

Eurofins Wireless Testing Service (Shenzhen) Co., Ltd.

101-104, 1F, A building, Safflower ridge industrial area, Taoyuan street, Nanshan district, Shenzhen
Tel : +86-755-23987770 / Fax : +86-755-26637771

MPE Report

Test Report No.	: SZ2111FS11
Applicant	: Chinotech International Limited
Product Type	: Wireless LoRaWAN Gateway
Trade Name	: Enlighten, ChinoINT
Model Number	: EL-WGW-923, SECIIHWLGE923
Received Date	: Oct. 14, 2021
Test Period	: Nov. 26, 2021
Issue Date	: Dec. 09, 2021
Test Specification	: ANSI / IEEE Std.C95.1-1992 / IEEE Std. 1528-2013
	47 CFR § 2.1091
	47 CFR § 1.1310

1. The test operations have to be performed with cautious behavior, the test results are as attached.
2. The test results are under chamber environment of Eurofins Wireless Testing Service (Shenzhen) Co., Ltd. Eurofins Wireless Testing Service (Shenzhen) Co., Ltd. does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples.
3. The measurement report has to be written approval of Eurofins Wireless Testing Service (Shenzhen) Co., Ltd. It may only be reproduced or published in full. This report shall not be reproduced except in full, without the written approval of Eurofins Wireless Testing Service (Shenzhen) Co., Ltd.
4. This document may be altered or revised by Eurofins Wireless Testing Service (Shenzhen) Co., Ltd. personnel only, and shall be noted in the revision section of the document.

Approved By : Baret Wu
(Baret Wu)

Tested By : Leo Zeng
(Leo Zeng)

Contents

1.	<i>Description of Equipment under Test (EUT).....</i>	3
2.	<i>Human Exposure Assessment</i>	4
3.	<i>RF Output Power.....</i>	5
4.	<i>Test Results.....</i>	6

1. Description of Equipment under Test (EUT)

Applicant	Chinotech International Limited D6B-1, 17/F, Block B, TML Tower, 3 Hoi Shing Road, Tsuen Wan, N.T., HK				
Manufacturer	Enlighten Company Limited Rm 12, 12/F, Blk A, Profit Industrial Building, No.1-15 Kwai Fung Crescent, Kwai Chung, N.T. Hong Kong				
Product Type	Wireless LoRaWAN Sensor				
Trade Name	Enlighten, ChinoINT				
Model Number	EL-WGW-923, SECIHWLGE923				
Models different description	Due to market demand, the models are differ from each other in brand, the PCB layout, circuit, and schematic design are the same.				
FCC ID	2A3GL-SECIHWLGE923				
Frequency Range	Operate Band			Frequency Range (MHz)	
	SRD			902-928	
Antenna Information	ANT	Model	Type	Max. Gain (dBi)	
	ANT-0	HY-057	external antenna	SRD	2.5
Temperature Range	5 ~ 40℃				

The above equipment was tested by Eurofins Wireless Testing Service (Shenzhen) Co., Ltd. For compliance with the requirements set forth in 47 CFR § 2.1091 / 47 CFR § 1.1310. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties

2. *Human Exposure Assessment*

Due to the design and installation of this product, it is not possible to conduct SAR evaluation. This is because client either manufactures or supplies the antenna(s) that will be used in the installation of this product. Therefore, this product will be evaluated as a mobile device per 47 CFR § 1.1310 titled "Radiofrequency radiation exposure limits", generally referred to as MPE limits.

In 47 CFR § 2.1091, paragraph (b) defines a mobile device as "a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 cm is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons. " This product is intended to be installed into a vehicle such that the unit is physically secured at one location. In the installation guide supplied with the product,

Client has made the following statement: "IMPORTANT: To meet the FCC's RF Exposure Guidelines, the antenna should be installed so there is at least 20 cm of separation between the body of the user and nearby persons and the antenna". Based on the installation of the transceiver and the antenna, the transmitters radiating structure is more than 20 cm from the user. Thus, this product is a "mobile device" as defined in section § 2.1091 paragraph (b).

Exposure evaluation
$S = \frac{PG}{4\pi R^2}$ <p>Where</p> <p>S: power density</p> <p>P: power input to the antenna</p> <p>G: power gain of the antenna in the direction of interest relative to an isotropic radiator.</p> <p>R: distance to the center of radiation of the antenna.</p>

3. *RF Output Power*

Operate Band	Frequency (MHz)	Packet Type	Conducted power (dBm)
SRD	915.0	---	12.96
SRD	919.8	---	15.96
SRD	924.6	---	13.61

4. Test Results

Antenna	Band	Frequency (MHz)	Limit (mw)/cm ²	Distance [R] (cm)	Power [P] (dBm)	ANT Gain (dBi)	Numeri c Gain [G]	Duty Cycl e	Power with Duty cycle [TP] (mW)	Power Density [S] (mw)/cm ²
SRD		915.0	0.610	20	12.96	2.5	1.78	1	35.190	0.0070
		919.8	0.613	20	15.96	2.5	1.78	1	70.213	0.0140
		924.6	0.616	20	13.61	2.5	1.78	1	40.871	0.0081

Note:

- 1.Mobile or fixed location transmitters, minimum separation distance is 20 cm, even if calculations indicate MPE distance is less.
- 2.The Numeric Gain calculated by $10^{(\text{ant. Gain(dBi)} / 10)}$.
- 3.Each band max power which perform MPE of any configurations.