

**Exposure limit according to §15.247(i) and RSS-102, Safety Code 6**

The PIR detector is classified as a mobile device.

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

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

The RSS-102 limit for power density for general population/uncontrolled exposure in 300 – 6000 MHz frequency range is  $0.02619 \times f^{0.6834} \text{ W/m}^2 = 0.02619 \times 912.75^{0.6834} \text{ W/m}^2 = 0.276 \text{ mW/cm}^2$

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 14.86 dBm plus maximum antenna gain (-1) dBi, the maximum equivalent isotropically radiated power EIRP is

$$P_T = 14.86 \text{ dBm} + (-1) \text{ dBi} = 13.86 \text{ dBm} = 24.3 \text{ mW}.$$

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

$$\begin{aligned} \text{Compliance with FCC limit: } 24.3 \text{ mW} / 4\pi (20 \text{ cm})^2 &= 0.005 \text{ mW/cm}^2 \ll 0.61 \text{ mW/cm}^2 \\ \text{Compliance with IC RSS-102 limit: } 24.3 \text{ mW} / 4\pi (20 \text{ cm})^2 &= 0.005 \text{ mW/cm}^2 \ll 0.276 \text{ mW/cm}^2 \end{aligned}$$

General public cannot be exposed to dangerous RF level.