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RF Exposure Evaluation Report

Report No. :	CQASZ20200300146E-03
Applicant:	ACOUSTMAX INTERNATIONAL CO., LTD
Address of Applicant:	Unit D16/F Cheuk Nang Plaza 250 Hennessy Road WanchaiHongKong.
Equipment Under Test (EUT):	
EUT Name:	ROCKIN' ROLLER 270 SPEAKER
Model No.:	MNRR270, MNRR270-X, MNRR270-C, MNRR270-EU
Test Model No.:	MNRR270
Brand Name:	Monster
FCC ID:	2AAIN-MNRR270
Standards:	47 CFR Part 1.1307 47 CFR Part 2.1093 KDB447498D01 General RF Exposure Guidance v06
Date of Receipt:	2020-03-10
Date of Test:	2020-03-10 to 2020-03-17
Date of Issue:	2020-03-17
Test Result :	**PASS***

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

Tested By: Tom Chen.

(Tom Chen)

Reviewed By: Aaron Ma

(Aaron Ma)

Approved By:

(Jack Ai)

SHENZHEN HUAXIA TESTING TECHNOLOGY CO., LTD 华夏准测 APPROVED

1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20200300146E-03	Rev.01	Initial report	2020-03-17

2 Contents

3 General Information

3.1 Client Information

Applicant:	ACOUSTMAX INTERNATIONAL CO., LTD
Address of Applicant:	Unit D16/F Cheuk Nang Plaza 250 Hennessy Road WanchaiHongKong.
Manufacturer:	China Electronic Southern Pioneer Technology Company
Address of Manufacturer:	Building B, zhongdian industrial park, longling avenue, puqian town, yuancheng district, heyuan city, guangdong province, China

3.2 General Description of EUT

Product Name:	ROCKIN' ROLLER 270 SPEAKER
Model No.:	MNRR270, MNRR270-X, MNRR270-C, MNRR270-EU
Test Model No.:	MNRR270
Trade Mark:	Monster
Hardware Version:	V03
Software Version:	V03
Sample Type:	☒ Mobile ☐ Portable ☐ Fix Location
Power Supply:	INPUT: AC100-240V~50/60Hz 80W lithium battery: DC12V

3.3 General Description of BT

Operation Frequency:	2402MHz~2480MHz
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)
Modulation Type:	GFSK, π/4DQPSK
Number of Channel:	79
Transfer Rate:	1Mbps/2Mbps/3Mbps
Hopping Channel Type:	Adaptive Frequency Hopping systems
Test Software of EUT:	FCCAssist 2.4 (manufacturer declare)
Antenna Type:	PCB antenna
Antenna Gain:	0dBi

3.4 General Description of BLE

Operation Frequency:	2402MHz~2480MHz
Modulation Type:	GFSK
Transfer Rate:	1Mbps
Number of Channel:	40
Test Software of EUT:	simple_peripheral (manufacturer declare)
Antenna Type:	PCB antenna
Antenna Gain:	0dBi

Model No.: MNRR270, MNRR270-X, MNRR270-C, MNRR270-EU
Only the model MNRR270 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 and model name.

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:

[(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

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)	3.200	2.5±1	3.5	2.239
Middle(2441MHz)	2.360	1.5±1	2.5	1.778
Highest(2480MHz)	1.420	0.5±1	1.5	1.413
π/4DQPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	3.960	3.0±1	4.0	2.512
Middle(2441MHz)	3.120	2.5±1	3.5	2.239
Highest(2480MHz)	2.210	1.5±1	2.5	1.778

Worst case: π/4DQPSK						
Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest (2402MHz)	3.960	3.0±1	4.0	2.512	0.779	3.0
Middle (2441MHz)	3.120	2.5±1	3.5	2.239	0.700	
Highest (2480MHz)	2.210	1.5±1	2.5	1.778	0.560	
Conclusion: the calculated value ≤3.0, SAR is exempted.						

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20200300146E-01

2) For BLE

Measurement Data

GFSK(1Mbps) mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	3.04	2.5±1	3.5	2.239
Middle(2440MHz)	2.79	2.0±1	3.0	1.995
Highest(2480MHz)	2.98	2.0±1	3.0	1.995

Worst case: GFSK(1Mbps)						
Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest (2402MHz)	3.04	2.5±1	3.5	2.239	0.694	3.0
Middle (2440MHz)	2.79	2.0±1	3.0	1.995	0.623	
Highest (2480MHz)	2.98	2.0±1	3.0	1.995	0.628	
Conclusion: the calculated value ≤3.0, SAR is exempted.						

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20200300146E-02

BDR, EDR and BLE can not simultaneous transmitting at same time.