Shenzhen Huaxia Testing Technology Co., Ltd

1F., Block A of Tongsheng Technology Building, Huahui Road, Dalang Street, Longhua District, Shenzhen, China

Telephone: +86-755-26648640
Fax: +86-755-26648637
Website: www.cqa-cert.com

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RF Exposure Evaluation Report

Report No. :	CQASZ20180900004E-03
Applicant:	Shenzhen IWOWN Technology Co., Ltd
Address of Applicant:	10A,Block C,Tongfang Information Harbor,No.11 East Langshan Road, Nanshan District, Shenzhen, China
Manufacturer:	Shenzhen IWOWN Technology Co., Ltd
Address of Manufacturer:	10A,Block C,Tongfang Information Harbor,No.11 East Langshan Road, Nanshan District, Shenzhen, China
Equipment Under Test (EUT):	
Product:	iWOWNfit Sports Wireless Earphone R1
Model No.:	R1
Brand Name:	iWOWNfit
FCC ID:	2AKPH-R1
Standards:	47 CFR Part 1.1307 47 CFR Part 2.1093 KDB447498D01 General RF Exposure Guidance v06
Date of Test:	2018-09-04 to 2018-09-10
Date of Issue:	2018-09-10
Test Result :	**PASS***

Tested By: Tiny You

(Tiny You)

Reviewed By: Aaron Ma

(Aaron Ma)

Approved By: Jack Ai

(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.

1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20180900004E-03	Rev.01	Initial report	2018-09-10

2 Contents

3 General Information

3.1 Client Information

Applicant:	Shenzhen IWOWN Technology Co., Ltd
Address of Applicant:	10A,Block C,Tongfang Information Harbor,No.11 East Langshan Road, Nanshan District, Shenzhen, China
Manufacturer:	Shenzhen IWOWN Technology Co., Ltd
Address of Manufacturer:	10A,Block C,Tongfang Information Harbor,No.11 East Langshan Road, Nanshan District, Shenzhen, China

3.2 General Description of EUT

Product Name:	iWOWNfit Sports Wireless Earphone R1
Model No.:	R1
Trade Mark:	iWOWNfit
Hardware Version:	1.0.0.36
Software Version:	V1.4
Power Supply:	lithium battery:DC3.8V, Charge by USB

3.3 General Description of BT

Frequency Range:	2402MHz to 2480MHz
Bluetooth Version:	V4.2
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)
Modulation Type:	GFSK, π/4DQPSK, 8DPSK
Number of Channels:	79
Hopping Channel Type:	Adaptive Frequency Hopping systems
Sample Type:	Portable production
Test Software of EUT:	Blue test (manufacturer declare)
Antenna Type:	Ceramic antenna
Antenna Gain:	0dBi

3.4 General Description of BLE

Type of Modulation:	GFSK
Operating Frequency:	2402MHz to 2480MHz
Bluetooth Version:	V4.2
Channel Number:	40
Channels Step:	2MHz
Sample Type:	Portable production
Test Software of EUT:	Blue test (manufacturer declare)
Antenna Type:	Ceramic antenna
Antenna Gain:	0dBi

4 SAR Evaluation

4.1 RF Exposure Compliance Requirement

4.1.1 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.

4.1.2 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

4.1.3 EUT RF Exposure

For BT:

Measurement Data

GFSK mode	
Test channel	Peak Output Power (dBm)
Lowest	1.450
Middle	1.460
Highest	1.590
π/4DQPSK mode	
Test channel	Peak Output Power (dBm)
Lowest	0.510
Middle	0.590
Highest	0.620
8DPSK mode	
Test channel	Peak Output Power (dBm)
Lowest	0.760
Middle	0.930
Highest	0.900

The Max Conducted Peak Output Power is 1.59dBm in highest channel(2.480GHz);

The best case gain of the antenna is 0dBi.

EIRP= 1.59dBm + 0dBi = 1.59dBm

1.59dBm logarithmic terms convert to numeric result is nearly 1.442mW

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 = (1.442mW / 5 mm) x √2.480GHz = 0.45 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.:CQASZ20180900004E-01

For BLE:

Measurement Data

GFSK mode	
Test channel	Peak Output Power (dBm)
Lowest	-2.74
Middle	-2.48
Highest	-2.41

The Max Conducted Peak Output Power is -2.41dBm in highest channel(2.480GHz);

The best case gain of the antenna is 0dBi.

EIRP= -2.41dBm + 0dBi = -2.41dBm

4.74dBm logarithmic terms convert to numeric result is nearly 0.574mW

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 = (0.574mW / 5 mm) x √2.480GHz = 0.18 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.:CQASZ20180900004E-02