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RF Exposure Evaluation Report

Report No.: CQASZ20220400621E-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: ONN. SMALL RUGGED SPEAKER
Model No.: AAGRY100081918, AAORRA100081918, AALUN100081918, AALAV100081918, AABLSV100081918
Test Model No.: AAGRY100081918
Brand Name: ONN.
FCC ID: 2AO5X-BM1023
Standards: 47 CFR Part 1.1307
47 CFR Part 2.1093
KDB447498D01 General RF Exposure Guidance v06
Date of Receipt: 2022-04-13
Date of Test: 2022-04-13 to 2022-04-20
Date of Issue: 2022-04-26
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
CQASZ20220400621E-02	Rev.01	Initial report	2022-04-26

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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.
Factory 1:	GANZHOU DEHUIDA TECHNOLOGY CO., LTD
Address of Factory:	Dehuida Science and Technology Park, Huoyanshan Road, Anyuan District, Ganzhou City, Jiangxi Province. P.R China.
Factory 2:	DEHUIDA VIET NAM TECHNOLOGY COMPANY LIMITED
Address of Factory:	Factory No.1, Lot 13 Noi Hoang industrial cluster (Rent factory of Viet Australia Steel Joint Stock Company), Noi Hoang Commune, Yen Dung District, Bac Giang Province, Vietnam

3.2 General Description of EUT

Product Name:	ONN. SMALL RUGGED SPEAKER
Model No.:	AAGRY100081918, AAORRA100081918, AALUN100081918, AALAV100081918, AABLSV100081918
Test Model No.:	AAGRY100081918
Trade Mark:	ONN.
Software Version:	V1.3
Hardware Version:	V2.0
Power Supply:	Li-ion battery: DC 3.7V 1200mAh, Charge by DC 5V for adapter

3.3 General Description of BT

Operation Frequency:	2402MHz~2480MHz
Modulation Type:	GFSK, $\pi/4$ DQPSK, 8DPSK
Transfer Rate:	1Mbps/2Mbps/3Mbps
Number of Channel:	79
Product Type:	☐ Mobile ☒ Portable ☐ Fix Location
Antenna Type:	PCB antenna
Antenna Gain:	0dBi

Note:

Model No.: AAGRY100081918, AAORRA100081918, AALUN100081918, AALAV100081918, AABLSV100081918

The circuit design, layout, components used and internal wiring are all the same, except for the color difference

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

For BT

Measurement Data

GFSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	5.06	5.0±1	6.0	3.981
Middle(2441MHz)	5.54	5.5±1	6.5	4.467
Highest(2480MHz)	6.08	6.0±1	7.0	5.012
$\pi/4$ DQPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	5.28	5.0±1	6.0	3.981
Middle(2441MHz)	5.7	5.5±1	6.5	4.467
Highest(2480MHz)	6.17	6.0±1	7.0	5.012
8DPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	5.98	6.0±1	7.0	5.012
Middle(2441MHz)	6.44	6.5±1	7.5	5.623
Highest(2480MHz)	6.57	6.5±1	7.5	5.623

Worst case: 8DPSK mode						
Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune- up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest (2402MHz)	5.98	6.0±1	7.0	5.012	1.554	3.0
Middle (2441MHz)	6.44	6.5±1	7.5	5.623	1.757	
Highest (2480MHz)	6.57	6.5±1	7.5	5.623	1.771	
Conclusion: the calculated value ≤3.0, SAR is exempted.						

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20220400621E-01

*** END OF REPORT ***