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RF Exposure REPORT

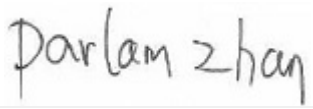
Application No.:	SHEM2012010711CR
Applicant:	Zimi Corporation
Address of Applicant:	Room A913, No.159 Chengjiang Road, Jiangyin ,China
Manufacturer:	Zimi Corporation
Address of Manufacturer:	Room A913, No.159 Chengjiang Road, Jiangyin ,China
Factory:	1.HUIZHOU LYAND ACOUSTIC TECHNOLOGY CO., LTD 2.Inventec Appliances(Jiangning) Corporation
Address of Factory:	1.NO.45,Xiangda Road, Xiaojinkou, Huizhou City, Guangdong Province, P.R.China 2. No.133, Jiang Jun Road, Jiangning Economic and Technological Development Zone, Nanjing City, P.R.China
Equipment Under Test (EUT):	
EUT Name:	ZMI PurPods Pro Wireless Noise Cancelling Earphone，ZMI PurPods True Wireless Earbuds
Model No.:	TW100ZM
Add Model No.:	TW101ZM
Standard(s) :	FCC Rules 47 CFR §2.1093 KDB447498 D01 General RF Exposure Guidance v06
Date of Receipt:	2020-12-29
Date of Test:	2020-12-30 to 2021-01-28
Date of Issue:	2021-01-29
Test Result:	**Pass***

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

Parlam Zhan
E&E Section Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.

Revision Record			
Version	**Description**	**Date**	**Remark**
00	Original	2021-01-29	/

Authorized for issue by:				
				
		Micheal Niu / Project Engineer		
				
		Parlam Zhan / Reviewer		

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3 General Information

3.1 General Description of E.U.T.

Power supply:	DC 3.7V by Rechargeable Lithium-ion Coin Cell

3.2 Details of E.U.T.

BT

Antenna Gain:	Left earbuds 0.75dBi(Provided by client) Right earbuds 0.75dBi(Provided by client)
Antenna Type:	Integral Antenna
Bluetooth Version:	V5.2(Dual)
Channel Spacing:	1MHz
Modulation Type:	GFSK, π/4DQPSK, 8DPSK
Number of Channels:	79
Operation Frequency:	2402MHz to 2480MHz
Spectrum Spread Technology:	Frequency Hopping Spread Spectrum(FHSS)

BLE

Antenna Gain:	Left earbuds 0.75dBi(Provided by client) Right earbuds 0.75dBi(Provided by client)
Antenna Type:	Integral Antenna
Bluetooth Version:	V5.2 LE
Data Rate:	1Mbps&2Mbps
Channel Spacing:	2MHz
Modulation Type:	GFSK
Number of Channels:	40
Operation Frequency:	2402MHz to 2480MHz

3.3 Test Location

All tests were performed at:

Compliance Certification Services (Kunshan) Inc.

No.10 Weiye Rd, Innovation park, Eco&Tec, Development Zone, Kunshan City, Jiangsu, China.

Tel: +86 512 5735 5888 Fax: +86 512 5737 0818

No tests were sub-contracted

3.4 Test Facility

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

• CNAS (No. CNAS L4354)

CNAS has accredited Compliance Certification Services (Kunshan) Inc. to ISO/IEC 17025:2017 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. 2541.01)

Compliance Certification Services (Kunshan) Inc. is accredited by the American Association for Laboratory Accreditation (A2LA). Certificate No. 2541.01.

• FCC (Designation Number: CN1172)

Compliance Certification Services Inc. has been recognized as an accredited testing laboratory. Designation Number: CN1172.

• ISED (CAB identifier: CN0072)

Compliance Certification Services (Kunshan) Inc. has been recognized by Innovation, Science and Economic Development Canada (ISED) as an accredited testing laboratory.

CAB Identifier: CN0072.

• VCCI (Member No.: 1938)

The 3m and 10m Semi-anechoic chamber and Shielded Room of Compliance Certification Services (Kunshan) Inc. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-1600, C-1707, T-1499, G-10216 respectively.

4 Test Standards and Limits

4.1 FCC Radiofrequency radiation exposure 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)/(min test separation distance)]*[√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

• The result is rounded to one decimal place for comparison

• 3.0 and 7.5 are referred to as the numeric thresholds

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 according to 4.1 f) is applied to determine SAR test exclusion.

For 2.4G band device, the limit of worse case is

$P_{max} \leq 3.0 * D_{min} / \sqrt{f} = 3.0 * 5 / \sqrt{2.480} = 9.525 mW$

5 Measurement and Calculation

5.1 Maximum transmit power

The Power Data is based on the RF Test Report SHEM201201071101. SHEM201201071102.

Test Data:

BT-Left Ear

Test Mode	Frequency (MHz)	Power (dBm)	Power (mW)
GFSK	2402	4.13	2.59
	2441	4.14	2.59
	2480	4.61	2.89
Pi/4DQPSK	2402	4.12	2.58
	2441	4.12	2.58
	2480	4.60	2.88
8DPSK	2402	4.29	2.69
	2441	4.32	2.70
	2480	4.77	**3.00**

BT-Right Ear

Test Mode	Frequency (MHz)	Power (dBm)	Power (mW)
GFSK	2402	4.14	2.59
	2441	4.15	2.60
	2480	4.61	2.89
Pi/4DQPSK	2402	4.12	2.58
	2441	4.15	2.60
	2480	4.61	2.89
8DPSK	2402	4.30	2.69
	2441	4.32	2.70
	2480	4.76	**2.99**

BLE-Left Ear

Test Mode	Frequency (MHz)	Power (dBm)	Power (mW)
1M	2402	4.06	2.55
	2440	4.05	2.54
	2480	4.54	2.84
2M	2402	4.09	2.56
	2440	4.07	2.55
	2480	4.59	2.88

BLE-Right Ear

Test Mode	Frequency (MHz)	Power (dBm)	Power (mW)
1M	2402	4.50	2.82
	2440	4.03	2.53
	2480	4.52	2.83
2M	2402	4.07	2.55
	2440	4.06	2.55
	2480	4.56	2.86

5.2 RF Exposure Calculation

The Max Conducted Peak Output Power of Left Earphone and Right Earphone are 3.00mW and 2.99mW. The best case gain of the antenna is 0.75dBi.

0.75dBi logarithmic terms convert to numeric result is nearly 1.2

According to the formula. calculate the EIRP test result:

EIRP(Left Earphone)= P x G = 3.00mW x 1.2 = 3.60mW < 9.525mW

EIRP(Right Earphone)= P x G = 2.99 mW x 1.2 = 3.59mW < 9.525mW

So the SAR report is not required.

--End of the Report--