RF Exposure Report

Report Number	:	TZ0028251209FRF15
Product Name	:	Lighting Speaker with Fast Wireless charger
Model/Type reference	:	L18
FCC ID	:	2BNUQ-L18
Prepared for	:	Shenzhen E-Wonderland Technology Co., Ltd Floor 3, Block 13, XiaWeishui industrial park, YanluoTown, Baoan District, ShenZhen, China

Prepared By	:	Shenzhen Tongzhou Testing Co.,Ltd. 1st Floor, Building 1, Haomai High-tech Park, Huating Road 387, Dalang Street, Longhua, Shenzhen, China
Standards	:	680106 D01 Wireless Power Transfer v04
Date of Test	:	2025-12-24 ~ 2025-12-30
Date of Issue	:	2025-12-31
Prepared by	:	Lena Wen
Reviewed by	:	Allen Lai
Approved by	:	Max Zhang (Authorized Officer)

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The test report apply only to the specific sample(s) tested under stated test conditions.
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Add: 1st Floor, Building 1, Haomai High-tech Park, Huating Road 387, Dalang Street, Longhua, Shenzhen, China
https://www.sztz-testing.com E-mail: sztz@sztz-testing.com Tel: +86-755-3209 2199

** Report Revise Record **

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	2025-12-31	Valid	Initial release

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1. GENERAL INFORMATION

1.1. Client Information

Applicant	:	Shenzhen E-Wonderland Technology Co., Ltd
Address	:	Floor 3, Block 13, XiaWeishui industrial park, YanluoTown, Baoan District, ShenZhen, China
Manufacturer	:	Shenzhen E-Wonderland Technology Co., Ltd
Address	:	Floor 3, Block 13, XiaWeishui industrial park, YanluoTown, Baoan District, ShenZhen, China

1.2. Description of Device (EUT)

Product Name	:	Lighting Speaker with Fast Wireless charger
Trade Mark	:	/
Model Number	:	L18
Model Declaration	:	N/A
Test Model	:	L18
Power Supply	:	Input: DC 9V 2A
Hardware version	:	V1.0
Software version	:	V001

1.3. Wireless Function Tested in this Report

WPT		
Operation Frequency	:	110.5 – 205 kHz
Test Frequency	:	142.027 kHz
Modulation Technology	:	ASK
Antenna Type and Gain	:	Coil Antenna with 0dBi Gain

Note 1: Antenna position refer to EUT Photos.
Note 2: the above information was supplied by the applicant.

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1.4. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

○supplied by the manufacturer

●supplied by the lab

●	Adapter	Model:	MDY-10-EH
		Input:	Input 100-240V\AC 50/60Hz 0.7A
		Output:	Output 9V 2A

1.5. Description of Test Facility

FCC

Designation Number: CN1275
Test Firm Registration Number: 167722
Shenzhen Tongzhou Testing Co.,Ltd has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

A2LA

Certificate Number: 5463.01
Shenzhen Tongzhou Testing Co.,Ltd has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement.

IC

ISED#: 22033
CAB identifier: CN0099
Shenzhen Tongzhou Testing Co.,Ltd has been listed by Innovation, Science and Economic Development Canada to perform electromagnetic emission measurement.

The 3m-Semi anechoic test site fulfils CISPR 16-1-4 according to ANSI C63.4 and CISPR 16-1-4:2010

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1.6. Statement of the Measurement Uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. To CISPR 16 – 4 “Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements” and is documented in the Shenzhen Tongzhou Testing Co.,Ltd’s quality system acc. To DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

1.7. Measurement Uncertainty

Test Item		Frequency Range	Uncertainty	Note
E-Field Strength	:	3KHz~0.4MHz	±1.5dB	(1)
		0.4MHz~10MHz	±1.3dB	(1)
H-Field Strength	:	3KHz~0.4MHz	±1.3dB	(1)
		0.4MHz~10MHz	±1.2dB	(1)

(1). This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

1.8. Description of Test Modes

The EUT has been tested under operating condition.

Test Modes:		
Mode 1	EUT + Wireless charger tester (Full Load: 99% of 15W)	Record
Mode 2	EUT + Wireless charger tester (Half Load: 50% of 15W)	Pre-test
Mode 3	EUT + Wireless charger tester (Null Load: <1%)	Pre-test
Note: All test modes were pre-tested, but we only recorded the worst case in this report.		

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2. SYSTEM TEST CONFIGURATION

2.1. EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

2.2. EUT Exercise

The EUT was operated in the engineering mode to fix the TX frequency that was for the purpose of the measurements.

2.3. Test Sample

Sample ID	Description
TZ0028251209–1#	Normal sample

2.4. Special Accessories

No.	Equipment	Manufacturer	Model No.	Serial No.	Length	shielded/ unshielded	Notes
1	WPT Test Load	YBZ	EPP	/	/	/	/

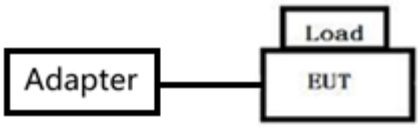
2.5. Test Instruments

Equipment	Manufacturer	Model	Serial no.	Calibrated date	Calibrated Due
Magnetic field probe	WAVECONTROL	SMP2/WP400	19SN1101/19WP100558	2025-08-03	2026-08-02

2.6. Equipment Modifications

Shenzhen Tongzhou Testing Co.,Ltd has not done any modification on the EUT.

2.7. Configuration of Tested System



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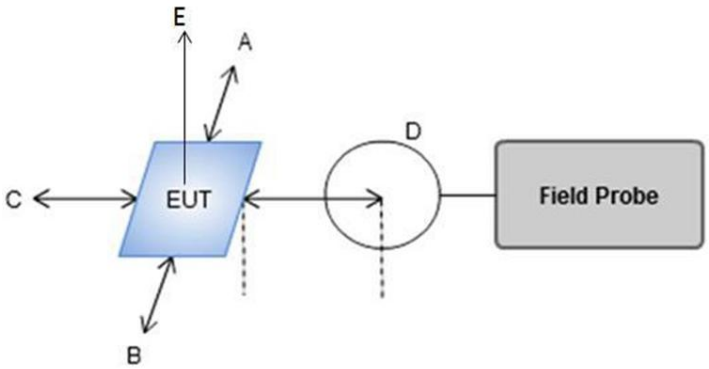
3. TEST RESULT

3.1. Limit of Maximum Permissible Exposure

Limits for Occupational / Controlled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm²)	Averaging Time |E|²,|H|² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842 / f	4.89 / f	(900 / f)*	6
30-300	61.4	0.163	1.0	6
300-1500			F/300	6
1500-100,000			5	6
Limits for General Population / Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm²)	Averaging Time |E|²,|H|² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180 / f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1	30

Note 1: f = frequency in MHz; *Plane-wave equivalent power density
Note 2: For the applicable limit, see FCC 1.1310, FCC KDB680106 D01 Wireless Power Transfer v04
Note 3: Emissions between 100 kHz to 300 kHz should be assessed versus the limits at 300 kHz in Table 1 of Section 1.1310: 614 V/m and 1.63 A/m. A KDB inquiry is required to determine the applicable exposure limits below 100 kHz.

3.2. Measurement Setup



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3.3. Measurement Procedure

For mobile RF exposure

a) E-field and H-field measurements should be taken with the probe geometric center located 20cm around the EUT and 20cm above the top surface of the master/client pair.

b) The highest emission level was recorded and compared with limit as soon as measurement of each point (A, B, C, D, E) were completed.

c) Equipment Approval Considerations of KDB 680106 D01v04

Requirements of KDB 680106	Yes or No	Description
The power transfer frequency is below 1 MHz	Yes	The device is operated in the frequency range 110.5kHz-205kHz.
Output power from each primary coil is lessthan 15 watts	Yes	The maximum output power of the primary coil is 15W.
The transfer system includes only single primary and secondary coils. This includes charging systems that may have multiple primary coils and clients that are able to detect and allow coupling only between individual pairs of coils.	Yes	The transfer system includes single coil that is able to detect receiver device.
Client device is placed directly in contact withthe transmitter.	Yes	Client device is placed directly in contactwith the transmitter.
Mobile exposure conditions only (portable exposure conditions are not covered by thisexclusion).	Yes	Device can be used in mobile conditions.
The aggregate H-field strengths at 20 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.	Yes	The EUT H-field strengths at 20 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.
For systems with more than one radiating structure, the conditions specified in (5) must be met when the system is fully loaded (i.e., clients absorbing maximum power available), and with all the radiating structures operating at maximum power at the same time, as per design conditions. If the design allows one or more radiating structures to be powered at a higher level while other radiating structures are not powered, then those cases must be tested as well. For instance, a device may use three RF coils powered at 5 W, or one coil powered at 15 W: in this case, both scenarios shall be tested.	Yes	The device has only a single radiating structure and is tested at full load

For portable RF exposure

a) The measurement probe was placed at test distance (from 0 cm to 20 cm, in 2 cm maximum increment) which is between the edge of the charger and the geometric center of probe.

b) The highest emission level was recorded and compared with limit as soon as measurement of each point (A, B, C, D, E, F,) were completed.

c) According to Calibration information and specification about WP400 Probe, The Probe WP400 Probe's sensitive elements center is located in the probe's center, and the distance from the sensitive elements center to the tip of probe is 6.25cm.

d) For locations that cannot be reached by numerical calculations, the actual field strengths less than 6.25cm need to be estimated.

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3.4. Result of Maximum Permissible Exposure

For all the cases mentioned above, E and H measurements should be made from all sides of the transmitter, along all the principal axes defined with respect to the orientation of the transmitting element (e.g., coil or antenna). When clearly demonstrated, symmetry considerations may be used to reduce the amount of testing. Furthermore, for “low-frequency” loop/coil emitting structures that lead to dominant H-field near field emissions (i.e., with E/H ratio less than 1/10 of the 377-ohm free space wave impedance, typically frequencies less than 1 MHz), only H-field measurements are sufficient for demonstrating MPE limit compliance.

Test condition: Mode 1(Worst)						
Distance(cm)	Measured H-Field Strength Values (A/m)					Limit(A/m)
	Position A	Position B	Position C	Position D	Position E	
20	0.08	0.11	0.10	0.09	0.34	1.63
22	0.08	0.11	0.09	0.10	0.26	1.63
24	0.00	0.10	0.11	0.09	0.19	1.63

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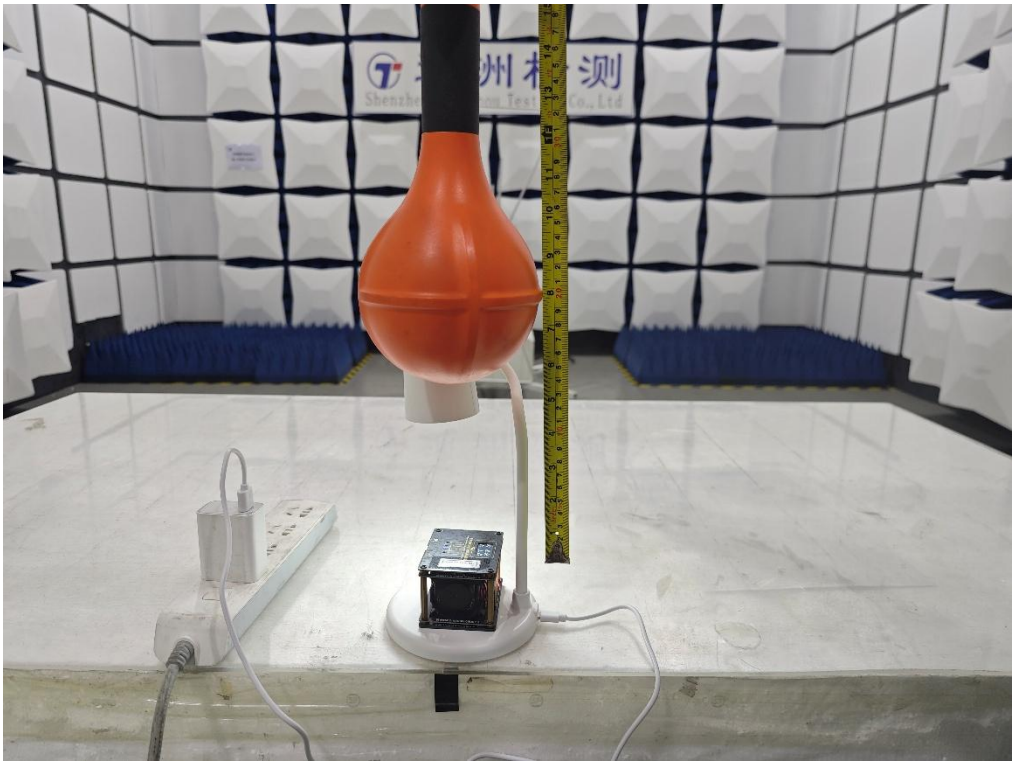
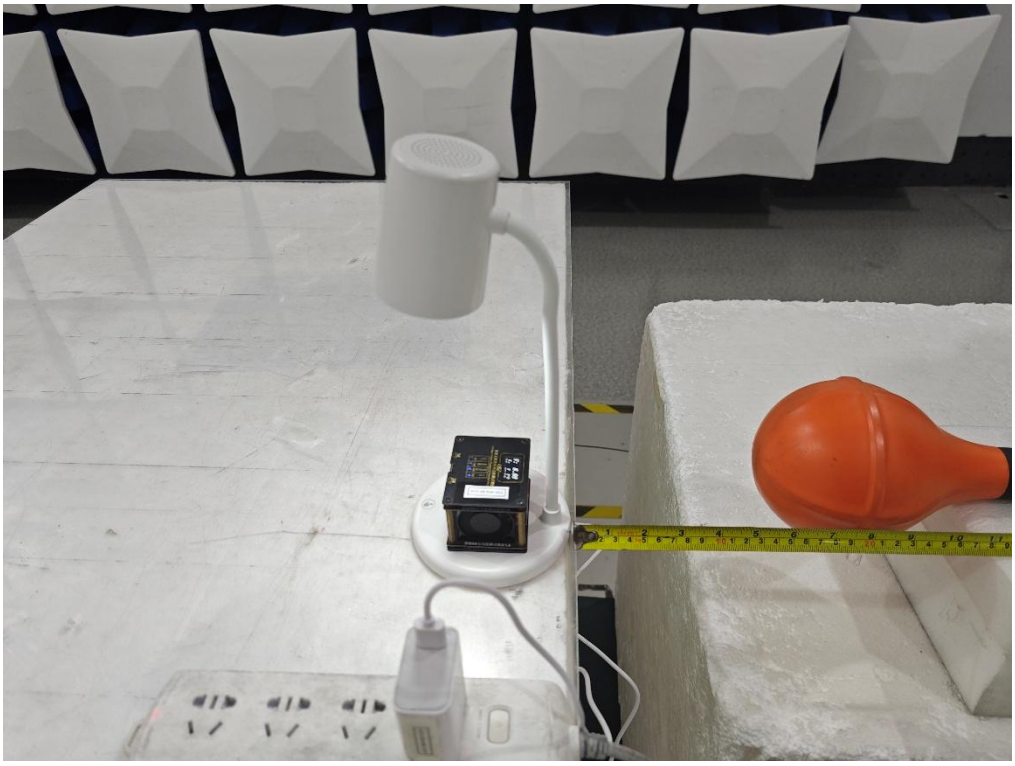
4. TEST SETUP PHOTOGRAPHS OF EUT

Photograph of Test
Position E



Position A



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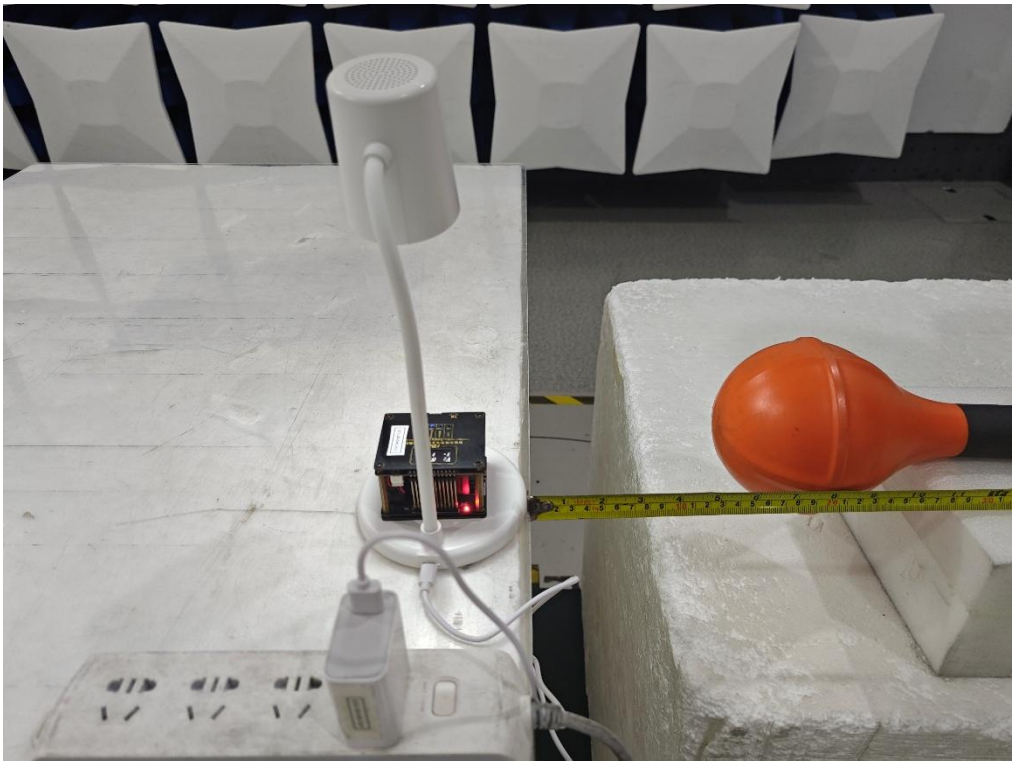
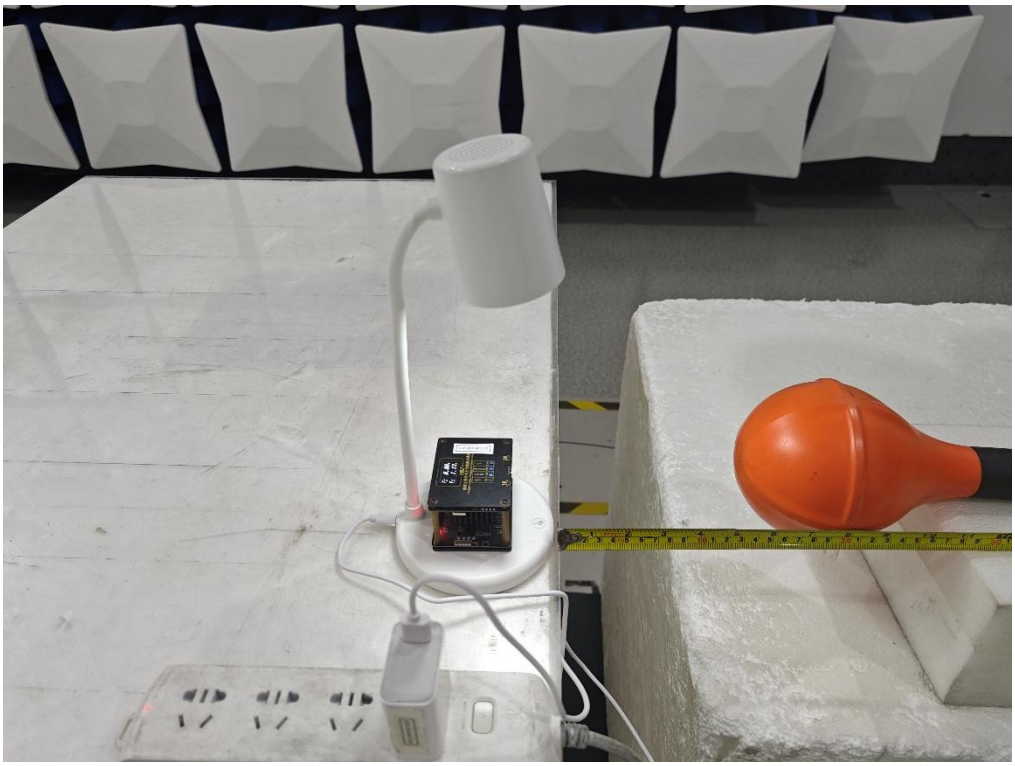
Position C



Position B



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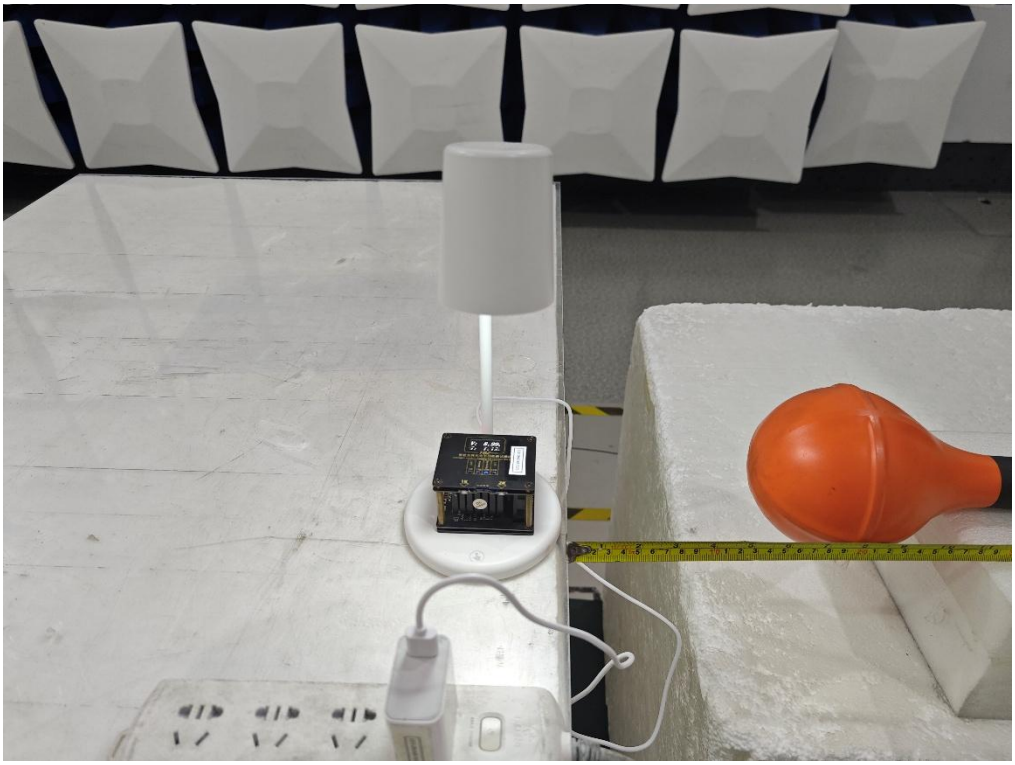
Position D



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5. EXTERIOR PHOTOGRAPHS OF EUT

Please refer to separated files for External Photos of the EUT.

6. INTERIOR PHOTOGRAPHS OF EUT

Please refer to separated files for Internal Photos of the EUT.

----------THE END OF REPORT----------

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