# RF Exposure Report

## For

| | |
|---|---|
| **Applicant Name:** | TennRich International Corp. |
| Address: | 1-3, Alley 5, Lane 305, Sec.1, Shin Nan Road, Lu Chu District, Taoyuan City, Taiwan 338 |
| EUT Name: | Portable Power Station |
| Brand Name: | Energizer |
| Model Number: | PPS300W2 |
| Series Model Number: | Refer to section 2 |

## Issued By

| | |
|---|---|
| **Company Name:** | Shenzhen BANTEK Testing Co., Ltd. |
| Address: | A5&A6,Building B1&B2,No.45 Gangtou Road,BoganCommunity, Shajing Street,Bao'an District, Shenzhen,Guangdong,China 518104 |
| Report Number: | BTEK230914007AE002 |
| Test Standards: | 47 CFR Part 15 Subpart C |
| FCC ID: | 2AU4P-PPS300W2 |
| Test Conclusion: | Pass |
| Test Date: | 2023-09-18 to 2023-09-21 |
| Date of Issue: | 2023-09-21 |
| Prepared By: |  |
| | Carl Yang /Project Engineer |
| Date: | 2023-09-21 |
| Approved By: |  |
| | Damon Su / EMC Manager |
| Date: | 2023-09-21 |

* In the configuration tested, the EUT complied with the standards specified above.

| Revision History | | |
|---|---|---|
| Version | Issue Date | Revisions Content |
| R_V0 | 2023-09-21 | Original |
| *Note:* | *Once the revision has been made, then previous versions reports are invalid.* | |

## Table of Contents

# 1. Introduction

## 1.1 Identification of Testing Laboratory

| | |
|---|---|
| Company Name: | Shenzhen BANTEK Testing Co., Ltd. |
| Address: | A5&A6,Building B1&B2,No.45 Gangtou Road,BoganCommunity, Shajing Street,Bao'an District, Shenzhen,Guangdong,China 518104 |
| Phone Number: | +86(755) 2334 4200 |
| Fax Number: | +86(755) 2334 4200 |

## 1.2 Identification of the Responsible Testing Location

| | |
|---|---|
| Test Location: | Shenzhen BANTEK Testing Co., Ltd. |
| Address: | A5&A6,Building B1&B2,No.45 Gangtou Road,BoganCommunity, Shajing Street,Bao'an District, Shenzhen,Guangdong,China 518104 |
| Description: | All measurement facilities used to collect the measurement data are located at A5&A6,Building B1&B2,No.45 Gangtou Road,BoganCommunity, Shajing Street,Bao'an District, Shenzhen,Guangdong,China 518104 |
| FCC Registration Number: | 264293 |
| Designation Number: | CN1356 |

## 1.3 Laboratory Condition

| | |
|---|---|
| Ambient Temperature: | 20℃ to 25℃ |
| Ambient Relative Humidity: | 45% to 55% |
| Ambient Pressure: | 100 kPa to 102 kPa |

## 1.4 Announcement

(1) The test report is invalid if not marked with the signatures of the persons responsible for preparing, reviewing and approving the test report.
(2) This document may not be altered or revised in any way unless done so by BANTEK and all revisions are duly noted in the revisions section.
(3) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.
(4) The laboratory is only responsible for the data released by the laboratory, except for the part provided by the applicant.

# 2. Product Information

## 2.1 Application Information

| | |
|---|---|
| Company Name: | TennRich International Corp. |
| Address: | 1-3, Alley 5, Lane 305, Sec.1, Shin Nan Road, Lu Chu District, Taoyuan City, Taiwan 338 |

## 2.2 Manufacturer Information

| | |
|---|---|
| Company Name: | Shenzhen Newman Hyde Intelligent Technology Co., Ltd |
| Address: | 902, No.2500106,JunXin Road, Niuhu Community, Guanlan Street, Longhua District, Shenzhen(9F, building A,Xinlida Industrial Park) |

## 2.3 Factory Information

| | |
|---|---|
| Company Name: | Shenzhen Newman Hyde Intelligent Technology Co., Ltd |
| Address: | 902, No.2500106,JunXin Road, Niuhu Community, Guanlan Street, Longhua District, Shenzhen(9F, building A,Xinlida Industrial Park) |

## 2.4 General Description of Equipment under Test (EUT)

| | |
|---|---|
| EUT Name | Portable Power Station |
| Under Test Model Name | PPS300W2 |
| Series Model Name | NA |
| Description of Model name differentiation | NA |
| Hardware Version | NA |
| Software and Firmware Version | NA |

## 2.5 Technical Information

| | |
|---|---|
| Power Supply | Capacity:20.4Ah/14.4V,293.76Wh<br>DC Input: DC 19V 3.15A<br>USB-C Input: DC 5V 3A,9V 3A,12V 3A,15V 3A,20V 3A (PD 60W Max.)<br>AC Output: 2 x 120Vac/60Hz 300W Max.(Peak 600W)<br>DC Output: 2 x DC 12V 10A (10A Max.)<br>Car Charger Outlet: 12V=--10A Max.(Shared DC Output)<br>USB Output: DC 5V 3A,9V 2A,12V 1.5A<br>USB Output:2 x DC 5V 2.4A<br>USB-C Output: PD DC 5V 3A, 9V 3A,12V 3A,15V 3A,20V 3A (PD 60W Max.)<br>Wireless Output:5W/10W<br>Solar Panel Input: MPPT 12V-28V(60W Max) |
| Modulation Type | FSK |
| Frequency Range | The frequency block is 110.0 KHz to 205.0KHz. |
| Antenna Type | Coil antenna |

# 3. Test Requirement

KDB 680106 D01 RF Exposure Wireless Charging App v03
According to the item 5.2 of KDB 680106 D01v03:
Inductive wireless power transfer applications that meet all of the following requirements are excluded from submitting an RF exposure evaluation.

| Requirements of KDB 680106 D01 | Yes / No | Description |
|---|---|---|
| Power transfer frequency is less than 1 MHz | Yes | The device operate in the frequency range 110KHz~205KHz |
| Output power from each primary coil is less than 15 watts | Yes | The maximum output power for each primary coil is 10W. |
| 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 | The transfer system includes only one primary coils. |
| Client device is placed directly in contact with the transmitter. | Yes | Client device is placed directly in contact with the transmitter. |
| Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion). | Yes | Mobile exposure conditions only |
| 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. | Yes | The EUT 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. |

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

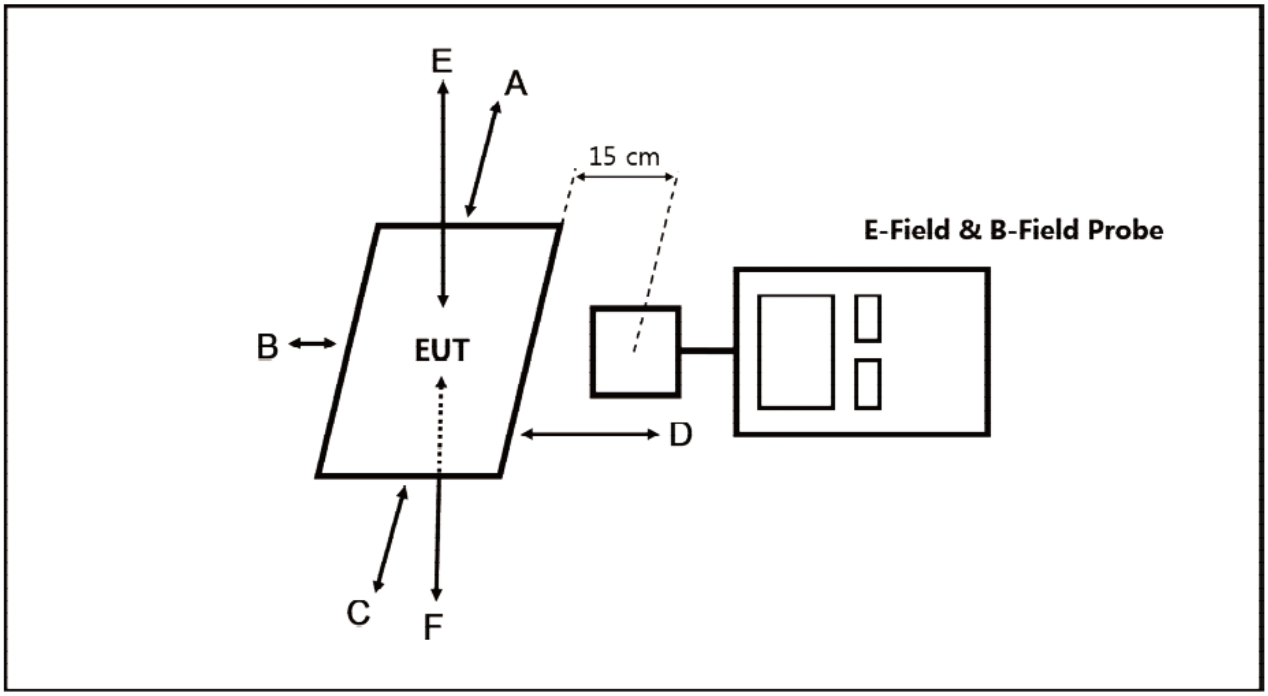
| Frequency range (MHz) | Electric field strength (V/m) | Magnetic field strength (A/m) | Power density ($mW/cm^2$) | Averaging time (minutes) |
|---|---|---|---|---|
| (A) Limits for Occupational/Controlled Exposure | | | | |
| 0.3-3.0 | 614 | 1.63 | *100 | 6 |
| 3.0-30 | 1842/f | 4.89/f | $*900/f^2$ | 6 |
| 30-300 | 61.4 | 0.163 | 1.0 | 6 |
| 300-1,500 | | | f/300 | 6 |
| 1,500-100,000 | | | 5 | 6 |
| (B) Limits for General Population/Uncontrolled Exposure | | | | |
| 0.3-1.34 | 614 | 1.63 | *100 | 30 |
| 1.34-30 | 824/f | 2.19/f | $*180/f^2$ | 30 |
| 30-300 | 27.5 | 0.073 | 0.2 | 30 |
| 300-1,500 | | | f/1500 | 30 |
| 1,500-100,000 | | | 1.0 | 30 |

f = frequency in MHz * = Plane-wave equivalent power density

**Test Equipment List**

| Test Equipment | Manufacturer | Model No. | Serial No. | Last Cal. (mm-dd-yy) | Next Cal. (mm-dd-yy) |
|---|---|---|---|---|---|
| Magnetic Field Analyzer | Narda | ETL-400 | N-0231 | 2023.06.12 | 2024.06.12 |

**Test Setup**




Note: Measurements should be made from all sides and the top of the primary/client pair, with the 15cm measured from the center of the probe(s) to the edge of the device.

1) The RF exposure test was performed in anechoic chamber.
2) The measurement probe was placed at test distance (15cm) which is between the edge of the charger and the geometric center of probe.
3) 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.
4) The EUT was measured according to the dictates of KDB 680106 D01 v03.

## 1.1 Assessment Result

☒ **Passed** ☐ **Not Applicable**

Note: All test modes were pre-tested, but we only recorded the worst case in this report.

H-Field Strength at 15 cm from the edges surrounding the EUT and 15cm from the top surface of the EUT

| Charging Battery Level | Unit | Frequency Range (MHz) | Measured E-Field Strength Values (A/m) | | | | | FCC H-Field Strength 50% Limits (A/m) | FCC H-Field Strength Limits (A/m) |
|---|---|---|---|---|---|---|---|---|---|
| | | | Test Position A | Test Position B | Test Position C | Test Position D | Test Position E | | |
| 1% | uT | 0.142 | 0.1512 | 0.1495 | 0.1486 | 0.1476 | 0.1502 | -- | -- |
| 1% | A/m | 0.142 | 0.1210 | 0.1196 | 0.1189 | 0.1181 | 0.1202 | 0.815 | 1.63 |
| 50% | uT | 0.142 | 0.1324 | 0.1318 | 0.1307 | 0.1305 | 0.1318 | -- | -- |
| 50% | A/m | 0.142 | 0.1059 | 0.1054 | 0.1046 | 0.1044 | 0.1054 | 0.815 | 1.63 |
| 99% | uT | 0.142 | 0.1254 | 0.1248 | 0.1276 | 0.1206 | 0.1212 | -- | -- |
| 99% | A/m | 0.142 | 0.1003 | 0.0998 | 0.1021 | 0.0965 | 0.0970 | 0.815 | 1.63 |

uT=1.25* A/m

E-Field Strength at 15 cm from the edges surrounding the EUT and 15cm from the top surface of the EUT

| Charging Battery Level | Unit | Frequency Range (MHz) | Measured E-Field Strength Values (V/m) | | | | | FCC E-Field Strength 50% Limits (V/m) | FCC E-Field Strength Limits (V/m) |
|---|---|---|---|---|---|---|---|---|---|
| | | | Test Position A | Test Position B | Test Position C | Test Position D | Test Position E | | |
| 1% | V/m | 0.142 | 45.6019 | 45.0892 | 44.8178 | 44.5162 | 45.3003 | 307.0 | 614.0 |
| 50% | V/m | 0.142 | 39.9318 | 39.7509 | 39.4191 | 39.3588 | 39.7509 | 307.0 | 614.0 |
| 99% | V/m | 0.142 | 37.8206 | 37.6397 | 38.4842 | 36.3730 | 36.5539 | 307.0 | 614.0 |

Note: V/m= A/m *377

H-Field Strength at 20cm from the top surface of the EUT

| Charging Battery Level | Unit | Frequency Range (MHz) | Measured E-Field Strength Values (A/m) | FCC H-Field Strength 50% Limits (A/m) | FCC H-Field Strength Limits (A/m) |
|---|---|---|---|---|---|
| | | | Test Position E | | |
| 1% | uT | 0.142 | 0.1013 | -- | -- |
| 1% | A/m | 0.142 | 0.0810 | 0.815 | 1.63 |
| 50% | uT | 0.142 | 0.0912 | -- | -- |
| 50% | A/m | 0.142 | 0.0730 | 0.815 | 1.63 |
| 99% | uT | 0.142 | 0.0813 | -- | -- |
| 99% | A/m | 0.142 | 0.0650 | 0.815 | 1.63 |

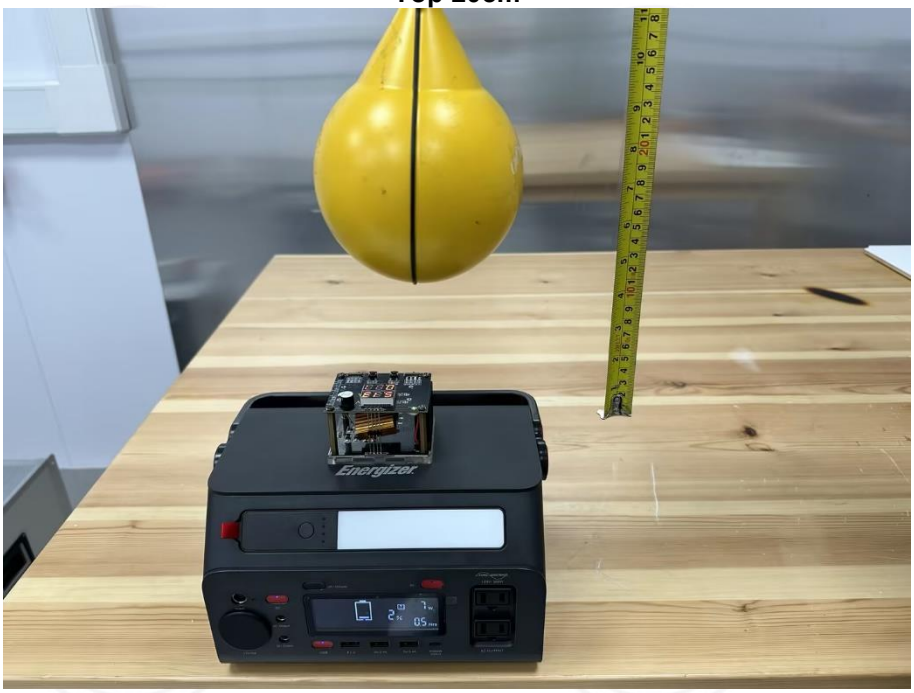
Note:A/m=uT/1.25

According to October 2018 TCB workshop. Only H-field required.

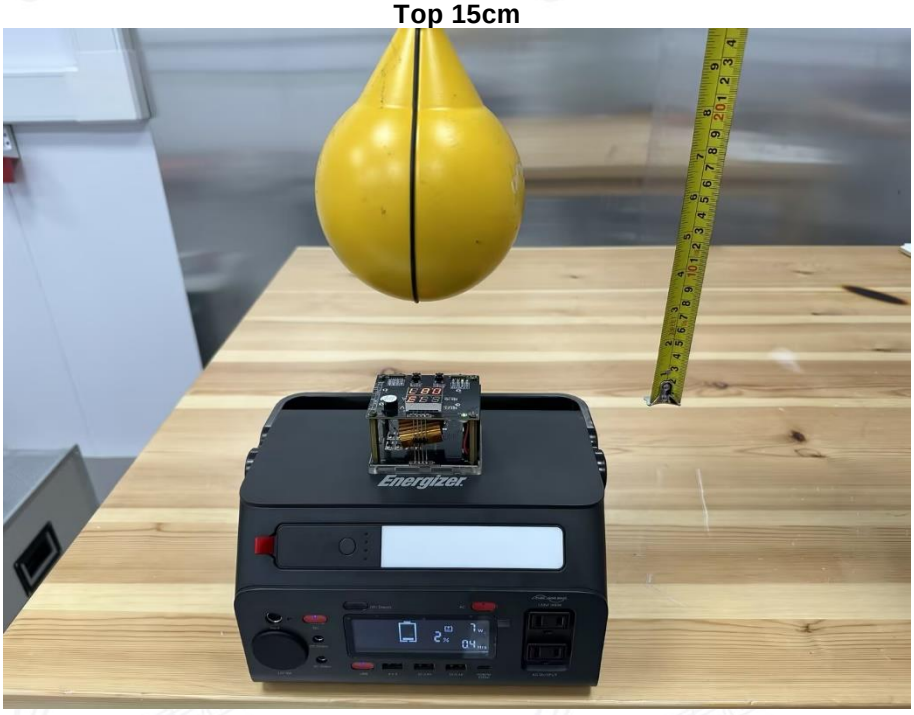
Note: All test modes were pre-tested, but we only recorded the worst case in this report.

## 1.1 Test Set-up Photo

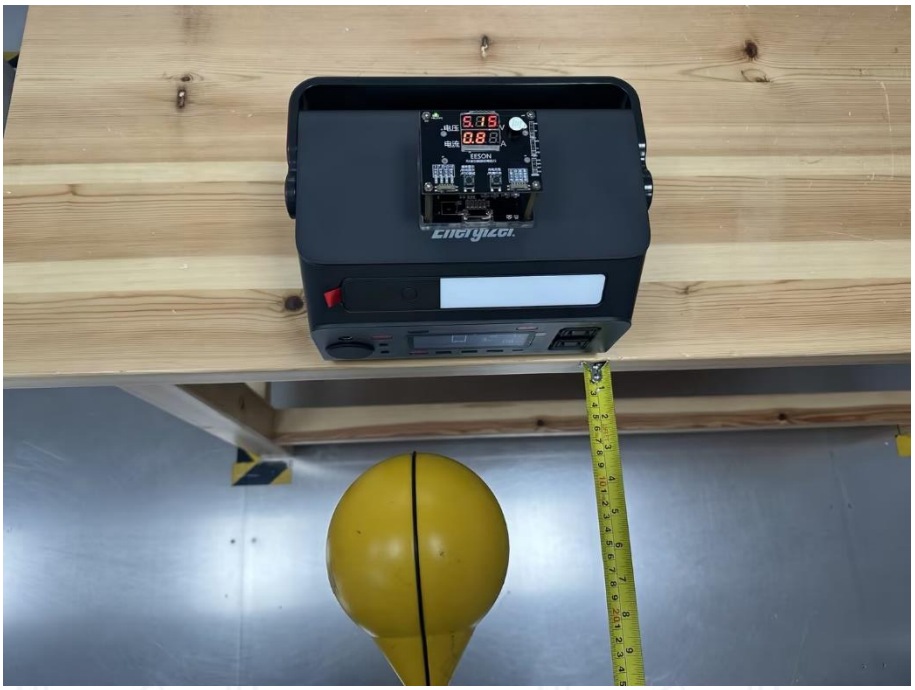
**Top 20cm**



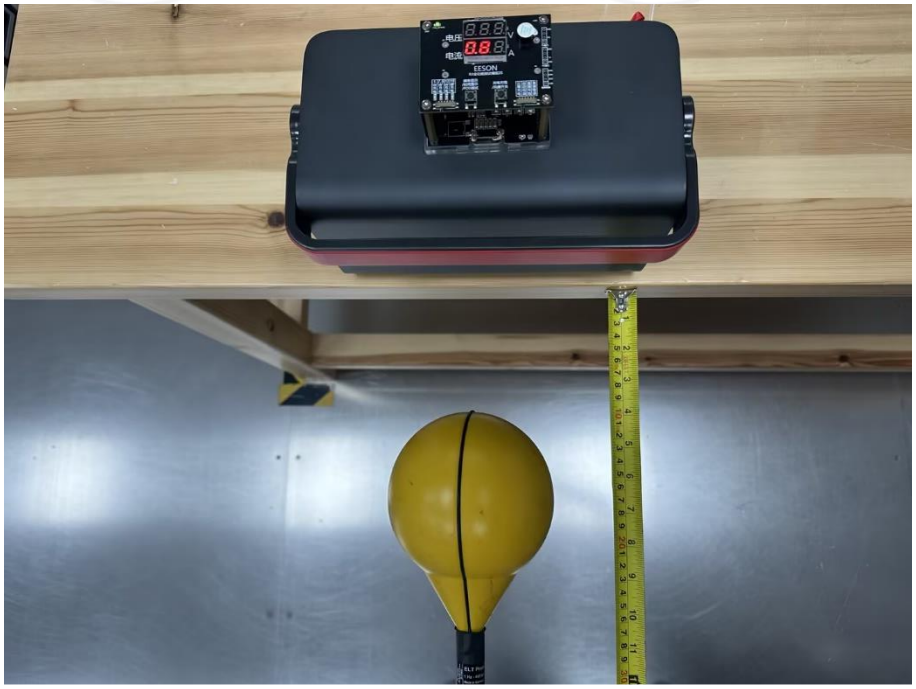

**Top 15cm**



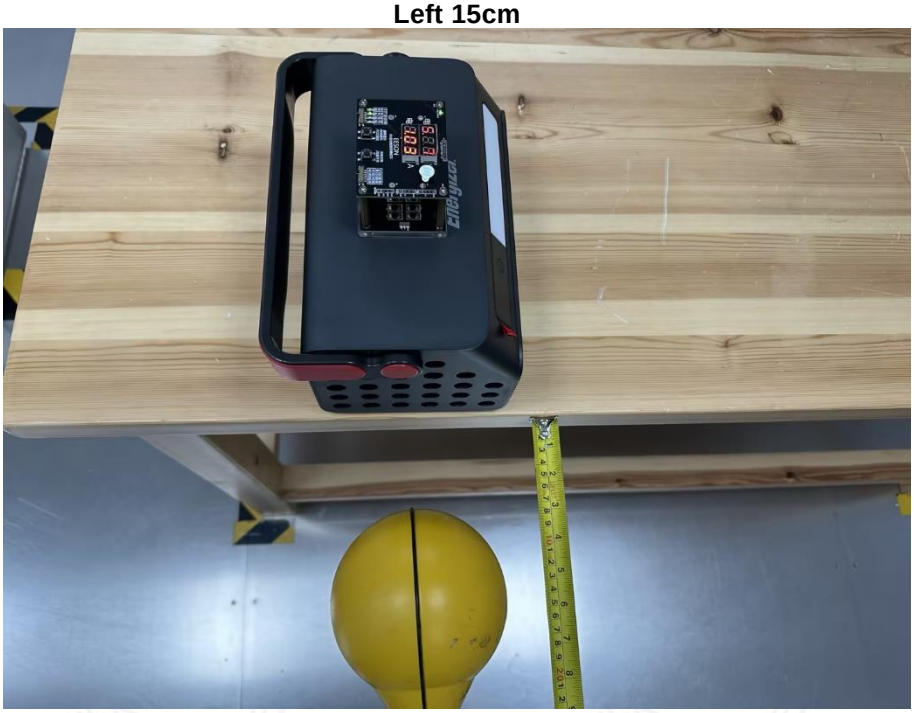
**Front 15cm**



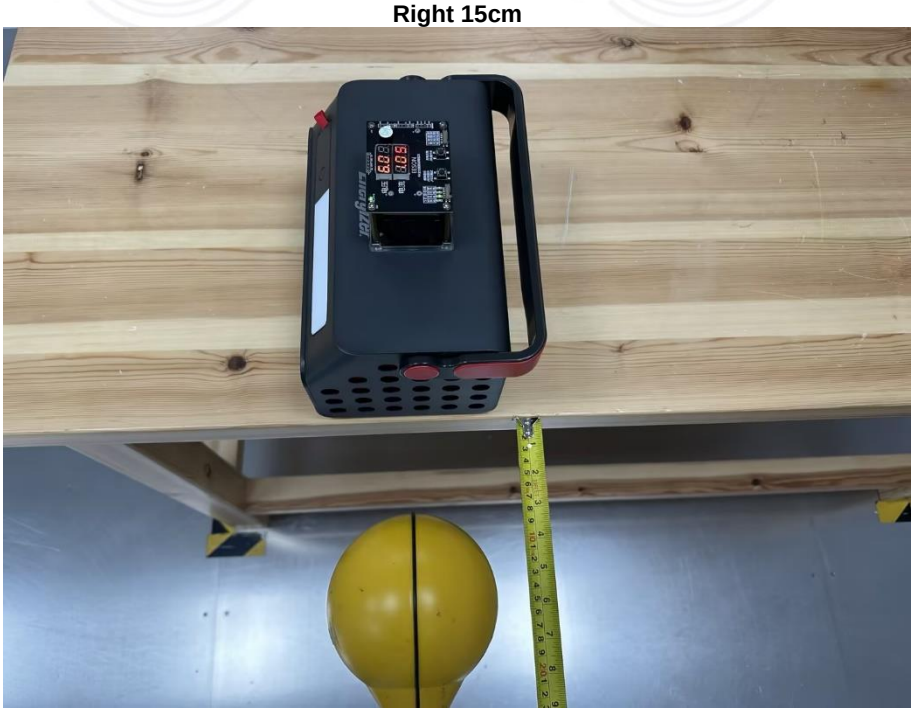
**Rear 15cm**



**Left 15cm**



**Right 15cm**



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