



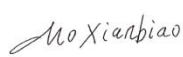
Test Report No.:
FCCSZ2025-0018-H

RF Test Report

FCC ID : 2AYHY-UG65CAT1
EUT : LoRaWAN Gateway
MODEL : See Section 2
BRAND NAME : Milesight
APPLICANT : Xiamen Milesight IoT Co., Ltd.
Classification of Test : N/A

CVC Testing Technology (Shenzhen) Co., Ltd.



Applicant		Name: Xiamen Milesight IoT Co., Ltd. Address: Building C09, Software Park Phase III, Xiamen 361024, Fujian, China	
Manufacturer		Name: Xiamen Milesight IoT Co., Ltd. Address: Building C09, Software Park Phase III, Xiamen 361024, Fujian, China	
Equipment Under Test		Name: LoRaWAN Gateway Model/Type: See Section 2 Brand: Milesight Serial No.: N/A Sampe No.: 2-1	
Date of Receipt.	Feb.2,2025	Date of Testing	Feb.2,2025~Apr.18,2025
Test Specification		Test Result	
FCC Part 2 (Section 2.1091) KDB 447498 D04, IEEE C95.3		PASS	
Evaluation of Test Result	The equipment under test was found to comply with the requirements of the standards applied. Seal of CVC Issue Date: Apr.18,2025		
Compiled by:  <u>Cai Jianyu</u> Name Signature	Reviewed by:  <u>Mo Xianbiao</u> Name Signature	Approved by:  <u>Dong Sanbi</u> Name Signature	
Other Aspects: NONE.			
Abbreviations:OK, Pass= passed Fail = failed N/A= not applicable EUT= equipment, sample(s) under tested			

This test report relates only to the EUT, and shall not be reproduced except in full, without written approval of CVC.



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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
FCCSZ2025-0018-H	Original release	Apr.18,2025



1. GENERAL PRODUCT INFORMATION

PRODUCT	LoRaWAN Gateway
BRAND	Milesight
MODEL	UG65-L09NA-915M-EA(ECA)
ADDITIONAL MODEL	See Section 2
POWER SUPPLY	1、PoE 2、DC 9~24V
OPERATING FREQUENCY	DTS 500kHz, 903MHz~927.5MHz
	Hybrid 125kHz, 902.3MHz~927.8MHz
	WIFI,2412MHz~2462MHz
	LTE B2/B4/B5/B12/B13/B66
I/O PORTS	Refer to user's manual
CABLE SUPPLIED	N/A
Remark: 1. For more detailed features description, please refer to the manufacturer's specifications or the User's Manual. 2. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report. 3. EUT photo refer to the report (Report NO.: FCCSZ2025-0018-EUT).	

2. ADDITIONAL MODEL/TYPE

Main Model No.	Serial Model No.	Difference
UG65-L09NA-915M-EA(ECA)	ND65-L09NA-915M-EA(ECA), UG65,ND65	Differences between main model and serial models are the model no and appearance silkprint.
UG65-L09NA-915M-EA(ECA)	UG65-L09NA-915M-EA, ND65-L09NA-915M-EA, UG65-915M-EA, ND65-915M-EA	1. Differences between main model and serial model are the model no and appearance silkprint. 2. Differences between main model and serial models are that the main model is equipped with an external antenna for LTE while the serial models are equipped with an internal PIFA antenna for LTE.



3. RF EXPOSURE LIMIT

(Option B) According to FCC Part2.1091 and FCC Part1.1307b, 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 is given by:

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

Where:

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

and f is in GHz;

and

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

(Option C) Or using Table 1 and the minimum separation distance (R in meters) from the body of a nearby person for the frequency (f in MHz) at which the source operates, the ERP (watts) is no more than the calculated value prescribed for that frequency. For the exemption in Table 1 to apply, R must be at least $\lambda / 2\pi$, where λ is the free-space operating wavelength in meters. If the ERP of a single RF source is not easily obtained, then the available maximum time-averaged power may be used in lieu of ERP if the physical dimensions of the radiating structure(s) do not exceed the electrical length of $\lambda / 4$ or if the antenna gain is less than that of a half-wave dipole (1.64 linear value).

RF SOURCE FREQUENCY (MHZ)	THRESHOLD ERP(W)
0.3 -1.34	$1,920 R^2$
1.34 - 30	$3,450 R^2 / F^2$
30 -300	$3.83 R^2$
300-1500	$0.0128 R^2 F$
1500-100,000	$19.2 R^2$



4. CLASSIFICATION

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. So, this device is classified as **Mobile Device**.

5. ANTENNA GAIN

The antennas provided to the EUT, please refer to the following table:

Transmitter Circuit	Peak Gain (dBi)	Antenna Type
LORA	2.14	External Antenna
2.4GWIFI	0.06	PCB Antenna

LTE Band	TX	RX	External Antenna Gain	PCB Antenna Gain
B2	1850 to 1910 MHz	1930 to 1990 MHz	1.92dBi	3.90dBi
B4	1710 to 1755 MHz	2110 to 2155 MHz	0.85dBi	1.58dBi
B5	824 to 849 MHz	869 to 894 MHz	-6.58dBi	2.97dBi
B12	699 to 716 MHz	729 to 746 MHz	0.76dBi	3.23dBi
B13	777 to 787 MHz	746 to 756 MHz	-6.58dBi	2.97dBi
B66	1710 to 1780 MHz	2110 to 2200 MHz	0.85dBi	1.58dBi

This is provided by the manufacturer. The laboratory is not responsible for technical data provided by the customer.

6. CALCULATION RESULT OF MAXIMUM CONDUCTED PEAK POWER

The measured conducted Peak Power

Technology	Antenna	Maximum conducted power (dBm)	Maximum Antenna Gain (dBi)	ERP (dBm)	ERP (W)	Part1.1307b Threshold (W)	Ratio
LORA	Ant1	19.16	2.14	19.15	0.0822	1.840	0.045
2.4GWIFI	Ant2	17.71	0.06	15.62	0.0364	3.060	0.012

For External Antenna(LTE)

Technology	Frequency (MHz)	Antenna	Maximum conducted power	Maximum Antenna Gain	ERP (dBm)	ERP (W)	Part1.1307b Threshold (W)	Ratio
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			(dBm)	(dBi)				
LTE B2	1850.7	Ant3	25.00	1.92	24.77	0.2999	3.060	0.098
LTE B4	1710.7	Ant2	25.00	0.85	23.70	0.2344	3.060	0.077
LTE B5	824.7	Ant3	25.00	-6.58	16.27	0.0424	1.682	0.025
LTE B12	699.7	Ant3	25.00	0.76	23.61	0.2296	1.427	0.161
LTE B13	799.5	Ant3	25.00	-6.58	16.27	0.0424	1.631	0.026
LTE B66	1710.7	Ant3	25.00	0.85	23.70	0.2344	3.060	0.077

For PCB Antenna(4G)

Technology	Frequency (MHz)	Antenna	Maximum conducted power (dBm)	Maximum Antenna Gain (dBi)	ERP (dBm)	ERP (W)	Part1.1307b Threshold (W)	Ratio
LTE B2	1850.7	Ant3	25.00	3.90	26.75	0.4732	3.060	0.155
LTE B4	1710.7	Ant2	25.00	1.58	24.43	0.2773	3.060	0.091
LTE B5	824.7	Ant3	25.00	2.97	25.82	0.3819	1.682	0.227
LTE B12	699.7	Ant3	25.00	3.23	26.08	0.4055	1.427	0.284
LTE B13	799.5	Ant3	25.00	2.97	25.82	0.3819	1.631	0.234
LTE B66	1710.7	Ant3	25.00	1.58	24.43	0.2773	3.060	0.091

CALCULATION FOR SIMULTANEOUS TRANSMISSION:

LoRa and 2.4GWIFI,LTE can transmit simultaneously, the formula of calculated the MPE is

$$\sum_{i=1}^a \frac{P_i}{P_{th,i}} + \sum_{j=1}^b \frac{ERP_j}{ERP_{th,j}} + \sum_{k=1}^c \frac{Evaluated_k}{Exposure Limit_k} \leq 1$$

For External Antenna(LTE):Sum of Ratio = 0.045+0.012+0.161=0.218 < 1

For PCB Antenna(LTE):Sum of Ratio = 0.045+0.012+0.284=0.341 < 1

Conclusion:Pass.

----- End of the Report -----



Important

- (1) The test report is invalid without the official stamp of CVC;
- (2) Any part photocopies of the test report are forbidden without the written permission from CVC;
- (3) The test report is invalid without the signatures of Approval and Reviewer;
- (4) The test report is invalid if altered;
- (5) Objections to the test report must be submitted to CVC within 15 days.
- (6) Generally, commission test is responsible for the tested samples only.
- (7) As for the test result “-” or “N” means “not applicable”, “/” means “not test”, “P” means “pass” and “F” means “fail”

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