

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

The calculation was done to confirm required safe distance for fixed device.

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 maximum equivalent isotropically radiated power (EIRP).

The peak output power is 12 dBm and max antenna gain is 35 dBi, that corresponds to the equivalent isotropically radiated power (EIRP) of

$$12 \text{ dBm} + 35 \text{ dBi} = 47 \text{ dBm}, \text{ which is equal to } 50118 \text{ mW}.$$

This calculation is done for Application for Class II permissive change. According to the applicant statement provided in the Cover letter the transmitter power shall not be increased.

The calculation for original Application gave the result of $8.32 \text{ dBm} + 35 \text{ dBi} = 43.32 \text{ dBm} \rightarrow 21478 \text{ mW}$.

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

$$r = \sqrt{P_T / (P \times 4\pi)} = \sqrt{21478 / 12.56} = 41 \text{ cm}.$$

The information note about safe distance of 50 cm provided in the User Manual on page 18.