

# Shanghai Rogen Information

## Technology Co.,LTD

### HiFi Stone

**Main Model: HBX10**

**Serial Model: N/A**

**November 01, 2013**




**Report No.: 13050042-FCC-H1**

**(This report supersedes NONE)**



**Modifications made to the product : None**

**This Test Report is Issued Under the Authority of:**

		
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# RF Exposure Evaluation Report

**To: FCC 2.1091: 2012**

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Country/Region	Accreditation Body	Scope
USA	FCC, A2LA	EMC , RF/Wireless , Telecom
Canada	IC, A2LA, NIST	EMC, RF/Wireless , Telecom
Taiwan	BSMI , NCC , NIST	EMC, RF, Telecom , Safety
Hong Kong	OFTA , NIST	RF/Wireless ,Telecom
Australia	NATA, NIST	EMC, RF, Telecom , Safety
Korea	KCC/RRA, NIST	EMI, EMS, RF , Telecom, Safety
Japan	VCCI, JATE, TELEC, RFT	EMI, RF/Wireless, Telecom
Mexico	NOM, COFETEL, Caniety	Safety, EMC , RF/Wireless, Telecom
Europe	A2LA, NIST	EMC, RF, Telecom , Safety

### Accreditations for Product Certifications

Country/Region	Accreditation Body	Scope
USA	FCC TCB, NIST	EMC , RF , Telecom
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EU	NB	EMC & R&TTE Directive
Japan	MIC, (RCB 208)	RF , Telecom
Hong Kong	OFTA (US002)	RF , Telecom

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## 1. EXECUTIVE SUMMARY & EUT INFORMATION

The purpose of this test programme was to demonstrate compliance of the Shanghai Rogen Information Technology Co.,LTD, HiFi Stone and model: HBX10 against the current Stipulated Standards. The HiFi Stone has demonstrated compliance with the FCC 2.1091: 2012.

### EUT Information

<b>EUT Description</b>	:	<b>HiFi Stone</b>
<b>Main Model</b>	:	<b>HBX10</b>
<b>Serial Model</b>	:	<b>N/A</b>
<b>Antenna Gain</b>	:	<b>0.1dBi</b>
<b>Input Power</b>	:	<b>DC 4.75~5.25V</b>
<b>Maximum Conducted Peak Power to Antenna</b>	:	<b>802.11b:15.12 dBm 802.11g:14.45 dBm 802.11n:12.60dBm</b>
<b>Classification Per Stipulated Test Standard</b>	:	<b>FCC 2.1091: 2012</b>

## 2. TECHNICAL DETAILS

<b>Purpose</b>	<b>Compliance testing of HiFi Stone with stipulated standard</b>
<b>Applicant / Client</b>	<b>Shanghai Rogen Information Technology Co.,LTD The 9 floor, Building 1, No.401, Caobao Rd, Xuhui District, Shanghai, P.R.China</b>
<b>Manufacturer</b>	<b>Shanghai rogen information technology Co., Ltd The 9 floor, Building 1, No. 401, Caobao Rd, Xuhui District, Shanghai, P.R.China</b>
<b>Laboratory performing the tests</b>	<b>SIEMIC (Nanjing-China) Laboratories NO.2-1,Longcang Dadao, Yuhua Economic Development Zone, Nanjing, China Tel: +86(25)86730128/86730129 Fax: +86(25)86730127 Email: China@siemic.com.cn</b>
<b>Test report reference number</b>	<b>13050042-FCC-H1</b>
<b>Date EUT received</b>	<b>October 15, 2013</b>
<b>Standard applied</b>	<b>FCC 2.1091: 2012</b>
<b>Dates of test</b>	<b>October 24 to October 27, 2013</b>
<b>No of Units</b>	<b>#1</b>
<b>Equipment Category</b>	<b>DTS</b>
<b>Trade Name</b>	<b>DOLRY</b>
<b>RF Operating Frequency (ies)</b>	<b>WIFI: 802.11b/g/n: 2412-2462 MHz</b>
<b>Number of Channels</b>	<b>802.11b/g /n: 11CH</b>
<b>Modulation</b>	<b>CCK/OFDM</b>
<b>FCC ID</b>	<b>2AA7JHBX10</b>

### **3. MAXIMUM PERMISSIBLE EXPOSURE (MPE)**

#### **FCC §2.1091 - MAXIMUM PERMISSIBLE EXPOSURE (MPE)**

##### **Applicable Standard**

According to §1.1307(b)(1), 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 of the Commission's guidelines.

According to §1.1310 and §2.1091 RF exposure is calculated.

Limits for General Population/Uncontrolled Exposure

Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Averaging Time (minutes)
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f <sup>2</sup> )	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

Test Data

Predication of MPE limit at a given distance

$$S = \frac{PG}{4\pi R^2}$$

Where: S = power density (in appropriate units, e.g. mW/cm<sup>2</sup>)

P = power input to the antenna (in appropriate units, e.g., mW).

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain.

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

**Note: base on different type antenna and their gain, the bellow result is the worst case.**

**802.11b:**

Maximum peak output power at antenna input terminal: 15.12 (dBm)

Maximum peak output power at antenna input terminal: 32.51 (mW)

Prediction distance: >20 (cm)

Predication frequency: 2412 (MHz)

Antenna Gain (typical): 0.1 (dBi)

Antenna Gain (typical): 1.023 (numeric)

The worst case is power density at predication frequency at 20 cm: 0.007 (mW/cm<sup>2</sup>)

MPE limit for general population exposure at prediction frequency: 1.0 (mW/cm<sup>2</sup>)

0.007(mW/cm<sup>2</sup>) < 1.0(mW/cm<sup>2</sup>)

**802.11g:**

Maximum peak output power at antenna input terminal: 14.45 (dBm)

Maximum peak output power at antenna input terminal: 35.08 (mW)

Prediction distance: >20 (cm)

Predication frequency: 2412 (MHz)

Antenna Gain (typical):0.1 (dBi)

Antenna Gain (typical): 1.023 (numeric)

The worst case is power density at predication frequency at 20 cm: 0.006 (mW/cm<sup>2</sup>)

MPE limit for general population exposure at prediction frequency:1.0 (mW/cm<sup>2</sup>)

0.006(mW/cm<sup>2</sup>) < 1.0(mW/cm<sup>2</sup>)

**802.11n:**

Maximum peak output power at antenna input terminal: 12.60 (dBm)

Maximum peak output power at antenna input terminal: 18.20(mW)

Prediction distance: >20 (cm)

Predication frequency: 2412 (MHz)

Antenna Gain (typical):0.1 (dBi)

Antenna Gain (typical): 1.023 (numeric)

The worst case is power density at predication frequency at 20 cm: 0.004 (mW/cm<sup>2</sup>)

MPE limit for general population exposure at prediction frequency: 1.0 (mW/cm<sup>2</sup>)

0.004 (mW/cm<sup>2</sup>) < 1.0(mW/cm<sup>2</sup>)

**Result: Pass**