

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

The Wireless Transceiver is classified as a mobile device. The Wireless Transceiver 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/cm² for 300 – 1500 MHz frequency range:

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

The power density P (mW/cm²) = $P_T / 4\pi r^2$

P_T is the transmitted power, which is equal to the peak transmitter output power 13.17 dBm plus maximum antenna gain -1 dBi, the maximum equivalent isotropically radiated power EIRP is

$$P_T = 15.66 \text{ dBm} + 7 \text{ dBi} = 22.66 \text{ dBm} = 184.5 \text{ mW}.$$

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

$$\text{Compliance with FCC limit: } 16.48 \text{ mW} / 4\pi (20 \text{ cm})^2 = 0.036 \text{ mW/cm}^2 \ll 0.61 \text{ mW/cm}^2$$

General public cannot be exposed to dangerous RF level.