RF EXPOSURE EVALUATION REPORT

Application No.:	GZCR2405000513AT
Applicant:	Guilin Gemred Sensor Technology Co., LTD
Address of Applicant:	No.D-08, Information Industrial Park, Chaoyang Road Qixing District, Guilin City, Guangxi zhuang Autonomous Region
Manufacturer:	Guilin Gemred Sensor Technology Co., LTD
Address of Manufacturer:	No.D-08, Information Industrial Park, Chaoyang Road Qixing District, Guilin City, Guangxi zhuang Autonomous Region
Factory:	Guilin Gemred Sensor Technology Co., LTD
Address of Factory:	No.D-08, Information Industrial Park, Chaoyang Road Qixing District, Guilin City, Guangxi zhuang Autonomous Region
Product Name:	Machine leveler ML200
Model No.:	82427
Trade Mark:	Gemred
Standard(s) :	KDB 447498 D01 V06
Date of Receipt:	2024-05-20
Date of Evaluation:	2024-06-05 to 2024-06-05
Date of Issue:	2024-06-14
Evaluation Result:	**Pass***

* 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	GZCR240500051303	2024-06-14	Original

Authorized for issue by:				
		Key Liang **Key Liang/Project Engineer**		
		Vico Cui **Vico Cui/Reviewer**		

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2 Evaluation Summary

Item	Standard	Method	Requirement	Result
RF Exposure	KDB 447498 D01 V06	KDB 447498 D01 V06	KDB 447498 D01 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.

3 Contents

4 General Information

4.1 Details of E.U.T.

Power supply:	Battery operation: DC 4.5V = 3 x 1.5V with size of "AAA" batteries.
Cable(s):	None.
Antenna Number:	2 (one for BLE and the other for 2.4GHz Proprietary)
BLE:	
Operation Frequency:	2402MHz to 2480MHz
Modulation Type:	GFSK
Number of Channels:	79
Channel Spacing:	1MHz
Antenna Type:	Integral Antenna
Antenna Gain:	0.89 dBi according to the antenna specification
2.4GHz Proprietary:	
Operation Frequency:	2420MHz to 2465MHz
Modulation Type:	GFSK
Number of Channels:	46
Antenna Type:	Integral Antenna
Antenna Gain:	0.89 dBi according to the antenna specification
Channel Spacing:	1MHz

Remark: The information in this section is provided by the applicant or manufacturer, SGS is not liable to the accuracy, suitability, reliability or/and integrity of the information.

4.2 Evaluating Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou Branch EMC Laboratory,

No.198, Kezhu Road, Science City, Economic & Technological Development Area, Guangzhou, Guangdong, China 510663

Tel: +86 20 82155555

No tests were sub-contracted.

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 General Description of Applied Standards

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.

5.2 RF Exposure Evaluation

5.2.1 Limit & Test Method

KDB447498D01 General RF Exposure Guidance v06

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:

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] · [√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation[17]
- 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

5.2.2 Conclusion

The BLE and 2.4GHz Proprietary function can be transmitted simultaneously, so

For BLE

The Maximum Conducted Peak Output Power is -4.16 dBm in channel 2.402 GHz;
-4.16 dBm logarithmic terms convert to numeric result is nearly 0.384 mW
[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] ·[√f(GHz)]
General RF Exposure = (0.384 mW / 5 mm) x √2.402 GHz =**0.119** ① ;
SAR requirement: S = **3.0** ② ;
∵ ① < ②.
∴ the SAR report is not required.

For 2.4GHz Proprietary
The Maximum Conducted Peak Output Power is -1.37 dBm in channel 2.440 GHz;
-1.37 dBm logarithmic terms convert to numeric result is nearly 0.729 mW
[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] ·[√f(GHz)]
General RF Exposure = (0.729 mW / 5 mm) x √2.440 GHz =**0.228** ① ;
SAR requirement: S = **3.0** ② ;
∵ ① < ②.
∴ the SAR report is not required.

The result is 0.119/3+0.228/3=0.116 <1, so the SAR report is not required.

Note: Refer to report No. GZCR240500051302 for EUT test Max Conducted Peak Output Power value.

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6 EUT Constructional Details (EUT Photos)

Refer to External and Internal Photos for GZCR2405000513AT

- End of the Report -

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