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

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SAR Evaluation Report

Application No.:	SZEM1704002963CR(SGS GZ No.:GZEM1704001894CR)
Applicant:	Kysho Multimedia Ltd.
Manufacturer:	Kysho Multimedia Ltd.
Factory:	1 Huizhou ShenKe XinFei Technology Co. Ltd 2. Dongguan Longyi Electronics Co., Ltd
Equipment Under Test (EUT):	
EUT Name:	OMNI JACKET BLUETOOTH SPEAKER
Model No.:	IMW789, IMW789-BLG-WM, IMW789-CB-WM, IMW478S, IMW478S-AB, IMW478S-BLK, IMW478S-DR, IMW578S, IMW578S-AB, IMW579S, IMW579S-BLK-BB, IMW579S-SBLUE-BB, IMW888S, IMW888S-BLG, IMW888S-SBLUE ♣
♣	Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.
Trade mark:	ALTEC LANSING
FCC ID:	SP9-00011B
Standards:	47 CFR Part 1.1307 (2016) 47 CFR Part 2.1093 (2016) KDB447498D01 General RF Exposure Guidance v06
Date of Receipt:	2017-04-10
Date of Test:	2017-04-19 to 2017-05-11
Date of Issue:	2017-05-15
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.

2 Version

Revision Record				
Version	**Chapter**	**Date**	**Modifier**	**Remark**
01		2017-05-15		Original

Authorized for issue by:				
Tested By		Bill Chen		2017-05-15
		Bill Chen /Project Engineer		**Date**
Checked By		Eric Fu		2017-05-15
		Eric Fu /Reviewer		**Date**

3 Contents

4 General Information

4.1 Client Information

Applicant:	Kysho Multimedia Ltd.
Address of Applicant:	Flat F, 5/F Valiant Industrial Centre, 2-12 Au Pui Wan ST, Fo Tan, Shatin
Manufacturer:	Kysho Multimedia Ltd.
Address of Manufacturer:	Flat F, 5/F Valiant Industrial Centre, 2-12 Au Pui Wan ST, Fo Tan, Shatin
Factory:	1 Huizhou ShenKe XinFei Technology Co. Ltd; 2.Dongguan Longyi Electronics Co., Ltd
Address of Factory:	1.Building C Tangxia Area, Chanjing Village Xinxu Town, Huiyang District, Huizhou Guangdong Province, China. 2.Jieling Industrial Zone No.8, GuanJing Tou Village, Fenggang, Dongguan, 523690

4.2 General Description of EUT

Product Name:	OMNI JACKET BLUETOOTH SPEAKER
Model No.:	IMW789
Trade Mark:	ALTEC LANSING
Power supply:	Adapter MODEL NO:JT-H050100 INPUT:AC100-240V 50/60Hz 150mA OUTPUT:DC 5V 1000mA Rechargeable battery:DC 3.7V 6000mAh 22.2Wh(Charge by USB) Test voltage:AC 120V 60Hz
Cable:	USB cable:60cm Unshielded AUX in cable:30cm Unshielded
For BT:	
Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	V2.1 with EDR
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)
Modulation Type:	GFSK, π/4DQPSK, 8DPSK
Number of Channel:	79
Hopping Channel Type:	Adaptive Frequency Hopping systems
Sample Type:	Portable production
Antenna Type:	Integral
Antenna Gain:	0dBi

For BLE:	
Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	V 4.0 Single mode
Modulation Type:	GFSK
Number of Channel:	40
Sample Type:	Portable production
Antenna Type:	Integral
Antenna Gain:	0dBi
For 5.8G:	
Operation Frequency:	5727MHz-5800MHz
Channel number:	16
Type of Modulation:	FSK
Antenna type:	PIFA
Antenna gain:	4dBi

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.

4.3.1. Simultaneous 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:

[(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

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)/7.5] ≤ 1.6 for 1-g SAR 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

5.1.3 EUT RF Exposure

Standalone SAR test exclusion considerations

For BT:

The Max Conducted Peak Output Power is 7.01dBm in low channel(2.402GHz);

7.01dBm logarithmic terms convert to numeric result is nearly 5.023mW

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 = (5.023mW / 5 mm) x √2.402GHz = 1.557 ①

SAR requirement:

S= 3.0 ② ;

① < ②.

So the SAR report is not required.

For BLE:

The Max Conducted Peak Output Power is 0.5dBm in low channel(2.402GHz);

0.5dBm logarithmic terms convert to numeric result is nearly 1.112mW

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 = (1.112mW / 5 mm) x √2.402GHz = 0.345 ①

SAR requirement:

S= 3.0 ② ;

① < ②.

So the SAR report is not required.

For 5.8G:

The Max Conducted Peak Output Power is 2.78dBm in low channel(5.727GHz);

2.78dBm logarithmic terms convert to numeric result is nearly 1.897mW

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 = (1.897mW / 5 mm) x √5.727GHz = 0.908 ①

SAR requirement:

S= 3.0 ② ;

① < ②.

So the SAR report is not required.

Simultaneous SAR test exclusion considerations

For BT

The Max Conducted Peak Output Power is 7.01dBm in low channel(2.402GHz);
7.01dBm logarithmic terms convert to numeric result is nearly 5.023mW
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)/7.5]
General RF Exposure = (5.023mW / 5 mm) x √2.402GHz/7.5 = 0.208 ①

For BLE

The Max Conducted Peak Output Power is 0.5dBm in low channel(2.402GHz);
0.5dBm logarithmic terms convert to numeric result is nearly 1.122mW
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)/7.5]
General RF Exposure = (1.122mW / 5 mm) x √2.402GHz/7.5 = 0.046 ①

For 5.8G:

The Max Conducted Peak Output Power is 0.62dBm in low channel(5.727GHz);
2.78dBm logarithmic terms convert to numeric result is nearly 1.897mW
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)/7.5]
General RF Exposure = (1.897mW / 5 mm) x √5.727GHz/7.5 = 0.121 ①

exposure conditions for simultaneous transmission operations

Simultaneous transmission MPE test is not required, because the Max. sum of the MPE ratios for BT/BLE, 5.8G wireless is 0.208+0.046+0.121=0.375＜1.6