

RF EXPOSURE EVALUATION REPORT

Application No.: GZCR2210001361HS
Applicant: StimScience Inc.
Address of Applicant: 2115 Milvia St, Suite 400, Berkeley, CA
Manufacturer: StimScience Inc.
Address of Manufacturer: 2115 Milvia St, Suite 400, Berkeley, CA
Factory: Shenzhen Esino Technology Co., Ltd
Address of Factory: Room 1610, Building T4, Fangda City, Taoyuan Street, Nanshan District, Shenzhen City, Guangdong Province, China

Equipment Under Test (EUT):
EUT Name: Somnee is a consumer wearable device that is intended to be a sleep aid.
Model No.: PUAWLZOV, PUAWLZOW, PUAWLZOX ♣
 ♣ Please refer to section 2 of this report which indicates which item was actually tested and which were electrically identical.

Trade Mark: Somnee
Standard(s) : 47 CFR Part 1.1307
 KDB447498 D01 General RF Exposure Guidance v06

Date of Receipt: 2022-10-28
Date of Evaluation: 2022-12-07
Date of Issue: 2022-12-16

Evaluation Result:	Pass*
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* In the configuration evaluated, the EUT complied with the standards specified above.



Ricky Liu
Manager



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Revision Record			
Version	Report No.	Date	Remark
01	GZCR221000136103	2022-12-16	Original

Authorized for issue by			
			
		Michael Huang/Project Engineer	
			
		Vico Cui/Reviewer	

2 Evaluation Summary

Item	Standard	Method	Requirement	Result
RF Exposure	KDB447498 D01 General RF Exposure Guidance v06	KDB447498 D01 General RF Exposure Guidance v06	KDB447498 D01 General RF Exposure Guidance v06	Pass

Note:

E.U.T./EUT means Equipment Under Test.

Pass means the test result passed the test standard requirement, please find the detailed decision rule in the report relative section.

♣ Declaration of EUT Family Grouping:

Model No.: PUAWLZOV, PUAWLZOW, PUAWLZX

According to the declaration from the applicant, the electrical circuit design, layout, components used and internal wiring were identical for all models, with only difference on model name.

Therefore, only one model **PUAWLZOV** was evaluated in this report.

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4 General Information

4.1 Details of E.U.T.

Power supply: DC 3.85V powered by internal rechargeable Li-ion battery as follow:
Model: 751836; DC 3.85V, 450mAh/1.732Wh.

Cable(s): About 1.6m unscreened DC cable between the output terminal of the adapter and the type-C connector.

Operation Frequency: 802.11b/g/n(HT20): 2412MHz to 2462MHz
BT LE: 2402MHz to 2480MHz

Modulation Type: 802.11b: DSSS (CCK, DQPSK, DBPSK), 802.11g/n: OFDM (64QAM, 16QAM, QPSK, BPSK)
BT LE: GFSK

Channel Spacing: 802.11b/g/n(HT20):5MHz
BT LE: 2 MHz

Number of Channels: 802.11b/g/n(HT20): 11
BT LE: 40

Antenna Gain: 1.4 dBi

4.2 Evaluating Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou Branch EMC Laboratory,
198 Kezhu Road, Sciencetech Park, Guangzhou Economic & Technology Development District,
Guangzhou, China 510663

Tel: +86 20 82155555

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No tests were sub-contracted.



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4.3 Facility

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

● ACMA

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory can also perform testing for the Australian/New Zealand Regulatory Compliance Mark (RCM).

● SGS UK(Certificate No.: 32), SGS-TUV SAARLAND and SGS-FIMKO

Have approved SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory as a supplier of EMC TESTING SERVICES and SAFETY TESTING SERVICES.

● FCC Recognized Accredited Test Firm(Registration No.: 486818)

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been accredited and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Designation Number: CN5016, Test Firm Registration Number: 486818.

● ISED (Registration No.: 4620B, CAB identifier: CN0052)

SGS-CSTC Standards Technical Services Co., Ltd., has been registered by Innovation Science and Economic Development Canada for Wireless Device Testing laboratories to test to Canadian radio equipment requirements. Registration No. 4620B, CAB identifier: CN0052.

● VCCI (Registration No.: R-12460, C-12584, G-20107 and T-11179)

The 10m Semi-anechoic chamber, 966 Anechoic Chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-12460, C-12584, G-20107 and T-11179 respectively.

● CBTL (Lab Code: TL129)

SGS-CSTC Standards Technical Services Co., Ltd., E&E Laboratory has been assessed and fully comply with the requirements of ISO/IEC 17025:2017, the Basic Rules, IECEE 01 and Rules of procedure IECEE 02, and the relevant IECEE CB-Scheme Operational documents.

4.4 Deviation from Standards

None

4.5 Abnormalities from Standard Conditions

None



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5 Technical Requirements Specification

5.1 RF Exposure Evaluation

5.1.1 Limit & Test Method

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:

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

5.1.2 Conclusion

For BT BLE

The Max Conducted Peak Output Power is -4.16 dBm on the highest channel 2.480 GHz

-4.16 dBm logarithmic terms convert to numeric result is nearly 0.38 mW

According to the formula. calculate the test exclusion thresholds:

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

General RF Exposure = $(0.38 \text{ mW} / 5 \text{ mm}) \times \sqrt{2.480 \text{ GHz}} = 0.121$ (1)

SAR requirement:

$S = 3.0$ (2)

(1) < (2)

For 2.4G Wi-Fi

The Max Conducted Peak Output Power is 6.08 dBm on the highest channel 2.462 GHz

6.08 dBm logarithmic terms convert to numeric result is nearly 4.055 mW

According to the formula. calculate the test exclusion thresholds:

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

General RF Exposure = $(4.055 \text{ mW} / 5 \text{ mm}) \times \sqrt{2.462 \text{ GHz}} = 1.27$ (1)

SAR requirement:

$S = 3.0$ (2)

(1) < (2)

BT and Wi-Fi can not be transmitted at the same time, so the SAR report is not required.

Note: Refer to report No. GZCR221000136102 for EUT test Max Conducted Peak Output Power value.

6 EUT Constructional Details (EUT Photos)

Refer to Appendix - External and Internal Photos for GZCR2210001361HS

- End of the Report -



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