

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

The EasyST transceiver is classified as mobile, the calculation was done for required safe distance.

Limit for power density for general population/uncontrolled exposure is $f/1500$ mW/cm² for 300 – 1500 MHz frequency range:

$$P = 698/1500 = 0.46 \text{ mW/cm}^2$$

The power density P (mW/cm²) = $P_T / 4\pi r^2$, where

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

$$25.94 \text{ dBm} + 15.3 \text{ dBi} = 41.24 \text{ dBm} = 13304.5 \text{ mW}.$$

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

$$r = \sqrt{P_T / (P \times 4\pi)} = \sqrt{13304.5 / (0.46 \times 12.56)} = 48 \text{ cm}.$$

The warning in User Manual about transmitter installation at minimum safe distance from all persons is required.