

# RF EVALUATION TEST REPORT

Applicant..... : Guangdong Zhihe New Energy Technology Co., Ltd  
Address..... : Room 1101, Building 8, Fenggang Tianan Digital City, No.208 Dongshen Rd,  
Dongguan, China  
Manufacturer..... : Guangdong Zhihe New Energy Technology Co., Ltd  
Address..... : Room 1101, Building 8, Fenggang Tianan Digital City, No.208 Dongshen Rd,  
Dongguan, China  
Factory..... : Guangdong Zhihe New Energy Technology Co., Ltd  
Address..... : Room 1101, Building 8, Fenggang Tianan Digital City, No.208 Dongshen Rd,  
Dongguan, China  
Product Name..... : Power Station  
Brand Name..... : ZH-POWER  
Model No. .... : ZH-CN-1000A, ZH-CN-1800A, Hiker Pro U1000, Hiker Pro U1800,  
CAPA-X-1300, CAPA-X-1000 (For model difference refer to section 2.)  
FCC ID..... : 2BBYD1800WCN  
Measurement Standard..... : 47 CFR PART 2, Section 2.1091  
Receipt Date of Samples.... : June 28, 2023  
Date of Tested..... : June 30, 2023 to July 13, 2023  
Date of Report..... : July 24, 2023

This report shows that above equipment is technically compliant with the requirements of the standards above. All test results in this report apply only to the tested sample(s). Without prior written approval of Dongguan Nore Testing Center Co., Ltd, this report shall not be reproduced except in full.



Prepared by

Julie Xiao / Project Engineer



Iori Fan / Authorized Signatory

## Table of Contents

|  |    |
|--|----|
| 1. General Description of EUT .....                            | 4  |
| 2. Test Facility and Location .....                            | 6  |
| 3. Test Modes Detail .....                                     | 7  |
| 4. Configuration of EUT .....                                  | 7  |
| 5. Modification of EUT .....                                   | 7  |
| 6. Description of Support Device.....                          | 8  |
| 7. Deviations and Abnormalities from Standard Conditions ..... | 8  |
| 8. Applicable Standards and References.....                    | 8  |
| 9. Equipment approval considerations.....                      | 9  |
| 10. Measurement Uncertainty .....                              | 9  |
| 11. Maximum Permissible Exposure.....                          | 10 |
| 12. Test Equipment List.....                                   | 14 |
| 13. Test Photos .....  | 15 |



## 1. General Description of EUT

| Product Information     |   |
|-------------------------|---|
| Product Name:           | Power Station   |
| Main Model Name:        | ZH-CN-1800A   |
| Additional Model Name:  | ZH-CN-1000A, Hiker Pro U1000, Hiker Pro U1800, CAPA-X-1300, CAPA-X-1000   |
| Model Difference:       | These models have the same circuit schematic, construction, PCB Layout and critical components. The difference is model number and the number of battery due to trading purpose.  |
| S/N:                    | 2306-3210   |
| Brand Name:             | ZH-POWER  |
| Hardware Version:       | 1.0   |
| Software Version:       | 1.0   |
| Rating:                 | AC Input: AC 120V, 60Hz Max, 19.8A; DC Input: DC 11-36V, 10A<br>AC Output: AC 120V, 60Hz, 1800W; DC 21.9V come from internal battery.<br>PD 100W Output: DC 5V/3A, DC 9V/3A, DC 12V/3A, DC 15V/3A, DC 20V/5A<br>PD 27W Output: DC 5V/3A, DC 9V/2A, DC 12V/2.25A<br>USB A1-A4 Output: DC 5V/2.4A (Total max 12W)<br>USB A5/A6 Output: DC 4.5V/5A, DC 5V/4.5A, DC 5V/3A, DC 9V/2A, DC 12V/1.5A<br>DC 1/2 Output: DC 12V/5A (Total max 100W)<br>Cigarette Lighter Output: DC 12V/8.3A (Max 100W)<br>Wireless charge: 15W |
| Typical Arrangement:    | Table-top   |
| I/O Port:               | Refer to user manual  |
| Accessories Information |   |
| Adapter:                | N/A   |
| Cable:                  | N/A   |
| Other:                  | N/A   |
| Additional Information  |   |
| Note:                   | According to these model differences, all tests were performed on model ZH-CN-1800A according to the manufacturer requirement.  |
| Remark:                 | All the information above are provided by the manufacturer. More detailed feature of the EUT please refers to the user manual.  |

| Technical Specification     |              |
|-----------------------------|--------------|
| Frequency Range:            | 110.5-205KHz |
| Modulation Type:            | FSK          |
| Antenna Type:               | Coil antenna |
| Output power for each coil: | 5W, 10W, 15W |

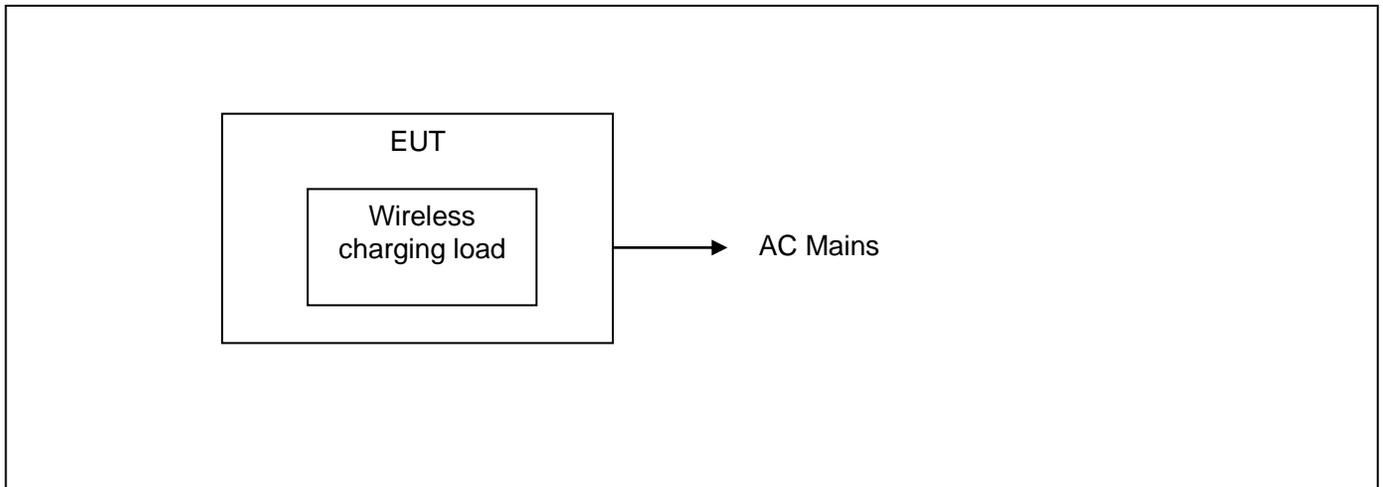
## 2. Test Facility and Location

|                                   |   |  |
|-----------------------------------|---|--|
| Test Site                         | : | Dongguan Nore Testing Center Co., Ltd. (Dongguan NTC Co., Ltd.)  |
| Accreditations and Authorizations | : | <p>The Laboratory has been assessed and proved to be in compliance with CNAS/CL01</p> <p>Listed by CNAS, August 13, 2018</p> <p>The Certificate Registration Number is L5795.</p> <p>The Certificate is valid until August 13, 2024</p><br><p>The Laboratory has been assessed and proved to be in compliance with ISO17025</p> <p>Listed by A2LA, November 01, 2017</p> <p>The Certificate Registration Number is 4429.01</p><br><p>Listed by FCC, November 06, 2017</p> <p>Test Firm Registration Number: 907417</p><br><p>Listed by Industry Canada, June 08, 2017</p> <p>The Certificate Registration Number. Is 46405-9743A</p> |
| Test Site Location                | : | Building D, Gaosheng Science and Technology Park, Hongtu Road, Nancheng District, Dongguan City, Guangdong Province, China   |

### 3. Test Modes Detail

| Test Mode | Test Setup Configuration | Remark                           |
|-----------|--------------------------|----------------------------------|
| 1.        | wireless charging (5W)   | Full Load, Half Load, Empty Load |
| 2.        | wireless charging (10W)  | Full Load, Half Load, Empty Load |
| 3.        | wireless charging (15W)  | Full Load, Half Load, Empty Load |

### 4. Configuration of EUT



### 5. Modification of EUT

No modifications are made to the EUT during all test items.

## 6. Description of Support Device

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.

| No. | Equipment              | Brand                | M/N | S/N | Cable Specification | Remarks              |
|-----|------------------------|----------------------|-----|-----|---------------------|----------------------|
| 1.  | Wireless charging load | Consumer Electronics | 2S  | --- | ---                 | Provided by the Lab. |

## 7. Deviations and Abnormalities from Standard Conditions

No additions, deviations and exclusions from the standard.

## 8. Applicable Standards and References

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

### Test Standards:

47 CFR Part 1, 1.1307(b) and 1.1310

KDB 680106 D01v03

## 9. Equipment approval considerations

| No.   | Requirements  | Conditions of the EUT  |
|---|---|--|
| 1.  | Power transfer frequency is less than 1MHz  | Yes, the operated frequency range is 110.5-205KHz.                     |
| 2.  | Output power from each primary coil is less than or equal to 15 watts   | Yes, the maximum output power of the primary coil is 15W.              |
| 3.  | 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 | Yes, it only has one coil.   |
| 4.  | Client device is placed directly in contact with the transmitter.   | Yes, Client device is placed directly in contact with the transmitter. |
| 5.  | Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).   | Yes. The device can be used as mobile exposure condition.              |
| 6.  | The aggregate H-field strengths at 20cm surrounding the device from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit.                          | Yes, less than the limits.   |
| Remark:<br><input type="checkbox"/> need PAG process<br><input checked="" type="checkbox"/> no need PAG process |   |  |

## 10. Measurement Uncertainty

| No.  | Test Item                | Uncertainty | Remarks |
|--|--------------------------|-------------|---------|
| 1.   | Magnetic Field Emissions | ±0.15 dB    | ---     |
| 2.   | Electric Field Emissions | ±0.36 dB    | ---     |
| <b>Note:</b> This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2. |                          |             |         |

## 11. Maximum Permissible Exposure

### LIMIT

| Frequency range (MHz)  | Electric field strength (V/m) | Magnetic field strength (A/m) | Power density (mW/cm <sup>2</sup> ) | Averaging time (minutes) |
|--|-------------------------------|-------------------------------|-------------------------------------|--------------------------|
| <b>(A) Limits for Occupational/Controlled Exposures</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                        |
| 1500-100,000   | /                             | /                             | 5                                   | 6                        |
| <b>(B) 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                       |
| 1500-100,00  | /                             | /                             | 1.0                                 | 30                       |

F=frequency in MHz

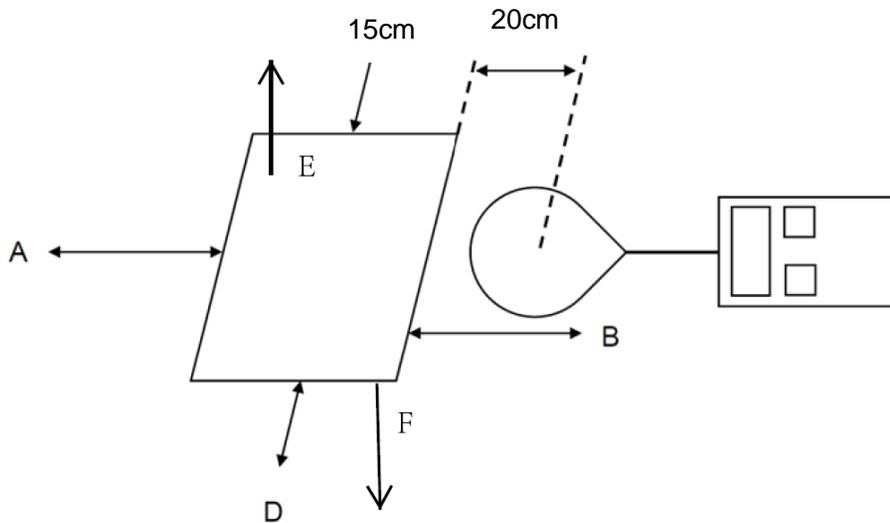
\*=Plane-wave equivalent power density

RF exposure compliance will need to be determined with respect to 1.1307(c) and (d) of the FCC rules. The emissions should be within the limits at 300kHz in Table 1 of 1.1310(use the 300kHz limits for 150kHz: 614V/m,1.63A/m).

Per KDB 680106 D01 v03 r01, RF exposure evaluation at 15cm surrounding the device and 20cm above the top surface. Emission between 50 kHz to 300 kHz should be assessed versus the limits at 300 kHz in Table 1 of Section 1.1310: 1.63/Am and aggregate H-field strengths from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit.

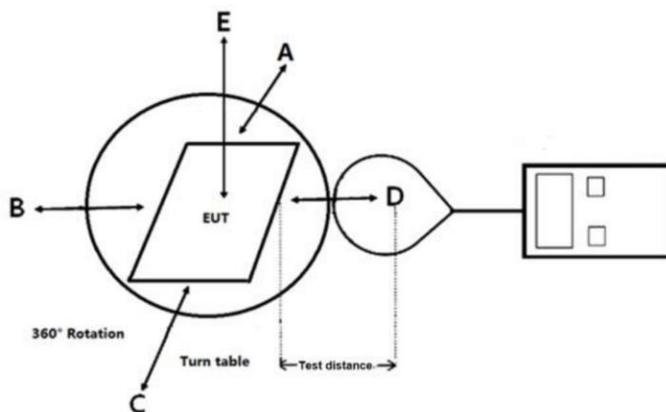
**BLOCK DIAGRAM OF TEST SETUP**

**For Mobile:**



Note: The distance of the points A/B/C/D is 15cm, and the point E is 20cm.

**For Portable:**



Note: The distance of the points A/B/C/D/E is 2,4,6,8,10,12,14,16,18, 20cm.

---

## TEST PROCEDURES

For mobile exposure conditions:

- a. The RF exposure test was performed in anechoic chamber;
- b. E and H-field measurements should be made with the center of the probe at a distance of 15cm surrounding the EUT and 20cm above the top surface of the primary/client pair.
- c. The highest emission level was recorded and compared with limit.
- d. The EUT was measured according to the dictates of KDB 680106 v03r01.

For portable exposure conditions:

- a. The RF exposure test was performed in anechoic chamber;
- b. E and H-field measurements should be made with the probe at 0cm for all side of the EUT.
- c. The highest emission level was recorded and compared with limit.

For portable exposure conditions:

Perform H-field measurements for each edge/top surface of the host/client pair at every 2cm, starting from as close as possible out to 10cm.

## TEST RESULTS

PASS

Please refer to the following pages of the worst case.

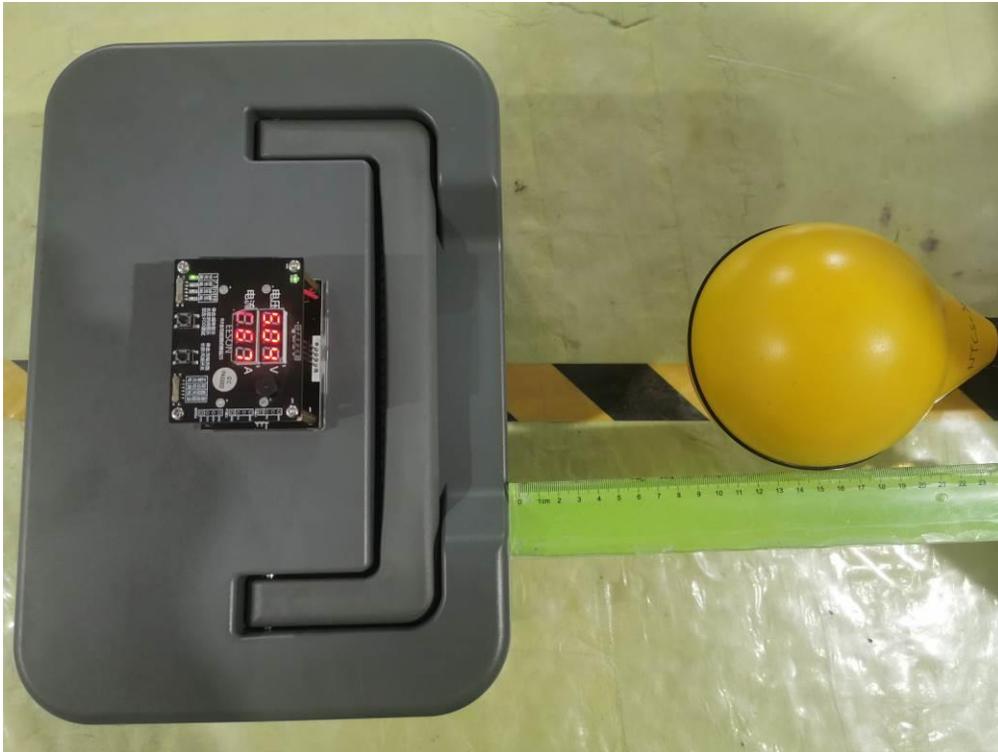
| Test Mode 1, Full Load |               |                             |                             |             |             |
|------------------------|---------------|-----------------------------|-----------------------------|-------------|-------------|
| Test Distance (cm)     | Test Position | Mobile Measure Result (V/m) | Mobile Measure Result (A/m) | Limit (V/m) | Limit (A/m) |
| 15                     | Side A        | 1.033                       | 0.21                        | 614         | 0.815       |
|                        | Side B        | 1.315                       | 0.22                        | 614         | 0.815       |
|                        | Side C        | 1.396                       | 0.21                        | 614         | 0.815       |
|                        | Side D        | 1.196                       | 0.20                        | 614         | 0.815       |
|                        | Side E        | ---                         | ---                         | ---         | ---         |
| 20                     | Side A        | ---                         | ---                         | ---         | ---         |
|                        | Side B        | ---                         | ---                         | ---         | ---         |
|                        | Side C        | ---                         | ---                         | ---         | ---         |
|                        | Side D        | ---                         | ---                         | ---         | ---         |
|                        | Side E        | 1.427                       | 0.24                        | 614         | 0.815       |

## 12. Test Equipment List

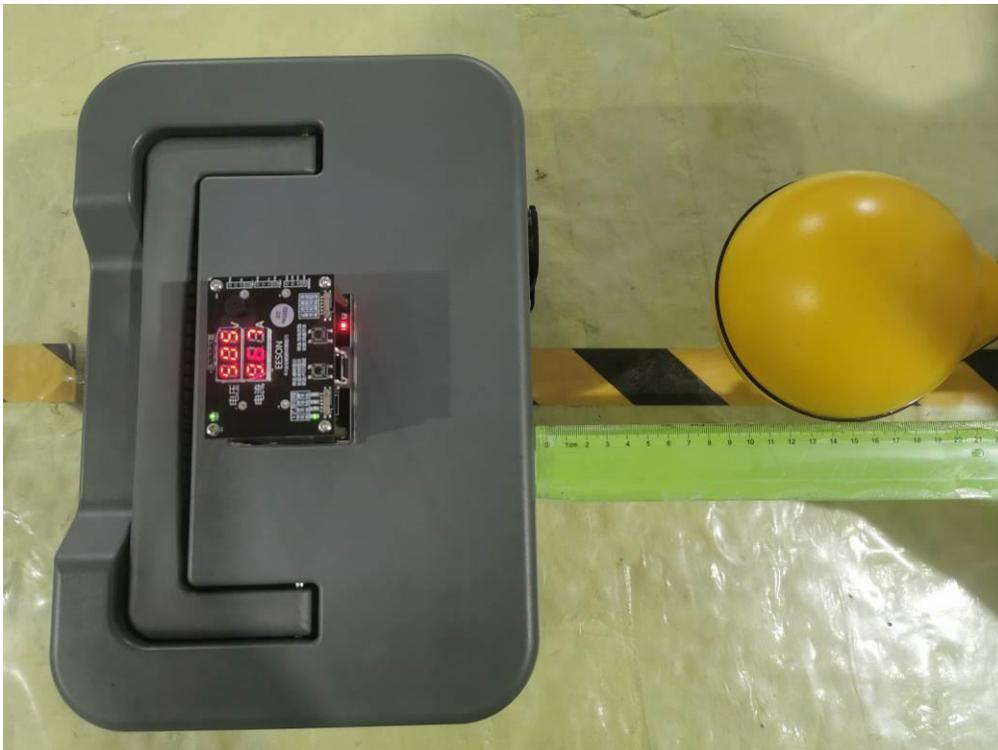
| Item | Equipment                               | Manufacturer | Model No.                                | Serial No. | Last Cal.     | Cal. Interval |
|------|---|--------------|--|------------|---------------|---------------|
| 1.   | Magnetic field probe 100cm <sup>2</sup> | Narda        | ETL-400 Probe<br>1Hz-400KHz<br>(r=6.2cm) | O-0167     | June 28,2023  | 1 Year        |
| 2.   | E-Field Probe                           | Narda        | EP-601                                   | 611WX70729 | Mar. 23, 2023 | 1 Year        |

### 13. Test Photos

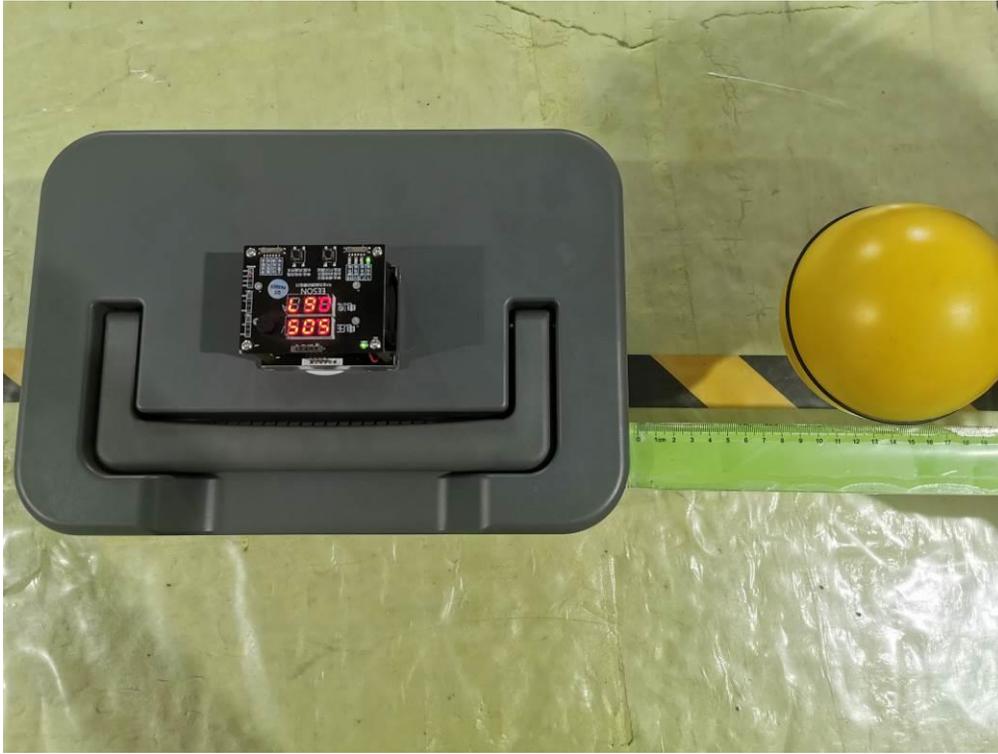
Side A: Test distance 15cm



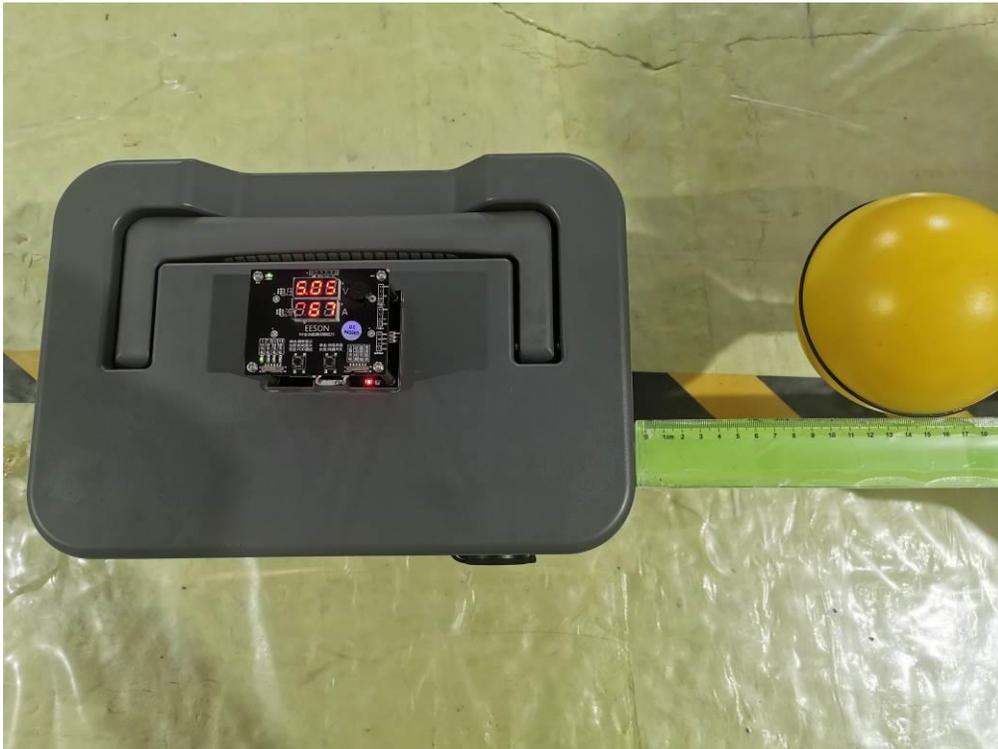
Side B: Test distance 15cm



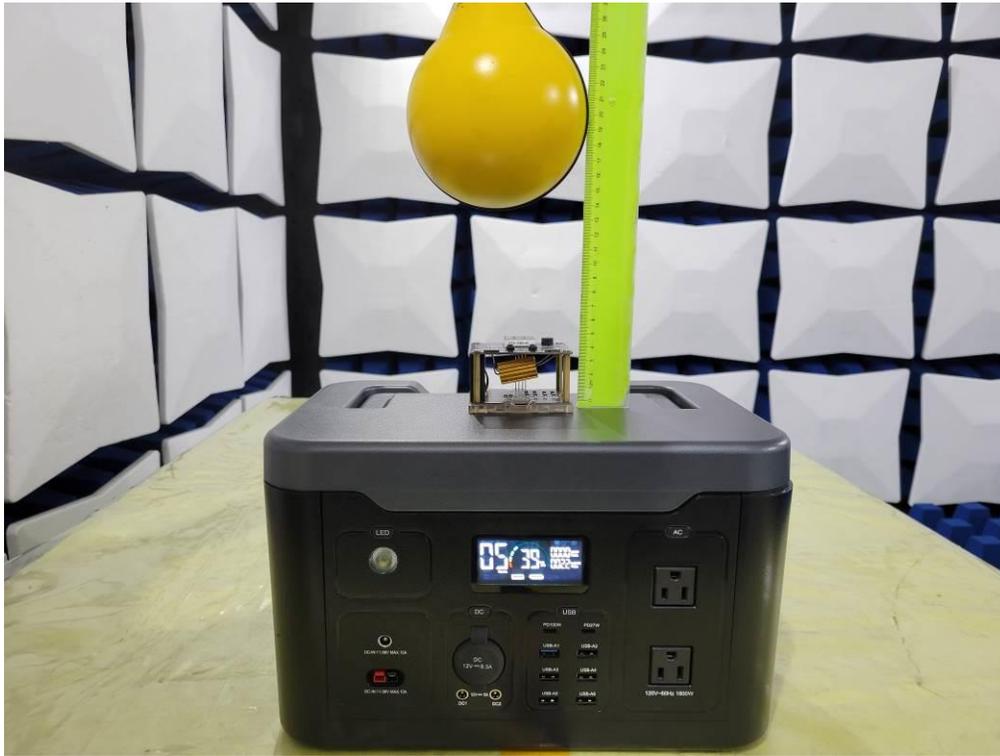
**Side C: Test distance 15cm**



**Side D: Test distance 15cm**



**Side E: Test distance 20cm**



---End---