



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

Report Template Version: V04

Report Template Revision Date: 2018-07-06

RF Exposure Evaluation Report

Report No.: CQASZ20210300370E-02
Applicant: Edifier International Limited
Address of Applicant: P.O. Box 6264 General Post Office Hong Kong
Equipment Under Test (EUT):
EUT Name: True Wireless Gaming Earbuds
Model No.: GM4
Brand Name: EDIFIER,HECATE
FCC ID: Z9G-EDF108
Standards: 47 CFR Part 1.1307
47 CFR Part 2.1093
KDB447498D01 General RF Exposure Guidance v06
Date of Receipt: 2021-3-29
Date of Test: 2021-3-29 to 2021-4-12
Date of Issue: 2021-4-12
Test Result: PASS*

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

Tested By: Jun Li
(Jun Li)
Reviewed By: Ares Liu
(Ares Liu)
Approved By: Sheek Luo
(Sheek Luo)



1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20210300370E-02	Rev.01	Initial report	2021-4-12

2 Contents

	Page
1 VERSION.....	2
2 CONTENTS.....	3
.....	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:	Edifier International Limited
Address of Applicant:	P.O. Box 6264 General Post Office Hong Kong
Manufacturer:	Dongguan Edifier Esports Technology Co., Ltd
Address of Manufacturer:	5th floor, Office Building in the 1st district, No. 2, East Industry Road, Songshan Lake Science & Technology Industrial Park, Dongguan, 523808, CHINA
Factory:	Dongguan Edifier Technology Co., Ltd.
Address of Factory:	No.2 Gongyedong Road, Songshan Lake Sci&Tech Industry Park, Dongguan,Guangdong 523808, PR.China

3.2 General Description of EUT

Product Name:	True Wireless Gaming Earbuds
Test Model No.:	GM4
Trade Mark:	EDIFIER,HECATE
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, $\pi/4$ DQPSK, 8DPSK
Transfer Rate:	1Mbps
Number of Channel:	79
Hopping Channel Type:	Adaptive Frequency Hopping systems
Product Type:	☐ Mobile ☒ Portable ☐ Fix Location
Antenna Type:	FPC antenna
Antenna Gain:	1.96dBi
EUT Power Supply:	lithium battery: DC3.7V,50mAh/60mAh, Charge by DC5.0V

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

1) For BT (Left)

Measurement Data

GFSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	4.090	3±1	4	2.512
Middle(2441MHz)	4.930	4±1	5	3.162
Highest(2480MHz)	4.690	4±1	5	3.162
π/4DQPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	3.050	2±1	3	1.995
Middle(2441MHz)	3.790	3±1	4	2.512
Highest(2480MHz)	3.460	2.5±1	3.5	2.239
8DPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	3.360	2.5±1	3.5	2.239
Middle(2441MHz)	4.140	3±1	4	2.512
Highest(2480MHz)	3.900	3±1	4	2.512

Worst case: GFSK mode						
Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune- up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest (2402MHz)	4.090	3±1	4	2.512	0.779	3.0
Middle (2441MHz)	4.930	4±1	5	3.162	0.988	
Highest (2480MHz)	4.690	4±1	5	3.162	0.996	
Conclusion: the calculated value ≤3.0, SAR is exempted.						

Remark: The Max Conducted Peak Output Power data refer to report Report No.:CQASZ20210300370E-01

2) For BT (Right)

Measurement Data

GFSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	3.620	3±1	4	2.512
Middle(2441MHz)	4.380	3.5±1	4.5	2.818
Highest(2480MHz)	4.180	3±1	4	2.512
π/4DQPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	2.350	1.5±1	2.5	1.778
Middle(2441MHz)	3.080	2±1	3	1.995
Highest(2480MHz)	2.730	2±1	3	1.995
8DPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	2.760	2±1	3	1.995
Middle(2441MHz)	3.510	2.5±1	3.5	2.239
Highest(2480MHz)	3.180	2±1	3	1.995

Worst case: GFSK mode						
Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune- up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest (2402MHz)	3.620	3±1	4	2.512	0.779	3.0
Middle (2441MHz)	4.380	3.5±1	4.5	2.818	0.881	
Highest (2480MHz)	4.180	3±1	4	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.:CQASZ20210300370E-02