

# Test Report

**Report No.:** MTi230714015-12E2

**Date of issue:** 2023-12-15

**Applicant:** LEXON

**Product:** LANTERN

**Model(s):** LH94

**FCC ID:** 2ARD3-LH094

Shenzhen Microtest Co., Ltd.

<http://www.mtitest.com>

The test report is only used for customer scientific research, teaching, internal quality control and other purposes, and is for internal reference only.



## Instructions

1. This test report shall not be partially reproduced without the written consent of the laboratory.
2. The test results in this test report are only responsible for the samples submitted
3. This test report is invalid without the seal and signature of the laboratory.
4. This test report is invalid if transferred, altered, or tampered with in any form without authorization.
5. Any objection to this test report shall be submitted to the laboratory within 15 days from the date of receipt of the report.

# Contents

|          |  |           |
|----------|--|-----------|
| <b>1</b> | <b>General Description .....</b>               | <b>5</b>  |
| 1.1      | Description of the EUT .....                   | 5         |
| 1.2      | Description of test modes .....                | 6         |
| 1.3      | Description of support units .....             | 6         |
| <b>2</b> | <b>Measurement uncertainty .....</b>           | <b>6</b>  |
| <b>3</b> | <b>Test facilities and accreditations.....</b> | <b>7</b>  |
| 3.1      | Test laboratory .....                          | 7         |
| <b>4</b> | <b>List of test equipment .....</b>            | <b>8</b>  |
| <b>5</b> | <b>Test result .....</b>                       | <b>9</b>  |
| 5.2      | Test setup .....                               | 10        |
| 5.3      | Test Procedures.....                           | 10        |
| 5.4      | Equipment Approval Considerations .....        | 11        |
| 5.5      | Test results .....                             | 12        |
|          | <b>Photographs of the Test Setup.....</b>      | <b>13</b> |
|          | <b>Photographs of the EUT.....</b>             | <b>13</b> |

| <b>Test Result Certification</b> |  |
|----------------------------------|--|
| <b>Applicant:</b>                | LEXON  |
| <b>Address:</b>                  | 125 avenue des Champs-Élysées 75008 Paris France |
| <b>Manufacturer:</b>             | LEXON  |
| <b>Address:</b>                  | 125 avenue des Champs-Élysées 75008 Paris France |
| <b>Product description</b>       |  |
| <b>Product name:</b>             | LANTERN  |
| <b>Trademark:</b>                | LEXON  |
| <b>Model name:</b>               | LH94   |
| <b>Series Model:</b>             | N/A  |
| <b>Standards:</b>                | FCC CFR 47 PART 1, § 1.1310                      |
| <b>Test method:</b>              | KDB 680106 D01 Wireless Power Transfer v04       |
| <b>Date of Test</b>              |  |
| <b>Date of test:</b>             | 2023-09-22 to 2023-12-15                         |
| <b>Test result:</b>              | Pass   |

**Test Engineer :**


 \_\_\_\_\_  
 (Maleah Deng)

**Reviewed By :**


 \_\_\_\_\_  
 (Leon Chen)

**Approved By :**


 \_\_\_\_\_  
 (Tom Xue)

## 1 General Description

### 1.1 Description of the EUT

|                          |   |
|--------------------------|---|
| Product name:            | LANTERN   |
| Model name:              | LH94  |
| Series Model:            | N/A   |
| Model difference:        | N/A   |
| Electrical rating:       | Input: DC 9V 2A<br>Light power: 5W max<br>Wireless Output: 5W/7.5W/10W/15W Max<br>Battery: DC 3.7V 5000 mAh |
| Accessories:             | Cable:<br>USB-C to USB-C cable  |
| Hardware version:        | MPS-946-V6.3  |
| Software version:        | MPS-946-V1.0  |
| Test sample(s) number:   | MTi230714015-12S1001  |
| <b>RF specification:</b> |   |
| Operation frequency:     | 115 kHz – 205 kHz   |
| Modulation type:         | ASK   |
| Antenna type:            | Coil Antenna  |

## 1.2 Description of test modes

All the test modes were carried out with the EUT in normal operation, the final test mode of the EUT was the worst test mode for emission test, which was shown in this report and defined as:

| No.   | Emission test modes            |
|-------|--------------------------------|
| Mode1 | Charging+Wireless Output(5W)   |
| Mode2 | Charging+Wireless Output(7.5W) |
| Mode3 | Charging+Wireless Output(10W)  |
| Mode4 | Charging+Wireless Output(15W)  |
| Mode5 | Wireless Output(5W)            |
| Mode6 | Stand by                       |

**The test data only show worst test mode: Mode 4**

## 1.3 Description of support units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

| Support equipment list   |              |                |              |
|--------------------------|--------------|----------------|--------------|
| Description              | Model        | Serial No.     | Manufacturer |
| Mobile phone             | Galaxy S9+   | R28K34V79NT    | SAMSUNG      |
| HUAWEI QUICK CHARGE(65W) | HW-200200ZP1 | JN67LSN7N03451 | HUAWEI       |

| Support cable list |            |      |    |
|--------------------|------------|------|----|
| Description        | Length (m) | From | To |
| /                  | /          | /    | /  |

## 2 Measurement uncertainty

| Parameter                                | Expanded Uncertainty |
|--|----------------------|
| Magnetic field measurement (9kHz~30MHz)  | ± 18.6%              |
| Electric field measurements (9kHz~30MHz) | ± 18.6%              |

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

### 3 Test facilities and accreditations

#### 3.1 Test laboratory

|                        |   |
|------------------------|---|
| Test laboratory:       | Shenzhen Microtest Co., Ltd.  |
| Test site location:    | 101, No. 7, Zone 2, Xinxing Industrial Park, Fuhai Avenue, Xinhe Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China |
| Telephone:             | (86-755)88850135  |
| Fax:                   | (86-755)88850136  |
| CNAS Registration No.: | CNAS L5868  |
| FCC Registration No.:  | 448573  |

#### 4 List of test equipment

| No.      | Equipment                                    | Manufacturer | Model    | Serial No. | Cal. date  | Cal. Due   |
|----------|--|--------------|----------|------------|------------|------------|
| MTi-E115 | Electric and Magnetic Field Probe – Analyzer | Narda        | EHP-200A | 101166     | 2023/08/14 | 2026/08/13 |



## 5 Test result

### 5.1.1 Requirement

§1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in §1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of FCC part 2.1093 of this chapter.

**Table 1 to §1.1310(e)(1) - Limits for Maximum Permissible Exposure (MPE)**

| Frequency range (MHz)   | Electric field strength (V/m) | Magnetic field strength (A/m) | Power density (mW/cm <sup>2</sup> ) | Averaging time (minutes) |
|---|-------------------------------|-------------------------------|-------------------------------------|--------------------------|
| <b>(i) Limits for Occupational/Controlled Exposure</b>          |                               |                               |                                     |                          |
| 0.3-3.0   | 614                           | 1.63                          | *(100)                              | ≤6                       |
| 3.0-30  | 1842/f                        | 4.89/f                        | *(900/f <sup>2</sup> )              | <6                       |
| 30-300  | 61.4                          | 0.163                         | 1.0                                 | <6                       |
| 300-1500  |                               |                               | f/300                               | <6                       |
| 1500-100000   |                               |                               | 5                                   | <6                       |
| <b>(ii) Limits for General Population/Uncontrolled Exposure</b> |                               |                               |                                     |                          |
| 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                      |
| 1500-100000   |                               |                               | 1.0                                 | <30                      |

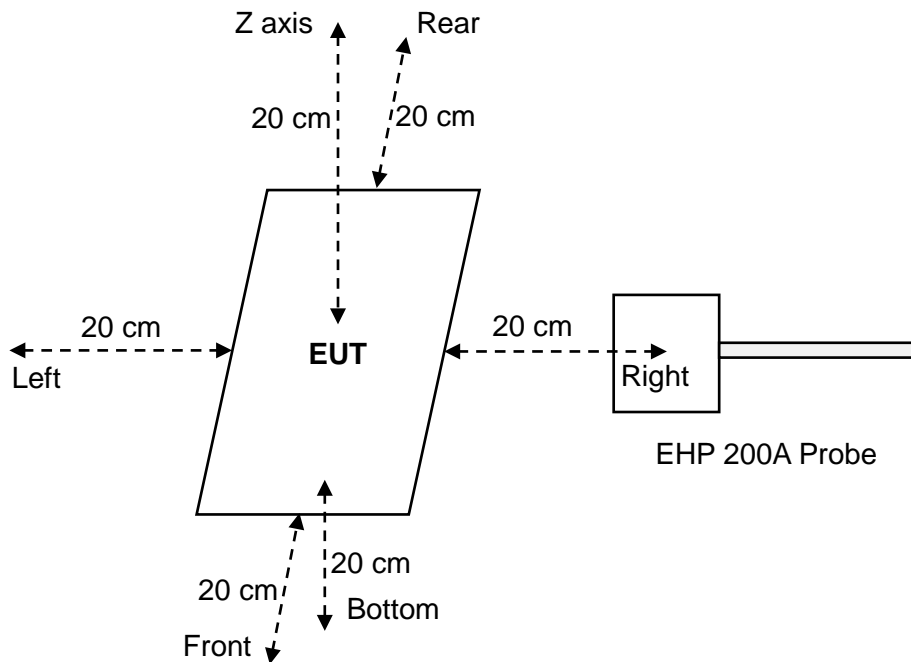
f = frequency in MHz

\* = Plane-wave equivalent power density

**Note 1:** Occupational/controlled exposure limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure.

**Note 2:** General population/uncontrolled exposure limits apply in situations in which the general public may be exposed, or in which persons who are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

## 5.2 Test setup



## 5.3 Test Procedures

- The RF exposure test was performed in anechoic chamber.
- E and H-field measurements should be made with these devices considered to meet the § 2.1091-Mobile conditions (“generally be used in such a way that a separation distance of at least 20 centimeters is normally maintained between the RF source's radiating structure(s) and [the nearest person]”).
- The highest emission level was recorded and compared with limit.
- The EUT was measured according to the dictates of KDB 680106 D01 Wireless Power Transfer v04.

#### 5.4 Equipment Approval Considerations

| Requirement   | Device   |
|---|--|
| 1. The power transfer frequency is below 1 MHz.   | Yes. The operating frequencies are: 115 kHz – 205 kHz                      |
| 2. The output power from each transmitting element (e.g., coil) is less than or equal to 15 watts.  | Yes. The maximum output power is: 15W                                      |
| 3. A client device providing the maximum permitted load is placed in physical contact with the transmitter (i.e., the surfaces of the transmitter and client device enclosures need to be in physical contact)  | Yes. The client device is placed directly in contact with the transmitter. |
| 4. Only § 2.1091-Mobile exposure conditions apply (i.e., this provision does not cover § 2.1093-Portable exposure conditions).  | Yes. Mobile exposure conditions only.                                      |
| 5. The E-field and H-field strengths, at and beyond 20 cm surrounding the device surface, are demonstrated to be less than 50% of the applicable MPE limit, per KDB 447498, Table 1. These measurements shall be taken along the principal axes of the device, with one axis oriented along the direction of the estimated maximum field strength, and for three points per axis or until a 1/d (inverse distance from the emitter structure) field strength decay is observed. Symmetry considerations may be used for test reduction purposes. The device shall be operated in documented worst-case compliance scenarios (i.e., the ones that lead to the maximum field components), and while all the radiating structures (e.g., coils or antennas) that by design can simultaneously transmit are energized at their nominal maximum power. | Yes.<br>See the test result in item 5.5.                                   |
| 6. For systems with more than one radiating structure, the conditions specified in (5) must be met when the system is fully loaded (i.e., clients absorbing maximum power available), and with all the radiating structures operating at maximum power at the same time, as per design conditions. If the design allows one or more radiating structures to be powered at a higher level while other radiating structures are not powered, then those cases must be tested as well. For instance, a device may use three RF coils powered at 5 W, or one coil powered at 15 W: in this case, both scenarios shall be tested.  | Yes. The EUT has a radiating structure and all scenarios have been tested. |

**5.5 Test results**
**Test condition 1: Mode 4 operating mode with client device (1 % battery status of client device)**

| Probe Position | E-field (V/m) |       |                | H-field (A/m) |       |                |
|----------------|---------------|-------|----------------|---------------|-------|----------------|
|                | Measurement   | Limit | Percentage (%) | Measurement   | Limit | Percentage (%) |
| Z axis         | 0.4389        | 614   | 0.10%          | 0.0478        | 1.63  | 8.68%          |
| Left           | 0.4419        |       |                | 0.0759        |       |                |
| Right          | 0.5557        |       |                | 0.0690        |       |                |
| Front          | 0.3769        |       |                | 0.1415        |       |                |
| Rear           | 0.6275        |       |                | 0.1160        |       |                |
| bottom         | 0.3651        |       |                | 0.1144        |       |                |

**Test condition 2: Mode 4 operating mode with client device (50 % battery status of client device)**

| Probe Position | E-field (V/m) |       |                     | H-field (A/m) |       |                     |
|----------------|---------------|-------|---------------------|---------------|-------|---------------------|
|                | Measurement   | Limit | Max. Percentage (%) | Measurement   | Limit | Max. Percentage (%) |
| Z axis         | 0.4263        | 614   | 0.10%               | 0.0577        | 1.63  | 8.37%               |
| Left           | 0.4396        |       |                     | 0.085         |       |                     |
| Right          | 0.5514        |       |                     | 0.0705        |       |                     |
| Front          | 0.3605        |       |                     | 0.1365        |       |                     |
| Rear           | 0.6448        |       |                     | 0.1227        |       |                     |
| Bottom         | 0.3531        |       |                     | 0.1051        |       |                     |

**Test condition 3: Mode 4 operating mode with client device (99 % battery status of client device)**

| Probe Position | E-field (V/m) |       |                | H-field (A/m) |       |                |
|----------------|---------------|-------|----------------|---------------|-------|----------------|
|                | Measurement   | Limit | Percentage (%) | Measurement   | Limit | Percentage (%) |
| Z axis         | 0.438         | 614   | 0.10%          | 0.0467        | 1.63  | 8.44%          |
| Left           | 0.4331        |       |                | 0.0738        |       |                |
| Right          | 0.5396        |       |                | 0.0667        |       |                |
| Front          | 0.3578        |       |                | 0.1375        |       |                |
| Rear           | 0.6087        |       |                | 0.1068        |       |                |
| bottom         | 0.3469        |       |                | 0.1081        |       |                |

## Photographs of the Test Setup

See the Appendix - Test Setup Photos.

## Photographs of the EUT

See the Appendix - EUT Photos.

**----End of Report----**