Exposure limit according to §15.247(i)

Sienna MX1 contains also an approved LTE Cat-M1/NBIoT module. Both transmitters cannot transmit simultaneously.

The device is classified as mobile.

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

P = 902/1500 = 0.6 mW/cm^2

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

P_T is the transmitted power, which is equal to the peak transmitter output power in LoRa modulation FHSS mode of 20.17 dBm plus maximum antenna gain 0 dBi, the maximum equivalent isotropically radiated power EIRP is

$$P_T = 20.17 \text{ dBm} + 0 \text{ dBi} = 20.17 \text{ dBm} = 104 \text{ mW}.$$

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

$$104 \text{ mW} / 4\pi (20 \text{ cm})^2 = 0.02 \text{ mW/cm}^2 < 0.6 \text{ mW/cm}^2$$

General public cannot be exposed to dangerous RF level.