Report No.: DDT-R21031818-4E08

Issued Date: Jul. 09, 2021

RF EXPOSURE REPORT

FOR

Applicant	**:**	Kingstate Electronics(Dongguan)Co.,Ltd
Address	**:**	Shi Chong Industrial Park, Shi Chong Avenue, Xiang Xi Village, Shi Pai Town, Dong Guan City, Guang Dong Province, China.
Equipment under Test	**:**	True Wireless Earbuds
Model No.	**:**	TW-E5B
Trade Mark	**:**	YAMAHA
FCC ID	**:**	2AKMBTW-E5B
Manufacturer	**:**	Kingstate Electronics(Dongguan)Co.,Ltd
Address	**:**	Shi Chong Industrial Park, Shi Chong Avenue, Xiang Xi Village, Shi Pai Town, Dong Guan City, Guang Dong Province, China.

Issued By: Dongguan Dongdian Testing Service Co., Ltd.

Add.: No. 17, Zongbu Road 2, Songshan Lake Sci&Tech, Industry Park, Dongguan City, Guangdong Province, China, 523808

Tel.: +86-0769-38826678, **E-mail:** ddt@dgddt.com, http://www.dgddt.com

REPORT

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Test Report Declare

Applicant	:	Kingstate Electronics(Dongguan)Co.,Ltd
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Standard Used: KDB447498 D01 General RF Exposure Guidance v06

We Declare:

The equipment described above is assessed by Dongguan Dongdian Testing Service Co., Ltd and in the configuration assessed the equipment complied with the standards specified above. The assessed results are contained in this report and Dongguan Dongdian Testing Service Co., Ltd is assumed of full responsibility for the accuracy and completeness of these assess.

After evaluation, our opinion is that the equipment In Accordance with above standard.

Report No:	DDT-R21031818-4E08		
Date of Receipt:	Jun. 10, 2021	**Date of Test:**	Jun. 10, 2021~ Jul. 09, 2021

Prepared By:

Johnny Wang

Johnny Wang/Engineer

Approved By:

DONGGUAN DONGDIAN TESTING SERVICE CO., LTD. APPROVED Damon Hu

Damon Hu/EMC Manager

Note: This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Dongguan Dongdian Testing Service Co., Ltd.

Revision History

Rev.	Revisions	Issue Date	Revised By
---	Initial issue	Jul. 09, 2021	

1. General Information

1.1. Description of equipment

EUT* Name	:	True Wireless Earbuds
Model Number	:	TW-E5B
EUT function description	:	Please reference user manual of this device
Power Supply	:	CHARGING CASE: DC 5V/0.5A from external adapter EARBUDS: DC 5V/0.05A from external charging case CHARGING CASE: DC 3.7V, 520mA, 1.924W polymer Li-ion built-in battery EARBUDS: DC 3.7V, 55mA, 0.204W polymer Li-ion built-in battery
Radio Specification	:	Bluetooth V5.2
Operation Frequency	:	2402 MHz - 2480 MHz
Modulation	:	GFSK, π/4-DQPSK
Data Rate	:	1 Mbps, 2 Mbps
Antenna Gain	:	Left side: 0.68 dBi Right side: -0.85 dBi
Serial Number	:	N/A

1.2. Assess laboratory

Dongguan Dongdian Testing Service Co., Ltd.

Add.: No. 17, Zongbu Road 2, Songshan Lake Sci&Tech, Industry Park, Dongguan City, Guangdong Province, China, 523808.

Tel.: +86-0769-38826678, http://www.dgddt.com, Email: ddt@dgddt.com.

CNAS Accreditation No. L6451; A2LA Accreditation Number: 3870.01

FCC Designation Number: CN1182, Test Firm Registration Number: 540522

Innovation, Science and Economic Development Canada Site Registration Number: 10288A

Conformity Assessment Body identifier: CN0048

VCCI facility registration number: C-20087, T-20088, R-20123, G-20118

2. RF Exposure evaluation for FCC

According to 447498 D01 General RF Exposure Guidance v06

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

The result is rounded to one decimal place for comparison

Manufacturing Tolerance

Left:
(Bluetooth BDR+EDR)

Test Mode	Frequency (MHz)	Average conducted output power (dBm)	Duty Cycle (%)	Maximum Tune-up Power (dBm)
DH5	2402	3.59	76.98	4.50
DH5	2441	3.84		4.50
DH5	2480	3.78		4.50
2DH5	2402	3.55	77.29	4.50
2DH5	2441	4.02		4.50
2DH5	2480	**4.27**		4.50
3DH5	2402	3.84	77.33	4.50
3DH5	2441	4.06		4.50
3DH5	2480	4.28		4.50

(BLE)

Test Mode	Frequency (MHz)	Average conducted output power (dBm)	Duty Cycle (%)	Maximum Tune-up Power (dBm)
BLE (1Mbps)	2402	-1.03	62.88	-0.50
	2440	-0.87		-0.50
	2480	-1.45		-0.50
BLE (2Mbps)	2402	-1.04	33.60	-0.50
	2440	-1.46		-0.50
	2480	-1.03		-0.50

Right:
(Bluetooth BDR+EDR)

Test Mode	Frequency (MHz)	Average conducted output power (dBm)	Duty Cycle (%)	Maximum Tune-up Power (dBm)
DH5	2402	3.17	77.00	4.00
DH5	2441	3.16		4.00
DH5	2480	3.05		4.00
2DH5	2402	3.44	77.29	4.00
2DH5	2441	3.71		4.00
2DH5	2480	3.80		4.00
3DH5	2402	3.48	77.33	4.00
3DH5	2441	3.77		4.00
3DH5	2480	**3.86**		4.00

(BLE)

Test Mode	Frequency (MHz)	Average conducted output power (dBm)	Duty Cycle (%)	Maximum Tune-up Power (dBm)
BLE (1Mbps)	2402	-1.64	63.00	-1.00
	2440	-1.47		-1.00
	2480	-1.59		-1.00
BLE (2Mbps)	2402	-1.53	33.60	-1.00
	2440	-1.36		-1.00
	2480	-1.59		-1.00

Estimtion Result

Worse case is as below: [2480 MHz, 4.5 dBm, 2.82 mW) output power]

(2.82/5) ·[√2.48(GHz)] = 0.89 < 3.0 for 1-g SAR

Then SAR evaluation is not required

END OF REPORT