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RF Exposure Evaluation Report

Report No.: CQASZ20211001846E-02
Applicant: HONGKONG VIMAI TECHNOLOGY CO., LIMITED
Address of Applicant: FLAT/RM H29, 1/F PHASE 2 KWAI SHING IND BLDG NO.42-46, TAI LIN PAI ROAD KWAI CHUNG, HONG KONG
Equipment Under Test (EUT):
EUT Name: Wireless microphone
Model No.: AP031
Test Model No.: AP031
Brand Name: N/A
FCC ID: 2AVLI-AP031
Standards: 47 CFR Part 1.1307
47 CFR Part 1.1310
KDB447498D01 General RF Exposure Guidance v06
Date of Receipt: 2021-10-28
Date of Test: 2021-10-28 to 2021-11-29
Date of Issue: 2021-12-03
Test Result: **PASS***

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

Tested By: Lewis Zhou

(Lewis Zhou)

Reviewed By: Rock Huang

(Rock Huang)

Approved By: Jack ai

(Jack ai)



1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20211001846E-02	Rev.01	Initial report	2021-12-03

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3 General Information

3.1 Client Information

Applicant:	HONGKONG VIMAI TECHNOLOGY CO., LIMITED
Address of Applicant:	FLAT/RM H29, 1/F PHASE 2 KWAI SHING IND BLDG NO.42-46, TAI LIN PAI ROAD KWAI CHUNG, HONG KONG
Manufacturer:	SHEN ZHEN VIMAI TECHNOLOGY CO., LTD
Address of Manufacturer:	Floor 3, building B, no. 5 huating road, tongsheng community, dalang street, longhua district, shenzhen
Factory:	SHEN ZHEN VIMAI TECHNOLOGY CO., LTD
Address of Factory:	Floor 3, building B, no. 5 huating road, tongsheng community, dalang street, longhua district, shenzhen

3.2 General Description of EUT

Product Name:	Wireless microphone
Model No.:	AP031
Test Model No.:	AP031
Trade Mark:	N/A
Software Version:	EP033-LX-Mic-Prd
Hardware Version:	EP033-LX-Mic-V1.2
Power Supply:	Li-ion battery: DC 3.7V 320mAh, Charge by DC 5V for adapter

3.3 General Description of BT Classic

Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	V5.2
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)
Modulation Type:	GFSK, $\pi/4$ DQPSK
Number of Channel:	79
Transfer Rate:	1Mbps/2Mbps
Hopping Channel Type:	Adaptive Frequency Hopping systems
Sample Type:	<input type="checkbox"/> Mobile <input checked="" type="checkbox"/> Portable <input type="checkbox"/> Fix Location
Antenna Type:	Chip antenna
Antenna Gain:	1.8 dBi

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:

$$\frac{[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where}$$

$f(\text{GHz})$ is the RF channel transmit frequency in GHz

Power and distance are rounded to the nearest mW and mm before calculation¹⁷

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 Standard Requirement

4.1.4 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)	1.180	1.0±1	2.0	1.585
Middle(2441MHz)	1.950	2.0±1	3.0	1.995
Highest(2480MHz)	1.840	2.0±1	3.0	1.995
π/4DQPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	2.790	2.5±1	3.5	2.239
Middle(2441MHz)	3.590	3.5±1	4.5	2.818
Highest(2480MHz)	3.290	3.0±1	4.0	2.512

Worst case: π/4DQPSK mode						
Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest (2402MHz)	2.790	2.5±1	3.5	2.239	0.694	3.0
Middle (2441MHz)	3.590	3.5±1	4.5	2.818	0.881	
Highest (2480MHz)	3.290	3.0±1	4.0	2.512	0.791	
Conclusion: the calculated value ≤3.0, SAR is exempted.						

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20211001846E-01 BLE can not simultaneous transmitting at same time.