

Exposure limit according to part 1, §1.1310

Limit for power density for general population/uncontrolled exposure is 1 mW/cm².

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

P_T - the transmitted power, which is equal to the transmitter output plus antenna gain.

In our case antenna gain is 7.5 dBi.

Maximal P_T @ carrier frequency 904.2 MHz is equal to 20.00 dBm + 7.5 dBi = 27.5 dBm = 562.34 mW .

$$1(\text{mW/cm}^2) = 562.34 \text{ mW} / 4\pi r^2$$

The minimum allowed distance “r”, where RF exposure limits may not be exceeded, is **6.69 cm**.

$$r = \sqrt{P_T / 4\pi} = \sqrt{562.34 / (4 \times 3.14))} = 6.69 \text{ (cm)}.$$

Maximal P_T @ carrier frequency 915.0 MHz is equal to 20.1 dBm + 7.5 dBi = 27.6 dBm = 575.44 mW .

$$1(\text{mW/cm}^2) = 575.44 \text{ mW} / 4\pi r^2$$

The minimum allowed distance “r”, where RF exposure limits may not be exceeded, is **6.76 cm**.

$$r = \sqrt{P_T / 4\pi} = \sqrt{575.44 / (4 \times 3.14))} = 6.76 \text{ (cm)}.$$

Maximal P_T @ carrier frequency 925.8 MHz is equal to 20.35 dBm + 7.5 dBi = 27.85 dBm = 609.53 mW .

$$1(\text{mW/cm}^2) = 609.53 \text{ mW} / 4\pi r^2$$

The minimum allowed distance “r”, where RF exposure limits may not be exceeded, is **6.96 cm**.

$$r = \sqrt{P_T / 4\pi} = \sqrt{609.53 / (4 \times 3.14))} = 6.96 \text{ (cm)}.$$

The EUT is an outdoor mounted unit, therefore the public cannot be exposed to dangerous RF level.