



SAR Evaluation Report

Application No.: SZCR2105020976HS(SGS SZ No.: T52110250319EM)
Applicant: Lucky Group(H.K.) Limited
Address of Applicant: Building B, Lucky Industrial Park, Hongjin Road, Hongmei Town Dongguan China
Manufacturer: SHENZHEN YANBOCHUANG TECHNOLOGY CO., LTD
Address of Manufacturer: 1210, 12/f, Block A, Phase 2, Zhuoyue City, Shenzhen, Guangdong, China
Buyer: D & B
Supplier: Lucky Group(H.K.) Limited
Importer: Dave & Buster's
Equipment Under Test (EUT):
EUT Name: Wireless Dual Stereo Speakers
Item No.: 18829
Ref. No.: LBC10082/LBD10171
Requested Age Grading: 3+
Country of Origin: China
Country of Destination: USA
FCC ID: 2ACO3-18829
Standards: 47 CFR Part 1.1307 , 47 CFR Part 2.1091
KDB447498D01 General RF Exposure Guidance v06
Date of Receipt: 2021-05-11
Date of Test: 2021-05-22 to 2021-06-09
Date of Issue: 2021-06-10

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

Keny Xu
EMC Laboratory Manager



2 Version

Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2021-06-10		Original

Authorized for issue by:			
		<i>Powell Bao</i>	
		Powell Bao/Project Engineer	
		<i>Eric Fu</i>	
		Eric Fu/Reviewer	



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4 General Information

4.1 General Description of EUT

Power Supply:	Rechargeable battery DC3.7V,1000mAh; Charged by DC5V
For BT:	
Operation Frequency:	2402MHz to 2480MHz
Bluetooth Version:	V5.0 Dual mode
Modulation Type:	GFSK, pi/4DQPSK, 8DPSK
Number of Channels:	79
Channel Spacing:	1MHz
Spectrum Spread Technology:	Frequency Hopping Spread Spectrum(FHSS)
Antenna Type:	PCB Antenna
Antenna Gain:	4.03dBi
For BLE:	
Operation Frequency:	2402MHz to 2480MHz
Bluetooth Version:	V5.0 Dual mode
Modulation Type:	GFSK
Number of Channels:	40
Channel Spacing:	2MHz
Data Rate	1M/bit
Antenna Type:	PCB Antenna
Antenna Gain:	4.03dBi



4.2 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

Address 1: No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, Guangdong, China. 518057.

Address 2: Room 105, Building A, Xinlong Technology Industrial Park, No. 50 Fengtang Road, Xintian Community, Fuyong Street, Bao'an District, Shenzhen, China

Telephone: +86 (0) 755 2601 2053 Fax: +86 (0) 755 2671 0594

No tests were sub-contracted.

4.3 Test Facility

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

• A2LA (Certificate No. 3816.01)

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

• VCCI

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

• FCC –Designation Number: CN1178

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1178. Test Firm Registration Number: 406779.

• Innovation, Science and Economic Development Canada

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.

4.4 Deviation from Standards

None.

4.5 Abnormalities from Standard Conditions

None.

4.6 Other Information Requested by the Customer

None.



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5 SAR Evaluation

5.1 RF Exposure Compliance Requirement

5.1.1 Limits

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 Exposures				
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
300–1500 .....	.....	.....	f/300	6
1500–100,000 .....	.....	.....	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
300–1500 .....	.....	.....	f/1500	30
1500–100,000 .....	.....	.....	1.0	30

F= Frequency in MHz

Friis Formula

Friis transmission formula: $Pd = (Pout * G) / (4 * \pi * R^2)$

Where

Pd = power density in mW/cm²

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

R = distance between observation point and center of the radiator in cm

Pd id the limit of MPE, 1 mW/cm² . If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.



5.1.2 Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

Antenna Gain: 4.03dBi

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 2.53 in linear scale.

Output Power Into Antenna & RF Exposure Evaluation Distance:

Frequency (MHz)	Max Conducted Peak Output Power (dBm)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm ²)	Limit	Result
2402	3.43	2.20	0.0011	1.0	PASS

Note: Refer to report No. SZCR210502097602 for EUT test Max Conducted Peak Output Power value. The distance r (4th column) calculated from the Friis transmission formula is far greater than 20 cm separation requirement.

According to the declaration from the applicant, The internal circuits and Bluetooth module of these two speakers are identical.

For Bluetooth transmit simultaneously:

$$\text{Bluetooth} * 2 = 0.0011 * 2 = 0.0022 < 1$$

So the SAR report is not required.

- End of the Report -

