

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-EXTREME

Brand Name..... : MAGFAST®

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

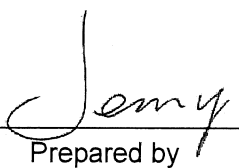
Measurement Standard..... : 47 CFR PART 2, Section 2.1091& 2.1093

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

Date of Tested..... : August 04, 2021 to November 12, 2021

Date of Report..... : April 27, 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

Iori Fan / Authorized Signatory

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Revision History

Report Number	Description	Issued Date
NTC2108501F01	Initial Issue	2022-04-27

1. General Description of EUT

Product Information	
Product name:	Wireless charger portable power bank
Main Model Name:	SBNP-NPK-LX-UU-PP-AW-01
Additional Model Name:	N/A
Model Difference:	N/A
S/N:	E000-A001-0CH0-0069
Brand Name:	MAGFAST®
Hardware version:	Not Stated
Software version:	Not Stated
Rating:	DC11.1V Come from 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 2.4A, Qi: 5W, 7.5W, 10W, MAGFAST: 5V 2A, 12V 500+A
Typical Arrangement:	Tabletop
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:	110.5-210KHz
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	:	The Laboratory has been assessed and proved to be in compliance with CNAS/CL01 Listed by CNAS, August 13, 2018 The Certificate Registration Number is L5795. The Certificate is valid until August 13, 2024 The Laboratory has been assessed and proved to be in compliance with ISO17025 Listed by A2LA, November 01, 2017 The Certificate Registration Number is 4429.01 Listed by FCC, November 06, 2017 Test Firm Registration Number: 907417 Listed by Industry Canada, June 08, 2017 The Certificate Registration Number. Is 46405-9743A
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	1 wireless charging (5W)	---
2	1 wireless charging (7.5W)	---
3	1 wireless charging (10W)	---
4	2 wireless charging (5W)	---
5	2 wireless charging (7.5W)	---
6	2 wireless charging (10W)	---
7	3 wireless charging (5W)	---
8	3 wireless charging (7.5W)	---
9	3 wireless charging (10W)	---
10	1+2+3 wireless charging (5W)	---
11	1+2+3 wireless charging (7.5W)	---
12	1+2+3 wireless charging (10W)	---

Remarks: The EUT has three charging bases.

1 means that the client device is placed at the first wireless charging base.

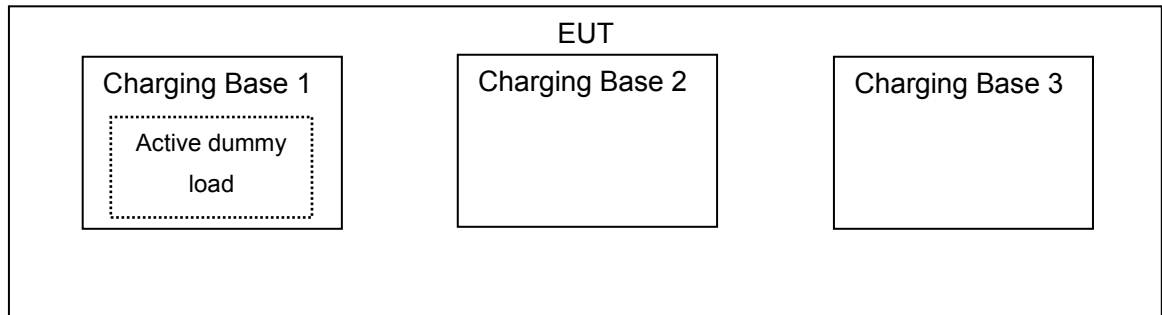
2 means that the client device is placed at the second wireless charging base.

3 means that the client device is placed at the third wireless charging base.

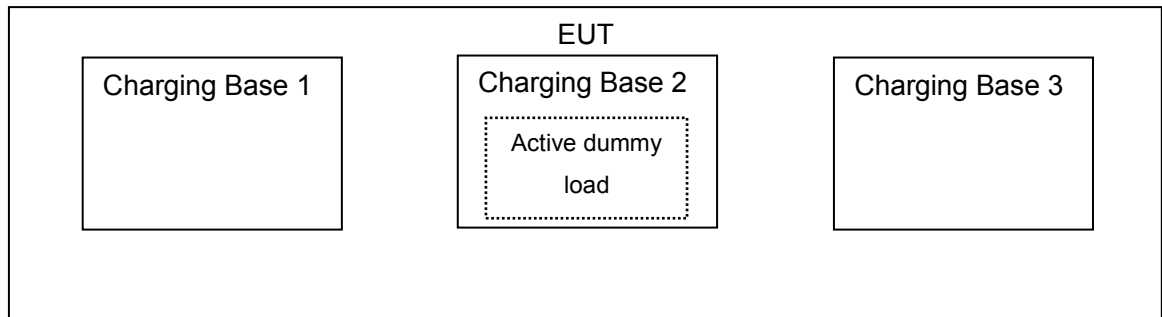
Both the internal li-ion battery and external AC/DC adapter power modes are considered, and only the worst case was recorded in the report.

4. Configuration of EUT

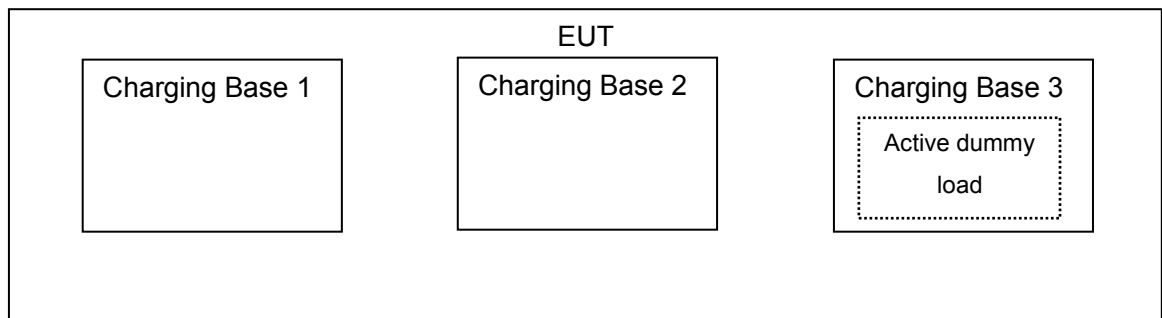
Mode 1-3



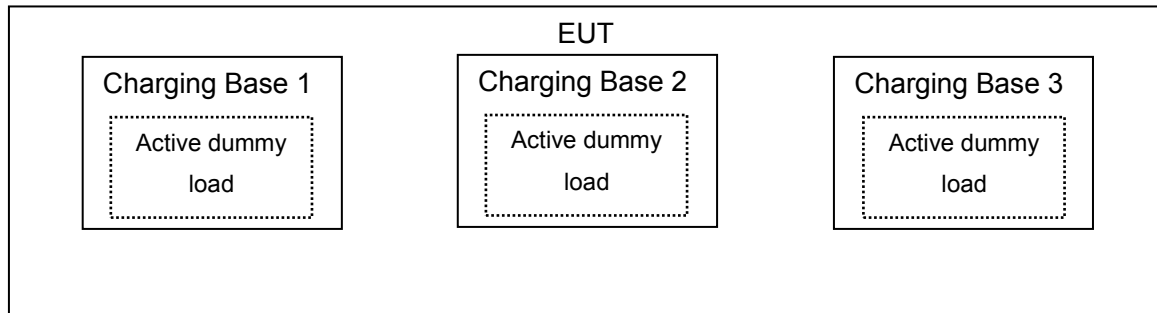
Mode 4-6



Mode 7-9



Mode 10-12



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.	Adapter	HUAWEI	HW-200325CP0	N/A	---	---
2.	Active Dummy Load	EESON	5/7.5/10/15W	N/A	---	---
3.	Active Dummy Load	EESON	5/7.5/10W	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 110.5-210KHz.
2.	Output power from each primary coil is less than or equal to 15 watts	Yes, the maximum output power of each 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 three source primary coils pairs that can be powered on at the same time.
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 big size product which must be used in Mobile condition in accordance with the user's manual.
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: ☐ need PAG process ☒ 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
1500-100,00	/	/	1.0	30

F=frequency in MHz

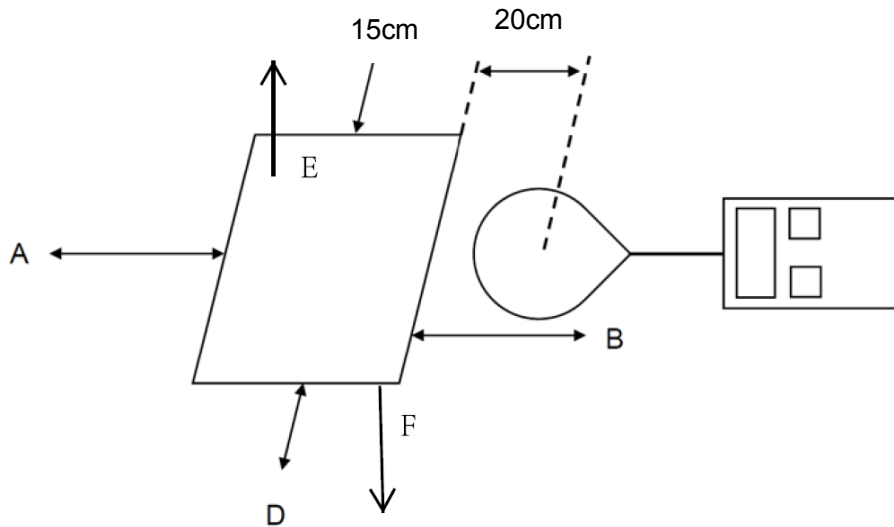
*=Plane-wave equivalent power density

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.

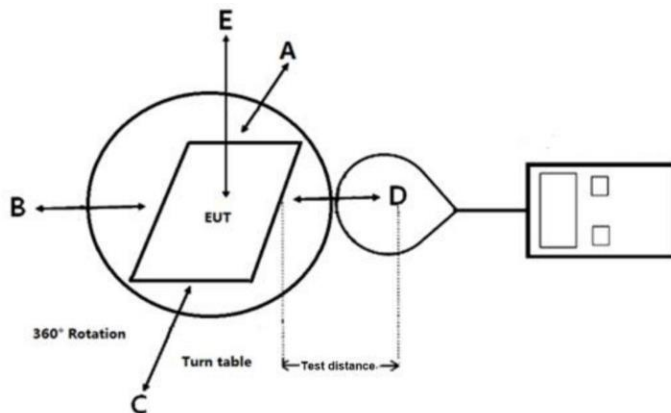
BLOCK DIAGRAM OF TEST SETUP

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 is 2,4,6,8,10,15cm, and the point E is:2,4,6,8,10,20cm.

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 2/4/6/8/10/15/20cm (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.

Test Mode 10					
Test Distance (cm)	Test Position	Mobile Measure Result (V/m)	Mobile Measure Result (A/m)	Limit (V/m)	Limit (A/m)
15	Side A	0.628	0.164	614	0.815
	Side B	0.814	0.178	614	0.815
	Side C	1.264	0.178	614	0.815
	Side D	1.354	0.179	614	0.815
	Side E	---	---	---	---
20	Side A	---	---	---	---
	Side B	---	---	---	---
	Side C	---	---	---	---
	Side D	---	---	---	---
	Side E	1.819	0.179	614	0.815

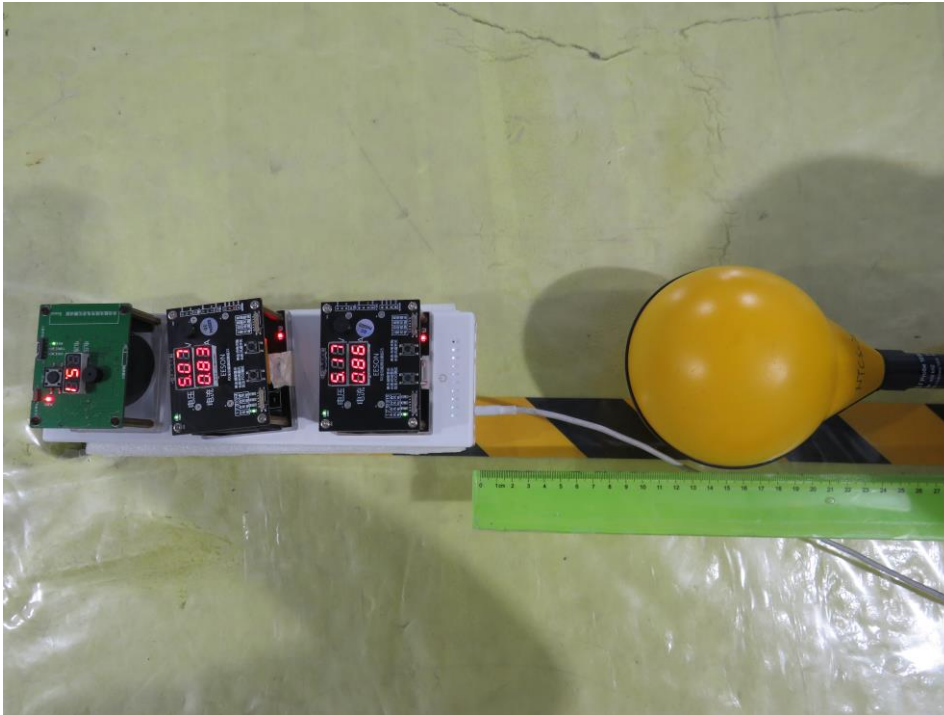
Test Mode 12					
Test Distance (cm)	Test Position	Mobile Measure Result (V/m)	Mobile Measure Result (A/m)	Limit (V/m)	Limit (A/m)
15	Side A	0.957	0.200	614	0.815
	Side B	0.615	0.205	614	0.815
	Side C	1.263	0.195	614	0.815
	Side D	1.263	0.187	614	0.815
	Side E	---	---	---	---
20	Side A	---	---	---	---
	Side B	---	---	---	---
	Side C	---	---	---	---
	Side D	---	---	---	---
	Side E	1.915	0.255	614	0.815

12. Test Equipment List

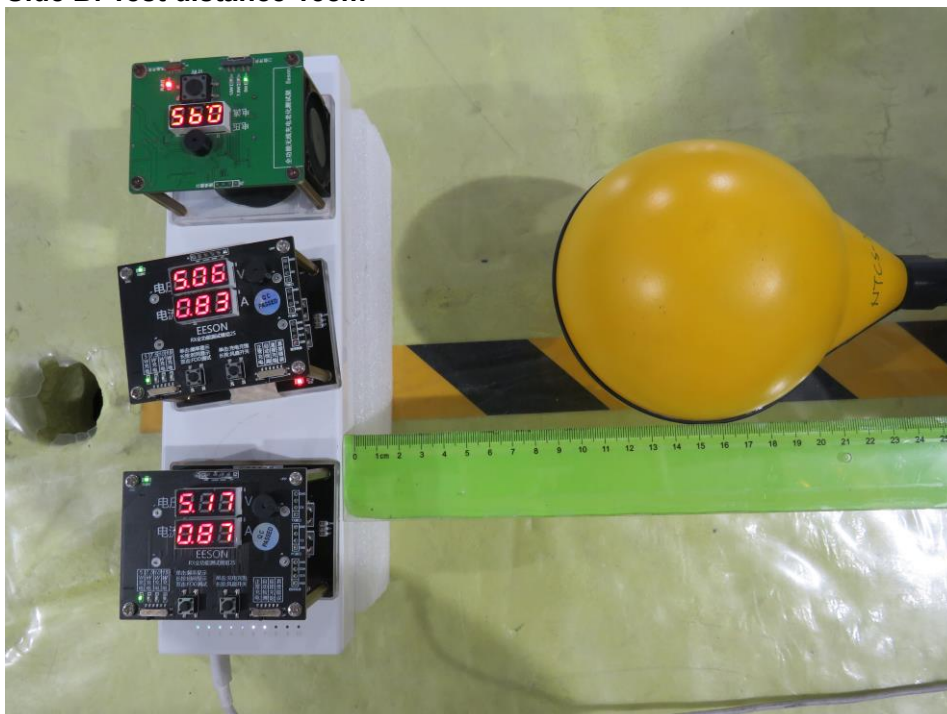
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Magnetic field probe 100cm2	Narda	ETL Probe 1Hz-400KHz	M-1587	June 28,2021	1 Year
2.	E-Field Probe	Narda	EP-601	611WX70729	Mar. 23, 2021	1 Year

13. Test Photos

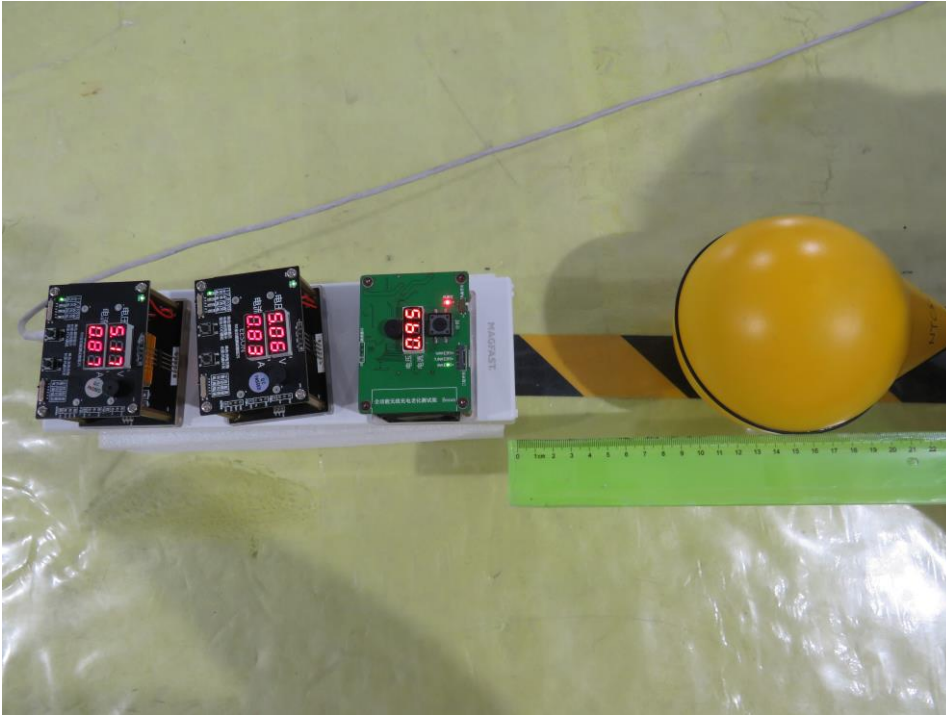
Side A: Test distance 15cm



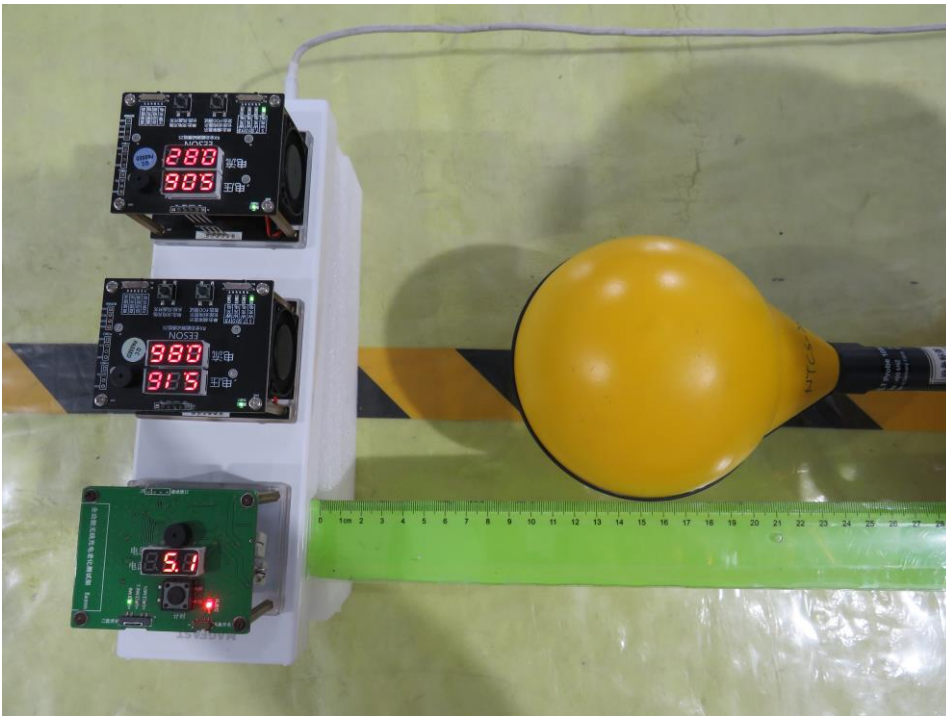
Side B: Test distance 15cm



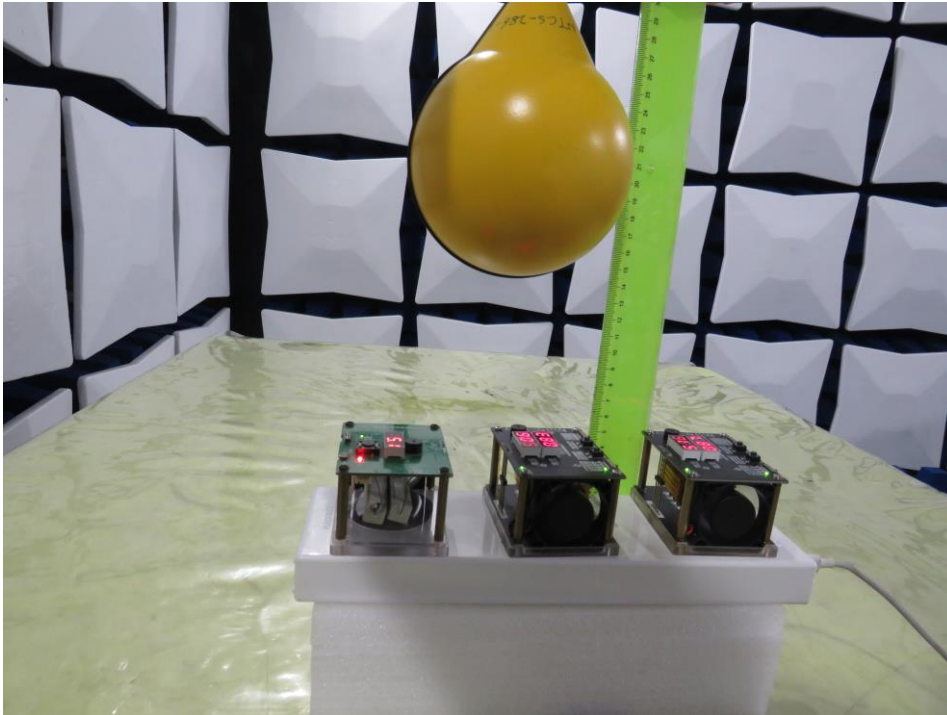
Side C: Test distance 15cm



Side D: Test distance 15cm



Side E: Test distance 20cm



---End---