

RF Exposure Evaluation Report

Product : Wireless RGB Mousepad
Trade mark : N/A
Model/Type reference : HD033
Serial Number : N/A
Report Number : EED32P80939302
FCC ID : 2BBUN-HD033
Date of Issue : Sep. 18, 2023
Test Standards : 47 CFR Part 1.1307
47 CFR Part 1.1310
47 CFR Part 2.1091(mobile devices)
47 CFR Part 2.1093(portable devices)
KDB 447498 D04 Interim General RF
Exposure Guidance v01
KDB 680106 D01 RF Exposure
Wireless Charging App v03r01
Test result : PASS

Prepared for:

Guangzhou Huadong Computer Technology Co.,Ltd.
FIFTH FLOOR OF HONGTAI INDUSTRIAL ZONE(PLANT A4),
HUDIELING, XINTANG TOWN, ZENGCHENG DISTRICT, GUANGZHOU

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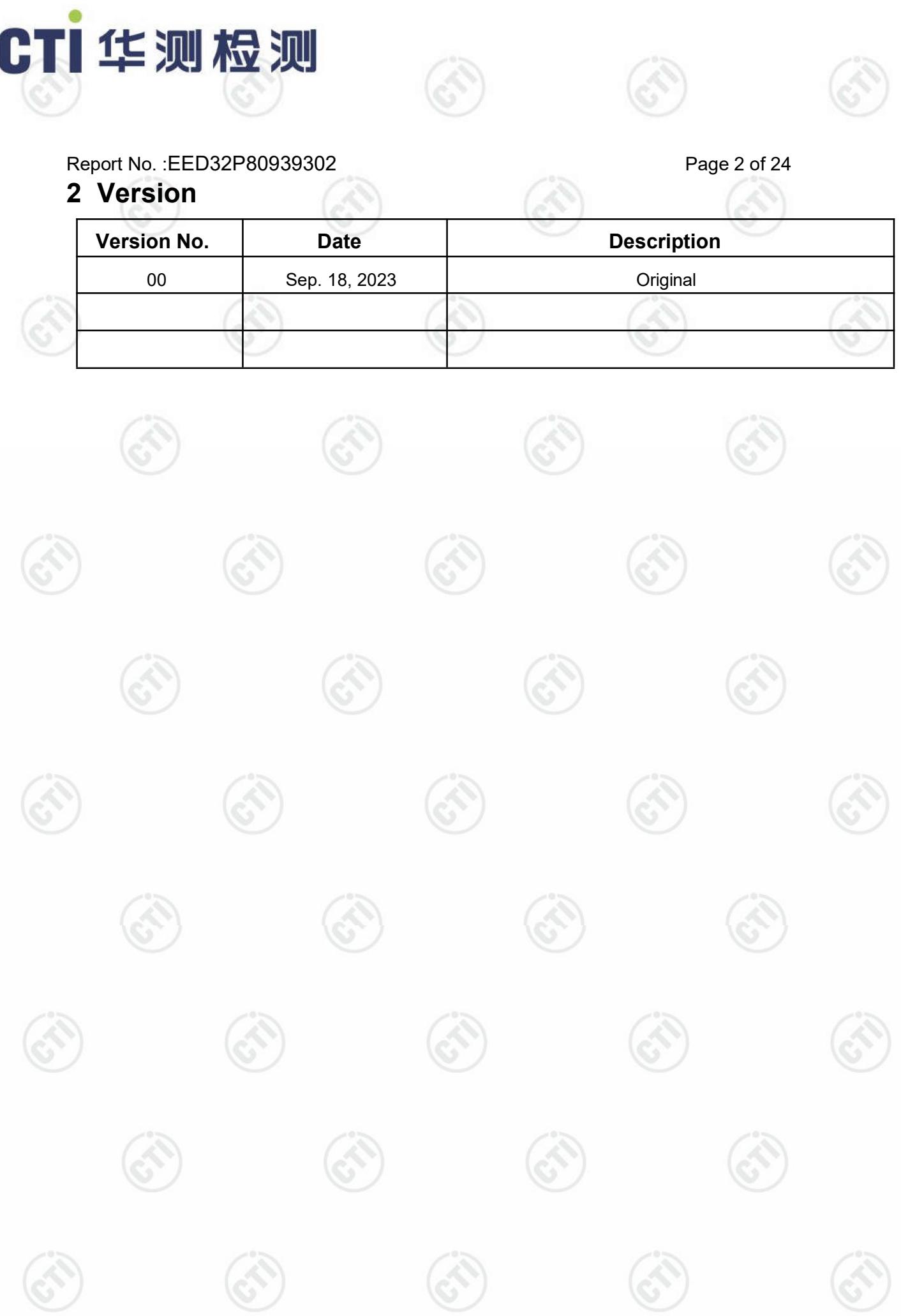


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2 Version

Version No.	Date	Description
00	Sep. 18, 2023	Original



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4 General Information

4.1 Client Information

Applicant:	Guangzhou Huadong Computer Technology Co.,Ltd.
Address of Applicant:	FIFTH FLOOR OF HONGTAI INDUSTRIAL ZONE(PLANT A4), HU DIE LING, XINTANG TOWN, ZENGCHENG DISTRICT, GUANGZHOU
Manufacturer:	Guangzhou Huadong Computer Technology Co.,Ltd.
Address of Manufacturer:	FIFTH FLOOR OF HONGTAI INDUSTRIAL ZONE(PLANT A4), HU DIE LING, XINTANG TOWN, ZENGCHENG DISTRICT, GUANGZHOU
Factory:	Guangzhou Huadong Computer Technology Co.,Ltd.
Address of Factory:	FIFTH FLOOR OF HONGTAI INDUSTRIAL ZONE(PLANT A4), HU DIE LING, XINTANG TOWN, ZENGCHENG DISTRICT, GUANGZHOU

4.2 General Description of EUT

Product Name:	Wireless RGB Mousepad
Model No.(EUT):	HD033
Trade Mark:	N/A

4.3 Product Specification subjective to this standard

Frequency Range:	111kHz-200kHz
Number of Channels:	1
Center Frequency:	128kHz
Test Power Grade:	Default
Test Software of EUT:	RF test
Antenna Type:	Coil antenna
Device type:	Desktop applications device
Power Supply:	USB port: DC 5.0V/DC 9.0V/DC 12.0V
Sample Received Date:	Jun. 26, 2023
Sample tested Date:	Jun. 26, 2023 to Jun. 29, 2023
Remark:	Company Name and Address shown on Report, the sample(s) and sample Information was/ were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified.

4.4 Test Environment and Mode

Operating Environment:	
Temperature:	22~25.0 °C
Humidity:	50~55 % RH
Atmospheric Pressure:	1010mbar
Test mode:Transmitting mode	
Mode a:	Wireless charging mode(Null load)(Connect to adapter)
Mode b:	Wireless charging mode(33.3% load)(Connect to adapter)
Mode c:	Wireless charging mode(66.7% load)(Connect to adapter)
Mode d:	Wireless charging mode(Half load)(Connect to adapter)
Mode e:	Wireless charging mode(Full load)(Connect to adapter)
Note:	
1.Wireless output:5W,7.5W,10W,15W(maximum wireless output 15W during charging);	
2.Through Pre-scan,when EUT power by DC 12.0V was the worst case, only the worst case data was recorded in the report.	

4.5 Description of Support Units

The EUT has been tested with associated equipment below.

1) support equipment

Description	Manufacturer	Model No.	Certification	Supplied by
Fast charging source adapter	MI	/	FCC ID and DOC	CTI
Intelligent wireless charging full function test module	YBZ	/	FCC ID and DOC	Client

4.6 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd

Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China

Telephone: +86 (0) 755 33683668 Fax:+86 (0) 755 33683385

No tests were sub-contracted.

FCC Designation No.: CN1164

4.7 Deviation from Standards

None.

4.8 Abnormalities from Standard Conditions

None.

4.9 Other Information Requested by the Customer

None.

5 Equipment List

RF test system					
Equipment	Manufacturer	Mode No.	Serial Number	Cal. Date (mm-dd-yyyy)	Cal. Due date (mm-dd-yyyy)
3M Chamber & Accessory Equipment	TDK	SAC-3	---	06-08-2023	06-07-2026
Electric and Magnetic field analyzer	Narda	EHP-200AC	180ZX11020	12-30-2022	12-29-2023
PC-1	HP	ZHAN200	--	--	--
EHP200-TS	Narda	--	Rel 1.95	--	--
Test software	Narda S.T.S./PMM	EHP200-TS	--	--	--
Steel Ruler	Wynn's	300mm	--	11-04-2021	11-03-2024

6 SAR Evaluation

6.1 RF Exposure Compliance Requirement

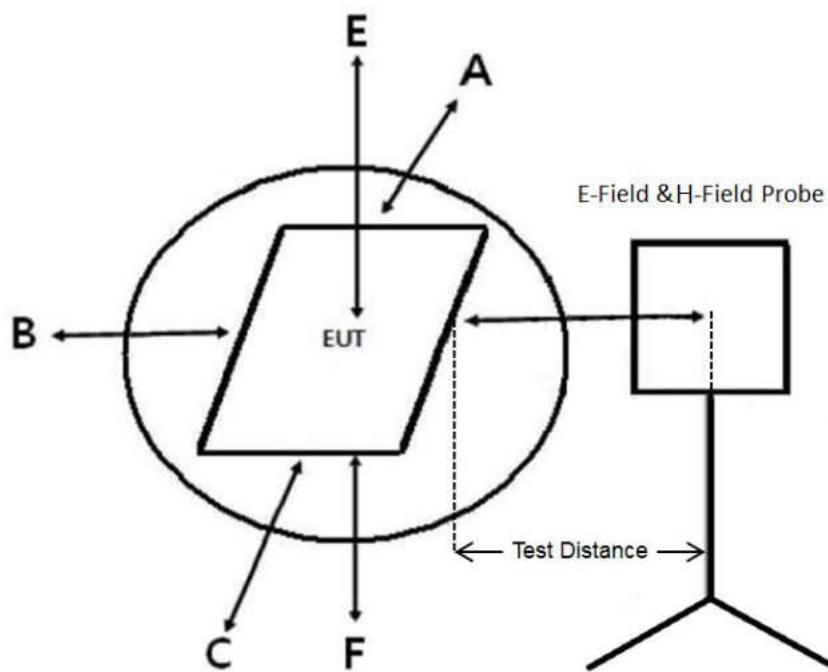
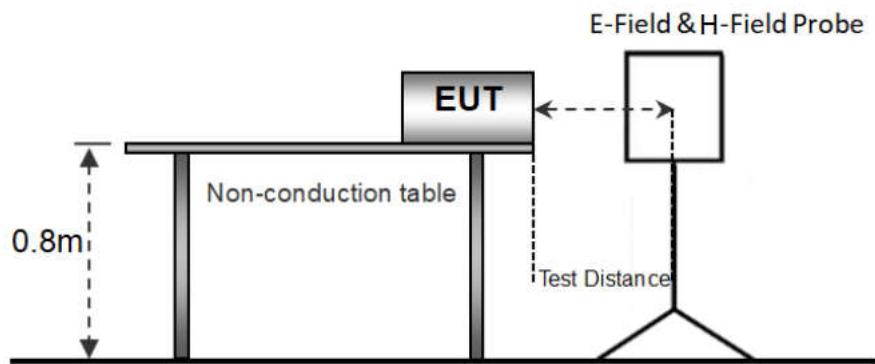
6.1.1 Limits

§ 1.1310 The criteria listed in table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency(RF) radiation as specified in § 1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of § 2.1093 of this chapter.

Table 1 to § 1.1310(e)(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)
(i) 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
(ii) 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.

6.1.2 Test Procedure

- The measurement probe was placed at test distance(15 cm for A,B,C,D,F and 20 cm for E) which is between the edge of the charger and the geometric center of probe.
- The highest emission level was recorded at the measurement points(A, B, C, D, E, F).
- The EUT was measured according to the distance of 680106 D01 RF Exposure Wireless Charging App v03r01.

6.1.3 RF Exposure Evaluation

6.1.3.1 Field strengths Evaluation

1. According to April 27,2022 TCB Workshop, for portable devices that do not physically attach to phone, desktop WPT testing guidance from FCC KDB 680106 D01 RF Exposure Wireless Charging App v03r01 is applied.

2. The equipment under test was placed on a wooden desk inside of shield room. The isotropic field probe was used to measure the field strength for 6 EUT surfaces. The detailed setup photo please refer to Appendix A.

3. Per FCC KDB 680106 D01 RF Exposure Wireless Charging App v03r01 and April 27,2022 TCB Workshop, For devices designed for typical desktop applications, such a wireless charging pads, RF exposure evaluation should be conducted assuming a user separation distance of 15 cm. E and H field strength measurements or numerical modeling may be used to demonstrate compliance. Measurements should be made from all sides and the top of the primary/client pair, with the 15 cm measured from the center of the probe(s) to the edge of the device. 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. And aggregate H-field strengths and E-field strengths from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit.

Test data:

Mode a						
Test position	Test distance (cm)	Electric Field Strength (V/m)	50% Limit (V/m)	Magnetic Field Strength (A/m)	50%Limit (A/m)	Result
Top	20	4.1470	307	0.2822	0.815	Pass
Front	15	1.9219	307	0.0220	0.815	Pass
Left	15	1.2128	307	0.0629	0.815	Pass
Rear	15	0.8449	307	0.0158	0.815	Pass
Right	15	1.2536	307	0.0103	0.815	Pass
Bottom*	15	/	/	/	/	/

*This product is belongs to desktop applications device,therefore it doesn't apply.

Mode b						
Test position	Test distance (cm)	Electric Field Strength (V/m)	50% Limit (V/m)	Magnetic Field Strength (A/m)	50%Limit (A/m)	Result
Top	20	2.9611	307	0.2910	0.815	Pass
Front	15	1.1492	307	0.0198	0.815	Pass
Left	15	1.4613	307	0.0719	0.815	Pass
Rear	15	1.1407	307	0.0144	0.815	Pass
Right	15	1.3299	307	0.0109	0.815	Pass
Bottom*	15	/	/	/	/	/

*This product is belongs to desktop applications device,therefore it doesn't apply.

Mode c						
Test position	Test distance (cm)	Electric Field Strength (V/m)	50% Limit (V/m)	Magnetic Field Strength (A/m)	50%Limit (A/m)	Result
Top	20	3.3168	307	0.1443	0.815	Pass
Front	15	0.8835	307	0.0357	0.815	Pass
Left	15	1.5205	307	0.1286	0.815	Pass
Rear	15	0.9522	307	0.0427	0.815	Pass
Right	15	1.3482	307	0.0126	0.815	Pass
Bottom*	15	/	/	/	/	/

*This product is belongs to desktop applications device,therefore it doesn't apply.

Mode d						
Test position	Test distance (cm)	Electric Field Strength (V/m)	50% Limit (V/m)	Magnetic Field Strength (A/m)	50%Limit (A/m)	Result
Top	20	5.9104	307	0.2148	0.815	Pass
Front	15	1.4054	307	0.0326	0.815	Pass
Left	15	1.5025	307	0.1258	0.815	Pass
Rear	15	1.1403	307	0.0334	0.815	Pass
Right	15	0.8113	307	0.0121	0.815	Pass
Bottom*	15	/	/	/	/	/

*This product is belongs to desktop applications device,therefore it doesn't apply.

Mode e						
Test position	Test distance (cm)	Electric Field Strength (V/m)	50% Limit (V/m)	Magnetic Field Strength (A/m)	50%Limit (A/m)	Result
Top	20	2.5223	307	0.3556	0.815	Pass
Front	15	1.0718	307	0.0382	0.815	Pass
Left	15	1.6766	307	0.1152	0.815	Pass
Rear	15	0.8629	307	0.0521	0.815	Pass
Right	15	0.8104	307	0.0143	0.815	Pass
Bottom*	15	/	/	/	/	/

*This product is belongs to desktop applications device,therefore it doesn't apply.

Conclusions:

From the measurement data obtained, the tested sample was considered to have complied with the requirements for the relevant §1.1310 Radio frequency radiation exposure limits and KDB 680106 D01 RF Exposure Wireless Charging App v03r01.

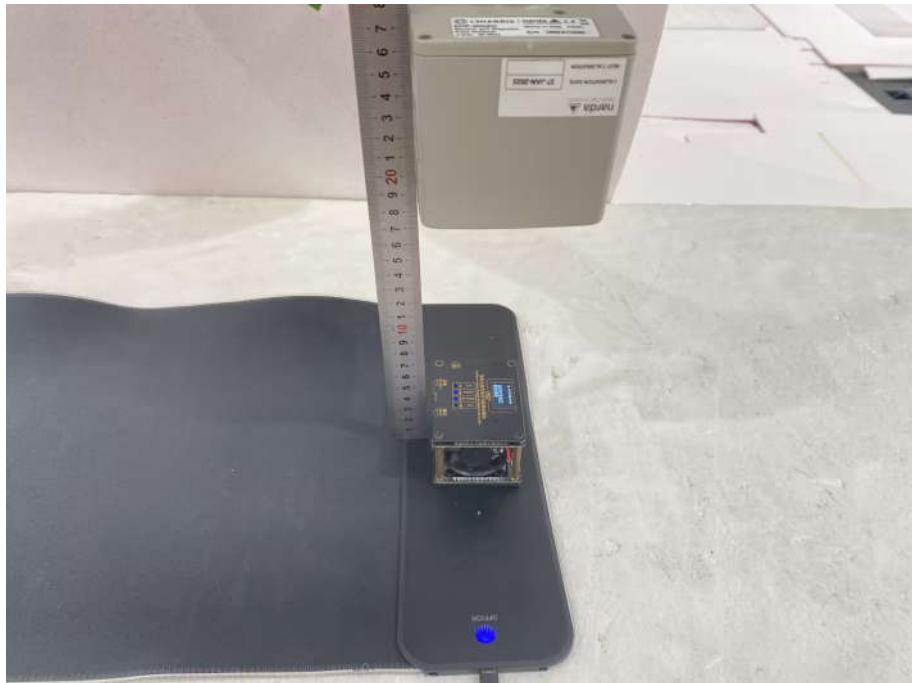
PHOTOGRAPHS OF TEST SETUP



Test Setup of Top (Mode a)



Test Setup of Top (Mode b)



Test Setup of Top (Mode c)



Test Setup of Top (Mode d)



Test Setup of Top (Mode e)



Test Setup of Front (Mode a)



Test Setup of Front (Mode b)



Test Setup of Front (Mode c)



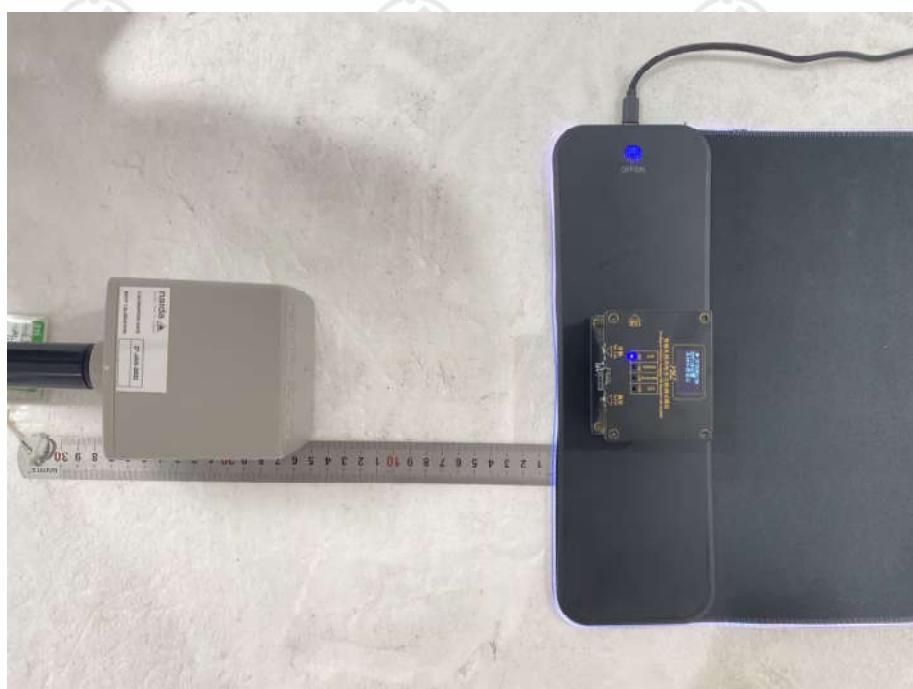
Test Setup of Front(Mode d)



Test Setup of Front(Mode e)



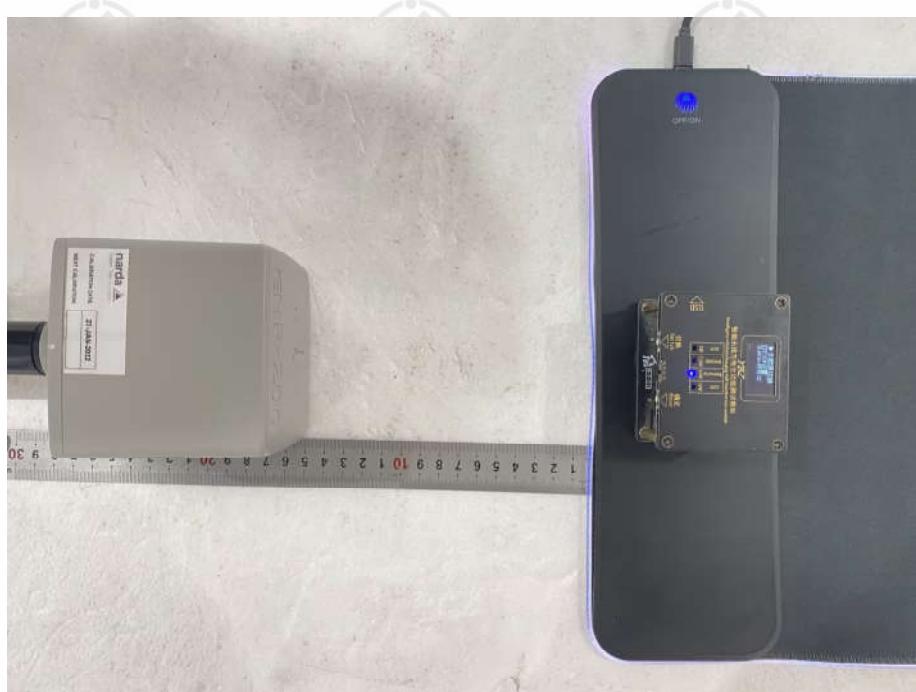
Test Setup of Left (Mode a)



Test Setup of Left (Mode b)



Test Setup of Left (Mode c)



Test Setup of Left (Mode d)



Test Setup of Left(Mode e)



Test Setup of Rear(Mode a)



Test Setup of Rear (Mode b)



Test Setup of Rear (Mode c)



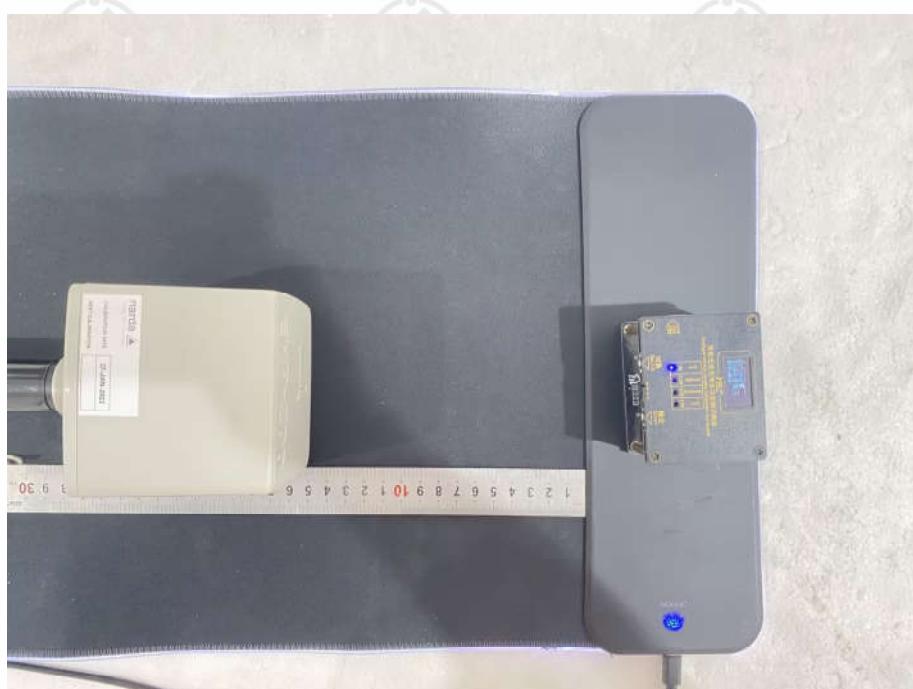
Test Setup of Rear (Mode d)



Test Setup of Rear (Mode e)



Test Setup of Right (Mode a)



Test Setup of Right (Mode b)



Test Setup of Right (Mode c)



Test Setup of Right (Mode d)



Test Setup of Right (Mode e)

PHOTOGRAPHS OF EUT Constructional Details

Refer to Report No.EED32P80939301 for EUT external and internal photos.

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*** End of Report ***