

Environmental evaluation and exposure limit according to FCC CFR 47 part 15, §15.247(b)(5) and §1.1307

MPE limit for power density for general population/uncontrolled exposure according to FCC §1.1310 is 1 mW/cm².

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

P_T - transmitted power.

For SPR 5.8GHz TDD Ext:

P_T is equal to transmitter output power 21 dBm reduced by 8.52 dB antenna cable loss plus maximum antenna gain 23 dBi, the maximum equivalent isotropically radiated power (e.i.r.p.) is 35.48 dBm = 3531.83 mW.

$$1(\text{mW/cm}^2) = 3531.83 \text{ mW} / 4\pi r^2$$

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

$$3531.83 \text{ mW} / 4\pi (20 \text{ cm})^2 = 0.7 \text{ mW/cm}^2 < 1 \text{ mW/cm}^2$$

For BSR 5.8GHz TDD V-pol:

P_T is equal to transmitter output power 21 dBm plus maximum antenna gain 11 dBi, the maximum equivalent isotropically radiated power (e.i.r.p.) is 32 dBm = 1584.9 mW.

$$1(\text{mW/cm}^2) = 1584.9 \text{ mW} / 4\pi r^2$$

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

$$1584.9 \text{ mW} / 4\pi (20 \text{ cm})^2 = 0.32 \text{ mW/cm}^2 < 1 \text{ mW/cm}^2$$

For SPR 5.8GHz TDD V-pol:

P_T is equal to transmitter output power 20 dBm plus maximum antenna gain 16 dBi, the maximum equivalent isotropically radiated power (e.i.r.p.) is 36 dBm = 3981.1 mW.

$$1(\text{mW/cm}^2) = 3981.1 \text{ mW} / 4\pi r^2$$

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

$$3981.1 \text{ mW} / 4\pi (20 \text{ cm})^2 = 0.79 \text{ mW/cm}^2 < 1 \text{ mW/cm}^2$$

Public cannot be exposed to dangerous RF level.