

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/cm² 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 10.49 dBm (0.011 W) measured at 57375 MHz in the original application and max antenna gain is 37 dBi, that corresponds to the equivalent isotropically radiated power (EIRP) of

$$10.49 \text{ dBm} + 37 \text{ dBi} = 47.49 \text{ dBm}, \text{ which is equal to } 56105 \text{ mW}.$$

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

$$r = \sqrt{P_T / (P \times 4\pi)} = \sqrt{56105 / 12.56} = 67 \text{ cm}.$$

The information note about safe distance provided in the User Manual.

Note: The contribution of baseband portion operating in 2402-2480 MHz with max 0.29 dBm conducted power and -3.22 dBi antenna may be ignored (reference in RF150930D07 test report of the original application).