



RF Exposure Report

For

Applicant name: Shenzhen Torras Technology Co., Ltd.
Address: RM1215, BLK C, Zhantao Technology BLDG, Minzhi Avenue, Minzhi ST, Longhua DIST, Shenzhen, China
EUT name: Power Bank
Brand name: TORRAS
Model number: PB23A
Series model number: N/A
FCC ID: 2AN4Y-PB23A

Issued By

Company name: BTF Testing Lab (Shenzhen) Co., Ltd.
Address: 101/201/301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Subdistrict, Bao'an District, Shenzhen, China
Report number: BTF250528R00302
Test standards: 47 CFR Part 1 Subpart I Section 1.1310
Test conclusion: Pass
Date of sample receipt: 2025-05-28
Test date: 2025-05-29 to 2025-06-17
Date of issue: 2025-10-13
Test by: Sean He
Sean He / Tester
Prepared by: Chris Liu
Chris Liu / Project engineer

Approved by:  Ryan.CJ / EMC manager



Note: All the test results in this report only related to the testing samples. Which can be duplicated completely for the legal use with approval of applicant; it shall not be reproduced except in full without the written approval of BTF Testing Lab (Shenzhen) Co., Ltd., All the objections should be raised within thirty days from the date of issue. To validate the report, you can contact us.

Revision History		
Version	Issue Date	Revisions Content
R_V0	2025-10-13	Original
Note:		Once the revision has been made, then previous versions reports are invalid.

Table of Contents

1.	Introduction.....	4
1.1	Laboratory Location	4
1.2	Laboratory Facility	4
1.3	Announcement.....	4
2.	Product Information.....	5
2.1	Application Information	5
2.2	Manufacturer Information.....	5
2.3	Factory Information	5
2.4	General Description of Equipment under Test (EUT).....	5
3.	Test Requirement.....	6
4.	Test Setup	7
5.	Assessment Result	8
5.1	E-Field Strength Test Date	8
5.2	H-Field Strength Test Date:.....	10
5.3	Estimated Model	11
5.4	Comparison of evaluation data and test data	15
6.	Conclusion.....	16
7.	Test Set-up Photo	16

1. Introduction

1.1 Laboratory Location

Test location:	BTF Testing Lab (Shenzhen) Co., Ltd.
Address:	101/201/301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Subdistrict, Bao'an District, Shenzhen, China
Phone number:	+86-0755-23146130
Fax number:	+86-0755-23146130

1.2 Laboratory Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **FCC - Designation No.: CN1409**
BTF Testing Lab (Shenzhen) Co., Ltd. has been accredited as a testing laboratory by FCC (Federal Communications Commission). The test firm Registration No. is 695374..
- **CNAS - Registration No.: CNAS L17568**
BTF Testing Lab (Shenzhen) Co., Ltd. is accredited to ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L17568.
- **A2LA - Registration No.: 6660.01**
BTF Testing Lab (Shenzhen) Co., Ltd. is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories.

1.3 Announcement

- (1) The test report reference to the report template version v0.
- (2) The test report is invalid if not marked with the signatures of the persons responsible for preparing, reviewing and approving the test report.
- (3) The test report is invalid if there is any evidence and/or falsification.
- (4) This document may not be altered or revised in any way unless done so by BTF and all revisions are duly noted in the revisions section.
- (5) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.
- (6) The laboratory is only responsible for the data released by the laboratory, except for the part provided by the applicant.

2. Product Information

2.1 Application Information

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

2.2 Manufacturer Information

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

2.3 Factory Information

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

2.4 General Description of Equipment under Test (EUT)

EUT Name	Power Bank
Under Test Model Name	PB23A
Series Model Name	N/A
Description of Model name differentiation	N/A
Hardware Version	N/A
Software and Firmware Version	N/A
Rating:	USB-C Input:5.0V $\overline{=}$ 3.0A/9.0V $\overline{=}$ 2.22A USB-C Output:5.0V $\overline{=}$ 2.0A/9.0V $\overline{=}$ 2.22A/10.0V $\overline{=}$ 2.25A USB-C+Wireless Charging Output: 15W MAX Wireless Charging Output:15W MAX Lithium Battery Energy:10Ah/3.7V/37Wh

3. Test Requirement

KDB 680106 D01 RF Exposure Wireless Charging App v03

According to the item 5.2 of KDB 680106 D01v03:

Inductive wireless power transfer applications that meet all of the following requirements are excluded from submitting an RF exposure evaluation.

- Power transfer frequency is less than 1 MHz.
Yes, the device operate in the frequency range from 110-205KHz
- Output power from each primary coil is less than or equal to 15 watts.
YES, the maximum output power of the primary coil is 5W.
- 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 only single primary and secondary coils
- Client device is placed directly in contact with the transmitter.
Yes, client device is placed directly in contact with the transmitter.
- Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).
Yes, the EUT is a Wireless Charging mobile.
- The aggregate H-field strengths at 15 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 field strength levels are 50% X MPE limit.

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

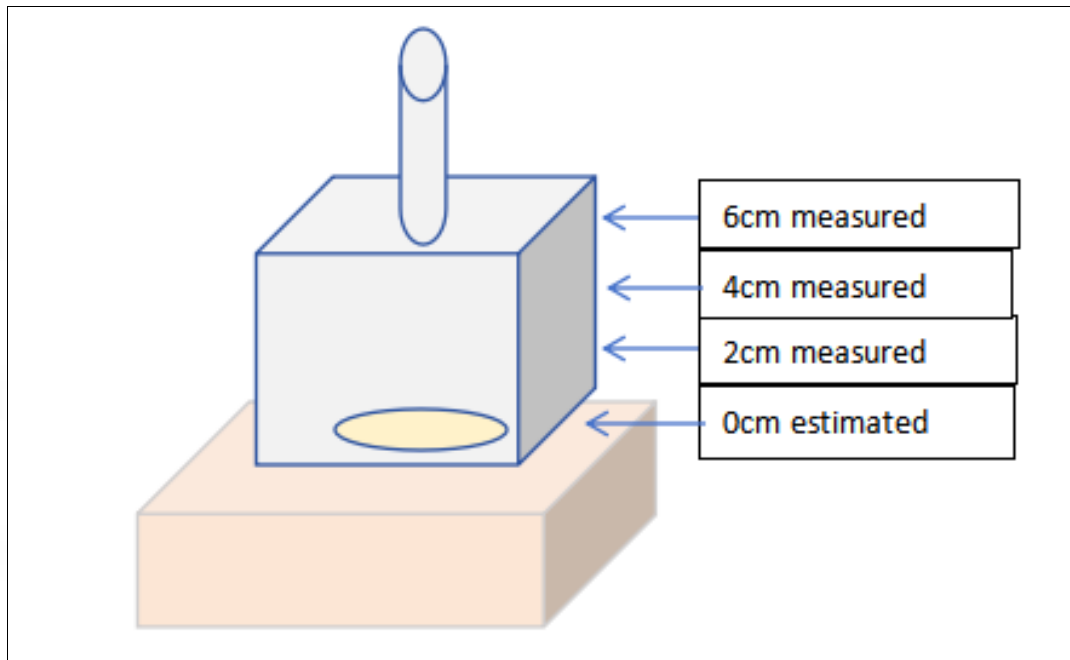
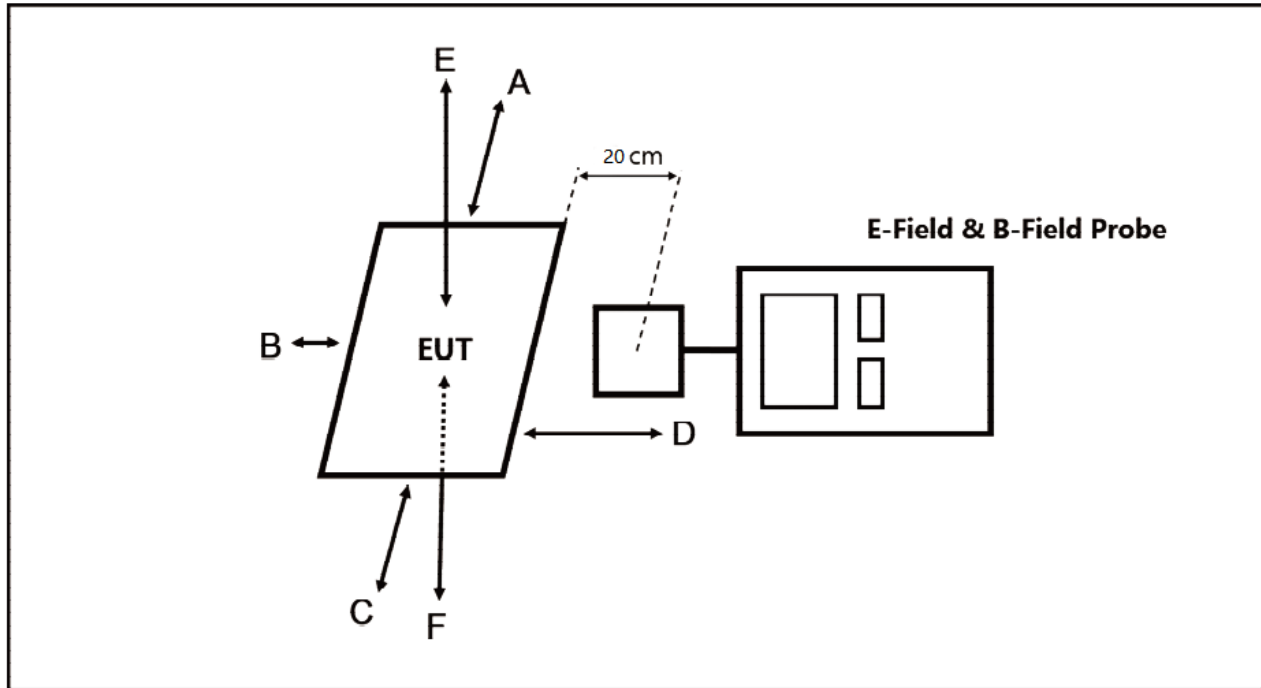
Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*900/f ²	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			5	6
(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
300-1,500			f/1500	30
1,500-100,000			1.0	30

f = frequency in MHz * = Plane-wave equivalent power density

Test Equipment List

Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. (mm-dd-yy)	Next Cal. (mm-dd-yy)
Electric and Magnetic Field Analyzer	Narda	EHP-200A	180ZX11001	2024/11/16	2025/11/15

4. Test Setup



Note1: The sensitive elements are located approximately 8mm below the external surface

Note2: Measurements should be made from all sides and the top of the primary/client pair, with the 0/2/4/6/8/10/12/14/16/18/20cm measured from the center of the probe(s) to the edge of the device.

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 D01 v04.

5. Assessment Result

Note: The sensitive elements are located approximately 8mm below the external surface

5.1 E-Field Strength Test Date

E-Field Strength at 2/4/6/8/10/12/14/16/18/20cm 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%	2	4.4325	4.8625	4.4268	4.5568	7.4632	7.3251	614
50%	2	4.3225	5.1214	4.7523	4.7632	7.8562	7.4965	614
1%	2	4.6325	5.1235	4.6235	4.4562	7.6852	7.6225	614
99%	4	4.0209	4.5456	4.1344	4.2189	7.2829	6.9444	614
50%	4	3.9102	4.7445	4.3078	4.2478	7.4929	7.1172	614
1%	4	4.2229	4.8782	4.3945	4.2515	7.5892	7.2885	614
99%	6	3.6609	4.4052	3.9505	3.9478	7.1449	6.7778	614
50%	6	3.7839	4.5441	4.1045	3.9945	7.3885	6.9502	614
1%	6	4.01	4.7035	4.2135	4.1145	7.5192	7.1772	614
99%	8	3.515	4.3552	3.8274	3.8274	7.0602	6.6649	614
50%	8	3.7035	4.4683	3.9782	3.9405	7.2864	6.8534	614
1%	8	3.892	4.6191	4.0913	4.0536	7.5126	7.0796	614
99%	10	2.761	3.7143	3.2996	3.2619	6.08	5.7224	614
50%	10	2.9118	3.8651	3.4127	3.375	6.3062	5.9109	614
1%	10	3.0626	3.9782	3.5258	3.4881	6.4947	6.0994	614
99%	12	2.0824	3.2242	2.8472	2.8095	5.2506	4.9307	614
50%	12	2.1955	3.2996	2.9226	2.8849	5.4391	5.0815	614
1%	12	2.3463	3.4127	3.0357	2.998	5.5899	5.2323	614
99%	14	1.4792	2.7718	2.4325	2.4325	4.5343	4.2144	614
50%	14	1.5923	2.8472	2.5079	2.5079	4.6851	4.3652	614
1%	14	1.7054	2.9226	2.5833	2.5833	4.8359	4.516	614
99%	16	0.9891	2.3571	2.0932	2.0932	3.9311	3.6489	614
50%	16	1.0645	2.4325	2.1686	2.1309	4.0442	3.762	614
1%	16	1.1776	2.5079	2.244	2.2063	4.1573	3.8751	614

99%	18	0.5367	2.0178	1.7916	1.7916	3.4033	3.1211	614
50%	18	0.6498	2.0932	1.867	1.8293	3.4787	3.2342	614
1%	18	0.7252	2.1686	1.9047	1.9047	3.5918	3.3096	614
99%	20	0.1597	1.7539	1.5277	1.5277	2.9509	2.6687	614
50%	20	0.2351	1.7916	1.6031	1.5654	3.0263	2.7818	614
1%	20	0.3105	1.867	1.6408	1.5922	3.1017	2.8572	614

Note: V/m= A/m *377

5.2 H-Field Strength Test Date:

H-Field Strength at 2/4/6 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%	2	uT	0.0475	0.0413	0.0332	0.0239	0.0478	0.0425	--
99%	2	A/m	0.0409	0.0377	0.0268	0.0263	0.0502	0.0438	1.63
50%	2	uT	0.0455	0.0384	0.0309	0.0231	0.0488	0.0465	--
50%	2	A/m	0.0402	0.0304	0.0266	0.0245	0.0486	0.0419	1.63
1%	2	uT	0.0542	0.0401	0.0315	0.0228	0.0455	0.0423	--
1%	2	A/m	0.0352	0.0395	0.0256	0.0243	0.0423	0.0396	1.63
99%	4	uT	0.0297	0.0253	0.0202	0.0239	0.0358	0.0347	--
99%	4	A/m	0.0238	0.0202	0.0162	0.0191	0.0319	0.0277	1.63
50%	4	uT	0.0335	0.0246	0.0208	0.0231	0.0358	0.0379	--
50%	4	A/m	0.0269	0.0197	0.0167	0.0185	0.0352	0.0303	1.63
1%	4	uT	0.0361	0.0284	0.0241	0.0228	0.0332	0.0342	--
1%	4	A/m	0.0289	0.0227	0.0193	0.0183	0.0312	0.0274	1.63
99%	6	uT	0.0239	0.0207	0.0165	0.0160	0.0328	0.0292	--
99%	6	A/m	0.0191	0.0165	0.0131	0.0127	0.0262	0.0233	1.63
50%	6	uT	0.0239	0.0210	0.0165	0.0168	0.0325	0.0322	--
50%	6	A/m	0.0191	0.0167	0.0131	0.0135	0.0260	0.0257	1.63
1%	6	uT	0.0234	0.0210	0.0182	0.0200	0.0303	0.0292	--
1%	6	A/m	0.0188	0.0167	0.0146	0.0160	0.0242	0.0233	1.63
99%	8	uT	0.0206	0.0154	0.0125	0.0138	0.0253	0.0241	--
99%	8	A/m	0.0165	0.0123	0.0100	0.0110	0.0202	0.0193	1.63
50%	8	uT	0.0214	0.0158	0.0130	0.0141	0.0262	0.0249	--
50%	8	A/m	0.0171	0.0126	0.0104	0.0113	0.0209	0.0198	1.63
1%	8	uT	0.0221	0.0163	0.0133	0.0146	0.0270	0.0256	--
1%	8	A/m	0.0176	0.0130	0.0107	0.0117	0.0216	0.0205	1.63
99%	10	uT	0.0179	0.0131	0.0108	0.0118	0.0218	0.0207	--
99%	10	A/m	0.0143	0.0105	0.0086	0.0094	0.0174	0.0166	1.63
50%	10	uT	0.0184	0.0137	0.0112	0.0122	0.0226	0.0214	--
50%	10	A/m	0.0148	0.0109	0.0089	0.0097	0.0180	0.0171	1.63
1%	10	uT	0.0190	0.0141	0.0116	0.0125	0.0232	0.0221	--
1%	10	A/m	0.0152	0.0112	0.0092	0.0100	0.0186	0.0177	1.63
99%	12	uT	0.0154	0.0114	0.0093	0.0102	0.0187	0.0179	--
99%	12	A/m	0.0123	0.0091	0.0074	0.0081	0.0150	0.0143	1.63

50%	12	uT	0.0159	0.0117	0.0096	0.0104	0.0194	0.0184	--
50%	12	A/m	0.0127	0.0093	0.0076	0.0083	0.0155	0.0147	1.63
1%	12	uT	0.0164	0.0121	0.0099	0.0108	0.0199	0.0190	--
1%	12	A/m	0.0131	0.0096	0.0079	0.0086	0.0160	0.0152	1.63
99%	14	uT	0.0132	0.0099	0.0079	0.0087	0.0161	0.0153	--
99%	14	A/m	0.0105	0.0078	0.0064	0.0070	0.0129	0.0122	1.63
50%	14	uT	0.0137	0.0101	0.0082	0.0091	0.0166	0.0158	--
50%	14	A/m	0.0109	0.0081	0.0066	0.0072	0.0133	0.0126	1.63
1%	14	uT	0.0140	0.0104	0.0084	0.0093	0.0172	0.0164	--
1%	14	A/m	0.0112	0.0083	0.0068	0.0075	0.0138	0.0131	1.63
99%	16	uT	0.0114	0.0084	0.0069	0.0076	0.0139	0.0132	--
99%	16	A/m	0.0091	0.0067	0.0055	0.0060	0.0111	0.0106	1.63
50%	16	uT	0.0117	0.0086	0.0072	0.0077	0.0143	0.0136	--
50%	16	A/m	0.0093	0.0069	0.0057	0.0062	0.0114	0.0109	1.63
1%	16	uT	0.0121	0.0089	0.0074	0.0080	0.0147	0.0141	--
1%	16	A/m	0.0097	0.0071	0.0059	0.0064	0.0118	0.0112	1.63
99%	18	uT	0.0098	0.0072	0.0059	0.0065	0.0120	0.0113	--
99%	18	A/m	0.0078	0.0057	0.0047	0.0052	0.0096	0.0090	1.63
50%	18	uT	0.0101	0.0074	0.0062	0.0066	0.0122	0.0118	--
50%	18	A/m	0.0081	0.0059	0.0049	0.0053	0.0098	0.0094	1.63
1%	18	uT	0.0104	0.0077	0.0063	0.0069	0.0127	0.0120	--
1%	18	A/m	0.0083	0.0061	0.0050	0.0055	0.0101	0.0096	1.63
99%	20	uT	0.0083	0.0063	0.0050	0.0055	0.0103	0.0097	--
99%	20	A/m	0.0067	0.0050	0.0040	0.0044	0.0083	0.0077	1.63
50%	20	uT	0.0087	0.0064	0.0053	0.0057	0.0106	0.0101	--
50%	20	A/m	0.0069	0.0051	0.0042	0.0045	0.0085	0.0081	1.63
1%	20	uT	0.0089	0.0067	0.0054	0.0059	0.0109	0.0104	--
1%	20	A/m	0.0071	0.0053	0.0043	0.0048	0.0087	0.0083	1.63

Note: A/m=uT/1.25

Note: A/m=uT/1.25

5.3 Estimated Model

According to the formula:

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

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

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.

Total or partial reproduction of this document without permission of the Laboratory is not allowed.

Page 11 of 18

BTF Testing Lab (Shenzhen) Co., Ltd.

F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

Email: info@btf-lab.com

Tel: +86-755-23146130

<http://www.btf-lab.com>

Version: 1/00

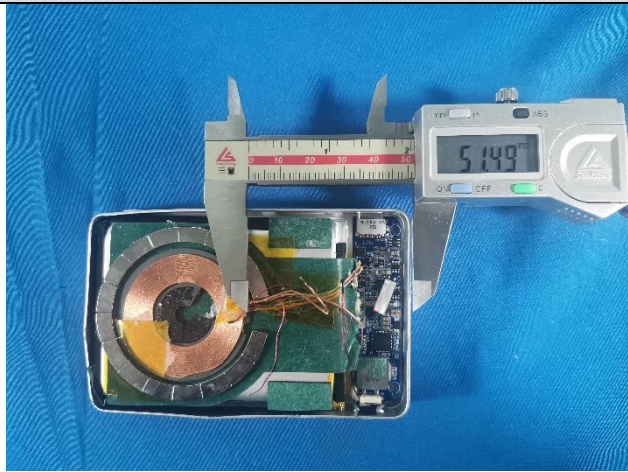
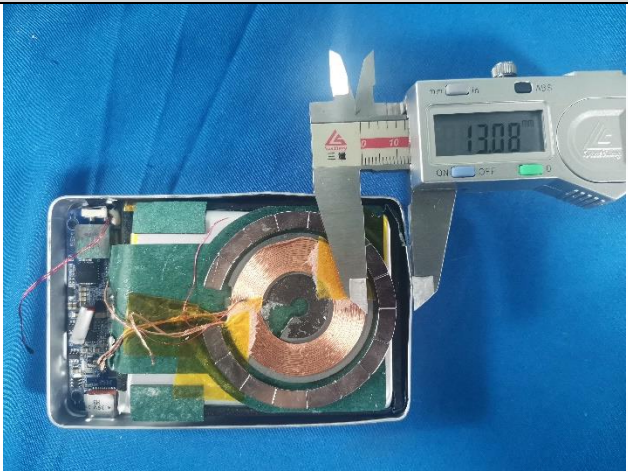
Therefore, From the measurement H6 we can estimate the values of H4,H2,H0:

$$H4=H6*r6/r4$$

$$H2=H6*r6/r2$$

$$H0=H6*r6/r0$$

The values of “r” are shown in the following table:

A:51.49mm 	B:13.08mm 
C:14.58mm 	D:12.98mm 
E:16.36mm 	F:2.86mm 

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
0	5.149	1.308	1.458	1.298	1.636	0.286
2	7.149	3.308	3.458	3.298	3.636	2.286
4	9.149	5.308	5.458	5.298	5.636	4.286
6	11.149	7.308	7.458	7.298	7.636	6.286
8	13.149	9.308	9.458	9.298	9.636	8.286
10	15.149	11.308	11.458	11.298	11.636	10.286
12	17.149	13.308	13.458	13.298	13.636	12.286
14	19.149	15.308	15.458	15.298	15.636	14.286
16	21.149	17.308	17.458	17.298	17.636	16.286
18	23.149	19.308	19.458	19.298	19.636	18.286
20	25.149	21.308	21.458	21.298	21.636	20.286

Note: The phone is 16.36mm thick.

The result is calculated by the above formula:

H-Field Strength at 0/2/4cm 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%	0	A/m	0.0414	0.0922	0.0670	0.0714	0.1223	0.5121	1.63
50%	0	A/m	0.0414	0.0933	0.0670	0.0759	0.1214	0.5649	1.63
1%	0	A/m	0.0407	0.0933	0.0747	0.0900	0.1130	0.5121	1.63
99%	2	A/m	0.0298	0.0365	0.0283	0.0281	0.0550	0.0641	1.63
50%	2	A/m	0.0298	0.0369	0.0283	0.0299	0.0546	0.0707	1.63
1%	2	A/m	0.0293	0.0369	0.0315	0.0354	0.0508	0.0641	1.63
99%	4	A/m	0.0233	0.0227	0.0179	0.0175	0.0355	0.0342	1.63
50%	4	A/m	0.0233	0.0230	0.0179	0.0186	0.0352	0.0377	1.63
1%	4	A/m	0.0229	0.0230	0.0199	0.0220	0.0328	0.0342	1.63

5.4 Comparison of evaluation data and test data

We compare the test value of 4cm/2cm with the estimated value:

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%	2	A/m	0.0409	0.0377	0.0268	0.0263	0.0502	0.0438	1.63
50%	2	A/m	0.0402	0.0304	0.0266	0.0245	0.0486	0.0419	1.63
1%	2	A/m	0.0352	0.0395	0.0256	0.0243	0.0423	0.0396	1.63
99%	4	A/m	0.0238	0.0202	0.0162	0.0191	0.0319	0.0277	1.63
50%	4	A/m	0.0269	0.0197	0.0167	0.0185	0.0352	0.0303	1.63
1%	4	A/m	0.0289	0.0227	0.0193	0.0183	0.0312	0.0274	1.63

Charging Battery Level	Measured Distance (cm)	Unit	Estimated 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%	2	A/m	0.0298	0.0365	0.0283	0.0281	0.055	0.0561	1.63
50%	2	A/m	0.0298	0.0369	0.0283	0.0299	0.0546	0.0527	1.63
1%	2	A/m	0.0293	0.0369	0.0315	0.0314	0.0508	0.0511	1.63
99%	4	A/m	0.0233	0.0227	0.0179	0.0175	0.0355	0.0342	1.63
50%	4	A/m	0.0233	0.023	0.0179	0.0186	0.0352	0.0377	1.63
1%	4	A/m	0.0229	0.023	0.0199	0.022	0.0328	0.0342	1.63

The corresponding deviation value is calculated

Charging Battery Level	Measured Distance (cm)	Unit	Deviation value						Limits (A/m)	Result
			Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Test Position F		
99%	2	A/m	-27.14%	-3.18%	5.60%	6.84%	9.56%	28.08%	30%	Pass
50%	2	A/m	-25.87%	21.38%	6.39%	22.04%	12.35%	25.78%	30%	Pass
1%	2	A/m	-16.76%	-6.58%	23.05%	29.22%	20.09%	29.04%	30%	Pass
99%	4	A/m	-2.10%	12.38%	10.49%	-8.38%	11.29%	23.47%	30%	Pass

50%	4	A/m	-15.24%	18.27%	20.36%	19.46%	-2.84%	3.63%	30%	Pass
1%	4	A/m	-21.11%	2.64%	4.15%	20.77%	9.62%	14.60%	30%	Pass

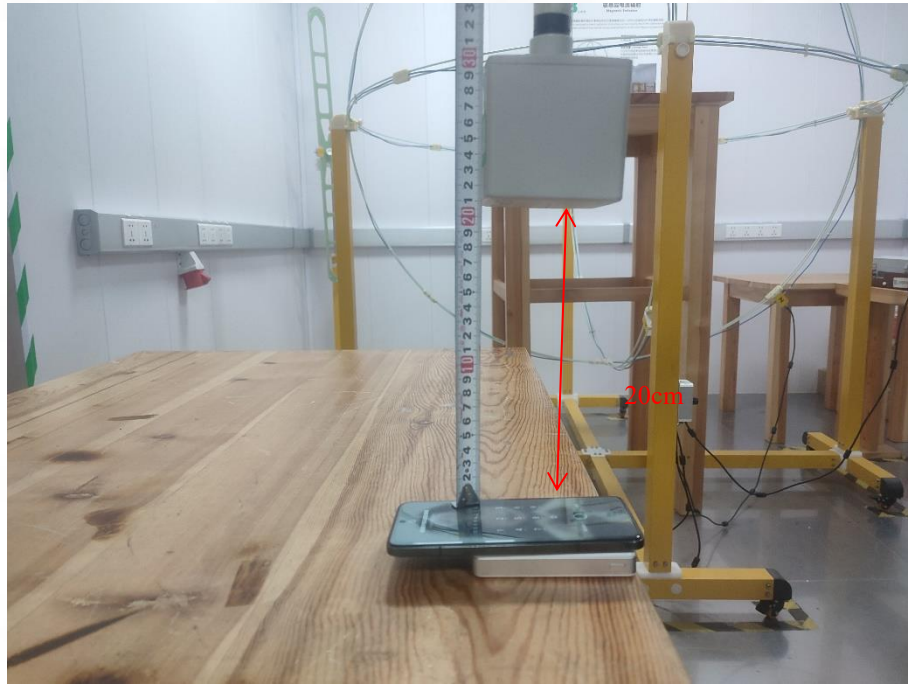
Note: Deviation value=(Hest-Hmea)/Hmea

6. 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. The estimated test distances of 0cm are reliable

7. Test Set-up Photo







Test Report Number: BTF250528R00302



BTF Testing Lab (Shenzhen) Co., Ltd.

F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street,
Bao'an District, Shenzhen, China

www.btf-lab.com

--END OF REPORT--