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RF Exposure Evaluation Report

Report No. :	CQASZ20181200057E-02
Applicant:	Shenzhen ke mai qi electronic technology co. LTD
Address of Applicant:	603-604, 6 / f, building C, zhongyuguan industrial park, longhua street, longhua new district, Shenzhen, China
Manufacturer:	Shenzhen ke mai qi electronic technology co. LTD
Address of Manufacturer:	603-604, 6 / f, building C, zhongyuguan industrial park, longhua street, longhua new district, Shenzhen, China
Factory:	Shenzhen ke mai qi electronic technology co. LTD
Address of Factory:	603-604, 6 / f, building C, zhongyuguan industrial park, longhua street, longhua new district, Shenzhen, China
Equipment Under Test (EUT):	
Product:	TWS
All Model No.:	W1-1, W1-2, W1-3, W1-4, W1-5, W1-6, W1-7, W1-8, W1-9, W1-10
Test Model No.:	W1-1
Brand Name:	N/A
FCC ID:	2ARGM-W1
Standards:	47 CFR Part 1.1307 47 CFR Part 1.1310 KDB447498D01 General RF Exposure Guidance v06
Date of Test:	2018-12-25 to 2019-01-03
Date of Issue:	2019-01-03
Test Result :	**PASS***

Tested By： Daisy Qin

(Daisy Qin)

Reviewed By: Aaron Ma

(Aaron Ma)

Approved By:

(Jack Ai)

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

1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20181200057E-02	Rev.01	Initial report	2019-01-03

2 Contents

3 General Information

3.1 Client Information

Applicant:	Shenzhen ke mai qi electronic technology co. LTD
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Factory:	Shenzhen ke mai qi electronic technology co. LTD
Address of Factory:	603-604, 6 / f, building C, zhongyuguan industrial park, longhua street, longhua new district, Shenzhen, China

3.2 General Description of EUT

Product Name:	TWS
All Model No.:	W1-1, W1-2, W1-3, W1-4, W1-5, W1-6, W1-7, W1-8, W1-9, W1-10
Test Model No.:	W1-1
Trade Mark:	N/A
Hardware Version:	V1.0
Software Version:	V1.0
Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	V5.0
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)
Modulation Type:	GFSK, π/4DQPSK, 8DPSK
Transfer Rate:	1Mbps/2Mbps/3Mbps
Number of Channel:	79
Hopping Channel Type:	Adaptive Frequency Hopping systems
Product Type:	☐ Mobile ☒ Portable ☐ Fix Location
Test Software of EUT:	Airoha.AB152x(verC)LAB TestTool (manufacturer declare)
Antenna Type:	Integral antenna
Antenna Gain:	0dBi
Power Supply:	lithium battery:DC3.7V, Charge by DC5.0V

Note:

All model: W1-1, W1-2, W1-3, W1-4, W1-5, W1-6, W1-7, W1-8, W1-9, W1-10

1. Only the model W1-1 was tested, since the electrical circuit design, layout, components used and internal wiring were identical for the above models, with difference being color of appearance and model name.

2. Since the left and right earbud have identical RF parameter, we tested only the left ear.

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

Measurement Data

GFSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	2.260	2±1	3	1.995
Middle(2441MHz)	2.400	2±1	3	1.995
Highest(2480MHz)	2.080	2±1	3	1.995
π/4DQPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	1.990	1±1	2	1.585
Middle(2441MHz)	1.980	1±1	2	1.585
Highest(2480MHz)	1.640	1±1	2	1.585
8DPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	2.150	2±1	3	1.995
Middle(2441MHz)	2.240	2±1	3	1.995
Highest(2480MHz)	1.840	1±1	2	1.585

Worst case: GFSK						
Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest (2402MHz)	2.260	2±1	3	1.995	0.62	3.0
Middle (2440MHz)	2.400	2±1	3	1.995	0.62	
Highest (2480MHz)	2.080	2±1	3	1.995	0.63	
Conclusion: the calculated value ≤3.0, SAR is exempted.						

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20181200057E-01