TCT 通测检测
TESTING CENTRE TECHNOLOGY

TEST REPORT

FCC ID. ..... :	2BCUY-CMW
Test Report No..... :	TCT230817E017
Date of issue..... :	Aug. 25, 2023
Testing laboratory ..... :	SHENZHEN TONGCE TESTING LAB
Testing location/ address:	2101 & 2201, Zhenchang Factory Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China
Applicant's name..... :	Shen Zhen Shi Chao Mai Ke Ji You Xian Gong Si
Address..... :	Room 10F-A-10A, Shenmao Business Center, 59 Xinwen Road, Meiling Community, Lianhua Street, Futian District, Shenzhen, 518000 China
Manufacturer's name ... :	Dong guan Utopia-Originality Technology Co., Ltd
Address..... :	NO.2, moushan Road, Chan'an Town, Dongguan City, Guangdong Province, China
Standard(s) ..... :	FCC CFR Title 47 Part 1.1310 KDB 680106 D01 RF Exposure Wireless Charging App v03r01
Product Name..... :	Portable Charger
Trade Mark ..... :	charmast
Model/Type reference..... :	CMW
Rating(s)..... :	Type-C Input: DC 5V, 1.0A Rechargeable Li-ion Battery DC 3.7V
Date of receipt of test item ..... :	Aug. 17, 2023
Date (s) of performance of test..... :	Aug. 17, 2023 - Aug. 25, 2023
Tested by (+signature) ... :	Onnado YE
Check by (+signature).... :	Beryl ZHAO
Approved by (+signature):	Tomsin

General disclaimer:

This report shall not be reproduced except in full, without the written approval of SHENZHEN TONGCE TESTING LAB. This document may be altered or revised by SHENZHEN TONGCE TESTING LAB personnel only, and shall be noted in the revision section of the document. The test results in the report only apply to the tested sample.

Table of Contents

1. General Product Information 3
1.1. EUT description 3
1.2. Model(s) list 3
2. Facilities and Accreditations 4
2.1. Facilities 4
2.2. Location 4
3. Technical Requirements Specification 5
3.1. Requirements 5
3.2. Test Setup 6
3.3. Test Procedure 7
3.4. Test Instruments List 7
3.5. Test Result 8
3.6. Test Set-up Photo 11

1. General Product Information

1.1. EUT description

Product Name.....:	Portable Charger
Model/Type reference.....:	CMW
Sample Number.....:	TCT230817E016-0101
Operation Frequency .....:	326.20kHz – 339.42kHz
Modulation Technology .....:	Load modulation
Max. Wireless Output Power:	2.5 W
Antenna Type.....:	Inductive loop coil Antenna
Rating(s).....:	Type-C Input: DC 5V, 1.0A Rechargeable Li-ion Battery DC 3.7V

1.2. Model(s) list

None.

2. Facilities and Accreditations

2.1. Facilities

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

- FCC - Registration No.: 645098
  SHENZHEN TONGCE TESTING LAB
  Designation Number: CN1205
  The testing lab has been registered and fully described in a report with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.
- IC - Registration No.: 10668A-1
  SHENZHEN TONGCE TESTING LAB
  CAB identifier: CN0031
  The testing lab has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing.

2.2. Location

SHENZHEN TONGCE TESTING LAB
Address: 2101 & 2201, Zhenchang Factory Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China
TEL: +86-755-27673339

3. Technical Requirements Specification

3.1. Requirements

According to the item 5 of KDB 680106 D01 RF Exposure Wireless Charging App v03r01:

(1) Power transfer frequency is less than 1 MHz.
Yes

(2) Output power from each primary coil is less than or equal to 15 watts.
Yes

(3) The system may consist of more than one source primary coils, charging one or more clients. If more than one primary coil is present, the coil pairs may be powered on at the same time.
Yes

(4) Client device is placed directly in contact with the transmitter.
Yes

(5) Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).
No

(6) 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

Limits

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)

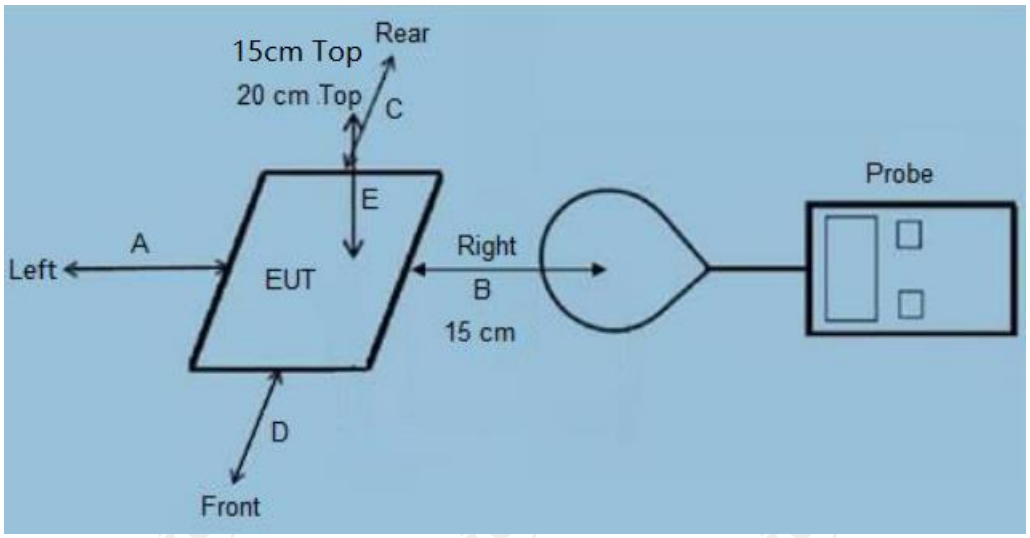
Limits for Maximum Permissible Exposure (MPE)

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

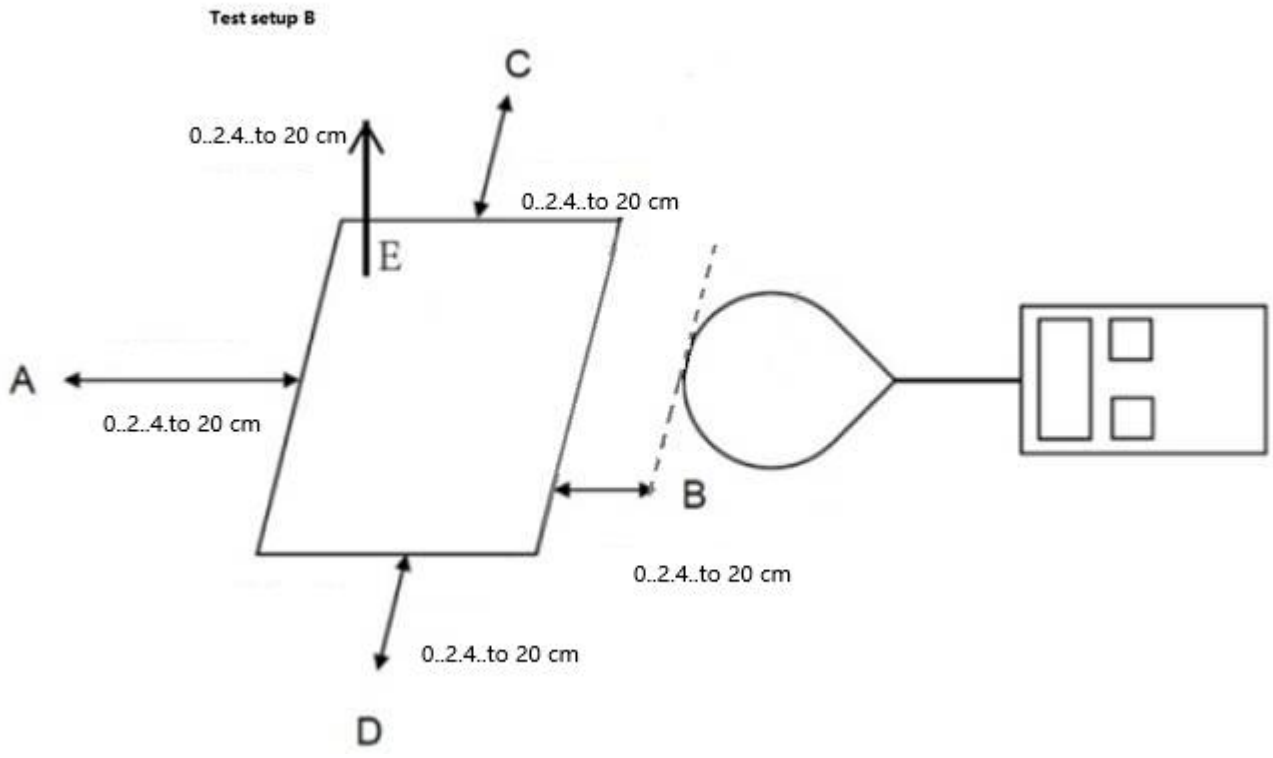
F=frequency in MHz
*=Plane-wave equivalent power density
RF exposure compliance will need to be determined with respect to 1.1307(c) and (d) of the FCC rules. The emissions should be within the limits at 300kHz in Table 1 of 1.1310(use the 300kHz limits for 150kHz:614V/m,1.63A/m).

3.2. Test Setup

A:



B:



3.3. Test Procedure

1) The RF exposure test was performed in an echoic chamber;

2) The measurement probe was placed at test distance(15 cm from edges, 20 cm and 15cm from top) Which is between the edge of the charger and the geometric center of probe, for test setup A;

3) In addition to what is described in KDB 680106 D01, please measure and provide magnetic and electrical field strength at a distance 0cm to 20cm at 2cm iteration, i.e. at a distance of 0cm, 2cm, 4cm, ……. 20cm. Which is between the edge of the charger and the edge of of probe, for test setup B;

4) The highest emission leve laws recorded and compared with limit as soon as measurement of each points (A, B, C, D, E) were completed;

5) The EUT was measured according to the dictates of KDB680106D01v03; And KDB Tracking Number 671578; TCB Workshop, October 2018, 5.2 RF Exposure Procedures

Remark: The EUT' s test position A, B, C, D and E is valid for the E and H field measurements.

3.4. Test Instruments List

Equipment	Manufacturer	Model No.	Serial No.	Calibration Due
Electric and Magnetic field probe-analyzer	Narda	EHP-200A	180ZX20511	Jul. 04, 2024
Apple Watch	Apple	A1757	/	/
Adapter	/	WC065A11JH	/	/

3.5. Test Result

Note: EUT mode: wireless output 2.5 W

Test Result for Test setup B:

Note： Internal battery power mode

E-Filed Strength at (15 cm from edges A, B, C, D, 20 cm and 15cm from top E) surrounding the EUT (V/m)

Charging Load Worse case	Test Position A (V/m)	Test Position B (V/m)	Test Position C (V/m)	Test Position D (V/m)	Test Position E (V/m)20cm	Test Position E (V/m)15cm	Limits (V/m)
1%	1.56	1.64	1.68	1.70	1.58	1.78	614
50%	1.32	1.51	1.55	1.62	1.46	1.73	614
99%	1.27	1.33	1.44	1.56	1.41	1.65	614

H-Filed Strength at (15 cm from edges A, B, C, D, 20 cm and 15cm from top E) surrounding the EUT (A/m)

Charging Load Worse case	Test Position A (A/m)	Test Position B (A/m)	Test Position C (A/m)	Test Position D (A/m)	Test Position E (A/m)20cm	Test Position E (A/m)15cm	Limits (A/m)
1%	0.202	0.198	0.204	0.196	0.187	0.190	1.63
50%	0.195	0.191	0.197	0.185	0.182	0.185	1.63
99 %	0.191	0.185	0.190	0.181	0.174	0.181	1.63

Note: AC power in mode

E-Filed Strength at (15 cm from edges A, B, C, D, 20 cm and 15cm from top E) surrounding the EUT (V/m)

Charging Load Worse case	Test Position A (V/m)	Test Position B (V/m)	Test Position C (V/m)	Test Position D (V/m)	Test Position E (V/m)20cm	Test Position E (V/m)15cm	Limits (V/m)
1%	1.58	1.65	1.62	1.71	1.47	1.70	614
50%	1.34	1.56	1.54	1.65	1.41	1.64	614
99%	1.26	1.34	1.48	1.53	1.35	1.56	614

H-Filed Strength at (15 cm from edges A, B, C, D, 20 cm and 15cm from top E) surrounding the EUT (A/m)

Charging Load Worse case	Test Position A(A/m)	Test Position B(A/m)	Test Position C(A/m)	Test Position D(A/m)	Test Position E(A/m)	Test Position E(A/m)	Limits (A/m)
1%	0.203	0.196	0.195	0.194	0.185	0.192	1.63
50%	0.195	0.189	0.192	0.186	0.177	0.189	1.63
99%	0.191	0.177	0.186	0.180	0.171	0.182	1.63

Test Result for Test setup B:
Note: internal battery power mode

1% ,50% ,99% load all have been tested, only worse case Max load (<1%) is reported.

E-Filed Strength at (distance 0cm to 20cm at 2cm iteration, i.e. at a distance of 20cm, 18cm, 16cm, ……. 0cm, Which is between the edge of the charger and the edge of of probe,) surrounding the EUT (V/m)

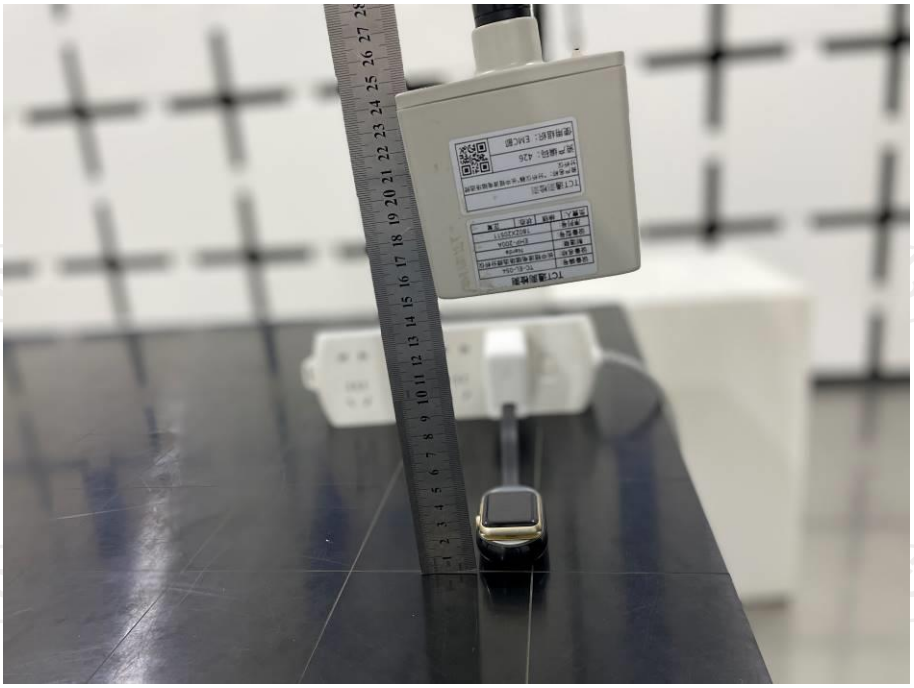
Test distance (cm)	Test Position A(V/m)	Test Position B(V/m)	Test Position C(V/m)	Test Position D(V/m)	Test Position E(V/m)	Test Position F(V/m)	Limits (V/m)
0	2.44	2.57	2.42	2.65	2.35	2.55	614
2	2.22	2.46	2.36	2.48	2.28	2.46	614
4	2.14	2.39	2.28	2.35	2.23	2.37	614
6	2.10	2.35	2.24	2.29	2.15	2.15	614
8	1.96	2.22	2.17	2.22	2.08	2.11	614
10	1.91	2.18	2.08	2.16	2.01	2.09	614
12	1.86	2.14	2.02	2.11	1.98	1.98	614
14	1.82	2.09	1.99	2.09	1.93	1.96	614
16	1.80	2.05	1.93	2.06	1.89	1.91	614
18	1.74	2.01	1.87	2.02	1.86	1.88	614
20	1.73	1.98	1.83	1.97	1.81	1.85	614

H-Filed Strength at (distance 0cm to 20cm at 2cm iteration, i.e. at a distance of 20cm, 18cm, 16cm, ……. 0cm, Which is between the edge of the charger and the edge of of probe,) surrounding the EUT (A/m)

Test distance (cm)	Test Position A(A/m)	Test Position B(A/m)	Test Position C(A/m)	Test Position D(A/m)	Test Position E(A/m)	Test Position F(A/m)	Limits (A/m)
0	0.371	0.358	0.342	0.334	0.356	0.352	1.63
2	0.345	0.312	0.306	0.301	0.302	0.318	1.63
4	0.302	0.284	0.282	0.289	0.285	0.284	1.63
6	0.286	0.269	0.267	0.252	0.261	0.263	1.63
8	0.265	0.242	0.255	0.247	0.242	0.246	1.63
10	0.253	0.228	0.242	0.225	0.233	0.237	1.63
12	0.248	0.216	0.238	0.221	0.211	0.218	1.63
14	0.222	0.203	0.223	0.207	0.205	0.206	1.63
16	0.215	0.189	0.217	0.200	0.197	0.195	1.63
18	0.207	0.186	0.208	0.196	0.189	0.186	1.63
20	0.202	0.181	0.202	0.191	0.184	0.180	1.63

3.6. Test Set-up Photo

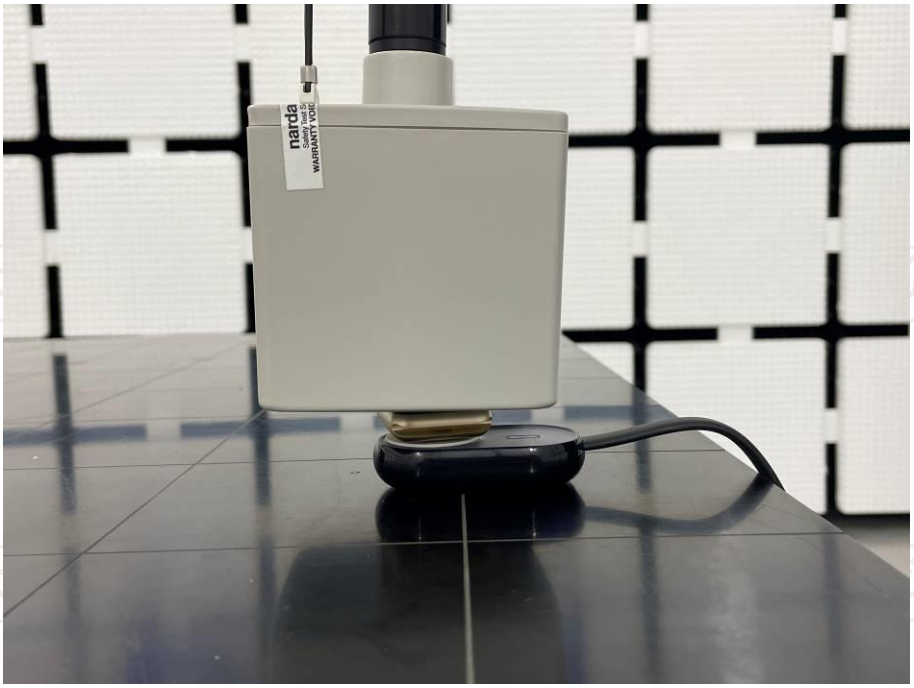
AC in mode

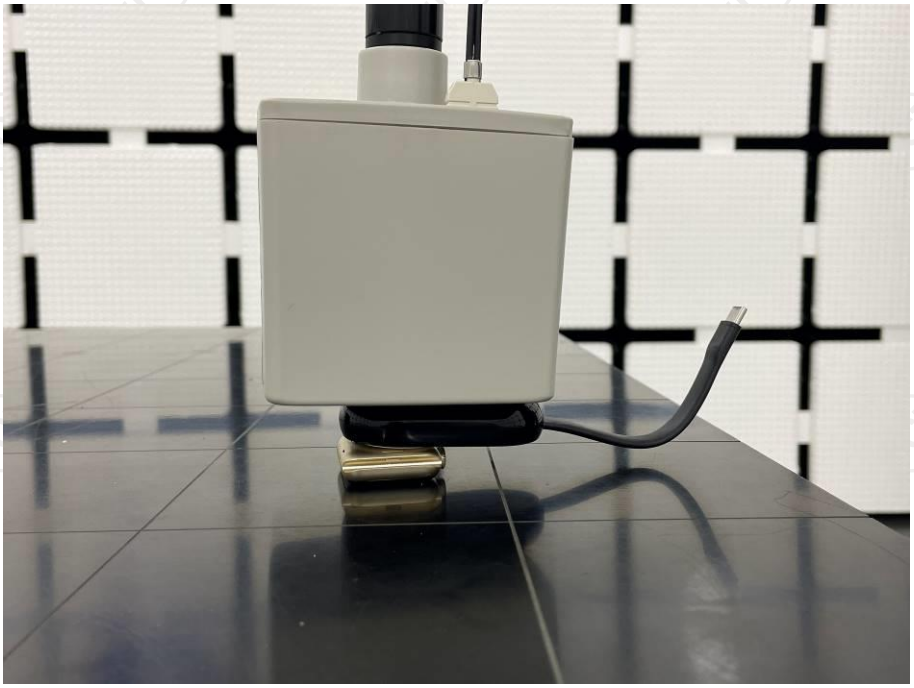


Internal battery mode

TCT通测检测
设备编号 TC-EL-054
设备名称 长中短波电磁场频谱分析仪
制造商 Narda
设备型号 EHP-200A
序列号 180ZX20511
负责人 状态 正常
TCT通测检测
资产名称：分析仪-长中短波电磁场频谱分析仪
资产编码：426
使用组织：EMC部

TCT通测检测
设备编号 TC-EL-054
设备名称 长中短波电磁场频谱分析仪
制造商 Narda
设备型号 EHP-200A
序列号 180ZX20511
负责人 状态 正常
TCT通测检测
资产名称：分析仪-长中短波电磁场频谱分析仪
资产编码：426
使用组织：EMC部





********END OF REPORT********