

RF EVALUATION TEST REPORT

Applicant..... : MAGFAST LLC

Address..... : 1 GRANDVIEW AVE Cornwall on Hudson, NY 12520 USA

Manufacturer..... : Shenzhen QiAo Communication Tech Co., Ltd

Address..... : Room ABCDEFGH OF 16F, Block C, Central Avenue, interchange between
XiXiang Road and Baoyuan, Laodong Community, XiXiang Road, Baoan District,
ShenZhen

Factory..... : Dongguan IRice Electronics Development Co.,Ltd.

Address..... : Building 1, No.17, Hudie 1st Road, Tianxin village, Huangjiang town, Dongguan
city, Guangdong province, PRC 523763 China

EUT : Wireless charger portable power bank

FCC ID..... : 2A2Y4-LIFE

Brand Name..... : MAGFAST®

Model No. : SBNP-NPK-LC-UU-PP-AW-01

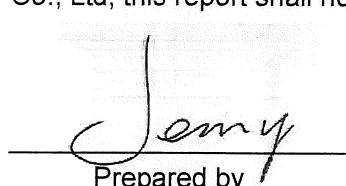
Measurement Standard..... : 47 CFR PART 2, Section 2.1091& 2.1093

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

Date of Tested..... : August 04, 2021 to October 27, 2022

Date of Report..... : November 11, 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

Jenny Liu / Project Engineer



Approved by

Ion Fan / Authorized Signatory

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Revision History

1. General Description of EUT

Product Information	
Product name:	Wireless charger portable power bank
Main Model Name:	SBNP-NPK-LC-UU-PP-AW-01
Additional Model Name:	N/A
Model Difference:	N/A
S/N:	L000-A001-0KEU-0083
Brand Name:	MAGFAST®
Hardware version:	Not Stated
Software version:	Not Stated
Rating:	DC3.8V Come from internal li-ion battery, INPUTS: USB-C: DC 5V 3A, 9V 2A, 12V 1.5A, PD Qi:5W Micro- USB: 5V 2A MAGFAST: 5V2A OUTPUTS: USB-C: DC 5V 3A, 9V 2A, 12V 1.5A PD, USB-A: 5V 3A, 9V 2A, 12V 1.5A, Qi: 5W, 7.5W, 10W, MAGFAST: 5V 2A
Typical Arrangement:	Tabletop
I/O Port:	Refer to the User's Manual
Accessories Information	
Adapter:	N/A
Cable:	USB line: 6cm, unshielded
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:	110.5-210KHz
Modulation Type:	FSK
Antenna Type:	Coil antenna

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>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

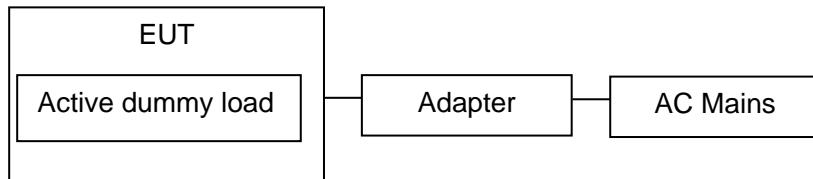
3. Test Modes Detail

Test Mode	Test Setup Configuration	Remark
1	wireless charging (5W)	---
2	wireless charging (7.5W)	---
3	wireless charging (10W)	---

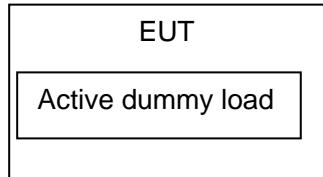
Note: Both the internal li-ion battery and external AC/DC adapter power modes are considered, and only the worst case was recorded in the report.

4. Configuration of EUT

(a) Powered by external AC/DC Adapter



(b) Powered by internal li-ion battery



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.	AC/DC Adapter	HUAWEI	65W	N/A	---	Provided by the lab
2.	Active Dummy Load	EESON	5/7.5/10/15W	N/A	---	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

TCB Workshop October 2021

9. Equipment approval considerations

No.	Requirements	Conditions of the EUT
1.	Power transfer frequency is less than 1MHz	Yes, the operated frequency range is 110.5-210KHz.
2.	Output power from each primary coil is less than or equal to 15 watts	Yes, the maximum output power of 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
4.	Client device is placed directly in contact with the transmitter.	Yes
5.	Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).	The EUT is portable device.
6.	The aggregate H-field strengths at 15cm surrounding the device and 20cm above the top surface from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit.	Yes
Remark: <input checked="" type="checkbox"/> need PAG process <input 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	
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 ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
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
300-1500	/	/	f/300	6
1500-100,000	/	/	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
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

F=frequency in MHz

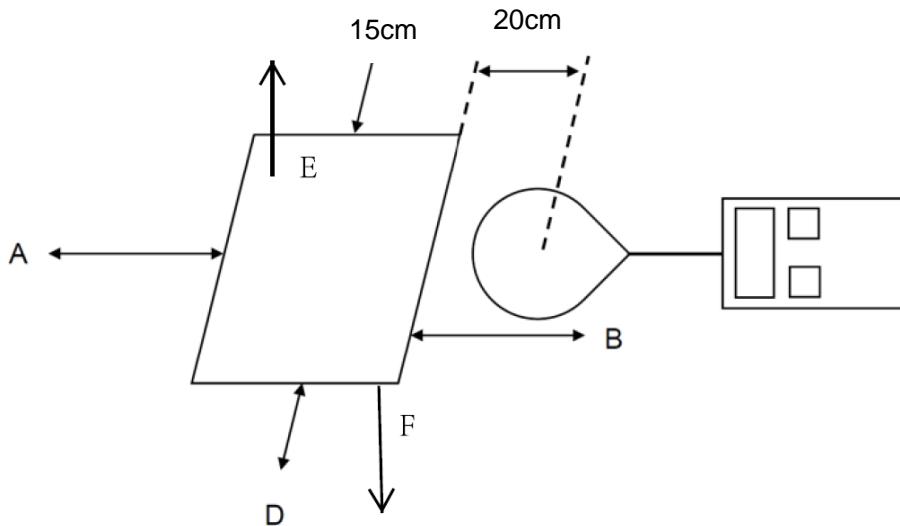
*=Plane-wave equivalent power density

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.

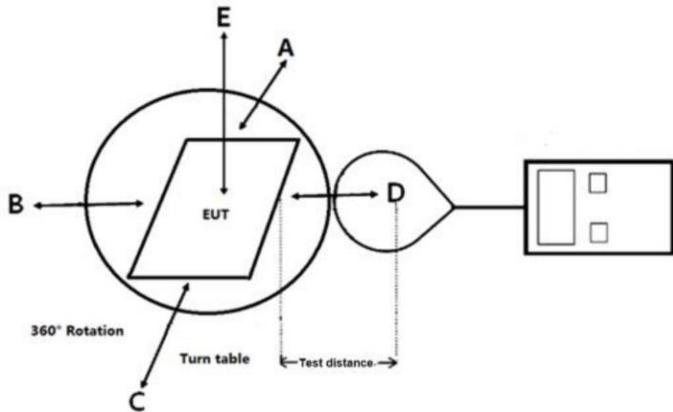
BLOCK DIAGRAM OF TEST SETUP

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

- 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 2/4/6/8/10/12/14/16/18/20cm (portable device) or 15/20cm (mobile device) from each side of the EUT.
- c. Along the side of the EUT to center of E-field probe and H-field probe were positioned at the location to search maximum field strength and record the results.
- 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 of the worst case (10W wireless charging & powered by external AC/DC Adapter).

Test Mode 3					
Test Distance (cm)	Test Position	E-Field Portable Measure Result (V/m)	H-Field Portable Measure Result (A/m)	E-Field Limit (V/m)	H-Field Limit (A/m)
0	Side A	---	0.53	614	1.63
	Side B	---	0.51	614	1.63
	Side C	---	0.52	614	1.63
	Side D	---	0.55	614	1.63
	Side E	---	0.61	614	1.63
2	Side A	---	0.42	614	1.63
	Side B	---	0.41	614	1.63
	Side C	---	0.45	614	1.63
	Side D	---	0.48	614	1.63
	Side E	---	0.56	614	1.63
4	Side A	---	0.32	614	1.63
	Side B	---	0.33	614	1.63
	Side C	---	0.31	614	1.63
	Side D	---	0.34	614	1.63
	Side E	---	0.39	614	1.63
6	Side A	---	0.26	614	1.63
	Side B	---	0.24	614	1.63
	Side C	---	0.26	614	1.63
	Side D	---	0.27	614	1.63
	Side E	---	0.29	614	1.63
8	Side A	---	0.23	614	1.63
	Side B	---	0.22	614	1.63
	Side C	---	0.23	614	1.63
	Side D	---	0.23	614	1.63
	Side E	---	0.25	614	1.63
10	Side A	---	0.21	614	1.63
	Side B	---	0.21	614	1.63
	Side C	---	0.22	614	1.63
	Side D	---	0.22	614	1.63
	Side E	---	0.23	614	1.63

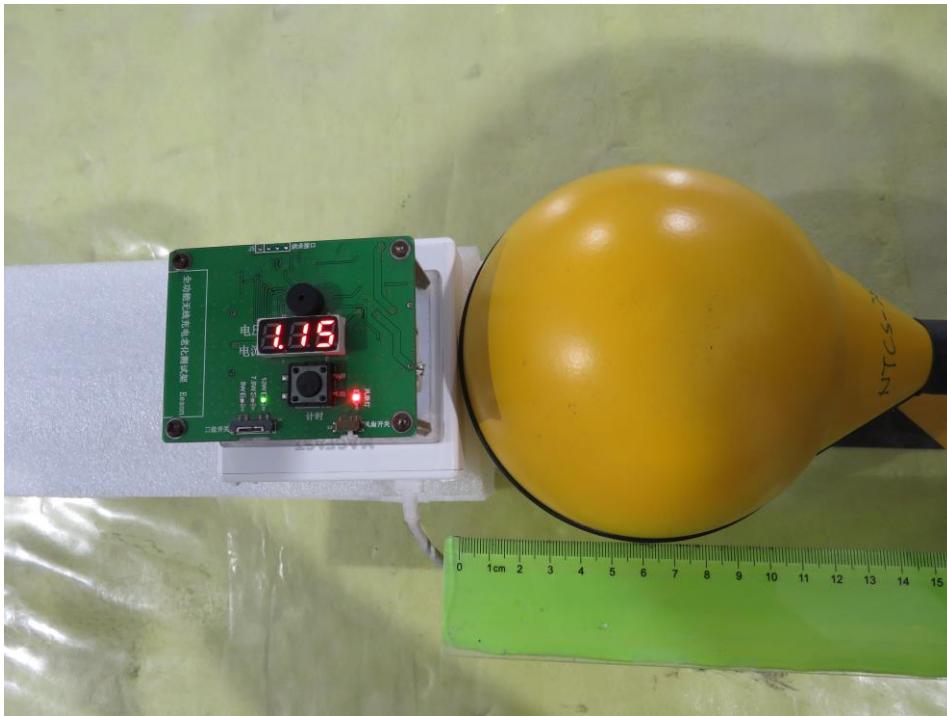
Test Mode 3					
Test Distance (cm)	Test Position	E-Field Portable Measure Result (V/m)	H-Field Portable Measure Result (A/m)	E-Field Limit (V/m)	H-Field Limit (A/m)
12	Side A	---	0.21	614	1.63
	Side B	---	0.22	614	1.63
	Side C	---	0.20	614	1.63
	Side D	---	0.21	614	1.63
	Side E	---	0.22	614	1.63
14	Side A	---	0.21	614	1.63
	Side B	---	0.23	614	1.63
	Side C	---	0.20	614	1.63
	Side D	---	0.22	614	1.63
	Side E	---	0.21	614	1.63
16	Side A	---	0.23	614	1.63
	Side B	---	0.22	614	1.63
	Side C	---	0.23	614	1.63
	Side D	---	0.20	614	1.63
	Side E	---	0.21	614	1.63
18	Side A	---	0.22	614	1.63
	Side B	---	0.20	614	1.63
	Side C	---	0.21	614	1.63
	Side D	---	0.22	614	1.63
	Side E	---	0.20	614	1.63
20	Side A	---	0.21	614	1.63
	Side B	---	0.21	614	1.63
	Side C	---	0.22	614	1.63
	Side D	---	0.21	614	1.63
	Side E	---	0.20	614	1.63

12. Test Equipment List

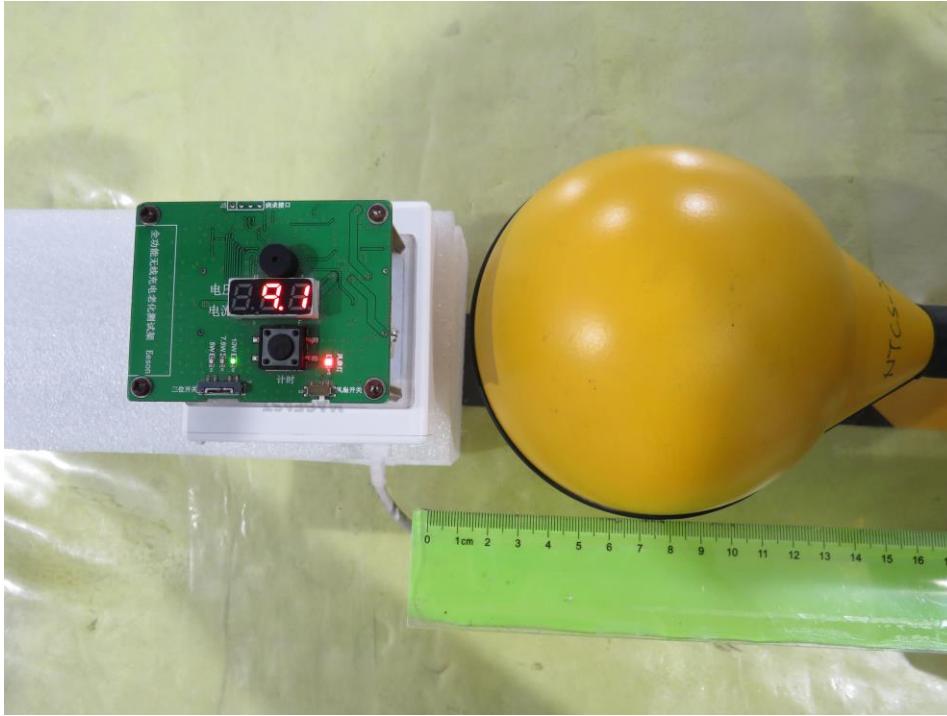
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Magnetic field probe 100cm ²	Narda	ETL Probe 1Hz-400KHz	M-1587	Mar. 23, 2022	1 Year
2.	E-Field Probe	Narda	EP-601	611WX70729	Mar. 23, 2022	1 Year

13. Test Photos

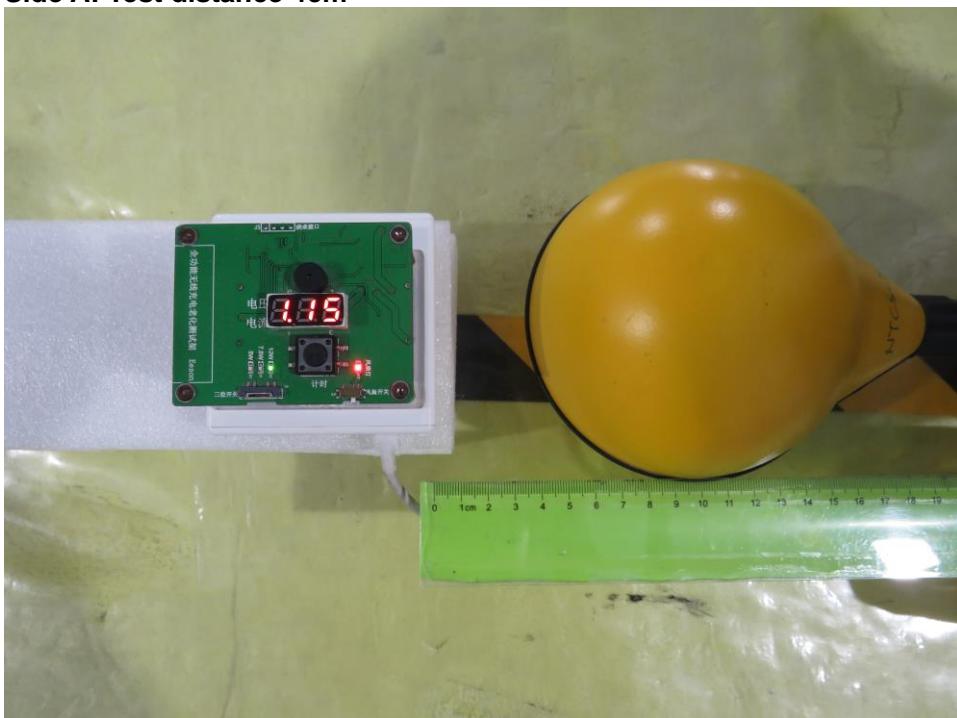
Side A: Test distance 0cm



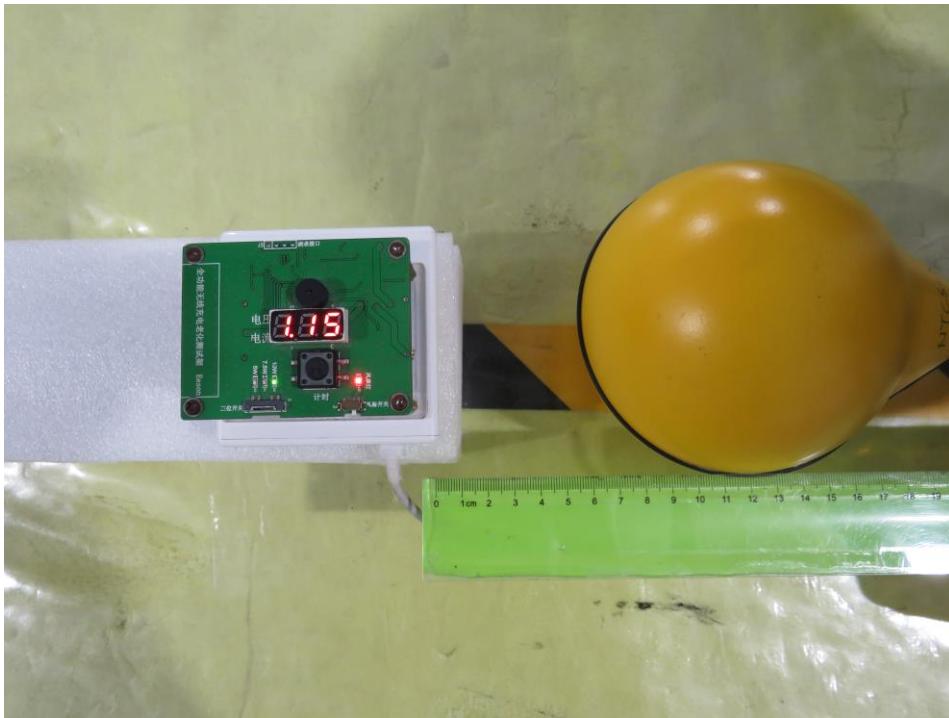
Side A: Test distance 2cm



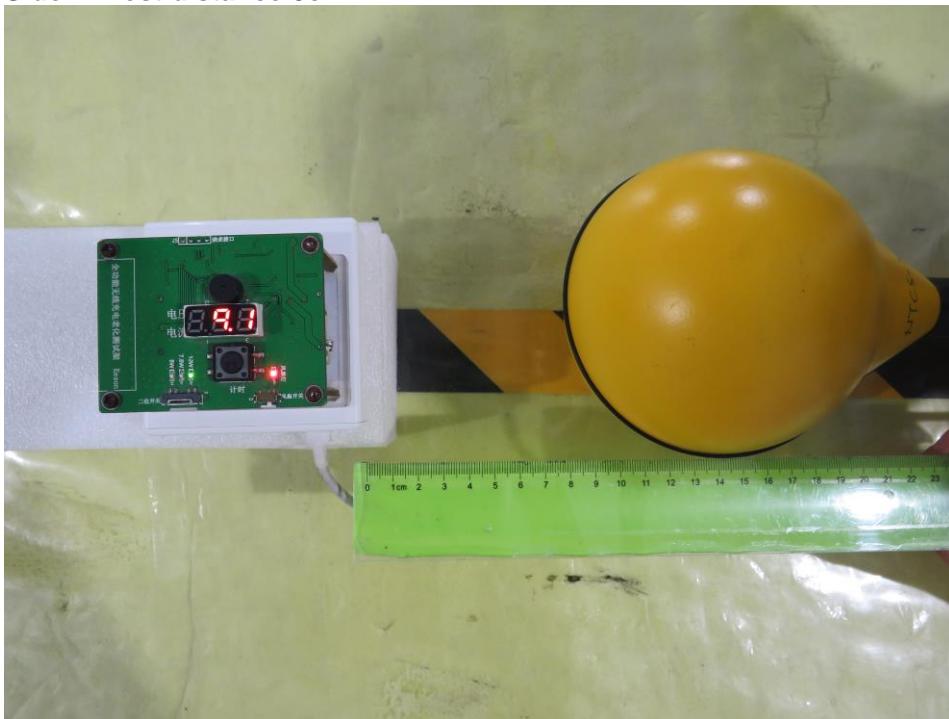
Side A: Test distance 4cm



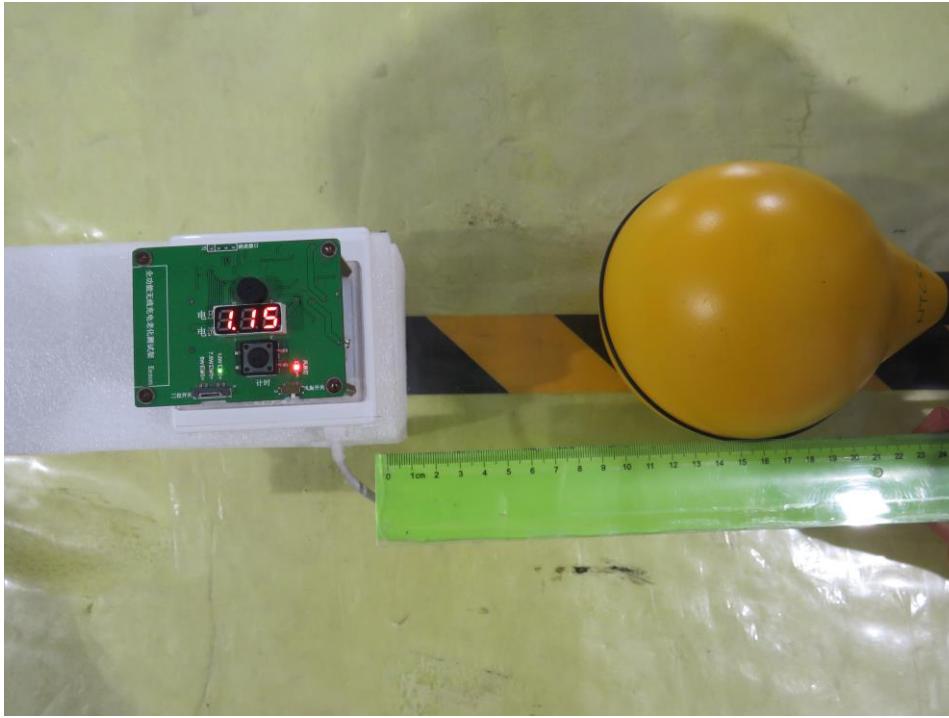
Side A: Test distance 6cm



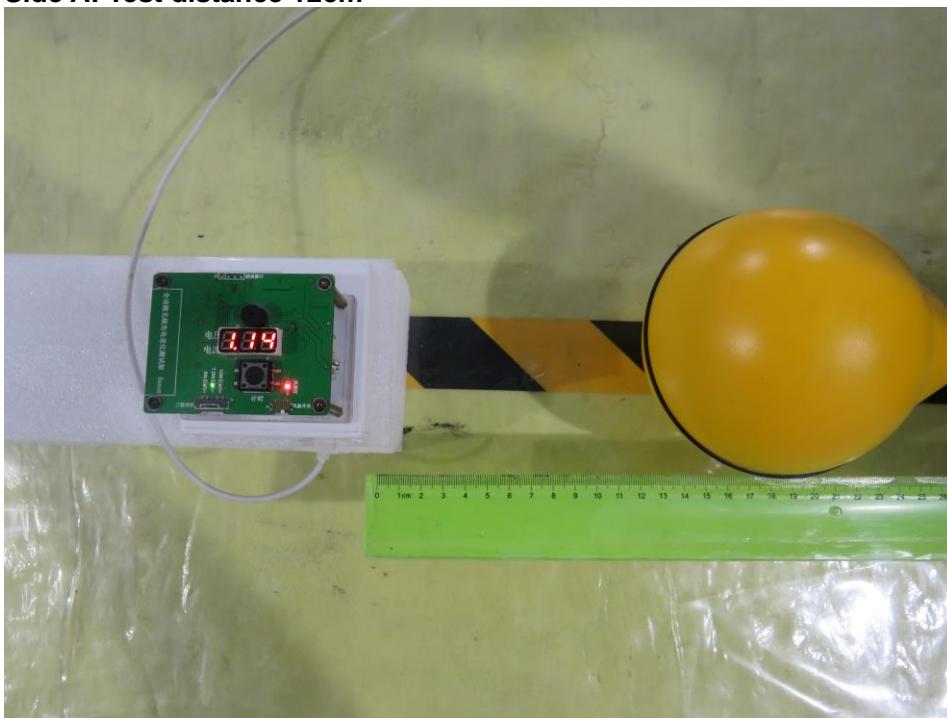
Side A: Test distance 8cm



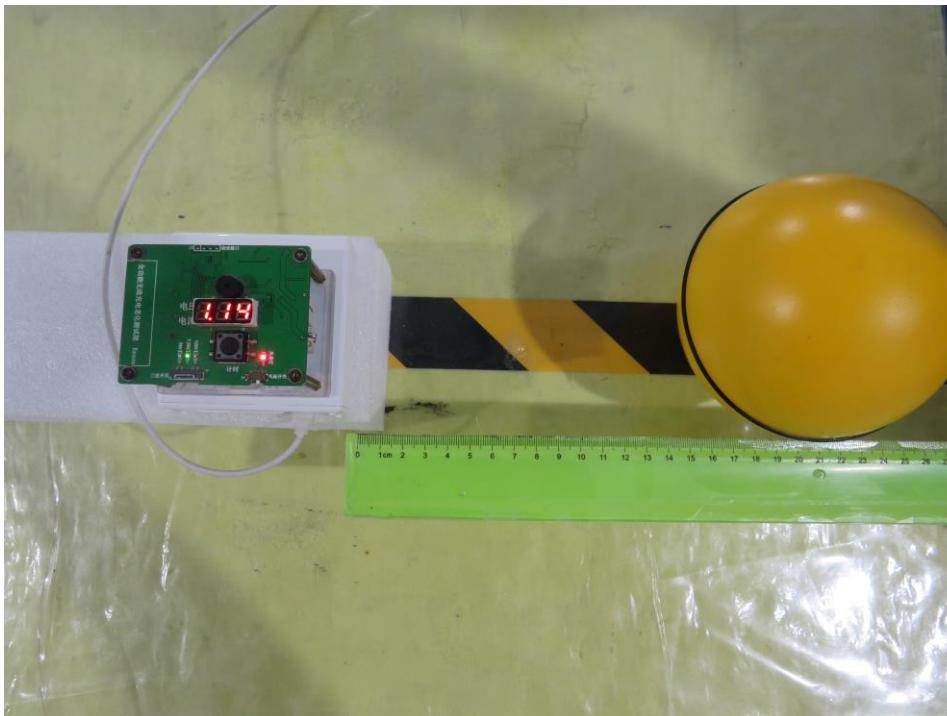
Side A: Test distance 10cm



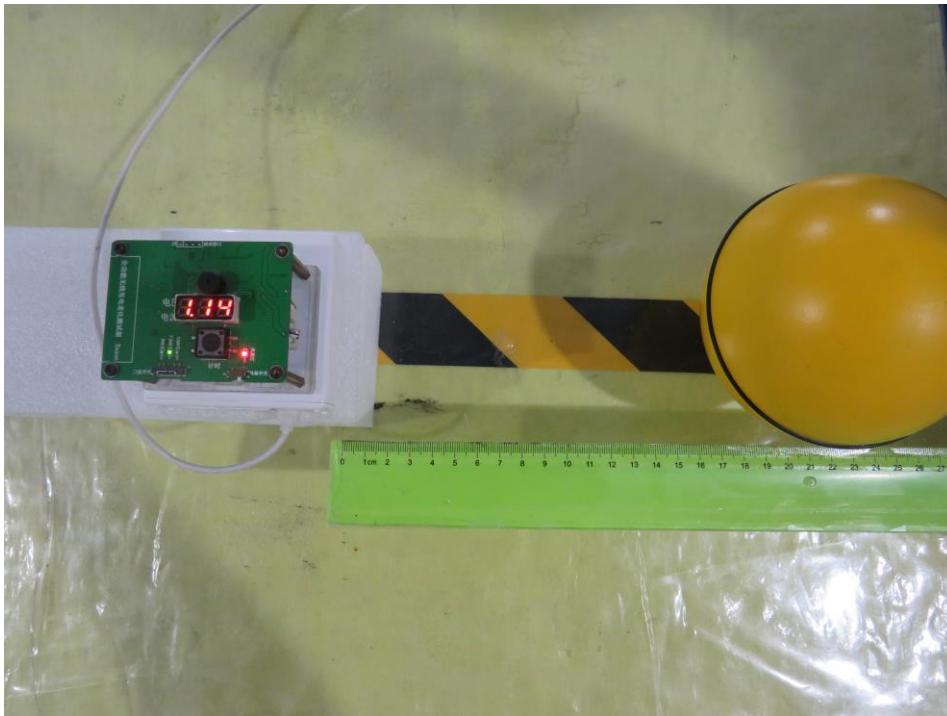
Side A: Test distance 12cm



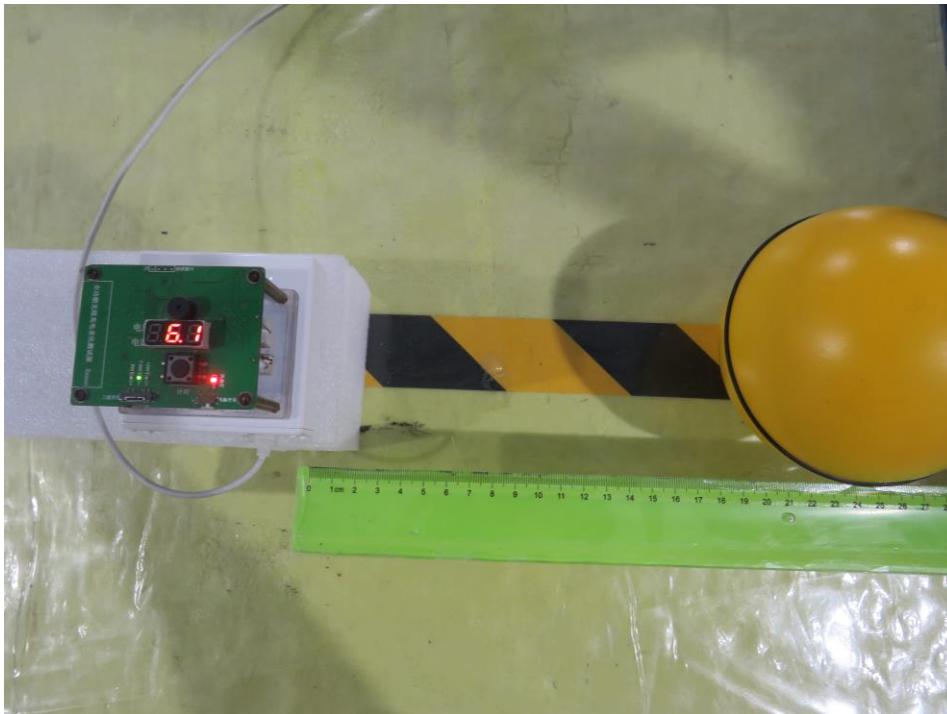
Side A: Test distance 14cm



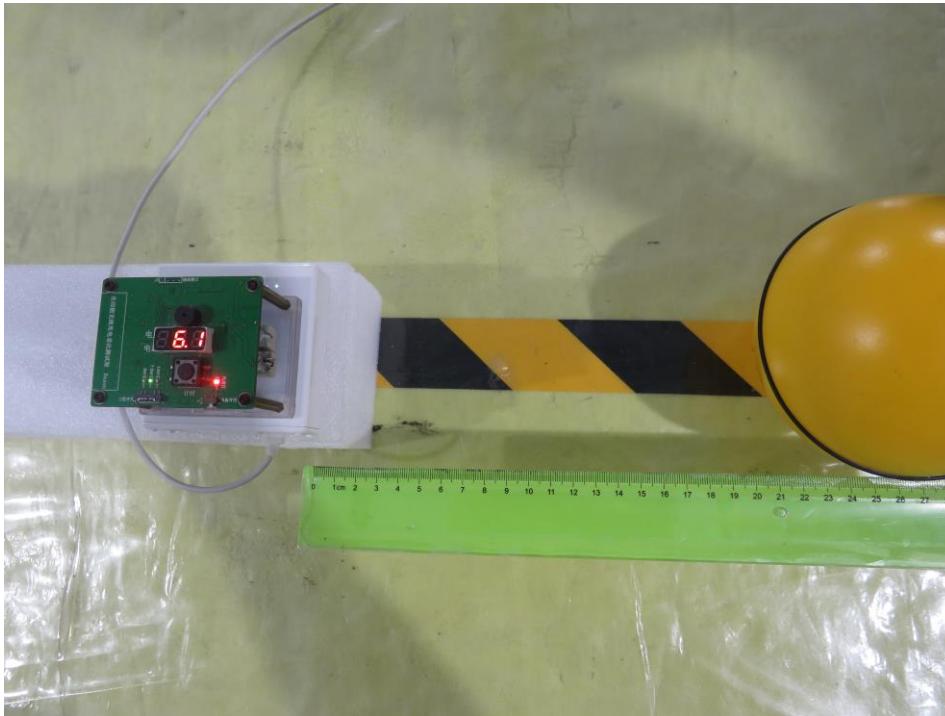
Side A: Test distance 16cm



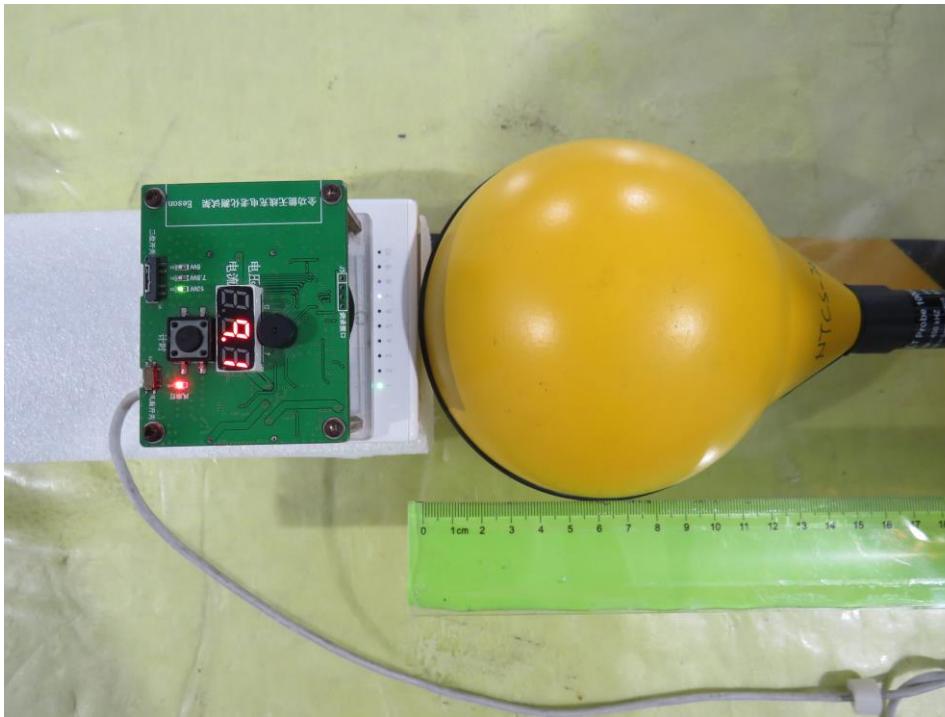
Side A: Test distance 18cm



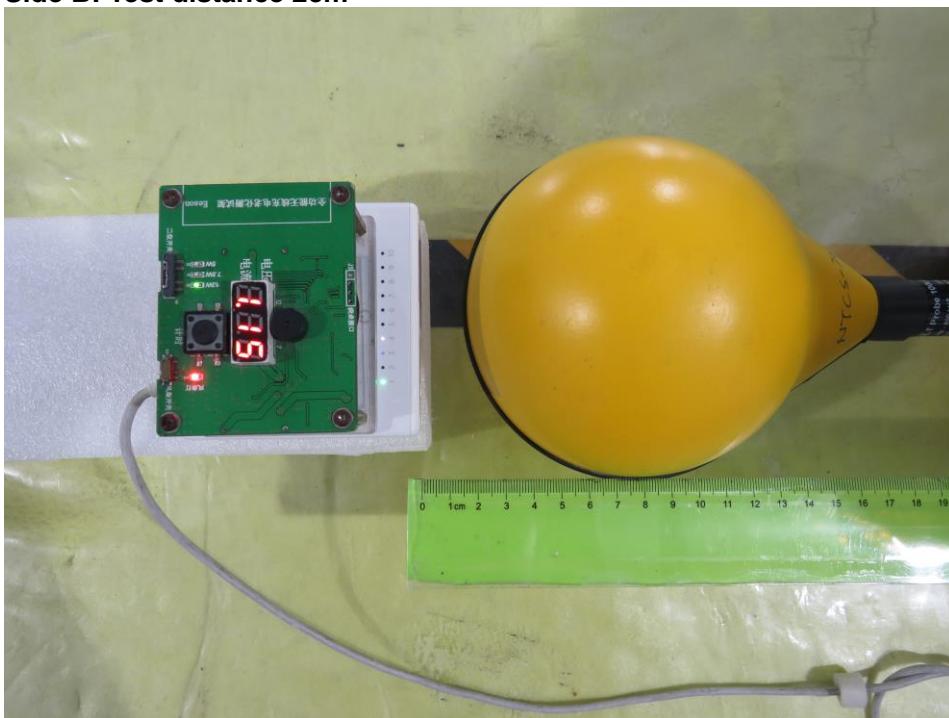
Side A: Test distance 20cm



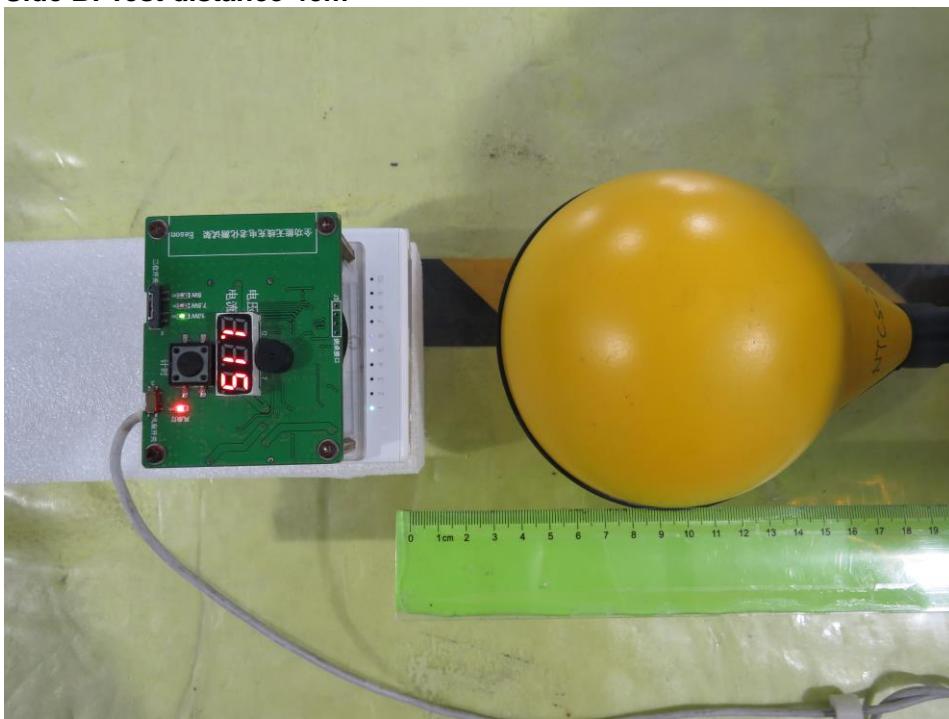
Side B: Test distance 0cm



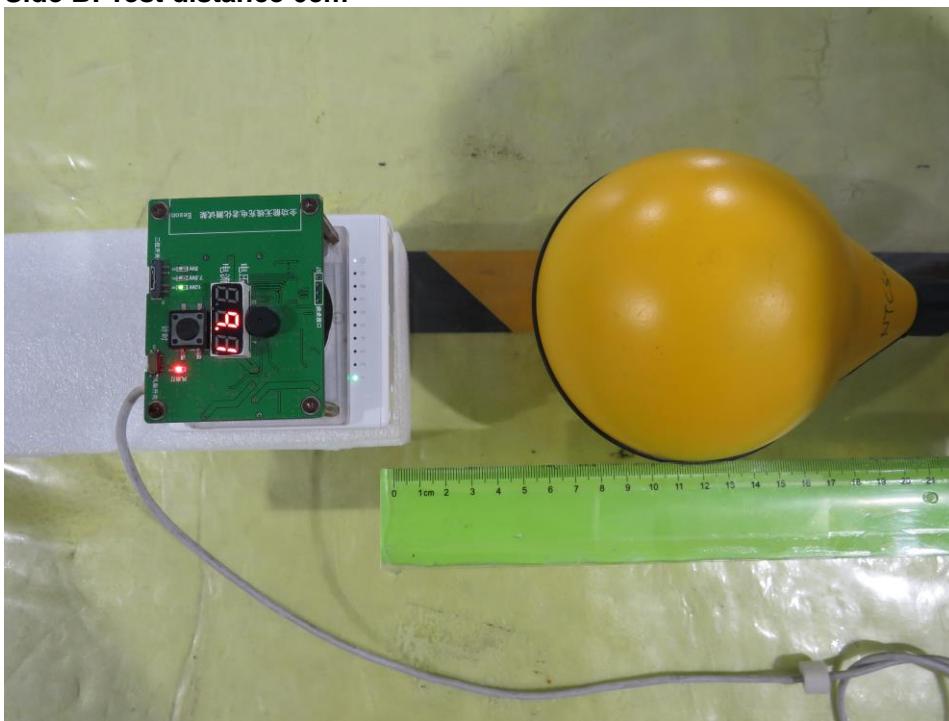
Side B: Test distance 2cm



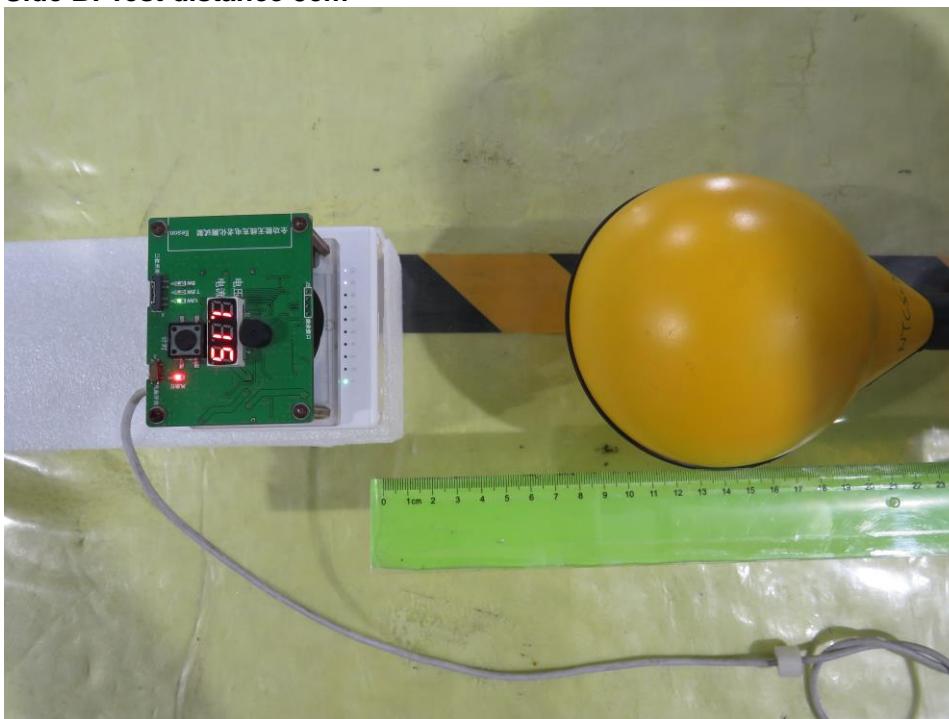
Side B: Test distance 4cm



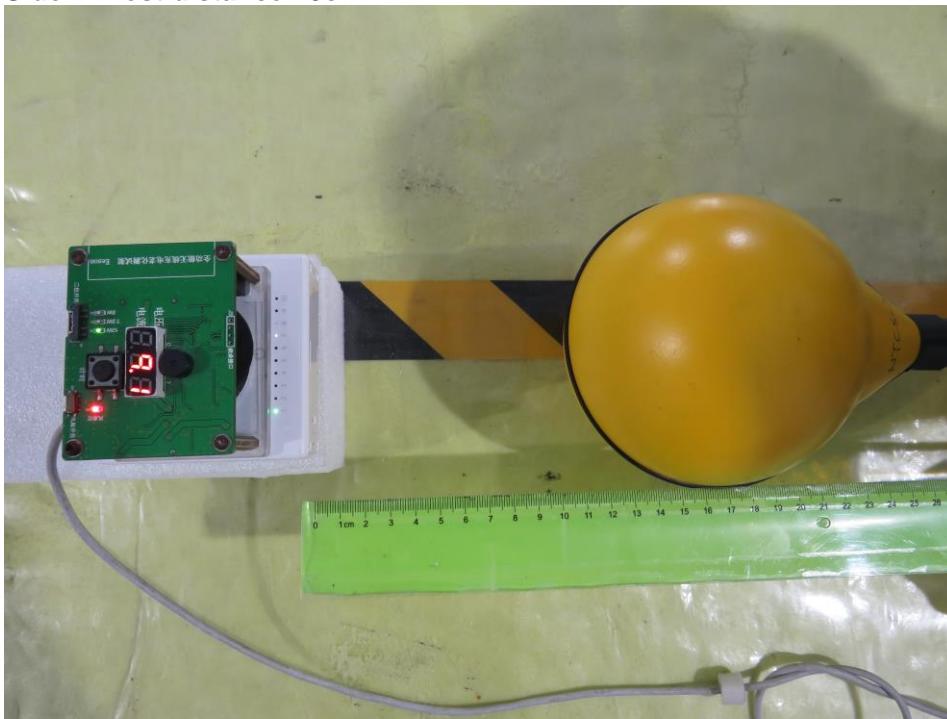
Side B: Test distance 6cm



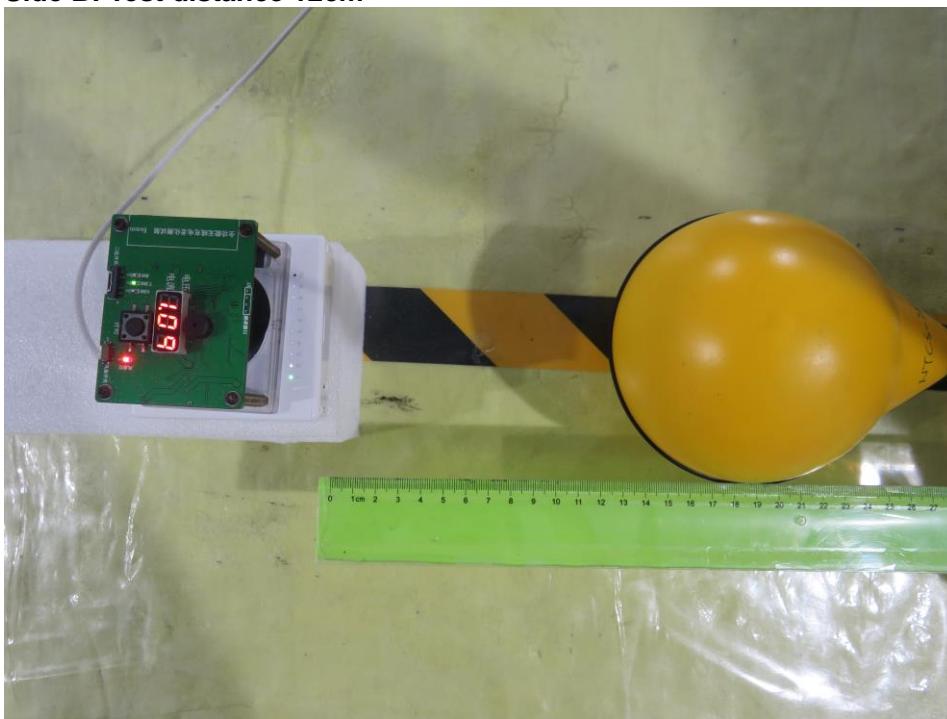
Side B: Test distance 8cm



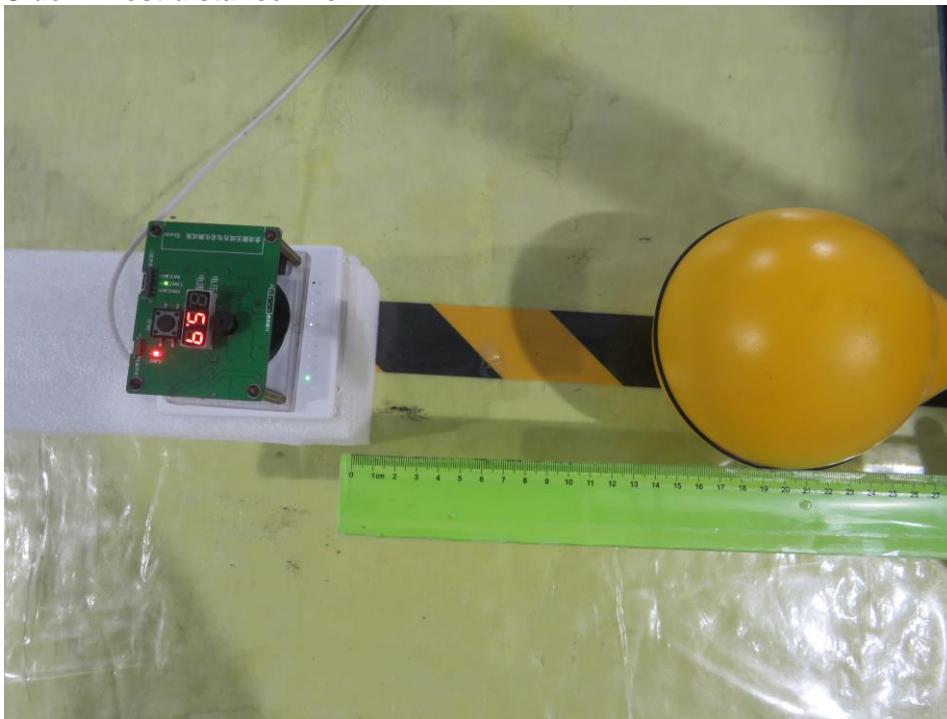
Side B: Test distance 10cm



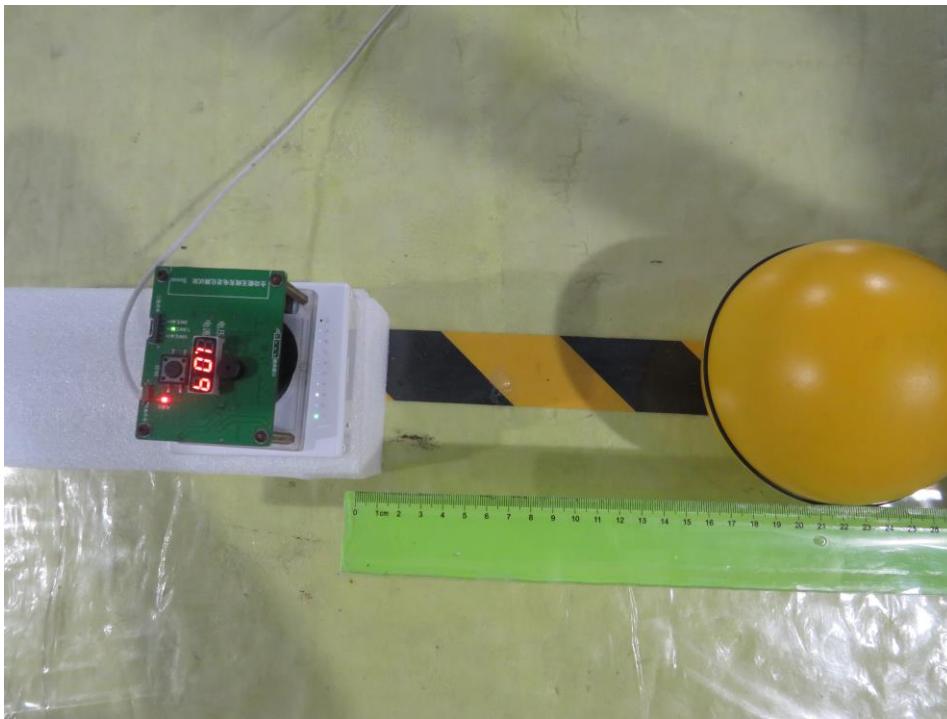
Side B: Test distance 12cm



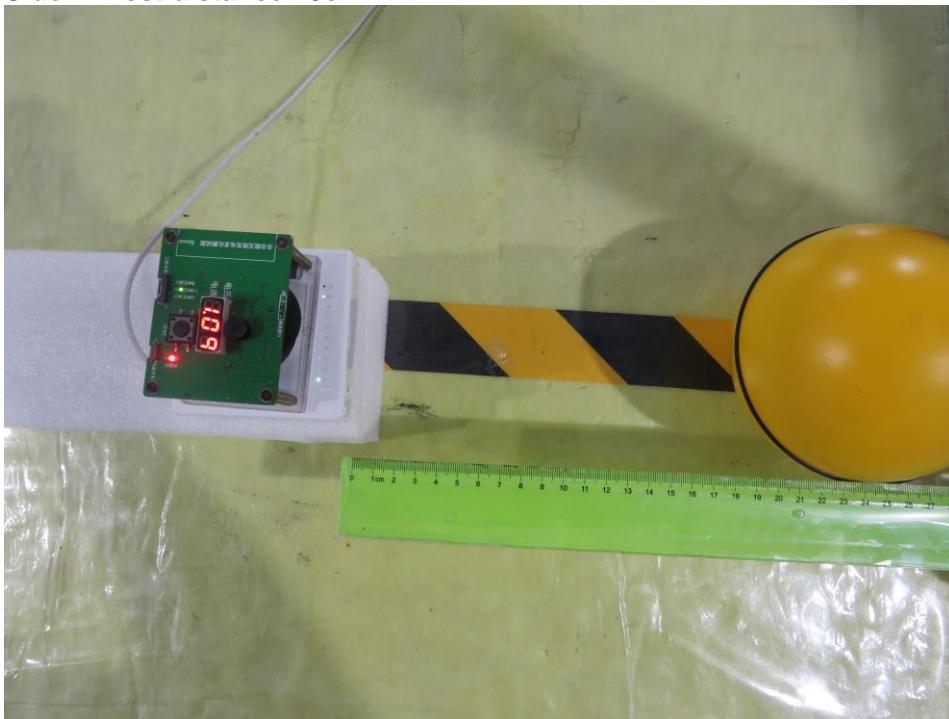
Side B: Test distance 14cm



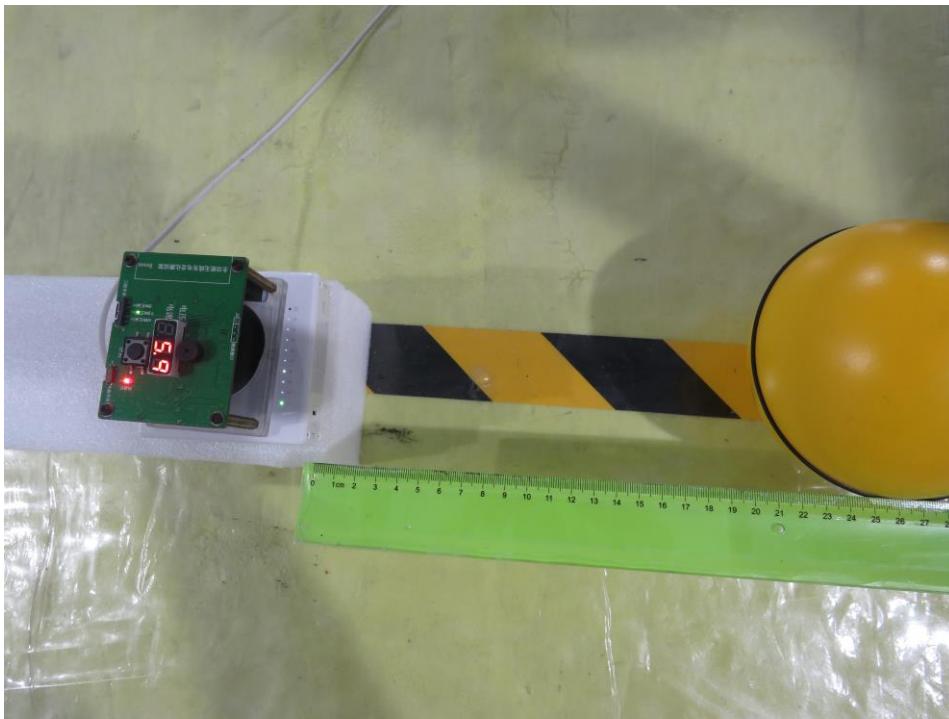
Side B: Test distance 16cm



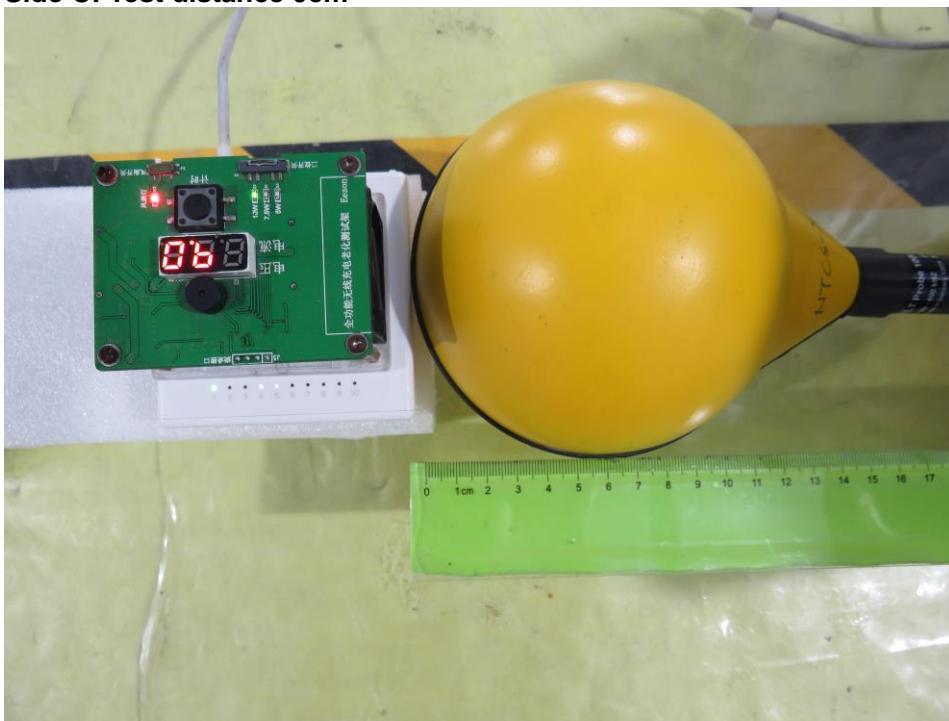
Side B: Test distance 18cm



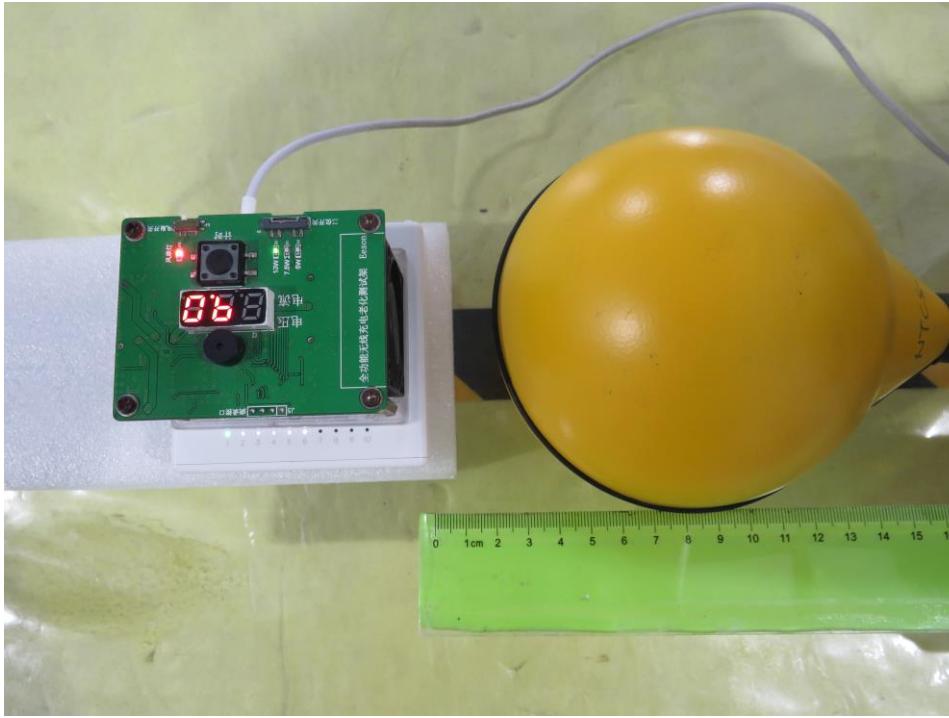
Side B: Test distance 20cm



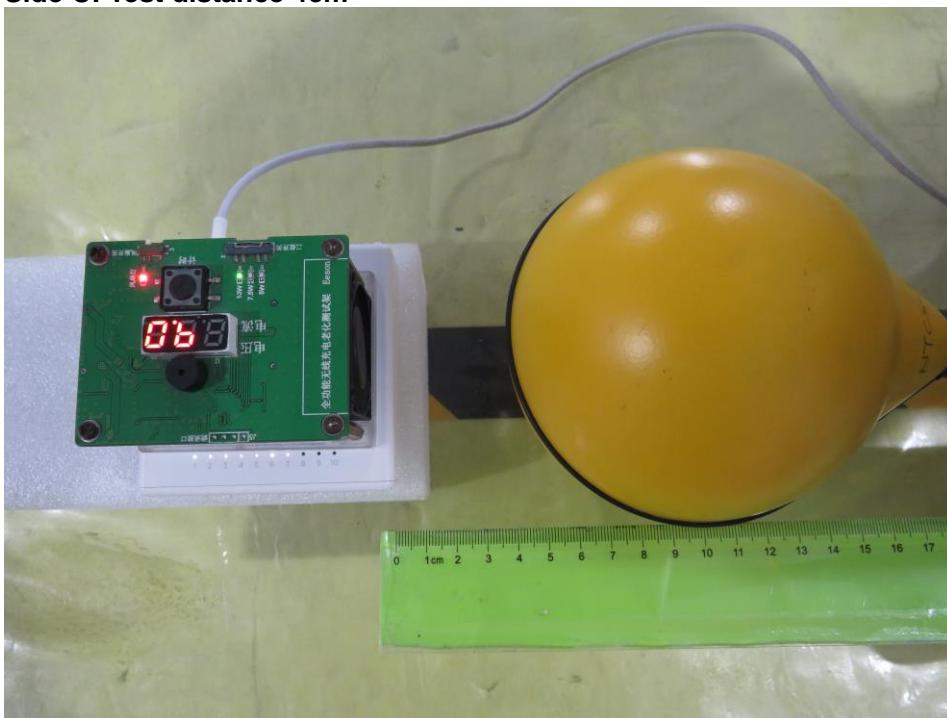
Side C: Test distance 0cm



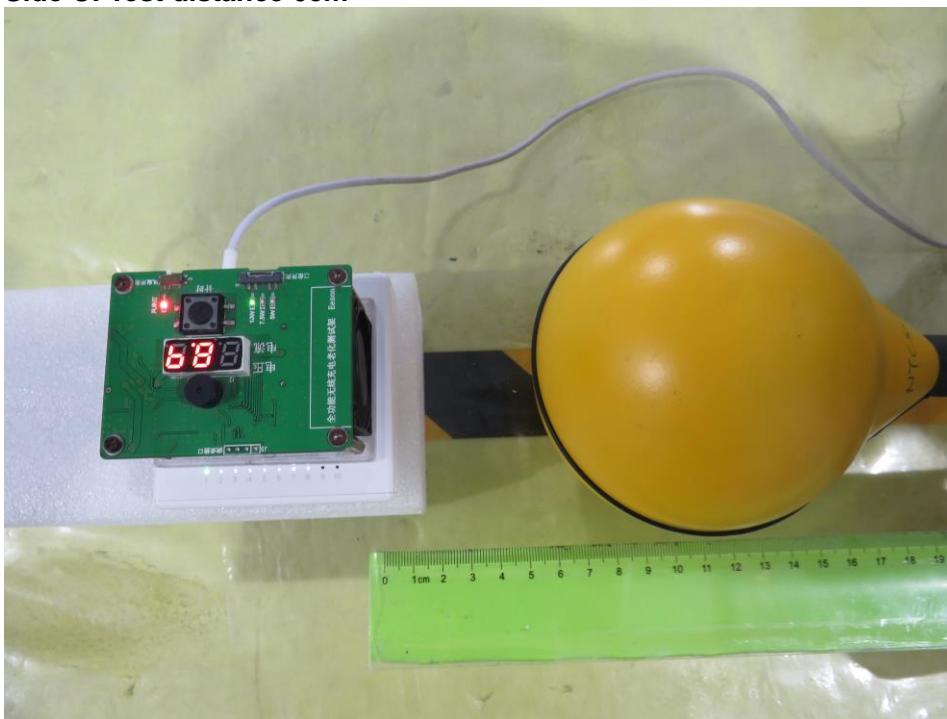
Side C: Test distance 2cm



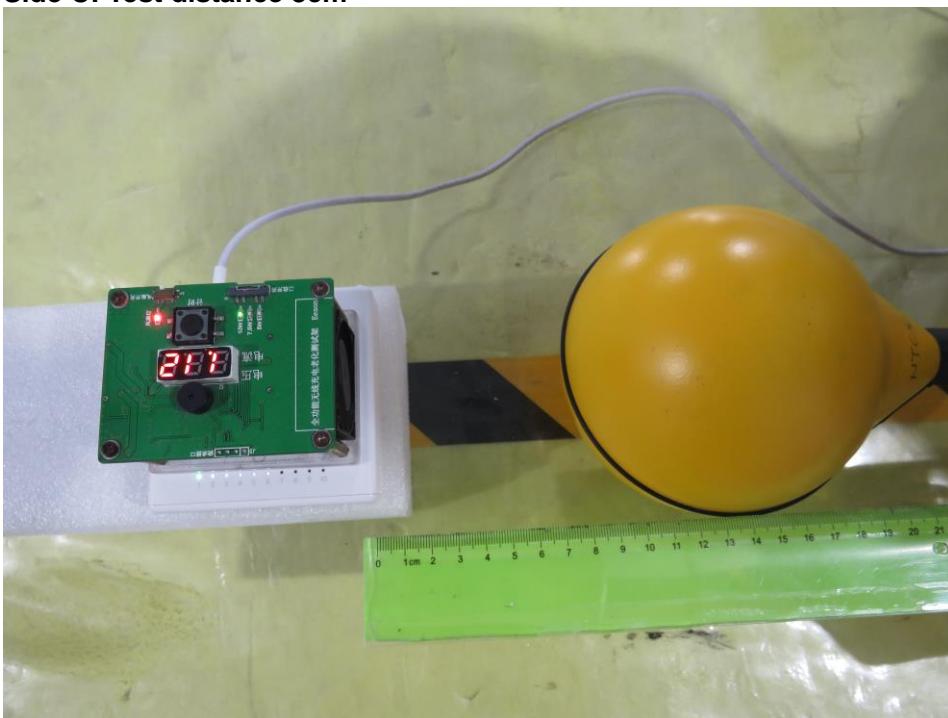
Side C: Test distance 4cm



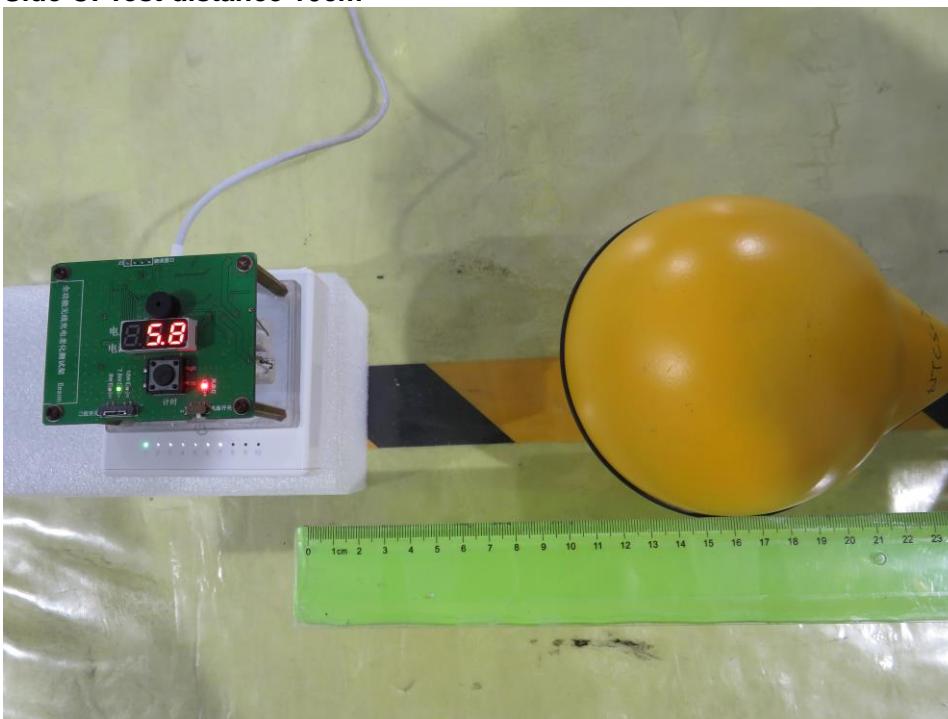
Side C: Test distance 6cm



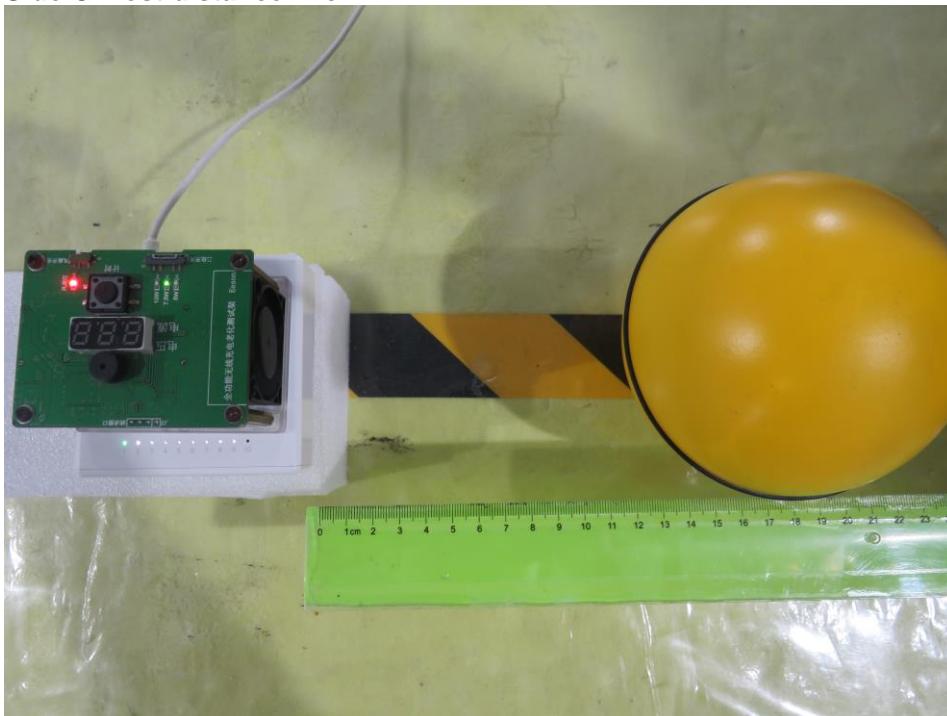
Side C: Test distance 8cm



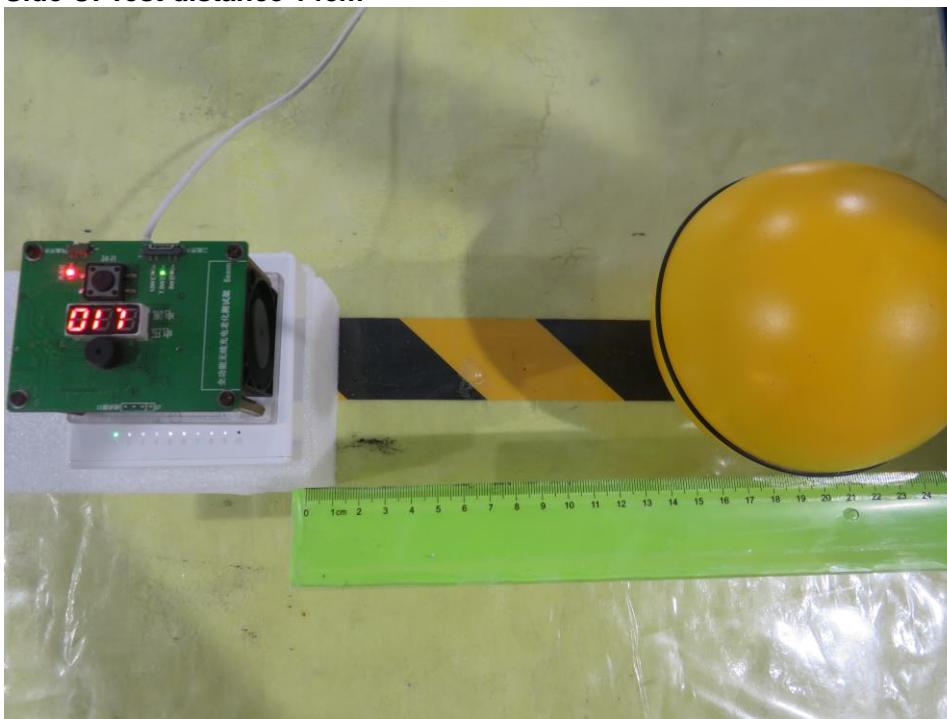
Side C: Test distance 10cm



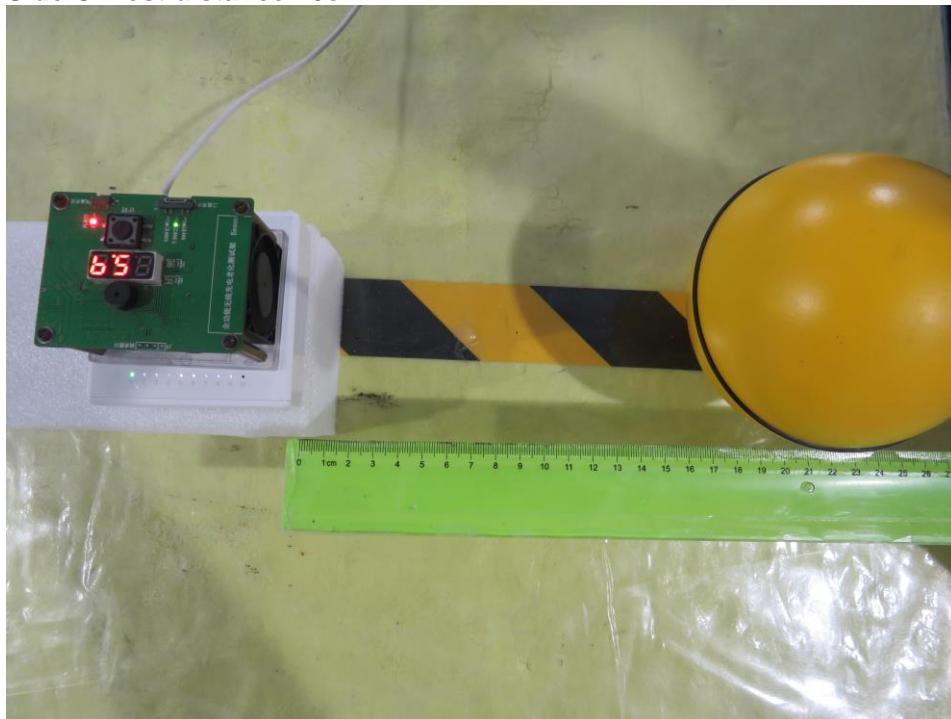
Side C: Test distance 12cm



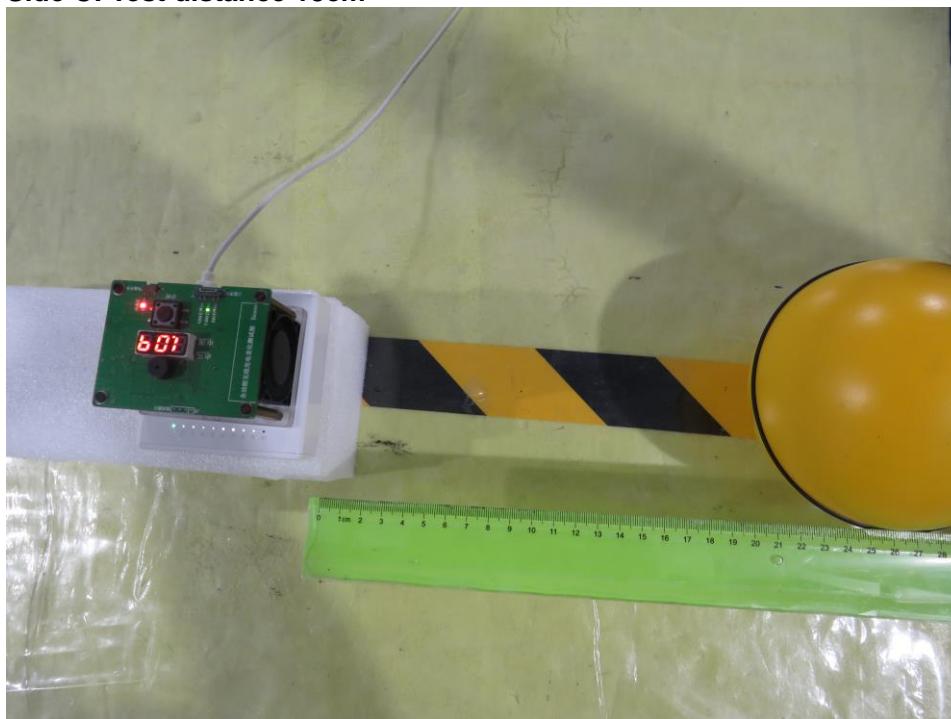
Side C: Test distance 14cm



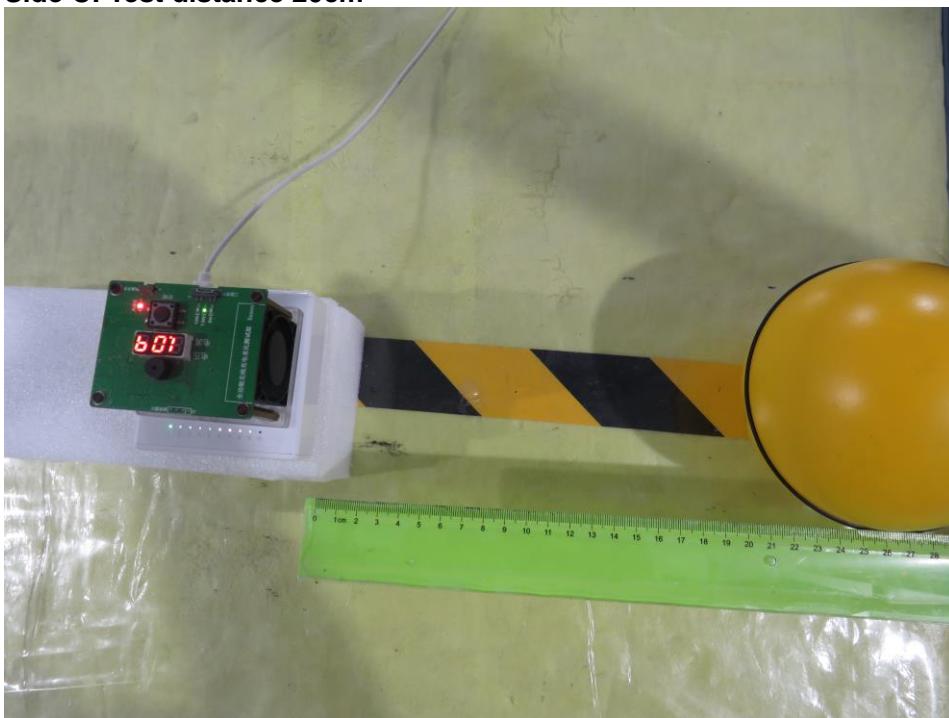
Side C: Test distance 16cm



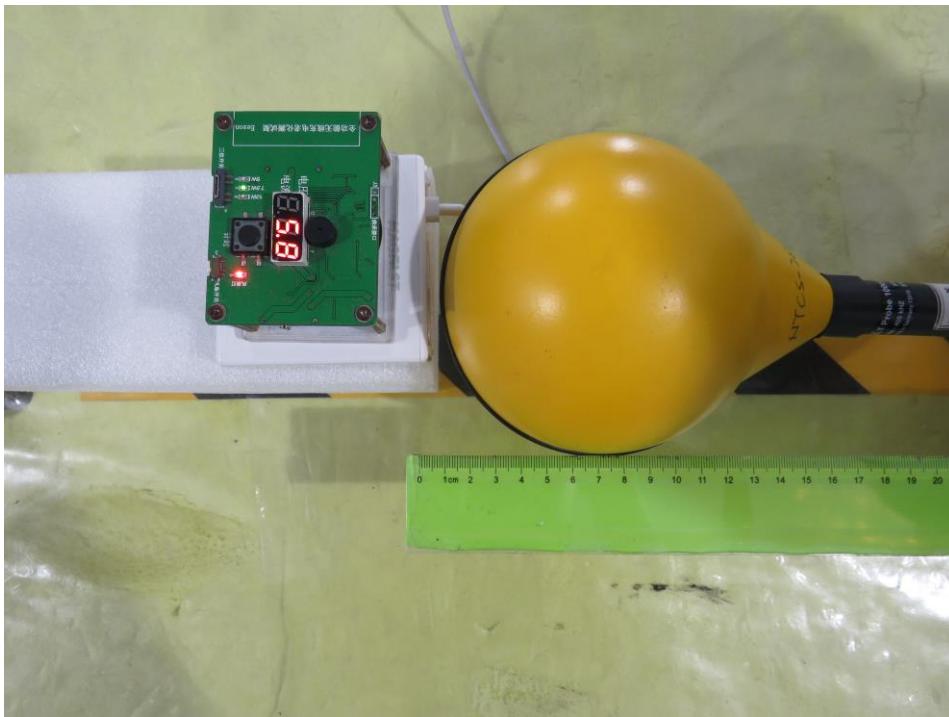
Side C: Test distance 18cm



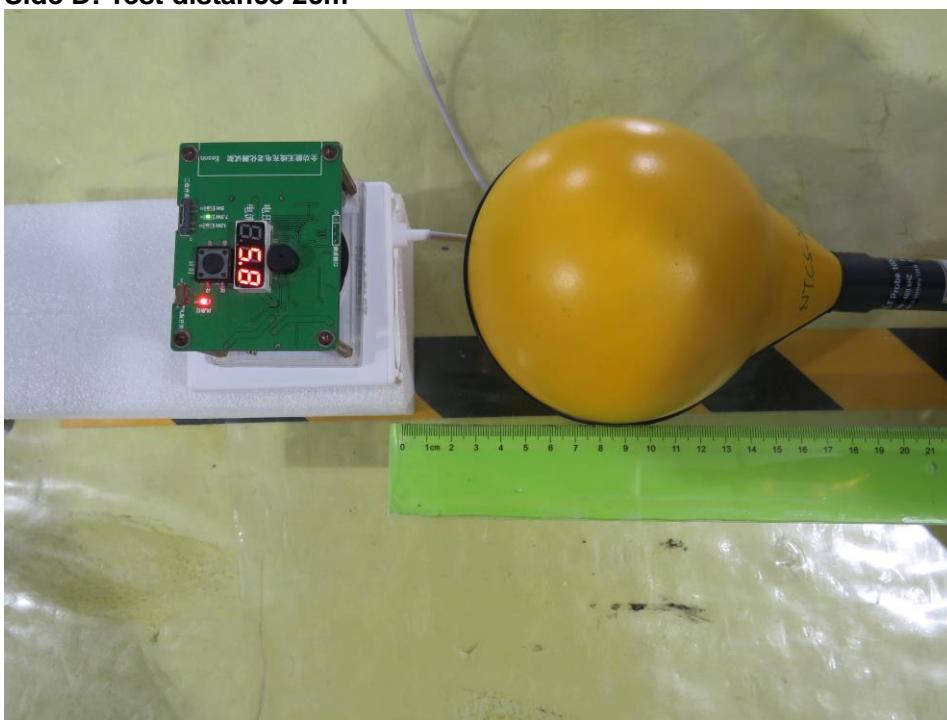
Side C: Test distance 20cm



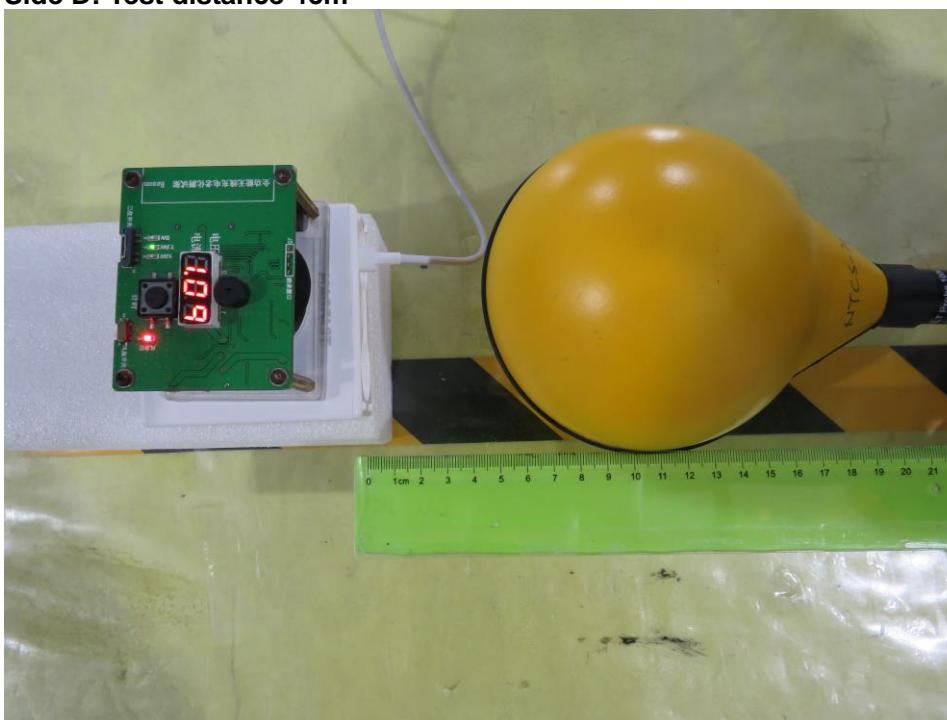
Side D: Test distance 0cm



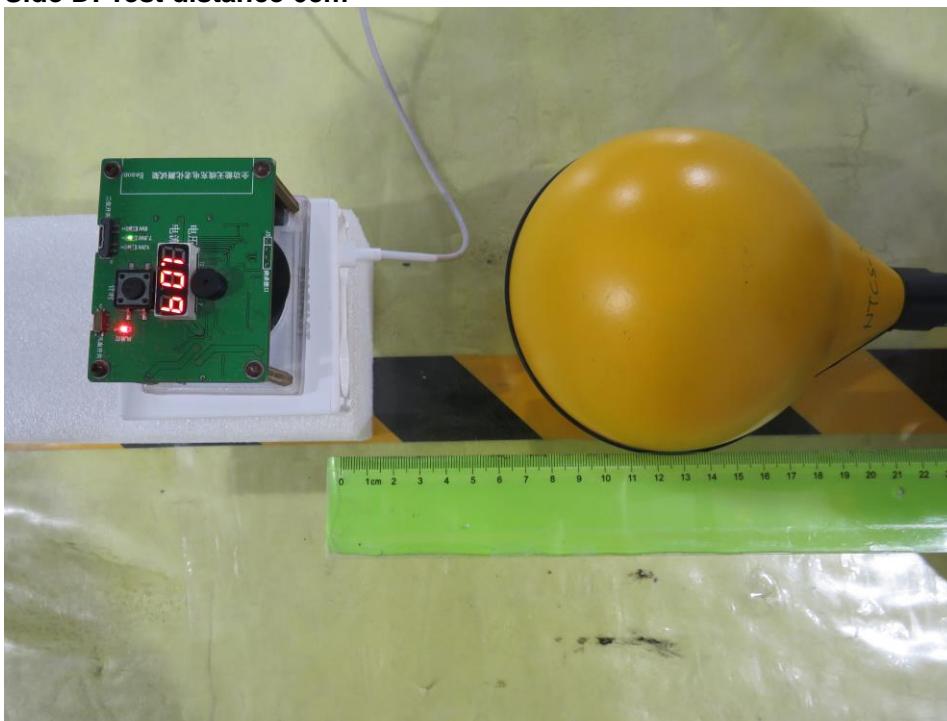
Side D: Test distance 2cm



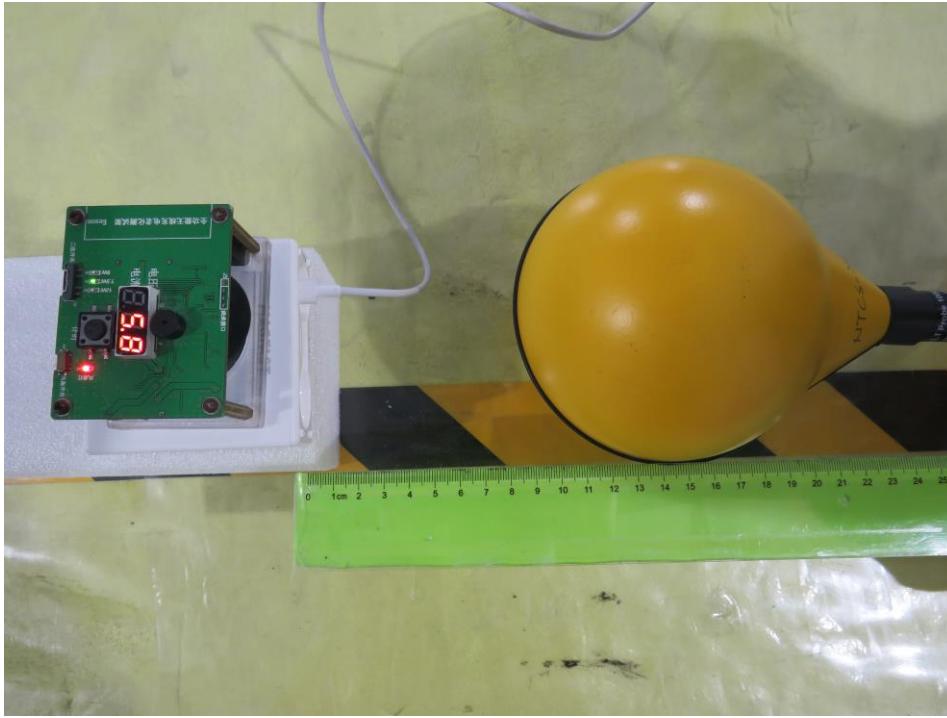
Side D: Test distance 4cm



Side D: Test distance 6cm



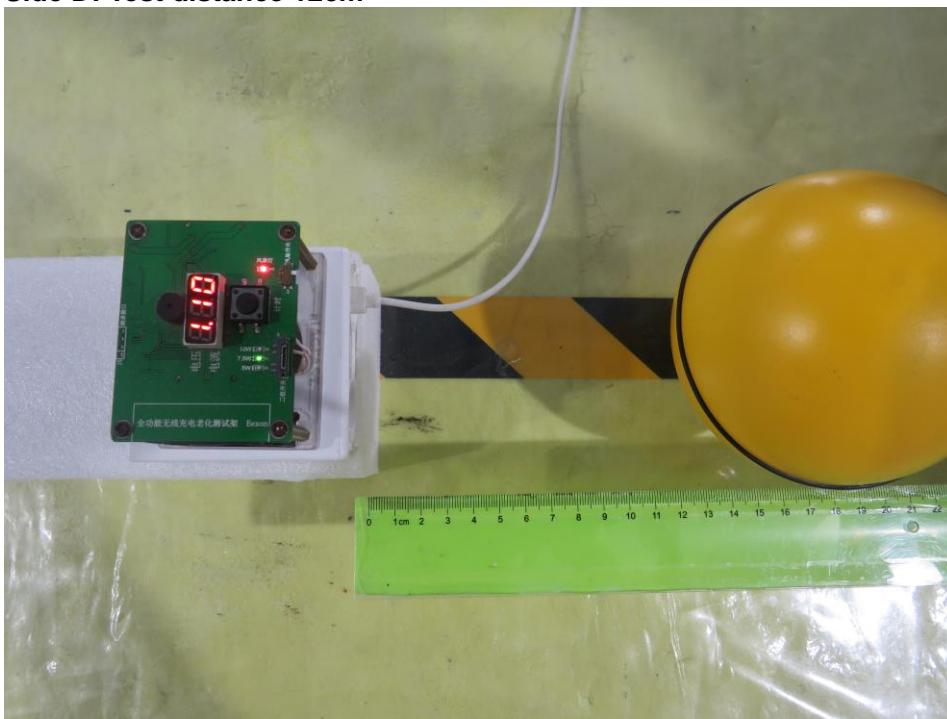
Side D: Test distance 8cm



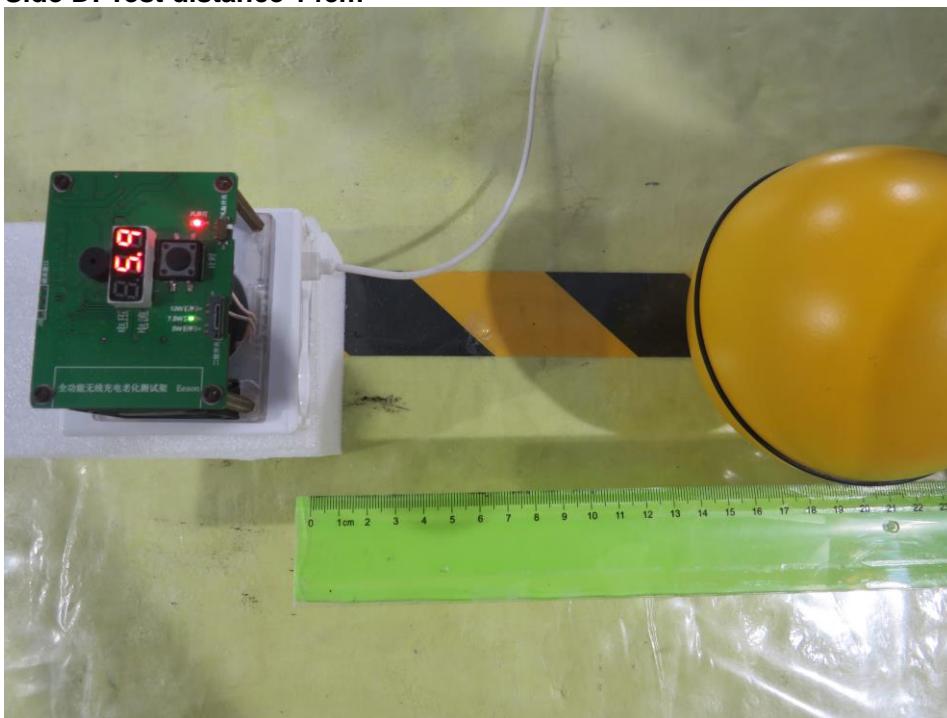
Side D: Test distance 10cm



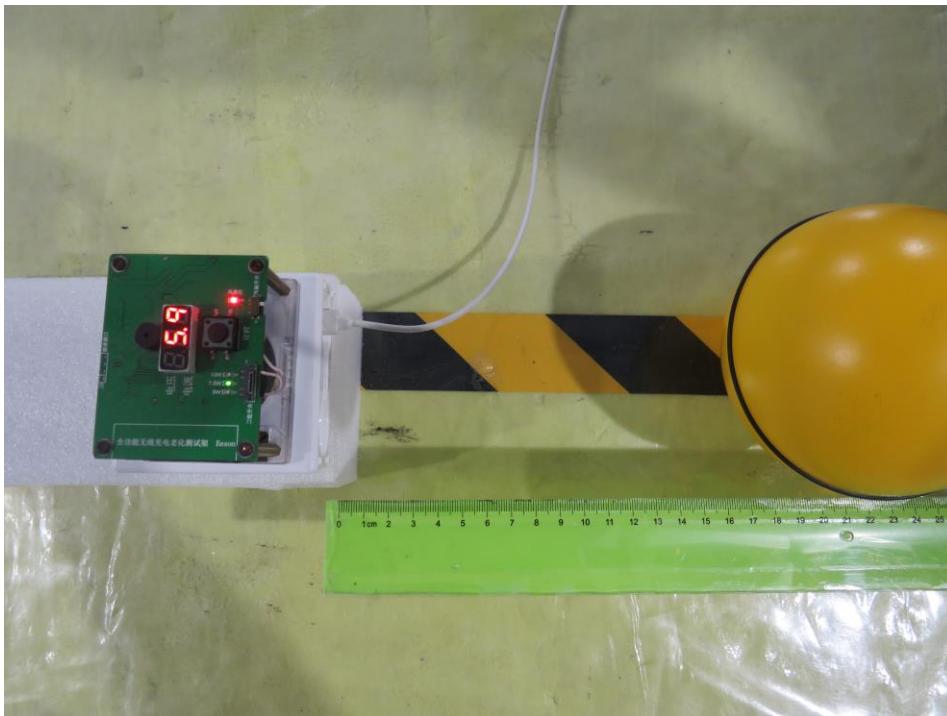
Side D: Test distance 12cm



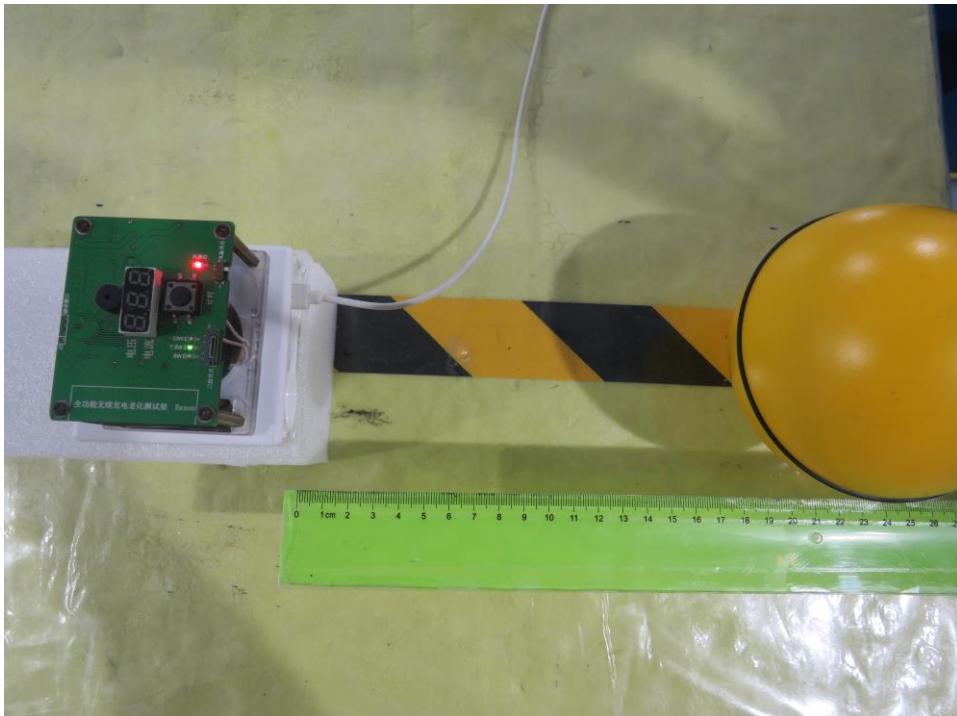
Side D: Test distance 14cm



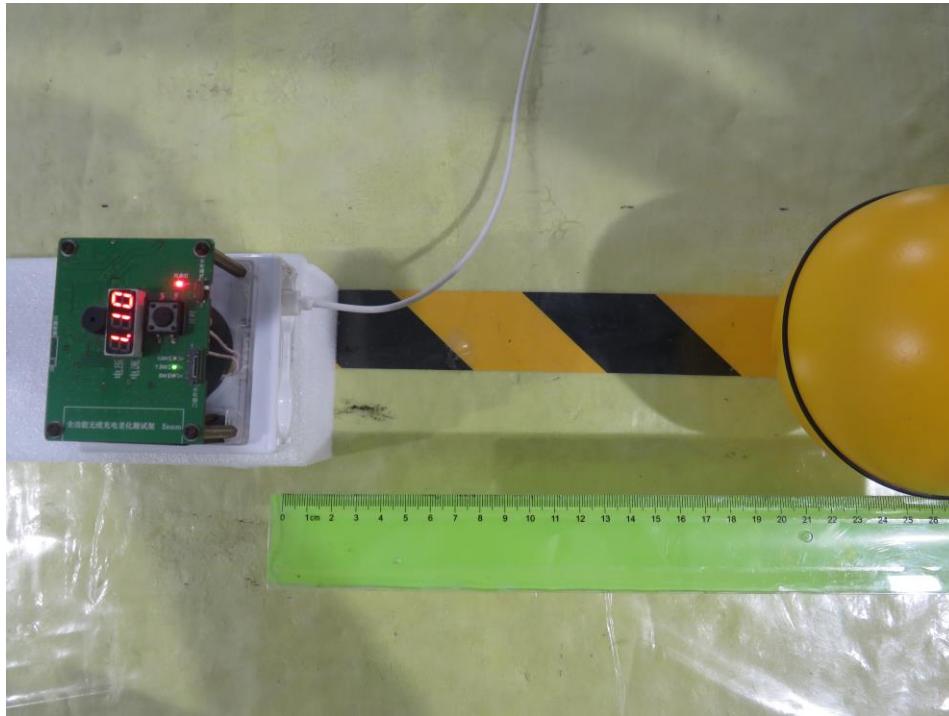
Side D: Test distance 16cm



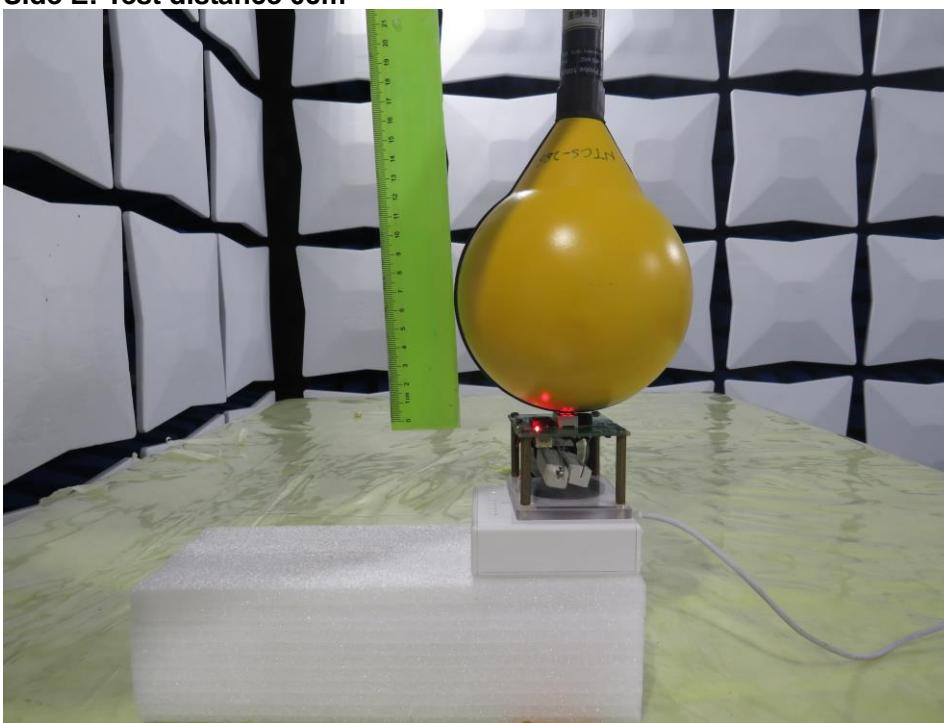
Side D: Test distance 18cm



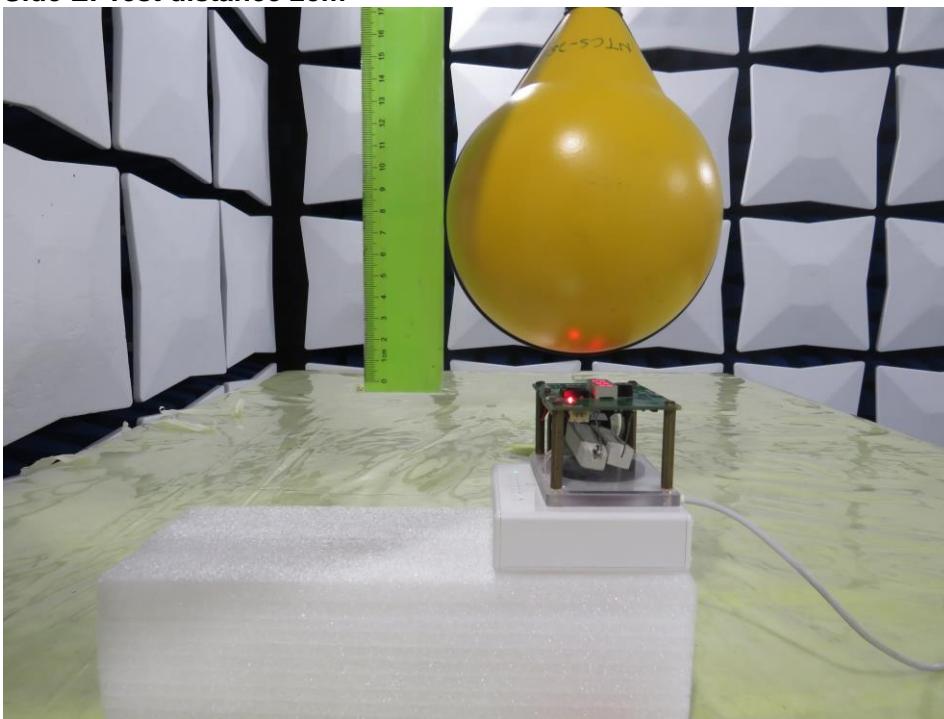
Side D: Test distance 20cm



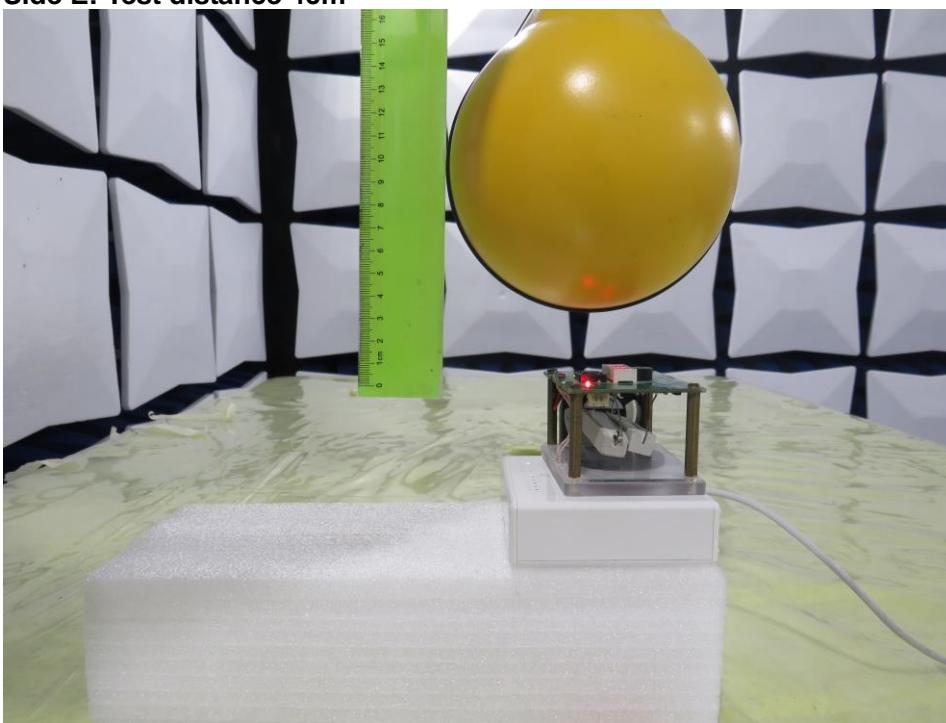
Side E: Test distance 0cm



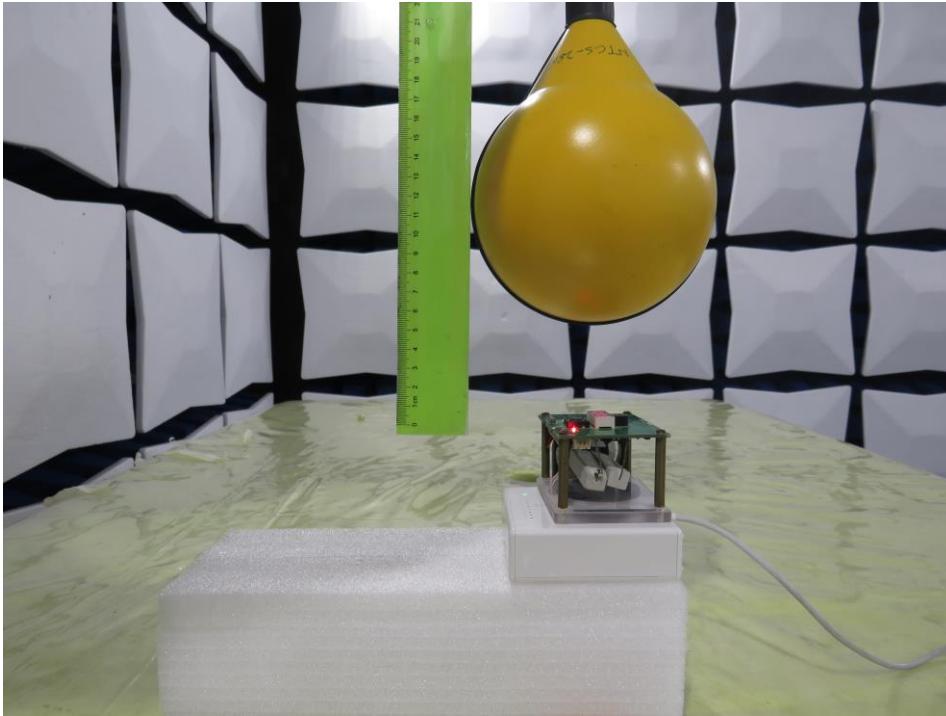
Side E: Test distance 2cm



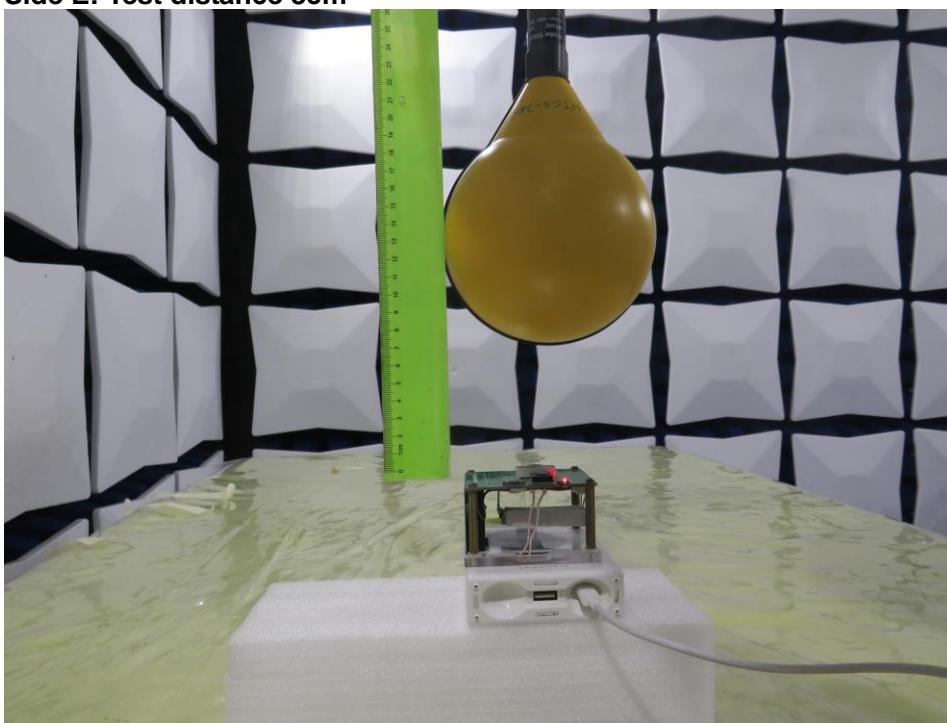
Side E: Test distance 4cm



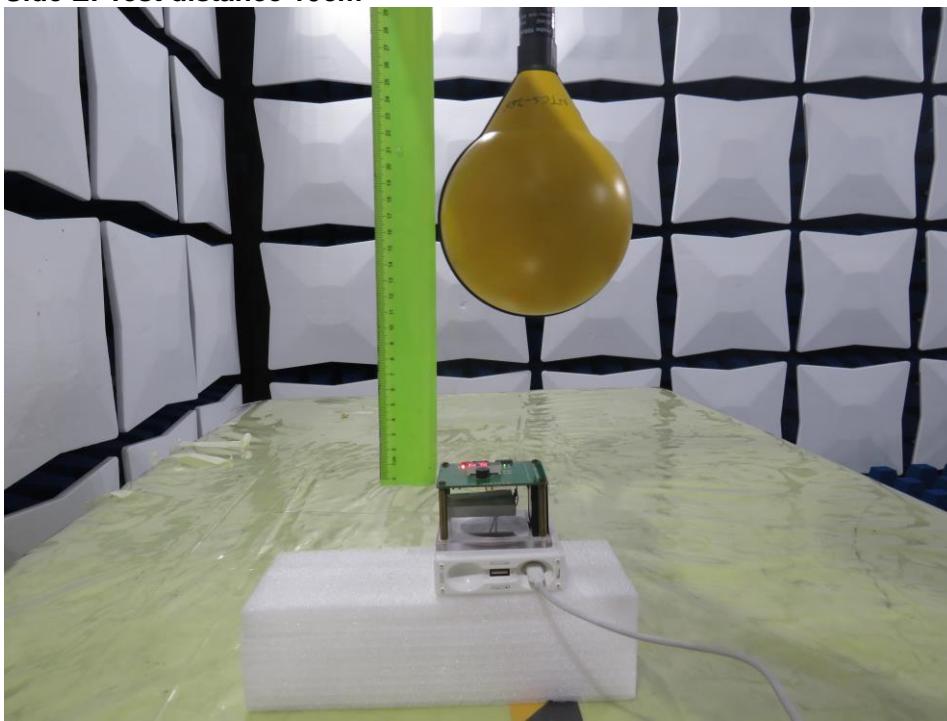
Side E: Test distance 6cm



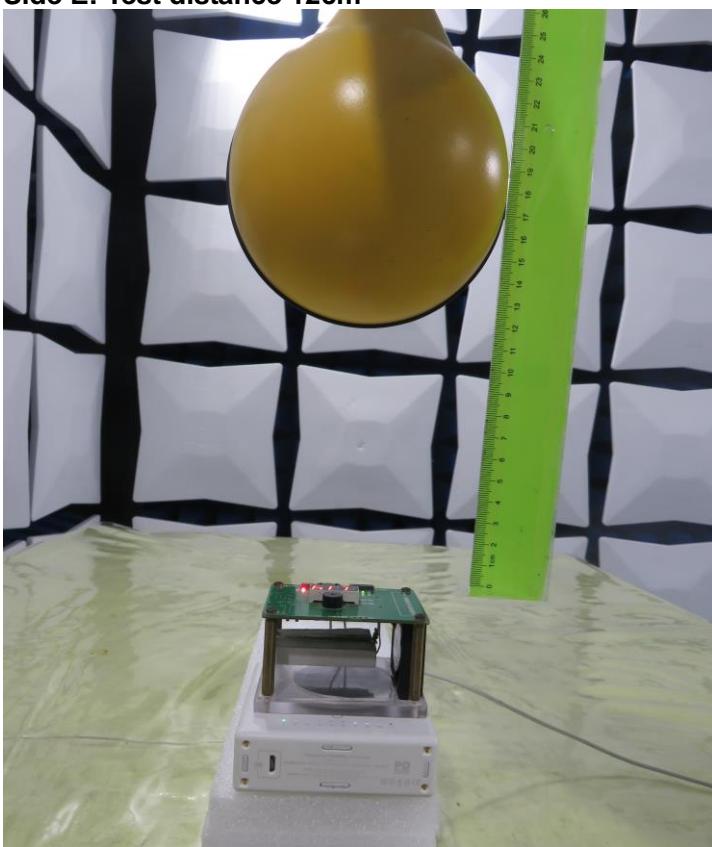
Side E: Test distance 8cm



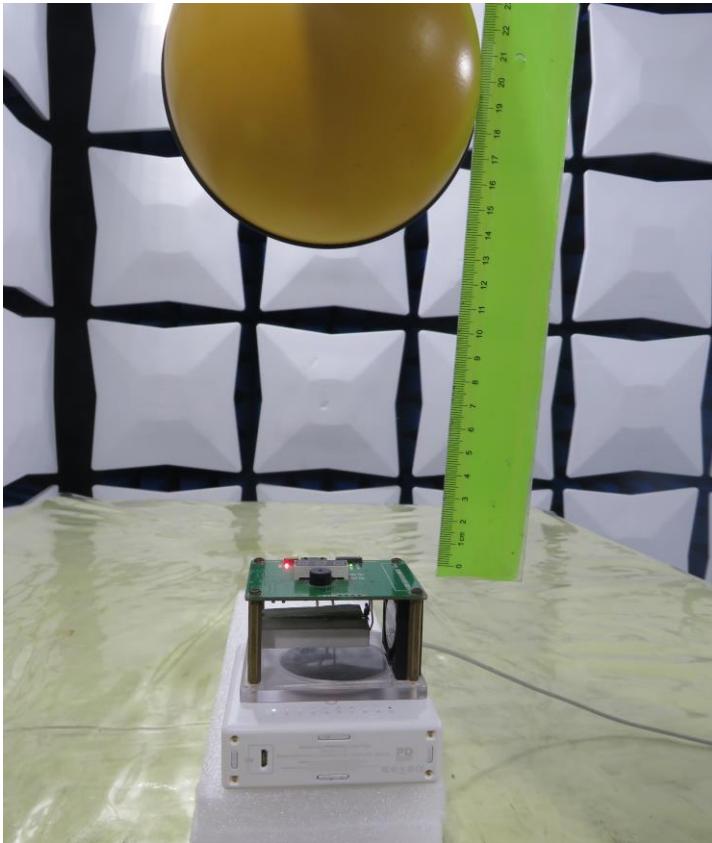
Side E: Test distance 10cm



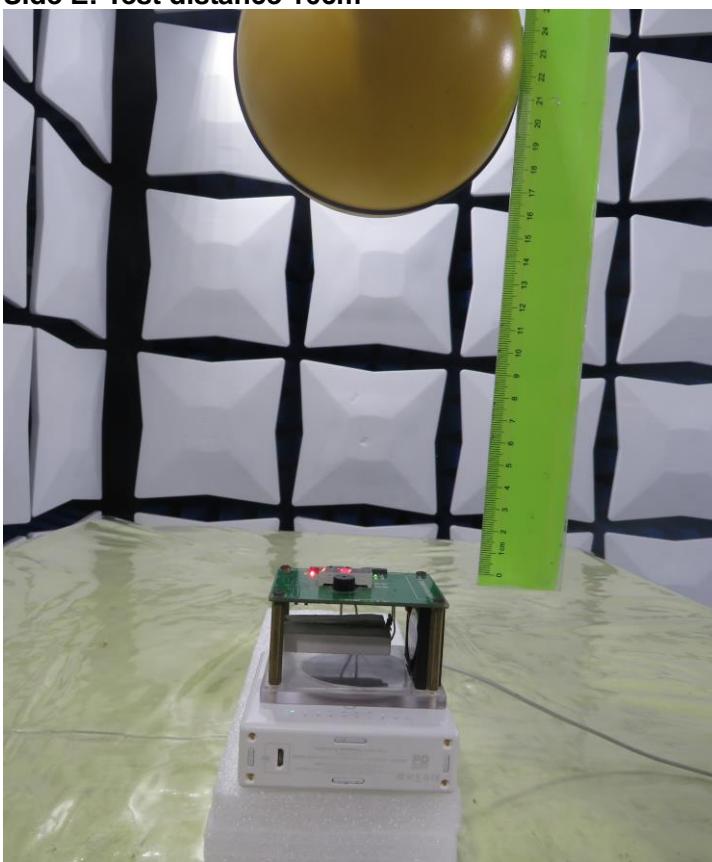
Side E: Test distance 12cm



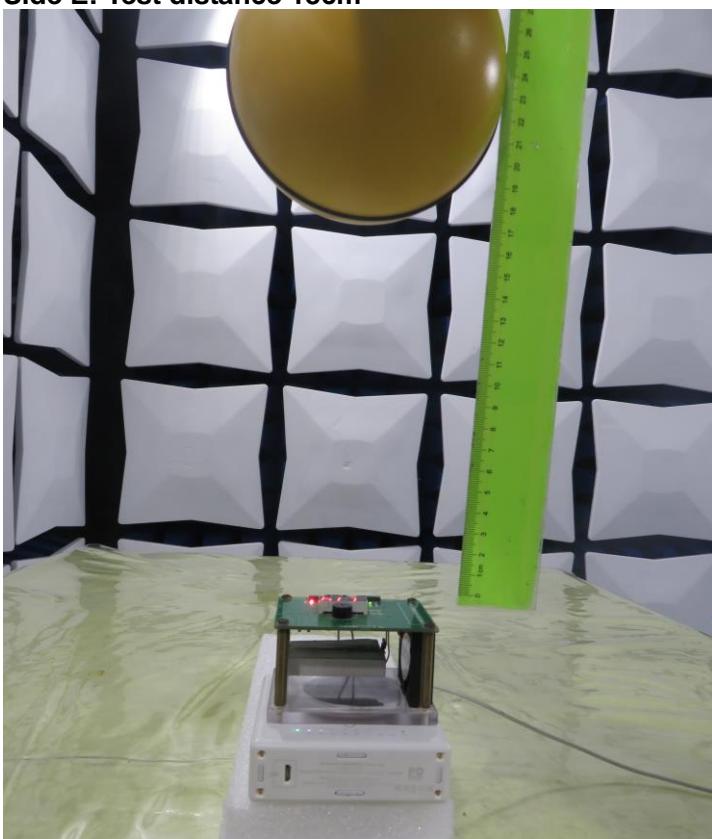
Side E: Test distance 14cm



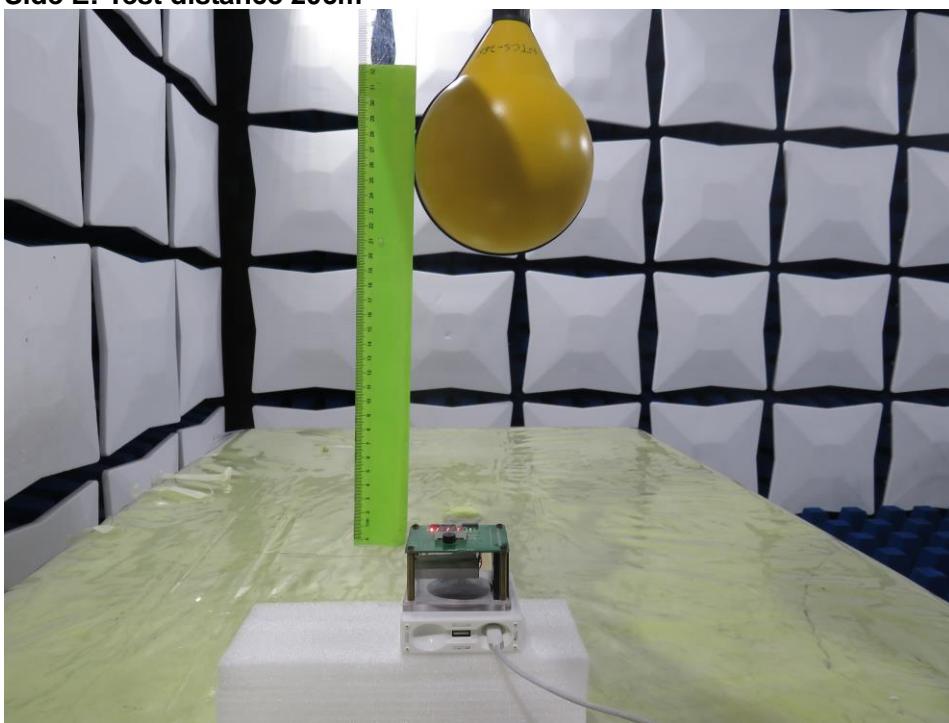
Side E: Test distance 16cm



Side E: Test distance 18cm



Side E: Test distance 20cm



---End---