



Shenzhen Huaxia Testing Technology Co., Ltd

1F., Block A of Tongsheng Technology Building, Huahui Road, Dalang Street, Longhua District, Shenzhen, China

Telephone: +86-755-26648640

Fax: +86-755-26648637

Website: www.cqa-cert.com

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RF Exposure Evaluation Report

Report No. : CQASZ20190900928E-02

Applicant: Shenzhen Shuaixian Electronic Equipment Co., Ltd

Address of Applicant: NO.10, Lane 3, Longxing Road, Dakang Long Village, Henggang Town, Shenzhen City, China

Equipment Under Test (EUT):

Product: Neckband Portable Wireless Speaker

Model No.: SX-822, BTSP-NB05

Test Model No.: SX-822

Brand Name: SUICEN

FCC ID: UHB-SX822

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

Date of Receipt: 2019-09-17

Date of Test: 2019-09-17 to 2019-09-25

Date of Issue: 2019-09-25

Test Result : PASS*

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

Tested By:

Tom Chen

(Tom chen)

Reviewed By:

Sheek Luo

(Sheek Luo)

Approved By:

Jack Ai

(Jack Ai)



1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20190900928E-02	Rev.01	Initial report	2019-09-25

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3 General Information

3.1 Client Information

Applicant:	Shenzhen Shuaixian Electronic Equipment Co., Ltd
Address of Applicant:	NO.10, Lane 3, Longxing Road, Dakang Long Village, Henggang Town, Shenzhen City, China
Manufacturer:	Shenzhen Shuaixian Electronic Equipment Co., Ltd
Address of Manufacturer:	NO.10, Lane 3, Longxing Road, Dakang Long Village, Henggang Town, Shenzhen City, China

3.2 General Description of EUT

Product Name:	Neckband Portable Wireless Speaker
Model No.:	SX-822, BTSP-NB05
Test Model No.:	SX-822
Trade Mark:	SUICEN
Hardware Version:	V1.0
Software Version:	A1
Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	V5.0
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)
Modulation Type:	GFSK, $\pi/4$ DQPSK, 8DPSK
Transfer Rate:	1Mbps/2Mbps/3Mbps
Number of Channel:	79
Hopping Channel Type:	Adaptive Frequency Hopping systems
Product Type:	☐ Mobile ☒ Portable ☐ Fix Location
Test Software of EUT:	Blue test3 (manufacturer declare)
Antenna Type:	PCB antenna
Antenna Gain:	0dBi
Power Supply:	lithium battery:DC3.7V, Charge by DC5.0V

Model No.: SX-822, BTSP-NB05

Only the model SX-822 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.

4 SAR Evaluation

4.1 RF Exposure Compliance Requirement

4.1.1 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.

4.1.2 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:

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

$f(\text{GHz})$ 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

4.1.3 EUT RF Exposure

Measurement Data

GFSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	3.060	2.5±1	3.5	2.239
Middle(2441MHz)	5.060	4.5±1	5.5	3.548
Highest(2480MHz)	5.440	4.5±1	5.5	3.548
π/4DQPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	1.920	1.0±1	2.0	1.585
Middle(2441MHz)	3.910	3.0±1	4.0	2.512
Highest(2480MHz)	4.300	3.5±1	4.5	2.818
8DPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	2.520	2.0±1	3.0	1.995
Middle(2441MHz)	4.380	3.5±1	4.5	2.818
Highest(2480MHz)	4.820	4.0±1	5.0	3.162

Worst case: 8DPSK						
Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune- up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest (2402MHz)	3.060	2.5±1	3.5	2.239	0.694	3.0
Middle (2441MHz)	5.060	4.5±1	5.5	3.548	1.109	
Highest (2480MHz)	5.440	4.5±1	5.5	3.548	1.118	
Conclusion: the calculated value ≤3.0, SAR is exempted.						

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20190900928E-01