

RF exposure evaluation according to §15.247(e)(i) and §1.1307

The calculation was done for power density at 20 cm distance.

Limit for power density for general population/uncontrolled exposure is 1 mW/cm² (for 1500 –100,000 MHz frequency range).

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

P_T is the transmitted power, which is equal to the peak transmitter output power 21.9 dBm plus maximum antenna gain 14 dBi, the maximum equivalent isotropically radiated power EIRP is

$$P_T = 21.9 \text{ dBm} + 14 \text{ dBi} = 35.9 \text{ dBm} = 3890.4 \text{ mW.}$$

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

$$P = 3890.4 \text{ mW} / 4\pi (20 \text{ cm})^2 = 0.77 \text{ mW/cm}^2 < 1 \text{ mW/cm}^2$$

General public cannot be exposed to dangerous RF level.