# RF EXPOSURE REPORT

| | | |
|---|---|---|
| **Applicant** | : | Shenzhen Romoss Technology Co.,Ltd |
| **Address of Applicant** | : | Room 1601, BLOCK B, Building 7, Shenzhen International Innovation Valley, Nanshan, Shenzhen, Guangdong, P.R.China |
| **Manufacturer** | : | Jiangmen Romoss Technology Co., Ltd. |
| **Address of Manufacturer** | : | Room 01-2, First floor, Building 8, No. 80, Renhe Road, Tangxia Town, Pengjiang District, Jiangmen City |
| **Equipment under Test** | : | Fast Charging Power Bank |
| **Model No.** | : | WMO10C-221 |
| **FCC ID** | : | 2A6QM-WMO10C-221 |
| **Test Standard(s)** | : | FCC CFR 47 part1, 1.1307(b), 1.1310; KDB680106 DR03-44118 |
| **Report No.** | : | DDT-RE24080636-2E04 |
| **Issue Date** | : | 2024/08/22 |
| **Issue By** | : | Guangdong Dongdian Testing Service Co., Ltd. Unit 2, Building 1, No. 17, Zongbu 2nd Road, Songshan Lake Park, Dongguan, Guangdong, China, 523808 |

REPORT

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# Test Report Declare

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|---|---|---|
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**Test Standard Used:**

FCC CFR 47 part1, 1.1307(b), 1.1310; KDB680106 DR03-44118

**We Declare:**

The equipment described above is tested by Guangdong Dongdian Testing Service Co., Ltd. and in the configuration tested the equipment complied with the standards specified above. The test results are contained in this test report and Guangdong Dongdian Testing Service Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests.

| | | | |
|---|---|---|---|
| **Report No.:** | DDT-RE24080636-2E04 | | |
| **Date of Receipt:** | 2024/08/09 | **Date of Test:** | 2024/08/09 - 2024/08/22 |

**Prepared By:**

Johnson Huang

**Johnson Huang/Engineer**

**Approved By:**

Damon Hu

Certificate and Report Seal
检验检测专用章

**Damon Hu/EMC Manager**

Note: This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Guangdong Dongdian Testing Service Co., Ltd.

# Revision History

| Rev. | Revisions | Issue Date | Revised By |
|---|---|---|---|
| --- | Initial issue | 2024/08/22 | |
| | | | |

# 1. General Test Information

## 1.1. Description of EUT

| | | |
|---|---|---|
| EUT Name | : | Fast Charging Power Bank |
| Model Number | : | WMO10C-221 |
| EUT Function Description | : | Please reference user manual of this device |
| Power Supply | : | 5V⎓3A/9V⎓3A/12V⎓2.5A/9V⎓3A/15V⎓2A from USB cable or DC 7.4V built-in battery |
| Wireless charging Operation frequency | : | 115-205 kHz |
| Antenna Type | : | Inductive loop coil antenna |

Note: The above EUT information is declared by manufacturer and for more detailed features description please refer to the manufacturer's specifications or User's Manual. The above Antenna information is declared by manufacturer and for more detailed features description please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

"⊠" means to be chosen or applicable; "□" means don't to be chosen or not applicable; This note applies to entire report.

## 1.2. Accessories of EUT

| Accessories | Manufacturer | Model number | Description |
|---|---|---|---|
| / | / | / | / |

## 1.3. Test laboratory

Guangdong Dongdian Testing Service Co., Ltd.

Add.: Unit 2, Building 1, No. 17, Zongbu 2nd Road, Songshan Lake Park, Dongguan, Guangdong, China, 523808.

Tel.: +86-0769-38826678, http://www.dgddt.com, Email: ddt@dgddt.com.

CNAS Accreditation No. L6451; A2LA Accreditation Number: 3870.01

FCC Designation Number: CN1182, Test Firm Registration Number: 540522

Innovation, Science and Economic Development Canada Site Registration Number: 10288A

Conformity Assessment Body identifier: CN0048

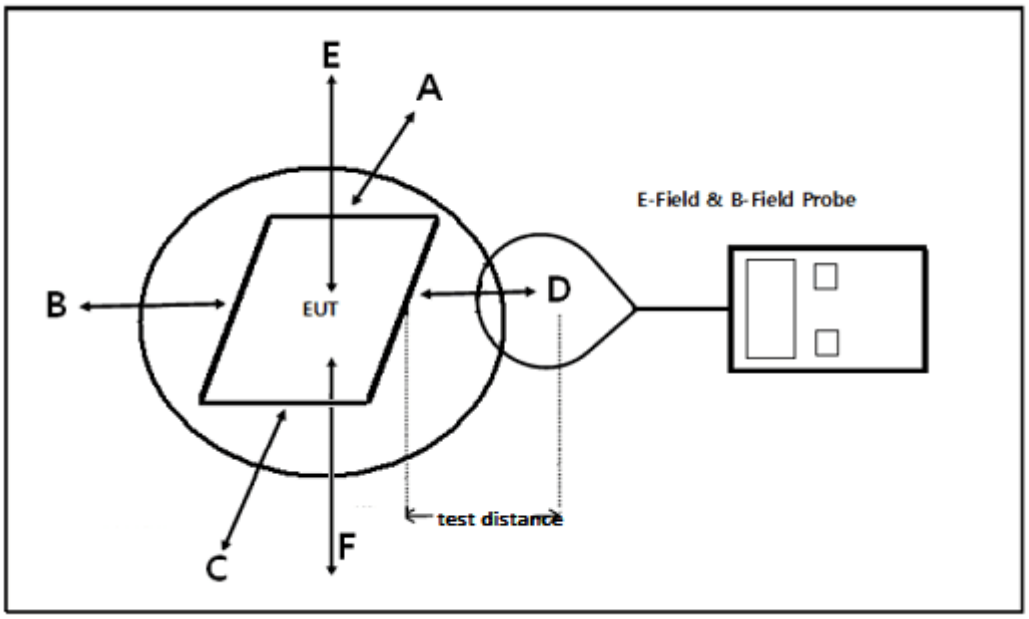
VCCI facility registration number: C-20087, T-20088, R-20123, R-20155, G-20118

# 2. RF Exposure evaluation for FCC

## 2.1. Test equipment

| Equipment | Manufacturer | Model No. | Serial No. | Cal Due To |
|---|---|---|---|---|
| ELECTRIC AND MAGNETIC FIELD ANALYZER | Narda | EHP-200A | DDT-ZC01401 | 2024/09/20 |

## 2.2. Block diagram of test setup




## 2.3. Limits

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 §2.1091 RF exposure is calculated.According KDB 680106 D01 Wireless Power Transfer v04..

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/f2 | 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/f2 | 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

## 2.4. Assistant equipment used for test

| Assistant equipment | Manufacturer | Model number | Description | other |
|---|---|---|---|---|
| Dummy load | / | / | / | / |
| Phone | Apple Inc. | iPhone 15 | N/A | N/A |

## 2.5. Test procedure

a)The RF exposure test was performed in shielded chamber.
b)The measurement probe was placed at test distance (0cm ,2cm, 4cm, 6cm, 8cm, 10cm,15 cm, 20 cm ) which is between the edge of the charger and the geometric centre of probe.
c)The measurement probe used to search of highest strength.
d)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.
e)The EUT were measured according to the dictates of KDB 680106 D01 Wireless Power Transfer v04.

**Equipment approval considerations:**

The EUT does comply with section 5.2 of KDB 680106 D01 Wireless Power Transfer v04.

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

Yes, the device operates in the frequency range from 115 kHz - 205 kHz

(2) The output power from each transmitting element (e.g., coil) is less than or equal to 15 watts.

Yes, the maximum output power of the primary coil is 15 W.

(3) A client device providing the maximum permitted load is placed in physical contact with the transmitter(i.e., the surfaces of the transitter and client device enclosures need to be in physical contact)

Yes. client device is placed directly in contact with the transmitter.

(4) Only §2.1091-Mobile exposure conditions apply (i.e, this provision does not cover § 2.1093-Portableexposure conditions).

No, the EUT is for portable exposure.

(5) The E-field and H-field strengths, at and beyond 20 cm surrounding the device surface, are demonstrated to be less than 50% of the applicable MPE limit, per KDB 447498, Table 1. Thesemeasurements shall be taken along the principal axes of the device, with one axis oriented along thedirection of the estimated maximum field strength, and for three points per axis or until a l/d (inversedistance from the emitter structure) field strength decay is observed. Symmetry considerations may be usedor test reduction purposes. The device shall be operated in documented worst-case compliance scenariosi.e., the ones that lead to the maximum field components), and while all the radiating structures (e.g., coilsor antennas) that by design can simultaneously transmit are energized at their nominal maximum power.

Yes, the E-field and H-field strengths levels are less than 50% of MPE limit.

(6) For systems with more than onc radiating structure, the conditions specified in (5) must be met whenthe system is fully loaded (i.e, clients absorbing maximum power available), and with all the radiatingstructures operating at maximum power at the same time, as per design conditions. If the design allows oneor more radiating structures to be powered at a higher level while other radiating structures are not powered.then those cases must be tested as well. For instance, a device may use three RF coils powered at 5 W, orone coil powered at 15 W: in this case, both scenarios shall be tested.

No, the transfer system only includes one primary coils.

## 2.6. Test result

Mobile phone has been charge at zero charge, intermediate charge, and full charge with iphone

Magnetic Field Emissions(WPC)

Note:

1. During the test the phone is attached the network in WWAN traffic mode and Wifi/BT is connected.

2. All test modes were pre-tested, but we only recorded the worst case in this report.

| Test mode | Test Distance (cm) | Test Position | Probe Measure Result(V/m) | | | 50% Limits Test (V/m) |
|---|---|---|---|---|---|---|
| | | | Full Load | Zero charge | intermediate charge | |
| Operation mode | 0 | A | 2.8894 | 2.4605 | 2.5574 | 307 |
| | | B | 2.7981 | 2.1006 | 2.5800 | 307 |
| | | C | 2.4180 | 1.5924 | 2.3011 | 307 |
| | | D | 1.4199 | 1.4277 | 1.3985 | 307 |
| | | E | 3.4432 | 3.8164 | 3.2442 | 307 |
| | | F | 5.1823 | 4.9297 | 4.6715 | 307 |

| Test mode | Test Distance (cm) | Test Position | Probe Measure Result(A/m) | | | 50%Limits Test (A/m) |
|---|---|---|---|---|---|---|
| | | | Full Load | Zero charge | intermediate charge | |
| Operation mode | 0 | A | 0.5735 | 0.4728 | 0.5030 | 0.815 |
| | | B | 0.1690 | 0.1377 | 0.1203 | 0.815 |
| | | C | 0.5218 | 0.4018 | 0.3280 | 0.815 |
| | | D | 0.3141 | 0.2934 | 0.2349 | 0.815 |
| | | E | 0.2121 | 0.1492 | 0.1226 | 0.815 |
| | | F | 0.2595 | 0.2540 | 0.1970 | 0.815 |

| Test mode | Test Distance (cm) | Test Position | Probe Measure Result(V/m) | | | 50% Limits Test (V/m) |
|---|---|---|---|---|---|---|
| | | | Full Load | Zero charge | intermediate charge | |
| Operation mode | 2 | A | 1.4871 | 1.7373 | 1.8253 | 307 |
| | | B | 1.4127 | 1.4379 | 1.4481 | 307 |
| | | C | 2.4464 | 1.5156 | 1.3216 | 307 |
| | | D | 0.9643 | 0.9709 | 0.8884 | 307 |
| | | E | 1.7291 | 1.7049 | 1.8067 | 307 |
| | | F | 2.1361 | 2.8645 | 2.5034 | 307 |

| Test mode | Test Distance (cm) | Test Position | Probe Measure Result(A/m) | | | 50%Limits Test (A/m) |
|---|---|---|---|---|---|---|
| | | | Full Load | Zero charge | intermediate charge | |
| Operation mode | 2 | A | 0.4632 | 0.0761 | 0.1034 | 0.815 |
| | | B | 0.0793 | 0.0575 | 0.0539 | 0.815 |
| | | C | 0.1085 | 0.0875 | 0.0877 | 0.815 |
| | | D | 0.1047 | 0.0898 | 0.0727 | 0.815 |
| | | E | 0.0630 | 0.0554 | 0.0553 | 0.815 |
| | | F | 0.1113 | 0.0752 | 0.0607 | 0.815 |

| Test mode | Test Distance (cm) | Test Position | Probe Measure Result(V/m) | | | 50% Limits Test (V/m) |
|---|---|---|---|---|---|---|
| | | | Full Load | Zero charge | intermediate charge | |
| Operation mode | 4 | A | 1.0045 | 1.3020 | 1.136 | 307 |
| | | B | 1.1504 | 1.1122 | 1.0687 | 307 |
| | | C | 1.0179 | 1.2889 | 1.0925 | 307 |
| | | D | 0.668 | 0.8427 | 0.7216 | 307 |
| | | E | 1.0223 | 1.4767 | 1.2503 | 307 |
| | | F | 1.5400 | 1.8319 | 1.9609 | 307 |

| Test mode | Test Distance (cm) | Test Position | Probe Measure Result(A/m) | | | 50%Limits Test (A/m) |
|---|---|---|---|---|---|---|
| | | | Full Load | Zero charge | intermediate charge | |
| Operation mode | 4 | A | 0.0626 | 0.0627 | 0.0626 | 0.815 |
| | | B | 0.0644 | 0.0569 | 0.0563 | 0.815 |
| | | C | 0.0833 | 0.0695 | 0.0590 | 0.815 |
| | | D | 0.0636 | 0.0730 | 0.0604 | 0.815 |
| | | E | 0.0554 | 0.0549 | 0.0553 | 0.815 |
| | | F | 0.0828 | 0.0920 | 0.0553 | 0.815 |

| Test mode | Test Distance (cm) | Test Position | Probe Measure Result(V/m) | | | 50% Limits Test (V/m) |
|---|---|---|---|---|---|---|
| | | | Full Load | Zero charge | intermediate charge | |
| Operation mode | 6 | A | 0.9414 | 0.9176 | 0.8800 | 307 |
| | | B | 0.9800 | 0.8117 | 0.5564 | 307 |
| | | C | 0.8550 | 0.8065 | 0.8962 | 307 |
| | | D | 0.6183 | 0.5577 | 0.5705 | 307 |
| | | E | 0.8521 | 0.8359 | 0.9209 | 307 |
| | | F | 0.8420 | 1.0470 | 1.1777 | 307 |

| Test mode | Test Distance (cm) | Test Position | Probe Measure Result(A/m) | | | 50%Limits Test (A/m) |
|---|---|---|---|---|---|---|
| | | | Full Load | Zero charge | intermediate charge | |
| Operation mode | 6 | A | 0.0538 | 0.0554 | 0.0538 | 0.815 |
| | | B | 0.0580 | 0.0553 | 0.0553 | 0.815 |
| | | C | 0.0563 | 0.0563 | 0.0563 | 0.815 |
| | | D | 0.0667 | 0.0590 | 0.0553 | 0.815 |
| | | E | 0.0569 | 0.0563 | 0.0553 | 0.815 |
| | | F | 0.1165 | 0.0589 | 0.0604 | 0.815 |

| Test mode | Test Distance (cm) | Test Position | Probe Measure Result(V/m) | | | 50% Limits Test (V/m) |
|---|---|---|---|---|---|---|
| | | | Full Load | Zero charge | intermediate charge | |
| Operation mode | 8 | A | 0.8429 | 0.7471 | 0.7503 | 307 |
| | | B | 0.6160 | 0.5730 | 0.7216 | 307 |
| | | C | 0.6939 | 0.6416 | 0.8577 | 307 |
| | | D | 0.4874 | 0.5203 | 0.5435 | 307 |
| | | E | 0.7772 | 0.5642 | 0.6710 | 307 |
| | | F | 0.9046 | 0.7285 | 0.9276 | 307 |

| Test mode | Test Distance (cm) | Test Position | Probe Measure Result(A/m) | | | 50%Limits Test (A/m) |
|---|---|---|---|---|---|---|
| | | | Full Load | Zero charge | intermediate charge | |
| Operation mode | 8 | A | 0.0564 | 0.0553 | 0.0589 | 0.815 |
| | | B | 0.0589 | 0.0575 | 0.0590 | 0.815 |
| | | C | 0.0567 | 0.0553 | 0.0589 | 0.815 |
| | | D | 0.0553 | 0.0557 | 0.0564 | 0.815 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | E | 0.0538 | 0.0553 | 0.0604 | 0.815 |
| | | F | 0.0569 | 0.0589 | 0.0564 | 0.815 |
| Test mode | Test Distance (cm) | Test Position | Probe Measure Result(V/m) | | | 50% Limits Test (V/m) |
| | | | Full Load | Zero charge | intermediate charge | |
| Operation mode | 10 | A | 0.6173 | 0.6520 | 0.6271 | 307 |
| | | B | 0.5915 | 0.6019 | 0.5002 | 307 |
| | | C | 0.6078 | 0.6655 | 0.5005 | 307 |
| | | D | 0.4175 | 0.4638 | 0.4207 | 307 |
| | | E | 0.5834 | 0.5285 | 0.4762 | 307 |
| | | F | 0.5372 | 0.6025 | 0.7672 | 307 |

| Test mode | Test Distance (cm) | Test Position | Probe Measure Result(A/m) | | | 50%Limits Test (A/m) |
|---|---|---|---|---|---|---|
| | | | Full Load | Zero charge | intermediate charge | |
| Operation mode | 10 | A | 0.0546 | 0.049 | 0.0563 | 0.815 |
| | | B | 0.0563 | 0.0553 | 0.0540 | 0.815 |
| | | C | 0.0588 | 0.0564 | 0.0589 | 0.815 |
| | | D | 0.0577 | 0.0564 | 0.0550 | 0.815 |
| | | E | 0.0564 | 0.0577 | 0.0538 | 0.815 |
| | | F | 0.0533 | 0.0550 | 0.0578 | 0.815 |

| Test mode | Test Distance (cm) | Test Position | Probe Measure Result(V/m) | | | 50% Limits Test (V/m) |
|---|---|---|---|---|---|---|
| | | | Full Load | Zero charge | intermediate charge | |
| Operation mode | 20 | A | 0.4152 | 0.3906 | 0.3808 | 307 |
| | | B | 0.4101 | 0.3734 | 0.3887 | 307 |
| | | C | 0.3734 | 0.3906 | 0.3906 | 307 |
| | | D | 0.3906 | 0.3734 | 0.3834 | 307 |
| | | E | 0.4059 | 0.3834 | 0.3887 | 307 |
| | | F | 0.4029 | 0.3734 | 0.4002 | 307 |

| Test mode | Test Distance (cm) | Test Position | Probe Measure Result(A/m) | | | 50%Limits Test (A/m) |
|---|---|---|---|---|---|---|
| | | | Full Load | Zero charge | intermediate charge | |
| Operation mode | 20 | A | 0.0553 | 0.0553 | 0.0610 | 0.815 |
| | | B | 0.0564 | 0.0589 | 0.0564 | 0.815 |
| | | C | 0.0554 | 0.0569 | 0.0553 | 0.815 |
| | | D | 0.0601 | 0.0578 | 0.0563 | 0.815 |
| | | E | 0.0595 | 0.0580 | 0.0546 | 0.815 |
| | | F | 0.0578 | 0.0564 | 0.0577 | 0.815 |

The distance from the probe measuring point to the EUT surface is 2mm
(Estimated value) =2cm (actual value) *4cm (actual value) /6cm (actual value)
According to the following table, when we backward derivation 0cm, it should be 3.9069(V/m), with a deviation from the actual test value of 24.6%.

| Measure Result V/m | | | |
|---|---|---|---|
| 0cm | 2cm | 4cm | 6cm |
| 5.1823 | 2.1361 | 1.54 | 0.842 |

According to the following table, when we backward derivation 0cm, it should be 0.5390(A/m), with a deviation from the actual test value of 6.0%.

| Measure Result A/m | | | |
|---|---|---|---|
| 0cm | 2cm | 4cm | 6cm |
| 0.5735 | 0.4632 | 0.0626 | 0.0538 |