# RF EXPOSURE REPORT FOR CERTIFICATION
On Behalf of

Huawei Technologies Co.,Ltd

HUAWEI SuperCharge Wireless Car Charger

Model Number: CP39S

FCC ID: QISCP39S1

| | |
|---|---|
| Prepared for: | Huawei Technologies Co.,Ltd |
| | Administration Building, Headquarters of Huawei Technologies Co., Ltd., |
| | Bantian, Longgang District,Shenzhen,China |
| | |
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| | |
|---|---|
| Report Number: | ESTE-R1910065 |
| Date of Test: | Sep. 18, 2019~Jan. 09, 2020 |
| Date of Report: | Jan. 10, 2020 |

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# EST Technology Co., Ltd.

| | |
|---|---|
| **Applicant:**<br>**Address:** | Huawei Technologies Co.,Ltd<br>Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District,Shenzhen,China |
| **Manufacturer:**<br>**Address:** | Huawei Technologies Co.,Ltd<br>Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District,Shenzhen,China |
| **E.U.T:** | HUAWEI SuperCharge Wireless Car Charger |
| **Model Number:** | CP39S |
| **Power Supply:** | DC12V,4A or DC24V,4A or Type-C From Car Charger: DC5V,4.5A or DC9V,2A or DC10V,4A |
| **Trade Name:** | HUAWEI Serial No.: ------ |
| **Date of Receipt:** | Sep. 18, 2019 Date of Test: Sep. 18, 2019~Jan. 09, 2020 |
| **Test Specification:** | FCC CFR 47 Part 1.1307(b)&1.1310<br>KDB 680106 D01 RF Exposure Wireless Charging Apps v03 |
| **Test Result:** | The device described above is tested by EST Technology Co., Ltd. The measurement results were contained in this test report and EST Technology Co., Ltd. was assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT to be technically compliance with the FCC CFR 47 Part 1.1307(b)&1.1310 requirements.This report applies to above tested sample only and shall not be reproduced in part without written approval of EST Technology Co., Ltd.<br>**Date: Jan. 10, 2020** |

| Prepared by: | Reviewed by: | Approved by: |
|---|---|---|
| Ring | Shawn | |
| Ring / Assistant | Tony / Engineer | Iceman Hu / Manager |

**Other Aspects:**
None.

*Abbreviations: OK/P=passed fail/F=failed n.a/N=not applicable E.U.T=equipment under tested*

*This test report is based on a single evaluation of one sample of above mentioned products ,It is not permitted to be duplicated in extracts without written approval of EST Technology Co., Ltd.*

# 1. SUMMARY OF TEST

## 1.1. Summary of test result

| Report Section | Description of Test Item | FCC Standard Section | Results |
|---|---|---|---|
| 3 | Maximum Permissible Exposure | Part 1.1307(b)&1.1310 | PASS |

## 1.2. Test Mode

| Test Item | Test Mode |
|---|---|
| Maximum Permissible Exposure | Wireless Charging with Empty Load |
| | Wireless Charging with Half Load |
| | Wireless Charging with Full Load |

## 1.3. Test Equipment List

| Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Next Cal. |
|---|---|---|---|---|---|
| Exposure Level Tester | Narda | ELT-400 | EST-E105 | Aug. 21,19 | 1 Year |
| B-Field Probe | Narda | ELT Probe | EST-E106 | Aug. 30,19 | 1 Year |

# 2. MAXIMUM PERMISSIBLE EXPOSURE

## 2.1. Limit

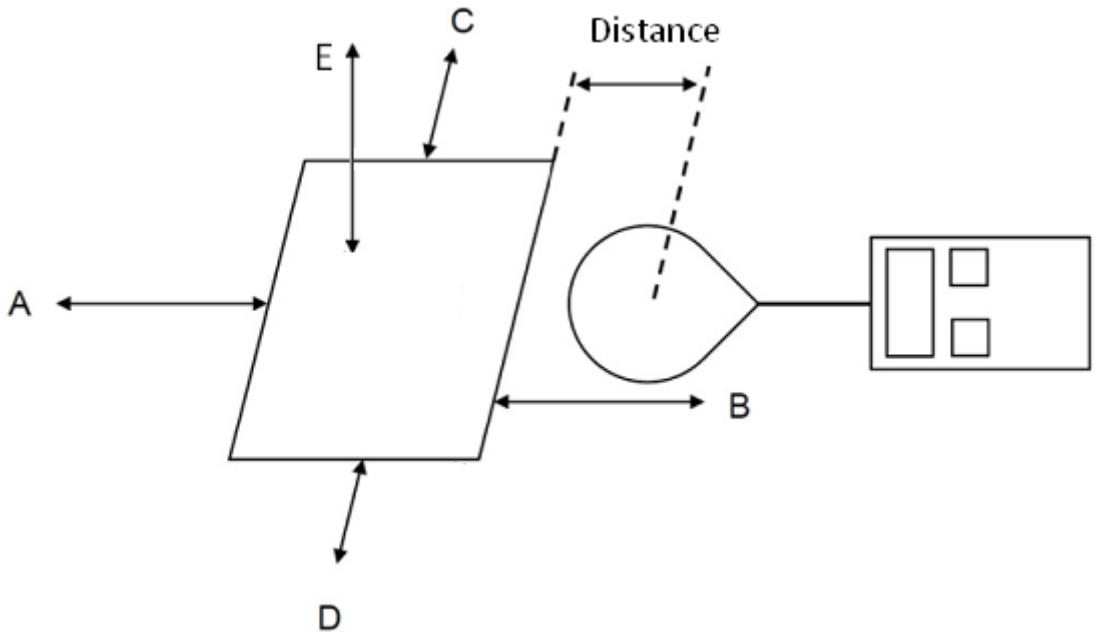
**Limits for Maximum Permissible Exposure (MPE)**

| Frequency range (MHz) | Electric field strength (V/m) | Magnetic field strength (A/m) | Power density (mW/cm2) | 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 |

Note:

1. f = frequency in MHz * = Plane-wave equivalent power density.
2. For devices designed for typical desktop applications, such a wireless charging pads, RF exposure evaluation should be conducted assuming a user separation distance of 15 cm. E and H field strength measurements or numerical modeling may be used to demonstrate compliance. Measurements should be made from all sides and the top of the primary/client pair, with the 15 cm measured from the center of the probe(s) to the edge of the device. Emissions between 100 kHz to 300 kHz should be assessed versus the limits at 300 kHz in Table 1 of Section 1.1310: 614 V/m and 1.63 A/m. A KDB inquiry is required to determine the applicable exposure limits below 100 kHz.

## 2.2. Test Setup



## 2.3. Test Procedure

a. The test was performed on turn table in anechoic chamber with a dummy load.
b. The dummy load must be placed horizontal of the EUT at the top (Parallel to the coil).
c. The probe was placed at 15 cm surrounding the device and 20 cm above the top of the charger and the geometric centre of the probe.
d. The highest emission level was recorded and compared with limit as soon as measurement of each point; A, B, C, D, E were completed.

## 2.4. Equipment Approval Considerations

Inductive wireless power transfer applications with supporting field strength results and meeting all of the following requirements are not required to submit a KDB inquiry for devices approved using SDoC or a PAG for equipment approved using certification to address RF exposure compliance.

| | |
|---|---|
| 1 | Power transfer frequency is less that 1 MHz |
| | YES; the device operated in the frequency range from 110.5-205KHz. |
| 2 | Output power from each primary coil is less than or equal to 15 watts. |
| | NO; the maximum output power of the primary coil is 27W. |
| 3 | 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. |
| 4 | Client device is placed directly in contact with the transmitter. |
| | YES; Client device is placed directly in contact with the transmitter. |
| 5 | Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion). |
| | YES. |
| 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; The EUT field strength levels are 50% x MPE limts. |

## 2.5. Test Result

**E-Field Test Result**

| | Test Mode | Full Load | Half Load | Empty Load |
|---|---|---|---|---|
| 10W | Frequency range (kHz) | 110.5 to 205 kHz | | |
| | Position A(V/m) | 3.231 | 3.025 | 2.963 |
| | Position B(V/m) | 3.456 | 2.968 | 2.914 |
| | Position C(V/m) | 3.425 | 3.124 | 2.563 |
| | Position D(V/m) | 3.785 | 2.963 | 2.465 |
| | Position E(V/m) | 4.111 | 3.457 | 3.175 |
| | Limits (V/m) | 614 | | |
| | 50% Limits(V/m) | 307 | | |

| | Test Mode | Full Load | Half Load | Empty Load |
|---|---|---|---|---|
| 27W | Frequency range (kHz) | 110.5 to 205 kHz | | |
| | Position A(V/m) | 3.452 | 3.058 | 2.945 |
| | Position B(V/m) | 4.045 | 3.164 | 3.002 |
| | Position C(V/m) | 5.075 | 3.865 | 2.643 |
| | Position D(V/m) | 4.316 | 3.054 | 2.754 |
| | Position E(V/m) | 4.089 | 3.963 | 2.998 |
| | Limits (V/m) | 614 | | |
| | 50% Limits(V/m) | 307 | | |

**H-Field Test Result**

| | Test Mode | Full Load | Half Load | Empty Load |
|---|---|---|---|---|
| 10W | Frequency range (kHz) | 110.5 to 205 kHz | | |
| | Position A(A/m) | 0.312 | 0.258 | 0.215 |
| | Position B(A/m) | 0.311 | 0.261 | 0.209 |
| | Position C(A/m) | 0.309 | 0.265 | 0.211 |
| | Position D(A/m) | 0.315 | 0.259 | 0.218 |
| | Position E(A/m) | 0.321 | 0.268 | 0.221 |
| | Limits (A/m) | 1.63 | | |
| | 50% Limits (A/m) | 0.815 | | |

| | Test Mode | Full Load | Half Load | Empty Load |
|---|---|---|---|---|
| 27W | Frequency range (kHz) | 110.5 to 205 kHz | | |
| | Position A(A/m) | 0.311 | 0.265 | 0.212 |
| | Position B(A/m) | 0.309 | 0.256 | 0.225 |
| | Position C(A/m) | 0.321 | 0.255 | 0.219 |
| | Position D(A/m) | 0.315 | 0.260 | 0.215 |
| | Position E(A/m) | 0.311 | 0.259 | 0.223 |
| | Limits (A/m) | 1.63 | | |
| | 50% Limits (A/m) | 0.815 | | |

**E-Filed**

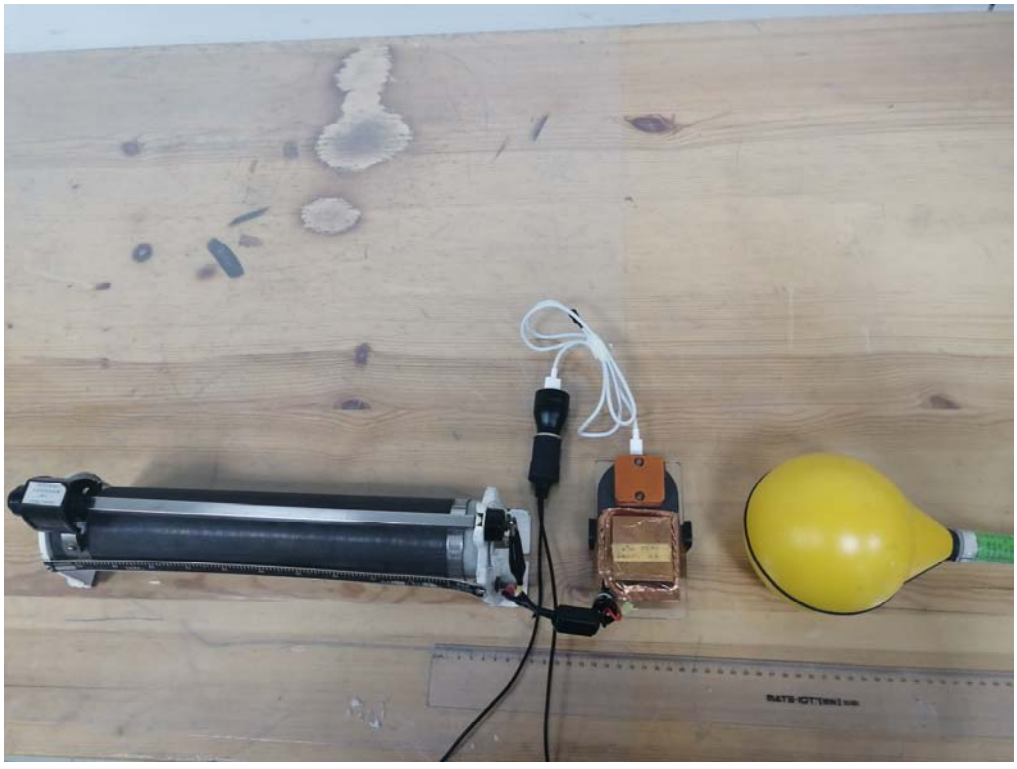
| Output POWER | Test distance (cm) | Position A (V/m) | Position B (V/m) | Position C (V/m) | Position D (V/m) | Position E (V/m) | Limits (V/m) |
|---|---|---|---|---|---|---|---|
| 10W | 1 | 12.354 | 12.328 | 12.418 | 12.462 | 13.078 | 614 |
| | 2 | 12.012 | 12.052 | 11.396 | 12.045 | 13.052 | 614 |
| | 3 | 10.354 | 11.147 | 10.289 | 10.998 | 11.307 | 614 |
| | 4 | 9.354 | 9.268 | 9.342 | 9.458 | 10.021 | 614 |
| | 5 | 7.358 | 7.356 | 7.123 | 7.546 | 7.976 | 614 |
| | 6 | 5.369 | 6.328 | 5.935 | 6.078 | 6.347 | 614 |
| | 7 | 5.021 | 5.305 | 5.369 | 4.986 | 5.087 | 614 |
| | 8 | 4.215 | 4.685 | 4.963 | 4.756 | 4.378 | 614 |
| | 9 | 3.985 | 3.967 | 3.469 | 3.087 | 4.025 | 614 |
| | 10 | 3.453 | 3.647 | 3.756 | 3.145 | 3.647 | 614 |

| Output POWER | Test distance (cm) | Position A (V/m) | Position B (V/m) | Position C (V/m) | Position D (V/m) | Position E (V/m) | Limits (V/m) |
|---|---|---|---|---|---|---|---|
| 27W | 1 | 13.452 | 13.245 | 12.963 | 13.452 | 13.045 | 614 |
| | 2 | 12.078 | 12.963 | 12.087 | 12.947 | 12.998 | 614 |
| | 3 | 9.358 | 10.256 | 10.347 | 9.867 | 10.348 | 614 |
| | 4 | 8.325 | 8.364 | 8.364 | 7.687 | 8.634 | 614 |
| | 5 | 7.367 | 7.058 | 7.698 | 7.642 | 7.085 | 614 |
| | 6 | 5.396 | 5.768 | 5.289 | 6.054 | 6.354 | 614 |
| | 7 | 5.325 | 5.087 | 5.364 | 5.078 | 5.934 | 614 |
| | 8 | 4.028 | 4.687 | 4.256 | 4.257 | 4.358 | 614 |
| | 9 | 4.001 | 3.985 | 3.457 | 3.579 | 4.312 | 614 |
| | 10 | 3.687 | 3.764 | 3.623 | 3.452 | 3.457 | 614 |

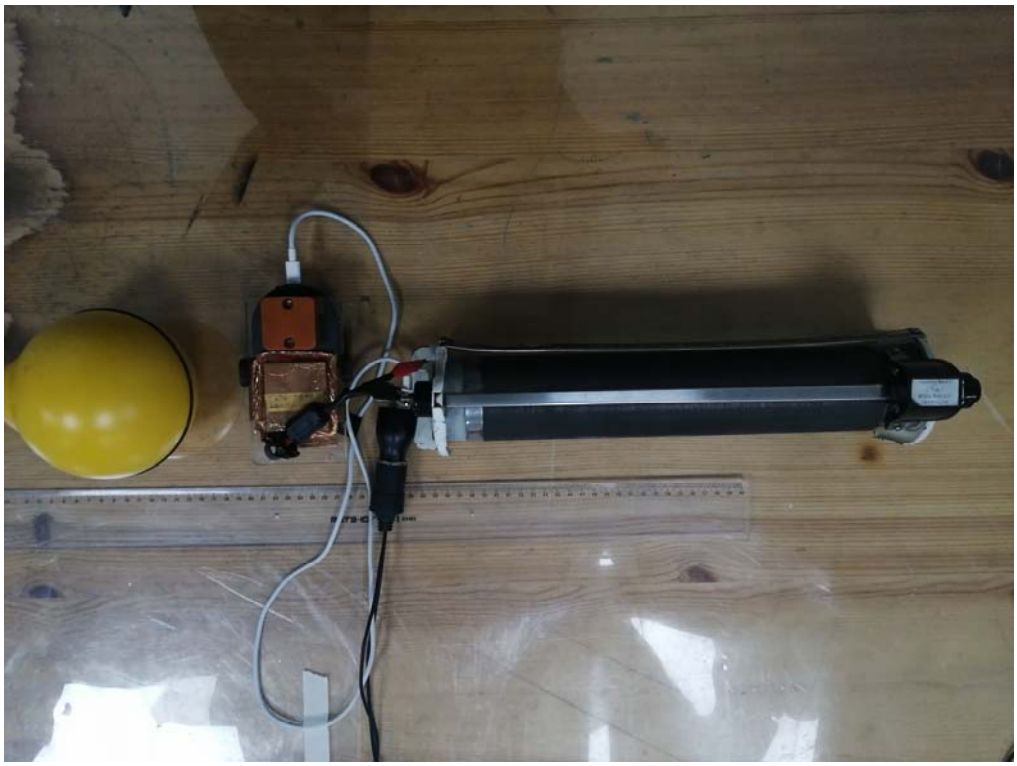
# 3. TEST SETUP PHOTO

**Position A**

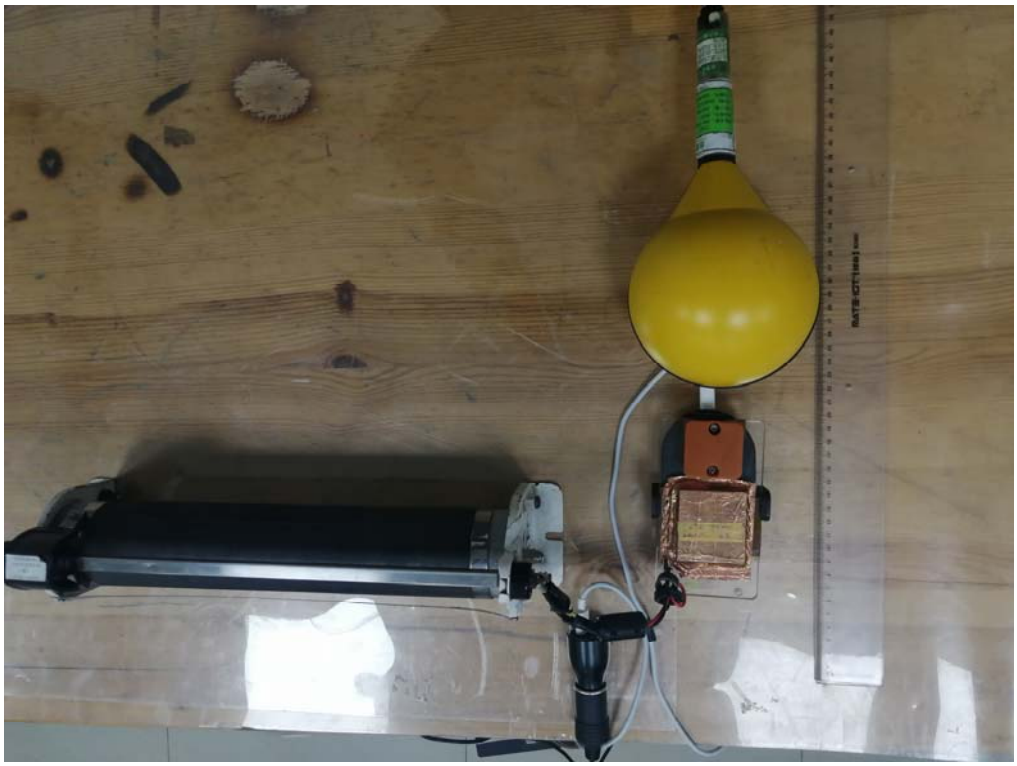
**Position B**



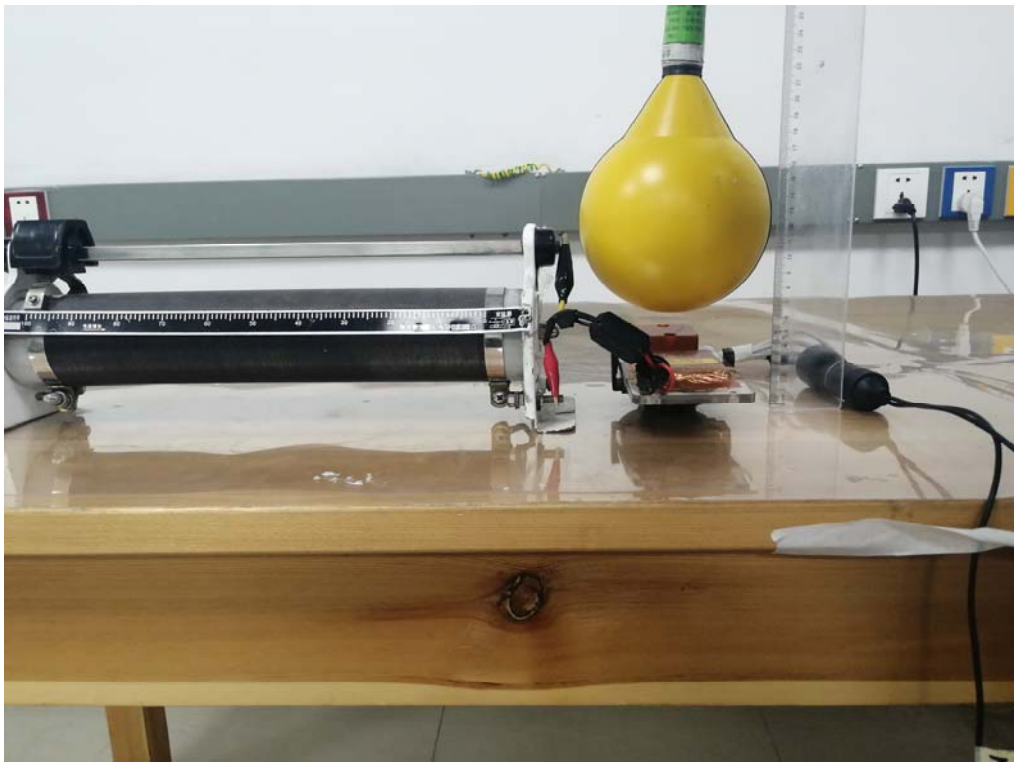
## Position C



## Position D



## Position E



**End of Test Report**