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Test Report

Prepared for: Noxgear LLC

EUT Name: Wearable Bluetooth Speaker
Model: NG-WBS-01

FCC ID: 2A3FG-NOX01
To

FCC Part 2.1093

Date of Issue: 22 November 2021

On the behalf of the applicant:

Noxgear LLC
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Attention of:

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Test Report Revision History

Revision	Date	Revised By	Reason for Revision
1.0	22 November 2021	Aaron S. Froehlich	Original Document

ANAB

Compliance Testing, LLC, has been accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to the joint ISO-ILAC-IAF Communiqué dated January 2009).

The tests results contained within this test report all fall within our scope of accreditation, unless noted below.

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FCC Site Reg. #349717

IC Site Reg. #2044A-2

Non-accredited tests contained in this report:

N/A

EUT Description

Product Marketing Name (PMN)	Wearable Bluetooth Speaker
Hardware Version Identification Number (HVIN)	NG-WBS-01
Firmware Version Identification Number (FVIN)	1.0.0
AC Adapter	Model: A2620 Input: 100-240V, 0.5A, 50-60 Hz Output: 5V, 2.4A
Frequency Range	2402-2480 MHz
Number of Channels	79
Modulation(s)	GFSK, $\pi/4$ -DQPSK, 8DPSK
Data Rate(s)	1/2/3 Mbps Type: Chip
Antenna	Part Number: 2450AT18D0100E Pk Gain: 1.5 dBi Frequency Range: 2.4-2.5 GHz
Maximum Conducted Output Power	0.86 mW
Maximum Radiated Power (Calculated)	1.21 mW

General Description of EUT and its intended use:

The EUT is a wearable speaker that receives its audio information via BlueTooth v4.0. The inaccessible internal battery is charged from a standard Micro USB port.

RF Exposure Test Exemption for Single Source

KDB 447498 D01 v07 DRAFT 20 April 2021

2.1.3 SAR-Based Exemption

A more comprehensive exemption, considering a variable power threshold that depends on both the *separation distance* and power, is provided in §1.1307(b)(3)(ii)(B). This exemption is applicable to the frequency range between 300 MHz and 6 GHz, with *test separation distances* between 0.5 cm and 40 cm, and for all RF sources in fixed, mobile, and portable device exposure conditions.

Accordingly, a RF source is considered an *RF exempt device* if its available maximum time-averaged (matched conducted) power or its effective radiated power (ERP), whichever is greater, are below a specified threshold. This exemption threshold was derived based on general population 1-g SAR requirements and is detailed in Appendix C.

47 CFR 1.1307(b)(3)(i)(B)

The available maximum time-averaged power or effective radiated power (ERP), whichever is greater, is less than or equal to the threshold P_{th} (mW) described in the following formula. This method shall only be used at separation distances (cm) from 0.5 centimeters to 40 centimeters and at frequencies from 0.3 GHz to 6 GHz (inclusive). P_{th} is given by:

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

Where

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

and

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

d = the separation distance (cm);

Calculations

$$ERP_{20\text{ cm}} = 3060\text{ mW}$$

$$\text{High Channel} \\ x = -\log_{10} \left(\frac{60}{3060 * \sqrt{2.48}} \right) = 1.904796$$

$$P_{th} = 3060 * \left(\frac{0.5}{20} \right)^{1.904796} = 2.717215\text{ mW}$$

$$\text{Low Channel} \\ x = -\log_{10} \left(\frac{60}{3060 * \sqrt{2.402}} \right) = 1.897857$$

$$P_{th} = 3060 * \left(\frac{0.5}{20} \right)^{1.897857} = 2.787665\text{ mW}$$

Conclusion

EUT is exempt from evaluation, the maximum radiated power (1.21 mW) is less than the power threshold for exemption (2.72 mW).

END OF TEST REPORT