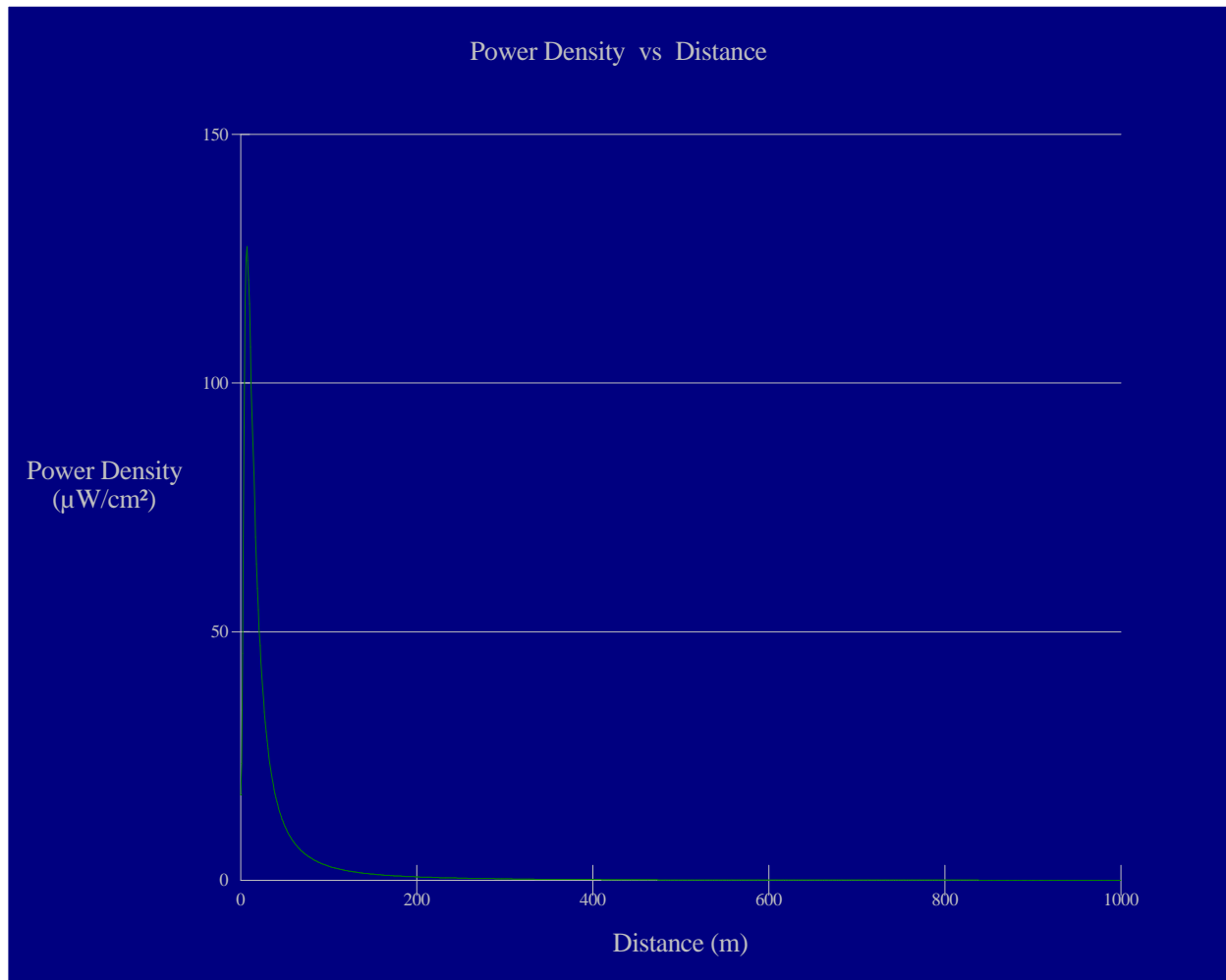
D is the distance in meters from the center of radiation to the calculation point.

Ground level power densities have been calculated for locations extending from the base of the tower to a distance of 1000 meters. Values past this point are increasingly negligible.

Calculations of the power density produced by the proposed antenna system assume a Type 3 element pattern, which is the element pattern for the ERI "rototiller" antenna proposed for use. The highest calculated ground level power density occurs at a distance of 7 meters from the base of the antenna support structure. At this point the power density is calculated to be 127.4 $\mu W/cm^2$,

which is 63.7% of $200 \mu\text{W}/\text{cm}^2$ (the FCC standard for uncontrolled environments).

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 radiation in excess of FCC guidelines.



Ground-Level RF Exposure

OET FMModel

KXZM 229B1 Felton

Antenna Type: ERI "rototiller"
No. of Elements: 1
Element Spacing: 1.0 wavelength

Distance: 1000 meters
Horizontal ERP: 0.420 kW
Vertical ERP: 0.420 kW

Antenna Height: 9 meters AGL

Maximum Calculated Power Density is 127.4 : W/cm² at 7 meters from the antenna structure.

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