RF EXPOSURE REPORT

Report No.: 17070487-FCC-H

Supersede Report No.: N/A

Applicant	KINGRAY ELECTRONICS Co., LTD
Product Name	Bluetooth earphone
Model No.	BB487
Serial No.	BB488 BB492 MG507 MG508 BB959 BB960 MG509 BB489 BB490 BB499 BB485 BB486 BB487 BB429 BB430
Test Standard	FCC 2.1093:2016
Test Date	June 22 to 29, 2017
Issue Date	June 30, 2017
Test Result	☑ Pass ☐ Fail
Equipment complied with the specification	☑
Equipment did not comply with the specification	☐

Vera Zhang	David Huang	
Vera Zhang Test Engineer	David Huang Checked By	

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Test result presented in this test report is applicable to the tested sample only

Issued by:

SIEMIC (SHENZHEN-CHINA) LABORATORIES

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Laboratories Introduction

SIEMIC, headquartered in the heart of Silicon Valley, with superior facilities in US and Asia, is one of the leading independent testing and certification facilities providing customers with one-stop shop services for Compliance Testing and Global Certifications.

In addition to testing and certification, SIEMIC provides initial design reviews and compliance management throughout a project. Our extensive experience with China, Asia Pacific, North America, European, and International compliance requirements, assures the fastest, most cost effective way to attain regulatory compliance for the global markets.

Accreditations for Conformity Assessment

Country/Region	Scope
USA	EMC, RF/Wireless, SAR, Telecom
Canada	EMC, RF/Wireless, SAR, Telecom
Taiwan	EMC, RF, Telecom, SAR, Safety
Hong Kong	RF/Wireless, SAR, Telecom
Australia	EMC, RF, Telecom, SAR, Safety
Korea	EMI, EMS, RF, SAR, Telecom, Safety
Japan	EMI, RF/Wireless, SAR, Telecom
Singapore	EMC, RF, SAR, Telecom
Europe	EMC, RF, SAR, Telecom, Safety

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1. Report Revision History

Report No.	Report Version	Description	Issue Date
17070487-FCC-H	NONE	Original	June 30, 2017

2. Customer information

Applicant Name	KINGRAY ELECTRONICS Co., LTD
Applicant Add	Building B, Ge Tailong Industrial Park , No.445, Bulong Rd , BanTian , LongGang , Shenzhen , China
Manufacturer	KINGRAY ELECTRONICS Co., LTD
Manufacturer Add	Building B, Ge Tailong Industrial Park , No.445, Bulong Rd , BanTian , LongGang , Shenzhen , China

3. Test site information

Lab performing tests	SIEMIC (Shenzhen-China) LABORATORIES
Lab Address	Zone A, Floor 1, Building 2 Wan Ye Long Technology Park South Side of Zhoushi Road, Bao' an District, Shenzhen, Guangdong China 518108
FCC Test Site No.	718246
IC Test Site No.	4842E-1
Test Software	Radiated Emission Program-To Shenzhen v2.0

4. Equipment under Test (EUT) Information

Description of EUT:	Bluetooth earphone
Main Model:	BB487
Serial Model:	BB488 BB492 MG507 MG508 BB959 BB960 MG509 BB489 BB490 BB499 BB485 BB486 BB487 BB429 BB430
Date EUT received:	June 22, 2017
Test Date(s):	June 22 to 29, 2017
Antenna Gain:	0dBi
Antenna Type:	PCB antenna
Type of Modulation:	GFSK, π /4DQPSK
RF Operating Frequency (ies):	2402-2480 MHz
Number of Channels:	79CH
Port:	USB Port
Input Power:	Battery: Model: 350926 Spec: 3.7Vdc,55mAh Charge Limit: 5Vdc USB Port: DC 5V
Trade Name :	KINGRAY
FCC ID:	2AML6BB430

5. FCC §2.1093 - Radiofrequency radiation exposure evaluation: portable devices.

5.1 RF Exposure

Standard Requirement:

According to §15.247 (i) and §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission' s guidelines.

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*)] · [$\sqrt{f_{(GHz)}}$] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR,[16] 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.

Routine SAR evaluation refers to that specifically required by § 2.1093, using measurements or computer simulation. When routine SAR evaluation is not required, portable transmitters with output power greater than the applicable low threshold require SAR evaluation to qualify for TCB approval.

result = $P\sqrt{F}\ /\ D$

P= Maximum turn-up power in mW

F= Channel frequency in GHz

D= Minimum test separation distance in mm

5.2 Test Result

Bluetooth Mode:

Modulation	CH	Frequency (MHz)	Conducted Power (dBm)	Tune Up Power (dBm)	Max Tune Up Power (dBm)	Max Tune Up Power (mW)	Result	Limit
GFSK	Low	2402	-6.662	-6±1	-5	0.316	0.10	3
	Mid	2441	-6.790	-6±1	-5	0.316	0.10	3
	High	2480	-6.968	-6±1	-5	0.316	0.10	3
π /4 DQPSK	Low	2402	-6.110	-6±1	-5	0.316	0.10	3
	Mid	2441	**-5.547**	-6±1	-5	0.316	0.10	3
	High	2480	-5.768	-6±1	-5	0.316	0.10	3

Result: Compliance

No SAR measurement is required.