

RF Exposure Evaluation according to FCC §1.1307

The transceiver is classified as fixed. The calculation was done to confirm a minimum safety distance.

Limit for power density for general population/uncontrolled exposure is 1 mW/cm² (for 1500 –100,000 MHz frequency range).

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 plus maximum antenna gain. The maximum equivalent isotropically radiated power EIRP was obtained in 3660-3665 MHz band:

$$P_T = 24.65 \text{ dBm} + 17 \text{ dBi} = 41.65 \text{ dBm} = 14621.8 \text{ mW}, \text{ where}$$

24.65 dBm is the EUT maximum output power;
17 dBi – antenna gain.

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

$$r = \sqrt{P_T / (P \times 4\pi)} = \sqrt{14621.8 / 12.56} = 34 \text{ cm}.$$

General public will not be exposed to dangerous RF level.