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RF Exposure Evaluation Report

Report No.: CQASZ20210701176E-02
Applicant: Shenzhen Doageas Technology Co., Ltd.
Address of Applicant: 5/F, 4th Bldg, Hedian Industrial Park, Guanlan, Longhua, Shenzhen, Guangdong 518110, China
Equipment Under Test (EUT):
EUT Name: Bluetooth speaker with wireless charger
Model No.: B85-2
Test Model No.: B85-2
Brand Name: DOAGEAS
FCC ID: 2AQ2W-B85-2
Standards: 47 CFR Part 1.1307
47 CFR Part 2.1093
KDB447498D01 General RF Exposure Guidance v06
Date of Receipt: 2021-07-27
Date of Test: 2021-07-27 to 2021-08-24
Date of Issue: 2022-02-22
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
CQASZ20210701176E-02	Rev.01	Initial report	2022-02-22

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3 General Information

3.1 Client Information

Applicant:	Shenzhen Doageas Technology Co., Ltd.
Address of Applicant:	5/F, 4th Bldg, Hedian Industrial Park, Guanlan, Longhua, Shenzhen, Guangdong 518110, China
Manufacturer:	Shenzhen Doageas Technology Co., Ltd.
Address of Manufacturer:	5/F, 4th Bldg, Hedian Industrial Park, Guanlan, Longhua, Shenzhen, Guangdong 518110, China
Factory:	Shenzhen Doageas Technology Co., Ltd.
Address of Factory:	5/F, 4th Bldg, Hedian Industrial Park, Guanlan, Longhua, Shenzhen, Guangdong 518110, China

3.2 General Description of EUT

Product Name:	Bluetooth speaker with wireless charger
Model No.:	B85-2
Trade Mark:	
EUT Supports Radios application:	Bluetooth mode 2402-2480MHz
Hardware Version:	DGLS-V1.0
Software Version:	DGLS-B85-6963B-8389-V2.0
Sample Type:	☐ Mobile ☒ Portable ☐ Fix Location
Power Supply:	Li-ion battery: DC 3.7V, 2500mAh, 9.25Wh Charge by DC 5.0V

3.3 General Description of BT

Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	V5.0
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
Test Software of EUT:	FCC Assist 1.0.2.2
Antenna Type:	Chip antenna
Antenna Gain:	0dBi

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:

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

$f(\text{GHz})$ 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 BT

Measurement Data

GFSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	-3.660	-3.5±1	-2.5	0.562
Middle(2441MHz)	-3.770	-3.5±1	-2.5	0.562
Highest(2480MHz)	-4.540	-4.5±1	-3.5	0.446
$\pi/4$ DQPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	-2.960	-2.5±1	-1.5	0.707
Middle(2441MHz)	-3.060	-3.5±1	-2.5	0.562
Highest(2480MHz)	-3.890	-4.0±1	-3.0	0.501
8DPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	-2.710	-2.5±1	-1.5	0.707
Middle(2441MHz)	-2.810	-2.5±1	-1.5	0.707
Highest(2480MHz)	-3.510	-3.5±1	-2.5	0.562

Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune- up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest (2402MHz)	-2.710	-2.5±1	-1.5	0.707	0.219	3.0
Middle (2441MHz)	-2.810	-2.5±1	-1.5	0.707	0.221	
Highest (2480MHz)	-3.510	-3.5±1	-2.5	0.562	0.177	
Conclusion: the calculated value ≤3.0, SAR is exempted.						

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20210701176E-01