R.F Exposure/Safety Calculation for Miltel Communications Transceiver 3A

The E.U.T. is wall or mast mounted. The typical distance between the E.U.T. and the general population is >20 cm.

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Calculation of Maximum Permissible Exposure (MPE)

Based on Section 1.1307(b)(1) Requirements

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(a) FCC limit at 450 MHz is: $\quad f/1500 = 0.3\dfrac{mW}{cm^2}$

Using table 1 of Section 1.1310 limit for general population/uncontrolled exposures, the above level is an average over 30 minutes.

(b) The power density produced by the E.U.T. is

$$S = \frac{P_t G_t}{4\pi R^2}$$

P_t- Transmitted Peak Power (worst case) 18.81 dBm, 76.03 mW

G_T- Antenna Gain , 2.2dBi; 1.66, numeric

R- Distance from Transmitter = 20 cm

(c) Peak power density at worst case continuous transmission:

$$\frac{76.03 \times 1.66}{4\pi(20)^2} = 0.025\frac{mw}{cm^2}$$

(d) This is below the FCC limit.