

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 3660-3690 MHz band:

$P_T = 20.36 \text{ dBm} + 21 \text{ dBi} = 41.36 \text{ dBm} = 13677 \text{ mW}$, where
20.36 dBm is the EUT maximum output power;
21 dBi – antenna gain.

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

$$r = \sqrt{P_T / (P \times 4\pi)} = \sqrt{13677 / 12.56} = 33 \text{ cm.}$$

General public will not be exposed to dangerous RF level.