The Device is a home sensor designed for IoT applications. The Home sensor is designed to be used as indoor for home or small office.

Per OET Bulletin 65 Edition 97-01, Appendix A Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Uncontrolled Exposure (table 1 B) Power Density 'S' (mW/cm^2)
300-1500	f/1500

Where f is in MHz

The worst-case scenario is provided at 902.3 MHz.

The maximum power density exposure is:

$S = 0.60153$ mW/cm^2, for uncontrolled exposure

LoRa RF conducted power measurement and antenna gain as per ETC test report t29e18a126-FCC section 2.3 are reported below.The worst case value is in bold below

TX	Frequency (MHz)	RF Output **100%** Duty Cycle (dBm)	Max. antenna gain (dBi)	**EIRP 100%** duty Cycle(dBm)	EIRP Duty Cycle (mW)
LoRa 500 KHz	903	17.39	2	19.39	86.896
	909.4	18.13	2	20.13	103.0386
	914.9	**18.24**	**2**	**20.24**	**105.6818**
LoRa 125 KHz	902.3	16.69	2	18.69	73.9605
	908.5	17.07	2	19.07	80.7235
	914.9	17.20	2	19.2	83.1764

For worst case scenario, the highest measured EIRP value for the LoRa transmitter was rounded up to **106 mW**.

Using the highest transmitted power with the equation (4) from the OET bulletin 65, at a distance of 20 cm

$$S = EIRP / (4\pi R^2)$$

Where: S, power density in 'mW/cm^2' (we use the value for the LoRa band of 0.60153 W/m^2)
        EIRP, Effective Isotropic Radiated Power in 'mW'
        R, distance to the center of the radiation of the antenna in 'cm'

The RF exposure from the radio is less than the limit specified as shown below and meets the exemption criteria.

$$0.0211 \text{ mW/cm}^2 = (106mW) / (4x \; \pi \; x20^2)$$

$$S = 0.0211 \text{ mW/cm}^2 \quad <<< 0.60153 \text{ mW/cm}^2$$

In addition, we re-arrange the above equation to determine the minimum safe distance.

$$R = \sqrt{[EIRP / (4\pi S)]}$$

$$3.8 \text{ cm} = \sqrt{[106mW / (4x\,\pi\,x0.60153mw/cm^2)]}$$

R =   3.8 cm, for uncontrolled exposure (rounded up to the first decimal)

The manufacturer manual specified a minimum safe distance of **20cm**.

The device is intended to be installed in uncontrolled area like small offices or home.