

RF Exposure Evaluation Report

Product : AudioSteamX
Trade mark : N/A
Model/Type reference : AUDIOXBK,AUDIOXWH
Serial Number : N/A
Report Number : EED32P80411702
FCC ID : 2A5N4-AUDIOX
Date of Issue : Jan. 10, 2024
Test Standards : 47 CFR Part 1.1307
47 CFR Part 1.1310
47 CFR Part 2.1091
47 CFR Part 2.1093
KDB 447498 D04 Interim General RF
Exposure Guidance v01
Test result : PASS

Prepared for:

Mr. Steam

43-20 34th Street, Long Island City, NY 11101, USA.

Prepared by:

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3 General Information

3.1 Client Information

Applicant:	Mr. Steam
Address of Applicant:	43-20 34th Street, Long Island City, NY 11101, USA.
Manufacturer:	Estone Technology LTD
Address of Manufacturer:	2F, Building No.1, Jia'an Industrial Park, No.2 Long Chang Road, Bao'an, Shenzhen 518101, China.
Factory:	Estone Technology LTD
Address of Factory:	2F, Building No.1, Jia'an Industrial Park, No.2 Long Chang Road, Bao'an, Shenzhen 518101, China.

3.2 General Description of EUT

Product Name:	AudioSteamX
Model No.(EUT):	AUDIOXBK,AUDIOXWH
Test Model No.:	AUDIOXBK
Trade Mark:	N/A

3.3 Product Specification subjective to this standard

Frequency Range:	2402MHz~2480MHz
Modulation Type:	GFSK, $\pi/4$ DQPSK
Test Power Grade:	Default
Test Software of EUT:	FCCAssist.exe
Antenna Type:	PCB Antenna
Antenna Gain:	-0.58dBi
Power Supply:	Model:AK65WG-2100300W2 Input:100-240V~50/60Hz,1.5A Output:21.0V,3.0A,63.0W
Sample Received Date:	Nov. 27, 2023
Sample tested Date:	Nov. 27, 2023 to Nov. 30, 2023
Remark: The product is divided into main speaker and subspeaker, of which only the main speaker has wireless function, both of which are tested and the test results are recorded in the report. Company Name and Address shown on Report, the sample(s) and sample Information were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified. Model No.: AUDIOXBK,AUDIOXWH Only the model AUDIOXBK was tested, since the electrical circuit design, layout, components used and internal wiring were identical for the above models, with difference being color of appearance, pack and model name.	

3.4 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

3.5 Deviation from Standards

None.

3.6 Abnormalities from Standard Conditions

None.

3.7 Other Information Requested by the Customer

None.

4 SAR Evaluation

4.1 RF Exposure Compliance Requirement

4.1.1 Limits

The SAR-based exemption formula of § 1.1307(b)(3)(i)(B), repeated here as Formula (B.2), applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power or effective radiated power (ERP), whichever is greater, of less than or equal to the threshold Pth (mW).

This method shall only be used at separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive). Pth is given by Formula

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases}$$

where

$$x = -\log_{10} \left(\frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right)$$

and f is in GHz, d is the separation distance (cm), and ERP20cm is per Formula (B.1).

$$P_{th} \text{ (mW)} = ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases} \quad (\text{B.1})$$

The 1 mW Blanket Exemption of § 1.1307(b)(3)(i)(A) applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power of no more than 1 mW, regardless of separation distance.

4.1.2 Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

4.1.3 EUT RF Exposure Evaluation

For Bluetooth Classic:

Frequency (MHz)	Available maximum time-averaged power (dBm)	Antenna gain (dBi)	ERP (dBm)	Available maximum time-averaged power (mW)	Limit (mW)	Result
2402	0.87	-0.58	-1.86	1.222	≤3060	PASS

Note:

- ① EIRP=Available maximum time-averaged power+Antenna gain;
- ② ERP=EIRP-2.15;
- ③ According to § 1.1307(b)(3)(i)(B), RF sources with available maximum time-averaged power or effective radiated power (ERP), whichever is greater, of less than or equal to the threshold Pth (mW). Only the worst case data was recorded in the report.
- ④ The separation distance is 20cm.

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CTI, this report can't be reproduced except in full.

*** End of Report ***