



**SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch**

No. 1 Workshop, M-10, Middle section, Science & Technology Park,
Shenzhen, Guangdong, China 518057

Telephone: +86 (0) 755 2601 2053
Fax: +86 (0) 755 2671 0594
Email: ee.shenzhen@sgs.com

Report No.: SZEM171001106305

Page: 1 of 7

SAR Evaluation Report

Application No.: SZEM1710011063CR
Applicant: ACOUSTMAX INTERNATIONAL CO., LTD.
Address of Applicant: Unit D16/F Cheuk Nang Plaza 250 Henessy Road Wanchai HongKong
Manufacturer: ACOUSTMAX INTERNATIONAL CO., LTD.
Address of Manufacturer: Unit D16/F Cheuk Nang Plaza 250 Henessy Road Wanchai HongKong
Factory: Arts Electronics Co., Ltd.
Address of Factory: NO. 1, SHANGXING LU, SHANGJIAO COMMUNITY, CHANGAN TOWN, DONGGUAN CITY, GUANGDONG PROVINCE, CHINA

Equipment Under Test (EUT):

EUT Name: ROCKIN' ROLLER 4 SPEAKER
Model No.: ROCKIN ROLLER 4 (RR4), RR4-1, RR4 PRO, RR4 mini, RR4, RR5, RR6, RR7, RR8 ♣

♣ Please refer to section 4 of this report which indicates which model was actually tested and which were electrically identical.

FCC ID: 2AAINYS1350
Trade mark: Monster
Standard(s) : 47 CFR Part 1.1307
47 CFR Part 2.1093
KDB447498D01 General RF Exposure Guidance v06

Date of Receipt: 2017-10-30
Date of Test: 2017-11-13 to 2017-11-24
Date of Issue: 2017-11-29

Test Result:	Pass*
---------------------	--------------

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

Authorized Signature:



Jack Zhang
EMC Laboratory Manager



The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.



2 Version

Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2017-11-29		Original

Authorized for issue by:				
				
		Harry Wu /Project Engineer		
				
		Eric Fu /Reviewer		



3 Contents

	Page
1 COVER PAGE	1
2 VERSION.....	2
3 CONTENTS.....	3
4 GENERAL INFORMATION	4
4.1 GENERAL DESCRIPTION OF EUT	4
4.2 TEST LOCATION	5
4.3 TEST FACILITY	5
4.4 DEVIATION FROM STANDARDS	5
4.5 ABNORMALITIES FROM STANDARD CONDITIONS	5
4.6 OTHER INFORMATION REQUESTED BY THE CUSTOMER	5
5 SAR EVALUATION.....	6
5.1 RF EXPOSURE COMPLIANCE REQUIREMENT.....	6
5.1.1 <i>Standard Requirement</i>	6
5.1.2 <i>Limits</i>	6
5.1.3 <i>EUT RF Exposure</i>	6-7



4 General Information

4.1 General Description of EUT

Power supply:	Input: AC 120V 60Hz Internal rechargeable battery: DC 12V 9Ah
Cable:	AC Cable: 200cm, Unshielded Microphone cable: 220cm unshielded
BT Classic:	
Frequency Range:	2402MHz to 2480MHz
Bluetooth Version:	V4.2 Classic mode
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)
Modulation Type:	GFSK, $\pi/4$ DQPSK, 8DPSK
Number of Channels:	79
Hopping Channel Type:	Adaptive Frequency Hopping systems
Antenna Type:	Integral
Antenna Gain:	0dBi
BLE1:	
Frequency Range:	2402MHz to 2480MHz
Bluetooth Version:	V4.2BLE mode
Modulation Type:	GFSK
Number of Channels:	40
Antenna Type:	Integral
Antenna Gain:	0dBi
BLE2:	
Frequency Range:	2402MHz to 2480MHz
Bluetooth Version:	V4.0
Modulation Type:	GFSK
Number of Channels:	40
Antenna Type:	Integral
Antenna Gain:	0dBi
Frequency Range:	2402MHz to 2480MHz

Remark:

Model No.: ROCKIN ROLLER 4 (RR4), RR4-1, RR4 PRO, RR4 mini, RR4, RR5, RR6, RR7, RR8
Only the model ROCKIN ROLLER 4 (RR4) was tested, since the electrical circuit design, layout, components used, internal wiring and functions were identical for all the above models, with only difference on model No. and enclosure colour.



4.2 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

Telephone: +86 (0) 755 2601 2053 Fax: +86 (0) 755 2671 0594

No tests were sub-contracted.

4.3 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 10m Semi-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.: G-823, R-4188, T-1153 and C-2383 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.

- **Industry Canada (IC)**

Two 3m Semi-anechoic chambers and the 10m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1, 4620C-2, 4620C-3.

4.4 Deviation from Standards

None.

4.5 Abnormalities from Standard Conditions

None.

4.6 Other Information Requested by the Customer

None.



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:

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

BT:

The Max Conducted Peak Output Power is	3.74	dBm on the lowest channel	2.48	GHz
3.74 dBm logarithmic terms convert to numeric result is nearly 2.37 mW				
According to the formula. calculate the test exclusion thresholds:				
$\left[\frac{\text{(max. power of channel, including tune-up tolerance, mW)}}{\text{(min. test separation distance, mm)}} \cdot \sqrt{f(\text{GHz})} \right]$				
General RF Exposure = (2.37 mW / 5 mm) x $\sqrt{2.48 \text{ GHz}}$ = 0.75			(1)	
SAR requirement:				
S = 3.0			(2)	
(1) < (2)				
So the SAR report is not required.				



BLE1:

The Max Conducted Peak Output Power is	4.84	dBm on the lowest channel	2.48	GHz
4.84 dBm logarithmic terms convert to numeric result is nearly 3.05 mW				
According to the formula. calculate the test exclusion thresholds:				
[(max. power of channel, including tune-up tolerance, mW)/				
(min. test separation distance, mm)] · [√f(GHz)]				
General RF Exposure = (3.05 mW / 5 mm) x √2.48 GHz = 0.96			(1)	
SAR requirement:				
S = 3.0			(2)	
(1) < (2)				
So the SAR report is not required.				

BLE2:

The Max Conducted Peak Output Power is	-3.15	dBm on the lowest channel	2.402	GHz
-3.15 dBm logarithmic terms convert to numeric result is nearly 0.48 mW				
According to the formula. calculate the test exclusion thresholds:				
[(max. power of channel, including tune-up tolerance, mW)/				
(min. test separation distance, mm)] · [√f(GHz)]				
General RF Exposure = (0.48 mW / 5 mm) x √2.402 GHz = 0.15			(1)	
SAR requirement:				
S = 3.0			(2)	
(1) < (2)				
So the SAR report is not required.				

Simultaneous transmission:

The Max peak Output Power = (3.05+0.48)mW=3.53mW

General RF Exposure=(3.53mW / 5 mm) x √2.480 GHz=1.11 (1)

SAR requirement:

S = 3.0 (2)

So the SAR report is not required