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RF Exposure Evaluation Report

Report No.:	CQASZ2020070708-02
Applicant:	Unlimited Audio Technology Ltd
Address of Applicant:	Room 212, floor 2, No. 35, Gonghe Industrial Road, Xixiang street, Bao'an District, Shenzhen City, Guangdong Province
Equipment Under Test (EUT):	
EUT Name:	True wireless stereo microphone
Model No.:	SmartMic, SmartMic1, SmartMic2, SmartMic3, uMike1, uMike2, uMike3
Test Model No.:	SmartMic
Brand Name:	N/A
FCC ID:	2AWXR-SMARTMIC
Standards:	47 CFR Part 1.1307 47 CFR Part 2.1093 KDB447498D01 General RF Exposure Guidance v06
Date of Receipt:	2020-07-15
Date of Test:	2020-07-15 to 2020-07-23
Date of Issue:	2020-07-23
Test Result:	**PASS***

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

Tested By: Martin Lee
(Martin Lee)

Reviewed By: Sheek . Luo
(Sheek Luo)

Approved By:
(Jack Ai)

1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20200700708E-02	Rev.01	Initial report	2020-07-23

2 Contents

3 General Information

3.1 Client Information

Applicant:	Unlimited Audio Technology Ltd
Address of Applicant:	Room 212, floor 2, No. 35, Gonghe Industrial Road, Xixiang street, Bao'an District, Shenzhen City, Guangdong Province
Manufacturer:	Unlimited Audio Technology Ltd
Address of Manufacturer:	Room 212, floor 2, No. 35, Gonghe Industrial Road, Xixiang street, Bao'an District, Shenzhen City, Guangdong Province

3.2 General Description of EUT

Product Name:	True wireless stereo microphone
Model No.:	SmartMic, SmartMic1, SmartMic2, SmartMic3, uMike1, uMike2, uMike3
Test Model No.:	SmartMic
Trade Mark:	N/A
Hardware Version:	Ver 003
Software Version:	Ver 0.4.32
Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	V4.1
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)
Modulation Type:	GFSK, π/4DQPSK, 8DPSK
Number of Channel:	79
Transfer Rate:	1Mbps/2Mbps/3Mbps
Hopping Channel Type:	Adaptive Frequency Hopping systems
Sample Type:	☐ Mobile ☒ Portable ☐ Fix Location
Test Software of EUT:	BlueTest3 (manufacturer declare)
Antenna Type:	Chip antenna
Antenna Gain:	0dBi
Power Supply:	lithium battery: DC 3.7V, 130mAh, Charge by DC 5.0V

Note:

Model No.: SmartMic, SmartMic1, SmartMic2, SmartMic3, uMike1, uMike2, uMike3

Only the model SmartMic 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.

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)	3.640	3.0±1	4.0	2.512
Middle(2441MHz)	4.050	3.5±1	4.5	2.818
Highest(2480MHz)	5.080	4.5±1	5.5	3.548
π/4DQPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	3.470	2.5±1	3.5	2.239
Middle(2441MHz)	4.020	3.5±1	4.5	2.818
Highest(2480MHz)	5.020	4.5±1	5.5	3.548
8DPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	3.440	2.5±1	3.5	2.239
Middle(2441MHz)	3.980	3.0±1	4.0	2.512
Highest(2480MHz)	4.980	4.0±1	5.0	3.162

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)	3.640	3.0±1	4.0	2.512	0.779	3.0
Middle (2441MHz)	4.050	3.5±1	4.5	2.818	0.881	
Highest (2480MHz)	5.080	4.5±1	5.5	3.548	1.117	
Conclusion: the calculated value ≤3.0, SAR is exempted.						

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20200700708E-01