

FCC RF Exposure

Applicant : Shenzhen Soundsoul Information Technology Co.,Ltd
Address : Room 1308-1309, Building B, Huihai Square, Chuangye Road, Longhua District, Shenzhen, Guangdong, China
Product Name : Wireless Headphones
Brand Mark : SOUNDPEATS
Model : TechClip
Series model : Clear Dot, Breezy, Clear Pods, Air4 Lite, Engine4, Q3 Pro, Q4 Pro, G1, G2, Clasp1, Sync T1, TechClip 2, R1, R2, OPenPulse, Flow 1, LinkPulse, OnePulse, AeroWing, Clip X1
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Date of Receipt : Mar. 24, 2025
Date of Test : Mar. 24, 2025 to Apr. 07, 2025
Test Standard : 47 CFR Part 15, Part1.1307
KDB447498D04 General RF Exposure Guidance v01
Test Result : Pass

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Review by: Sweels

Approved by: Blue Zheng

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Revise Record

Version No.	Date	Description
01	Apr. 22, 2025	Original

1 General information

1.1 General information

Applicant	Shenzhen Soundsoul Information Technology Co.,Ltd
Address	Room 1308-1309, Building B, Huihai Square, Chuangye Road, Longhua District, Shenzhen, Guangdong, China
Manufacturer	Shenzhen Soundsoul Information Technology Co.,Ltd
Address	Room 1308-1309, Building B, Huihai Square, Chuangye Road, Longhua District, Shenzhen, Guangdong, China
Factory	Shenzhen Soundsoul Information Technology Co.,Ltd
Address	Room 1308-1309, Building B, Huihai Square, Chuangye Road, Longhua District, Shenzhen, Guangdong, China

1.2 General description of EUT

Product name	Wireless Headphones
Model no.	TechClip
Series Model No.	Clear Dot, Breezy, Clear Pods, Air4 Lite, Engine4, Q3 Pro, Q4 Pro, G1, G2, Clasp1, Sync T1, TechClip 2, R1, R2, OPenPulse, Flow 1, LinkPulse, OnePulse, AeroWing, Clip X1
Differences of Series model	Their electrical circuit design layout, components used and internal wiring are identical, only the model name are different
Operation Frequency:	BT/BLE:2402MHz-2480MHz
Modulation Type:	BLE:GFSK BT:GFSK, $\pi/4$ DQPSK, 8DPSK
Number of Channels:	BLE:40 BT:79
Antenna Type:	FPC Antenna
Product Type:	Portable
Antenna Gain:	1.72dBi(Provided by customer)
Power supply:	Battery DC 3.7V
Test Voltage:	DC 3.7V
Hardware Version	V1.1
Software Version	V1.0

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

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

Where:

pt = transmitter output power in watts,

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

E = electric field strength in V/m,

d = measurement distance in meters (m)

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

Separation distance = 0.5cm

Ant gain = 1.72dBi

For BLE 2M(Worst) R ear:

Max Output power = -3.21dBm @ 2442MHz

$$\text{ERP} = -3.21\text{dBm} + 1.72\text{dBi} - 2.15 = -3.64\text{dBm} = 0.433\text{mW} < 2.751\text{ mW}$$

For BT Classic(8DPSK) R ear:

Max Output power = -1.676dBm @ 2441MHz

$$\text{ERP} = -1.676\text{dBm} + 1.72\text{dBi} - 2.15 = -2.106\text{dBm} = 0.616\text{mW} < 2.752\text{ mW}$$

For BLE 2M(Worst) L ear:

Max Output power = -3.717dBm @ 2442MHz

$$\text{ERP} = -3.717\text{dBm} + 1.72\text{dBi} - 2.15 = -4.147\text{dBm} = 0.385\text{mW} < 2.751\text{ mW}$$

For BT Classic(8DPSK) L ear:

Max Output power = -2.11dBm @ 2441MHz

$$\text{ERP} = -2.11\text{dBm} + 1.72\text{dBi} - 2.15 = -2.54\text{dBm} = 0.557\text{mW} < 2.752\text{ mW}$$

Comply with RF exposure exemption limit.

----END OF REPORT----

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