



FCC TEST REPORT

FCC ID: 2AR7W-PB-MAG-10K

On Behalf of

Shenzhen BNY Industrial Co.,Ltd

Magnetic Power Bank

**Model No.: PB_MAG_G_PB_10K, PB_MAG_GM_PB_10K,
BNY-100GWB, BNY-100DW**

Prepared for : Shenzhen BNY Industrial Co.,Ltd
Address : No.332 Liangji Building, Donghuan No.1 Road, 518109 Longhua district,
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 : psi2412108-C01-R19
Date of Receipt : January 7, 2025
Date of Test : January 7, 2025-January 16, 2025
Date of Report : January 17, 2025
Version Number : V0

TABLE OF CONTENTS

	Description	Page
1.	Test Result Summary	5
2.	EUT Description	6
2.1.	DESCRIPTION OF DEVICE (EUT).....	6
2.2.	ACCESSORIES OF DEVICE (EUT).....	7
2.3.	TESTED SUPPORTING SYSTEM DETAILS	7
2.4.	BLOCK DIAGRAM OF CONNECTION BETWEEN EUT AND SIMULATORS	7
2.5.	DESCRIPTION OF TEST MODES.....	7
2.6.	TEST CONDITIONS	8
2.7.	TEST FACILITY	8
2.8.	MEASUREMENT UNCERTAINTY	8
3.	Test Results and Measurement Data	9
3.1.	RF EXPOSURE TEST	9
4.	Photos of test setup	16

TEST REPORT DECLARATION

Applicant : Shenzhen BNY Industrial Co.,Ltd
Address : No.332 Liangji Building, Donghuan No.1 Road, 518109 Longhua district,
Shenzhen, China
Manufacturer : Shenzhen BNY Industrial Co.,Ltd
Address : No.332 Liangji Building, Donghuan No.1 Road, 518109 Longhua district,
Shenzhen, China
EUT Description : Magnetic Power Bank
(A) Model No. : PB_MAG_G_PB_10K, PB_MAG_GM_PB_10K,
BNY-100GWB, BNY-100DW
(B) Trademark : N/A

Measurement Standard Used:

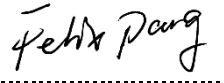
FCC CFR 47 PART 1, FCC CFR 47 part1, 1.1307(b), 1.1310, 2.1093

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.....: January 17, 2025

Revision History

Revision	Issue Date	Revisions	Revised By
V0	January 17, 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 : Magnetic Power Bank

Model No. : PB_MAG_G_PB_10K, PB_MAG_GM_PB_10K, BNY-100GWB, BNY-100DW

DIFF. : There is no difference except for the appearance, shape and model name.
So all the test were performed on the model BNY-100GWB.
Type-C Input: 5V $\overline{=}$ 3A, 9V $\overline{=}$ 2A

Power supply : Type-C Output: 5V $\overline{=}$ 3A, 9V $\overline{=}$ 2.22A, 12V $\overline{=}$ 1.67A
Wireless Output: 15W, 10W, 7.5W, 5W
Battery: DC 3.87V 10000mAh

Radio Technology : Wireless power transmission systems

Operation frequency : 115KHz -205KHz

Modulation : ASK

Antenna Type : Coil Antenna

Connector cable loss : 0.5dB

Software version : V1.0

Hardware version : V1.0

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

2.2. Accessories of Device (EUT)

Accessories	:	N/A
Manufacturer	:	N/A
Model	:	N/A
specifications	:	N/A

2.3. Tested Supporting System Details

No.	Description	Manufacturer	Model	Serial Number	Certification
1	Cellphone	Apple	iPhone 15 Pro Max	N/A	N/A
2	N/A	N/A	N/A	N/A	N/A
3	USB cable	N/A	1M	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~205KHz

2.6. Description of Test Modes

Mode	Test mode description
1	Wireless output: 15W
2	Wireless output: 10W
3	Wireless output: 7.5W
4	Wireless output: 5W
5	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°C	26°C
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)

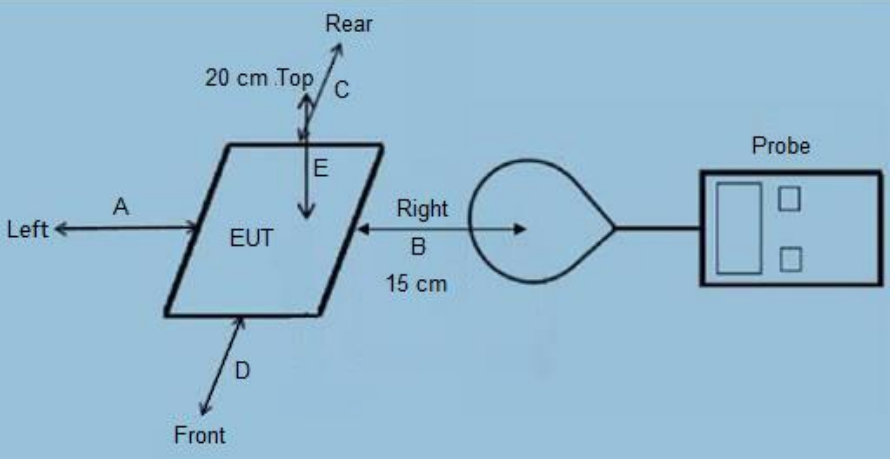
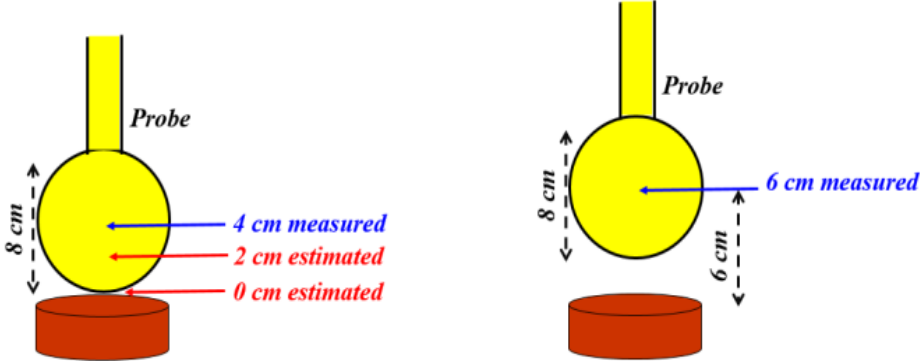
Item	Uncertainty
Uncertainty for H-Field	2.39dB
Uncertainty for E-Field	2.45dB
Uncertainty for conducted RF Power	0.65dB
Uncertainty for temperature	0.2°C
Uncertainty for humidity	1%
Uncertainty for DC and low frequency voltages	0.06%

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> <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> <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> </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	20.594	15.472	18.172	17.502	23.710	21.833	614
50%	8	21.707	15.571	18.693	17.829	24.010	22.893	614
1%	8	21.759	15.669	19.230	18.823	24.343	22.822	614
99%	10	18.487	14.335	16.474	16.025	21.339	19.621	614
50%	10	19.600	14.434	16.995	16.352	21.639	20.681	614
1%	10	19.652	14.532	17.532	17.346	21.972	20.610	614
99%	12	16.381	13.199	14.776	14.549	18.968	17.409	614
50%	12	17.494	13.298	15.297	14.876	19.268	18.469	614
1%	12	17.546	13.396	15.834	15.870	19.601	18.398	614
99%	14	14.274	12.062	13.078	13.073	16.597	15.197	614
50%	14	15.387	12.161	13.599	13.400	16.897	16.257	614
1%	14	15.439	12.259	14.136	14.394	17.230	16.186	614
99%	16	12.167	10.925	11.380	11.597	14.226	12.986	614
50%	16	13.280	11.024	11.901	11.924	14.526	14.046	614
1%	16	13.332	11.122	12.438	12.918	14.859	13.975	614
99%	18	10.061	9.789	9.682	10.121	11.855	10.774	614
50%	18	11.174	9.888	10.203	10.448	12.155	11.834	614
1%	18	11.226	9.986	10.740	11.442	12.488	11.763	614
99%	20	7.954	8.652	7.984	8.645	9.484	8.562	614
50%	20	9.067	8.751	8.505	8.972	9.784	9.622	614
1%	20	9.119	8.849	9.042	9.966	10.117	9.551	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	0.068	0.051	0.060	0.058	0.079	0.072	--
99%	8	A/m	0.055	0.041	0.048	0.046	0.063	0.058	1.63
50%	8	uT	0.072	0.052	0.062	0.059	0.080	0.076	--
50%	8	A/m	0.058	0.041	0.050	0.047	0.064	0.061	1.63
1%	8	uT	0.072	0.052	0.064	0.062	0.081	0.076	--
1%	8	A/m	0.058	0.042	0.051	0.050	0.065	0.061	1.63
99%	10	uT	0.061	0.048	0.055	0.053	0.071	0.065	--
99%	10	A/m	0.049	0.038	0.044	0.043	0.057	0.052	1.63
50%	10	uT	0.065	0.048	0.056	0.054	0.072	0.069	--
50%	10	A/m	0.052	0.038	0.045	0.043	0.057	0.055	1.63
1%	10	uT	0.065	0.048	0.058	0.058	0.073	0.068	--
1%	10	A/m	0.052	0.039	0.047	0.046	0.058	0.055	1.63
99%	12	uT	0.054	0.044	0.049	0.048	0.063	0.058	--
99%	12	A/m	0.043	0.035	0.039	0.039	0.050	0.046	1.63
50%	12	uT	0.058	0.044	0.051	0.049	0.064	0.061	--
50%	12	A/m	0.046	0.035	0.041	0.039	0.051	0.049	1.63
1%	12	uT	0.058	0.044	0.053	0.053	0.065	0.061	--
1%	12	A/m	0.047	0.036	0.042	0.042	0.052	0.049	1.63
99%	14	uT	0.047	0.040	0.043	0.043	0.055	0.050	--
99%	14	A/m	0.038	0.032	0.035	0.035	0.044	0.040	1.63
50%	14	uT	0.051	0.040	0.045	0.044	0.056	0.054	--
50%	14	A/m	0.041	0.032	0.036	0.036	0.045	0.043	1.63
1%	14	uT	0.051	0.041	0.047	0.048	0.057	0.054	--
1%	14	A/m	0.041	0.033	0.037	0.038	0.046	0.043	1.63
99%	16	uT	0.040	0.036	0.038	0.038	0.047	0.043	--
99%	16	A/m	0.032	0.029	0.030	0.031	0.038	0.034	1.63
50%	16	uT	0.044	0.037	0.039	0.040	0.048	0.047	--
50%	16	A/m	0.035	0.029	0.032	0.032	0.039	0.037	1.63
1%	16	uT	0.044	0.037	0.041	0.043	0.049	0.046	--
1%	16	A/m	0.035	0.030	0.033	0.034	0.039	0.037	1.63
99%	18	uT	0.033	0.032	0.032	0.034	0.039	0.036	--
99%	18	A/m	0.027	0.026	0.026	0.027	0.031	0.029	1.63
50%	18	uT	0.037	0.033	0.034	0.035	0.040	0.039	--
50%	18	A/m	0.030	0.026	0.027	0.028	0.032	0.031	1.63
1%	18	uT	0.037	0.033	0.036	0.038	0.041	0.039	--
1%	18	A/m	0.030	0.026	0.028	0.030	0.033	0.031	1.63
99%	20	uT	0.026	0.029	0.026	0.029	0.031	0.028	--
99%	20	A/m	0.021	0.023	0.021	0.023	0.025	0.023	1.63
50%	20	uT	0.030	0.029	0.028	0.030	0.032	0.032	--
50%	20	A/m	0.024	0.023	0.023	0.024	0.026	0.026	1.63

1%	20	uT	0.030	0.029	0.030	0.033	0.034	0.032	--
1%	20	A/m	0.024	0.023	0.024	0.026	0.027	0.025	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

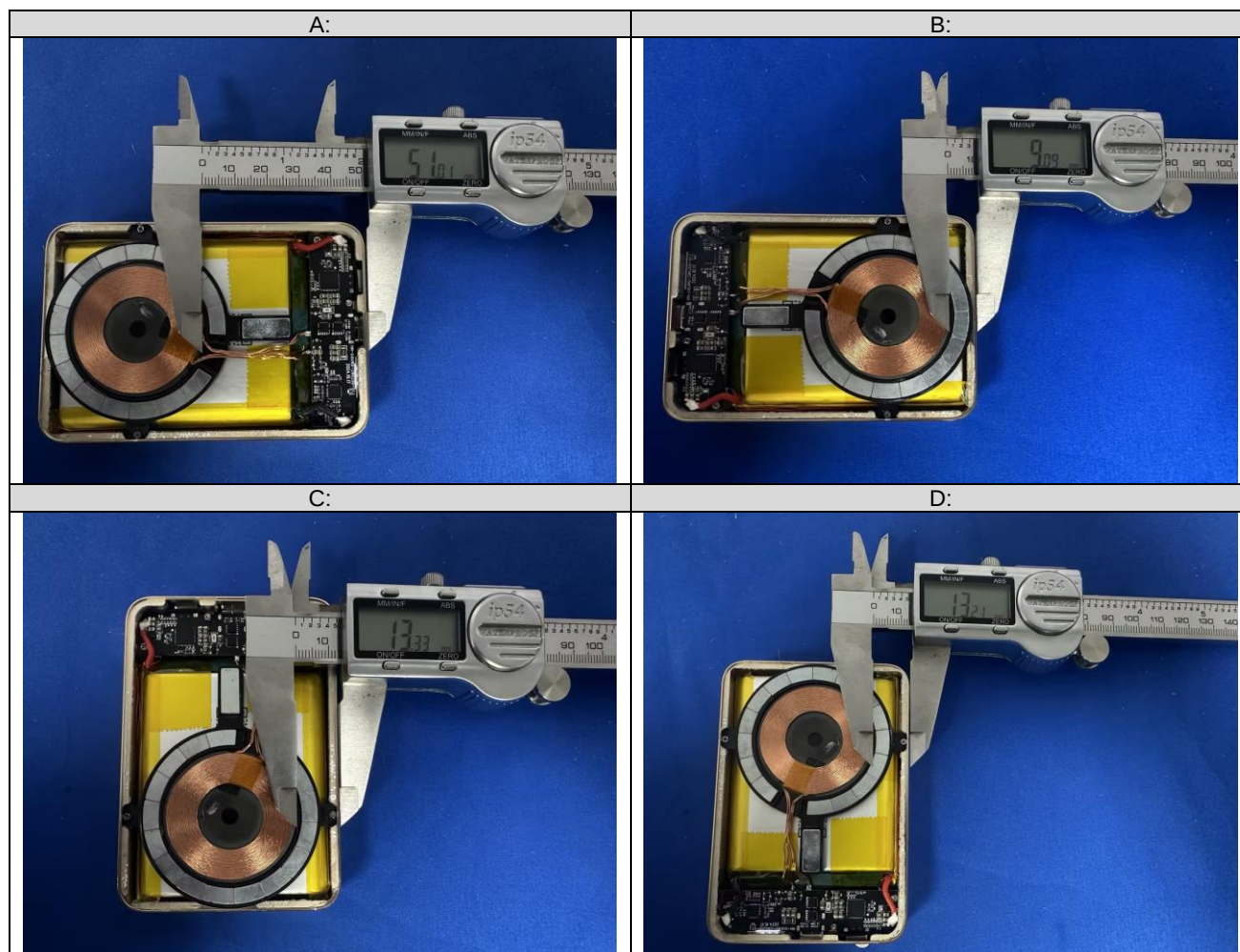
$$H = I/(2\pi r) * \mu$$

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	25.101	20.909	21.333	21.321	20.835	21.555
18	23.101	18.909	19.333	19.321	18.835	19.555
16	21.101	16.909	17.333	17.321	16.835	17.555
14	19.101	14.909	15.333	15.321	14.835	15.555
12	17.101	12.909	13.333	13.321	12.835	13.555
10	15.101	10.909	11.333	11.321	10.835	11.555
8	13.101	8.909	9.333	9.321	8.835	9.555
6	11.101	6.909	7.333	7.321	6.835	7.555
4	9.101	4.909	5.333	5.321	4.835	5.555
2	7.101	2.909	3.333	3.321	2.835	3.555
0	5.101	0.909	1.333	1.321	0.835	1.555

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

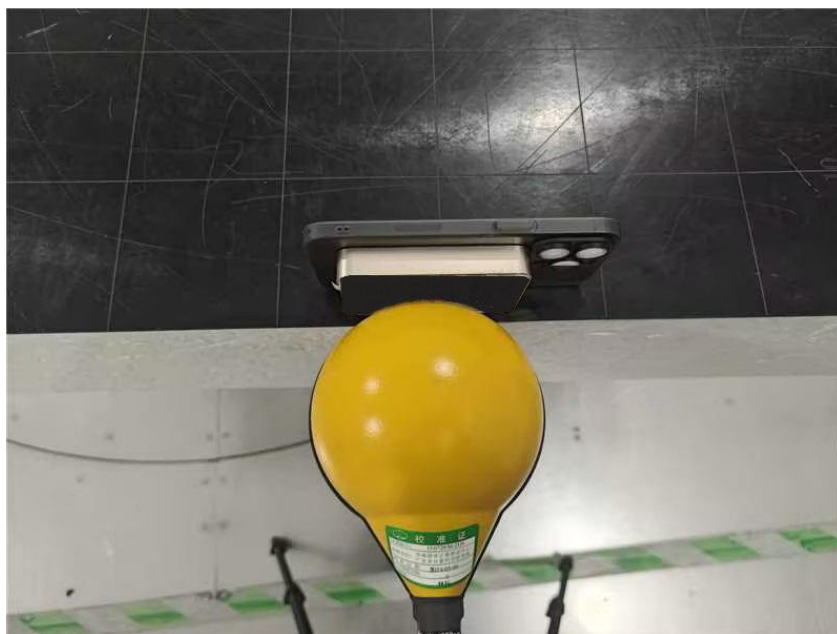
Charging Battery Level	Measured Distance (cm)	Unit	Measured H-Field Strength Values (A/m)						FCC H-Field Strength Limits (A/m)
			Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Test Position F	
1%	0	A/m	0.3226	0.4894	0.5350	0.5222	1.6025	1.4058	1.63
50%	0	A/m	0.3058	0.4467	0.5027	0.5145	1.5840	1.3445	1.63
99%	0	A/m	0.2845	0.4462	0.4765	0.4815	1.5709	1.2927	1.63
1%	2	A/m	0.2101	0.2649	0.2973	0.2905	0.8341	0.7386	1.63
50%	2	A/m	0.2011	0.2249	0.2490	0.2565	0.8298	0.7113	1.63
99%	2	A/m	0.1942	0.1993	0.2049	0.2241	0.8057	0.7087	1.63
1%	4	A/m	0.1368	0.1434	0.1652	0.1616	0.3563	0.3217	1.63
50%	4	A/m	0.1166	0.1249	0.1615	0.1347	0.3341	0.3028	1.63
99%	4	A/m	0.1070	0.1173	0.1527	0.1296	0.3298	0.2621	1.63
1%	6	A/m	0.0891	0.0776	0.0918	0.0899	0.1522	0.1401	1.63
50%	6	A/m	0.0714	0.0470	0.0894	0.0650	0.1222	0.1011	1.63
99%	6	A/m	0.0646	0.0449	0.0490	0.0340	0.1201	0.0788	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-----