



## **FCC TEST REPORT**

**FCC ID: 2AP2N-M52**

On Behalf of

**Shenzhen Esorun Technology Co., LTD**

**Magnetic Wireless Power Bank With Stand**

**Model No.: Fold M52, Fold M52M, Fold M52S**

Prepared for : Shenzhen Esorun Technology Co., LTD  
Address : Room 226, Building A, B, C, Zone B, Yuanfen Industrial Zone, Taoyuan  
Community, Dalang Street, Longhua District, Shenzhen

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 : A2307239-C02-R08  
Date of Receipt : August 2, 2023  
Date of Test : August 2, 2023-August 14, 2023  
Date of Report : October 16, 2023  
Version Number : V0

---

**TABLE OF CONTENTS**

| <b>Description</b>   | <b>Page</b> |
|--|-------------|
| <b>1. Test Result Summary .....</b>                                      | <b>5</b>    |
| <b>2. EUT Description .....</b>  | <b>6</b>    |
| <b>2.1. DESCRIPTION OF DEVICE (EUT).....</b>                             | <b>6</b>    |
| <b>2.2. ACCESSORIES OF DEVICE (EUT).....</b>                             | <b>8</b>    |
| <b>2.3. TESTED SUPPORTING SYSTEM DETAILS .....</b>                       | <b>8</b>    |
| <b>2.4. BLOCK DIAGRAM OF CONNECTION BETWEEN EUT AND SIMULATORS .....</b> | <b>8</b>    |
| <b>2.5. DESCRIPTION OF TEST MODES.....</b>                               | <b>8</b>    |
| <b>2.6. TEST CONDITIONS .....</b>  | <b>9</b>    |
| <b>2.7. TEST FACILITY .....</b>  | <b>9</b>    |
| <b>2.8. MEASUREMENT UNCERTAINTY .....</b>                                | <b>9</b>    |
| <b>3. Test Results and Measurement Data .....</b>                        | <b>10</b>   |
| <b>3.1. RF EXPOSURE TEST .....</b>                                       | <b>10</b>   |
| <b>4. Photos of test setup .....</b>                                     | <b>16</b>   |

### TEST REPORT DECLARATION

Applicant : Shenzhen Esorun Technology Co., LTD  
 Address : Room 226, Building A, B, C, Zone B, Yuanfen Industrial Zone, Taoyuan Community, Dalang Street, Longhua District, Shenzhen  
 Manufacturer : Shenzhen Esorun Technology Co., LTD  
 Address : Room 226, Building A, B, C, Zone B, Yuanfen Industrial Zone, Taoyuan Community, Dalang Street, Longhua District, Shenzhen  
 EUT Description : Magnetic Wireless Power Bank With Stand  
 (A) Model No. : Fold M52, Fold M52M, Fold M52S  
 (B) Trademark : ESORUN


Measurement Standard Used:


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

**FCC KDB 680106 D01 RF Exposure Wireless Charging Apps 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).....: Reak Yang  
 Project Manager 

Date of issue.....: October 16, 2023

**Revision History**

| Revision | Issue Date       | Revisions              | Revised By |
|----------|------------------|------------------------|------------|
| V0       | October 16, 2023 | 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.*
5. Decision rules for the conclusion of this test report: decision by actual test data without considering measurement uncertainty.

## 2. EUT Description

### 2.1. Description of Device (EUT)

|                      |   |   |
|----------------------|---|---|
| EUT Name             | : | Magnetic Wireless Power Bank With Stand   |
| Model No.            | : | Fold M52, Fold M52M, Fold M52S  |
| DIFF.                | : | There is no difference between the models except the appearance color.<br>So all the test were performed on the model Fold M52.   |
| Power supply         | : | DC 5V/9V/12V from adapter with AC 120V/60Hz<br>DC 3.7V from battery<br>Type-C Input: 5V===2.6A, 9V===2.0A, 12V===1.5A<br>Wireless Output: 5W, 7.5W, 10W, 15W<br>Type-C Output: 5V===2.4A, 9V===2.22A, 12V===1.67A<br>Max Multiplex output:<br>Type-C Output: 5V===1A and Wireless Output: 10W |
| Radio Technology     | : | Wireless power transmission systems   |
| Operation frequency  | : | 115-205KHz  |
| Modulation           | : | MSK   |
| Antenna Type         | : | Coil Antenna, Maximum Gain is 0dBi<br>(This value is supplied by applicant).  |
| Connector cable loss | : | 0.5dB (This value is supplied by applicant).  |
| Software version     | : | V1.0  |
| Hardware version     | : | V1.2  |

| <b>Conditions requirement</b>   | <b>Answers</b>   |
|---|--|
| Power transfer frequency is less than 1MHz.   | After measuring the product the transfer frequency is 115-205KHz   |
| Output power from each primary coil is less than or equal to 15 watts.  | After measuring the product the each primary coil power is 15 watts  |
| The system may consist of more than one source primary coils, charging one or more clients. If more than one primary coil is 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).   | Mobile exposure conditions only.   |
| The aggregate H-field strengths at 15 cm surrounding the device and 20 cm above the top surface from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit. | After measuring the product the Max H-field Strength is 0.646A/m and the Max E-field Strength is 9.95V/m Far less than 50% of the MPE limit. |

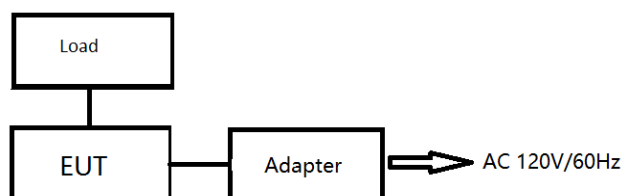
## 2.2. Accessories of Device (EUT)

|              |   |   |
|--------------|---|---|
| Accessories  | : | / |
| Manufacturer | : | / |
| Model        | : | / |
| Ratings      | : | / |

## 2.3. Tested Supporting System Details

| No. | Description | Manufacturer | Model        | Serial Number | Certification or SDoC |
|-----|-------------|--------------|--------------|---------------|-----------------------|
| 1   | Adapter     | Huoniu       | HNFCQC3024UU | N/A           | N/A                   |
| 2   | Load        | N/A          | N/A          | N/A           | N/A                   |

## 2.4. Block Diagram of connection between EUT and simulators



## 2.5. Description of Test Modes

| Mode | Test mode description  |
|------|--|
| 1    | Discharging(Wireless output: 15W)                              |
| 2    | Discharging(Wireless output: 5W)                               |
| 3    | Discharging(Type-C output: 5V/2.4A)                            |
| 4    | Discharging(Type-C output: 12V/1.67A)                          |
| 5    | Discharging<br>(Wireless output: 10W and Type-C output: 5V/1A) |
| 6*   | Charging and Discharging(Wireless output: 15W)                 |
| 7    | Charging   |
| 8    | No Load  |

Note: 1. This report conducted transmission tests on the antenna, reflecting the worst mode data.



## 2.6. Test Conditions

| Items              | Required  | Actual |
|--------------------|-----------|--------|
| Temperature range: | 15-35°C   | 24°C   |
| 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: 12135A

## 2.8. Measurement Uncertainty

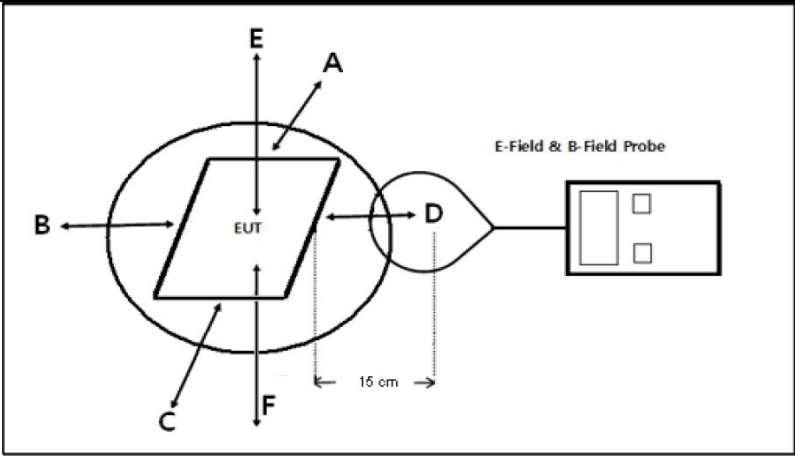
(95% confidence levels, k=2)

| 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, F is the bottom of the product</p>  |
| <b>Test Mode:</b>        | Transmitting Mode   |
| <b>Test Procedure:</b>   | <ol style="list-style-type: none"> <li>1. The RF exposure test was carried out on a non-metallic table top 80cm high in the shielding darkroom.</li> <li>2. The measurement probe was placed at test distance (0cm, 2cm, 4cm, 6cm, 8cm, 10cm, 15 cm or 20 cm for Top side) which is between the edge of the charger and the geometric centre of probe.</li> <li>3. The test time is maintained for more than one minute.</li> <li>4. The highest emission level was recorded and compared with limit as soon as measurement of each points (A, B, C, D, E, F) were completed.</li> <li>5. The EUT were measured according to the dictates of KDB 680106 D01v03r01.</li> <li>6. H-field strengths levels should less than 50% of MPE limit.</li> <li>7. Mobile phone will been charge at zero charge, intermediate charge, and full charge.</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     | 2022.08.30 | 1 Year        |
| 2    | Magnetic field probe 100cm2    | narda        | ELT probe 100cm2 | M0675      | 2022.08.30 | 1 Year        |
| 3    | Isotropic Electric Field Probe | narda        | EP-601           | 511WX60706 | 2022.08.30 | 1 Year        |

## 3.1.3. Test data

## For test mode: Charging and Discharging (Wireless output: 15W)

| Operation frequency(MHz) | Test Distance (cm) | Test Position | Probe Measure Result(A/m) |            |            | 50% Limit (A/m) |
|--------------------------|--------------------|---------------|---------------------------|------------|------------|-----------------|
|                          |                    |               | 10% charge                | 50% charge | 90% charge |                 |
| 0.115-0.205              | 0                  | A             | 0.627                     | 0.627      | 0.611      | 0.815           |
|                          |                    | B             | 0.599                     | 0.599      | 0.606      | 0.815           |
|                          |                    | C             | 0.606                     | 0.606      | 0.611      | 0.815           |
|                          |                    | D             | 0.611                     | 0.611      | 0.583      | 0.815           |
|                          |                    | E             | <b>0.646</b>              | 0.641      | 0.639      | 0.815           |
|                          |                    | F             | 0.589                     | 0.589      | 0.580      | 0.815           |

| Operation frequency(MHz) | Test Distance (cm) | Test Position | Probe Measure Result(A/m) |            |            | 50% Limit (A/m) |
|--------------------------|--------------------|---------------|---------------------------|------------|------------|-----------------|
|                          |                    |               | 10% charge                | 50% charge | 90% charge |                 |
| 0.115-0.205              | 2                  | A             | 0.596                     | 0.600      | 0.573      | 0.815           |
|                          |                    | B             | 0.597                     | 0.580      | 0.580      | 0.815           |
|                          |                    | C             | 0.597                     | 0.580      | 0.562      | 0.815           |
|                          |                    | D             | 0.592                     | 0.600      | 0.577      | 0.815           |
|                          |                    | E             | 0.628                     | 0.617      | 0.607      | 0.815           |
|                          |                    | F             | 0.566                     | 0.553      | 0.583      | 0.815           |

| Operation frequency(MHz) | Test Distance (cm) | Test Position | Probe Measure Result(A/m) |            |            | 50% Limit (A/m) |
|--------------------------|--------------------|---------------|---------------------------|------------|------------|-----------------|
|                          |                    |               | 10% charge                | 50% charge | 90% charge |                 |
| 0.115-0.205              | 4                  | A             | 0.594                     | 0.569      | 0.553      | 0.815           |
|                          |                    | B             | 0.564                     | 0.563      | 0.562      | 0.815           |
|                          |                    | C             | 0.578                     | 0.549      | 0.535      | 0.815           |
|                          |                    | D             | 0.578                     | 0.571      | 0.538      | 0.815           |
|                          |                    | E             | 0.604                     | 0.607      | 0.591      | 0.815           |
|                          |                    | F             | 0.542                     | 0.550      | 0.514      | 0.815           |

| Operation frequency(MHz) | Test Distance (cm) | Test Position | Probe Measure Result(A/m) |            |            | 50% Limit (A/m) |
|--------------------------|--------------------|---------------|---------------------------|------------|------------|-----------------|
|                          |                    |               | 10% charge                | 50% charge | 90% charge |                 |
| 0.115-0.205              | 6                  | A             | 0.552                     | 0.568      | 0.540      | 0.815           |
|                          |                    | B             | 0.537                     | 0.554      | 0.518      | 0.815           |
|                          |                    | C             | 0.541                     | 0.527      | 0.523      | 0.815           |
|                          |                    | D             | 0.559                     | 0.524      | 0.515      | 0.815           |
|                          |                    | E             | 0.574                     | 0.551      | 0.560      | 0.815           |
|                          |                    | F             | 0.527                     | 0.502      | 0.522      | 0.815           |

| Operation frequency(MHz) | Test Distance (cm) | Test Position | Probe Measure Result(A/m) |            |            | 50% Limit (A/m) |
|--------------------------|--------------------|---------------|---------------------------|------------|------------|-----------------|
|                          |                    |               | 10% charge                | 50% charge | 90% charge |                 |
| 0.115-0.205              | 8                  | A             | 0.527                     | 0.532      | 0.540      | 0.815           |
|                          |                    | B             | 0.513                     | 0.498      | 0.495      | 0.815           |
|                          |                    | C             | 0.519                     | 0.511      | 0.497      | 0.815           |
|                          |                    | D             | 0.509                     | 0.522      | 0.515      | 0.815           |
|                          |                    | E             | 0.555                     | 0.545      | 0.514      | 0.815           |
|                          |                    | F             | 0.495                     | 0.489      | 0.462      | 0.815           |

| Operation frequency(MHz) | Test Distance (cm) | Test Position | Probe Measure Result(A/m) |            |            | 50% Limit (A/m) |
|--------------------------|--------------------|---------------|---------------------------|------------|------------|-----------------|
|                          |                    |               | 10% charge                | 50% charge | 90% charge |                 |
| 0.115-0.205              | 10                 | A             | 0.486                     | 0.467      | 0.458      | 0.815           |
|                          |                    | B             | 0.477                     | 0.462      | 0.453      | 0.815           |
|                          |                    | C             | 0.468                     | 0.459      | 0.445      | 0.815           |
|                          |                    | D             | 0.478                     | 0.444      | 0.441      | 0.815           |
|                          |                    | E             | 0.496                     | 0.474      | 0.497      | 0.815           |
|                          |                    | F             | 0.444                     | 0.435      | 0.427      | 0.815           |

| Operation frequency(MHz) | Test Distance (cm) | Test Position | Probe Measure Result(A/m) |            |            | 50% Limit (A/m) |
|--------------------------|--------------------|---------------|---------------------------|------------|------------|-----------------|
|                          |                    |               | 10% charge                | 50% charge | 90% charge |                 |
| 0.115-0.205              | 15                 | A             | 0.423                     | 0.417      | 0.426      | 0.815           |
|                          |                    | B             | 0.418                     | 0.399      | 0.402      | 0.815           |
|                          |                    | C             | 0.420                     | 0.418      | 0.400      | 0.815           |
|                          |                    | D             | 0.415                     | 0.425      | 0.399      | 0.815           |
|                          |                    | F             | 0.438                     | 0.448      | 0.442      | 0.815           |

| Operation frequency(MHz) | Test Distance (cm) | Test Position | Probe Measure Result(A/m) |            |            | 50% Limit (A/m) |
|--------------------------|--------------------|---------------|---------------------------|------------|------------|-----------------|
|                          |                    |               | 10% charge                | 50% charge | 90% charge |                 |
| 0.115-0.205              | 20                 | E             | 0.374                     | 0.388      | 0.375      | 0.815           |

**E-field strengths levels should less than 50% of MPE limit.**

| Operation frequency(MHz) | Test Distance (cm) | Test Position | Probe Measure Result(V/m) |            |            | 50% Limit (V/m) |
|--------------------------|--------------------|---------------|---------------------------|------------|------------|-----------------|
|                          |                    |               | 10% charge                | 50% charge | 90% charge |                 |
| 0.115-0.205              | 0                  | A             | 9.19                      | 9.19       | 8.99       | 307             |
|                          |                    | B             | 8.91                      | 8.91       | 9.00       | 307             |
|                          |                    | C             | 8.68                      | 8.68       | 8.43       | 307             |
|                          |                    | D             | 9.07                      | 9.07       | 9.09       | 307             |
|                          |                    | E             | <b>9.95</b>               | 9.85       | 9.78       | 307             |
|                          |                    | F             | 8.13                      | 8.13       | 7.80       | 307             |

| Operation frequency(MHz) | Test Distance (cm) | Test Position | Probe Measure Result(V/m) |            |            | 50% Limit (V/m) |
|--------------------------|--------------------|---------------|---------------------------|------------|------------|-----------------|
|                          |                    |               | 10% charge                | 50% charge | 90% charge |                 |
| 0.115-0.205              | 2                  | A             | 9.17                      | 9.14       | 9.17       | 307             |
|                          |                    | B             | 8.86                      | 8.83       | 8.84       | 307             |
|                          |                    | C             | 8.54                      | 8.52       | 8.50       | 307             |
|                          |                    | D             | 8.96                      | 8.96       | 8.92       | 307             |
|                          |                    | E             | 9.85                      | 9.83       | 9.85       | 307             |
|                          |                    | F             | 7.98                      | 7.98       | 7.97       | 307             |

| Operation frequency(MHz) | Test Distance (cm) | Test Position | Probe Measure Result(V/m) |            |            | 50% Limit (V/m) |
|--------------------------|--------------------|---------------|---------------------------|------------|------------|-----------------|
|                          |                    |               | 10% charge                | 50% charge | 90% charge |                 |
| 0.115-0.205              | 4                  | A             | 8.91                      | 8.91       | 8.88       | 307             |
|                          |                    | B             | 8.61                      | 8.58       | 8.57       | 307             |
|                          |                    | C             | 8.27                      | 8.29       | 8.28       | 307             |
|                          |                    | D             | 8.71                      | 8.70       | 8.71       | 307             |
|                          |                    | E             | 9.60                      | 9.57       | 9.61       | 307             |
|                          |                    | F             | 7.73                      | 7.71       | 7.71       | 307             |

| Operation frequency(MHz) | Test Distance (cm) | Test Position | Probe Measure Result(V/m) |            |            | 50% Limit (V/m) |
|--------------------------|--------------------|---------------|---------------------------|------------|------------|-----------------|
|                          |                    |               | 10% charge                | 50% charge | 90% charge |                 |
| 0.115-0.205              | 6                  | A             | 8.55                      | 8.54       | 8.56       | 307             |
|                          |                    | B             | 8.26                      | 8.23       | 8.24       | 307             |
|                          |                    | C             | 7.93                      | 7.92       | 7.91       | 307             |
|                          |                    | D             | 8.36                      | 8.34       | 8.37       | 307             |
|                          |                    | E             | 9.26                      | 9.22       | 9.22       | 307             |
|                          |                    | F             | 7.38                      | 7.37       | 7.35       | 307             |

| Operation frequency(MHz) | Test Distance (cm) | Test Position | Probe Measure Result(V/m) |            |            | 50% Limit (V/m) |
|--------------------------|--------------------|---------------|---------------------------|------------|------------|-----------------|
|                          |                    |               | 10% charge                | 50% charge | 90% charge |                 |
| 0.115-0.205              | 8                  | A             | 8.07                      | 8.07       | 8.03       | 307             |
|                          |                    | B             | 7.75                      | 7.73       | 7.72       | 307             |
|                          |                    | C             | 7.43                      | 7.43       | 7.42       | 307             |
|                          |                    | D             | 7.85                      | 7.87       | 7.87       | 307             |
|                          |                    | E             | 8.75                      | 8.73       | 8.72       | 307             |
|                          |                    | F             | 6.89                      | 6.88       | 6.86       | 307             |

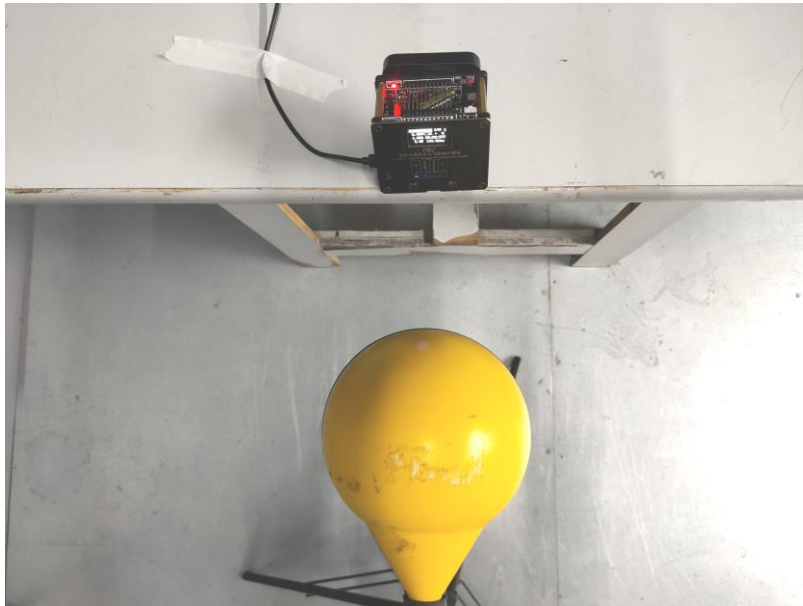
| Operation frequency(MHz) | Test Distance (cm) | Test Position | Probe Measure Result(V/m) |            |            | 50% Limit (V/m) |
|--------------------------|--------------------|---------------|---------------------------|------------|------------|-----------------|
|                          |                    |               | 10% charge                | 50% charge | 90% charge |                 |
| 0.115-0.205              | 10                 | A             | 7.47                      | 7.43       | 7.42       | 307             |
|                          |                    | B             | 7.15                      | 7.15       | 7.15       | 307             |
|                          |                    | C             | 6.82                      | 6.80       | 6.80       | 307             |
|                          |                    | D             | 7.26                      | 7.24       | 7.26       | 307             |
|                          |                    | E             | 8.15                      | 8.14       | 8.15       | 307             |
|                          |                    | F             | 6.29                      | 6.27       | 6.28       | 307             |

| Operation frequency(MHz) | Test Distance (cm) | Test Position | Probe Measure Result(V/m) |            |            | 50% Limit (V/m) |
|--------------------------|--------------------|---------------|---------------------------|------------|------------|-----------------|
|                          |                    |               | 10% charge                | 50% charge | 90% charge |                 |
| 0.115-0.205              | 15                 | A             | 6.75                      | 6.75       | 6.73       | 307             |
|                          |                    | B             | 6.45                      | 6.45       | 6.42       | 307             |
|                          |                    | C             | 6.14                      | 6.14       | 6.14       | 307             |
|                          |                    | D             | 6.56                      | 6.53       | 6.52       | 307             |
|                          |                    | F             | 7.44                      | 7.44       | 7.44       | 307             |

| Operation frequency(MHz) | Test Distance (cm) | Test Position | Probe Measure Result(V/m) |            |            | 50% Limit (V/m) |
|--------------------------|--------------------|---------------|---------------------------|------------|------------|-----------------|
|                          |                    |               | 10% charge                | 50% charge | 90% charge |                 |
| 0.115-0.205              | 20                 | E             | 5.96                      | 5.95       | 5.94       | 307             |

#### 4. Photos of test setup

H-Filed



E-Filed



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