



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

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CNAS L5785

RF Exposure Evaluation Report

Report No.: CQASZ20200600623E-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):
EUT Name: Mono Bluetooth Headset
Model No.: 18CY02, 08082
Test Model No.: 08082
Brand Name: N/A
FCC ID: 2AKI8-08082
Standards: 47 CFR Part 1.1307
47 CFR Part 2.1093
KDB447498D01 General RF Exposure Guidance v06
Date of Receipt: 2020-06-30
Date of Test: 2020-06-30 to 2020-07-07
Date of Issue: 2020-07-07
Test Result: **PASS***

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

Tested By:

Tom Chen

(Tom Chen)

Reviewed By:

Sheek Luo

(Sheek Luo)

Approved By:

Jack Ai

(Jack Ai)



1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20200600623E-02	Rev.01	Initial report	2020-07-07

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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
Factory:	Shenzhen Jia Hua Li Dian Zi You Xian Gong Si
Address of Factory:	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:	Mono Bluetooth Headset
Model No.:	18CY02, 08082
Test Model No.:	08082
Trade Mark:	N/A
Hardware Version:	V0.2
Software Version:	V1.5
Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	V4.2
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)
Modulation Type:	GFSK, $\pi/4$ DQPSK, 8DPSK
Number of Channel:	79
Transfer Rate:	1Mbps/2Mbps/3Mbps
Hopping Channel Type:	Adaptive Frequency Hopping systems
Sample Type:	<input type="checkbox"/> Mobile <input checked="" type="checkbox"/> Portable <input type="checkbox"/> Fix Location
Test Software of EUT:	BK32xx RF Test -V1.5_en (manufacturer declare)
Antenna Type:	PCB antenna
Antenna Gain:	0 dBi
Power Supply:	lithium battery: DC 3.7V, 110mAh, Charge by DC 5.0V

Note:

Model No.: 18CY02, 08082

Only the model 08082 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:

$$\left[\frac{\text{max. power of channel, including tune-up tolerance, mW}}{\text{min. test separation distance, mm}} \right] \cdot \sqrt{f(\text{GHz})} \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where}$$

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)	-2.490	-3.0±1	-2.0	0.631
Middle(2441MHz)	-2.020	-3.0±1	-2.0	0.631
Highest(2480MHz)	-1.160	-2.0±1	-1.0	0.794
π/4DQPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	-0.420	-1.0±1	0	1.000
Middle(2441MHz)	0.020	-0.5±1	0.5	1.122
Highest(2480MHz)	0.890	0±1	1.0	1.259
8DPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	-0.130	-1.0±1	0	1.000
Middle(2441MHz)	0.320	-0.5±1	0.5	1.122
Highest(2480MHz)	1.150	0.5±1	1.5	1.413

Worst case: 8DPSK						
Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest (2402MHz)	-0.130	-1.0±1	0	1.000	0.310	3.0
Middle (2441MHz)	0.320	-0.5±1	0.5	1.122	0.351	
Highest (2480MHz)	1.150	0.5±1	1.5	1.413	0.445	
Conclusion: the calculated value ≤3.0, SAR is exempted.						

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20200600623E-01.