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Development District, Guangzhou, China 510663

Telephone: +86 (0) 20 82155555 Report No.: GZEM190301160202

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TEST REPORT

Application No.: GZEM1903011602CR

Applicant: MMD Hong Kong Holding Limited

Address of Applicant: Units 1006-1007, 10th Floor, C-Bons International Center, 108 Wai Yip

Street, Kwun Tong, Kowloon, Hong Kong

Manufacturer: MMD Hong Kong Holding Limited

Address of Manufacturer: Units 1006-1007, 10th Floor, C-Bons International Center, 108 Wai Yip

Street, Kwun Tong, Kowloon, Hong Kong

Factory: Guangzhou Panyu Juda Car Audio Equipment Co., Ltd.

Address of Factory: Vtrek Dewei Industrial Garden, Shibei Indust rial Road, Dashi Town, Panyu

Borough, Guangzhou City, Guangdong Province, China

Equipment Under Test (EUT):

EUT Name: Subwoofer

Model No.: HTL1520BSW/37

Trade Mark: PHILIPS

Standard(s): 47 CFR Part 1.1307, Part 2.1093, KDB 447498

Date of Receipt: 2019-03-27

Date of Test: 2019-03-28 to 2019-04-17

Date of Issue: 2019-05-15

Test Result: Pass*



Kobe Jian Lab 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.



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



检验检测专用章

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

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Revision Record							
Version Chapter Date Modifier Remark							
01		2019-05-15		Original			

Authorized for issue by:		
Tested By	Jackson huan	2019-03-28 to 2019-04-17
	Jackson_Yuan /Project Engineer	Date
Checked By	Riday Liu	2019-04-25
	Ricky_Liu /Reviewer	Date

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Test Summary 2

Radio Spectrum Technical Requirement								
Item	Standard	Method	Requirement	Result				
RF Exposure	47 CFR Part 1.1307, Part 2.1093, KDB 447498	CFR 47 Part 2.1093	CFR 47 Part 2.1093	Pass				



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4 General Information

4.1 Details of E.U.T.

Power Supply: AC 100-240V, 50/60Hz

Test Voltage: AC 120 V, 60 Hz

Cable: AC mains (unshielded, 1.5m)

Antenna Gain 0 dBi

Antenna Type PCB Antenna

Channel Spacing 1MHz

Modulation Type GFSK, π/4DQPSK, 8DPSK

Number of Channels 79

Operation Frequency 2402MHz to 2480MHz

Spectrum Spread

Frequency Hopping Spread Spectrum(FHSS)

Technology

Software

BT FCC TOOL V2.00

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
Laptop	Lenovo	T430u	REF. No.SEA1800
BT test board	SGS EMC	RF 07	RF 07

4.3 Measurement Uncertainty

RF

No.	Item	Measurement Uncertainty
1	Radio Frequency	±5.5 x 10 ⁻⁸
2	Duty cycle	±0.57%
3	Occupied Bandwidth	±3%
4	RF Conducted power	±0.68dB
5	RF Power Density	±1.50dB
6	Conducted Spurious Emissions	±1.04dB
7	RF Radiated Power	±4.5dB (below 1GHz)
/	hr hadiated fower	±4.8dB (above 1GHz)
8	Radiated Spurious Emission Test	±4.5dB (30MHz-1GHz)
0	nadiated Spurious Emission Test	±4.8dB (1GHz-18GHz)
9	Temperature	±0.4℃
10	Humidity	±1.3%
11	Supply Voltages	±1.5%
12	Time	±3%

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4.4 Test Location

All tests were performed at:

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

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No tests were sub-contracted.



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4.5 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-CL01:2006 accreditation criteria for testing laboratories (identical to

ISO/IEC 17025:2005 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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4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions



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Equipment List 5

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General used equipment							
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date		
DMM	Fluke	73	EMC0006	2018-07-20	2019-07-19		
DMM	Fluke	73	EMC0007	2018-07-19	2019-07-18		

Conducted Peak Output Power								
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date			
EXA Signal Analzer	AgilentTechnologies	N9010A	EMC2138	2018-11-19	2019-11-18			
6dB Attenuator	HP	8491A	EMC2062	2018-04-04	2020-04-03			
Test Software JS1120-3	HangTianXing	V2.6	GZE100-69	N/A	N/A			



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6 Radio Spectrum Technical Requirement

6.1 RF Exposure

6.1.1 Test Requirement:

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.2m normally can be maintained between the user and the device.

(a) Limits for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S)(mW/cm²)	Averaging Times E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f)*	6
30-300	61.4	0.163	1.0	6
300-1500			F/300	6
1500-100000			5	6

(b) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S)(mW/cm²)	Averaging Times E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100000			1.0	30

Note: f=frequency in MHz; *Plane-wave equivalent power density



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6.1.2 MPE Calculation Method

 $E (V/m) = (30*P*G)^{0.5}/d$ Power Density: $Pd(W/m^2) = E^2/377$

E=Electric Field (V/m)

P=Peak RF output Power (W)

G=EUT Antenna numeric gain (numeric)

d= Separation distance between radiator and human body (m)

The formula can be changed to

 $Pd = (30*P*G)/(377*d^2)$

From the peak EUT RF output power, the minimum mobile separation distance, d=0.2m, as well as the gain of the used antenna, the RF power density can be obtained.

6.1.3 Calculated Result and Limit

Frequency (MHz)	Antenna Gain (Numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2402	1.000	9	7.943	0.00158	1	Complies
2441	1.000	9	7.943	0.00158	1	Complies
2480	1.000	9	7.943	0.00158	1	Complies

So the SAR report is not required.



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Photographs

7.1 EUT Constructional Details

Please refer to Appendix A - Photographs of EUT Constructional Details for GZEM1903011602CR

-- End of Report —



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