

Environmental evaluation and exposure limit according to FCC CFR 47 part 1, §§1.1307, 1.310.

FCC §1.1310 limit of power density for general population/uncontrolled exposure in 902 – 928 MHz band is 0.61 mW/cm².

The power density calculation is $S = (P_t / 4\pi r^2)$.

Where:

P_t - The transmitted power EIRP (mW)

r - The distance from the unit. (cm)

The limit 1mW/cm² can be calculated from the above based on the following data:

P_t - the transmitted maximum EIRP power = 17.8 dBm = 60.25 mW.

Maximum allowed distance “ r ”, where RF exposure limits may not be exceeded = $\text{SQRT}(60.25/4\pi)$ and is more than 2.2 cm from the tested unit antenna.

Peak power density for distance 20 cm is $P_t/4\pi r^2 = 60.25 \text{ mW}/4\pi \cdot 0.2^2 = 0.01 \text{ mW/cm}^2$. That is less than 0.61 mW/cm² power density limit.