

RF EXPOSURE EVALUATION REPORT

Application No.: GZCR2103000025AT
Applicant: SOLA-Messwerkzeuge GmbH
Address of Applicant: Unteres Tobel 25, 6840Götzis, Austria
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

Equipment Under Test (EUT):

FCC ID: 2AW48-017302XSO

EUT Name: BIG RED digital

Model No.: 017308XSO, 017314XSO, 017364XSO, 017358XSO, 017302XSO, 017316XSO ♣

♣ Please refer to section 2 of this report which indicates which item was actually tested and which were electrically identical.

Trade mark: SOLA

Standard(s) : 47 CFR Part 1.1307, Part 2.1093, KDB 447498

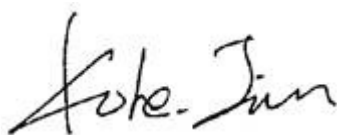
Date of Receipt: 2021-03-10

Date of Test: 2021-03-22

Date of Issue: 2021-03-24

Test Result:	Pass*
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* In the configuration tested, the EUT complied with the standards specified above.



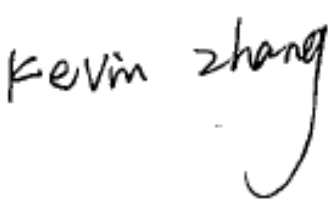
Kobe Jian
EMC Laboratory Manager



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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2021-03-24		Original

Authorized for issue by			
Tested By			
	Kevin Zhang/Project Engineer		
Reviewed By			
	Ricky Liu/Reviewer		



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3 General Information

3.1 Details of E.U.T.

Power supply: 3 x size "AAA" 1.5V batteries.
Operation Frequency: 2402MHz to 2480MHz
Modulation Type: GFSK
Number of Channels: 40
Channel Spacing: 2MHz
Antenna Type: PCB Antenna
Antenna Gain: 0dBi declared by applicant.
Hardware: GR2418GNB V1.4
Software: V01
S/N: 20190519
Test Software: nrfghostudio.exe
Power Setting: 0dBm can't be changed by user

3.2 Test Location

All tests were performed at:
SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch
No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, Guangdong, China.
518057.
Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

3.3 Test Facility

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

• **CNAS (No. CNAS L2929)**

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

• **A2LA (Certificate No. 3816.01)**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

• **VCCI**

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

• **FCC –Designation Number: CN1178**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1178. Test Firm Registration Number: 406779.

• **Innovation, Science and Economic Development Canada**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.



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3.4 Deviation from Standards

None

3.5 Abnormalities from Standard Conditions

None



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4 Technical Requirements Specification

4.1 General Description of Applied Standards

4.2 RF Exposure Evaluation

4.2.1 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

4.2.2 Test Data and Test Result

The Max conducted output power is -0.82 dBm in Highest channel (2.480 GHz);

-0.82 dBm logarithmic terms convert to numeric result is nearly 0.828 mW

According to the formula. calculate the test result:

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

General RF Exposure = $(0.828 \text{ mW} / 5 \text{ mm}) \times \sqrt{2.480 \text{ GHz}} = 0.26$ ①

SAR requirement:

$S = 3.0$ ② ;

① $<$ ②.

So the SAR report is not required.



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5 EUT Constructional Details (EUT Photos)

Refer to Appendix - Photographs of EUT Constructional Details for GZCR2103000025AT

- End of the Report -



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