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RF Exposure Evaluation Report

Report No. : CQASZ20211001721E-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
All Model No.: AP003
Test Model No.: AP003
Brand Name: N/A
FCC ID: 2AVLI-AP003
Standards: 47 CFR Part 1.1307
47 CFR Part 1.1310
KDB447498D01 General RF Exposure Guidance v06
Date of Receipt: 2021-10-08
Date of Test: 2021-10-08 to 2021-10-15
Date of Issue: 2021-11-11
Test Result : **PASS***

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

Tested By:

Lewis Zhou

(Lewis Zhou)

Reviewed By:

Rook Huang

(Rook Huang)

Approved By:

Jack Ai

(Jack Ai)



1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20211001721E-02	Rev.01	Initial report	2021-11-11

2 Contents

	Page
1 VERSION.....	2
2 CONTENTS.....	3
3 GENERAL INFORMATION.....	4
3.1 CLIENT INFORMATION.....	4
3.2 GENERAL DESCRIPTION OF EUT.....	4
4 SAR EVALUATION.....	5
4.1 RF EXPOSURE COMPLIANCE REQUIREMENT.....	5
4.1.1 <i>Standard Requirement</i>	5
4.1.2 <i>Limits</i>	5
4.1.3 <i>EUT RF Exposure</i>	6

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.:	AP003
Test Model No.:	AP003
Trade Mark:	N/A
Hardware Version:	EP033TZ-LX-MIC-V1.2
Software Version:	P003_mic_1.prd
Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	V5.0
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)
Modulation Type:	GFSK, $\pi/4$ DQPSK
Transfer Rate:	1Mbps/2Mbps
Number of Channel:	79
Hopping Channel Type:	Adaptive Frequency Hopping systems
Product Type:	☐ Mobile ☒ Portable ☐ Fix Location
Test Software of EUT:	BT Tool
Antenna Type:	Creamic antenna
Antenna Gain:	1.8dBi
Power Supply:	DC 3.3V

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:

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

$f(\text{GHz})$ 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 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)	3.460	3.5±1	4.5	2.818
Middle(2441MHz)	4.460	4.5±1	5.5	3.548
Highest(2480MHz)	4.820	5.0±1	6.0	3.981
$\pi/4$ DQPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	3.850	4.0±1	5.0	3.162
Middle(2441MHz)	4.850	5.0±1	6.0	3.981
Highest(2480MHz)	5.200	5.0±1	6.0	3.981

Worst case: $\pi/4$ DQPSK						
Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune- up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest (2402MHz)	3.850	4.0±1	5.0	3.162	0.980	3.0
Middle (2441MHz)	4.850	5.0±1	6.0	3.981	1.244	
Highest (2480MHz)	5.200	5.0±1	6.0	3.981	1.254	
Conclusion: the calculated value ≤ 3.0 , SAR is exempted.						

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20211001721E-01