# RF EXPOSURE REPORT

**FOR**

**Wireless Charger**

**MODEL NUMBER: RWC826USB**

**REPORT NUMBER: R11447116-E1**

**ISSUE DATE: 2017-05-12**

**FCC ID: YV8-RWC826USB**

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## Revision History

| Ver. | Issue Date | Revisions | Revised By |
|---|---|---|---|
| 1 | 2017-05-12 | Initial Issue | Richard Jankovics |

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# 1. ATTESTATION OF TEST RESULTS

| | |
|---|---|
| **COMPANY NAME:** | Pass & Seymour<br>50 Boyd Avenue<br>Syracuse, NY 13209 USA |
| **EUT DESCRIPTION:** | Qi Wireless Charger |
| **MODEL:** | RWC826USB |
| **SERIAL NUMBER:** | Sample # 11 |
| **DATE TESTED:** | 2017-03-06 – 2017-03-07 |

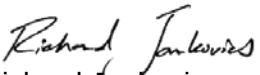
UL LLC measured the RF Exposure of the above equipment in accordance with the requirements set forth in the above standards, using test results reported in the test report documents referenced below and/or documentation furnished by the applicant. All indications of Pass/Fail in this report are opinions expressed by UL LLC based on interpretations of these calculations. The results show that the equipment is capable of demonstrating compliance with the requirements as documented in this report.

**Note:** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL LLC and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL LLC will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the US Government.

Approved & Released
For UL LLC By:

Jeff Moser
EMC Program Manager
UL – Consumer Technology Division

Prepared By:



Richard Jankovics
WiSE Engineer
UL – Consumer Technology Division

# 2. TEST METHODOLOGY

All measurements were made in accordance to par. 3 of KDB 680106 D01 v02 RF Exposure Wireless Charging Applications.

# 3. REFERENCES

All measurements were made as documented in this test report UL LLC

# 4. FACILITIES

The test sites and measurement facilities used to collect data are located at 12 Laboratory Dr., Research Triangle Park, NC 27709, USA and 2800 Suite B, Perimeter Park Drive, Morrisville, NC 27560.

| 12 Laboratory Dr., RTP, NC 27709 |
|---|
| ☐ Chamber A |
| ☐ Chamber C |

| 2800 Suite B Perimeter Park Dr., Morrisville, NC 27560 |
|---|
| ☒ Chamber NORTH |
| ☒ Chamber SOUTH |

# 5. CALIBRATION AND UNCERTAINTY

## 5.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

## 5.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

| Test | Equipment | Uncertainty k=2 |
|---|---|---|
| Magnetic Field | Exposure Level Meter | +/- 1.1 dB |
| Electric Field | RF Field Probe | +/- 1.0 dB |

Uncertainty figures are valid to a confidence level of 95%.

# 6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

| Test Equipment List | | | | | |
|---|---|---|---|---|---|
| Description | Manufacturer | Model | Eqp. No. | Cal Date | Cal Due |
| RF Field Probe | Holiday | HI-4422 | AT0009 | 2016-06-20 | 2017-06-30 |
| Exposure Level Meter | Narda | ELT-400 | 34950 | 2016-08-02 | 2017-08-31 |

# 7. EQUIPMENT UNDER TEST

## 7.1. DESCRIPTION OF EUT

The EUT is a Wireless Qi Charger with dual identical charging coils (used for alignment, only one coil active at a time), one USB 5V output (maximum 0.5 A), and a dual 120V outlet. Device is installed in a standard wall-mount orientation for testing.

**GENERAL INFORMATION**

| | |
|---|---|
| Power Requirements | 120V/60Hz |
| Frequency Range used for Charging | 0.110-0.205MHz |

**SUPPORT EQUIPMENT & PERIPHERALS**

| Support Equipment List | | | | |
|---|---|---|---|---|
| **Description** | **Manufacturer** | **Model** | **Serial Number** | **FCC ID** |
| Qi Client | Samsung | SM-G930U (Galaxy S7) | R58HA07593X | A3LSMG930US |

**I/O CABLES**

| I/O Cable List | | | | | | |
|---|---|---|---|---|---|---|
| **Cable No** | **Port** | **# of identical ports** | **Connector Type** | **Cable Type** | **Cable Length (m)** | **Remarks** |
| 1 | AC Input | 1 | Screw terminal | 3-wire | 1 | None. |

## 7.1. SOFTWARE AND FIRMWARE

Firmware installed on sample: Rev 0.9.

## 7.2. WORST-CASE CONFIGURATION AND MODE

E AND H Field measurements were performed at a distance of 10cm laterally from the edges of the EUT.

The following modes were investigated with the Qi charger under the following conditions:

Qi client at 0%-charge state.
Qi client at 50% charge state.
Qi client at 100% charge state.
Standby (No Qi client on charging pad.)

## 7.3. MODIFICATIONS

No modifications were made during testing.

# 8. MAXIMUM PERMISSIBLE RF EXPOSURE

## 8.1. FCC RULES

§1.1310 The criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio-frequency (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 ($mW/cm^2$) | Averaging time (minutes) |
|---|---|---|---|---|
| **(B) Limits for General Population/Uncontrolled Exposure** | | | | |
| 0.3-1.34 | 614 | 1.63 | *100 | 30 |

f = frequency in MHz

* = Plane-wave equivalent power density

# 9. RF EXPOSURE RESULTS

## Electric Field Strength and Magnetic Field Strength

Test Operator: Mark Nolting Date: 2017-03-06

| Exposure with Qi Client at 0% charge | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Position** | **Leteral Distance from EUT (cm)** | **Electric Field Strength (V/m)** | **FCC Limit (V/m)** | **Magnetic Field Strength (uT)** | **Magnetic Field Strength (A/m)** | **FCC Limit (A/m)** | **IC Limit (A/m)** |
| Top | 10 | 2.58 | 614 | 0.159 | 0.13 | 1.63 | 3.56 |
| Left | 10 | 1.64 | 614 | 0.063 | 0.05 | 1.63 | 3.56 |
| Right | 10 | 2.46 | 614 | 0.123 | 0.10 | 1.63 | 3.56 |
| Front | 10 | 3.79 | 614 | 0.197 | 0.16 | 1.63 | 3.56 |
| Back | 10 | 5.29 | 614 | 0.586 | 0.47 | 1.63 | 3.56 |
| Bottom | 10 | 2.59 | 614 | 0.109 | 0.09 | 1.63 | 3.56 |
| Exposure in Standby (No Qi client on charging pad.) | | | | | | | |
| **Position** | **Leteral Distance from EUT (cm)** | **Electric Field Strength (V/m)** | **FCC Limit (V/m)** | **Magnetic Field Strength (uT)** | **Magnetic Field Strength (A/m)** | **FCC Limit (A/m)** | **IC Limit (A/m)** |
| Top | 10 | 2.42 | 614 | 0.141 | 0.11 | 1.63 | 3.56 |
| Left | 10 | 1.62 | 614 | 0.044 | 0.03 | 1.63 | 3.56 |
| Right | 10 | 1.53 | 614 | 0.087 | 0.07 | 1.63 | 3.56 |
| Front | 10 | 2.71 | 614 | 0.605 | 0.48 | 1.63 | 3.56 |
| Back | 10 | 2.79 | 614 | 0.355 | 0.28 | 1.63 | 3.56 |
| Bottom | 10 | 1.75 | 614 | 0.072 | 0.06 | 1.63 | 3.56 |

| Test Operator: Mark Nolting | | | | | | Date: 2017-03-07 | |
|---|---|---|---|---|---|---|---|
| Exposure with Qi Client at 50% charge | | | | | | | |
| **Position** | **Leteral Distance from EUT (cm)** | **Electric Field Strength (V/m)** | **FCC Limit (V/m)** | **Magnetic Field Strength (uT)** | **Magnetic Field Strength (A/m)** | **FCC Limit (A/m)** | **IC Limit (A/m)** |
| Top | 10 | 2.86 | 614 | 0.170 | 0.14 | 1.63 | 3.56 |
| Left | 10 | 1.36 | 614 | 0.062 | 0.05 | 1.63 | 3.56 |
| Right | 10 | 2.49 | 614 | 0.170 | 0.14 | 1.63 | 3.56 |
| Front | 10 | 3.79 | 614 | 0.208 | 0.17 | 1.63 | 3.56 |
| Back | 10 | 5.54 | 614 | 0.607 | 0.48 | 1.63 | 3.56 |
| Bottom | 10 | 2.37 | 614 | 0.126 | 0.10 | 1.63 | 3.56 |
| Exposure with Qi Client at 100% charge | | | | | | | |
| **Position** | **Leteral Distance from EUT (cm)** | **Electric Field Strength (V/m)** | **FCC Limit (V/m)** | **Magnetic Field Strength (uT)** | **Magnetic Field Strength (A/m)** | **FCC Limit (A/m)** | **IC Limit (A/m)** |
| Top | 10 | 1.54 | 614 | 0.043 | 0.03 | 1.63 | 3.56 |
| Left | 10 | 1.47 | 614 | 0.036 | 0.03 | 1.63 | 3.56 |
| Right | 10 | 1.24 | 614 | 0.039 | 0.03 | 1.63 | 3.56 |
| Front | 10 | 2.59 | 614 | 0.046 | 0.04 | 1.63 | 3.56 |
| Back | 10 | 3.92 | 614 | 0.097 | 0.08 | 1.63 | 3.56 |
| Bottom | 10 | 1.90 | 614 | 0.039 | 0.03 | 1.63 | 3.56 |