

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

The glass break detector is classified as a mobile device.

The FCC limit for power density for general population/uncontrolled exposure is 1 mW/cm² for 2.4 GHz.
The RSS-102 limit for power density for general population/uncontrolled exposure in 300 – 6000 MHz frequency range is $0.02619 \times f^{0.6834} \text{ W/m}^2 = 0.02619 \times 2412^{0.6834} \text{ W/m}^2 = 0.536 \text{ mW/cm}^2$

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 16.28 dBm plus maximum antenna gain 3 dBi, the maximum equivalent isotropically radiated power EIRP is

$$P_T = 16.28 \text{ dBm} + 3 \text{ dBi} = 19.28 \text{ dBm} = 85 \text{ mW}.$$

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

$$\begin{aligned} 85 \text{ mW} / 4\pi (20 \text{ cm})^2 &= 0.017 \text{ mW/cm}^2 \ll 1 \text{ mW/cm}^2 \\ 102 \text{ mW} / 4\pi (20 \text{ cm})^2 &= 0.017 \text{ mW/cm}^2 \ll 0.536 \text{ mW/cm}^2 \end{aligned}$$

General public cannot be exposed to dangerous RF level.