RF Exposure Evaluation

FOR

Shenzhen Xutao Electronics Co., Ltd

MINI SPEAKER

Test Model: C01

Prepared for	:	Shenzhen Xutao Electronics Co., Ltd
Address	:	Unit 301, Dawangshan Rainbow Residence, No.1007 Xihuan Road, Dawangshan Community, Shajing District, Bao'an District, Shenzhen GuangDong China
Prepared by	:	Shenzhen LCS Compliance Testing Laboratory Ltd.
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Date of receipt of test sample	:	March 25, 2025
Number of tested samples	:	2
Sample No.	:	A250321105-1, A250321105-2
Serial number	:	Prototype
Date of Test	:	March 25, 2025 ~ April 01, 2025
Date of Report	:	April 02, 2025

RF Exposure Evaluation		
Report Reference No.	**:**	**LCSA03255027EB**
Date of Issue.....	:	April 02, 2025
Testing Laboratory Name	**:**	**Shenzhen LCS Compliance Testing Laboratory Ltd.**
Address.....	:	101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China
Testing Location/ Procedure.....	:	Full application of Harmonised standards ■ Partial application of Harmonised standards □ Other standard testing method □
Applicant's Name.....	**:**	**Shenzhen Xutao Electronics Co., Ltd**
Address.....	:	Unit 301, Dawangshan Rainbow Residence, No.1007 Xihuan Road, Dawangshan Community, Shajing District, Bao'an District, Shenzhen GuangDong China
Test Specification		
Standard	:	FCC KDB publication 447498 D01 General RF Exposure Guidance v06 FCC CFR 47 part1 1.1310 FCC CFR 47 part2 2.1093
Test Report Form No.	:	TRF-4-E-215 A/0
TRF Originator	:	Shenzhen LCS Compliance Testing Laboratory Ltd.
Master TRF	:	Dated 2011-03

Test Item Description.	**:**	**MINI SPEAKER**
Trade Mark.....	:	N/A
Test Model	:	C01
Ratings.....	:	Input: DC 5V DC 3.7V by Rechargeable Li-ion Battery, 400mAh
Result	**:**	**Positive**

Compiled by:	Supervised by:	Approved by:
Nadia Zhou	Jack Liu	Gavin Liang
Nadia Zhou/ Administrator	Jack Liu/ Technique principal	Gavin Liang / Manager

RF Exposure Evaluation

Test Report No. : LCSA03255027EB	April 02, 2025 Date of issue

Test Model.....	: C01
EUT.....	: MINI SPEAKER
Applicant.....	**: Shenzhen Xutao Electronics Co., Ltd**
Address.....	: Unit 301, Dawangshan Rainbow Residence, No.1007 Xihuan Road, Dawangshan Community, Shajing District, Bao'an District, Shenzhen GuangDong China
Telephone.....	: /
Fax.....	: /
Manufacturer.....	**: Shenzhen Xutao Electronics Co., Ltd**
Address.....	: Unit 301, Dawangshan Rainbow Residence, No.1007 Xihuan Road, Dawangshan Community, Shajing District, Bao'an District, Shenzhen GuangDong China
Telephone.....	: /
Fax.....	: /
Factory.....	**: Shenzhen Xutao Electronics Co., Ltd**
Address.....	: Unit 301, Dawangshan Rainbow Residence, No.1007 Xihuan Road, Dawangshan Community, Shajing District, Bao'an District, Shenzhen GuangDong China
Telephone.....	: /
Fax.....	: /

Test Result	**Positive**

The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

Revision History

Report Version	Issue Date	Revision Content	Revised By
000	April 02, 2025	Initial Issue	---

TABLE OF CONTENTS

Description **Page**

FCC RF Exposure Evaluation

1. Product Information

EUT	:	MINI SPEAKER
Test Model	:	C01
Ratings	:	Input: DC 5V DC 3.7V by Rechargeable Li-ion Battery, 400mAh
Hardware Version	:	/
Software Version	:	/
Bluetooth Frequency Range	:	2402MHz~2480MHz
Channel Number	:	79 channels for Bluetooth V5.4 (DSS)
Channel Spacing	:	1MHz for Bluetooth V5.4 (DSS)
Modulation Type	:	π/4-DQPSK for Bluetooth V5.4 (DSS)
Bluetooth Version	:	V5.4
Antenna Description	:	PCB Antenna, 1.68dBi(Max.)
Exposure category	:	General population/uncontrolled environment
EUT Type	:	Production Unit
Device Type	:	Portable Device

Note: For a more detailed antenna description, please refer to the antenna specifications or the antenna report provided by the customer.

2. Evaluation method and Limit

According to KDB447498 D01 General RF Exposure Guidance v06 Section 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 Test Exclusion Threshold condition, listed below, is satisfied. These test exclusion conditions are based on source-based time-averaged maximum conducted output power of the RF channel requiring evaluation, adjusted for tune-up tolerance, and the minimum test separation distance required for the exposure conditions.22 The minimum test separation distance is determined by the smallest distance from the antenna and radiating structures or outer surface of the device, according to the host form factor, exposure conditions and platform requirements, to any part of the body or extremity of a user or bystander (see 5) of section 4.1). To qualify for SAR test exclusion, the test separation distances applied must be fully explained and justified by the operating configurations and exposure conditions of the transmitter and applicable host platform requirements, typically in the SAR measurement or SAR analysis report, according to the required published RF exposure KDB procedures. When no other RF exposure testing or reporting is required, a statement of justification and compliance must be included in the equipment approval, in lieu of the SAR report, to qualify for the SAR test exclusion. When required, the device specific conditions described in the other published RF exposure KDB procedures must be satisfied before applying these SAR test exclusion provisions; for example, handheld PTT two-way radios, handsets, laptops & tablets etc.“

[(max. power of channel, including tune-up tolerance, mW)/ (min. test separation distance, mm)] · [√f (GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where:

• f (GHz) is the RF channel transmit frequency in GHz

• Power and distance are rounded to the nearest mW and mm before calculation

• The result is rounded to one decimal place for comparison

• 3.0 and 7.5 are referred to as the numeric thresholds in the step 2 below

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 according to f) in section 4.1 is applied to determine SAR test exclusion.

When one of the following test exclusion conditions is satisfied for all combinations of simultaneous transmission configurations, further equipment approval is not required to incorporate transmitter modules in host devices that operate in the mixed mobile and portable host platform exposure conditions. The grantee is responsible for documenting this according to Class I permissive change requirements. Antennas that qualify for standalone SAR test exclusion must apply the estimated standalone SAR to determine simultaneous transmission test exclusion.

a)The [∑ of (the highest measured or estimated SAR for each standalone antenna configuration, adjusted for maximum tune-up tolerance) / 1.6 W/kg] + [∑ of MPE ratios] is ≤ 1.0.

b)The SAR to peak location separation ratios of all simultaneously transmitting antenna pairs operating in portable device exposure conditions are all ≤ 0.04, and the [∑ of MPE ratios] is ≤ 1.0.

3. Refer Evaluation Method

ANSI C95.1–1999: IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.

FCC KDB publication 447498 D01 General RF Exposure Guidance v06: Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies.

FCC CFR 47 part1 1.1310: Radiofrequency radiation exposure limits.

FCC CFR 47 part2 2.1093: Radiofrequency radiation exposure evaluation: portable devices

4. Conducted Power Results

<BT>

Mode	Channel	Frequency (MHz)	Peak Conducted Output Power (dBm)
π/4DQPSK	0	2402	1.37
	39	2441	1.50
	78	2480	0.39

5. Manufacturing Tolerance

<BT>

π/4DQPSK (Peak)			
Channel	Channel 0	Channel 39	Channel 78
Target (dBm)	1.0	1.0	0
Tolerance ±(dB)	1.0	1.0	1.0

6. Evaluation Results

6.1 Standalone Evaluation

Band/Mode		Frequency (GHz)	Antenna Distance (mm)	RF output power		SAR Test Exclusion Threshold	SAR Test Exclusion
				dBm	mW		
BT	π/4DQPSK	2.441	5	2.0	1.5849	0.4952< 3.0	Yes

Remark:
1. Output power including tune up tolerance;
2. When the minimum test separation distance is < 5 mm, a distance of 5 mm according to f) in section 4.1 is applied to determine SAR test exclusion.

6.2 Simultaneous Transmission for SAR Exclusion

The sample support one BT modular. No need consider simultaneous transmission.

7. Conclusion

The measurement results comply with the FCC Limit per 47 CFR 2.1093 for the uncontrolled RF Exposure and SAR Exclusion Threshold per KDB 447498 v06.

8. Description of Test Facility

NVLAP Accreditation Code is 600167-0.

FCC Designation Number is CN5024.

CAB identifier is CN0071.

CNAS Registration Number is L4595.

Test Firm Registration Number: 254912.

9. Measurement Uncertainty

Test Item		Frequency Range	Uncertainty	Note
Output power	:	1GHz-40GHz	±0.57dB	(1)

(1). This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

.....THE END OF REPORT.....