RF Exposure Evaluation according to §15.407(f) and §1.1307

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

The device operating frequency ranges are 5250 - 5350 MHz, 5480 – 5715 MHz. Limit for power density for general population/uncontrolled exposure is 1 mW/cm^2 (for 1500 –100,000 MHz frequency range).

The power density $\mathbf{P\ (mW/cm^2) = P_T / 4\pi r^2}$

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 = 7.5 dBm +22.5 dBi = 30 dBm = 1000 mW, where

7.5 dBm is the EUT maximum output power in 5250 - 5350 MHz range and external antenna,
22.5 dBi – antenna assembly gain.

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

$$r = \text{sqrt}\{ P_T / (P \times 4\pi)\} = \text{sqrt}\{1000/ 12.56\} = 8.9 \text{ cm}.$$

General public cannot be exposed to dangerous RF level.