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Report No.: SZEM140500252006
Page: 1 of 23

SAR Evaluation Report

Application No.: SZEM1411006259CR
Applicant: Creative Labs Inc.
Product Name: Sound Blaster X7
Model No.(EUT): SB1580
Trade Mark: Creative
FCC ID: IBAAVPSB1580
Standards: 47 CFR Part 1.1307(2013)
47 CFR Part 2.1093 (2013)
KDB447498D01 General RF Exposure Guidance v05
Date of Receipt: 2014-11-19
Date of Test: 2014-11-19
Date of Issue: 2014-11-24

Test Result :	PASS*
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* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



Jack Zhang
EMC Laboratory Manager

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. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.

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		2014-11-24		Original

Authorized for issue by:				
Tested By		 (Eric Fu) /Project Engineer		2014-11-19 Date
Prepared By		 (Sade Luo) /Clerk		2014-11-24 Date
Checked By		 (Kevin Feng) /Reviewer		2014-11-26 Date



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4 General Information

4.1 Client Information

Applicant:	Creative Labs Inc.
Address of Applicant:	1901, McCarthy Boulevard, Milpitas, CA 95035, United States

4.2 General Description of EUT

Product Name:	Sound Blaster X7
Model No.	SB1580
Trade Mark:	Creative
Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	4.1
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)
Modulation Type:	GFSK, $\pi/4$ DQPSK, 8DPSK for classic mode GFSK for BLE mode
Number of Channel:	79 for classic mode 40 for BLE mode
Hopping Channel Type:	Adaptive Frequency Hopping systems
Sample Type:	Fixed production
Test Power Grade:	50,30 (manufacturer declare) for classic mode 0(manufacturer declare) for BLE mode
Test Software of EUT:	Bluetest3 (manufacturer declare)
Antenna Type and Gain:	Type :Integral Gain :0.5dBi
USB Cable:	150cm(Shielded)
Audio Extension Cable:	15cm(Unshielded)
AC Cable:	120cm(Unshielded)
Audio Cable:	200cm(Unshielded)
DC Cable:	150cm(Unshielded with one ferrite core)
AC Adapter:	MODEL: GM150-2400600 INPUT: 100-240V~50/60Hz 2.5A OUTPUT: 24V \equiv 6.0A
Power Supply:	Input: DC 24V 6.0A
Test Voltage:	AC 120V 60Hz



4.3 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch E&E Lab
No. 1 Workshop, M-10, Middle section, Science & Technology Park, Shenzhen, Guangdong, China
518057
Telephone: +86 (0) 755 2601 2053 Fax: +86 (0) 755 2671 0594
No tests were sub-contracted.

4.4 Test Facility

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

- **CNAS (No. CNAS L2929)**

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab 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.

- **VCCI**

The 10m Semi-anechoic chamber and Shielded Room (7.5m x 4.0m x 3.0m) of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-823, R-4188, T-1153 and C-2383 respectively.

- **FCC – Registration No.: 556682**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No.: 556682.

- **Industry Canada (IC)**

Two 3m Semi-anechoic chambers of SGS-CSTC Standards Technical Services Co., Ltd. have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1 & 4620C-2.

4.5 Deviation from Standards

None.

4.6 Abnormalities from Standard Conditions

None.

4.7 Other Information Requested by the Customer

None.



5 SAR Evaluation

5.1 RF Exposure Compliance Requirement

5.1.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v05

4.3.1. Standalone SAR test exclusion considerations

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

5.1.2 Limits

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

$$\left[\frac{(\text{max. power of channel, including tune-up tolerance, mW})}{(\text{min. test separation distance, mm})} \right] \cdot \sqrt{f(\text{GHz})} \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where}$$

$f(\text{GHz})$ is the RF channel transmit frequency in GHz

Power and distance are rounded to the nearest mW and mm before calculation¹⁷

The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion



5.1.3 EUT RF Exposure

For classic mode:

The Max Conducted Peak Output Power is 0.88dBm in highest channel(2.480GHz);

The best case gain of the antenna is 0.5dBi.

$$\text{EIRP} = 0.88\text{dBm} + 0.5\text{dBi} = 1.38\text{dBm}$$

1.38dBm logarithmic terms convert to numeric result is nearly 1.3740mW

According to the formula. calculate the EIRP test result:

$$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}]$$

$$\text{General RF Exposure} = (1.3740\text{mW} / 5 \text{ mm}) \times \sqrt{2.480\text{GHz}} = 0.4328 \text{ ①}$$

SAR requirement:

$$S = 3.0$$

$$\text{②} ;$$

$$\text{①} < \text{②}.$$

So the SAR report is not required.

For BLE mode:

The Max Conducted Peak Output Power is -1.95dBm in highest channel(2.480GHz);

The best case gain of the antenna is 0.5dBi.

$$\text{EIRP} = (-1.95)\text{dBm} + 0.5\text{dBi} = (-1.45)\text{dBm}$$

-1.45dBm logarithmic terms convert to numeric result is nearly 0.7161mW

According to the formula. calculate the EIRP test result:

$$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}]$$

$$\text{General RF Exposure} = (0.7161\text{mW} / 5 \text{ mm}) \times \sqrt{2.480\text{GHz}} = 0.2255 \text{ ①}$$

SAR requirement:

$$S = 3.0$$

$$\text{②} ;$$

$$\text{①} < \text{②}.$$

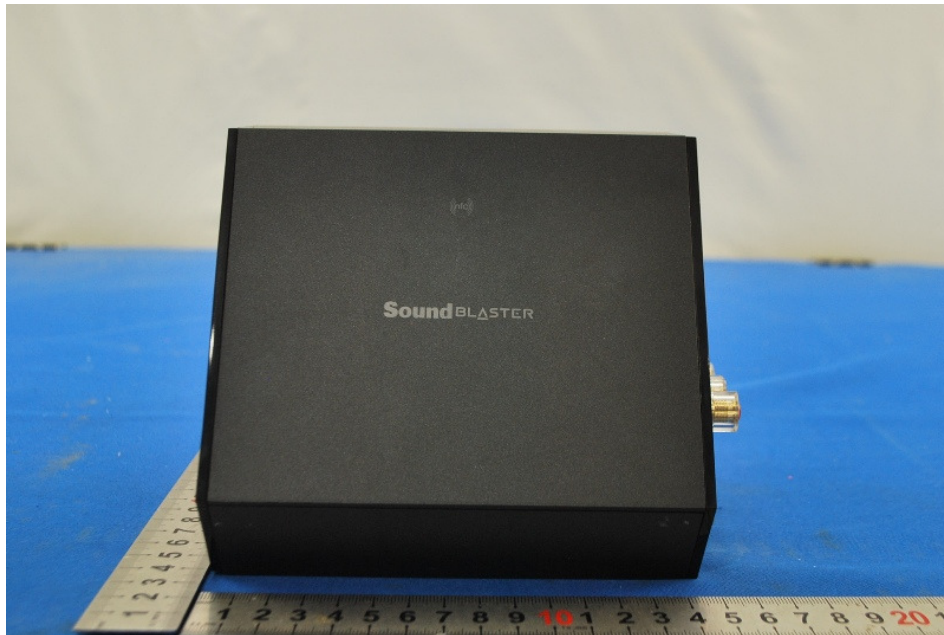
So the SAR report is not required.

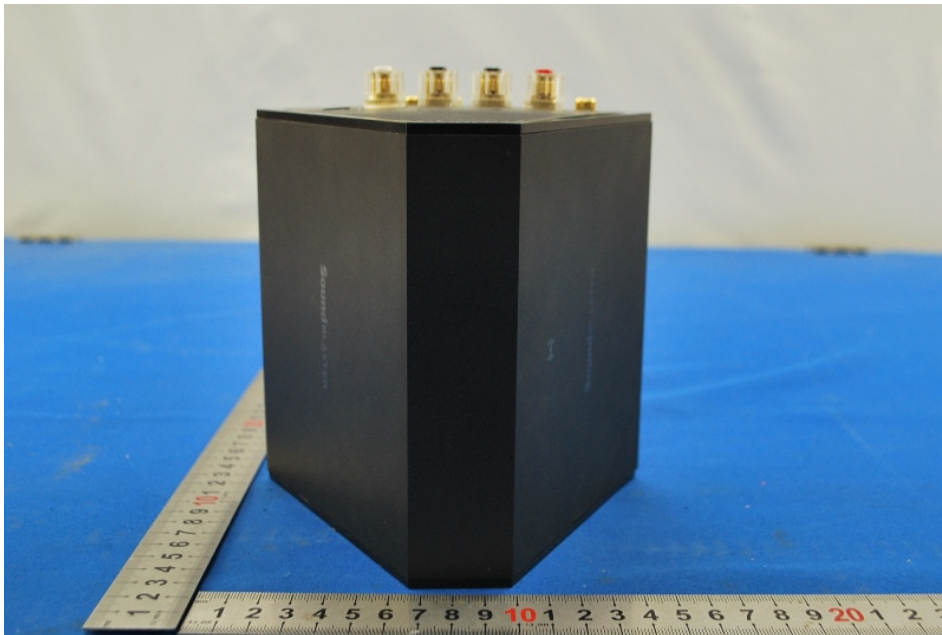
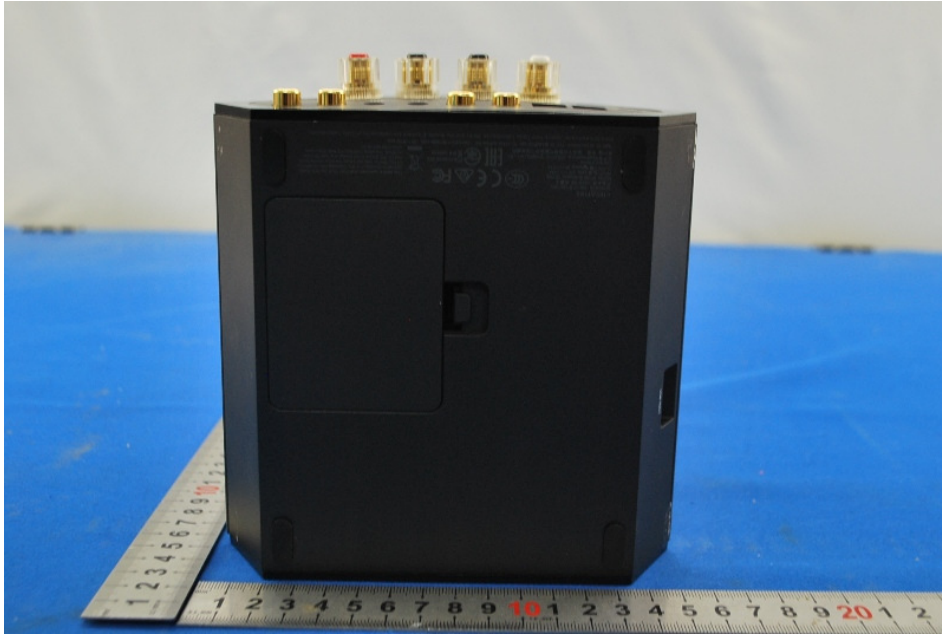
6 Photographs - EUT Constructional Details

Test model No.:SB1580



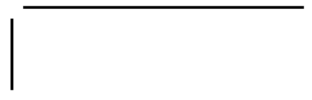








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CREATIVE

Звуковая карта USB SOUND BLASTER X7

产品名称: CREATIVE 声霸卡 (有源音箱) USB SOUND CARD MODEL NO./型号/모델명: SB1580

INPUT/电源/вход: 24V 6A OUTPUT/输出/выход: 5V 2.1A

生产者/Производитель/제조사: CREATIVE TECHNOLOGY LTD. 创新科技有限公司

Сделано в Китае/原产地: 中国

适用于非热带气候条件下安全使用 For safe use in non-tropical climate conditions.

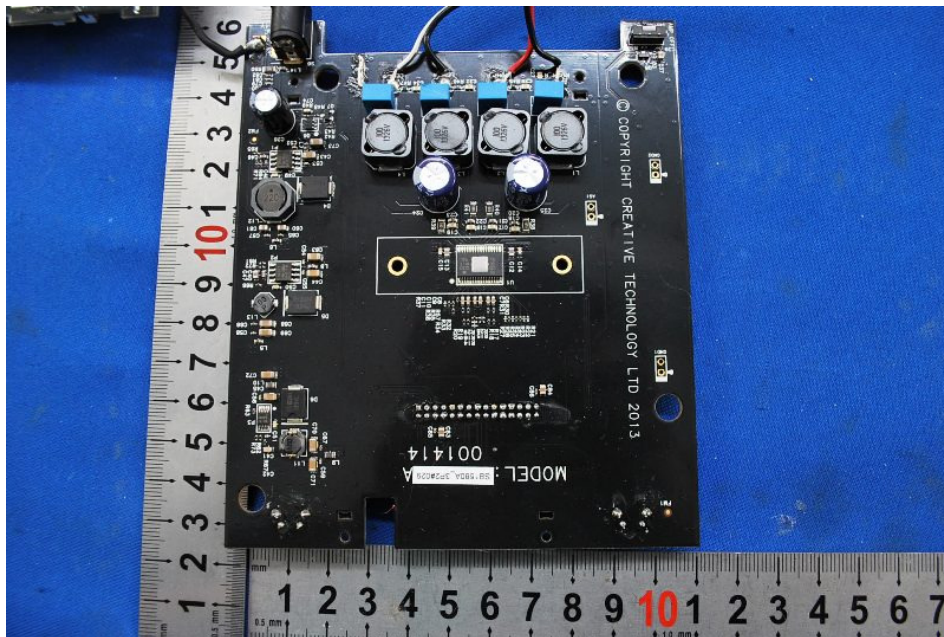
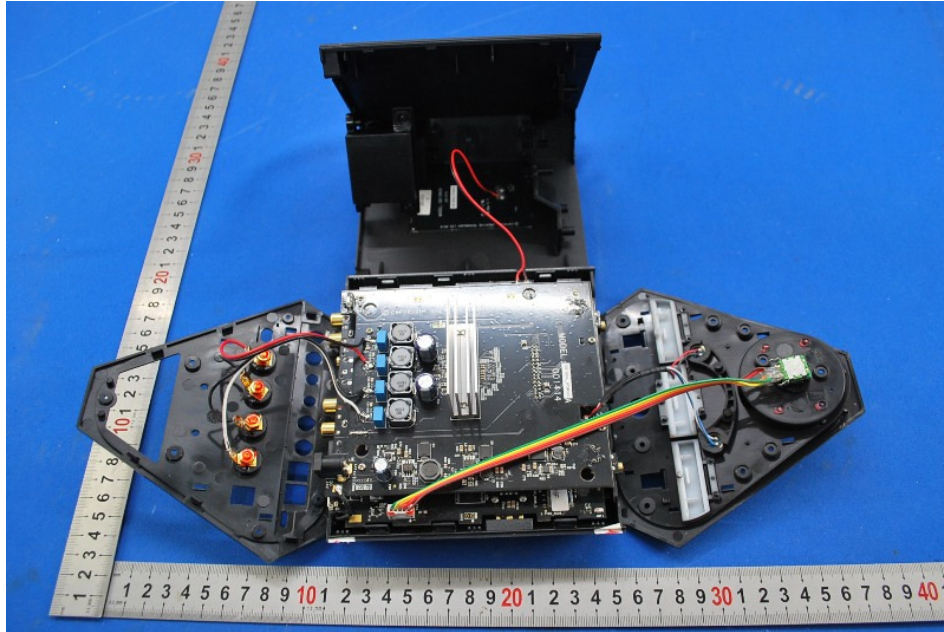
FCC ID: IBAVPSB1580 IC: 2315A-AVPSB1580 CAN ICES-3 (B)/NMB-3 (B) Z571 (R-NZ only)

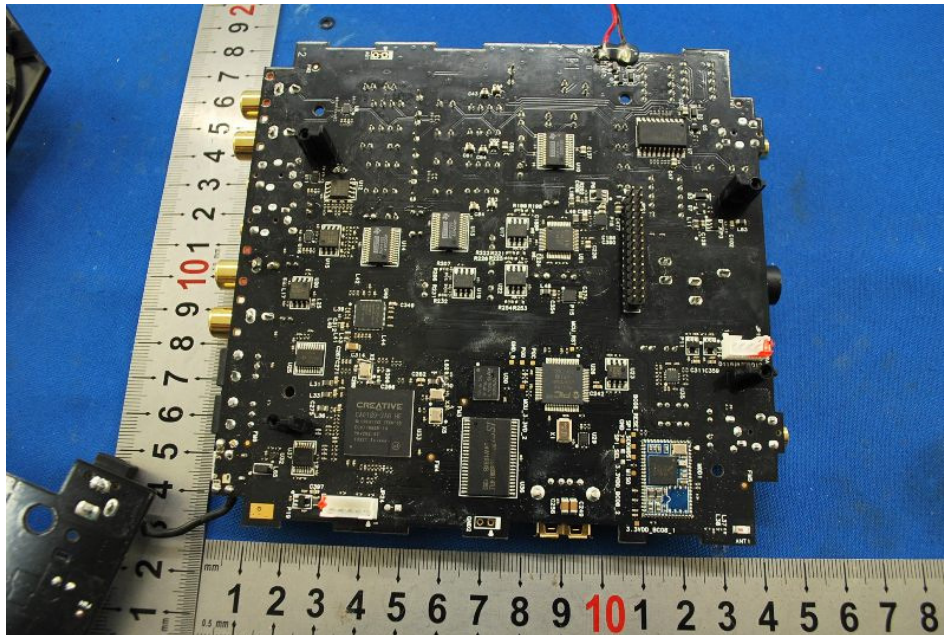
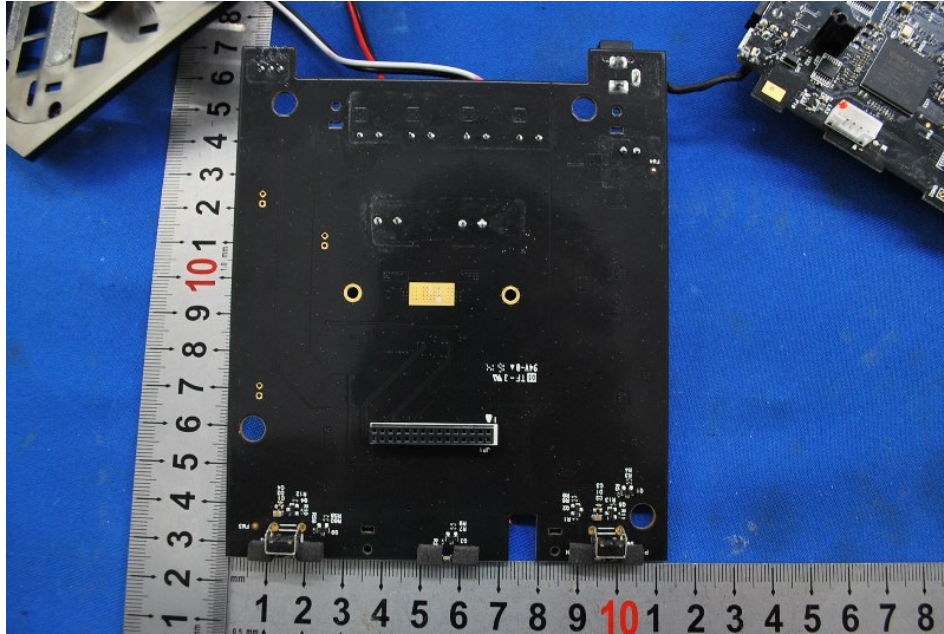
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

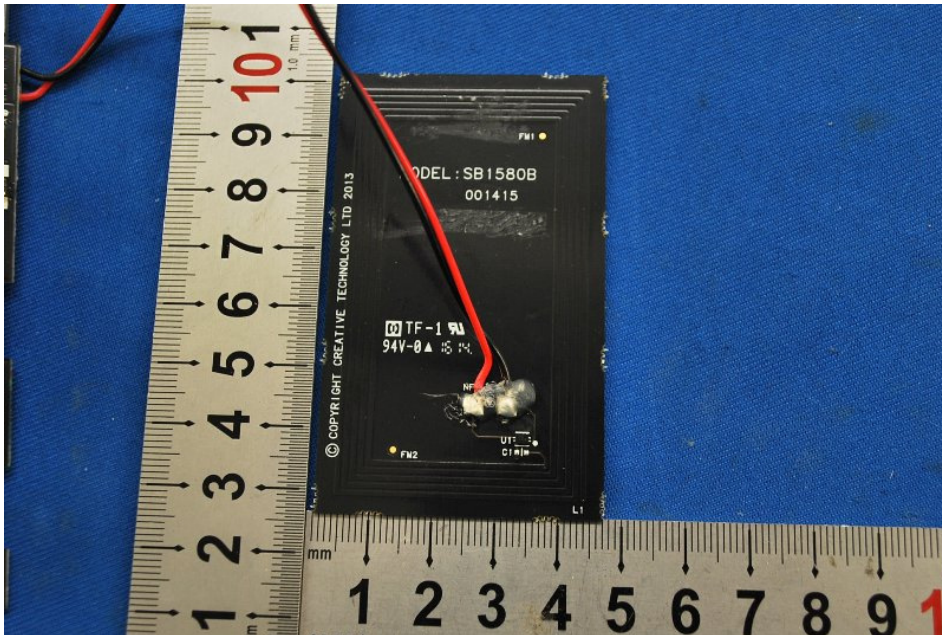
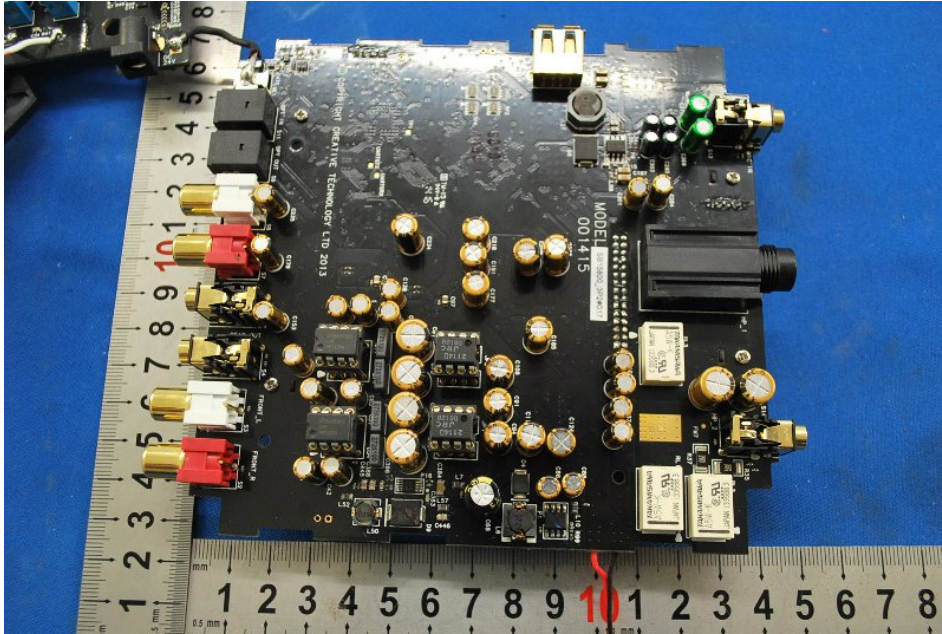
Manufactured under license from Dolby Laboratories.

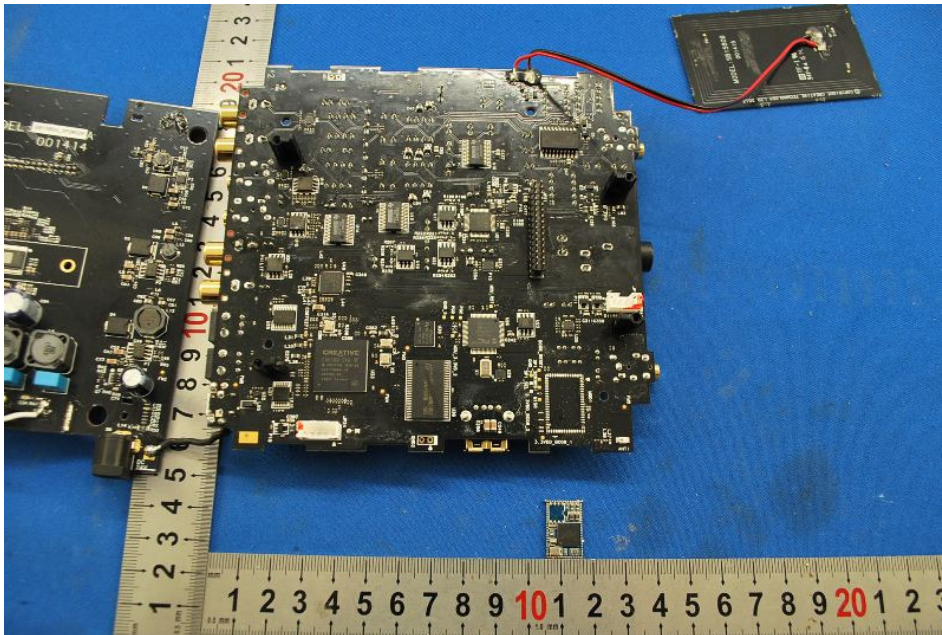
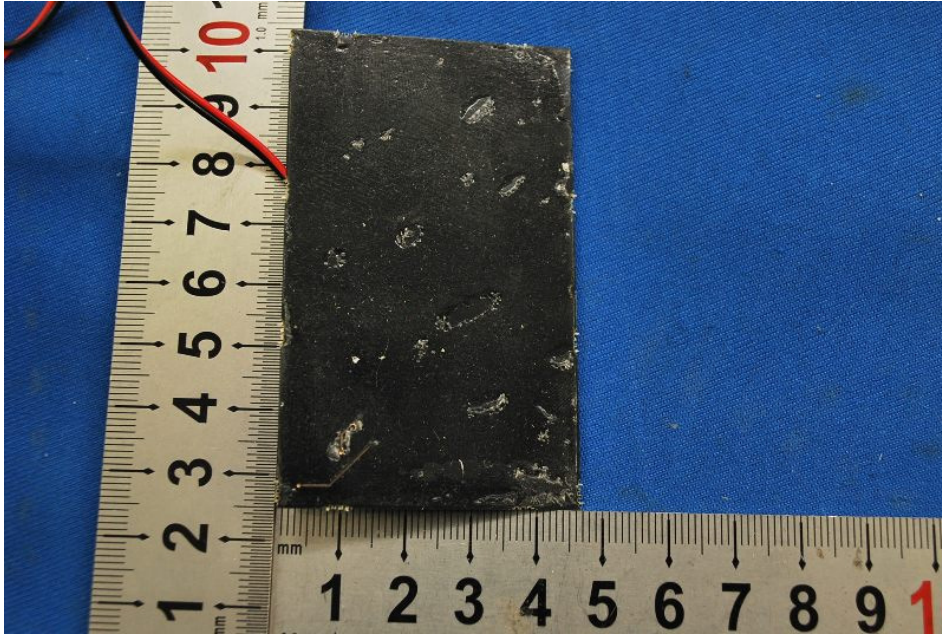
Dolby and the double-D symbol are trademarks of Dolby Laboratories.

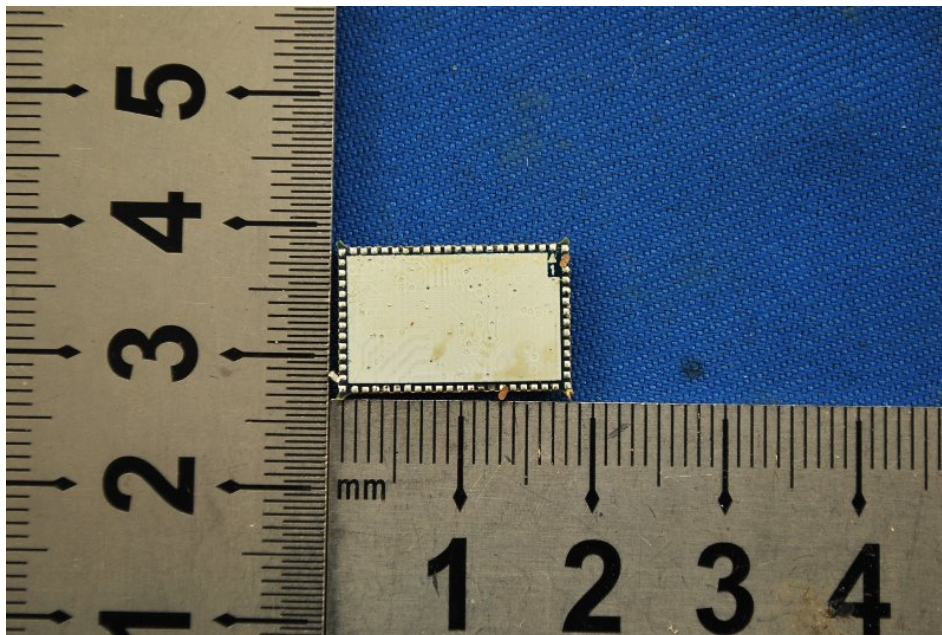
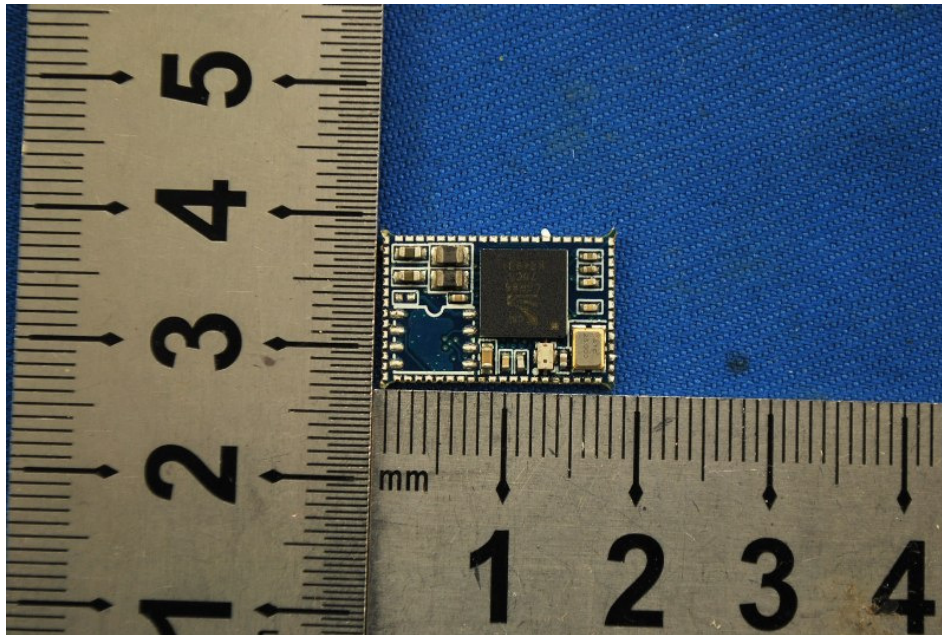


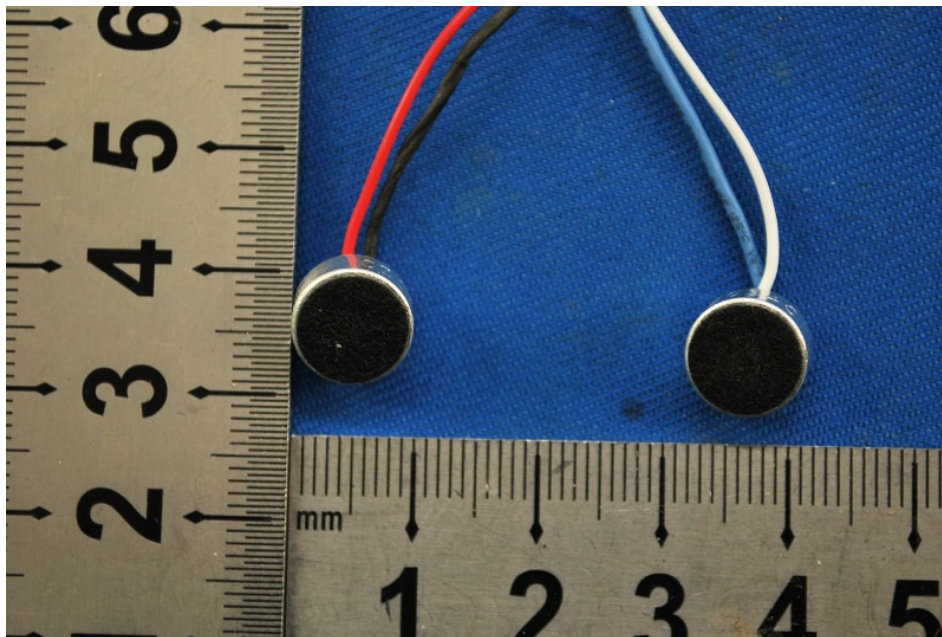
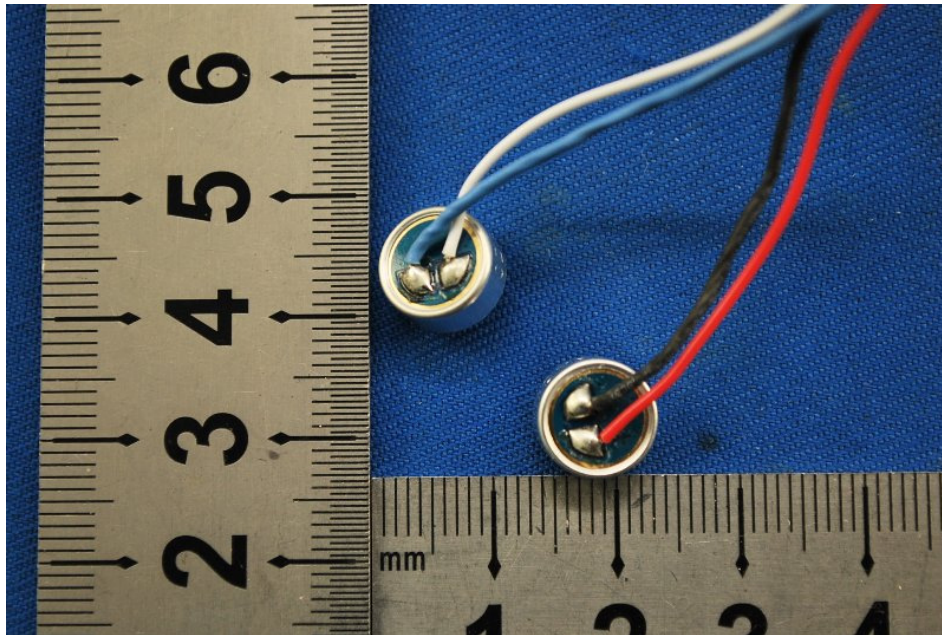
















AC/DC ADAPTER
 电源适配器
 адаптер питания



MODEL\型号\модель: GM150-2400600

INPUT\输入\вход: 100-240V~ 50/60Hz 2.5A

OUTPUT\输出\выход: 24V --- 6.0A 144W

(V) EFFICIENCY LEVEL - - - +

전기용품 안전관리법에 의한 표시

모델명: GM150-2400600

정격입력: 100-240V~ 50/60Hz 2.5A

정격출력: 24V --- 6.0A 144W

안전인증번호: HU10379-11005A

제품명: 직류전원장치

제조원: Foshan Shunde Guanyuda Power Supply Co., Ltd.

제조국: 중국(MADE IN CHINA)

제조년월: 2014년 11 월

A/S연락처: JAY WORKS CO., LTD

(02) 9485757


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MADE IN CHINA/ 中国制造/ Сделано в Китае

FO SHAN SHUNDE GUANYUDA
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