January 2011
KPKR(FM)   Channel 239B1
Parker, AZ
RF Exposure Analysis

Facilities Proposed

The proposed operation will be on Channel 239B1 (95.7 MHz) with an effective radiated power of 6.3 kilowatts. Operation is proposed with a 4-element circularly-polarized omni-directional half-wave-spaced antenna. The antenna will be side-mounted on an existing tower located atop Black Metal Peak. This structure does not require an FCC Antenna Structure Registration Number.

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 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.

Because the Commission does not recognize the PSI FM-4-HWS antenna to be utilized by KPKR as a match to the Jampro "double V" antenna for purposes of ground-level RF exposure calculations, calculations of the power density produced by the KPKR antenna system assume a Type 1 element pattern, which is the "worst case" element pattern for a "ring stub" antenna. The highest calculated ground level power density occurs at a distance of 19 meters from the base of

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the antenna support structure. At this point the power density is calculated to be 26.0 µW/cm², which is 13.0% of 200 µW/cm^2 (the FCC standard for uncontrolled environments).

Pursuant to OET Bulletin No. 65, all station personnel and contractors are required to follow appropriate safety procedures before any work is commenced on the antenna tower, including reduction in power or discontinuance of operation before any maintenance work is undertaken.

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Power Density vs Distance
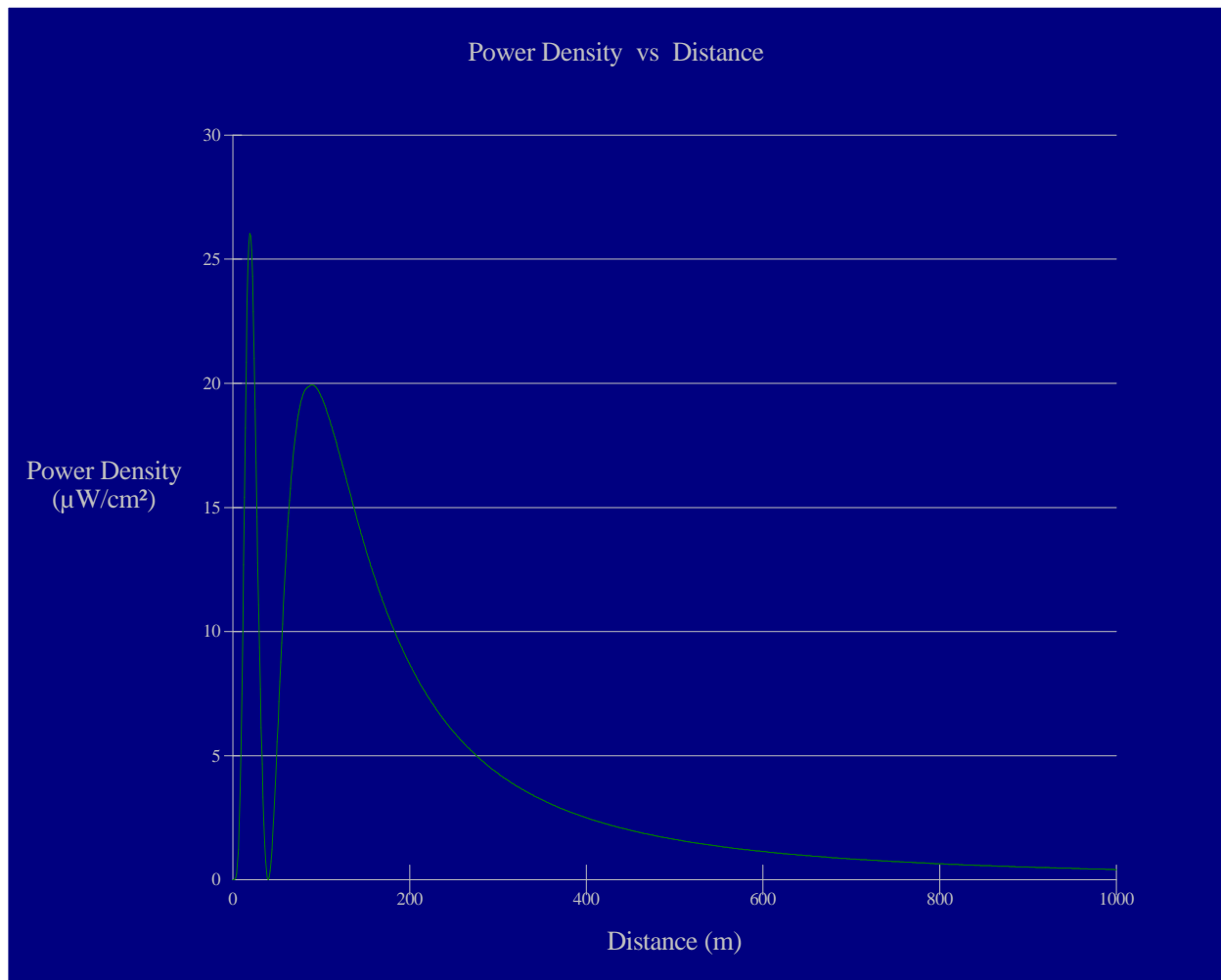
Ground-Level RF Exposure   **OET FMModel**

KPKR 239B1 Parker

Antenna Type:	PSI FM-4-HWS (ring-stub element model assumed for this study)
No. of Elements:	4
Element Spacing:	0.5 wavelength

Distance:	1000 meters
Horizontal ERP:	6.3 kW
Vertical ERP:	6.3 kW

Antenna Height:	25 meters AGL

Maximum Calculated Power Density is 26.0 : W/cm^2 at 19 meters from the antenna structure.

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