

RF Exposure Evaluation Report

Product : over-ear noise cancellation headphones
Trade mark : blackbox
Model/Type reference : Trip
Serial Number : N/A
Report Number : EED32K00209202
FCC ID : 2AN4C-1266
Date of Issue : Aug. 16, 2018
47 CFR Part 1.1307
Test Standards : 47 CFR Part 2.1093
KDB 447498 D01v06
Test result : PASS

Prepared for:

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Aug. 16, 2018

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2 Version

| Version No. | Date | Description |
|-------------|---------------|-------------|
| 00 | Aug. 16, 2018 | Original |
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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 EUT..... | 4 |
| 4.3 PRODUCT SPECIFICATION SUBJECTIVE TO THIS STANDARD..... | 4 |
| 4.4 TEST LOCATION..... | 5 |
| 4.5 TEST FACILITY..... | 5 |
| 4.6 DEVIATION FROM STANDARDS..... | 6 |
| 4.7 ABNORMALITIES FROM STANDARD CONDITIONS..... | 6 |
| 4.8 OTHER INFORMATION REQUESTED BY THE CUSTOMER..... | 6 |
| 5 SAR EVALUATION..... | 7 |
| 5.1 RF EXPOSURE COMPLIANCE REQUIREMENT..... | 7 |
| 5.1.1 Standard Requirement..... | 7 |
| 5.1.2 Limits..... | 7 |
| 5.1.3 EUT RF Exposure..... | 7 |
| PHOTOGRAPHS OF EUT CONSTRUCTIONAL DETAILS..... | 8 |

4 General Information

4.1 Client Information

| | |
|--------------------------|--|
| Applicant: | Shenzhen Grandsun Electronic Co., Ltd. |
| Address of Applicant: | Pingdi Gaoqiao Industry Zone, Longgang District, Shenzhen, China |
| Manufacturer: | Shenzhen Grandsun Electronic Co., Ltd. |
| Address of Manufacturer: | Pingdi Gaoqiao Industry Zone, Longgang District, Shenzhen, China |
| Factory: | Shenzhen Grandsun Electronic Co., Ltd. |
| Address of Factory: | Pingdi Gaoqiao Industry Zone, Longgang District, Shenzhen, China |

4.2 General Description of EUT

| | |
|----------------------------------|--|
| Product Name: | over-ear noise cancellation headphones |
| Model No.(EUT): | Trip |
| Trade Mark: | blackbox |
| EUT Supports Radios application: | BT4.2 Signal mode, 2402-2480MHz |

4.3 Product Specification subjective to this standard

| | |
|---|---|
| Frequency Range: | 2402-2480MHz |
| Test Power Grade: | N/A |
| Test Software of EUT: | CSR BlueTest3(manufacturer declare) |
| Antenna Type: | PIFA type FPC antenna |
| Antenna Gain: | 2dBi |
| Power Supply: | Battery: 3.7V, 720mAh |
| Conducted Peak Output Power: | 3.890dBm The Conducted Peak Output Power data refer to the report EED32K00209201 |
| Hardware Version: | V0.3(manufacturer declare) |
| Firmware version: | V2.5(manufacturer declare) |
| Sample Received Date: | Aug. 02, 2018 |
| Sample tested Date: | Aug. 02, 2018 to Aug. 06, 2018 |
| The tested sample(s) and the sample information are provided by the client. | |

4.4 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd

Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China

Telephone: +86 (0) 755 33683668 Fax: +86 (0) 755 33683385

No tests were sub-contracted.

FCC Designation No.: CN1164

4.5 Test Facility

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

CNAS-Lab Code: L1910

Centre Testing International Group Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories..

A2LA-Lab Cert. No. 3061.01

Centre Testing International Group Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

FCC-Registration No.: CN1164

Centre Testing International Group Co., Ltd. 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 CN1164.

IC-Registration No.: 7408A

The 3m Alternate Test Site of Centre Testing International Group Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 7408A .

IC-Registration No.: 7408B

The 10m Alternate Test Site of Centre Testing International Group Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 7408B.

NEMKO-Aut. No.: ELA503

Centre Testing International Group Co., Ltd. has been assessed the quality assurance system, the testing facilities, qualifications and testing practices of the relevant parts of the organization. The quality assurance system of the Laboratory has been validated against ISO/IEC 17025 or equivalent. The laboratory also fulfils the conditions described in Nemko Document NLA-10.

VCCI

The Radiation 3 &10 meters site of Centre Testing International Group Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-4096.

Main Ports Conducted Interference Measurement of Centre Testing International Group Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: C-4563.

Telecommunication Ports Conducted Disturbance Measurement of Centre Testing International Group Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: T-2146.

The Radiation 3 meters site of Centre Testing International Group Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-758

4.6 Deviation from Standards

None.

4.7 Abnormalities from Standard Conditions

None.

4.8 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
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:

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

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

The Max Conducted Peak Output Power is 3.890dBm in highest channel(2.441GHz);

The best case gain of the antenna is 2dBi.

$EIRP = 3.890 + 2 = 5.890 \text{ dBm}$

5.890dBm logarithmic terms convert to numeric result is nearly 3.88mW

According to the formula. calculate the EIRP test result:

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

General RF Exposure = $3.88 \text{ mW} / 5 \text{ mm} \cdot \sqrt{2.441 \text{ GHz}} = 1.21$ ①

SAR requirement:

S = 3.0

② ;

① < ②.

So the SAR report is not required.

PHOTOGRAPHS OF EUT Constructional Details

Refer to Report No. EED32K00209201 for EUT external and internal photos.

*** End of Report ***

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