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RF Exposure Evaluation Report

Report No. : CQASZ20180300027EW-02

Applicant: Shenzhen Shuaixian Electronic Equipment Co., Ltd.

Address of Applicant: NO.10 Lane3, Longxing Road, Dakang Long Village, Henggang Town, Longgang District, Shenzhen, China

Manufacturer: Shenzhen Shuaixian Electronic Equipment Co., Ltd.

Address of Manufacturer: NO.10 Lane3, Longxing Road, Dakang Long Village, Henggang Town, Longgang District, Shenzhen, China

Factory: Shenzhen Shuaixian Electronic Equipment Co., Ltd.

Address of Factory: NO.10 Lane3, Longxing Road, Dakang Long Village, Henggang Town, Longgang District, Shenzhen, China

Equipment Under Test (EUT):

Product: Bluetooth headset

Model No.: SX-815, SX-815A

Test Model No.: SX-815

Brand Name: SUICEN

FCC ID: UHBSX-815

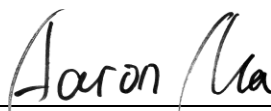
Standards: 47 CFR Part 1.1307
47 CFR Part 2.1093
KDB447498D01 General RF Exposure Guidance v06

Date of Test: 2018-03-20 to 2018-03-30

Date of Issue: 2018-03-30

Test Result : PASS*


Tested By:


(Aaron Ma)

Reviewed By:


(Owen Zhou)

Approved By:


(Jack Ai)



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

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CQA, this report can't be reproduced except in full.

2 Version

Revision History Of Report

| Report No. | Version | Description | Issue Date |
|-----------------------|---------|----------------|------------|
| CQASZ20180100027EW-02 | Rev.01 | Initial report | 2018-03-30 |

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4 General Information

4.1 Client Information

| | |
|--------------------------|--|
| Applicant: | Shenzhen Shuaixian Electronic Equipment Co., Ltd. |
| Address of Applicant: | NO.10 Lane3, Longxing Road, Dakang Long Village, Henggang Town, Longgang District, Shenzhen, China |
| Manufacturer: | Shenzhen Shuaixian Electronic Equipment Co., Ltd. |
| Address of Manufacturer: | NO.10 Lane3, Longxing Road, Dakang Long Village, Henggang Town, Longgang District, Shenzhen, China |
| Factory: | Shenzhen Shuaixian Electronic Equipment Co., Ltd. |
| Address of Factory: | NO.10 Lane3, Longxing Road, Dakang Long Village, Henggang Town, Longgang District, Shenzhen, China |

4.2 General Description of EUT

| | |
|-----------------------|---|
| Product Name: | Bluetooth headset |
| Model No.: | SX-815, SX-815A |
| Trade Mark: | SUICEN |
| Hardware Version: | A0 |
| Software Version: | A0 |
| Operation Frequency: | 2402MHz~2480MHz |
| Bluetooth Version: | V4.1 |
| Modulation Technique: | Frequency Hopping Spread Spectrum(FHSS) |
| Modulation Type: | GFSK, $\pi/4$ DQPSK, 8DPSK |
| Number of Channel: | 79 |
| Hopping Channel Type: | Adaptive Frequency Hopping systems |
| Sample Type: | portable production |
| Test Software of EUT: | Blue test 3 (manufacturer declare) |
| Antenna Type: | Ceramic antenna |
| Antenna Gain: | 2.14dBi |
| Power Supply: | lithium battery: DC3.7V, Charge by DC5.0V |

Note:

1. All model: SX-815, SX-815A

Only the model SX-815 was tested, since the electrical circuit design, layout, components used and internal wiring were identical for the above models, with difference being color of appearance and model name.

5 SAR Evaluation

5.1 RF Exposure Compliance Requirement

5.1.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06

4.3.1. Standalone SAR test exclusion considerations

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

5.1.2 Limits

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

$$\left[\frac{\text{max. power of channel, including tune-up tolerance, mW}}{[\sqrt{f(\text{GHz})}]} \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where} \right.$$

$f(\text{GHz})$ is the RF channel transmit frequency in GHz

Power and distance are rounded to the nearest mW and mm before calculation¹⁷

The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion

5.1.3 EUT RF Exposure

For BT:

Measurement Data

| GFSK mode | |
|--------------------|-------------------------|
| Test channel | Peak Output Power (dBm) |
| Lowest | 0.22 |
| Middle | 2.01 |
| Highest | 2.46 |
| $\pi/4$ DQPSK mode | |
| Test channel | Peak Output Power (dBm) |
| Lowest | -1.91 |
| Middle | 0.65 |
| Highest | 1.70 |
| 8DPSK mode | |
| Test channel | Peak Output Power (dBm) |
| Lowest | -1.60 |
| Middle | 1.21 |
| Highest | 2.32 |

The Max Conducted Peak Output Power is 2.46dBm in highest channel(2.480GHz);

The best case gain of the antenna is 2.14dBi.

$EIRP = 2.46dBm + 2.14dBi = 4.6dBm$

4.6dBm logarithmic terms convert to numeric result is nearly 2.884mW

According to the formula. calculate the EIRP test result:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot \sqrt{f(\text{GHz})}$

General RF Exposure = $(2.884mW / 5 \text{ mm}) \times \sqrt{2.480GHz} = 0.91$ ①

SAR requirement:

$S = 3.0$

②;

① < ②.

So the SAR report is not required.

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20180300027EW-01