

# RF EVALUATION TEST REPORT

Applicant..... : Power System Electronic Technology Co., Ltd.

Address..... : No.1 Shangbian Road, Puxin Industrial District, Shipai Town, Dongguan City, Guangdong, China

Manufacturer..... : Power System Electronic Technology Co., Ltd.

Address..... : No.1 Shangbian Road, Puxin Industrial District, Shipai Town, Dongguan City, Guangdong, China

Factory..... : Power System Electronic Technology Co., Ltd.

Address..... : No.1 Shangbian Road, Puxin Industrial District, Shipai Town, Dongguan City, Guangdong, China

EUT ..... : Portable Multifunctional Power Bank

FCC ID..... : 2AQTM-PS330US

Brand Name..... : N/A

Model No. .... : PS-330US

Measurement : 47 CFR PART 2, Section 2.1091& 2.1093

Standard..... November 2019 TCB Workshop, Wireless Power Transfer Updates

Receipt Date of Samples.... : August 04, 2021

Date of Tested..... : October 28, 2021 to January 17, 2022

Date of Report..... : January 17, 2022

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

Breeze Jiang / Project Engineer



Approved by

Lori Fan / Authorized Signatory

## Table of Contents

1. General Description of EUT .....	4
2. Test Facility and Location .....	6
3. Test Modes Detail .....	6
4. Configuration of EUT.....	7
5. Modification of EUT .....	8
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 .....	10
11. Maximum Permissible Exposure.....	11
12. Test Equipment List.....	15
13. Test Photos .....	16

## Revision History

Report Number	Description	Issued Date
NTC2108509F-1	Initial Issue	2022-01-17

## 1. General Description of EUT

Product Information	
Product name:	Portable Multifunctional Power Bank
Main Model Name:	PS-330US
Additional Model Name:	N/A
Model Difference:	N/A
S/N:	2108-4792
Brand Name:	N/A
Hardware version:	N/A
Software version:	N/A
Temperature Range:	0 to 40°C (Declared by manufacturer)
Rating:	DC14.8V come from Battery, USB-C Input: PD30W (DC5V 3A, DC9V 3A, DC12V 2.5A, DC15V 2A, DC20V 1.5A), USB-C Output: PD60W (DC5V 3A, DC9V 3A, DC12V 3A, DC15V 3A, DC20V 3A), USB-A1/2 Output: DC5V 2.4A, USB-A Total Output: DC5V 3.4A, Wireless Output: 5W/7.5W/10W, AC Output: AC110V 100W Max
I/O Port:	Refer to the User's Manual
Accessories Information	
Adapter:	N/A
Cable:	N/A
Other:	N/A
Additional information	
Note:	N/A
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
Number of Primary Coil:	1 (Primary Coil = 10W)
Remark:	The information above are provided by the manufacturer. More detailed feature of the EUT please refers to the user manual.

## 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> <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> <p>The Certificate is valid until December 31, 2021</p> <p>Listed by FCC, November 06, 2017</p> <p>Test Firm Registration Number: 907417</p> <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

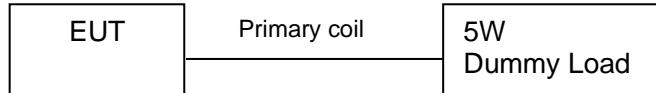
## 3. Test Modes Detail

Test Mode	Test Setup Configuration	Remark
1	Operating with primary coil + 5W Dummy Load	Internal Li-ion battery with full status
2	Operating with primary coil + 10W Dummy Load	Internal Li-ion battery with full status
3	Operating with primary coil + 5W Dummy Load	65W PD Adapter
4	Operating with primary coil + 10W Dummy Load	65W PD Adapter

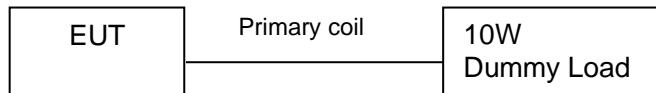
Note: Only the worst case (Input: 65W PD Adapter) was recorded in the report.

## 4. Configuration of EUT

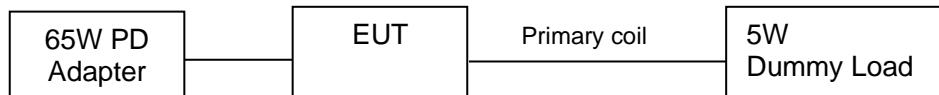
### Mode 1



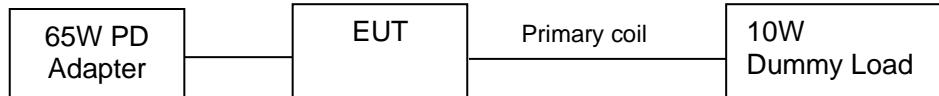
### Mode 2



### Mode 3



### Mode 4



## 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.	65W PD Adapter	HUAWEI	HW-200325CP0	N/A	---	---
2.	Dummy Load	EESON	5/7.5/10/15W	N/A	---	---

## 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 10W
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; the transfer system includes one source primary coils pairs.
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, although the EUT can be used as portable condition, the wireless charging function of the EUT is mainly designed to use on the desk or other surface, but not portable using. Normally it will keep away from the human 20cm at least during the charging, and such statements will be placed on the User Manual.
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.
7.	The H-field strength surrounding the device is below the applicable limit in 47CF 1.1310.	Yes, H-field strength results are all below the limit in 47CF 1.1310.
<p>Remark:</p> <p> <input checked="" type="checkbox"/> need PAG process  <input type="checkbox"/> no need PAG process  <input type="checkbox"/> Portable RF exposure evaluation process  <input checked="" type="checkbox"/> Mobile RF exposure evaluation process       </p>		

## 10. Measurement Uncertainty

No.	Test Item	Uncertainty	Remarks
1.	Magnetic Field Emissions	±0.15 dB	---
2.	Electric Field Emissions	±0.36 dB	

**Note:**

1. 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

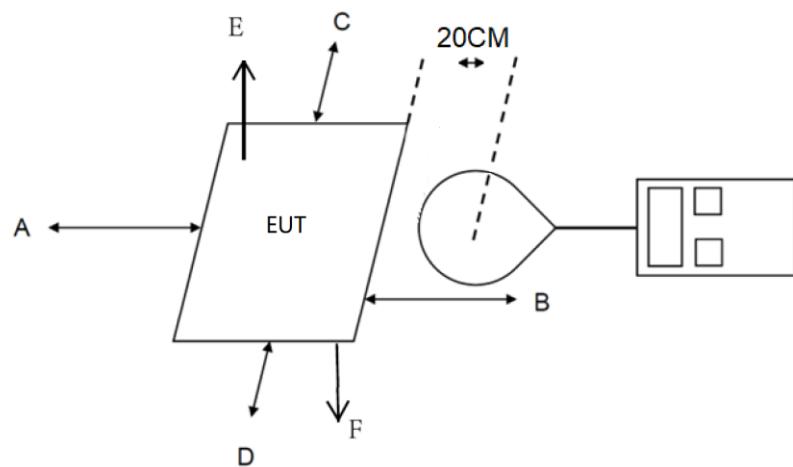
\*=Plane-wave equivalent power density

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/A/m 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**



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

---

## TEST PROCEDURES

- a. The EUT was placed on a non-conductive table top of shielding room or anechoic chamber, and the ancillary equipment (e.g., mobile phone, dummy loads) was placed on the EUT for charging.
- b. Maximum E-field and H-field measurements were tested  $r+8.8\text{cm}$  for sides A/B/C/D that exhibited on the block diagram of test setup and  $r+13.8\text{cm}$  for side E. The radius of H-field probe is 6.2cm.
- c. Along the side of the EUT to the E-field probe and H-field probe were positioned at the location to search maximum field strength and record the results. H-field data are taken along all three axes the device, from 15 cm and 20 cm, with one axis coincident with the axis of the main coil.
- d. Repeat the steps a~c on each test modes and configurations until the end of the test.

## TEST RESULTS

PASS

Please refer to the following pages.

Test Mode 3					
Test Distance (cm)	Test Position	Probe Measure Result (V/m)	Probe Measure Result (A/m)	Limit (V/m)	Limit (A/m)
15	Side A	0.539	0.179	614	0.815
	Side B	0.374	0.184	614	0.815
	Side C	0.352	0.193	614	0.815
	Side D	0.409	0.187	614	0.815
20	Side E	0.295	0.168	614	0.815

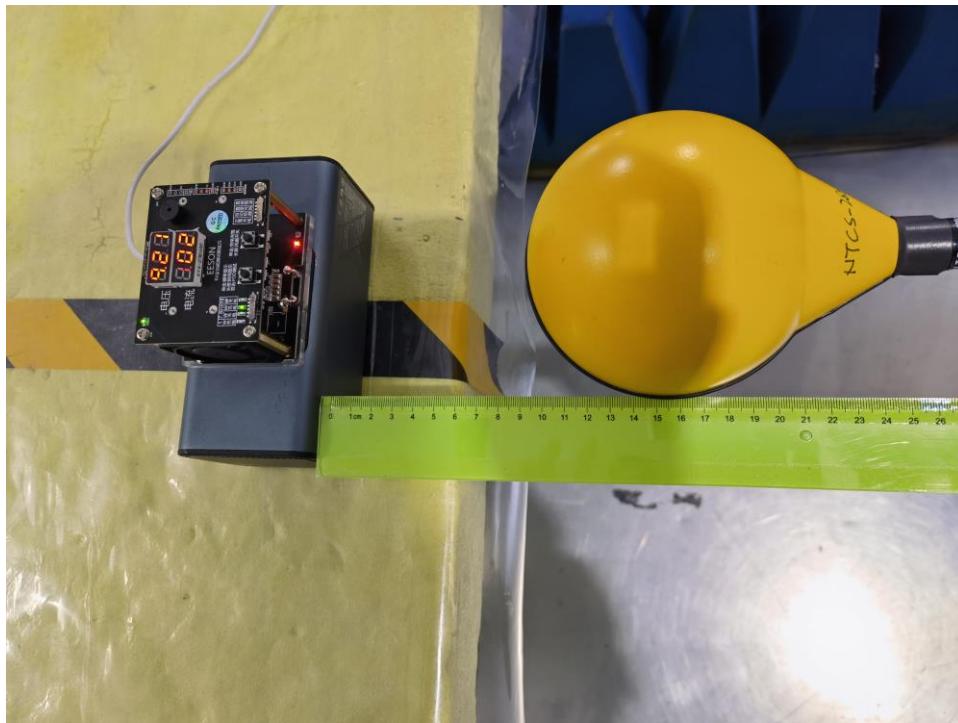
Test Mode 4					
Test Distance (cm)	Test Position	Probe Measure Result (V/m)	Probe Measure Result (A/m)	Limit (V/m)	Limit (A/m)
15	Side A	0.558	0.194	614	0.815
	Side B	0.451	0.182	614	0.815
	Side C	0.376	0.190	614	0.815
	Side D	0.419	0.188	614	0.815
20	Side E	0.304	0.173	614	0.815

**12. Test Equipment List**

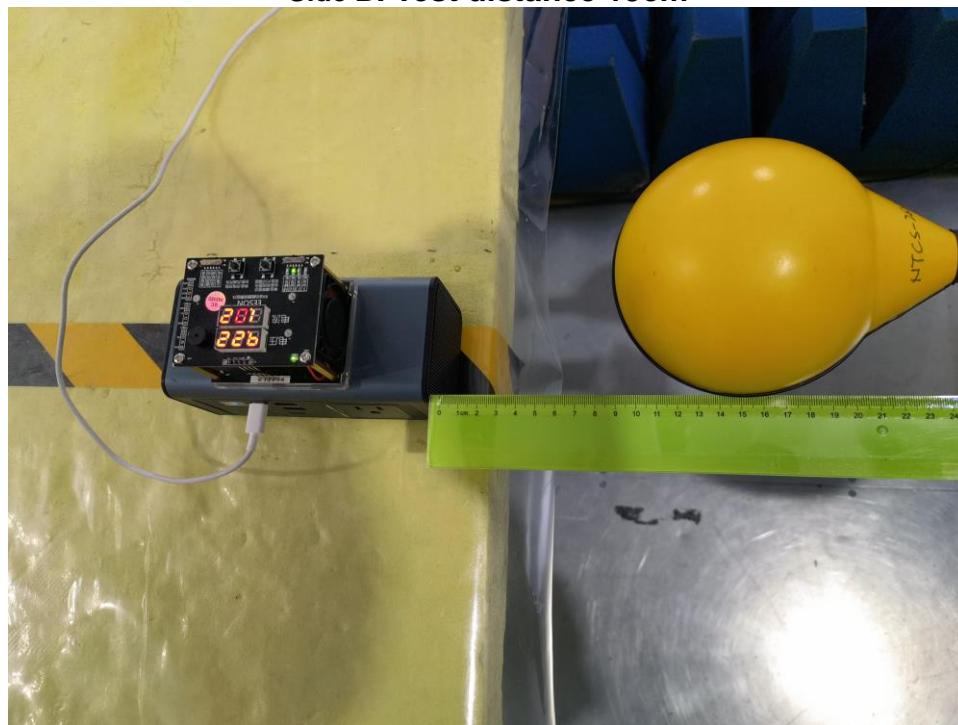
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Magnetic field probe 100cm <sup>2</sup>	Narda	ETL Probe 1Hz-400KHz (r=6.2cm)	M-1587	June 28,2021	1 Year
2.	E-Field Probe	Narda	EP-601	611WX70729	Mar. 23, 2021	1 Year

### 13. Test Photos

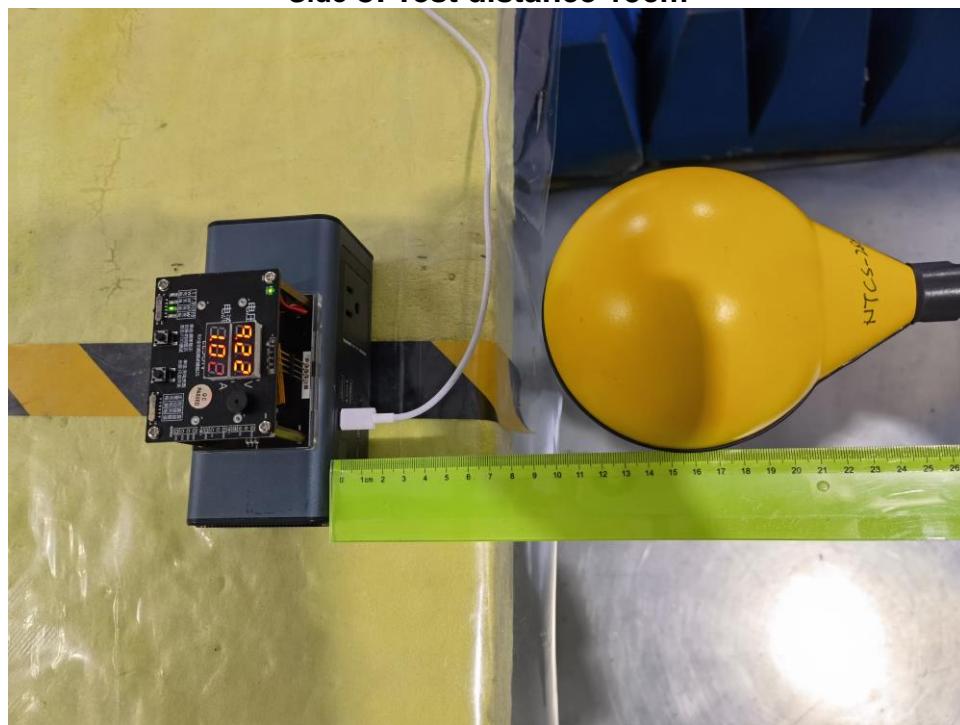
**Side A: Test distance 15cm**



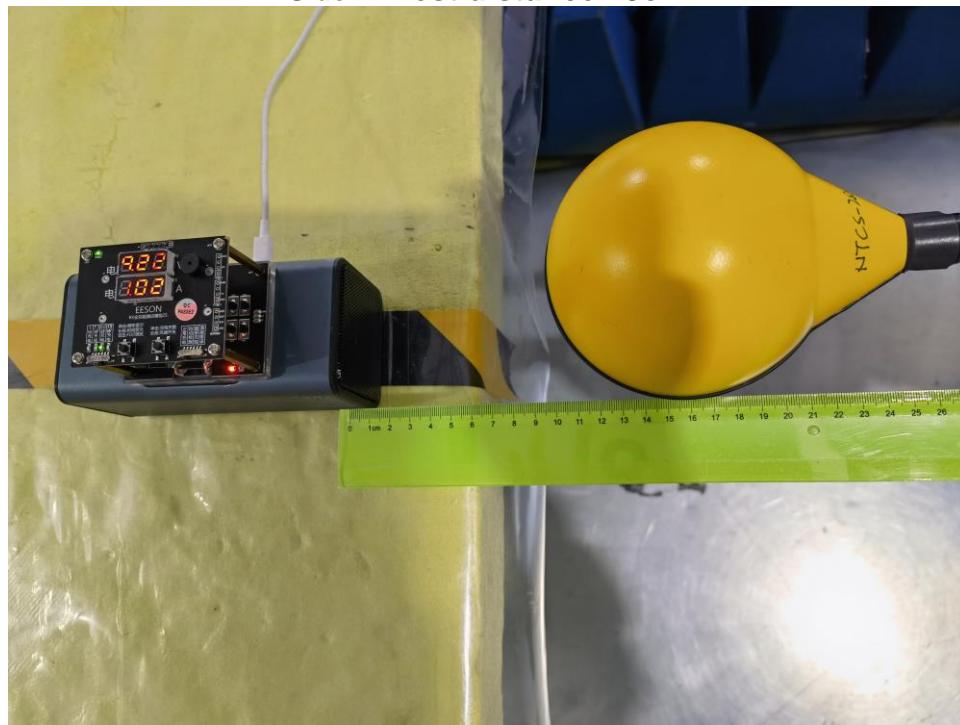
**Side B: Test distance 15cm**



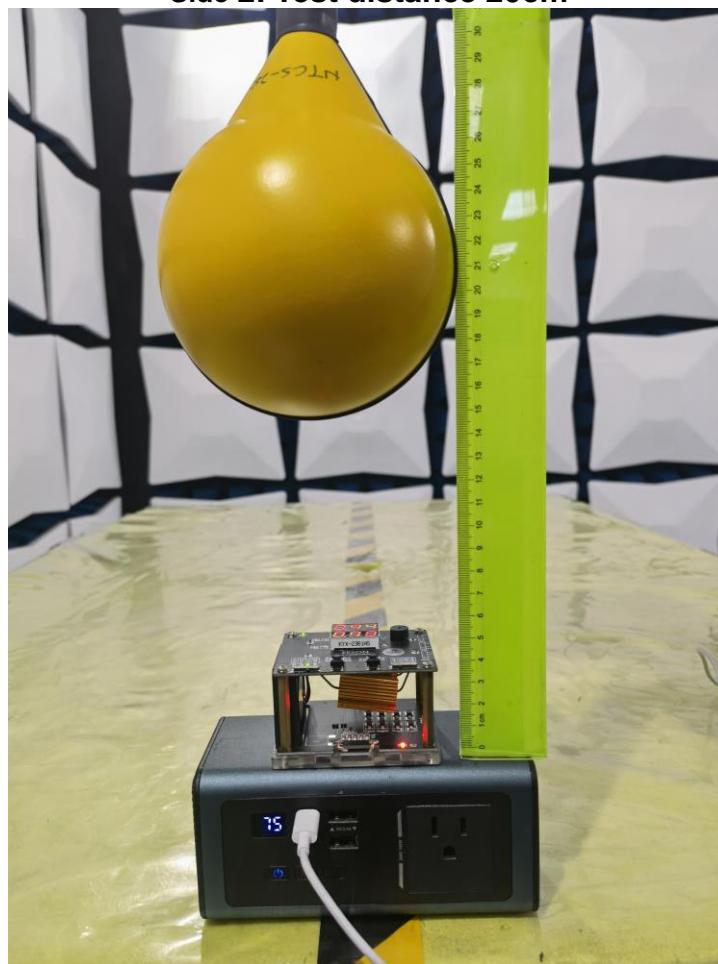
**Side C: Test distance 15cm**



**Side D: Test distance 15cm**



**Side E: Test distance 20cm**



---End---