



**中认信通**  
CHINA CERTIFICATION ICT CO., LTD (DONGGUAN)



## TEST REPORT

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

Address: 4/F, NO. 63-2 Wanghai Road, 2nd Software Park, Xiamen, China

**FCC ID:** 2AYHY-UG65DSS

**Product Name:** LoRaWAN Gateway

**Model Number:** UG65-L00AF-915M-EA, UG65-L04AF-915M-EA,  
UG65-915M-EA, UG65-915M, UG65-L00AF-915M-EA-  
H32, UG65-L04AF-915M-EA-H32, UG65-915M-EA-H32,  
UG65-L00AF-915M, UG65-L04AF-915M

**Standard(s):** 47 CFR Part 2  
47 CFR Part 22, Subpart H  
47 CFR Part 24, Subpart E  
47 CFR Part 27  
ANSI C63.26-2015  
KDB 971168 D01 Power Meas License Digital Systems  
v03r01

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

**Report Number:** CR21100088-00CA1

**Date Of Issue:** 2021-10-28

**Reviewed By:** Sun Zhong

*Sun Zhong*

Title: Manager

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

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## 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.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0123.

## 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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## CONTENTS

TEST FACILITY .....	2
DECLARATIONS.....	2
<b>1. GENERAL INFORMATION .....</b>	<b>4</b>
<b>1.1 PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT) .....</b>	<b>4</b>
<b>2. SUMMARY OF TEST RESULTS .....</b>	<b>5</b>
<b>RF EXPOSURE EVALUATION .....</b>	<b>6</b>
<b>MAXIMUM PERMISSIBLE EXPOSURE (MPE) .....</b>	<b>6</b>
<b>APPLICABLE STANDARD.....</b>	<b>6</b>
<b>PROCEDURE .....</b>	<b>6</b>
<b>CALCULATED RESULT.....</b>	<b>7</b>

## 1. GENERAL INFORMATION

### 1.1 Product Description for Equipment under Test (EUT)

<b>EUT Name:</b>	LoRaWAN Gateway
<b>EUT Model:</b>	UG65-L00AF-915M-EA
<b>Multiple Model:</b>	UG65-L04AF-915M-EA,UG65-915M-EA,UG65-915M, UG65-L00AF-915M-EA-H32,UG65-L04AF-915M-EA-H32, UG65-915M-EA-H32, UG65-L00AF-915M, UG65-L04AF-915M
<b>Operation Bands and modes:</b>	WCDMA: Band 2/4/5 LTE: Band 2/4/5/12/13/14/66/71
<b>Modulation Type:</b>	GMSK,8PSK, BPSK, QPSK, 16QAM
<b>Rated Input Voltage:</b>	DC 12V from adapter or DC 48V from PoE
<b>Serial Number:</b>	CR21100088-RF-A1-S1
<b>EUT Received Date:</b>	2021.09.28
<b>EUT Received Status:</b>	Good
Note: The Multiple models are identical with Test model, please refer to the declaration letter for more detail, which was provided by manufacturer.	

### Accessory Information:

Accessory Description	Manufacturer	Model	Parameters
RJ45 Cable	Unknown	Unknown	Un-shield, 1.0 m
Adapter	ORIENTAL HERO ELE.FTY	OH- 1015A1201000U3-UL	Input: 100-240V~50/60Hz 0.35A Output: 12V 1A

## 2. SUMMARY OF TEST RESULTS

Rules	Description of Test	Result
FCC§2.1046; § 22.913 (a); § 24.232 (c); §27.50	RF Output Power	Compliance*
FCC§ 2.1047	Modulation Characteristics	Not Applicable
FCC§ 2.1049; § 22.905 § 22.917; § 24.238; §27.53	Occupied Bandwidth	Compliance*
FCC§ 2.1051, § 22.917 (a); § 24.238 (a); §27.53	Spurious Emissions at Antenna Terminal	Compliance*
FCC§ 22.917 (a); § 24.238 (a); §27.53	Out of band emission, Band Edge	Compliance*
FCC§ 2.1055 § 22.355; § 24.235; §27.54	Frequency stability vs. temperature Frequency stability vs. voltage	Compliance*
FCC§ 2.1053 § 22.917 (a); § 24.238 (a); §27.53	Field Strength of Spurious Radiation	Compliance*
§1.1310 & §2.1091	Maximum Permissible Exposure (MPE)	Compliance

Note:

Compliance\*:

The device was Upgraded version base on the certified device, FCC ID: 2AYHY-UG65, granted on: 2021-03-18.

The difference from original version is:

1. Enabled Lora-DTS frequency band: 903-914.2 MHz by software.
2. Enabled Lora-FHSS frequency band: 902.3-914.9MHz by software.

The above upgraded was declared by manufacturer, please refer to the declaration letter from manufacturer for more detail.

The above upgraded have not affect the test result of WWAN, therefore, the results of WWAN please refer to the original FCC ID report: RXM200911054-00B, which was issued by Bay Area Compliance Laboratories Corp. (Shenzhen) on 2021-02-04.

Per check with power and radiated emission, they are same with the original device, FCC ID: 2AYHY-UG65, FCC ID report: RXM200911054-00B, which was issued by Bay Area Compliance Laboratories Corp. (Shenzhen) on 2021-02-04.

## RF EXPOSURE EVALUATION

### MAXIMUM PERMISSIBLE EXPOSURE (MPE)

#### Applicable Standard

§1.1310 & §2.1091

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 levels in excess of the Commission's guidelines. See §1.1307(b)(1) of this chapter.

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.

#### Procedure

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:

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

**Calculated Result**

Modes	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)			
Lora-DTS 903-914.2 MHz	1.5	1.41	14	25.12	20.00	0.007	0.60
Lora-FHSS 902.3- 914.9MHz	1.5	1.41	14	25.12	20.00	0.007	0.60
WLAN	1.5	1.41	18	63.10	20.00	0.018	1.0
WWAN	1.5	1.41	23.5	223.87	20.00	0.063	0.422

Note: WWAN limit was used is the worst of all frequency bands(LTE B71).

**Simultaneous Transmission:**

The Lora, WLAN and WWAN can transmit simultaneously:

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

$$=S_{Lora}/S_{limit-Lora} + S_{WLAN}/S_{limit-WLAN} + S_{WWAN}/S_{limit-WWAN}$$

$$=0.007/0.60+0.018/1+0.063/0.422$$

$$=0.18$$

$$< 1.0$$

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

\*\*\*\*\* END OF REPORT \*\*\*\*\*