

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

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

Limit for power density for general population/uncontrolled exposure is 1 mW/cm^2 for 1500 -100000 MHz frequency range.

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

P_T is the transmitted power, which is equal to the peak transmitter output power plus maximum antenna gain. The maximum equivalent isotropically radiated power EIRP is

$$P_T = 30.4 \text{ dBm} + 10.5 \text{ dBi} = 40.9 \text{ dBm} = 12303 \text{ mW, where}$$

30.4 dBm is the EUT maximum output power,
10.5 dBi – antenna gain.

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

$$r = \sqrt{P_T / (P \times 4\pi)} = \sqrt{12303 / 12.56} = 31.3 \approx 32 \text{ cm.}$$

A warning about a safe distance is contained in the user manual.