

MPE REPORT

Certificate No. : TB200926511
Applicant : Heltec Automation Technology Co., Ltd
Equipment Under Test (EUT)
EUT Name : Heltec LoRa Gateway
Model No. : HT-M01
Serial No. : HT-M02, HT-M02S
Brand Name : ----
Receipt Date : 2020-09-13
Test Date : 2020-09-14 to 2020-10-16
Issue Date : 2020-10-17
Standards : EN 62311: 2008
Conclusions : **PASS**

In the configuration tested, the EUT complied with the standards specified above. The EUT technically complies with the Council Directive 2014/53/EU relating to radio equipment.

Test/Witness Engineer :

Engineer Supervisor :

Engineer Manager :

Jack

IVAN SU

Ray Lai



This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in the report.

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Revision History

| Report No. | Version | Description | Issued Date |
|--------------|---------|-------------------------|-------------|
| TB-HEA175544 | Rev.01 | Initial issue of report | 2020-10-17 |
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1 General Information

1.1 Client Information

| | | |
|---------------------|---|---|
| Applicant | : | Heltec Automation Technology Co., Ltd |
| Address | : | 2-208, Block A, Yusha Building, 64 Hangtian Road, Longtan Industrial Park, Chenghua District, Chengdu, Sichuan, China |
| Manufacturer | : | Heltec Automation Technology Co., Ltd |
| Address | : | 2-208, Block A, Yusha Building, 64 Hangtian Road, Longtan Industrial Park, Chenghua District, Chengdu, Sichuan, China |

1.2 General Description of EUT (Equipment Under Test)

| | | | |
|-------------------------------|---|---|------------------------|
| EUT Name | : | Heltec LoRa Gateway | |
| Model No. | : | HT-M01, HT-M02, HT-M02S | |
| Model different | : | The all model only difference of color. | |
| Product Description | : | Operation Frequency: | LORA: 866.7-869.7MHz |
| | | Antenna Designation: | 3 dBi External Antenna |
| | | EIRP Power: | LORA:12.21 dBm (max) |
| Power Supply | : | Input: DC 5V | |
| Software Version | : | V1.0 | |
| Hardware Version | : | V2 | |
| Connecting I/O Port(S) | : | Please refer to the User's Manual | |

Note:

- (1) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual. This Test Report is EN 62311 for Lora, under RED Article 3.1(a) Healthy.
- (2) More information about test, please refer to the RF test report.

1.3 Test Facility

The testing report were performed by the Shenzhen Toby Technology Co., Ltd., in their facilities located at 1A/F., Bldg.6, Yusheng Industrial Zone, The National Road No.107 Xixiang Section 467, Xixiang, Bao'an, Shenzhen, Guangdong, China. At the time of testing, the following bodies accredited the Laboratory:

CNAS (L5813)

The Laboratory has been accredited by CNAS to ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories for the competence in the field of testing. And the Registration No.: CNAS L5813.

A2LA Certificate No.: 4750.01

The laboratory has been accredited by American Association for Laboratory Accreditation(A2LA) to ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories for the technical competence in the field of Electrical Testing. And the A2LA Certificate No.: 4750.01.FCC Accredited Test Site Number: 854351.

IC Registration No.: (11950A)

The Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing. The site registration: Site# 11950A.

2 Maximum Permissible Exposure

2.1 Standard

EN 62311-Assess Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz - 300 GHz)

2.2 Limit

For frequency range 10 MHz to 10 GHz

The basic restriction at frequencies between 10 MHz and 100 GHz is on localized SAR in the head. Any device with output power below 20 mW cannot produce an exposure exceeding this restriction under the most pessimistic exposure conditions. The basic restriction is 2 W/kg so any unit which supplies less than 20 mW ($=2/100\text{W}$) from its antenna port, averaged over 6 minutes, will meet the basic restriction.

For frequency range 10 GHz to 300 GHz

The most conservative assumption is that all the transmitted power is absorbed within the specified area, therefore any device which supplies less than 20 mW will meet the basic restriction. The average time is equal to $68/f-1.05$ minutes (where f is in GHz) In the frequency range 10 GHz to 300 GHz, the basic restriction is 10 Wm⁻² averaged over any 20 cm² of exposed area with a spatial maximum of 200 Wm⁻² averaged over 1 cm²

3 Test Results Summary

3.1 Transmit Power

Continuously Transmitting
Transmit Power:

LORA:12.21 dBm (max)

More details please refer to RF Test Reports.

3.2 Client Information

RF exposure assessment has been performed below to prove that this unit will not generate the harmful EM emission above the reference level as specified in EC Council Recommendation (1999/519/EC).

3.3 Human Exposure Assessment

| EUT parameter | |
|--|-----------------------------|
| Max output power in Watt(TP) | 12.39dBm (0.01663) |
| Antenna Gain (G) | 3dBi (Numeric gain: 1.9953) |
| Minimum distance in meter (D) (from transmitting structure to the human body) | 0.2m |

| Exposure Evaluation | |
|---|---|
| <p>Given</p> $E = \frac{\sqrt{30 \times G \times TP}}{D}$ <p>Yield $E = \frac{\sqrt{30 \times 1.9953 \times 0.01663}}{0.20} = 4.99 \text{ V/m}$</p> | <p>Where</p> <p>G: numerical gain of transmitting antenna; TP: Transmitted power in watt; D: Distance from the transmitting antenna in meter.</p> |
| <p>Conclusion:</p> <p>E=4.99V/m is significant lower than the 61 V/m as required in Annex III table 2 of EC Council Recommendation (1999/519/EC). This proves that the unit complies with the EN62311 for RF exposure requirement.</p> | |

-----END OF REPORT-----