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Test Report No.: FM181102N034

RF EXPOSURE REPORT

Applicant	ELAC Electroacoustic GmbH
Address	Fraunhoferstr.16, 24118 Kiel, Germany

Manufacturer or Supplier	ELAC Electroacoustic GmbH
Address	Fraunhoferstr.16, 24118 Kiel, Germany
Product	Headband Bluetooth ANC Headphones
Brand Name	ELAC
Model	Hearing Protector P103
Additional Model & Model Difference	N/A
Date of tests	Nov. 02, 2018 ~ Nov. 28, 2018

FCC Part 2 (Section 2.1093)

KDB 447498 D01

IEEE C95.1

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Tested by Tom Chen Project Engineer / EMC Department	Approved by Glyn He Supervisor/ EMC Department

Date: Dec. 12, 2018

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
FM181102N034	Original release	Dec. 12, 2018



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1. CERTIFICATION

FCC ID:	2ARWH-P103
PRODUCT:	Headband Bluetooth ANC Headphones
BRAND NAME:	ELAC
MODEL NO.:	Hearing Protector P103
ADDITIONAL NO.:	N/A
APPLICANT:	ELAC Electroacoustic GmbH
STANDARDS:	FCC Part 2 (Section 2.1093)
	KDB 447498 D01
	IEEE C95.1



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2. RF EXPOSURE DEFINE

The corresponding SAR Exclusion Threshold condition, listed below:

1) 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:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$ for 1-g SAR and ≤ 7.5 for 10-g extremity SAR,¹⁶ where

- $f(\text{GHz})$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- 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.

2) At 100 MHz to 6 GHz and for test separation distances > 50 mm, the SAR test exclusion threshold is determined according to the following:

- a) [Threshold at 50 mm in step 1) + (test separation distance - 50 mm) · (f(MHz)/150)] mW, at 100MHz to 1500 MHz
- b) [Threshold at 50 mm in step 1) + (test separation distance - 50 mm) · 10] mW at > 1500 MHz and ≤ 6 GHz

3) At frequencies below 100 MHz, the following may be considered for SAR test exclusion.

- a) The threshold at the corresponding test separation distance at 100 MHz in step 2) is multiplied by $[1 + \log(100/f(\text{MHz}))]$ for test separation distances > 50 mm and < 200 mm.
- b) The threshold determined by the equation in a) for 50 mm and 100 MHz is multiplied by $\frac{1}{2}$ for test separation distances ≤ 50 mm.
- c) SAR measurement procedures are not established below 100 MHz. When SAR test exclusion cannot be applied, a KDB inquiry is required to determine SAR evaluation requirements for any test results to be acceptable.

3. CLASSIFICATION

The antenna of this product, under normal use condition, is at less than 20cm away from the body of the user. So, this device is classified as **Portable Device**.

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4. SAR TEST EXCLUSION THRESHOLDS

The tuned conducted Average Power (declared by client)

Mode	Frequency (MHz)	Target Power (dBm)	Tolerance (dBm)	Lower Tolerance (dBm)	Upper Tolerance (dBm)
GFSK	2402-2480	7	+2	5	9
8DPSK	2402-2480	4	+2	2	6
BT-LE(GFSK)	2402-2480	0	+2	-2	2

The measured conducted Average Power

Mode	Frequency (MHz)	Averaged Power (dBm)
GFSK	2480	7.64
8DPSK	2441	4.39
BT-LE(GFSK)	2480	0.65

SAR Test Exclusion Thresholds

Frequency (MHz)	Maximum source-based time averaged conducted output power (dBm)	Minimum separation distance (mm)	Result of Eq. 1	Limit for 1-g SAR	Limit for 10-g extremity SAR	Verdict
2402-2480	9	5	2.50	3.0	7.5	Exempt from SAR

Conclusion

Therefore this device complies with FCC's RF radiation exposure limits for general population without SAR evaluation.