RF Exposure information

The AT57-7 is classified as mobile.
The AT57-7 includes BLE , LoRa transmitters operating according to FCC part 15 subpart C section 15.247 (DTS and FHSS).

The RF technologies: LoRaWAN, BLE is not transmitting simultaneously.

The FCC power density limit for general population/uncontrolled exposure is 1 mW/cm^2 for 2.4 GHz for BLE transmitter.

Limit for power density for general population/uncontrolled exposure is 1 mW/cm^2 for 1500 -100000 MHz frequency range.

The FCC power density limit for general population/uncontrolled exposure is 0.609 mW/cm^2 for 914.9 MHz for LoRa transmitter.

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

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

BLE transmitter

P_T is the transmitted power, which is equal to the peak transmitter output power 4.92 dBm plus maximum antenna gain 2.5 dBi, the maximum equivalent isotopically radiated power EIRP is

$$P_T = 6.59\ dBm + 2.5\ dBi = 9.5\ dBm = 8.91\ mW.$$

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

$$8.91\ mW / 4\pi\ (20\ cm)^2 = 0.002\ mW/cm^2 << 1\ mW/cm^2$$

General public cannot be exposed to dangerous RF level.

LoRa transmitter

P_T is the transmitted power, which is equal to the peak transmitter output power 27.94 dBm plus maximum antenna gain 0 dBi, the maximum equivalent isotropically radiated power EIRP is

$$P_T = 29.91 \text{ dBm} + 0 \text{ dBi} = 29.91 \text{ dBm} = 979.5 \text{ mW}.$$

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

$$979.5 \text{ mW} / 4\pi (20 \text{ cm})^2 = 0.19 \text{ mW/cm}^2 << 0.609 \text{ mW/cm}^2$$

General public cannot be exposed to dangerous RF level.