Safety Human Exposure

1.1 Radio Frequency Exposure Compliance

1.1.1 Electromagnetic Fields

RESULT: **Pass**

Test Specification

Test item	:	Watchgas Lora module
Identification / Type No.	:	WGLora
FCC ID	:	2BHPW-WGLORA
Test standard	:	CFR47 FCC Part 2: Section 2.1093 CFR47 FCC Part 1: Section 1.1310 FCC KDB Publication 447498 D04 V01

- **Product Classification**

This device defined as a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that the RF source's radiating structure(s) is/are within 20 centimeters of the body of the user.

Max -0.80 dBi for LoRa

- **Radio Frequency Exposure Limit**

For FCC:
According to FCC KDB # 447498 D04 V01, Clause Appendix B and 1.1307(b)(3)(i)(B)
The available maximum time-averaged power or effective radiated power (ERP), whichever is greater, is less than or equal to the threshold P_{th} (mW) described in the following formula. This method shall only be used at separation distances (cm) from 0.5 centimeters to 40 centimeters and at frequencies from 0.3 GHz to 6 GHz (inclusive). P_{th} is given by:

$$P_{th}\ (\text{mW}) = \begin{cases} ERP_{20\ cm}(d/20\ \text{cm})^{x} & d \le 20\ \text{cm} \\ ERP_{20\ cm} & 20\ \text{cm} < d \le 40\ \text{cm} \end{cases}$$

Where

$$x = -\log_{10}\left(\frac{60}{ERP_{20\ cm}\sqrt{f}}\right) \text{ and } f \text{ is in GHz;}$$

and

$$ERP_{20\ cm}\ (\text{mW}) = \begin{cases} 2040f & 0.3\ \text{GHz} \le f < 1.5\ \text{GHz} \\ 3060 & 1.5\ \text{GHz} \le f \le 6\ \text{GHz} \end{cases}$$

d = the separation distance (cm);

a) EUT RF Exposure Evaluation standalone operations

FCC

Mode	Frequency [GHz]	*Measured RF Output Power [dBm]	*Measured RF Output Power [mW]	Antenna Gain [dBi]	ERP [dBm]	ERP [mW]	d [cm]	Limit-P_{th} [mW]
LoRa	0.915	2.65	1.8	-0.80	-0.3	0.93	0.5	8.13

Note:

1. *LoRa RF Output Power: Refer to CN25FRLN 001

- **Conclusion**

The maximum calculations result of above are meet the requirement of Radio Frequency Exposure limit.