



EVALUATION REPORT

Application No.: GZEM2009015373CR
Applicant: Kysho Multimedia Ltd
Address of Applicant: Flat F; 5/F Valiant Ind. Ctr, 2-12 Au Pui Wan Street, Fo Tan, Shatin, HK
Manufacturer: Huizhou Shenke Xinfei Technology Co. LTD
Address of Manufacturer: Building C, Tangxia chanjing Industrial Park, Huiyang District, Huizhou City
Factory: Huizhou Shenke Xinfei Technology Co. LTD
Address of Factory: Building C, Tangxia chanjing Industrial Park, Huiyang District, Huizhou City
Equipment Under Test (EUT):
EUT Name: ROCKBOX XL BLUETOOTH SPEAKER
Model No.: IMW999, IMW999-STL, IMW999-XXX (X can be A to Z)
Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.
Trade Mark: ALTEC LANSING
Standard(s): 47 CFR Part 1.1307, Part 1.1310
KDB447498 D01 General RF Exposure Guidance V06
Date of Receipt: 2020-09-25
Date of Test: 2020-10-15 to 2020-11-26
Date of Issue: 2021-08-09

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

Kobe Jian

Kobe Jian
EMC Laboratory Manager



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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2021-08-09		Original

Authorized for issue by:				
Tested By				
		Curry_Wu /Project Engineer		
Checked By				
		Ricky_Liu /Reviewer		



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2 Test Summary

Radio Spectrum Technical Requirement				
Item	Standard	Method	Requirement	Result
RF Exposure	47 CFR Part 1.1307, Part 1.1310	KDB447498 D01 General RF Exposure Guidance V06	CFR 47 Part 1.1310	Pass

Declaration of EUT Family Grouping:

Model No.: IMW999, IMW999-STL, IMW999-XXX (X can be A to Z)

According to the declaration from the applicant, the electrical circuit design, layout, components used and internal wiring were identical for all models, with only difference on the model name, colour and decoration.

Therefore only one model **IMW999** was tested in this report.



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4 General Information

4.1 Details of E.U.T.

Power Supply:	Charging by adaptor: Model: MLF-E021802500CU INPUT: AC 100-240V 60/60Hz 1.5A max OUTPUT: DC 18V 2.5A DC 14.8V supply by internal rechargeable battery(2400mAh) AC 120V 60Hz & DC 14.8V
Test Voltage:	
For BT classic:	
Antenna Gain:	0dBi
Antenna Type:	PCB antenna
Channel Spacing:	1MHz
Modulation Type:	GFSK, $\pi/4$ DQPSK, 8DPSK
Number of Channels:	79
Operation Frequency:	2402MHz to 2480MHz
Spectrum Spread Technology:	Frequency Hopping Spread Spectrum (FHSS)
For BLE:	
Antenna Gain:	0dBi
Antenna Type:	PCB antenna
Channel Spacing:	2MHz
Modulation Type:	GFSK
Number of Channels:	40
Operation Frequency:	2402MHz to 2480MHz
For 5.8GHz:	
Antenna Gain:	0dBi
Antenna Type:	Integral Antenna
Modulation Type:	GFSK
Number of Channels:	16
Operation Frequency:	5727MHz-5800MHz
TPC Function:	Not support



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4.2 Description of Support Units

The EUT has been tested as an independent unit.

4.3 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou Branch EMC Laboratory,
198 Kezhu Road, Sciencetech Park, Guangzhou Economic & Technology Development District,
Guangzhou, China 510663

Tel: +86 20 82155555 Fax: +86 20 82075059

No tests were sub-contracted.



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4.4 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

● NVLAP (Lab Code: 200611-0)

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 200611-0.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

● ACMA

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our NVLAP accreditation.

● SGS UK(Certificate No.: 32), SGS-TUV SAARLAND and SGS-FIMKO

Have approved SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory as a supplier of EMC TESTING SERVICES and SAFETY TESTING SERVICES.

● CNAS (Lab Code: L0167)

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been assessed and in compliance with CNAS-CL01:2018 accreditation criteria for testing laboratories (identical to

ISO/IEC 17025:2017 General Requirements) for the Competence of Testing Laboratories.

● FCC Recognized 2.948 Listed Test Firm(Registration No.: 282399)

SGS-CSTC Standards Technical Services Co., Ltd., 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 282399, May 31, 2002.

● FCC Recognized Accredited Test Firm(Registration No.: 486818)

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been accredited and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Designation Number: CN5016, Test Firm Registration Number: 486818, Jul 13, 2017.

● Industry Canada (Registration No.: 4620B, CAB identifier: CN0052)

SGS-CSTC Standards Technical Services Co., Ltd., has been registered by Innovation Science and Economic Development Canada for Wireless Device Testing laboratories to test to Canadian radio equipment requirements. Registration No. 4620B, CAB identifier: CN0052.

● VCCI (Registration No.: R-12460, C-12584, G-10449 and T-11179)

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.: R-12460, C-12584, G-10449 and T-11179 respectively.

● CBTL (Lab Code: TL129)

SGS-CSTC Standards Technical Services Co., Ltd., E&E Laboratory has been assessed and fully comply with the requirements of ISO/IEC 17025:2005, the Basic Rules, IECEE 01 and Rules of procedure IECEE 02, and the relevant IECEE CB-Scheme Operational documents.



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4.5 Deviation from Standards

None

4.6 Abnormalities from Standard Conditions

None



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5 Radio Spectrum Technical Requirement

5.1 RF Exposure

5.1.1 Test Requirement:

The product belongs to **standalone portable device** base the FCC rule part 2.1091&2.1093. The transmission frequencies of the device are between 100 MHz and 6 GHz. The worst case test separation distance is **5mm**.

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:

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

- $f(\text{GHz})$ 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



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5.1.3 Conclusion for Bluetooth and 5.8G Simultaneous transmission.

The Max Conducted Output Power and SAR Test Exclusion Threshold (mW) are listed below:

For Bluetooth (power value refer to report GZEM200901537301/GZEM200901537302):

The Max Conducted Peak Output Power 2.68 dBm on the lowest channel 2.402 GHz	
2.68 dBm logarithmic terms convert to numeric result is nearly 1.85 mW	
According to the formula. calculate the test exclusion thresholds:	
$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}]$	
General RF Exposure = $(1.85 \text{ mW} / 5 \text{ mm}) \times \sqrt{2.402 \text{ GHz}} = 0.57$	(1)
SAR requirement:	
$S = 3.0$	(2)
$(1) < (2)$	
So the SAR report is not required.	

For 5.8GHz (power value refer to report GZEM200901537303)

The Max Conducted Peak Output Power -11.80 dBm on the lowest channel 5.727 GHz	
-11.80 dBm logarithmic terms convert to numeric result is nearly 0.07 mW	
According to the formula. calculate the test exclusion thresholds:	
$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}]$	
General RF Exposure = $(0.07 \text{ mW} / 5 \text{ mm}) \times \sqrt{5.727 \text{ GHz}} = 0.03$	(1)
SAR requirement:	
$S = 3.0$	(2)
$(1) < (2)$	
So the SAR report is not required.	

The max power for BLE is 0.26dbm at channel 2402Mhz, max power for Bluetooth classic is 2.68dbm, at channel 2402Mhz, BLE and Bluetooth classic can't support simultaneous transmission, therefore, the worst case is

The Bluetooth classic and 5.8G can be transmitted together, the result is

$$0.57/3 + 0.03/3 = 0.2 < 1.0$$

So SAR report is not required.



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6 Photographs

6.1 EUT Constructional Details

Refer to Appendix A - Photographs of EUT Constructional Details for GZEM2009015373CR.

--End of Report--



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