

# TEST REPORT

**Product Name** : TWS Bluetooth headset  
**Brand Mark** : N/A  
**Model No.** : HE-008A  
**Extension Model** : HE-008,HE-008B,HE-008C,HE-008D,  
HE-008E,X12,TX90,T550,J56,  
USAMS-XD18,USAMS-XD19,  
Harmonics Twins S14  
**FCC ID** : 2A2BYHE-008A  
**Report Number** : BLA-EMC-202309-A3703  
**Date of Sample Receipt** : 2023/9/11  
**Date of Test** : 2023/9/12 to 2023/9/20  
**Date of Issue** : 2023/9/22  
**Test Standard** : 47 CFR Part 15, Part1.1307  
47 CFR Part 15, Part2.1093  
KDB447498D04 General RF Exposure  
Guidance v01  
**Test Result** : Pass

Prepared for:

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Date:

2023/9/22



**REPORT REVISE RECORD**

<b>Version No.</b>	<b>Date</b>	<b>Description</b>
00	2023/9/22	Original

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## 1 TEST SUMMARY

Test item	Test Requirement	Test Method	Class/Severity	Result
RF Exposure	47 CFR Part 1.1307, Part 2.1093, KDB 447498	CFR 47 Part 2.1093	CFR 47 Part 2.1093	PASS

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## 2 GENERAL INFORMATION

<b>Applicant</b>	Dongguan Huien Electronic Technology Co., Ltd
<b>Address</b>	Room 301, Building of 1, No. 429, Changdong Road, Changping Town, Dongguan city, Guangdong Province, China
<b>Manufacturer</b>	Dongguan Huien Electronic Technology Co., Ltd
<b>Address</b>	Room 301, Building of 1, No. 429, Changdong Road, Changping Town, Dongguan city, Guangdong Province, China
<b>Factory</b>	Dongguan Huien Electronic Technology Co., Ltd
<b>Address</b>	Room 301, Building of 1, No. 429, Changdong Road, Changping Town, Dongguan city, Guangdong Province, China
<b>Product Name</b>	TWS Bluetooth headset
<b>Test Model No.</b>	HE-008A
<b>Extension Model</b>	HE-008, HE-008B, HE-008C, HE-008D, HE-008E, X12, TX90, T550, J56, USAMS-XD18, USAMS-XD19, Harmonics Twins S14
<b>Remark</b>	all models are electrically identical, only model no. and color is different.

## 3 GENERAL DESCRIPTION OF E.U.T.

<b>Hardware Version</b>	02
<b>Software Version</b>	V137
<b>Operation Frequency:</b>	2402MHz-2480MHz
<b>Modulation Type:</b>	GFSK, pi/4DQPSK
<b>Channel Spacing:</b>	1MHz
<b>Number of Channels:</b>	79
<b>Antenna Type:</b>	Chip Antenna
<b>Antenna Gain:</b>	2.36dBi(Provided by the customer)

#### 4 LABORATORY LOCATION

All tests were performed at:  
BlueAsia of Technical Services(Shenzhen) Co.,Ltd.  
Building C, No. 107, Shihuan Road, Shiyan Sub-District, Baoan District, Shenzhen, Guangdong Province, China  
Telephone: TEL: +86-755-28682673 FAX: +86-755-28682673  
No tests were sub-contracted.

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## 5 RF EXPOSURE COMPLIANCE REQUIREMENT

### 5.1 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.

### 5.2 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

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

$$EIRP = P_t \times G_t = (E \times d)^2 / 30$$

where:

$P_t$  = transmitter output power in watts,

$G_t$  = numeric gain of the transmitting antenna (unitless),

$E$  = electric field strength in V/m, ---  $10((dBuV/m)/20)/106$

$d$  = measurement distance in meters (m)---3m

$$S_{opt} = (E \times d)^2 / 30 \times G_t$$

$$\text{Ant gain} = 2.36 \text{ dBi}$$

$$\text{Max Output power} = 0.123 \text{ dBm @EDR@ } 2402 \text{ MHz}$$

$$\text{ERP} = 0.123 \text{ dBm} + 2.36 \text{ dBi} - 2.15 = 0.333 \text{ dBm}$$

So

worse case :

$$10^{0.0333} = 1.0797 \text{ mW} < 2.79 \text{ mW}$$

Comply with RF exposure exemption limit.

**----END OF REPORT----**

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