

RF EXPOSURE EVALUATION REPORT

Application No.: GZCR2108020989AT
Applicant: Kyscho Multimedia Ltd.
Address of Applicant: Flat F, 5/F Valiant Industrial Centre, 2-12 Au Pui Wan Street, Fo Tan, Shatin, N.T.
Manufacturer: Kyscho Multimedia Ltd.
Address of Manufacturer: Flat F, 5/F Valiant Industrial Centre, 2-12 Au Pui Wan Street, Fo Tan, Shatin, N.T.
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: HydraShock
Model No.: IMW1500, IMW1500-xxx (X can be A to Z) ♣
 ♣ Please refer to section 2 of this report which indicates which item was actually evaluated and which were electrically identical.
Standard(s) : 47 CFR Part 1.1307
 KDB447498D01 General RF Exposure Guidance v06
Date of Receipt: 2021-08-31
Date of Evaluation: 2021-09-02 to 2021-09-23
Date of Issue: 2021-09-30

Evaluation Result:	Pass*
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* In the configuration evaluated, the EUT complied with the standards specified above.

Kobe Jian
EMC Laboratory Manager



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<i>Revision Record</i>				
Version	Chapter	Date	Modifier	Remark
01		2021-09-30		Original

Authorized for issue by:			
		<i>Lily Kuang</i>	
		Lily Kuang/Project Engineer	
		<i>Ricky Liu</i>	
		Ricky Liu/Reviewer	



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2 Evaluation Summary

Note:

E.U.T./EUT means Equipment Under Test.

Pass means the test result passed the test standard requirement, please find the detailed decision rule in the report relative section.

♣Declaration of EUT Family Grouping:

Model No.: IMW1500, IMW1500-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.

Therefore only one model IMW1500 was tested in this report.



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4 General Information

4.1 Details of E.U.T.

Power supply:	Powered by rechargeable battery: DC 14.8V Model: ICR18650-4S 2000mAh 14.8V Charged by the AC adapter as below: model: MLF-E021802500CU Input:100~240V~50/60Hz 1.5A max Output:18V,2.5A
Operation Frequency:	2402MHz to 2480MHz
Modulation Type:	GFSK, pi/4DQPSK, 8DPSK
Number of Channels:	79
Channel Spacing:	1MHz
Spectrum Spread Technology:	Frequency Hopping Spread Spectrum(FHSS)
Antenna Type:	Integral Antenna
Antenna Gain:	0dBi declared by applicant
Firmware Version:	IMW792 LED1 PCB
Hardware Version:	V1.0
Testing Software:	FCC Assist 1.0.2.2
Sample NO.:	SP-2021091101
Power Setting:	-3 dBm can not changed by user
Function:	Playing music by BT classic
BT Version:	BT 5.1 for Classic only

4.2 Evaluating 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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4.3 Facility

The 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/New Zealand Regulatory Compliance Mark (RCM).

- **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 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.

- **ISED (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-20107 and T-11179)**

The 10m Semi-anechoic chamber, 966 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-20107 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 17025:2017, the Basic Rules, IECEE 01 and Rules of procedure IECEE 02, and the relevant IECEE CB-Scheme Operational documents.

4.4 Deviation from Standards

None

4.5 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:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot$

$[\sqrt{f(\text{GHz})}] \leq 3.0$ for 1-g SAR and ≤ 7.5 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

The Max Conducted Peak Output Power is -2.7dBm (include turn up tolerance) in Middle channel(2.441GHz);

Note: Refer to report No. GZCR210802098902 for EUT test Max Conducted Peak Output Power value.

-2.7dBm logarithmic terms convert to numeric result is nearly 0.537mW.

According to the formula. calculate the test exclusion threshold result:

$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot$

$[\sqrt{f(\text{GHz})}]$

General RF Exposure = $(0.537\text{mW} / 5 \text{ mm}) \times \sqrt{2.441\text{GHz}} = 0.17$ ①

SAR requirement:

S= 3.0 ② ;

① < ②.

So the SAR report is not required.



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6 EUT Constructional Details (EUT Photos)

Refer to Appendix - External and Internal Photos for GZCR2108020989AT

- End of the Report -



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