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

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FCC MPE REPORT

Application No.: SHEM1206000740RF

Address of Applicant: Hansong(Nanjing) Technology Ltd.

Equipment Under Test (EUT):

NOTE: The following sample(s) submitted was/were identified on behalf of the client as

EUT Name:	Wireless audio and amplifier system
Brand Name:	Sound Tube
Model No.:	WLL-RX1p
FCC ID:	XCO-HSWLLR
IC:	7756A-HSWLLR
Standards:	FCC Rules 47 CFR §2.1091 & FCC OET Bulletin 65 supplement C
Date of Receipt:	May. 27, 2012
Date of Test:	July. 28, 2012
Date of Issue:	Oct. 18, 2012

Test Result :	**PASS***

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

E&E Section Head
SGS-CSTC(Shanghai) Co., Ltd.

E&E EMC Engineer
SGS-CSTC(Shanghai) Co., Ltd.

2 Contents

3 General Information

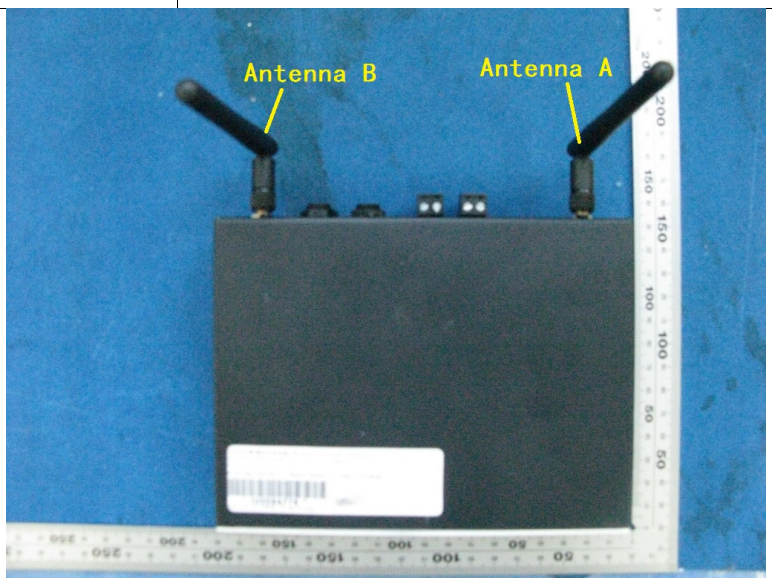
3.1 Client Information

Applicant :	Hansong(Nanjing) Technology Ltd.
Applicant Address:	8th Kangping Road, Jiangning Economy and Technology Development Zone,Nanjing,201106,China
Manufacturer:	Hansong(Nanjing) Technology Ltd.
Manufacturer Address:	8th Kangping Road, Jiangning Economy and Technology Development Zone,Nanjing,201106,China

3.2 Details of E.U.T.

Technical Specifications:

EUT Name:	Wireless audio and amplifier system	
Brand Name:	Sound Tube	
Model No:	WLL-RX1p	
Support Frequency Band:	2412-2464MHz / 3 Channels	
	Channel of Tranmitter	Frequency(MHz)
	Lowest	2412
	Middle	2438
	Highest	2464
Modulation Type:	QPSK	
Antenna Type:	Double PIFA antenna Remark: the two antennas is not working at the same time. The antennas define like below figure.	
Antenna Gain:	2.0dBi	



Power Supply:

Rated Input:	32VDC 3.75A		
Adapter:	Manufacturer:	N/A	
	Model No.:	FY3203750	
	Rated Input:	AC 100V-240V 50-60Hz	
	Rated Output:	32VDC 3.75A	
	Cable length:	AC port:	120cm(3 wires)
		DC port:	120cm

3.3 Test Location

All tests were performed at SGS E&E EMC lab

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.
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3.4 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.

4 Test Standards and Limits

The Equipment under Test (EUT) has been tested at SGS's (own or subcontracted) laboratories.

The following table summarizes the specific reference documents such as harmonized standards or test specifications which were used for testing as SGS's (own or subcontracted) laboratories.

Identity	Document Title	Version
FCC OET Bulletin 65 supplement C	Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields	2001

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

FCC LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

(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/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	$(180/f^2)$*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

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

5 Summary of Results

For antenna A

Frequency Band	Limit (mW/cm²)	Result (mW/cm²)	Verdict
2412-2464MHz	1.0	0.034	Pass

For antenna B

Frequency Band	Limit (mW/cm²)	Result (mW/cm²)	Verdict
2412-2464MHz	1.0	0.029	Pass

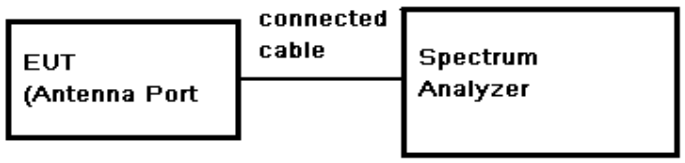
6 Measurement and Calculation

6.1 Maximum transmit power

Test Date: July 28, 2012

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

Test Configuration:



Test Results

For Antenna A

CH	Frequency (MHz)	Reading Peak Power (dBm)	Cable Loss (dB)	Output Peak Power (dBm)	Output Peak Power (mW)	Peak Power Limit (dBm)	Result
LOW	2412	19.79	0.5	20.29	106.91	30	PASS
MID	2438	18.75	0.5	19.25	84.14	30	PASS
HIGH	2464	18.14	0.5	18.64	73.11	30	PASS

For Antenna B

CH	Frequency (MHz)	Reading Peak Power (dBm)	Cable Loss (dB)	Output Peak Power (dBm)	Output Peak Power (mW)	Peak Power Limit (dBm)	Result
LOW	2412	19.17	0.5	19.67	92.68	30	PASS
MID	2438	18.93	0.5	19.43	87.70	30	PASS
HIGH	2464	18.27	0.5	18.77	75.34	30	PASS

6.2 SAR Calculation

For Antenna A:

Test Results: MPE Limit Calculation: the EUT's operating frequencies 2412MHz to 2464MHz; the highest power is High channel(2412MHz). The Measured maximum radiated power is 20.29 dBm(106.91mW).with maximum peak gain is 2.0dBi. Duty factor is 100%

Equation from page 18 of OET 65, Edition 97-01

$S = PG^* \text{ Duty factor} / 4\pi R^2$

P =Power Input to antenna (106.91mWatts)
G =Antenna Gain (1.585numeric)
R = distance to the center of radiation of antenna (in meter) = 20cm
$S = (106.91 * 1.585 * 1) / (4\pi * 20^2) = 0.034 mW/cm^2$

For Antenna B:

Test Results: MPE Limit Calculation: the EUT's operating frequencies 2412MHz to 2464MHz; the highest power is High channel(2412MHz). The Measured maximum radiated power is 19.67 dBm(92.68mW).with maximum peak gain is 2.0dBi. Duty factor is 100%

Equation from page 18 of OET 65, Edition 97-01

$S = PG^* \text{ Duty factor} / 4\pi R^2$

P =Power Input to antenna (92.68mWatts)
G =Antenna Gain (1.585numeric)
R = distance to the center of radiation of antenna (in meter) = 20cm
$S = (92.68 * 1.585 * 1) / (4\pi * 20^2) = 0.029 mW/cm^2$

MPE limit = $1.0 mW/cm^2$

Note:

1) P (Watts)= $10^{\frac{dBm}{10}}$ / 1000

2) G (Antenna gain in numeric) = 10^ (Antenna gain in dBi /10)

THE END OF REPORT