

FCC TEST REPORT
FCC ID: 2AN4Y-PB4D

On Behalf of

Shenzhen Torras Technology Co., Ltd.

Power Bank

Model No.: PB4D

Prepared for : Shenzhen Torras Technology Co., Ltd.
Address : RM1215, BLK C, Zhantao Technology BLDG, Minzhi Avenue, Minzhi
ST, Longhua DIST, Shenzhen, China

Prepared By : Shenzhen PSI Testing Co., Ltd.
Address : 1-2/F., Building 5, Yudafu Industrial Park, No.10, Xingye West Road,
Shajing Subdistrict, Bao'an District, Shenzhen, Guangdong, China

Report Number : psi2503075-C01-R05
Date of Receipt : February 28, 2025
Date of Test : March 1, 2025-March 20, 2025
Date of Report : March 21, 2025
Version Number : V0

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TEST REPORT DECLARATION

Applicant : Shenzhen Torras Technology Co., Ltd.
Address : RM1215, BLK C, Zhantao Technology BLDG, Minzhi Avenue, Minzhi ST,
Longhua DIST, Shenzhen, China
Manufacturer : Shenzhen Torras Technology Co., Ltd.
Address : RM1215, BLK C, Zhantao Technology BLDG, Minzhi Avenue, Minzhi ST,
Longhua DIST, Shenzhen, China
EUT Description : Power Bank
(A) Model No. : PB4D
(B) Trademark : TORRAS

Measurement Standard Used:

FCC CFR 47 PART 1, FCC CFR 47 part1, 1.1307(b), 1.1310, 2.1093

KDB 680106 D01 Wireless Power Transfer v04

Test Result: PASS

The device described above is tested by Shenzhen PSI Testing Co., Ltd. to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The test results are contained in this test report and Shenzhen PSI Testing Co., Ltd. is assumed full responsibility for the accuracy and completeness test. Also, this report shows that the EUT is technically compliant with the KDB 680106 D01 requirements.

This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Shenzhen PSI Testing Co., Ltd.

Tested by (name + signature).....:

Felix Pang
Test Engineer



Approved by (name + signature).....:

Simple Guan
Project Manager



Date of issue.....:

March 21, 2025

Revision History

Revision	Issue Date	Revisions	Revised By
V0	March 21, 2025	Initial released Issue	Felix Pang

1. Test Result Summary

Requirement	CFR 47 Section	Result
RF EXPOSURE	§1.1307(b)(1), §1.1310, §2.1093 & KDB680106 D01	PASS

Note:

1. PASS: Test item meets the requirement.
2. Fail: Test item does not meet the requirement.
3. N/A: Test case does not apply to the test object.
4. The test result judgment is decided by the limit of test standard.
5. Decision rules for the conclusion of this test report: decision by actual test data without considering measurement uncertainty.

2. EUT Description

2.1. Description of Device (EUT)

EUT Name : Power Bank
Model No. : PB4D
DIFF. : N/A
Power supply : DC 5V(Adapter Input 230V 50Hz) or DC 3.87V from battery
Ratings: USB-C Input:DC5V,3A
USB-C Output:DC5V,2A/DC9V,2A
Wireless Charging Output:7.5W Max
USB-C+Wireless Charging Output:5W+5W MAX

Radio Technology : Wireless power transmission systems

Operation frequency : 115KHz -148KHz

Modulation : ASK

Antenna Type : Coil Antenna

Connector cable loss : 0.5dB

Software version : N/A

Hardware version : N/A

Note : Antenna information is provided by applicant.
Testing lab is not responsible for the accuracy of the information.

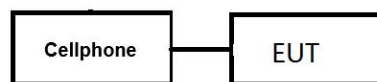
2.2. Accessories of Device (EUT)

None

2.3. Tested Supporting System Details

No.	Description	Manufacturer	Model	Serial Number	Certification
1	Adapter	Baseus	CCXFK65CC	N/A	N/A
2	USB Cable	N/A	N/A	N/A	N/A
3	Cellphone	Apple	iPhone 15 Pro Max	N/A	N/A

2.4. Block Diagram of connection between EUT and simulators



2.5. Equipment Approval Considerations

The EUT does comply with KDB 680106 D01 as follow table.

Requirements of KDB 680106 D01	Yes/ No	Description
Mobile Device and Portable Device Configurations	Yes	Portable Device
Equipment Authorization Procedures for Devices Operating at Frequencies Below 4 MHz	Yes	The device operate in the frequency range 115KHz -148KHz

2.6. Description of Test Modes

Mode	Test mode description
1	Wireless output: 7.5W
2	Wireless output: 5W
3	No Load

Note: The client operating modes (client battery status 1%, 50%, 99%) have been tested and only display data for the worst-case scenario Mode 1 of the client battery status.

2.7. Test Conditions

Items	Required	Actual
Temperature range:	15-35℃	26℃
Humidity range:	25-75%	54%
Pressure range:	86-106kPa	101kPa

2.8. Test Facility

Shenzhen PSI Testing Co., Ltd.

1-2/F., Building 5, Yudafu Industrial Park, No.10, Xingye West Road, Shajing Subdistrict, Bao'an District, Shenzhen, Guangdong, China

September 13, 2023 File on Federal Communication Commission

Registration Number: 916281

2.9. Measurement Uncertainty

(95% confidence levels, k=2)

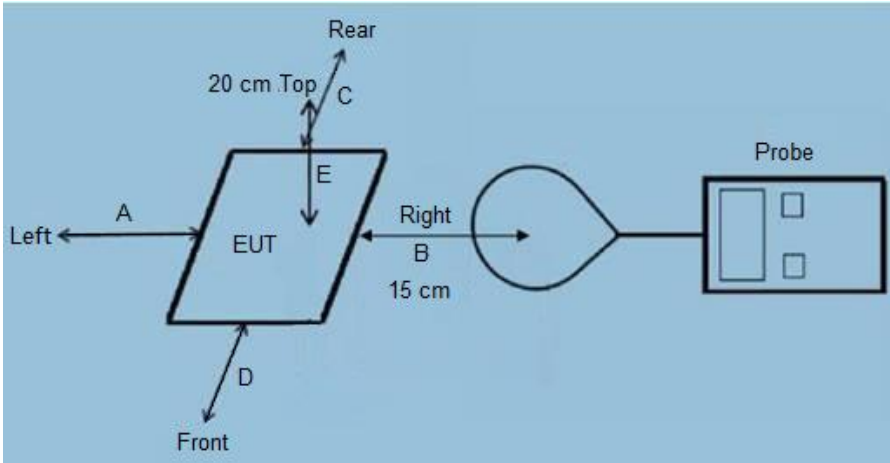
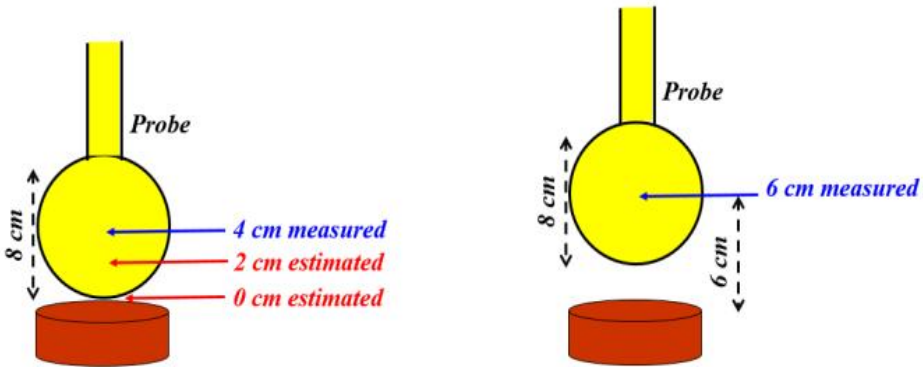
Item	Uncertainty
Uncertainty for H-Field	2.39dB
Uncertainty for E-Field	2.45dB
Uncertainty for conducted RF Power	0.65dB
Uncertainty for temperature	0.2℃
Uncertainty for humidity	1%
Uncertainty for DC and low frequency voltages	0.06%

3. Test Results and Measurement Data

3.1. RF EXPOSURE TEST

3.1.1. Test Specification

Test Requirement:	FCC Rules and Regulations KDB680106																																																																				
Test Method:	According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines. According to §1.1310 and §2.1093 RF exposure is calculated. According KDB680106 D01: KDB 680106 D01 Wireless Power Transfer v04.																																																																				
Limits:	According to the item 3 of KDB 680106 D01v04: Inductive wireless power transfer applications that meet all of the following requirements are excluded from submitting an RF exposure evaluation. (1) Mobile Device and Portable Device Configurations (2) Equipment Authorization Procedures for Devices Operating at Frequencies Below 4 MHz (3) The aggregate H-field strengths anywhere at (0/2/4/6/8/10/12/14/16/18/20cm) surrounding the device six surfaces. The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b) Limits for Maximum Permissible Exposure (MPE) <table border="1"> <thead> <tr> <th>Frequency range (MHz)</th><th>Electric field strength (V/m)</th><th>Magnetic field strength (A/m)</th><th>Power density (mW/cm²)</th><th>Averaging time (minutes)</th></tr> </thead> <tbody> <tr> <td colspan="5">(A) Limits for Occupational/Controlled Exposures</td></tr> <tr> <td>0.3-3.0</td><td>614</td><td>1.63</td><td>*(100)</td><td>6</td></tr> <tr> <td>3.0-30</td><td>1842/f</td><td>4.89/f</td><td>*(900/f²)</td><td>6</td></tr> <tr> <td>30-300</td><td>61.4</td><td>0.163</td><td>1.0</td><td>6</td></tr> <tr> <td>300-1500</td><td>/</td><td>/</td><td>f/300</td><td>6</td></tr> <tr> <td>1500-100,000</td><td>/</td><td>/</td><td>5</td><td>6</td></tr> <tr> <td colspan="5">(B) Limits for General Population/Uncontrolled Exposure</td></tr> <tr> <td>0.3-1.34</td><td>614</td><td>1.63</td><td>*(100)</td><td>30</td></tr> <tr> <td>1.34-30</td><td>824/f</td><td>2.19/f</td><td>*(180/f²)</td><td>30</td></tr> <tr> <td>30-300</td><td>27.5</td><td>0.073</td><td>0.2</td><td>30</td></tr> <tr> <td>300-1500</td><td>/</td><td>/</td><td>f/1500</td><td>30</td></tr> <tr> <td>1500-100,000</td><td>/</td><td>/</td><td>1.0</td><td>30</td></tr> </tbody> </table> 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).				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
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Test Setup:	 Figure 1  Figure 2
Test Mode:	Communication Mode (Mobile phone will be charge at zero charge, intermediate charge, and full charge.)
Test Procedure:	1) The RF exposure test was performed in anechoic chamber. 2) The measurement probe was placed at test distance (0/2/4/6/8/10/12/14/16/18/20cm) which is between the edge of the charger and the geometric center of probe. 3) The highest emission level was recorded and compared with limit as soon as measurement of each points (A, B, C, D, E, F) were completed. 4) The EUT was measured according to the dictates of KDB 680106 D01v04. 5) Large size probes may prevent the measurement of E- and/or H-fields near the surface of the radiating structure (e.g., a WPT source coil), as in the example shown in Figure 2. These estimates shall include points spaced no more than 2 cm from each other. Thus, in the example of Figure 2, at least the estimates at 0 cm² and 2 cm are required, while only one point would not be sufficient. In addition, the model needs to be validated through the probe measurements for the two closest points to the device surface, and with 2-cm increments, as indicated in Figure 2. In that example, the same model must also be applied to the 4 cm and 6 cm positions, and then compared with the measured data, for validation purposes. The validation is considered sufficient if a 30% agreement between the model and the (E- and/or H-field) probe measurements is demonstrated. If such a level of agreement cannot be shown, a more accurate model (and/or a smaller probe) shall be used.
Test Result:	PASS

3.1.2. Test Instruments

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Exposure Level Tester	narda	ELT-400	O-0729	2024.05.06	1 Year
2	Magnetic field probe 100cm2	narda	ELT probe 100cm2	M-2116	2024.05.06	1 Year

Note: The probe radius is 8 cm

3.1.3. Test data

The probe radius is 8 cm.

E-Field Strength at 8/10/12/14/16/18/20cm from the edges surrounding the EUT

Charging Battery Level	Measured Distance (cm)	Measured E-Field Strength Values (V/m)						FCC E-Field Strength Limits (V/m)
		Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Test Position F	
99%	8	5.6173	4.3732	3.8454	3.8454	6.9368	6.6729	614
50%	8	5.8058	4.4863	3.9962	3.9585	7.163	6.8614	614
1%	8	5.9943	4.6371	4.1093	4.0716	7.3892	7.0876	614
99%	10	4.8633	3.7323	3.3176	3.2799	5.9566	5.7304	614
50%	10	5.0141	3.8831	3.4307	3.3930	6.1828	5.9189	614
1%	10	5.1649	3.9962	3.5438	3.5061	6.3713	6.1074	614
99%	12	4.1847	3.2422	2.8652	2.8275	5.1272	4.9387	614
50%	12	4.2978	3.3176	2.9406	2.9029	5.3157	5.0895	614
1%	12	4.4486	3.4307	3.0537	3.0160	5.4665	5.2403	614
99%	14	3.5815	2.7898	2.4505	2.4505	4.4109	4.2224	614
50%	14	3.6946	2.8652	2.5259	2.5259	4.5617	4.3732	614
1%	14	3.8077	2.9406	2.6013	2.6013	4.7125	4.5240	614
99%	16	3.0914	2.3751	2.1112	2.1112	3.8077	3.6569	614
50%	16	3.1668	2.4505	2.1866	2.1489	3.9208	3.7700	614
1%	16	3.2799	2.5259	2.2620	2.2243	4.0339	3.8831	614
99%	18	2.6390	2.0358	1.8096	1.8096	3.2799	3.1291	614
50%	18	2.7521	2.1112	1.8850	1.8473	3.3553	3.2422	614
1%	18	2.8275	2.1866	1.9227	1.9227	3.4684	3.3176	614
99%	20	2.2620	1.7719	1.5457	1.5457	2.8275	2.6767	614
50%	20	2.3374	1.8096	1.6211	1.5834	2.9029	2.7898	614
1%	20	2.4128	1.8850	1.6588	1.6588	2.9783	2.8652	614

Note: V/m= A/m *377

H-Field Strength at 8/10/12/14/16/18/20cm from the edges surrounding the EUT

Charging Battery Level	Measured Distance (cm)	Unit	Measured H-Field Strength Values (A/m)						FCC H-Field Strength Limits (A/m)
			Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Test Position F	
99%	8	uT	0.0186	0.0145	0.0128	0.0128	0.0230	0.0221	--
99%	8	A/m	0.0149	0.0116	0.0102	0.0102	0.0184	0.0177	1.63
50%	8	uT	0.0193	0.0149	0.0133	0.0131	0.0238	0.0228	--
50%	8	A/m	0.0154	0.0119	0.0106	0.0105	0.0190	0.0182	1.63
1%	8	uT	0.0199	0.0154	0.0136	0.0135	0.0245	0.0235	--
1%	8	A/m	0.0159	0.0123	0.0109	0.0108	0.0196	0.0188	1.63
99%	10	uT	0.0161	0.0124	0.0110	0.0109	0.0198	0.0190	--
99%	10	A/m	0.0129	0.0099	0.0088	0.0087	0.0158	0.0152	1.63
50%	10	uT	0.0166	0.0129	0.0114	0.0113	0.0205	0.0196	--
50%	10	A/m	0.0133	0.0103	0.0091	0.0090	0.0164	0.0157	1.63
1%	10	uT	0.0171	0.0133	0.0118	0.0116	0.0211	0.0203	--
1%	10	A/m	0.0137	0.0106	0.0094	0.0093	0.0169	0.0162	1.63
99%	12	uT	0.0139	0.0108	0.0095	0.0094	0.0170	0.0164	--
99%	12	A/m	0.0111	0.0086	0.0076	0.0075	0.0136	0.0131	1.63
50%	12	uT	0.0143	0.0110	0.0098	0.0096	0.0176	0.0169	--
50%	12	A/m	0.0114	0.0088	0.0078	0.0077	0.0141	0.0135	1.63
1%	12	uT	0.0148	0.0114	0.0101	0.0100	0.0181	0.0174	--
1%	12	A/m	0.0118	0.0091	0.0081	0.0080	0.0145	0.0139	1.63
99%	14	uT	0.0119	0.0093	0.0081	0.0081	0.0146	0.0140	--
99%	14	A/m	0.0095	0.0074	0.0065	0.0065	0.0117	0.0112	1.63
50%	14	uT	0.0123	0.0095	0.0084	0.0084	0.0151	0.0145	--
50%	14	A/m	0.0098	0.0076	0.0067	0.0067	0.0121	0.0116	1.63
1%	14	uT	0.0126	0.0098	0.0086	0.0086	0.0156	0.0150	--
1%	14	A/m	0.0101	0.0078	0.0069	0.0069	0.0125	0.0120	1.63
99%	16	uT	0.0103	0.0079	0.0070	0.0070	0.0126	0.0121	--
99%	16	A/m	0.0082	0.0063	0.0056	0.0056	0.0101	0.0097	1.63
50%	16	uT	0.0105	0.0081	0.0073	0.0071	0.0130	0.0125	--
50%	16	A/m	0.0084	0.0065	0.0058	0.0057	0.0104	0.0100	1.63
1%	16	uT	0.0109	0.0084	0.0075	0.0074	0.0134	0.0129	--
1%	16	A/m	0.0087	0.0067	0.0060	0.0059	0.0107	0.0103	1.63
99%	18	uT	0.0088	0.0068	0.0060	0.0060	0.0109	0.0104	--
99%	18	A/m	0.0070	0.0054	0.0048	0.0048	0.0087	0.0083	1.63
50%	18	uT	0.0091	0.0070	0.0063	0.0061	0.0111	0.0108	--
50%	18	A/m	0.0073	0.0056	0.0050	0.0049	0.0089	0.0086	1.63
1%	18	uT	0.0094	0.0073	0.0064	0.0064	0.0115	0.0110	--
1%	18	A/m	0.0075	0.0058	0.0051	0.0051	0.0092	0.0088	1.63
99%	20	uT	0.0075	0.0059	0.0051	0.0051	0.0094	0.0089	--
99%	20	A/m	0.0060	0.0047	0.0041	0.0041	0.0075	0.0071	1.63
50%	20	uT	0.0078	0.0060	0.0054	0.0053	0.0096	0.0093	--
50%	20	A/m	0.0062	0.0048	0.0043	0.0042	0.0077	0.0074	1.63

1%	20	uT	0.0080	0.0063	0.0055	0.0055	0.0099	0.0095	--
1%	20	A/m	0.0064	0.0050	0.0044	0.0044	0.0079	0.0076	1.63

Note: A/m=uT/1.25

According to the formula:

The formula for the magnetic field strength at a distance r from the coil is

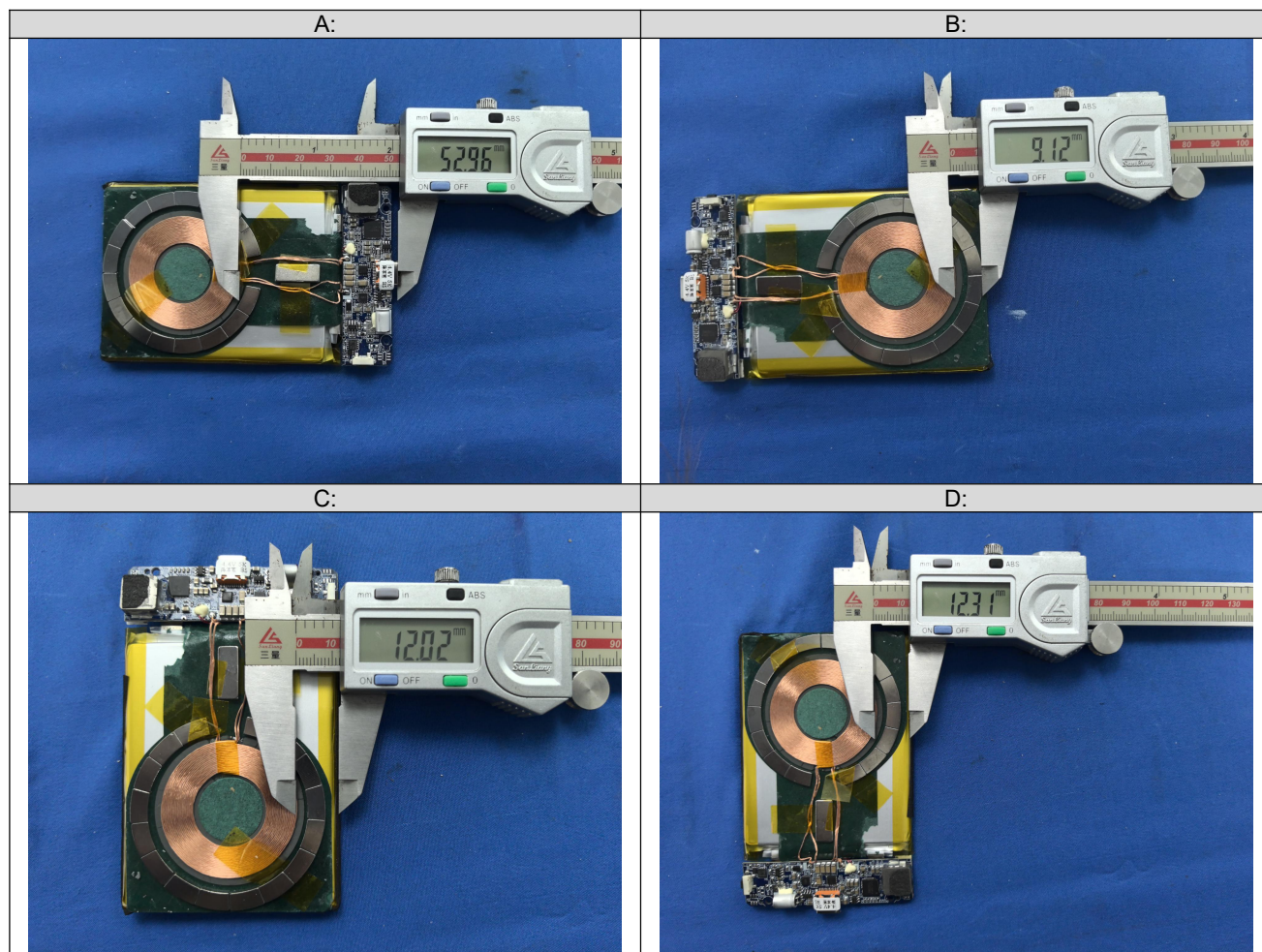
$$H = I/(2\pi r) * \mu$$

H is A/m

I is the current intensity

μ is the permeability, and its value depends on the medium.

The other parameters are fixed, so H is inversely proportional to r.



ABCDEF direction The actual distance(r) to the antenna coil.

measured distance(cm)	Actual distance r to the antenna (cm)					
	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Test Position F
20	25.296	20.912	21.202	21.231	20.835	20.899
18	23.296	18.912	19.202	19.231	18.835	18.899
16	21.296	16.912	17.202	17.231	16.835	16.899
14	19.296	14.912	15.202	15.231	14.835	14.899
12	17.296	12.912	13.202	13.231	12.835	12.899
10	15.296	10.912	11.202	11.231	10.835	10.899
8	13.296	8.912	9.202	9.231	8.835	8.899
6	11.296	6.912	7.202	7.231	6.835	6.899
4	9.296	4.912	5.202	5.231	4.835	4.899
2	7.296	2.912	3.202	3.231	2.835	2.899
0	5.296	0.912	1.202	1.231	0.835	0.899

Note: The phone is 8.35mm thick.

The result is calculated by the above formula:

H-Field Strength at 0/2/4/6cm from the edges surrounding the EUT

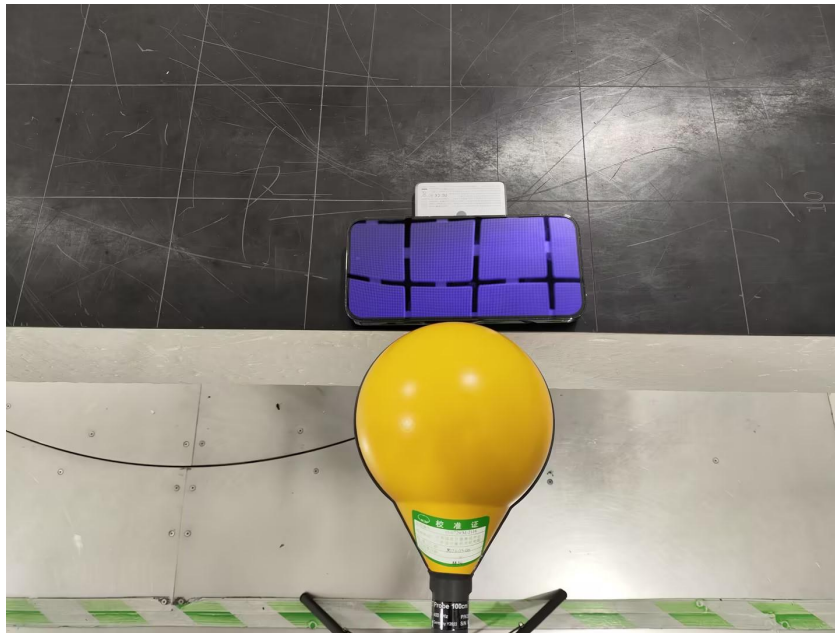
Charging Battery Level	Measured Distance (cm)	Unit	Measured H-Field Strength Values (A/m)						FCC H-Field Strength Limits (A/m)
			Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Test Position F	
1%	0	A/m	0.5485	0.4861	0.5007	0.145	1.5326	1.2025	1.63
50%	0	A/m	0.5414	0.4798	0.4942	0.1431	1.5127	1.1869	1.63
99%	0	A/m	0.5024	0.4453	0.4586	0.1328	1.4039	1.1015	1.63
1%	2	A/m	0.1251	0.1109	0.1118	0.0704	0.4766	0.2762	1.63
50%	2	A/m	0.1235	0.1095	0.1103	0.0695	0.4704	0.2726	1.63
99%	2	A/m	0.1135	0.1006	0.1014	0.0639	0.4323	0.2505	1.63
1%	4	A/m	0.0467	0.0414	0.0414	0.0393	0.1204	0.0879	1.63
50%	4	A/m	0.0460	0.0408	0.0408	0.0387	0.1187	0.0867	1.63
99%	4	A/m	0.0427	0.0378	0.0378	0.0359	0.1100	0.0803	1.63
1%	6	A/m	0.0223	0.0197	0.0196	0.0242	0.0431	0.0371	1.63
50%	6	A/m	0.0218	0.0193	0.0192	0.0237	0.0422	0.0363	1.63
99%	6	A/m	0.0201	0.0177	0.0177	0.0218	0.0388	0.0334	1.63

3.1.4. Conclusion

A minimum safety distance of 0 cm to the antenna is required when the device is charging a smart phone for mobile exposure. The detected emissions are below the limitations according FCC KDB 680106.

The model was established with a 30% agreement, so it was considered to be approved.

4. Photos of test setup



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