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Report No.: SZEM160700612403
Page: 1 of 6

SAR Evaluation Report

Application No.: SZEM1607006124CR
Applicant: MODERN ELECTRONICS FACTORY LTD
Manufacturer: MODERN ELECTRONICS FACTORY LTD
Factory: Keng Fu Jia Electronics (Shenzhen) Co., Ltd.
Product Name: CDG Karaoke With Bluetooth Boombox
Model No.(EUT): GQ743
Add Model No.: GQ751, GQ752, GQ753, GQ755, MET743, 752BT, 743BT
Trade Mark: Karaoke USA, MET, Modern
FCC ID: SSM393MET743
Standards: 47 CFR Part 1.1307 (2015)
47 CFR Part 2.1093 (2015)
KDB447498D01 General RF Exposure Guidance v06
Date of Receipt: 2016-07-28
Date of Test: 2016-08-03 to 2016-09-09
Date of Issue: 2016-09-18

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

Authorized Signature:



Jack Zhang
EMC Laboratory Manager

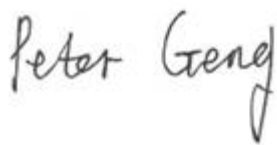
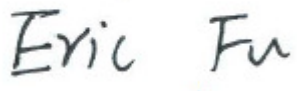
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2 Version

Revision Record				
Version	Chapter	Date	Modifier	Remark
00		2016-09-18		Original

Authorized for issue by:				
Tested By		 		2016-09-09
				Date
Checked By		 		2016-09-18
				Date
		(Peter Geng) /Project Engineer		
		(Eric Fu) /Reviewer		



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4 General Information

4.1 Client Information

Applicant:	MODERN ELECTRONICS FACTORY LTD
Address of Applicant:	FLAT C, 10/F, PHASE 4, KWUN TONG INDUSTRIAL CENTRE, 472-478 KWUN TONG ROAD, HONG KONG
Manufacturer:	MODERN ELECTRONICS FACTORY LTD
Address of Manufacturer:	FLAT C, 10/F, PHASE 4, KWUN TONG INDUSTRIAL CENTRE, 472-478 KWUN TONG ROAD, HONG KONG
Factory:	Keng Fu Jia Electronics (Shenzhen) Co., Ltd.
Address of Factory:	Sui Wai Sun Chuen, Tai Long, Lung Wah, Shenzhen, GDGZ

4.2 General Description of EUT

Product Name:	CDG Karaoke With Bluetooth Boombox
Model No.:	GQ743
Trade Mark:	Karaoke USA
Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	Bluetooth V2.1+EDR
Modulation Type:	GFSK, $\pi/4$ DQPSK
Number of Channel:	79
Antenna Type:	Integral
Antenna Gain:	2dBi
Power Supply	MODEL: K18S120150U INPUT: AC 100-240V, 50/60Hz OUTPUT: DC 12V, 1.5A

Remark:

Model No.: GQ743, GQ751, GQ752, GQ753, GQ755, MET743, 752BT, 743BT

Only the model GQ743 was tested, since the electrical circuit design, layout, components used, internal wiring and functions were identical for all the above models, only different on model name, trade mark and color.



4.3 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.

4.4 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 – Registration No.: 556682**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No.: 556682.

- **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.

4.5 Deviation from Standards

None.

4.6 Abnormalities from Standard Conditions

None.

4.7 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:

$$\left[\frac{(\text{max. power of channel, including tune-up tolerance, mW})}{(\text{min. test separation distance, mm})} \cdot \sqrt{f(\text{GHz})} \right] \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where}$$

$f(\text{GHz})$ 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

5.1.3 EUT RF Exposure

The Max Conducted Peak Output Power is -5.95dBm in middle channel(2.441GHz);

The best case gain of the antenna is 2dBi.

$\text{EIRP} = -5.95\text{dBm} + 2\text{dBi} = -3.95\text{dBm}$

-3.95dBm logarithmic terms convert to numeric result is nearly 0.40mW

According to the formula. calculate the EIRP test result:

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

General RF Exposure = $(0.40\text{mW} / 5 \text{ mm}) \times \sqrt{2.441\text{GHz}} = 0.12$ ①

SAR requirement:

$S = 3.0$

② ;

① < ②.

So the SAR report is not required.