

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

Limit for power density for general population/uncontrolled exposure is $f/1500$ mW/cm² for 300 – 1500 MHz frequency range:

$$P = 1391/1500 = 0.927 \text{ mW/cm}^2$$

The transceiver is classified as fixed, the calculation was done to confirm a safe distance.

The maximum equivalent isotropically radiated power EIRP is

$P_T = 25.15 \text{ dBm} + 18 \text{ dBi} = 43.15 \text{ dBm} = 20654 \text{ mW}$, where
25.15 dBm is the EUT maximum output power at 1433.5 MHz and 2.5 MHz CBW,
18 dBi – antenna gain.

The minimum safe distance “r”, where RF exposure does not exceed FCC permissible limit, is

$$r = \sqrt{P_T / (P \times 4\pi)} = \sqrt{20654 / (0.927 \times 12.56)} = 42 \text{ cm} \ll 2 \text{ m} .$$

General public cannot be exposed to dangerous RF level.