

1 Cover Page

FCC MPE REPORT

Application No.:	SHEM1409002327RF
Applicant:	Hansong (Nanjing) Technology Ltd.
FCC ID:	XCO-MUSAIC1401
IC:	7756A-MUSAIC1401
Equipment Under Test (EUT):	
NOTE: The following sample(s) submitted was/were identified on behalf of the client as	
Product Name:	Music Player
Model No.(EUT):	MP10
Standards:	FCC Rules 47 CFR §2.1091 KDB447498 D01 General RF Exposure Guidance
Date of Receipt:	September 12, 2014
Date of Test:	December 08, 2014 to December 19, 2014
Date of Issue:	January 04, 2015
Test Result:	Pass*

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



Tony Wu

E&E Section Manager

SGS-CSTC (Shanghai) Co., Ltd.

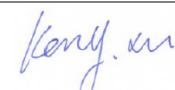
The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.

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. All test results in this report can be traceable to National or International Standards.

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2 Version

Revision Record				
Version	Chapter	Date	Modifier	Remark
00	/	January 04, 2015	/	Original

Authorized for issue by:			
Engineer		Eddy Zong	
		Print Name	
Clerk		Susie Liu	
		Print Name	
Reviewer		Keny Xu	
		Print Name	

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4 General Information

4.1 Client Information

Applicant: Hansong (Nanjing) Technology Ltd.
Address of Applicant: 8th Kangping Road, Jiangning Economy and Technology Development Zone, Nanjing, 211106, China
Manufacturer: Musaic Ltd.
Address of Manufacturer: 4-5 Bonhill Street, London EC2A 4BX, UK
Factory: Hansong (Nanjing) Technology Ltd.
Address of Factory: 8th Kangping Road, Jiangning Economy and Technology Development Zone, Nanjing, 211106, China

4.2 General Description of E.U.T.

Brand Name: MUSAIC
Product Description: Fixed product
Rated Input: DC 18V 3.3A
Adapter(For MP10):
Model No.: FJ-SW1803300D
Rated Input: AC 100V-240V 50/60Hz 1.5A MAX
Rated Output: DC 18V 3.3A
Cable length: AC port: 180 cm (2 wires)
DC port: 180 cm

4.3 Details of E.U.T.

Operation Frequency: 2402MHz~2480MHz
Bluetooth Version: 3.0+HS
Modulation Technique: FHSS(GFSK, π/4DQPSK, 8DPSK)
Number of Channel: 79
Antenna Type: Integral
Antenna Gain: 2 dBi

4.4 Test Location

All tests were performed at SGS E&E EMC lab

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

No.588 West Jindu Road, Songjiang District, Shanghai, China. 201612.

Tel: +86 21 6191 5666

Fax: +86 21 6191 5678

4.5 Test Facility

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

- CNAS (No. CNAS L0599)**

CNAS has accredited SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. 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. Date of expiry: 2017-07-14.

- FCC – Registration No.: 402683**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered and fully described in a report filed with the Federal Communications Commission (FCC). The acceptance letter from the FCC is maintained in our files. Registration No.: 402683, Expiry Date: 2017-09-16.

- Industry Canada (IC) – IC Assigned Code: 8617A**

The 3m Semi-anechoic chamber of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 8617A-1. Expiry Date: 2017-06-18.

- VCCI (Member No.: 3061)**

The 3m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-3868 and C-4336 respectively. Date of Registration: 2012-05-29. Date of Expiry: 2015-05-28.

5 Test Standards and Limits

According to §1.1310 Radiofrequency radiation exposure limits:

The limit for general population/uncontrolled exposures

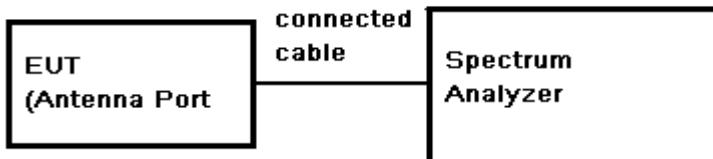
Frequency	Power density(mW/cm ²)	Averaging time(minutes)
300MHz~1.5GHz	f/1500	30
1.5GHz~100GHz	1.0	30

6 Measurement and Calculation

6.1 Maximum transmit power

EUT Operation: Test in fixing frequency operating mode at lowest, middle and highest frequency.

Test Configuration:



Test Data:

For BT:

Test mode	Channel	Reading Power (dBm)	Cable Loss (dB)	Output Power (dBm)	Output Peak Power (mW)	Peak Power Limit (dBm)	Result
GFSK	Low	-1.99	0.5	-1.49	0.71	30	PASS
	Mid	0.86	0.5	1.36	1.37	30	PASS
	High	-0.56	0.5	-0.06	0.99	30	PASS
$\pi/4$ DQPSK	Low	-0.75	0.5	-0.25	0.94	30	PASS
	Mid	1.13	0.5	1.63	1.46	30	PASS
	High	0.87	0.5	1.37	1.37	30	PASS
8DPSK	Low	-0.57	0.5	-0.07	0.98	30	PASS
	Mid	1.45	0.5	1.95	1.57	30	PASS
	High	1.22	0.5	1.72	1.49	30	PASS

6.2 MPE Calculation

According to the formula $S = \frac{PG}{4R^2\pi}$, we can calculate S which is MPE.

Note:

- 1) P (Watts) = Power Input to antenna = $10^{\frac{dBm}{10}} / 1000$
- 2) G (Antenna gain in numeric) = $10^{\text{Antenna gain in dBi}} / 10$
- 3) R = distance to the center of radiation of antenna (in meter) = 20cm
- 4) MPE limit = 1mW/cm²

The Max Conducted Peak Output Power is 1.57mW in middle channel of 8DPSK;

The best case gain of the antenna is 2dBi. 2dB logarithmic terms convert to numeric result is nearly 1.58

$$\text{So, } S = \frac{PG}{4R^2\pi} = \frac{1.57 \times 1.58}{4 \times 400 \times 3.14} = 0.0005 \text{ mW/cm}^2$$

The DTS modules (CUS227) which has been applied full module approved with **FCC ID: PPD-CUS227** and **IC: 4104A-CUS227**. The BT and the DTS modules can't simultaneous transmitting at frequency 2.4GHz band, according to the KDB447498 D01 section 7.2 determine the device is exclusion from SAR test.

7 EUT Constructional Details

Refer to the < MP10 _External Photos > & < MP10 _Internal Photos>.

--End of the Report--