



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: MS19

Issued By

Company Name: BTF Testing Lab (Shenzhen) Co., Ltd.
Address: F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park,
Tantou Community, Songgang Street, Bao'an District, Shenzhen,
China

Report Number: BTF240314R00402
Test Standards: 47 CFR Part 1 Subpart I Section 1.1310
FCC ID: 2AN4Y-MS19
Test Conclusion: Pass
Test Date: 2024-03-15 to 2024-03-26
Date of Issue: 2024-03-27

Prepared By:

Aria Zhang

Date:

Aria Zhang / Project Engineer
2024-03-27

Approved By:

Ryan.CJ

Date:

Ryan.CJ / EMC Manager
2024-03-27



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Revision History		
Version	Issue Date	Revisions Content
R_V0	2024-03-27	Original
<i>Note:</i>	<i>Once the revision has been made, then previous versions reports are invalid.</i>	

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1. Introduction

1.1 Identification of Testing Laboratory

Company Name:	BTF Testing Lab (Shenzhen) Co., Ltd.
Address:	F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China
Phone Number:	+86-0755-23146130
Fax Number:	+86-0755-23146130

1.2 Identification of the Responsible Testing Location

Test Location:	BTF Testing Lab (Shenzhen) Co., Ltd.
Address:	F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China
Description:	All measurement facilities used to collect the measurement data are located at F101,201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China
FCC Registration Number:	518915
Designation Number:	CN1330

1.3 Laboratory Condition

Ambient Temperature:	20°C to 25°C
Ambient Relative Humidity:	45% to 55%
Ambient Pressure:	100 kPa to 102 kPa

1.4 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	MS19

3. Test Requirement

KDB 680106 D01 RF Exposure Wireless Charging App v03

Human exposure to RF Low frequency emissions from portable devices (47 CFR § 2.1093) may be evaluated based on the MPE limits adopted by the FCC for electric and magnetic field strength and/or power density.

According to the item 5.2 of KDB 680106 D01v03:

TCB Workshop and combine the actual situation of the EUT, For the portable wireless charger, RF exposure evaluation should be made from all sides(six sides) of EUT, with the 0cm to 20cm measured from the center of the probe to the edge of the EUT, in 2cm minimum increment.

E and H field strength measurements or numerical modelling may be used to demonstrate compliance.

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

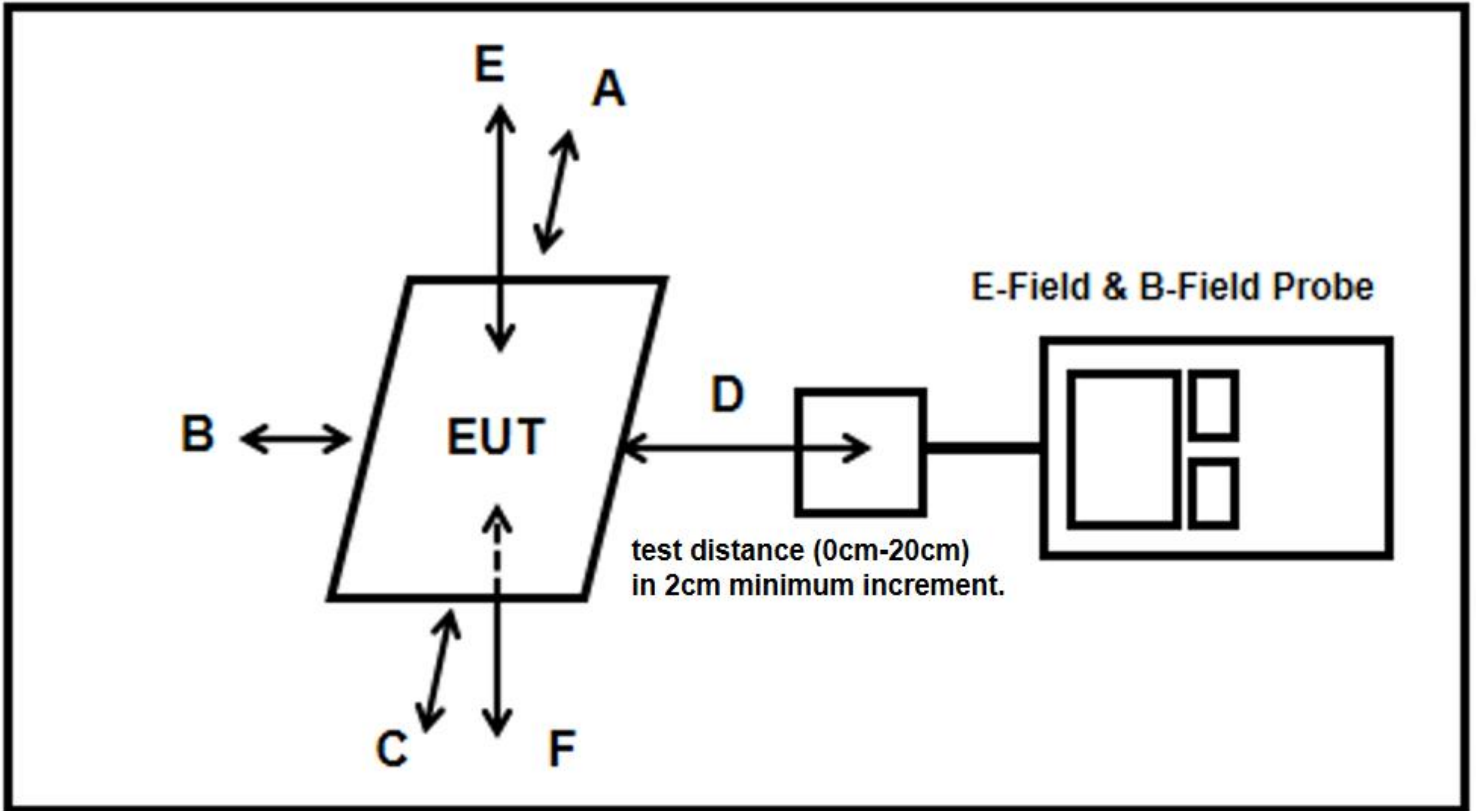
Test Equipment List

Test Equipment	Manufacturer	Model No.	Serial No.	Demensions	Last Cal. (mm-dd-yy)	Next Cal. (mm-dd-yy)
Electric and Magnetic Field Analyzer	Narda	EHP-200A	180ZX11001	92*92*109mm	2023.3.29	2024.3.28
Electric and Magnetic Field Analyzer	Narda	EHP-200A	180ZX11001	92*92*109mm	2024.3.27	2025.3.26

Test Mode

Test mode	Description
ANT1	Mode 1: AC/DC Adapter + EUT + Wireless load (Full Load) Mode 2: AC/DC Adapter + EUT + Wireless load (Half Load) Mode 3: AC/DC Adapter + EUT + Wireless load (Null Load)
	Mode 4: EUT + Wireless load (Full Load) Mode 5: EUT + Wireless load (Half Load) Mode 6: EUT + Wireless load (Null Load)
No Loads	AC/DC Adapter + EUT(Null Load)

Test Setup



Note: Measurements should be made from all sides and the top of the primary/client pair, the test distance of A, B, C, D, E, F side is 0cm to 20cm.

- 1) The RF exposure test was performed in anechoic chamber.
- 2) 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.
- 3) The EUT was measured according to the dictates of KDB 680106 D01 v03.

3.1 Assessment Result

Note: All the mode have been tested, and only the worst case of mode are in the report.

0cm

Note: The dimensions of the probe is 92*92*109mm and The sensitive elements are located approximately 8 mm below the external surface.

We tested the values for distances of 2 cm and 4 cm, and we assessed that the attenuation from 4 cm to 2 cm was the same as the attenuation from 2 cm to 0 cm.

Measured Value (0cm)= Measured Value (2cm)+ (Measured Value (2cm)- Measured Value (4cm))

Magnetic Field Strength Measurement

Test Position	Distance (cm)	Measured Value(A/m)	Limit(A/m)
Top	0	0.3674	1.63
Bottom	0	0.3260	1.63
Front	0	1.3899	1.63
Rear	0	0.1725	1.63
Left	0	0.5075	1.63
Right	0	1.0380	1.63

Test Position	Distance (cm)	Measured Value(V/m)	Limit(V/m)
Top	0	8.4270	614
Bottom	0	1.5549	614
Front	0	5.1127	614
Rear	0	1.0194	614
Left	0	3.2581	614
Right	0	4.7809	614

2cm

Magnetic Field Strength Measurement

Test Position	Distance (cm)	Measured Value(A/m)	Limit(A/m)
Top	2	0.3624	1.63
Bottom	2	0.3187	1.63
Front	2	1.3748	1.63
Rear	2	0.1596	1.63
Left	2	0.5021	1.63
Right	2	1.0307	1.63

Test Position	Distance (cm)	Measured Value(V/m)	Limit(V/m)
Top	2	7.9874	614
Bottom	2	1.5258	614
Front	2	5.1047	614

Rear	2	1.0104	614
Left	2	3.2324	614
Right	2	4.6578	614

4cm
Magnetic Field Strength Measurement

Test Position	Distance (cm)	Measured Value(A/m)	Limit(A/m)
Top	4	0.3574	1.63
Bottom	4	0.3114	1.63
Front	4	1.3597	1.63
Rear	4	0.1467	1.63
Left	4	0.4967	1.63
Right	4	1.0234	1.63

Test Position	Distance (cm)	Measured Value(V/m)	Limit(V/m)
Top	4	7.5478	614
Bottom	4	1.4967	614
Front	4	5.0967	614
Rear	4	1.0014	614
Left	4	3.2067	614
Right	4	4.5347	614

6cm
Magnetic Field Strength Measurement

Test Position	Distance (cm)	Measured Value(A/m)	Limit(A/m)
Top	6	0.3410	1.63
Bottom	6	0.3017	1.63
Front	6	1.3410	1.63
Rear	6	0.1307	1.63
Left	6	0.4816	1.63
Right	6	1.0137	1.63

Test Position	Distance (cm)	Measured Value(V/m)	Limit(V/m)
Top	6	7.1025	614
Bottom	6	1.4814	614
Front	6	4.9274	614
Rear	6	0.9876	614
Left	6	3.1028	614
Right	6	4.1125	614

8cm
Magnetic Field Strength Measurement

Test Position	Distance (cm)	Measured Value(A/m)	Limit(A/m)
Top	8	0.3245	1.63
Bottom	8	0.2785	1.63
Front	8	1.2974	1.63
Rear	8	0.1214	1.63
Left	8	0.4158	1.63
Right	8	0.9247	1.63

Test Position	Distance (cm)	Measured Value(V/m)	Limit(V/m)
Top	8	6.9574	614
Bottom	8	1.2579	614
Front	8	4.2147	614
Rear	8	0.9321	614
Left	8	2.9547	614
Right	8	3.9987	614

10cm
Magnetic Field Strength Measurement

Test Position	Distance (cm)	Measured Value(A/m)	Limit(A/m)
Top	10	0.3014	1.63
Bottom	10	0.2567	1.63
Front	10	1.2647	1.63
Rear	10	0.1015	1.63
Left	10	0.3964	1.63
Right	10	0.8964	1.63

Test Position	Distance (cm)	Measured Value(V/m)	Limit(V/m)
Top	10	6.0254	614
Bottom	10	1.0247	614
Front	10	3.9874	614
Rear	10	0.8967	614
Left	10	2.0214	614
Right	10	3.0347	614

12cm
Magnetic Field Strength Measurement

Test Position	Distance (cm)	Measured Value(A/m)	Limit(A/m)
Top	12	0.2874	1.63
Bottom	12	0.2018	1.63
Front	12	1.2067	1.63
Rear	12	0.9764	1.63
Left	12	0.3147	1.63
Right	12	0.7964	1.63

Test Position	Distance (cm)	Measured Value(V/m)	Limit(V/m)
Top	12	5.7631	614
Bottom	12	0.9974	614
Front	12	3.0147	614
Rear	12	0.7968	614
Left	12	1.9978	614
Right	12	2.9674	614

14cm
Magnetic Field Strength Measurement

Test Position	Distance (cm)	Measured Value(A/m)	Limit(A/m)
Top	14	0.2610	1.63
Bottom	14	0.1988	1.63
Front	14	1.1924	1.63
Rear	14	0.8341	1.63
Left	14	0.2967	1.63
Right	14	0.7014	1.63

Test Position	Distance (cm)	Measured Value(V/m)	Limit(V/m)
Top	14	4.3274	614
Bottom	14	0.8954	614
Front	14	2.5987	614
Rear	14	0.6874	614
Left	14	1.7865	614
Right	14	2.1297	614

16cm
Magnetic Field Strength Measurement

Test Position	Distance (cm)	Measured Value(A/m)	Limit(A/m)
Top	16	0.2150	1.63
Bottom	16	0.1097	1.63
Front	16	0.9247	1.63
Rear	16	0.7598	1.63
Left	16	0.1967	1.63
Right	16	0.5014	1.63

Test Position	Distance (cm)	Measured Value(V/m)	Limit(V/m)
Top	16	3.2487	614
Bottom	16	0.6587	614
Front	16	1.9674	614
Rear	16	0.4698	614
Left	16	1.1239	614
Right	16	1.8745	614

18cm
Magnetic Field Strength Measurement

Test Position	Distance (cm)	Measured Value(A/m)	Limit(A/m)
Top	18	0.1978	1.63
Bottom	18	0.8547	1.63
Front	18	0.6987	1.63
Rear	18	0.5137	1.63
Left	18	0.1647	1.63
Right	18	0.3574	1.63

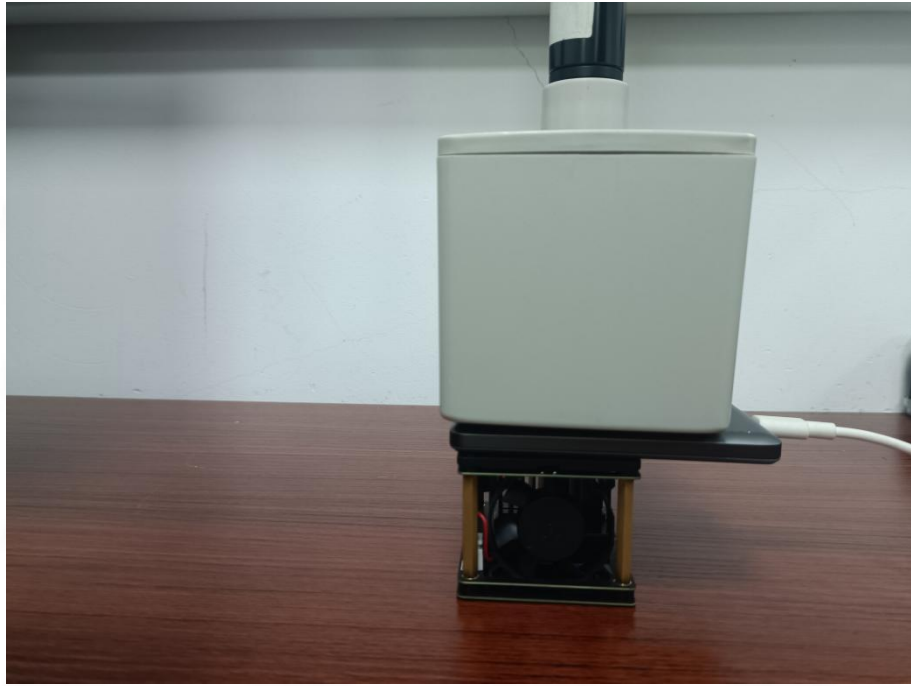
Test Position	Distance (cm)	Measured Value(V/m)	Limit(V/m)
Top	18	2.5741	614
Bottom	18	0.4567	614
Front	18	1.1247	614
Rear	18	0.2967	614
Left	18	0.9987	614
Right	18	1.1674	614

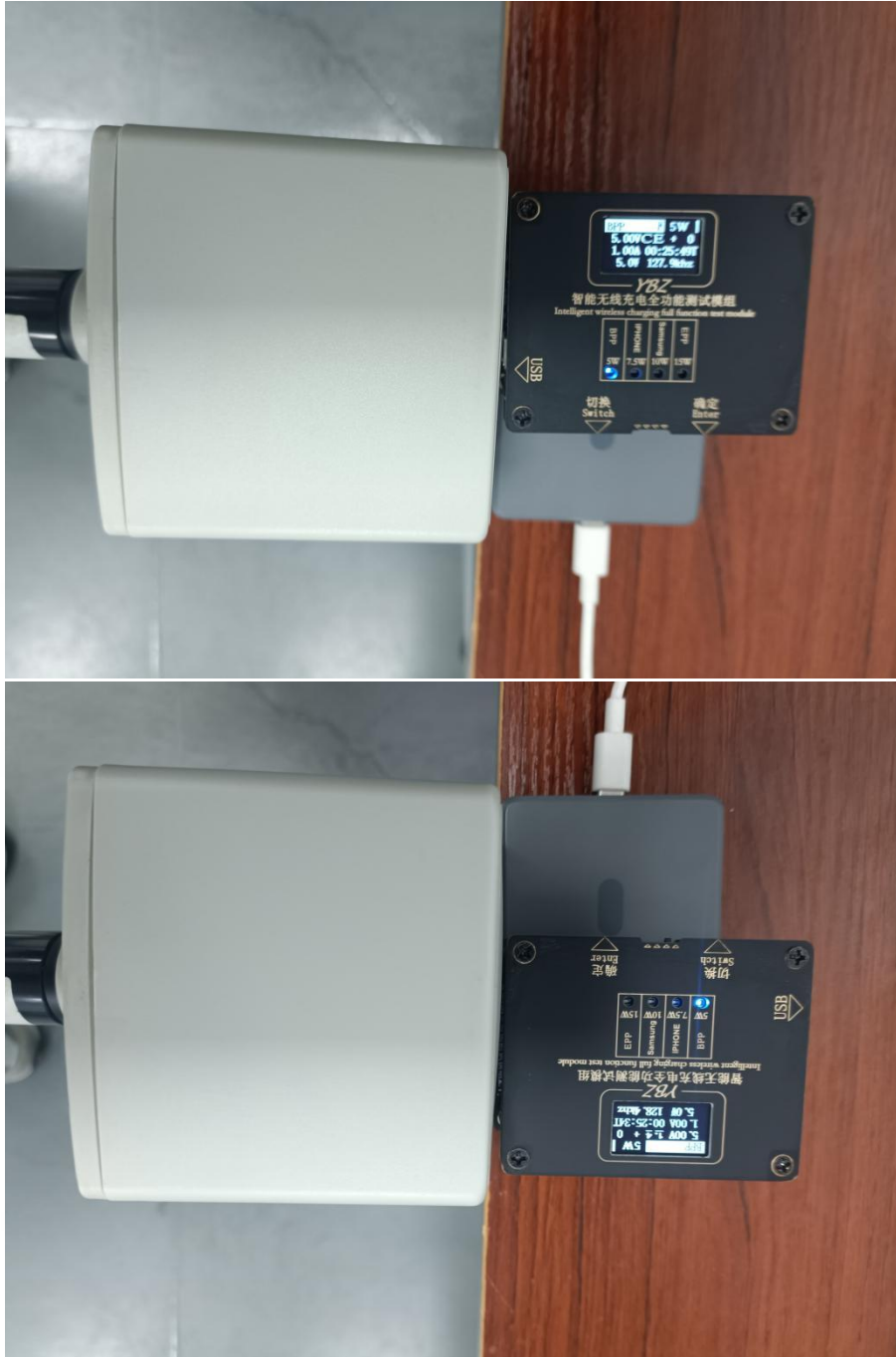
20cm
Magnetic Field Strength Measurement

Test Position	Distance (cm)	Measured Value(A/m)	Limit(A/m)
Top	20	0.0996	1.63
Bottom	20	0.5691	1.63
Front	20	0.4678	1.63
Rear	20	0.2967	1.63
Left	20	0.8974	1.63
Right	20	0.1967	1.63

Test Position	Distance (cm)	Measured Value(V/m)	Limit(V/m)
Top	20	1.6874	614
Bottom	20	0.2698	614
Front	20	0.9647	614
Rear	20	0.1697	614
Left	20	0.5314	614
Right	20	0.7864	614

3.2 Test Set-up Photo









Test Report Number: BTF240314R00402



BTF Testing Lab (Shenzhen) Co., Ltd.

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Bao'an District, Shenzhen, China

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