

RF exposure evaluation according to §90.1217 and §1.1310

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

Limit for power density for general population/uncontrolled exposure is 1 mW/cm^2 (for 1500 –100,000 MHz frequency range).

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

P_T is the transmitted power, which is equal to the peak transmitter output power 20.8 dBm plus maximum antenna gain 17 dBi, the maximum equivalent isotropically radiated power EIRP is

$$P_T = 20.8 \text{ dBm} + 17 \text{ dBi} = 37.8 \text{ dBm} = 6026 \text{ mW}.$$

The minimum safe distance “r”, where RF exposure does not exceed FCC permissible limit, is 21.9 cm.

$$r = \sqrt{P_T / (P \times 4\pi)} = \sqrt{6026 / 12.56} = 21.9 \text{ cm}$$

The device is mounted outdoors on a pole, hence, no safety hazard exists for human being.