



# **FCC TEST REPORT**

## **FCC ID: 2AP2N-MAG5000W**

On Behalf of

**Shenzhen Esorun Technology Co., LTD**

**Magnetic Wireless Power Bank**

**Model No.: Mag5000W**

Prepared for : Shenzhen Esorun Technology Co., LTD  
Address : 101, Dormitory Building, No. 1215, Guihua Community Guanguang Road, Guanlan Street, Longhua District, Shenzhen, China

Prepared By : Shenzhen Alpha Product Testing Co., Ltd.  
Address : Building i, No.2, Lixin Road, Fuyong Street, Bao'an District, 518103, Shenzhen, Guangdong, China

Report Number : A2106137-C01-R03  
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Date of Report : July 15, 2021  
Version Number : V0

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## TEST REPORT DECLARATION

Applicant : Shenzhen Esorun Technology Co., LTD  
Address : 101, Dormitory Building, No. 1215, Guihua Community Guanguang Road, Guanlan Street, Longhua District, Shenzhen, China  
Manufacturer : Shenzhen Esorun Technology Co., LTD  
Address : 101, Dormitory Building, No. 1215, Guihua Community Guanguang Road, Guanlan Street, Longhua District, Shenzhen, China  
EUT Description : Magnetic Wireless Power Bank  
(A) Model No. : Mag5000W  
(B) Trademark : **ESORUN**

Measurement Standard Used:

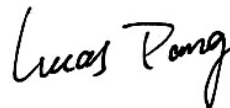
**FCC CFR Title 47 Part 15 Subpart C**

**FCC KDB 680106 D01 RF Exposure Wireless Charging App v03r01**

The device described above is tested by Shenzhen Alpha Product Testing Co., Ltd. to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The test results are contained in this test report and Shenzhen Alpha Product Testing Co., Ltd. is assumed full responsibility for the accuracy and completeness test. Also, this report shows that the EUT is technically compliant with the KDB 680106 D01 requirements.

This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Shenzhen Alpha Product Testing Co., Ltd.

Tested by (name + signature).....: Lucas Pang  
Project Engineer



Approved by (name + signature).....: Simple Guan  
Project Manager



Date of issue.....: July 15, 2021

**Revision History**

| Revision | Issue Date    | Revisions              | Revised By |
|----------|---------------|------------------------|------------|
| V0       | July 15, 2021 | Initial released Issue | Lucas Pang |

## 1. Test Result Summary

| Requirement | CFR 47 Section            | Result |
|-------------|---------------------------|--------|
| RF EXPOSURE | §1.1307(b)(1) & KDB680106 | PASS   |

**Note:**

1. *PASS: Test item meets the requirement.*
2. *Fail: Test item does not meet the requirement.*
3. *N/A: Test case does not apply to the test object.*
4. *The test result judgment is decided by the limit of test standard.*

## 2. EUT Description

### 2.1. Description of Device (EUT)

|                        |   |                                                                                                                                           |
|------------------------|---|-------------------------------------------------------------------------------------------------------------------------------------------|
| EUT Name               | : | Magnetic Wireless Power Bank                                                                                                              |
| Model No.              | : | Mag5000W                                                                                                                                  |
| DIFF.                  | : | N/A                                                                                                                                       |
| Trademark              | : | <b>ESORUN</b>                                                                                                                             |
| Power supply           | : | Micro Input : 5V =2.0A<br>Type-C Input : 5V =2.0A<br>USB Output: 5V=2.0A<br>Wireless Output : 5V =1.0A(5W)<br>Total output power: Max 10W |
| Operation frequency    | : | 115~205KHz                                                                                                                                |
| Modulation             | : | MSK                                                                                                                                       |
| Antenna Type           | : | Coil Antenna, Maximum Gain is 0dBi (This value is supplied by applicant).                                                                 |
| Software version       | : | V1.0                                                                                                                                      |
| Hardware version       | : | V1.0                                                                                                                                      |
| Intend use environment | : | Residential, commercial and light industrial environment                                                                                  |

| Conditions requirement                                                                                                                                                                                                                                                                               | Answers                                                                                                                                                                        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power transfer frequency is less than 1 MHz.                                                                                                                                                                                                                                                         | After measuring the product the transfer frequency is 0.115-0.205MHz                                                                                                           |
| Output power from each primary coil is less than or equal to 15 watts.                                                                                                                                                                                                                               | After measuring the product the each primary coil power is 5 watts                                                                                                             |
| The system may consist of more than one source primary coils, charging one or more clients. If more than one primary coils present, the coil pairs may be powered on at the same time.                                                                                                               | The transfer system includes only single primary.                                                                                                                              |
| Client device is placed directly in contact with the transmitter.                                                                                                                                                                                                                                    | Client device is placed directly in contact with the transmitter.                                                                                                              |
| Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).                                                                                                                                                                                                    | Can be used as a fixed device or as a portable device                                                                                                                          |
| The aggregate H-field strengths anywhere at or beyond 15 cm surrounding the device, and 20 cm away from the surface from all coils that by design can simultaneously transmit, and while those coils are simultaneously energized, are demonstrated to be less than 50% of the applicable MPE limit. | After measuring the product the Max H-field Strength is 0.812A/m Far less than 50% of the MPE limit; the Max E-field Strength is 2.099 V/m Far less than 50% of the MPE limit. |

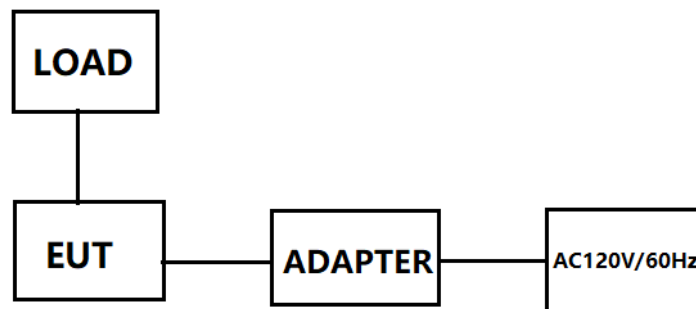
## 2.2. Accessories of Device (EUT)

Accessories1 : Cable  
 Manufacturer : Shenzhen Esorun Technology Co., LTD  
 Model : /  
 Ratings : /

## 2.3. Tested Supporting System Details

| No. | Description   | Manufacturer | Model  | Serial Number | Certification |
|-----|---------------|--------------|--------|---------------|---------------|
| 1   | Wireless load | --           | --     | --            | --            |
| 2   | Adapter       | --           | XIAOMI | --            | --            |

## 2.4. Block Diagram of Connection between EUT and Simulators



## 2.5. Description of Test Modes

| Channel | Frequency (KHz) |
|---------|-----------------|
| 1       | 115             |

## 2.6. Test Conditions

| Items              | Required  | Actual |
|--------------------|-----------|--------|
| Temperature range: | 15-35℃    | 24℃    |
| Humidity range:    | 25-75%    | 56%    |
| Pressure range:    | 86-106kPa | 98kPa  |



## 2.7. Test Facility

Shenzhen Alpha Product Testing Co., Ltd

Building i, No.2, Lixin Road, Fuyong Street, Bao'an District, 518103, Shenzhen, Guangdong, China

June 21, 2018 File on Federal Communication Commission  
Registration Number: 293961

July 15, 2019 Certificated by IC  
Registration Number: CN0085

## 2.8. Measurement Uncertainty

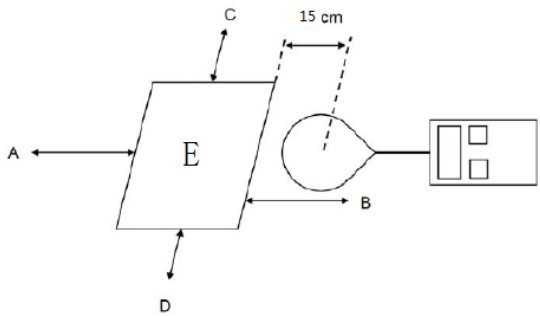
(95% confidence levels,  $k=2$ )

| Item                                          | Uncertainty |
|-----------------------------------------------|-------------|
| Uncertainty for H-Field                       | 2.39dB      |
| Uncertainty for E-Field                       | 2.45dB      |
| Uncertainty for conducted RF Power            | 0.65dB      |
| Uncertainty for temperature                   | 0.2°C       |
| Uncertainty for humidity                      | 1%          |
| Uncertainty for DC and low frequency voltages | 0.06%       |

### 3. Test Results and Measurement Data

#### 3.1. RF Exposure Test

##### 3.1.1. Test Specification

|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Test Requirement:</b> | <b>FCC Rules and Regulations KDB680106</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Test Method:</b>      | §1.1307(b)(1) & KDB680106                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Limits:</b>           | According to §1.1307(b)(1), 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 level in excess of the Commission's guidelines. According to §1.1310 and §2.1093 RF exposure is calculated. According KDB680106 D01v03r01: RF Exposure Wireless Charging.                                                                                                                                                            |
| <b>Test Setup:</b>       |  <p>E to position is 20cm.</p>                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Test Mode:</b>        | Charging + Transmitting Mode                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Test Procedure:</b>   | <ol style="list-style-type: none"> <li>1. The RF exposure test was performed on 80cm insulated table in anechoic chamber.</li> <li>2. The measurement probe was placed at test distance (15cm) which is between the edge of the charger and the geometric centre of probe.</li> <li>3. The highest emission level was recorded and compared with limit as soon as measurement of each points (A, B, C, D, E) were completed.</li> <li>4. The EUT were measured according to the dictates of KDB 680106D01v03r01.</li> </ol> |
| <b>Test Result:</b>      | PASS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

### 3.1.2. Test Instruments

| Item | Equipment                      | Manufacturer | Model No.        | Serial No. | Last Cal.  | Cal. Interval |
|------|--------------------------------|--------------|------------------|------------|------------|---------------|
| 1    | Exposure Level Tester          | narda        | ELT-400          | N-0231     | 2020.09.02 | 1 Year        |
| 2    | Magnetic field probe 100cm2    | narda        | ELT probe 100cm2 | M0675      | 2020.09.02 | 1 Year        |
| 3    | Isotropic Electric Field Probe | narda        | EP-601           | 511WX60706 | 2020.09.02 | 1 Year        |

### 3.1.3. Test data

For Full load mode:

E-Field Strength at 0 cm for position A,B,C,D,E from the edges surrounding the EUT (V/m)

| Frequency Range (MHz) | Test Position A | Test Position B | Test Position C | Test Position D | Test Position E | Limit (50%) (V/m) | Limits Test (V/m) |
|-----------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|-------------------|
| 0.115-0.205           | 2.099           | 2.032           | 1.990           | 2.035           | 1.950           | 307               | 614               |

E-Field Strength at 15 cm for position A,B,C,D 20cm for position E from the edges surrounding the EUT (V/m)

| Frequency Range (MHz) | Test Position A | Test Position B | Test Position C | Test Position D | Test Position E | Limit (50%) (V/m) | Limits Test (V/m) |
|-----------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|-------------------|
| 0.115-0.205           | 1.613           | 1.467           | 1.534           | 1.498           | 1.449           | 307               | 614               |

H-Filed Strength at 0 cm for position A,B,C,D,E from the edges surrounding the EUT (A/m)

| Frequency Range (MHz) | Test Position A | Test Position B | Test Position C | Test Position D | Test Position E | Limit (50%) (A/m) | Limits Test (A/m) |
|-----------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|-------------------|
| 0.115-0.205           | 0.812           | 0.781           | 0.781           | 0.766           | 0.742           | 0.815             | 1.63              |

H-Filed Strength at 15 cm for position A,B,C,D 20cm for position E from the edges surrounding the EUT (A/m)

| Frequency Range (MHz) | Test Position A | Test Position B | Test Position C | Test Position D | Test Position E | Limit (50%) (A/m) | Limits Test (A/m) |
|-----------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|-------------------|
| 0.115-0.205           | 0.805           | 0.724           | 0.720           | 0.706           | 0.726           | 0.815             | 1.63              |

For Half load mode:

E-Field Strength at 0 cm for position A,B,C,D,E from the edges surrounding the EUT (V/m)

| Frequency Range (MHz) | Test Position A | Test Position B | Test Position C | Test Position D | Test Position E | Limit (50%) (V/m) | Limits Test (V/m) |
|-----------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|-------------------|
| 0.115-0.205           | 1.715           | 1.624           | 1.636           | 1.559           | 1.629           | 307               | 614               |

E-Field Strength at 15 cm for position A,B,C,D 20cm for position E from the edges surrounding the EUT (V/m)

| Frequency Range (MHz) | Test Position A | Test Position B | Test Position C | Test Position D | Test Position E | Limit (50%) (V/m) | Limits Test (V/m) |
|-----------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|-------------------|
| 0.115-0.205           | 1.481           | 1.418           | 1.448           | 1.335           | 1.345           | 307               | 614               |

H-Filed Strength at 0 cm for position A,B,C,D,E from the edges surrounding the EUT (A/m)

| Frequency Range (MHz) | Test Position A | Test Position B | Test Position C | Test Position D | Test Position E | Limit (50%) (A/m) | Limits Test (A/m) |
|-----------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|-------------------|
| 0.115-0.205           | 0.808           | 0.763           | 0.769           | 0.730           | 0.765           | 0.815             | 1.63              |

H-Filed Strength at 15 cm for position A,B,C,D 20cm for position E from the edges surrounding the EUT (A/m)

| Frequency Range (MHz) | Test Position A | Test Position B | Test Position C | Test Position D | Test Position E | Limit (50%) (A/m) | Limits Test (A/m) |
|-----------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|-------------------|
| 0.115-0.205           | 0.691           | 0.660           | 0.674           | 0.618           | 0.623           | 0.815             | 1.63              |

For Null load mode:

E-Field Strength at 0 cm for position A,B,C,D,E from the edges surrounding the EUT (V/m)

| Frequency Range (MHz) | Test Position A | Test Position B | Test Position C | Test Position D | Test Position E | Limit (50%) (V/m) | Limits Test (V/m) |
|-----------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|-------------------|
| 0.115-0.205           | 1.613           | 1.533           | 1.506           | 1.532           | 1.553           | 307               | 614               |

E-Field Strength at 15 cm for position A,B,C,D 20cm for position E from the edges surrounding the EUT (V/m)

| Frequency Range (MHz) | Test Position A | Test Position B | Test Position C | Test Position D | Test Position E | Limit (50%) (V/m) | Limits Test (V/m) |
|-----------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|-------------------|
| 0.115-0.205           | 1.335           | 1.163           | 1.325           | 1.149           | 1.323           | 307               | 614               |

H-Filed Strength at 0 cm for position A,B,C,D,E from the edges surrounding the EUT (A/m)

| Frequency Range (MHz) | Test Position A | Test Position B | Test Position C | Test Position D | Test Position E | Limit (50%) (A/m) | Limits Test (A/m) |
|-----------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|-------------------|
| 0.115-0.205           | 0.757           | 0.717           | 0.704           | 0.717           | 0.727           | 0.815             | 1.63              |

H-Filed Strength at 15 cm for position A,B,C,D 20cm for position E from the edges surrounding the EUT (A/m)

| Frequency Range (MHz) | Test Position A | Test Position B | Test Position C | Test Position D | Test Position E | Limit (50%) (A/m) | Limits Test (A/m) |
|-----------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|-------------------|
| 0.115-0.205           | 0.618           | 0.532           | 0.613           | 0.524           | 0.612           | 0.815             | 1.63              |

## 4. Photos of test setup

For Full load mode



0cm

For No load mode



0cm

For Full load mode



15cm

For No load mode



15cm

For Full load mode



0cm

For No load mode



0cm



For Full load mode



15cm

For No load mode



15cm

## **5. Photographs of EUT**

Refer to test report A2106137-C01-R02.

-----End-----