FCC RF EXPOSURE REPORT

Applicant	:	Edifier International Limited
Address of Applicant	:	P. O. Box 6264 General Post Office Hong Kong
Manufacturer	:	Beijing Edifier Technology Co., Ltd.
Address of Manufacturer	:	815, Floor 8, Shuangqiao Building, No.68, North Fourth Ring West Road, Haidian District, Beijing 100080, P.R.China
Equipment under Test	:	Active Speaker
Model No.	:	EDF100078
FCC ID	:	Z9G-EDF219
Test Standard(s)	:	KDB447498 D01 General RF Exposure Guidance v06
Report No.	:	DDT-RE23103011-2E05
Issue Date	:	2023/12/04
Issue By	:	Guangdong Dongdian Testing Service Co., Ltd.
Address of Laboratory	:	Unit 2, Building 1, No. 17, Zongbu 2nd Road, Songshan Lake Park, Dongguan, Guangdong, China, 523808

REPORT

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Test Report Declare

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Standard Used: KDB447498 D01 General RF Exposure Guidance v06

We Declare:

The equipment described above is assessed by Guangdong Dongdian Testing Service Co., Ltd and in the configuration assessed the equipment complied with the standards specified above. The assessed results are contained in this report and Guangdong Dongdian Testing Service Co., Ltd is assumed of full responsibility for the accuracy and completeness of these assess.

After evaluation, our opinion is that the equipment In Accordance with above standard.

Report No.:	DDT-RE23103011-2E05		
Date of Receipt:	2023/11/04	**Date of Test:**	2023/11/04-2023/12/04

Prepared By: ***Approved By:***

Johnson Huang

Johnson Huang /Engineer

Damon Hu

Damon Hu/EMC Manager

Note: This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Guangdong Dongdian Testing Service Co., Ltd.

Revision History

Rev.	Revisions	Issue Date	Revised By
---	Initial issue	2023/12/04	

1. General Information

1.1. Description of equipment

EUT Name	:	Active Speaker
Model Number	:	EDF100078
EUT function description	:	Please reference user manual of this device
Power Supply	:	100-240V~ 50/60Hz
Radio Technology	:	Bluetooth (BR/EDR/LE),5.8GHz Wireless
Operation frequency	:	Bluetooth (BR/EDR/LE):2402 MHz-2480 MHz 5.8GHz Wireless :5729MHz-5845MHz
Modulation	:	Bluetooth BR/EDR: GFSK, π/4-DQPSK, 8DPSK Bluetooth LE: GFSK 5.8GHz Wireless: FSK
Antenna Type	:	Bluetooth: Integral antenna, Maximum PK gain: -0.29dBi 5.8GHz Wireless: Integral antenna, Maximum PK gain: 1.57dBi

Note: EUT is the abbreviation of equipment under test.

Antenna information		
Ant.	Antenna Type	Gain (dBi)
Bluetooth	Integral antenna	-0.29
5.8GHz Wireless	Integral antenna	1.57

Note:
This EUT supports CDD, and antenna gains are not equal, Directional gain was calculated by using the formulas applicable to equal gain antennas with G_{ANT} set equal to the gain of the antenna having the highest gain
so Directional gain = G_{ANT}+ Array Gain, where Array Gain is as follows:

For power measurements,
Array Gain = 0 dB ($N_{ANT} \leq 4$), so the Directional gain=-0.29 for Bluetooth
Array Gain = 0 dB (NANT ≤ 4), so the Directional gain=1.57 for 5.8G Wireless

1.2. Assess laboratory

Guangdong Dongdian Testing Service Co., Ltd.

Add.: Unit 2, Building 1, No. 17, Zongbu 2nd Road, Songshan Lake Park, Dongguan, Guangdong, China, 523808

Tel.: +86-0769-38826678, http://www.dgddt.com, Email: ddt@dgddt.com.

CNAS Accreditation No. L6451; A2LA Accreditation Number: 3870.01

FCC Designation Number: CN1182, Test Firm Registration Number: 540522

Innovation, Science and Economic Development Canada Site Registration Number: 10288A

Conformity Assessment Body identifier: CN0048

VCCI facility registration number: C-20087, T-20088, R-20123, R-20155, G-20118

2. RF Exposure Evaluation

2.1. Requirement

Systems operating under the provisions of FCC 47 CFR section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as mobile device whereby a distance of 0.2 m normally can be maintained between the user and the device, and below RF Permissible Exposure limit shall comply with.

Limits for General Population/Uncontrolled Exposure

(B) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$,$\|H\|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1.0	30

Note: f = frequency in MHz ; *Plane-wave equivalent power density

2.2. Calculation method

$$E(V/m) = \frac{\sqrt{30 \times P \times G}}{d} \qquad \text{Power Density: } S(mW/cm^2) = \frac{E^2}{377}$$

E = Electric field (V/m)
P = Peak RF output power (mW)
G = EUT Antenna numeric gain (numeric)=
d = Separation distance between radiator and human body (m)
The formula can be changed to

We can change the formula to:

$$S = \frac{30 \times P \times G}{377 \times d^2} \quad \text{or, } d = \sqrt{\frac{30 \times P \times G}{377 \times S}}$$

From the peak EUT RF output power, the minimum mobile separation distance, d=0.2 m, as well as the gain of the used antenna, the RF power density can be obtained.

2.3. Estimation result

Mode	Output power (dBm)	Output power (mW)	tune up power (dBm)	Antenna Gain (dBi)	Antenna Gain (linear)	MPE Values (mW/cm^2)	MPE Limit (mW/cm^2)
Bluetooth	12.48	17.701	13	-0.29	0.94	0.004	1
5.8GHz	7.09	5.117	7.5	1.57	1.44	0.002	1

Note: The estimation distance is 20 cm

The EUT support Bluetooth and 5.8G SRD simultaneous emission.0.004/1+0.002/1=0.006<1

Conclusion: MPE evaluation required since transmitter power is below FCC threshold

END OF REPORT