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

The Wireless Motion Detector is classified as a mobile device. The Wireless Motion 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 mW/cm^2 for 300 – 1500 MHz frequency range:

$$P = 912.75/1500 = 0.61 \text{ mW/cm}^2$$

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

P_T is the transmitted power, which is equal to the peak transmitter output power 14.29 dBm plus maximum antenna gain 3 dBi, the maximum equivalent isotropically radiated power EIRP is

$$P_T = 14.29 \text{ dBm} + 3 \text{ dBi} = 17.29 \text{ dBm} = 53.57 \text{ mW}.$$

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

Compliance with FCC limit: 53.57 mW / 4π (20 cm)^2 = 0.011 mW/cm^2 << 0.61 mW/cm^2

General public cannot be exposed to dangerous RF level.