

Exposure limit according to §15.247(b)(5) and §1.1310

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) = $P_T / 4\pi r^2$, where

P_T is the maximum equivalent isotropically radiated power (EIRP), which is equal to the transmitter output power plus maximum antenna gain:

$$P_T = 19.87 \text{ dBm} + 2 \text{ dBi} = 21.87 \text{ dBm} = 153.8 \text{ mW.}$$

The power density at 20 cm (minimum safe distance, required for mobile devices), calculated as follows:

$$153.8 \text{ mW} / 4\pi (20 \text{ cm})^2 = 0.03 \text{ mW/cm}^2 \ll 1 \text{ mW/cm}^2$$

was found far below the limit.

Hence, no safety hazard exists for human being.