

FCC RF Exposure

Applicant : Kali Audio Audio, Inc.
Address : 201 N. Hollywood Way STE 212 Burbank CA 91505
United States
Product Name : Wireless Headphones
Brand Mark : Kali Audio
Model : HP-1
FCC ID : 2ATSD-HP-1
Report Number : BLA-EMC-202502-A6704
Date of Receipt : Feb.25,2025
Date of Test : Feb.26,2025 to Mar.17,2025
Test Standard : KDB447498D04 General RF Exposure Guidance v01
Test Result : Pass

Compiled by: Review by: Approved by: 

Issued Date: Mar.18,2025

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Revise Record

Version No.	Date	Description
01	Mar.18,2025	Original

1 General information

1.1 General information

Applicant	Kali Audio Audio, Inc.
Address	201 N. Hollywood Way STE 212 Burbank CA 91505 United States
Manufacturer	Kali Audio Audio, Inc.
Address	201 N. Hollywood Way STE 212 Burbank CA 91505 United States
Factory	Kali Audio Audio, Inc.
Address	201 N. Hollywood Way STE 212 Burbank CA 91505 United States

1.2 General description of EUT

Product name	Wireless Headphones
Model No.	HP-1
Operation Frequency:	BT/BLE: 2402MHz-2480MHz
Modulation Type:	BT: GFSK, $\pi/4$ DQPSK, 8DPSK BLE: GFSK
Number of Channels:	BT: 79 BLE: 40
Antenna Type:	Monopolar Ceramic antenna
Antenna Gain:	2.01dBi (Provided by the customer)
Hardware Version:	N/A
Software Version:	N/A

2 RF Exposure Compliance Requirement

2.1 Standard Requirement

According to 447498 D04 Interim General RF Exposure Guidance v01

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.

2.2 Limits

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases} \quad (\text{B. 2})$$

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 $ERP_{20 \text{ cm}}$ is per Formula (B.1).

Example values shown in Table B.2 are for illustration only.

Table B.2—Example Power Thresholds (mW)

Frequency (MHz)	Distance (mm)										
		5	10	15	20	25	30	35	40	45	50
	300	39	65	88	110	129	148	166	184	201	217
	450	22	44	67	89	112	135	158	180	203	226
	835	9	25	44	66	90	116	145	175	207	240
	1900	3	12	26	44	66	92	122	157	195	236
	2450	3	10	22	38	59	83	111	143	179	219
	3600	2	8	18	32	49	71	96	125	158	195
	5800	1	6	14	25	40	58	80	106	136	169

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

2.3 Result

$$\text{EIRP} = p_t \times g_t = (E \times d)^{2/30}$$

Where:

p_t = transmitter output power in watts,

g_t = numeric gain of the transmitting antenna (unitless),

E = electric field strength in V/m,

d = measurement distance in meters (m)

$$\text{Spot} = (E \times d)^{2/30} \times g_t$$

$$\text{Ant gain} = 2.01 \text{ dBi}$$

For BT Classic($\pi/4$ DQPSK)

$$\text{Max Output power} = 0.715 \text{ dBm @ } 2441 \text{ MHz}$$

$$\text{ERP} = 0.715 \text{ dBm} + 2.01 \text{ dBi} - 2.15 = 0.575 \text{ dBm} = 1.14 \text{ mW} < 3 \text{ mW}$$

For BLE

$$\text{Max Output power} = 0.853 \text{ dBm @ } 2441 \text{ MHz}$$

$$\text{ERP} = 0.853 \text{ dBm} + 2.01 \text{ dBi} - 2.15 = 0.713 \text{ dBm}$$

ERP less than Max Output power, Therefore, evaluate based on the maximum output power
 $0.853 \text{ dBm} = 1.217 \text{ mW} < 3 \text{ mW}$

Comply with RF exposure exemption limit.

----END OF REPORT----

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