

RF Exposure Evaluation according to RSS-102 and FCC 47 CFR part 1 §1.1307

The transceiver is classified as fixed. The calculation was done for minimum safety distance.

The device operating frequency range is 2412 – 2462 MHz. 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 is

$P_T = 23.72 \text{ dBm} + 19 \text{ dBi} = 42.72 \text{ dBm} = 18707 \text{ mW}$, where
23.72 dBm is the EUT maximum output power, obtained at low frequency 2412 MHz with 64QAM modulation and 32.5 Mbps bit rate, 5 MHz CBW;
19 dBi – external antenna gain.

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

$$r = \sqrt{P_T / (P \times 4\pi)} = \sqrt{18707 / 12.56} = 39 \text{ cm.}$$

General public will not be exposed to dangerous RF level.