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Report Template Version: V04

Report Template Revision Date: 2018-07-06

RF Exposure Evaluation Report

Report No. : CQASZ20200400315E-02
Applicant: DONGGUAN LINPA ACOUSTIC TECHNOLOGY CO.,LTD
Address of Applicant: 2A NO.60, Lizhong Road, Dali, Qingxi Town, Dongguan City, Guangdong Province, China
Equipment Under Test (EUT):
Product: Linpa sports
Model No.: TWS056, T3
Test Model No.: TWS056
Brand Name: N/A
FCC ID: 2AKZ8-TWS056
Standards: 47 CFR Part 1.1307
47 CFR Part 2.1093
KDB447498D01 General RF Exposure Guidance v06
Date of Receipt: 2020-04-28
Date of Test: 2020-04-28 to 2020-05-06
Date of Issue: 2020-05-06
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
CQASZ20200400315E-02	Rev.01	Initial report	2020-05-06

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3 General Information

3.1 Client Information

Applicant:	DONGGUAN LINPA ACOUSTIC TECHNOLOGY CO.,LTD
Address of Applicant:	2A NO.60, Lizhong Road, Dali, Qingxi Town, Dongguan City, Guangdong Province, China
Manufacturer:	DONGGUAN LINPA ACOUSTIC TECHNOLOGY CO.,LTD
Address of Manufacturer:	2A NO.60, Lizhong Road, Dali, Qingxi Town, Dongguan City, Guangdong Province, China

3.2 General Description of EUT

Product Name:	Linpa sports	
Model No.:	TWS056, T3	
Test Sample:	Test Model No.:	TWS056
	Wear Position:	Right ear
Trade Mark:	N/A	
Hardware Version:	V1.0	
Software Version:	V1.0	
Operation Frequency:	2402MHz~2480MHz	
Bluetooth Version:	V5.0	
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)	
Modulation Type:	GFSK, $\pi/4$ DQPSK	
Transfer Rate:	1Mbps/2Mbps	
Number of Channel:	79	
Hopping Channel Type:	Adaptive Frequency Hopping systems	
Product Type:	☐ Mobile ☒ Portable ☐ Fix Location	
Test Software of EUT:	FCC_assist 1.0.1.1 (manufacturer declare)	
Antenna Type:	Chip Antenna	
Antenna Gain:	3.0dBi	
Power Supply:	lithium battery:DC 3.7V 110mAh, Charge by DC 5V	

Note:

Model No.: TWS056, T3

Only the model TWS056 was tested, since the electrical circuit design, layout, components used and internal wiring were identical for the above models, with difference being 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:

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

$f(\text{GHz})$ 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)	-4.730	-4.0±1	-3	0.501
Middle(2441MHz)	-4.150	-4.0±1	-3	0.501
Highest(2480MHz)	-4.080	-4.0±1	-3	0.501
π/4DQPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	-4.140	-4.0±1	-3	0.501
Middle(2441MHz)	-3.580	-4.0±1	-3	0.501
Highest(2480MHz)	-3.540	-4.0±1	-3	0.501

Worst case: $\pi/4$ DQPSK						
Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune- up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest (2402MHz)	-4.140	-4.0±1	-3	0.501	0.155	3.0
Middle (2441MHz)	-3.580	-4.0±1	-3	0.501	0.157	
Highest (2480MHz)	-3.540	-4.0±1	-3	0.501	0.158	
Conclusion: the calculated value ≤ 3.0 , SAR is exempted.						

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20200400315E-01