



Report No.: SZEM190301142202

Page: 1 of 9

Human Exposure Report

Application No.: SZEM1903011422CR
Applicant: Spigen Korea Co., Ltd.
Address of Applicant: Spigen HQ-A, 446, Bongeunsa-ro, Gangnam-gu, Seoul, 06153, South Korea.
Manufacturer: Spigen Korea Co., Ltd.
Address of Manufacturer: Spigen HQ-A, 446, Bongeunsa-ro, Gangnam-gu, Seoul, 06153, South Korea.
Factory: Shenzhen Fang Xin Technology Co., Ltd.
Address of Factory: Rm 2406, 24F, Tower A, Xinghe World, No.1, Yabao Rd, Bantian St, Longgang Dist, Shenzhen, China
Equipment Under Test (EUT):
EUT Name: Fast Wireless Charger
Model No.: F303W
Trade mark: Essential
FCC ID: 2AFKNF303WR1
Standards: 47 CFR PART 1, Subpart I, Section 1.1310
Date of Receipt: 2019-03-07
Date of Test: 2019-03-08 to 2019-04-20
Date of Issue: 2019-04-23

| | |
|----------------------|--------------|
| Test Result : | Pass* |
|----------------------|--------------|

* In the configuration tested, the EUT complied with the standards specified above

Kenx. Xu

Kenx Xu
EMC Laboratory Manager



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| Revision Record | | | | |
|-----------------|---------|------------|----------|----------|
| Version | Chapter | Date | Modifier | Remark |
| 01 | | 2019-04-23 | | Original |
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| Authorized for issue by: | | | |
| | |  | |
| | | <hr/> | |
| | | Powell Bao /Project Engineer | |
| | |  | |
| | | <hr/> | |
| | | Eric Fu /Reviewer | |



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3 General Information

3.1 Details of E.U.T.

Power supply: Input: DC9V1.67A DC12V1.5A
Output: 5W/7.5W/10W

Cable: USB Cable(Unshielded, 120cm)

Antenna Type: Inductive Loop Coil Antenna

Modulation Type: Load Modulation

Operation Frequency: 110.08kHz to 146.80kHz

Remark: This device has been tested with the horizontal positioning and vertical positioning and all three load modes, the worse status(10W) was vertical positioning had been recorded in the report.

3.2 Description of Support Units

| Description | Manufacturer | Model No. | Serial No. |
|--------------|--------------------------------|--|------------------|
| Adapter | XIAOMI (Provided by client) | MDY-10-EH Input: AC100-240V,50/60Hz, 0.7A Output: DC5V,3A; DC9V,3A; DC12V,2.25A; DC20V, 1.35A | N/A |
| iPhone 8 | Apple | A1863 | F4GVQ656JC 6D |
| Mobile phone | SAMSUNG | SM-G9500 | R28J9140LPB |



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3.3 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch E&E Lab,

No. 1 Workshop, M-10, Middle section, Science & Technology Park, Shenzhen, Guangdong, China 518057.

Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

3.4 Test Facility

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

- **CNAS (No. CNAS L2929)**

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

- **A2LA (Certificate No. 3816.01)**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation (A2LA). Certificate No. 3816.01.

- **VCCI**

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

- **FCC –Designation Number: CN1178**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1178. Test Firm Registration Number: 406779.

- **Innovation, Science and Economic Development Canada**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.

3.5 Deviation from Standards

None.

3.6 Abnormalities from Standard Conditions

None.



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4 Equipments Used during Test

| Item | Test Equipment | Manufacturer | Model No. | Inventory No. | Cal. Due date |
|------|--------------------------------------|--------------|-----------|---------------|---------------|
| 1 | Electric and Magnetic Field Analyzer | Narda | EHP-50F | EMC092 | 2020-02-06 |
| 2 | Shielding Room | SAEMC | MSR733 | SEM001-09 | 2020-05-09 |



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5 Test Results

5.1 RF Exposure test

Test Requirement: 47 CFR PART 1, Subpart I, Section 1.1310

Measurement Distance: 15cm

Limit:

| 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).

5.1.1 E.U.T. Operation

Operating Environment:

Temperature: 24.5 °C Humidity: 52% RH Atmospheric Pressure: 1015 mbar

EUT Operation:

This device has been tested the worst status of full load and the device has been tested with mobile phone at zero charge, intermediate charge, and full charge.



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5.1.2 Measurement Data

Output Voltage=DC 9V; The max output power =10W

Magnetic Field Emissions

| Operation frequency | Test Distance (cm) | Test Position | Probe Measure Result (A/m) | 50% Limit (A/m) |
|---------------------|--------------------|---------------|----------------------------|-----------------|
| 133.8 kHz | 15 | Side 1 | 0.0429 | 0.815 |
| | | Side 2 | 0.0228 | 0.815 |
| | | Side 3 | 0.0586 | 0.815 |
| | | Side 4 | 0.0278 | 0.815 |
| | | Top | 0.1733 | 0.815 |

Mobile phone has been charge at zero charge, intermediate charge, and full charge.

Magnetic Field Emissions

| Operation frequency | Test Distance (cm) | Test Position | Probe Measure Result(A/m) | | | 50%Limit (A/m) |
|---------------------|--------------------|---------------|---------------------------|---------------------|-------------|----------------|
| | | | zero charge | intermediate charge | full charge | |
| 133.8 kHz | 15 | Side 1 | 0.0534 | 0.0429 | 0.0288 | 0.815 |
| | | Side 2 | 0.0437 | 0.033 | 0.0186 | 0.815 |
| | | Side 3 | 0.0696 | 0.0585 | 0.0447 | 0.815 |
| | | Side 4 | 0.0437 | 0.033 | 0.0201 | 0.815 |
| | | Top | 0.1862 | 0.1707 | 0.1569 | 0.815 |



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6 Photographs

6.1 Test setup photos

Please refer to RF Exposure Setup Photos.

- End of the Report -



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