



RF EXPOSURE EVALUATION REPORT

Application No.: GZCR2105020357HS
Applicant: Puzhen Life Co., Ltd.
Address of Applicant: Unit 1112-1116, 11/F, Delta House, 3 On Yiu Street, Shatin, Hongkong
Manufacturer: Puzhen Life Co., Ltd.
Address of Manufacturer: Unit 1112-1116, 11/F, Delta House, 3 On Yiu Street, Shatin, Hongkong
Factory: K-Star Plastic Mold (Shenzhen) Co. Ltd.
Address of Factory: Floor 1-4, Factory NO. 2, DongWangYang Industrial East, HuangTian Village, HangCheng Street, BaoAn District, ShenZhen, Guang Dong Province

Equipment Under Test (EUT):

EUT Name: Duet Diffuser

Model No.: PZ-PA051

Trade Mark:



Standard(s) : 47 CFR Part 1.1307
KDB447498D01 General RF Exposure Guidance v06

Date of Receipt: 2021-05-31

Date of Evaluation: 2021-06-19

Date of Issue: 2021-08-26

Test Result:	Pass*
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* In the configuration tested, the EUT complied with the standards specified above.

Kobe Jian

Kobe Jian
EMC Laboratory Manager



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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2021-08-26		Original

Authorized for issue by:			
Tested By	 Lily Kuang/Project Engineer		
Reviewed By	 Ricky Liu/Reviewer		

2 Test Summary

Note:

E.U.T./EUT means Equipment Under Test.

Pass means the test result passed the test standard requirement, please find the detailed decision rule in the report relative section.



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4 General Information

4.1 Details of E.U.T.

Power supply: DC 5V powered by AC/DC adapter as below:
Model: E010-1L050200VUU
Input 100~240V, 50/60Hz, 0.3A
Output: 5V DC, 2A

For BLE:

Operation Frequency: 2402MHz to 2480MHz
Modulation Type: GFSK
Number of Channels: 40
Channel Spacing: 2MHz
Antenna Gain: 3.46dBi
Antenna Type: Integrated Antenna

For Classic:

Operation Frequency: 2402MHz to 2480MHz
Modulation Type: GFSK, pi/4DQPSK, 8DPSK
Number of Channels: 79
Channel Spacing: 1MHz
Antenna Gain: 3.46dBi
Antenna Type: Integrated Antenna
Spectrum Spread Technology: Frequency Hopping Spread Spectrum(FHSS)
Hardware Version: PZ-PA0518A
Firmware Version: V1.1
S/N: SP-2021060501
Test Software Version: BT_Tool V1.2
Power setting level: 2 dBm

4.2 Evaluation Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou Branch EMC Laboratory,
198 Kezhu Road, Sciencetech Park, Guangzhou Economic & Technology Development District,
Guangzhou, China 510663

Tel: +86 20 82155555 Fax: +86 20 82075059

No tests were sub-contracted.



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4.3 Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **NVLAP (Lab Code: 200611-0)**

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 200611-0.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

- **ACMA**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory can also perform testing for the Australian/New Zealand Regulatory Compliance Mark (RCM).

- **SGS UK(Certificate No.: 32), SGS-TUV SAARLAND and SGS-FIMKO**

Have approved SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory as a supplier of EMC TESTING SERVICES and SAFETY TESTING SERVICES.

- **CNAS (Lab Code: L0167)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been assessed and in compliance with CNAS-CL01:2018 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:2017 General Requirements) for the Competence of Testing Laboratories.

- **FCC Recognized Accredited Test Firm(Registration No.: 486818)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been accredited and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Designation Number: CN5016, Test Firm Registration Number: 486818.

- **ISED (Registration No.: 4620B, CAB identifier: CN0052)**

SGS-CSTC Standards Technical Services Co., Ltd., has been registered by Innovation Science and Economic Development Canada for Wireless Device Testing laboratories to test to Canadian radio equipment requirements. Registration No. 4620B, CAB identifier: CN0052.

- **VCCI (Registration No.: R-12460, C-12584, G-20107 and T-11179)**

The 10m Semi-anechoic chamber, 966 Anechoic Chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-12460, C-12584, G-20107 and T-11179 respectively.

- **CBTL (Lab Code: TL129)**

SGS-CSTC Standards Technical Services Co., Ltd., E&E Laboratory has been assessed and fully comply with the requirements of ISO/IEC 17025:2017, the Basic Rules, IECEE 01 and Rules of procedure IECEE 02, and the relevant IECEE CB-Scheme Operational documents.

4.4 Deviation from Standards

None

4.5 Abnormalities from Standard Conditions

None



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5 Radio Spectrum Matter Test Results

5.1 RF Exposure Evaluation

Test Requirement 47 CFR Part 1.1310

Limit:

According to FCC Part1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in Part1.1307(b)

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*900/f ²	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f ²	30
30-300	27.5	0.073	0.2	30
300-1,500			f/1500	30
1,500-100,000			1.0	30
f = frequency in MHz * = Plane-wave equivalent power density				

According to IEEE C95.3:2002 section 5.5.1.1, The power density S at a point on the axis at a distance d from a transmitting antenna is given by the Friis free-space transmission formula

$$S = \frac{PG}{4\pi d^2}$$

S = power density (mW/cm²)
P = the net power delivered to the antenna (mW)
G = gain of the antenna in linear scale
d = distance between observation point and center of the radiator (cm)

5.1.1 Conclusion

Antenna Gain: 3.46dBi for BT,

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 2.218 in linear scale.

Output Power Into Antenna & RF Exposure Evaluation Distance: 20 cm

BLE:

Channel	Frequency (MHz)	Max Conducted Peak Output Power (dBm)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm ²)	Limit	Result
Lowest	2402	1.98	1.578	0.0007	1.0	PASS

Classic:

Channel	Frequency (MHz)	Max Conducted Peak Output Power (dBm)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm ²)	Limit	Result
Lowest	2402	1.93	1.560	0.0007	1.0	PASS

So, the SAR report is not required.

Note: Refer to report No. GZCR210502035701 and GZCR210502035702 for EUT test Max Conducted Peak Output Power value.

The distance R (4th column) calculated from the Fries transmission formula is far greater than 20 cm separation requirement.

6 EUT Constructional Details (EUT Photos)

Refer to external and internal photos for GZCR2105020357HS

- End of the Report -