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RF Exposure Evaluation Report

Report No. : CQASZ20191101112E-02
Applicant: GANZHOU DEHUIDA TECHNOLOGY CO., LTD
Address of Applicant: Dehuida Science and Technology Park, Huoyanshan Road, Anyuan District, Ganzhou City, Jiangxi Province. P.R China.
Equipment Under Test (EUT):
EUT Name: WIRELESS SPEAKERS
All Model No.: AAABLU100006839, AAAGRY100006839, AAAQU100006839
Test Model No.: AAABLU100006839
Brand Name: onn.
FCC ID: 2AO5X-BM1172
Standards: 47 CFR Part 1.1307
47 CFR Part 1.1310
KDB447498D01 General RF Exposure Guidance v06
Date of Receipt: 2019-11-04
Date of Test: 2019-11-04 to 2019-11-13
Date of Issue: 2019-11-13
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
CQASZ20191101112E-02	Rev.01	Initial report	2019-11-13

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3 General Information

3.1 Client Information

Applicant:	GANZHOU DEHUIDA TECHNOLOGY CO., LTD
Address of Applicant:	Dehuida Science and Technology Park, Huoyanshan Road, Anyuan District, Ganzhou City, Jiangxi Province. P.R China.
Manufacturer:	GANZHOU DEHUIDA TECHNOLOGY CO., LTD
Address of Manufacturer:	Dehuida Science and Technology Park, Huoyanshan Road, Anyuan District, Ganzhou City, Jiangxi Province. P.R China.

3.2 General Description of EUT

Product Name:	WIRELESS SPEAKERS
All Model No.:	AAABLU100006839, AAAGRY100006839, AAAAQU100006839
Test Model No.:	AAABLU100006839
Trade Mark:	onn.
Hardware Version:	VA.0
Software Version:	V1.3
Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	V5.0
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:	☐ Mobile ☒ Portable ☐ Fix Location
Test Software of EUT:	BT FCC Tool V2.00 (manufacturer declare)
Antenna Type:	PCB antenna
Antenna Gain:	0dBi
USB cable	45cm(Unshielded)
Power Supply:	Li-ion Battery 3.7V, Charging by DC5V 1A

Battery information:

Object No.	Factory	Model	Technical data
Battery 1	DONGGUAN WILYIYOUANG ELECTRONICS CO., LTD	18650	3.7V, 1200mAh, 4.44Wh
Battery 2	Guangdong Pow-Tech New Power Co., Ltd.	IMR18650	3.7V, 1200mAh, 4.44Wh

Note:

1. All model: AAABLU100006839, AAAGRY100006839, AAAQU100006839

Only the model AABLU100006839 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.

2. Each model has two types of batteries, Battery 1 and Battery 2.

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:

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

$f(\text{GHz})$ 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)	-2.690	-2.5±1	-1.5	0.708
Middle(2441MHz)	-1.920	-2.0±1	-1	0.794
Highest(2480MHz)	-1.100	-1.5±1	-0.5	0.891
π/4DQPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	-0.070	0±1	1	1.259
Middle(2441MHz)	0.840	1.0±1	2	1.585
Highest(2480MHz)	1.600	1.5±1	2.5	1.778
8DPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	0.390	0±1	1	1.259
Middle(2441MHz)	1.280	1.0±1	2	1.585
Highest(2480MHz)	2.200	2.0±1	3	1.995

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)	0.390	0±1	1	1.259	0.39	3.0
Middle (2441MHz)	1.280	1.0±1	2	1.585	0.50	
Highest (2480MHz)	2.200	2.0±1	3	1.995	0.63	
Conclusion: the calculated value ≤3.0, SAR is exempted.						

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20191101112E-01