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Report Template Version: V03
Report Template Revision Date: Mar.1st, 2017

RF Exposure Evaluation Report

Report No. : CQASZ20190600458E-02
Applicant: TOPWAY EM ENTERPRISE LTD.
Address of Applicant: 8F BLOCK B BUILDING 6 BAONENG S & T PARK LONG HUA, SHENZHEN GD, China 518109

Equipment Under Test (EUT):

Product: Bluetooth Headphone
All Model No.: MZX701, MZX701-GRY, MZX701-BLUE, MZX701-BLK, 17LY51
Test Model No.: 17LY51
Brand Name: Altec Lansing
FCC ID: 2AKI8-MZX701
Standards: 47 CFR Part 1.1307
47 CFR Part 2.1093
KDB447498D01 General RF Exposure Guidance v06
Date of Receipt: 2019-06-17
Date of Test: 2019-06-17 to 2019-06-24
Date of Issue: 2019-06-25
Test Result : PASS*

Tested By:

(Daisy Qin)

Reviewed By:

(Aaron Ma)

Approved By:

(Jack Ai)



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

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CQA, this report can't be reproduced except in full.

1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20190600458E-02	Rev.01	Initial report	2019-06-25

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:	TOPWAY EM ENTERPRISE LTD.
Address of Applicant:	8F BLOCK B BUILDING 6 BAONENG S & T PARK LONG HUA, SHENZHEN GD, China 518109
Manufacturer:	SHENZHEN JIA HUA LI DIAN ZI YOU XIAN GONG SI
Address of Manufacturer:	NO 101,201, BUILDING E, NEW INDUSTRIAL ZONE, SHENZHU ROAD, LIUYUE SHENKENG VILLAGE, HENGGANG, LONGGANG DISTRICT,SHENZHEN CHINA

3.2 General Description of EUT

Product Name:	Bluetooth Headphone
All Model No.:	MZX701, MZX701-GRY, MZX701-BLUE, MZX701-BLK, 17LY51
Test Model No.:	17LY51
Trade Mark:	Altec Lansing
Hardware Version:	V1.0
Software Version:	V1.0
Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	V4.0
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)
Modulation Type:	GFSK, $\pi/4$ DQPSK, 8DPSK
Transfer Rate:	1Mbps/2Mbps/3Mbps
Number of Channel:	79
Hopping Channel Type:	Adaptive Frequency Hopping systems
Product Type:	<input type="checkbox"/> Mobile <input checked="" type="checkbox"/> Portable <input type="checkbox"/> Fix Location
USB Changing cable:	30cm(shielded)
AUX cable:	110cm(shielded)
Test Software of EUT:	Blue test 3 (manufacturer declare)
Antenna Type:	PCB antenna
Antenna Gain:	0dBi
Power Supply:	lithium battery: DC3.7V, 250mAh, Charge by USB

Note:

All model: MZX701, MZX701-GRY, MZX701-BLUE, MZX701-BLK, 17LY51

Only the model 17LY51 was tested, since the electrical circuit design, layout, components used and internal wiring were identical for the above models, with difference being color of appearance and model name.

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:

$$\left[\frac{\text{max. power of channel, including tune-up tolerance, mW}}{\text{min. test separation distance, mm}} \right] \cdot \sqrt{f(\text{GHz})} \leq 3.0$$
 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 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)	3.180	3±1	4	2.512
Middle(2441MHz)	5.810	6±1	7	5.012
Highest(2480MHz)	6.790	6±1	7	5.012
π/4DQPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	0.960	1±1	2	1.585
Middle(2441MHz)	4.530	5±1	6	3.981
Highest(2480MHz)	5.630	5±1	6	3.981
π/4DQPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	1.320	1±1	2	1.585
Middle(2441MHz)	4.770	5±1	6	3.981
Highest(2480MHz)	5.900	5±1	6	3.981

Worst case: GFSK						
Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest (2402MHz)	3.180	3±1	4	2.512	0.78	3.0
Middle (2441MHz)	5.810	6±1	7	5.012	1.57	
Highest (2480MHz)	6.790	6±1	7	5.012	1.58	
Conclusion: the calculated value ≤3.0, SAR is exempted.						

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20190600458E-01