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RF Exposure Evaluation Report

Report No.: CQASZ20220200217E-03
Applicant: SPRITE Group Limited
Address of Applicant: 4th Floor, A3 Building, Shenliang Group, No.299 Guanping Road, Guanlan Street, Longhua District
Equipment Under Test (EUT):
EUT Name: TWS Bluetooth headset
Model No.: E10, T63, T64
Test Model No.: E10
Brand Name: N/A
FCC ID: 2ADTF-E10
Standards: 47 CFR Part 1.1307
47 CFR Part 2.1093
KDB447498D01 General RF Exposure Guidance v06
Date of Receipt: 2022-02-21
Date of Test: 2022-02-21 to 2022-02-28
Date of Issue: 2022-03-03
Test Result: **PASS***

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

Tested By: Lewis Zhou
(Lewis Zhou)

Reviewed By: Rock Huang
(Rock Huang)

Approved By: Jack Ai
(Jack Ai)



1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20220200217E-03	Rev.01	Initial report	2022-03-03

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3 General Information

3.1 Client Information

Applicant:	SPRITE Group Limited
Address of Applicant:	4th Floor, A3 Building, Shenliang Group, No.299 Guanping Road, Guanlan Street, Longhua District
Manufacturer:	Shenzhen zhikang technology co. , LTD
Address of Manufacturer:	4th Floor, A3 Building, Shenliang Group, No.299 Guanping Road, Guanlan Street, Longhua District
Factory:	Shenzhen zhikang technology co. , LTD
Address of Factory:	4th Floor, A3 Building, Shenliang Group, No.299 Guanping Road, Guanlan Street, Longhua District

3.2 General Description of EUT

Product Name:	TWS Bluetooth headset
Model No.:	E10, T63, T64
Test Model No.:	E10
Trade Mark:	N/A
Software Version:	V1.6.2
Hardware Version:	HZX-ZK-T63J-V1.3
Power Supply:	Charge box:Li-ion battery: DC 3.7V 320mAh, Charge by DC 5V for adapter Earphone:Li-ion battery: DC 3.7V 30mAh, Charge by DC 5V for Charge box

3.3 General Description of BLE

Operation Frequency:	2402MHz~2480MHz
Modulation Type:	GFSK
Transfer Rate:	1Mbps
Number of Channel:	40
Product Type:	☐ Mobile ☒ Portable ☐ Fix Location
Antenna Type:	Ceramic antenna
Antenna Gain:	4dBi

3.4 General Description of BT

Operation Frequency:	2402MHz~2480MHz
Modulation Type:	GFSK, $\pi/4$ DQPSK
Transfer Rate:	1Mbps/2Mbps
Number of Channel:	79
Product Type:	☐ Mobile ☒ Portable ☐ Fix Location
Antenna Type:	Ceramic antenna
Antenna Gain:	4dBi

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

1) For BLE

Measurement Data

GFSK mode (1Mbps)				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	-8.72	-8.5±1	-7.5	0.178
Middle(2440MHz)	-7.64	-7.5±1	-6.5	0.224
Highest(2480MHz)	-7.41	-7.5±1	-6.5	0.224

Worst case: GFSK mode (1Mbps)						
Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune- up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest (2402MHz)	-8.72	-8.5±1	-7.5	0.178	0.055	3.0
Middle (2440MHz)	-7.64	-7.5±1	-6.5	0.224	0.070	
Highest (2480MHz)	-7.41	-7.5±1	-6.5	0.224	0.071	
Conclusion: the calculated value ≤3.0, SAR is exempted.						

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20220200217E-01
BT can not simultaneous transmitting at same time.

2) For BT

Measurement Data

GFSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	-6.69	-6.5±1	-5.5	0.282
Middle(2441MHz)	-5.62	-5.5±1	-4.5	0.355
Highest(2480MHz)	-5.42	-5.5±1	-4.5	0.355
$\pi/4$ DQPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	-6.32	-6.0±1	-5.0	0.316
Middle(2441MHz)	-5.1	-5.0±1	-4.0	0.398
Highest(2480MHz)	-4.96	-5.0±1	-4.0	0.398

Worst case: $\pi/4$ DQPSK mode						
Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune- up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest (2402MHz)	-6.32	-6.0±1	-5.0	0.316	0.098	3.0
Middle (2441MHz)	-5.1	-5.0±1	-4.0	0.398	0.124	
Highest (2480MHz)	-4.96	-5.0±1	-4.0	0.398	0.125	
Conclusion: the calculated value ≤ 3.0 , SAR is exempted.						

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20220200217E-02 BLE can not simultaneous transmitting at same time.

*** END OF REPORT ***