# MPE TEST REPORT

Report No:STS1810006H01

Issued for

Shenzhen Sword Special Power Technology Co.,Ltd

Building 4, NO.12, Huanping Road, Gaoqiao Communtiy,
Pingdi Street, Longgang District, Shenzhen, China

| | |
|---|---|
| **Product Name:** | Wireless Charger |
| **Brand Name:** | N/A |
| **Model Name:** | MC-008 |
| **Series Model:** | N/A |
| **FCC ID:** | 2ARH3MC-008 |
| **Test Standard:** | FCC CFR 47 part 1, 1.1310 |



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## TEST RESULT CERTIFICATION

| | |
|---|---|
| Applicant's name.....: | Shenzhen Sword Special Power Technology Co.,Ltd |
| Address.....: | Building 4, NO.12, Huanping Road, Gaoqiao Communtiy, Pingdi Street, Longgang District, Shenzhen, China |
| Manufacture's Name .....: | Shenzhen Sword Special Power Technology Co.,Ltd |
| Address.....: | Building 4, NO.12, Huanping Road, Gaoqiao Communtiy, Pingdi Street, Longgang District, Shenzhen, China |

**Product description**

| | |
|---|---|
| Product Name .....: | Wireless Charger |
| Brand Name .....: | N/A |
| Model Name.....: | MC-008 |
| Series Model .....: | N/A |
| Standards……..: | FCC CFR 47 part 1, 1.1310 |
| Test Procedure ……..: | 680106 D01 RF Exposure Wireless Charging Apps v03 |

This device described above has been tested by STS, the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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| | |
|---|---|
| Date of performance of tests..: | 24 Oct. 2018 ~01 Nov. 2018 |
| Date of Issue.....: | 06 Nov. 2018 |
| Test Result .....: | **Pass** |

Testing Engineer : Chris chen

( Chris chen )

Technical Manager : Sunday Hu

( Sunday Hu )

Authorized Signatory : Vita Li

(Vita Li)

**Table of Contents** **Page**

## Revision History

| Rev. | Issue Date | Report NO. | Effect Page | Contents |
|---|---|---|---|---|
| 00 | 06 Nov. 2018 | STS1810006H01 | ALL | Initial Issue |
| | | | | |

# 1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:
FCC KDB 680106 D01 RF Exposure Wireless Charging Apps v03

| FCC CFR 47 | | | |
|---|---|---|---|
| Standard Section | Test Item | Judgment | Remark |
| FCC CFR 47 part1, 1.1310 KDB680106 D01v03 | Electric Field Strength (E) (V/m) | PASS | |
| | Magnetic Field Strength (H) (A/m) | PASS | |

## 1.1 TEST FACTORY

Shenzhen STS Test Services Co., Ltd.
Add. : 1/F., Building B, Zhuoke Science Park, No.190, Chongqing Road,
Fuyong Street, Bao'an District, Shenzhen, Guangdong, China
FCC Registration No.: 625569
IC Registration No.: 12108A; A2LA Certificate No.: 4338.01;

## 1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement **y ±U**，where expended uncertainty **U** is based on a standard uncertainty multiplied by a coverage factor of **k=2**，providing a level of confidence of approximately **95** %。

| No. | Item | Uncertainty |
|---|---|---|
| 1 | All emissions,radiated(<30M)(9KHz-30MHz) | ±2.45dB |
| 2 | Temperature | ±0.5°C |
| 3 | Humidity | ±2% |

1.3 GENERAL DESCRIPTION OF EUT

| | |
|---|---|
| Product Name | Wireless Charger |
| Trade Name | N/A |
| Model Name | MC-008 |
| Series Model | N/A |
| Model Difference | N/A |
| Equipemnt Category | Non-ISM frequency |
| Operating frequency | 110-205KHz |
| Modulation Type | ASK |
| Power Raitng | Input: 5V ⎓2.0A ;9V ⎓1.5A<br>Output1:5V ⎓1.0A ; Output2: 5V ⎓1.0A |
| Hardware version number | MC-008 V5.0 |
| Software version number | V3.33 |

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
2. Table for Filed Antenna

| Ant. | Brand | Model Name | Antenna Type | Connector | NOTE |
|---|---|---|---|---|---|
| 1 | N/A | MC-008 | Coil | NA | Antenna |

The EUT antenna is Coil Antenna. No antenna other than that furnished by the responsible party shall be used with the device.

## 1.4 EQUIPMENTS LIST FOR ALL TEST ITEMS

| Kind of Equipment | Manufacturer | Type No. | Serial No. | Last calibration | Calibrated until |
|---|---|---|---|---|---|
| EMF Meter | NARDA | ELT-400 | N-0342 | 2018.10.22 | 2019.10.21 |
| EMF probe | NARDA | B-Field Probe | M-0779 | 2018.10.22 | 2019.10.21 |
| Broadband field meter NARDA NBM | 550 | Broadband field meter NARDA NBM | E-1275 | 2018.10.22 | 2019.10.21 |
| Broadband field probe NARDA EF | 0391 | Broadband field probe NARDA EF | D-0894 | 2018.10.22 | 2019.10.21 |

# 2. MAXIMUM PERMISSIBLE EXPOSURE

## 2.1 MAXIMUM PERMISSIBLE EXPOSURE

Limit of Maximum Permissible Exposure

| Limits for Occupational / Controlled Exposure | | | | |
|---|---|---|---|---|
| Frequency Range (MHz) | Electric Field Strength (E) (V/m) | Magnetic Field Strength (H) (A/m) | Power Density (S) (mW/ cm²) | Averaging Time \|E\|²,\|H\|² or S (minutes) |
| 0.3-3.0 | 614 | 1.63 | (100)* | 6 |
| 3.0-30 | 1842 / f | 4.89 / f | (900 / f)* | 6 |
| 30-300 | 61.4 | 0.163 | 1.0 | 6 |
| 300-1500 | | | F/300 | 6 |
| 1500-100,000 | | | 5 | 6 |

| Limits for General Population / Uncontrolled Exposure | | | | |
|---|---|---|---|---|
| Frequency Range (MHz) | Electric Field Strength (E) (V/m) | Magnetic Field Strength (H) (A/m) | Power Density (S) (mW/ cm²) | Averaging Time \|E\|²,\|H\|² or S (minutes) |
| 0.3-1.34 | 614 | 1.63 | (100)* | 30 |
| 1.34-30 | 824/f | 2.19/f | (180 / f)* | 30 |
| 30-300 | 27.5 | 0.073 | 0.2 | 30 |
| 300-1500 | | | F/1500 | 30 |
| 1500-100,000 | | | 1 | 30 |

Note 1: f = frequency in MHz ; *Plane-wave equivalent power density

Note 2: For the applicable limit, see FCC 1.1310, 680106 D01 RF Exposure Wireless Charging Apps v03

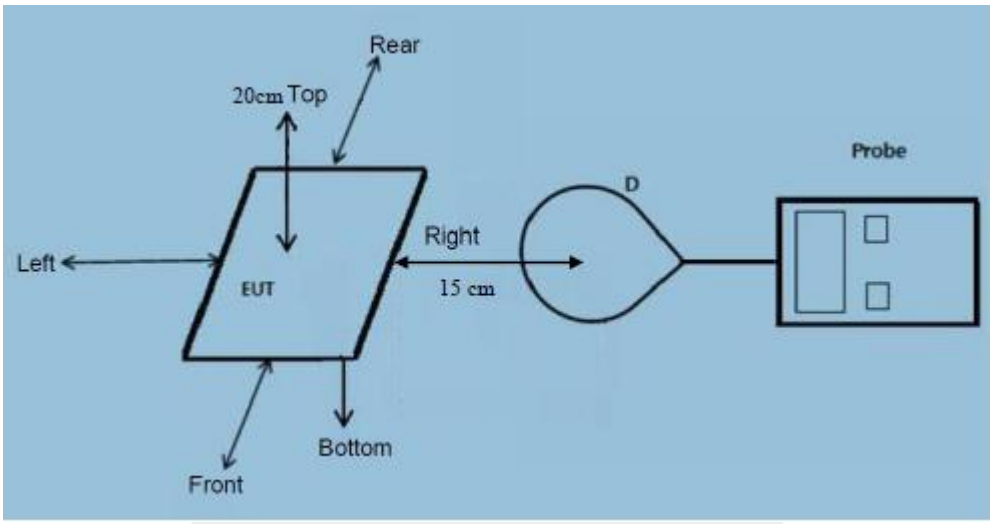
Note 3: Emissions between 100 kHz to 300 kHz should be assessed versus the limits at 300 kHz in Table 1 of Section 1.1310: 614 V/m and 1.63 A/m. A KDB inquiry is required to determine the applicable exposure limits below 100 kHz.

Note 4: 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 .

2.2 TEST PROCEDURE

a. For devices designed for typical desktop applications, such a wireless charging pads, RF exposure evaluation should be conducted assuming a user separation distance of 20 cm(Top) and 15cm(Edge). 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 20 cm(Top) and 15cm(Edge) measured from the center of the probe(s) to the edge of the device.

2.3 TEST SETUP




2.4 Test results

The EUT does comply with item 5 KDB680106 D01 v03.

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

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

(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.
(Conform)

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

(5) Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).
(Conform)

(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.
(Conform)

## 2.5 MAXIMUM PERMISSIBLE EXPOSURE

| Maximum Permissible Exposure | | | | |
|---|---|---|---|---|
| Charging | Separation | Probe from EUT Side | E-field (V/m) | H-field (A/m) |
| < 1% Battery | 15cm | Front | 0.448 | 0.097 |
| < 1% Battery | 15cm | Rear | 0.433 | 0.110 |
| < 1% Battery | 15cm | Left | 0.434 | 0.121 |
| < 1% Battery | 15cm | Right | 0.436 | 0.114 |
| < 1% Battery | 20cm | Top | 0.476 | 0.144 |
| Limit | | | 614 | 1.63 |
| Margin Limit (%) | | | 0.08% | 8.83% |

| Maximum Permissible Exposure | | | | |
|---|---|---|---|---|
| Charging | Separation | Probe from EUT Side | E-field (V/m) | H-field (A/m) |
| 50% Battery | 15cm | Front | 0.441 | 0.107 |
| 50% Battery | 15cm | Rear | 0.424 | 0.095 |
| 50% Battery | 15cm | Left | 0.442 | 0.113 |
| 50% Battery | 15cm | Right | 0.445 | 0.125 |
| 50% Battery | 20cm | Top | 0.473 | 0.144 |
| Limit | | | 614 | 1.63 |
| Margin Limit (%) | | | 0.08% | 8.83% |

| Maximum Permissible Exposure | | | | |
|---|---|---|---|---|
| Charging | Separation | Probe from EUT Side | E-field (V/m) | H-field (A/m) |
| ＞99% Battery | 15cm | Front | 0.458 | 0.114 |
| ＞99% Battery | 15cm | Rear | 0.421 | 0.103 |
| ＞99% Battery | 15cm | Left | 0.422 | 0.104 |
| ＞99% Battery | 15cm | Right | 0.449 | 0.12 |
| ＞99% Battery | 20cm | Top | 0.463 | 0.133 |
| Limit | | | 614 | 1.63 |
| Margin Limit (%) | | | 0.08% | 8.16% |

# MPE SETUP PHOTO

Note: See test photos in setup photo document for the actual connections between Product and support equipment.

※※※※※END OF THE REPORT※※※※※