

RF Exposure Evaluation Report

Application No.: GZEM2101000213CR
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: 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: HydraJolt
Model No.: IMW1200, IMW1200-XXX (X can be A to Z) ♣
 ♣ Please refer to section 2 of this report which indicates which item was actually tested and which were electrically identical.
Standard(s): 47 CFR Part 1.1307, Part 1.1310
 KDB447498 D01 General RF Exposure Guidance V06
Date of Receipt: 2021-01-11
Date of Test: 2021-01-14 to 2021-01-19
Date of Issue: 2021-08-26

| | |
|---------------------|--------------|
| Test Result: | Pass* |
|---------------------|--------------|

* In the configuration tested, the EUT complied with the standards specified above.



Kobe Jian
EMC Laboratory Manager



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| Revision Record | | | | |
|-----------------|---------|------------|----------|----------|
| Version | Chapter | Date | Modifier | Remark |
| 01 | | 2021-08-26 | | Original |
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|---------------------------------|-------------------------------------|--|--|
| Authorized for issue by: | | | |
| Tested By | <i>Lily Kuang</i> | | |
| | Lily_Kuang /Project Engineer | | |
| Reviewed By | <i>Ricky Liu</i> | | |
| | 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.: IMW1200, IMW1200-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, decorations.

Therefore only one model IMW1200 was tested in this report.



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4 General Information

4.1 Details of E.U.T.

| | |
|-----------------------------|---|
| Power Supply: | Rechargeable battery: DC 3.7V 2000mAh 7.4Wh (Charge by USB) |
| Test Voltage: | AC 120V 60Hz and DC 3.7V |
| Cable: | DC in cable:80cm Unshielded USB cable: 40cm Unshielded |
| Antenna Gain: | 0 dBi |
| Antenna Type: | Integrated antenna |
| Channel Spacing: | 1MHz |
| Modulation Type: | GFSK, $\pi/4$ DQPSK, |
| Number of Channels: | 79 |
| Operation Frequency: | 2402MHz to 2480MHz |
| Spectrum Spread Technology: | Frequency Hopping Spread Spectrum (FHSS) |

4.2 Description of Support Units

| Description | Manufacturer | Model No. | Serial No. |
|---------------|--------------|-----------|-------------------|
| AC/DC Adapter | SGS | DC 5V | REF. No. SEA0500 |
| Notebook | IBM | T30 | S/N78-3VMLX 06/01 |
| BT test board | SGS EMC | RF 07 | RF 07 |

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.
- **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, IECCE 01 and Rules of procedure IECCE 02, and the relevant IECCE 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:

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

$[\sqrt{f(\text{GHz})}] \leq 3.0$ 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 2.49dBm (include turn up tolerance) in Middle channel(2.480GHz);
 The best-case gain of the antenna is 0dBi.

Note: Refer to report No. GZEM210100021302 for EUT test Max Conducted Peak Output Power value.

2.49dBm logarithmic terms convert to numeric result is nearly 1.77mW

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

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

$$\text{General RF Exposure} = (1.77\text{mW} / 5 \text{ mm}) \times \sqrt{2.480\text{GHz}} = 0.559 \text{ ①}$$

SAR requirement:

$$S = 3.0 \text{ ②};$$

$$\text{①} < \text{②}.$$

So the SAR report is not required.

6 Photographs

6.1 EUT Constructional Details

Refer to Appendix A - Photographs of EUT Constructional Details for GZEM2101000213CR

--End of Report--



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