

Environmental evaluation and exposure limit according to FCC CFR 47part 1, §1.1307, §1.1310

The Wireless PIR Detector, model PMD3M are classified as a mobile device. The Wireless PIR Detector includes transmitter operating according to FCC part 15 subpart C section 15.247 (FHSS)

The FCC limit for power density for general population/uncontrolled exposure is $f/1500 \text{ mW/cm}^2$ for 300 – 1500 MHz frequency range:

$$P = 902.25/1500 = 0.6 \text{ mW/cm}^2$$

The power density **$P \text{ (mW/cm}^2\text{)} = P_T / 4\pi r^2$**

P_T is the transmitted power, which is equal to the peak transmitter output power 25.20 dBm plus maximum antenna gain 0 dBi, the maximum equivalent isotropically radiated power EIRP is

$$P_T = 25.20 \text{ dBm} + 0 \text{ dBi} = 25.20 \text{ dBm} = 331.13 \text{ mW}.$$

The power density at 20 cm (minimum safe distance, required for mobile devices), calculated as follows:

$$\text{Compliance with FCC limit: } 331.13 \text{ mW} / 4\pi (20 \text{ cm})^2 = 0.065 \text{ mW/cm}^2 < 0.6 \text{ mW/cm}^2$$

General public cannot be exposed to dangerous RF level.

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