# RF Exposure Report

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| **Report No.:** | SA170118D03 |
| **FCC ID:** | IKQMPQ |
| **Test Model:** | MPQ |
| **Received Date:** | Jan. 18, 2017 |
| **Test Date:** | Jan. 26 ~ Oct. 11, 2017 |
| **Issued Date:** | Oct. 12, 2017 |
| **Applicant:** | Scosche Industries, Inc. |
| **Address:** | 1550 Pacific Ave. Oxnard, CA 93033, USA |
| **Issued By:** | Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch |
| **Lab Address:** | No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan (R.O.C.) |

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## Release Control Record

| Issue No. | Description | Date Issued |
|---|---|---|
| SA170118D03 | Original release. | Oct. 12, 2017 |

## 1 Certificate of Conformity

**Product:** WIRELESS CHARGING PAD

**Brand:** SCOSCHE

**Test Model:** MPQ

**Sample Status:** Engineering Sample

**Applicant:** Scosche Industries, Inc.

**Test Date:** Jan. 26 ~ Oct. 11, 2017

**Standards:** FCC Part 1 (Section 1.1307(b), 1.1310)

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

**Prepared by :** Annie Chang , **Date:** Oct. 12, 2017

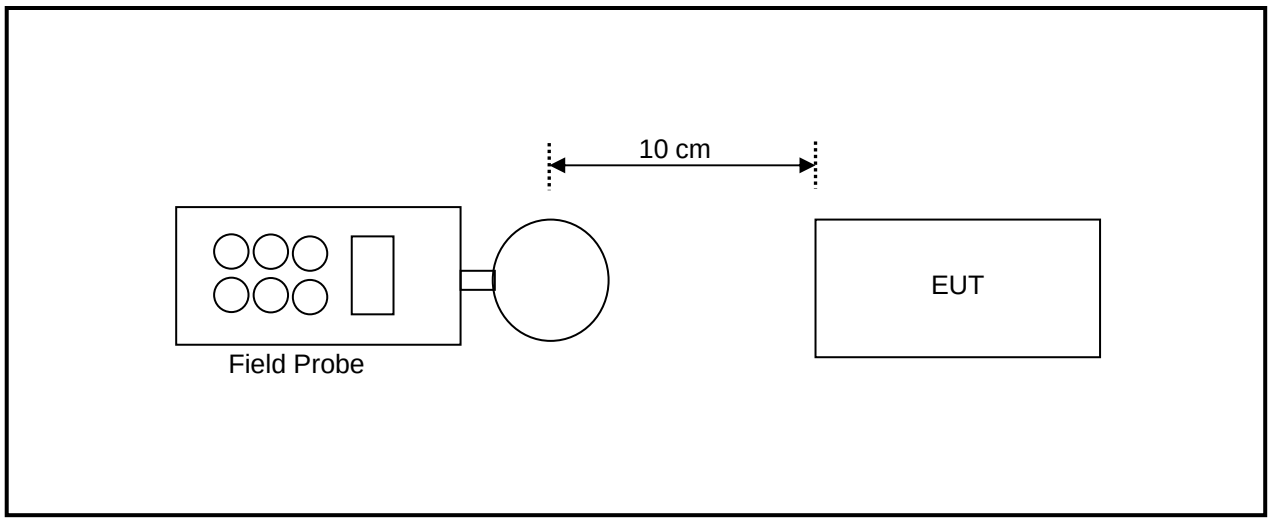
Annie Chang / Senior Specialist

**Approved by :** Rex. Lai , **Date:** Oct. 12, 2017

Rex Lai / Assistant Manager

## 2 RF Exposure

### 2.1 Test Setup




Note: Measurements should be made from all sides and the top of the primary/client pair, with the 10 cm measured from the center of the probe(s) to the edge of the device.

### 2.2 Test Instruments

| Description | Brand | Model No. | Frequency Range | Calibrated Date | Calibrated Until |
|---|---|---|---|---|---|
| Broadband Field Meter | NARDA | NBM-550 | - | Feb. 9, 2016 | Feb. 8, 2018 |
| Magnetic Field Meter | NARDA | ELT-400 | 1 – 400kHz | Feb. 11, 2016 | Feb. 10, 2018 |
| Magnetic Probe | NARDA | HF-3061 | 300kHz – 30MHz | Feb. 9, 2016 | Feb. 8, 2018 |
| Magnetic Probe | NARDA | HF-0191 | 27 – 1000MHz | Feb. 9, 2016 | Feb. 8, 2018 |
| Broadband Field Meter | NARDA | NBM-550 | - | Feb. 9, 2016 | Feb. 8, 2018 |
| Electric Field Meter | COMBINOVA | EFM 200 | 5Hz – 400kHz | Oct. 14, 2015 | Oct. 13, 2017 |
| E-Field Probe | NARDA | EF-0391 | 100kHz – 3GHz | Feb. 9, 2016 | Feb. 8, 2018 |
| E-Field Probe | NARDA | EF-6091 | 100MHz – 60GHz | Feb. 9, 2016 | Feb. 8, 2018 |

**NOTE:** 1. The calibration interval of the above test instruments is 12/24 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Chia Pau RF Chamber
3. The FCC Designation Number is TW2021.

## 2.3 Limits For Maximum Permissible Exposure (MPE)

§ 1.1310 The criteria listed in table 1 shall be used to evaluate the environmental impact of human exposure to radiofrequency(RF) radiation as specified in § 1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of § 2.1093 of this chapter.

TABLE 1—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 Exposures** | | | | |
| 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 |
| 300–1500 | ..... | ..... | 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/f²) | 30 |
| 30–300 | 27.5 | 0.073 | 0.2 | 30 |
| 300–1500 | ..... | ..... | f/1500 | 30 |
| 1500–100,000 | ..... | ..... | 1.0 | 30 |

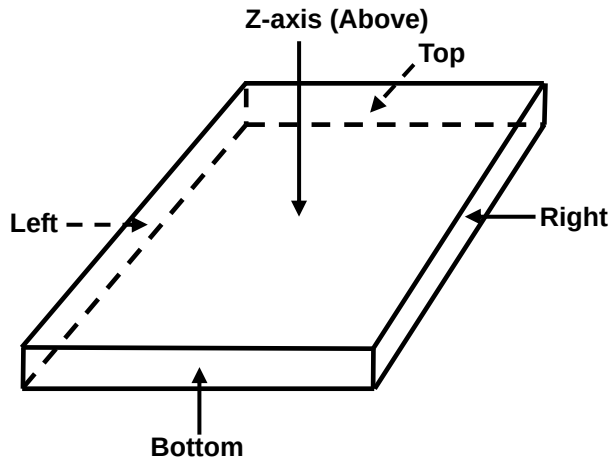
f = frequency in MHz
* = Plane-wave equivalent power density

NOTE 1 TO TABLE 1: Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

NOTE 2 TO TABLE 1: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

**680106 D01 RF Exposure Wireless Charging Apps v02**
Aggregate leakage fields at 10 cm surrounding the device from all simultaneous transmitting coils are demonstrated to be less than 30% of the MPE limit.

## 2.4 Test Point Description



## 3 Calculation Result Of Maximum Conducted Power

**For Adapter Mode (Channel 1: 10% Load):**

| E-Field Measurement (10cm) | | | | | |
|---|---|---|---|---|---|
| EUT Side | Left | Right | Top | Bottom | Z-axis (Above) |
| Max E-field (V/m) | 3.26 | 2.09 | 2.25 | 1.98 | 3.81 |
| Limit 614 (V/m) | 614 | 614 | 614 | 614 | 614 |
| Margin (V/m) | -610.74 | -611.91 | -611.75 | -612.02 | -610.19 |
| 70% of the limit (V/m) | 429.8 | 429.8 | 429.8 | 429.8 | 429.8 |
| 70% of the Margin (V/m) | -427.518 | -428.337 | -428.225 | -428.414 | -427.133 |

| H-Field Measurement (10cm) | | | | | |
|---|---|---|---|---|---|
| EUT Side | Left | Right | Top | Bottom | Z-axis (Above) |
| Max H-field (A/m) | 0.584 | 0.9659 | 0.344 | 0.6641 | 1.1023 |
| Limit 1.63 (A/m) | 1.63 | 1.63 | 1.63 | 1.63 | 1.63 |
| Margin (A/m) | -1.046 | -0.6641 | -1.286 | -0.9659 | -0.5277 |
| 70% of the limit (A/m) | 1.141 | 1.141 | 1.141 | 1.141 | 1.141 |
| 70% of the Margin (A/m) | -0.7322 | -0.46487 | -0.9002 | -0.67613 | -0.36939 |

Measurements was made from all sides and the top of the primary/client pair, with the 10 cm measured from the center of the probe(s) to the edge of the device. The highest emission level was recorded.

**For Adapter Mode (Channel 2: 50% Load):**

| E-Field Measurement (10cm) | | | | | |
|---|---|---|---|---|---|
| EUT Side | Left | Right | Top | Bottom | Z-axis (Above) |
| Max E-field (V/m) | 3.18 | 2.06 | 2.15 | 2.03 | 3.79 |
| Limit 614 (V/m) | 614 | 614 | 614 | 614 | 614 |
| Margin (V/m) | -610.82 | -611.94 | -611.85 | -611.97 | -610.21 |
| 70% of the limit (V/m) | 429.8 | 429.8 | 429.8 | 429.8 | 429.8 |
| 70% of the Margin (V/m) | -427.574 | -428.358 | -428.295 | -428.379 | -427.147 |

| H-Field Measurement (10cm) | | | | | |
|---|---|---|---|---|---|
| EUT Side | Left | Right | Top | Bottom | Z-axis (Above) |
| Max H-field (A/m) | 0.562 | 0.9593 | 0.341 | 0.6609 | 1.0993 |
| Limit 1.63 (A/m) | 1.63 | 1.63 | 1.63 | 1.63 | 1.63 |
| Margin (A/m) | -1.068 | -0.6707 | -1.289 | -0.9691 | -0.5307 |
| 70% of the limit (A/m) | 1.141 | 1.141 | 1.141 | 1.141 | 1.141 |
| 70% of the Margin (A/m) | -0.7476 | -0.46949 | -0.9023 | -0.67837 | -0.37149 |

Measurements was made from all sides and the top of the primary/client pair, with the 10 cm measured from the center of the probe(s) to the edge of the device. The highest emission level was recorded.

**For Adapter Mode (Channel 3: 90% Load):**

| E-Field Measurement (10cm) | | | | | |
|---|---|---|---|---|---|
| EUT Side | Left | Right | Top | Bottom | Z-axis (Above) |
| Max E-field (V/m) | 3.4 | 2.18 | 2.39 | 2.08 | 3.84 |
| Limit 614 (V/m) | 614 | 614 | 614 | 614 | 614 |
| Margin (V/m) | -610.6 | -611.82 | -611.61 | -611.92 | -610.16 |
| 70% of the limit (V/m) | 429.8 | 429.8 | 429.8 | 429.8 | 429.8 |
| 70% of the Margin (V/m) | -427.42 | -428.274 | -428.127 | -428.344 | -427.112 |

| H-Field Measurement (10cm) | | | | | |
|---|---|---|---|---|---|
| EUT Side | Left | Right | Top | Bottom | Z-axis (Above) |
| Max H-field (A/m) | 0.588 | 0.9664 | 0.356 | 0.6656 | 1.1048 |
| Limit 1.63 (A/m) | 1.63 | 1.63 | 1.63 | 1.63 | 1.63 |
| Margin (A/m) | -1.042 | -0.6636 | -1.274 | -0.9644 | -0.5252 |
| 70% of the limit (A/m) | 1.141 | 1.141 | 1.141 | 1.141 | 1.141 |
| 70% of the Margin (A/m) | -0.7294 | -0.46452 | -0.8918 | -0.67508 | -0.36764 |

Measurements was made from all sides and the top of the primary/client pair, with the 10 cm measured from the center of the probe(s) to the edge of the device. The highest emission level was recorded.

**For Car Charger Mode (Channel 1: 10% Load):**

| E-Field Measurement (10cm) | | | | | |
|---|---|---|---|---|---|
| EUT Side | Left | Right | Top | Bottom | Z-axis (Above) |
| Max E-field (V/m) | 2.54 | 2.37 | 2.62 | 1.93 | 3.44 |
| Limit 614 (V/m) | 614 | 614 | 614 | 614 | 614 |
| Margin (V/m) | -611.46 | -611.63 | -611.38 | -612.07 | -610.56 |
| 70% of the limit (V/m) | 429.8 | 429.8 | 429.8 | 429.8 | 429.8 |
| 70% of the Margin (V/m) | -428.022 | -428.141 | -427.966 | -428.449 | -427.392 |

| H-Field Measurement (10cm) | | | | | |
|---|---|---|---|---|---|
| EUT Side | Left | Right | Top | Bottom | Z-axis (Above) |
| Max H-field (A/m) | 0.492 | 0.9043 | 0.3285 | 1.2027 | 1.4706 |
| Limit 1.63 (A/m) | 1.63 | 1.63 | 1.63 | 1.63 | 1.63 |
| Margin (A/m) | -1.138 | -0.7257 | -1.3015 | -0.4273 | -0.1594 |
| 70% of the limit (A/m) | 1.141 | 1.141 | 1.141 | 1.141 | 1.141 |
| 70% of the Margin (A/m) | -0.7966 | -0.50799 | -0.91105 | -0.29911 | -0.11158 |

Measurements was made from all sides and the top of the primary/client pair, with the 10 cm measured from the center of the probe(s) to the edge of the device. The highest emission level was recorded.

**For Car Charger Mode (Channel 2: 50% Load):**

| E-Field Measurement (10cm) | | | | | |
|---|---|---|---|---|---|
| EUT Side | Left | Right | Top | Bottom | Z-axis (Above) |
| Max E-field (V/m) | 2.36 | 2.27 | 2.35 | 1.81 | 3.29 |
| Limit 614 (V/m) | 614 | 614 | 614 | 614 | 614 |
| Margin (V/m) | -611.64 | -611.73 | -611.65 | -612.19 | -610.71 |
| 70% of the limit (V/m) | 429.8 | 429.8 | 429.8 | 429.8 | 429.8 |
| 70% of the Margin (V/m) | -428.148 | -428.211 | -428.155 | -428.533 | -427.497 |

| H-Field Measurement (10cm) | | | | | |
|---|---|---|---|---|---|
| EUT Side | Left | Right | Top | Bottom | Z-axis (Above) |
| Max H-field (A/m) | 0.488 | 0.9022 | 0.3281 | 1.1998 | 1.4695 |
| Limit 1.63 (A/m) | 1.63 | 1.63 | 1.63 | 1.63 | 1.63 |
| Margin (A/m) | -1.142 | -0.7278 | -1.3019 | -0.4302 | -0.1605 |
| 70% of the limit (A/m) | 1.141 | 1.141 | 1.141 | 1.141 | 1.141 |
| 70% of the Margin (A/m) | -0.7994 | -0.50946 | -0.91133 | -0.30114 | -0.11235 |

Measurements was made from all sides and the top of the primary/client pair, with the 10 cm measured from the center of the probe(s) to the edge of the device. The highest emission level was recorded.

**For Car Charger Mode (Channel 3: 90% Load):**

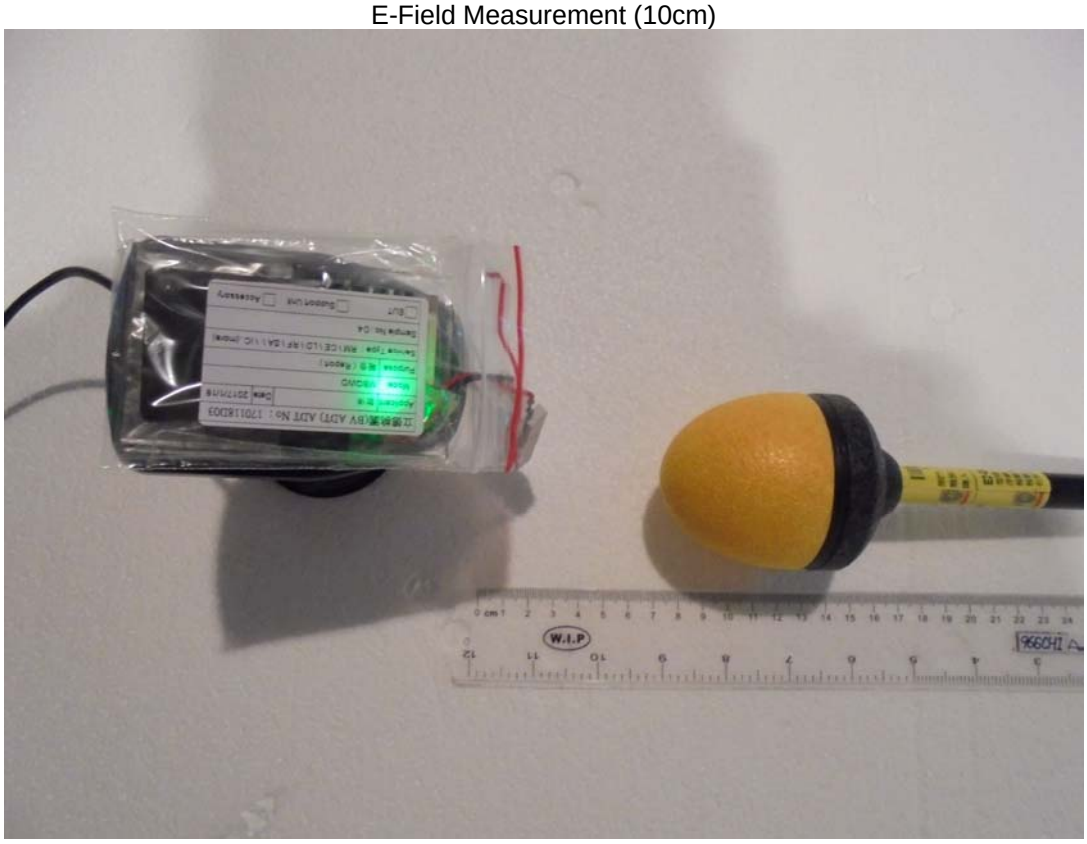
| E-Field Measurement (10cm) | | | | | |
|---|---|---|---|---|---|
| EUT Side | Left | Right | Top | Bottom | Z-axis (Above) |
| Max E-field (V/m) | 2.61 | 2.45 | 2.56 | 1.99 | 3.47 |
| Limit 614 (V/m) | 614 | 614 | 614 | 614 | 614 |
| Margin (V/m) | -611.39 | -611.55 | -611.44 | -612.01 | -610.53 |
| 70% of the limit (V/m) | 429.8 | 429.8 | 429.8 | 429.8 | 429.8 |
| 70% of the Margin (V/m) | -427.973 | -428.085 | -428.008 | -428.407 | -427.371 |

| H-Field Measurement (10cm) | | | | | |
|---|---|---|---|---|---|
| EUT Side | Left | Right | Top | Bottom | Z-axis (Above) |
| Max H-field (A/m) | 0.496 | 0.9056 | 0.3296 | 1.2032 | 1.4736 |
| Limit 1.63 (A/m) | 1.63 | 1.63 | 1.63 | 1.63 | 1.63 |
| Margin (A/m) | -1.134 | -0.7244 | -1.3004 | -0.4268 | -0.1564 |
| 70% of the limit (A/m) | 1.141 | 1.141 | 1.141 | 1.141 | 1.141 |
| 70% of the Margin (A/m) | -0.7938 | -0.50708 | -0.91028 | -0.29876 | -0.10948 |

Measurements was made from all sides and the top of the primary/client pair, with the 10 cm measured from the center of the probe(s) to the edge of the device. The highest emission level was recorded.

## 4 Photographs of the Test Configuration

E-Field Measurement (10cm)



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