



Report No.: SZEM190401246003

Page: 1 of 8

## **SAR Evaluation Report**

Application No.: SZEM1904012460CR

Applicant: Tiinlab Acoustic Technology Limited

Address of Applicant: Tianliao Building 1403, Zone A Tianliao Industrial Park, Taoyuan Str.,

Nanshan Dist. Shenzhen, China.

Manufacturer: Tiinlab Acoustic Technology Limited

Address of Manufacturer: Tianliao Building 1403, Zone A Tianliao Industrial Park, Taoyuan Str.,

Nanshan Dist. Shenzhen, China.

**Equipment Under Test (EUT):** 

**EUT Name:** Mi Bluetooth Noise Cancelling Neckband Earphones

Model No.: LYXQEJ03JY

Trade mark: MI

FCC ID: 2ASDILYXQEJ03JY
Standards: 47 CFR Part 1.1307

47 CFR Part 2.1093

KDB447498D01 General RF Exposure Guidance v06

**Date of Receipt:** 2019-04-08

**Date of Test:** 2019-04-12 to 2019-04-16

**Date of Issue:** 2019-04-19

Test Result : PASS\*

Keny Xu EMC Laboratory Manager



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<sup>\*</sup> In the configuration tested, the EUT complied with the standards specified above.



Report No.: SZEM190401246003

Page: 2 of 8

### Version

	Revision Record				
Version	Chapter	Date	Modifier	Remark	
01		2019-04-19		Original	

Authorized for issue by:		
	fone Boro	
	Powell Bao /Project Engineer	
	EvicFu	
	Eric Fu /Reviewer	



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Report No.: SZEM190401246003

Page: 3 of 8

#### **Contents**

			Page
1	COV	ER PAGE	1
2	VER	SION	2
3	CON	TENTS	3
4	GEN	ERAL INFORMATION	4
	4.1	GENERAL DESCRIPTION OF EUT	4
	4.2	TEST LOCATION	5
	4.3	TEST FACILITY	5
	4.4	DEVIATION FROM STANDARDS	
	4.5	ABNORMALITIES FROM STANDARD CONDITIONS	
	4.6	OTHER INFORMATION REQUESTED BY THE CUSTOMER	6
5	SAR	EVALUATION	7
	5.1	RF EXPOSURE COMPLIANCE REQUIREMENT	7
	5.1.1		
	5.1.2		
	5.1.3	EUT RF Exposure	7-8



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Report No.: SZEM190401246003

Page: 4 of 8

### 4 General Information

## 4.1 General Description of EUT

Power supply:	Powered by DC 3.7V rechargeable battery and can be charged via Type-C port	
For BT:		
Operation Frequency:	2402MHz to 2480MHz	
Bluetooth Version:	V5.0 Dual mode	
Spectrum Spread Technology:	Frequency Hopping Spread Spectrum(FHSS)	
Modulation Type:	GFSK, π/4DQPSK, 8DPSK	
Number of Channels:	79	
Channel Spacing:	1MHz	
Antenna Type:	Integral Antenna	
Antenna Gain:	0.5dBi	
For BLE:		
Operation Frequency:	2402MHz to 2480MHz	
Bluetooth Version:	V5.0 Dual mode	
Modulation Type:	GFSK	
Number of Channels:	40	
Channel Spacing:	2MHz	
Antenna Type:	Integral Antenna	
Antenna Gain:	0.5dBi	



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Report No.: SZEM190401246003

Page: 5 of 8

#### 4.2 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

No. 1 Workshop, M-10, Middle section, Science & Technology Park, Shenzhen, Guangdong, China

Telephone: +86 (0) 755 2601 2053 Fax: +86 (0) 755 2671 0594

No tests were sub-contracted.

#### 4.3 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

#### CNAS (No. CNAS L2929)

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

#### A2LA (Certificate No. 3816.01)

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

#### FCC –Designation Number: CN1178

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1178. Test Firm Registration Number: 406779.

#### • Innovation, Science and Economic Development Canada

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.



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Report No.: SZEM190401246003

Page: 6 of 8

#### 4.4 Deviation from Standards

None

#### 4.5 Abnormalities from Standard Conditions

### 4.6 Other Information Requested by the Customer



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Report No.: SZEM190401246003

Page: 7 of 8

#### SAR Evaluation

#### 5.1 RF Exposure Compliance Requirement

#### 5.1.1 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-q 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.

#### **5.1.2 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)] ·  $[\sqrt{f(GHz)}] \le 3.0$  for 1-g SAR and  $\le 7.5$  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<sup>17</sup>

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

#### 5.1.3 EUT RF Exposure

#### For BT:

The Max. power (including tune-up tolerance) is 6.11 dBm on the middle channel 2.441 GHz (\*) 6.11 dBm logarithmic terms convert to numeric result is nearly 4.08 mW According to the formula. calculate the test exclusion thresholds:

$$General\ RF\ Exposure = \frac{(Max.\ Power\ of\ channel\ ,including\ tune\ -up\ tolerance\ ,mW)\ *\sqrt{f\ (GHz)}}{(min.\ test\ separation\ distance\ ,mm)}$$
 (1) 
$$General\ RF\ Exposure\ = (4.08\ mW\ /\ 5\ mm)\ x\ \sqrt{2.441\ GHz} = 1.27$$
 (2) 
$$SAR\ requirement:$$
 
$$S = 3.0$$
 (2) 
$$(1) < (2)$$
 So the SAR report is not required.

(\*) Max. power refer to Report No.:SZEM190401246001



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Report No.: SZEM190401246003

Page: 8 of 8

#### For BLE:

The Max. power (including tune-up tolerance) is 3.32 dBm on the middle channel 2.44 GHz (\*) 3.32 dBm logarithmic terms convert to numeric result is nearly 2.15 mW According to the formula. calculate the test exclusion thresholds:

General RF Exposure = 
$$\frac{(\text{Max.Power of channel, including tune-up tolerance, }mW)*\sqrt{f(GHZ)}}{(\text{min.test separation distance,}mm)}$$
General RF Exposure =  $(2.15 \text{ mW}/5 \text{ mm}) \times \sqrt{2.44 \text{ GHz}} = 0.67$  (1)
SAR requirement:
$$S = 3.0$$
 (2)
$$(1) < (2)$$

(\*) Max. power refer to Report No.:SZEM190401246002

So the SAR report is not required.

- End of the Report -



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