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Report No.: SHEM130900182405
Page: 1 of 8

1 Cover Page

FCC MPE REPORT

Application No.:	SHEM1309001824RF
Applicant:	Hansong (Nanjing) Technology Ltd.
FCC ID:	XCO-SOUNDBAR2
IC ID:	7756A-SOUNDBAR2
Equipment Under Test (EUT): NOTE: The following sample(s) submitted was/were identified on behalf of the client as	
Product Name:	Soundtrack 2 System
Model No.(EUT):	Soundtrack 2
Standards:	FCC Rules 47 CFR §2.1093 KDB447498 D01 General RF Exposure Guidance
Date of Receipt:	September 12, 2013
Date of Test:	September 13, 2013 to September 26, 2013
Date of Issue:	October 11, 2013
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	/	October 11, 2013	/	Original

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

3 Contents

	Page
1 COVER PAGE	1
2 VERSION	2
3 CONTENTS	3
4 GENERAL INFORMATION.....	4
4.1 CLIENT INFORMATION.....	4
4.2 GENERAL DESCRIPTION OF E.U.T.....	4
4.3 DETAILS OF E.U.T.	4
4.4 TEST LOCATION.....	5
4.5 TEST FACILITY.....	5
5 TEST STANDARDS AND LIMITS	6
6 MEASUREMENT AND CALCULATION	7
6.1 MAXIMUM TRANSMIT POWER	7
6.2 MPE CALCULATION	8
7 EUT CONSTRUCTIONAL DETAILS	8

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:	Not supplied by the client.
Address of Manufacturer:	Not supplied by the client.
Factory:	Not supplied by the client.
Address of Factory:	Not supplied by the client.

4.2 General Description of E.U.T.

Product Name:	Soundtrack 2 System
Model No.(EUT):	Soundtrack 2
Product Description:	Portable Product

4.3 Details of E.U.T.

Operation Frequency:	BT:2402MHz~2480MHz DTS: 2412MHz~2464MHz
Bluetooth Version:	3.0+EDR
Modulation Technique:	BT: GFSK, $\pi/4$ DQPSK, 8DPSK DTS: QPSK
Number of Channel:	BT: 79 DTS: 3
Antenna Type	BT: Plug-in antenna DTS: Integral (The WiFi modular contains two antennas, but the two antennas couldn't simultaneous working.)
Antenna Gain	BT: 2 dBi DTS: 1.5dBi
Adapter:	Manufacturer: GOLDEN PROFIT ELECTRONICS LTD. Model No.: GPE060D-200250D Rated Input: 100-240V AC 50/60Hz, 1.5A Rated Output: 20V DC 2500mA Cable length: AC port: About 150cm Length DC port: About 170cm Length
Engineering Mode:	Using test software to control EUT working in continuous transmitting, and select channel and modulation type

4.4 Test Location

All tests were performed at SGS E&E EMC lab
SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.
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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: 2014-07-26.

- **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: 2015-02-22.

- **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. Expiry Date: 2014-09-20.

- **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

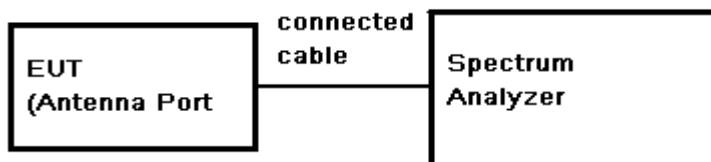
Frequency	Power density(mW/cm ²)	Averaging time(minutes)
300MHz~1.5GHz	f/1500	30
1.5GHz~100GHz	1.0	30

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 Results record:

For BT:

Test mode	Channel	Reading Peak Power (dBm)	Cable Loss (dB)	Output Peak Power (dBm)	Output Peak Power (mW)	Peak Power Limit (dBm)	Result
GFSK	Low	-1.65	0.5	-1.15	0.767361	30	PASS
	Mid	-1.78	0.5	-1.28	0.744732	30	PASS
	High	-2.33	0.5	-1.83	0.656145	30	PASS
$\pi/4$ DQPSK	Low	-1.77	0.5	-1.27	0.746449	30	PASS
	Mid	-1.08	0.5	-0.58	0.874984	30	PASS
	High	-1.16	0.5	-0.66	0.859014	30	PASS
8DPSK	Low	-1.42	0.5	-0.92	0.809096	30	PASS
	Mid	-0.83	0.5	-0.33	0.926830	30	PASS
	High	-1.33	0.5	-0.83	0.826038	30	PASS

For DTS:

Test mode	Channel	Reading Peak Power (dBm)	Cable Loss (dB)	Output Peak Power (dBm)	Output Peak Power (mW)	Peak Power Limit (dBm)	Result
Antenna A	Low	15.69	0.5	16.19	41.59	30	PASS
	Mid	15.85	0.5	16.35	43.15	30	PASS
	High	16.02	0.5	16.52	44.87	30	PASS
Antenna B	Low	16.47	0.5	16.97	49.77	30	PASS
	Mid	16.54	0.5	17.04	50.58	30	PASS
	High	16.69	0.5	17.19	52.36	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) = $10^{(Antenna\ gain\ in\ dBi / 10)}$
- 3) R = distance to the center of radiation of antenna (in meter) = 20cm
- 4) MPE limit = 1mW/cm²

For BT:

The Max Conducted Peak Output Power is 0.93mW in middle channel of 8DPSK;

The best case gain of the antenna is 2dBi. 3dB logarithmic terms convert to numeric result is nearly 1.58

$$\text{So, } S = \frac{PG}{4R^2\pi} = \frac{0.93 \times 1.58}{4 \times 400 \times 3.14} = 0.0003 \text{ mW/cm}^2$$

For DTS:

The Max Conducted Peak Output Power is 52.36mW in highest channel;

The best case gain of the antenna is 1.5dBi. 3dB logarithmic terms convert to numeric result is nearly 1.41

$$\text{So, } S = \frac{PG}{4R^2\pi} = \frac{52.36 \times 1.41}{4 \times 400 \times 3.14} = 0.0147 \text{ mW/cm}^2$$

The BT and the DTS modules can simultaneous transmitting at frequency 2.4GHz band. But the maximum rate of MPE is $\frac{0.0003}{1.0} + \frac{0.0147}{1.0} = 0.0150 \leq 1.0$. according to the KDB447498 D01 section 7.2 determine the device is exclusion from SAR test.

7 EUT Constructional Details

Refer to the < Soundtrack 2_External Photos > & < Soundtrack 2_Internal Photos>.

--End of the Report--