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RF Exposure Evaluation Report

Report No. :	CQASZ20180100040EW-02
Applicant:	Shenzhen KingAnDa Technology Development Co., Ltd.
Address of Applicant:	East Block No.2, Shangxue Industrial Zone, Bantian Street, Longgang District, Shenzhen, China
Manufacturer:	Shenzhen KingAnDa Technology Development Co., Ltd.
Address of Manufacturer:	East Block No.2, Shangxue Industrial Zone, Bantian Street, Longgang District, Shenzhen, China
Factory:	Shenzhen KingAnDa Technology Development Co., Ltd.
Address of Factory:	East Block No.2, Shangxue Industrial Zone, Bantian Street, Longgang District, Shenzhen, China
Equipment Under Test (EUT):	
Product:	Bluetooth Earphone
Model No.:	HBQ-i8TWS, HBQ-iX, HBQ-i7, HBQ-i7R, HBQ-i7TWS, HBQ-i7STWS, HBQ-i9, HBQ-i9S, HBQ-Q23, HBQ-Q24, HBQ-Q25, HBQ-26, HBQ-27, HBQ-Q28, HBQ-Q29, HBQ-Q30
Test Model No.:	HBQ-i8TWS
Brand Name:	HBQ
FCC ID:	2AOZM-HBQYZB
Standards:	47 CFR Part 1.1307 47 CFR Part 2.1093 KDB447498D01 General RF Exposure Guidance v06
Date of Test:	2018-01-25 to 2018-02-02
Date of Issue:	2018-02-02
Test Result :	**PASS***

Tested By: Aaron Ma

(Aaron Ma)

Reviewed By: Owen Zhou

(Owen Zhou)

Approved By:

(Jack Ai)

SHENZHEN HUAXIA TESTING TECHNOLOGY CO.,LTD 华夏准测 APPROVED

* In the configuration tested, the EUT complied with the standards specified above.

2 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20180100040EW-02	Rev.01	Initial report	2018-02-02

3 Contents

4 General Information

4.1 Client Information

Applicant:	Shenzhen KingAnDa Technology Development Co., Ltd.
Address of Applicant:	East Block No.2, Shangxue Industrial Zone, Bantian Street, Longgang District, Shenzhen, China
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Factory:	Shenzhen KingAnDa Technology Development Co., Ltd.
Address of Factory:	East Block No.2, Shangxue Industrial Zone, Bantian Street, Longgang District, Shenzhen, China

4.2 General Description of EUT

Product Name:	Bluetooth Earphone
Model No.:	HBQ-i8TWS, HBQ-iX, HBQ-i7, HBQ-i7R, HBQ-i7TWS, HBQ-i7STWS, HBQ-i9, HBQ-i9S, HBQ-Q23, HBQ-Q24, HBQ-Q25, HBQ-26, HBQ-27, HBQ-Q28, HBQ-Q29, HBQ-Q30
Trade Mark:	HBQ
Hardware Version:	HBQ-i8tws(2823)20170921CNEN.fw
Software Version:	Q21-2823-L R V7
Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	V4.2+EDR
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)
Modulation Type:	GFSK, π/4DQPSK, 8DPSK
Number of Channel:	79
Hopping Channel Type:	Adaptive Frequency Hopping systems
Sample Type:	portable production
Test Software:	Bluetooth MP Tool (Provide by Manufacturers)
Antenna Type:	Ceramic antenna
Antenna Gain:	0.8dBi
Power Supply:	lithium battery: DC3.7V, Charge by DC5.0V

5 SAR Evaluation

5.1 RF Exposure Compliance Requirement

5.1.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06

4.3.1. 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.

5.1.2 Limits

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:

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] · [√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

f(GHz) is the RF channel transmit frequency in GHz
Power and distance are rounded to the nearest mW and mm before calculation[17]
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

5.1.3 EUT RF Exposure

For BT:

Measurement Data

GFSK mode	
Test channel	Peak Output Power (dBm)
Lowest	2.97
Middle	3.17
Highest	2.92
π/4DQPSK mode	
Test channel	Peak Output Power (dBm)
Lowest	2.26
Middle	2.34
Highest	1.85
8DPSK mode	
Test channel	Peak Output Power (dBm)
Lowest	2.53
Middle	2.57
Highest	2.20

The Max Conducted Peak Output Power is 3.17dBm in middle channel(2.441GHz);

The best case gain of the antenna is 0.8dBi.

EIRP= 3.17dBm + 0.8dBi = 3.97dBm

3.97dBm logarithmic terms convert to numeric result is nearly 2.49mW

According to the formula. calculate the EIRP test result:

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] · [√f(GHz)]

General RF Exposure = (2.49mW / 5 mm) x √2.441GHz = 0.778 ①

SAR requirement:

S= 3.0 ② ;

① < ②.

So the SAR report is not required.

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20180100040EW-01