



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

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Report No.: SHEM130400052205
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FCC MPE REPORT

Application No.:	SHEM1304000522RF
Applicant:	Hansong (Nanjing) Technology Ltd.
FCC ID:	XCO-KMCSTADIUM
IC:	7756A-KMCSTADIUM
Equipment Under Test (EUT):	
NOTE: The following sample(s) submitted was/were identified on behalf of the client as	
EUT Name:	Airplay Speaker
Brand Name:	Klipsch
Model No:	Klipsch STADIUM.
Fundamental Frequency :	2412MHz~2462MHz
Standards:	FCC Rules 47 CFR §2.1091 KDB 447498 D01 General RF Exposure Guidance
Date of Receipt:	April 17, 2013
Date of Test:	July 11, 2013 to July 12, 2013
Date of Issue:	July 16, 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.



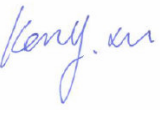
The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. All test results in this report can be traceable to National or International Standards.

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1 Version

Revision Record				
Version	Chapter	Date	Modifier	Remark
00	/	July 16, 2013	/	Original

Authorized for issue by:				
Engineer		Zenger Zhang _____ Print Name		 _____
Clerk		Susie Liu _____ Print Name		 _____
Reviewer		Keny Xu _____ Print Name		 _____



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3 General Information

3.1 Client Information

Applicant :	Hansong (Nanjing) Technology Ltd.
Applicant Address:	8th Kangping Road, Jiangning Economy& Technology Development Zone, 211106 Nanjing, People's Republic of China
Manufacturer:	Klipsch Group Inc
Manufacturer Address:	3502 Woodview Trace, Indianapolis IN 46268, USA
Factory:	Not supplied by the client.

3.2 Details of E.U.T.

EUT Name:	Airplay Speaker
Brand Name:	Klipsch
Model No:	Klipsch STADIUM·
Power Supply:	AC 100V-240V
Operation Frequency:	802.11b/g:2412MHz~2462MHz Bluetooth:2401MHz~2480MHz
Antenna Type:	Integral antenna Note:Antenna Gain: 3.0dBi for Wi-Fi and 1.9dBi for BT



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.

In the configuration tested, the EUT complied with. FCC Rules 47 CFR §2.1091 and KDB 447498 D01 General RF Exposure Guidance section 7.3

Radiofrequency radiation exposure limits

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f ²)	6
30-300	61.4	0.163	1.0	6
300-1500			f/300	6
1500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
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

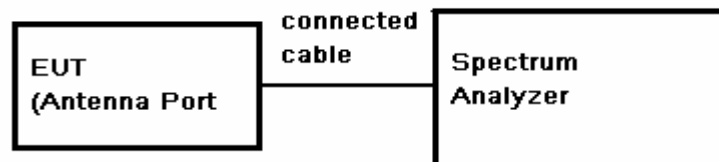
* = Plane-wave equivalent power density

5 Measurement and Calculation

5.1 Maximum transmit power

EUT Operation: Test in fixing frequency operating mode at lowest, middle and highest frequency of the every working band.

Test Configuration:



Test Results

For DTS:

Test Mode	CH	Frequency (MHz)	Reading Peak Power (dBm)	Cable Loss (dB)	Output Peak Power (dBm)	Output Peak Power (mW)
802.11b	Low	2412	20.42	1.5	21.92	155.60
	Middle	2437	20.50	1.5	22.00	158.49
	High	2462	20.53	1.5	22.03	159.59
802.11g	Low	2412	22.06	1.9	23.56	226.99
	Middle	2437	21.86	1.9	23.36	216.77
	High	2462	22.09	1.9	23.59	228.56

BT maximum Power.

Test Channel	Modulation	Fundamental Frequency (MHz)	Reading Power (dBm)	Cable Loss (dB)	Output Power	
					(dBm)	(mW)
Lowest	GFSK	2402	2.69	1.5	4.19	2.62
Middle	GFSK	2441	3.49	1.5	4.99	3.16
Highest	GFSK	2480	4.90	1.5	6.40	4.37
Lowest	$\pi/4$ DQPSK	2402	0.28	1.5	1.78	1.51
Middle	$\pi/4$ DQPSK	2441	4.32	1.5	5.82	3.82
Highest	$\pi/4$ DQPSK	2480	5.64	1.5	7.14	5.18
Lowest	8DPSK	2402	-0.12	1.5	1.38	1.37
Middle	8DPSK	2441	4.51	1.5	6.01	3.99
Highest	8DPSK	2480	5.86	1.5	7.36	5.45

5.2 MPE Calculation

Equation from section 5.5.1.1 of IEEE C95.3

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

P = Power Input to antenna

G = Antenna Gain

R = distance to the center of radiation of antenna (in meter) = 20cm

Note:

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

$$2) G (\text{Antenna gain in numeric}) = 10^{(\text{Antenna gain in dBi} / 10)}$$

$$3) \text{MPE limit} = 1 \text{mW/cm}^2$$

Test Mode	CH	Frequency (MHz)	Output Peak Power (mW)	Antenna Gain (dBi)	R (cm)	MPE (mW/cm ²)	Results
802.11b	Low	2412	155.60	3.0	20	0.062	Pass
	Middle	2437	158.49	3.0	20	0.063	Pass
	High	2462	159.59	3.0	20	0.064	Pass
802.11g	Low	2412	226.99	3.0	20	0.090	Pass
	Middle	2437	216.77	3.0	20	0.086	Pass
	High	2462	228.56	3.0	20	0.091	Pass

Test Mode		CH	Frequency (MHz)	Output Peak Power (mW)	Antenna Gain (dBi)	R (cm)	MPE	Results
Band	Modulation							
2.4GHz BT	GFSK	Low	2402	2.62	1.9	20	0.001	Pass
		Middle	2441	3.16	1.9	20	0.001	Pass
		High	2480	4.37	1.9	20	0.001	Pass
	π/4DQPSK	Low	2402	1.51	1.9	20	0.001	Pass
		Middle	2441	3.82	1.9	20	0.001	Pass
		High	2480	5.18	1.9	20	0.002	Pass
	8DPSK	Low	2402	1.37	1.9	20	0.001	Pass
		Middle	2441	3.99	1.9	20	0.001	Pass
		High	2480	5.45	1.9	20	0.002	Pass



6 EUT Constructional Details

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

THE END OF REPORT