



**中认信通**

CHINA CERTIFICATION ICT CO., LTD (DONGGUAN)



## RF EXPOSURE EVALUATION

**Applicant:** Xiamen Milesight IoT Co., Ltd.

**Address:** Building C09, Software Park Phase III, Xiamen 361024, Fujian, China

**FCC ID:** 2AYHY-UG63V2

**Product Name:** LoRaWAN Gateway

**Standard(s):** 47 CFR §1.1310, 47 CFR §2.1091  
447498 D01 General RF Exposure Guidance v06

The above device has been tested and found compliant with the requirement of the relative standards by China Certification ICT Co., Ltd (Dongguan)

**Report Number:** CR231167606-00E

**Date Of Issue:** 2024/2/2

**Reviewed By:** Julie Tan

Title: RF Engineer

*Julie Tan*

**Approved By:** Sun Zhong

Title: Manager

*Sun Zhong*

**Test Laboratory:** China Certification ICT Co., Ltd (Dongguan)

No. 113, Pingkang Road, Dalang Town, Dongguan,  
Guangdong, China

Tel: +86-769-82016888

## Test Facility

The Test site used by China Certification ICT Co., Ltd (Dongguan) to collect test data is located on the No. 113, Pingkang Road, Dalang Town, Dongguan, Guangdong, China.

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 442868, the FCC Designation No. : CN1314.

## Declarations

China Certification ICT Co., Ltd (Dongguan) is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with a triangle symbol “▲”. Customer model name, addresses, names, trademarks etc. are not considered data.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

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## DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
1.0	CR231167606-00E	Original Report	2024/2/2

## 1.1 Applicable Standard

According to subpart §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (Mw/cm <sup>2</sup> )	Averaging Time (minutes)
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f <sup>2</sup> )	30
30–300	27.5	0.073	0.2	30
300–1500	/	/	f/1500	30
1500–100,000	/	/	1.0	30

f = frequency in MHz; \* = Plane-wave equivalent power density;

According to §1.1310 and §2.1091 RF exposure is calculated.

## 1.2 Calculation formula:

### For Power Density:

Prediction of power density at the distance of the applicable MPE limit

$S = PG/4\pi R^2$  = power density (in appropriate units, e.g. mW/cm<sup>2</sup>);

P = power input to the antenna (in appropriate units, e.g., mW);

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

For simultaneously transmit system, the calculated power density should comply with:

$$\sum_i \frac{S_i}{S_{Limit,i}} \leq 1$$

**1.3 EUT Information ▲ :**

Operation Modes	Operation Frequency (MHz)	Max Conducted output power including Tune-up Tolerance (dBm)	Maximum Antenna Gain (dBi)
2.4G WLAN	2412-2462	21	3.17
Lora-FHSS	902.3-927.6	21	-1.87
Lora-DTS	903-926.9	15	-1.87
LTE B2	1850-1910	25	3.14
LTE B4	1710-1755	25	4.76
LTE B5	824-849	25	-4.41
LTE B12	698-716	25	-4.7
LTE B13	777-787	25	-3.63
LTE B66	1710-1780	25	4.76

Note:

1. The Above Parameters were provided by the manufacturer.
2. Please refer to the FCC ID: XMR2023EG915QNA for power about the certified WWAN module.

**1.4 Calculated Data:****Power Density Calculation:**

Operation Modes	Frequency (MHz)	Antenna Gain		Conducted output power including Tune-up Tolerance		Evaluation Distance (cm)	Power Density (mW/cm <sup>2</sup> )	MPE Limit (mW/cm <sup>2</sup> )
		(dBi)	(numeric)	(dBm)	(mW)			
2.4G Wifi	2412-2462	3.17	2.07	21	125.89	20.00	0.052	1.0
Lora-FHSS	902.3-927.6	-1.87	0.65	21	125.89	20.00	0.0163	0.6
Lora-DTS	903-926.9	-1.87	0.65	15	31.62	20.00	0.0041	0.6
LTE B2	1850-1910	3.14	2.06	25	316.23	20.00	0.1297	1.0
LTE B4	1710-1755	4.76	2.99	25	316.23	20.00	0.1883	1.0
LTE B5	824-849	-4.41	0.36	25	316.23	20.00	0.0228	0.55
LTE B12	698-716	-4.7	0.34	25	316.23	20.00	0.0213	0.47
LTE B13	777-787	-3.63	0.43	25	316.23	20.00	0.0273	0.52
LTE B66	1710-1780	4.76	2.99	25	316.23	20.00	0.1883	1.0

**Simultaneous transmission:**

2.4G Wifi, Lora, WWAN can transmission simultaneously:

$$\sum_i \frac{S_i}{S_{Limit,i}} \leq 1$$

$$= S_{2.4G\ Wifi}/S_{limit-2.4G\ Wifi} + S_{Lora}/S_{limit-Lora} + S_{WWAN}/S_{limit\ WWAN}$$

$$= 0.052/1 + 0.0163/0.6 + 0.1883/1$$

$$= 0.27$$

$$< 1.0$$

**Result:** The device meet FCC MPE at 20 cm distance

**===== END OF REPORT =====**