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

Limit for power density for general population/uncontrolled exposure is f/1500 mW/cm^2 for 300 – 1500 MHz frequency range:

P = 1391/1500 = 0.927 mW/cm^2

1. The **EasyST** transceiver is classified as mobile, the calculation was done for power density at 20 cm distance.

The power density **P (mW/cm^2) = P$_T$ / 4π 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

25.15 dBm + 6 dBi = 31.15 dBm = 1303.2 mW, where

25.15 dBm is the EUT maximum output power,
6 dBi – antenna gain.

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

P = 1303.2 mW / 4π (20 cm)^2 = 0.26 mW/cm^2 < 0.927 mW/cm^2

General public cannot be exposed to dangerous RF level.

2. The **ProST** transceiver is classified as fixed, the calculation was done to confirm a safe distance.

The maximum equivalent isotropically radiated power EIRP is

P$_T$ = 25.15 dBm +18 dBi = 43.15 dBm = 20654 mW, where

25.15 dBm is the EUT maximum output power,
18 dBi – antenna gain.

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

r = sqrt { P$_T$ / (Px4π)} = sqrt {20654 / (0.927 x12.56)} = 42 cm << 2 m .

General public cannot be exposed to dangerous RF level.