TCT 通测检测 TESTING CENTRE TECHNOLOGY

TEST REPORT

FCC ID. ..... :	2BOQM-X9	
Test Report No..... :	TCT250410E077	
Date of issue..... :	May 06, 2025	
Testing laboratory ..... :	SHENZHEN TONGCE TESTING LAB	
Testing location/ address:	2101 & 2201, Zhenchang Factory, Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China	
Applicant's name..... :	Shenzhen Lesheng Acoustics Technology Co., Ltd	
Address..... :	C1406, Building BC, Huizhi R&D Center, Longteng Community, Xixiang Street, Bao'an District, Shenzhen, China	
Manufacturer's name ... :	Shenzhen Lesheng Acoustics Technology Co., Ltd	
Address..... :	C1406, Building BC, Huizhi R&D Center, Longteng Community, Xixiang Street, Bao'an District, Shenzhen, China	
Standard(s) ..... :	FCC CFR Title 47 Part 1.1307	
Product Name..... :	DAC & Headphone Amplifier	
Trade Mark ..... :	LUXSIN	
Model/Type reference..... :	X9	
Rating(s)..... :	AC 120V/60Hz	
Date of receipt of test item ..... :	Apr. 10, 2025	
Date (s) of performance of test..... :	Apr. 10, 2025 ~ May 06, 2025	
Tested by (+signature) ... :	Yannie ZHONG	Yannie Zhong
Check by (+signature).... :	Beryl ZHAO	Beryl Zhao
Approved by (+signature):	Tomsin	Tomsin

SHENZHEN TONGCE TESTING LAB TCT

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Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com

1. General Product Information

1.1. EUT description

Product Name.....:	DAC & Headphone Amplifier
Model/Type reference.....:	X9
Sample Number.....:	TCT250410E060-0101
Operation Frequency.....:	For BT/BLE: 2402MHz~2480MHz For 2.4G WIFI: 2412MHz~2462MHz (802.11b/802.11g/802.11n(HT20)) 2422MHz~2452MHz (802.11n(HT40)) For 5G WIFI: 5180MHz~5240MHz
Modulation Type.....:	For BT: GFSK, π/4-DQPSK, 8DPSK For BLE: GFSK For 2.4G WIFI: 802.11b: Direct Sequence Spread Spectrum (DSSS) 802.11g/802.11n: Orthogonal Frequency Division Multiplexing (OFDM) For 5G WIFI: 64QAM, 16QAM, BPSK, QPSK
Antenna Type.....:	Black Rubber Antenna
Antenna Gain.....:	For BT/BLE: 3.32dBi For 2.4G WIFI: 3.32dBi For 5G WIFI: 3.29dBi
Rating(s).....:	AC 120V/60Hz

Note: The antenna gain listed in this report is provided by applicant, and the test laboratory is not responsible for this parameter.

1.2. Model(s) list

None.

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2. General Information

2.1. Test environment and mode

Item	Normal condition
Temperature	+25ºC
Voltage	AC 120V
Humidity	56%
Atmospheric Pressure:	1008 mbar
Test Mode:	
Transmitting Mode:	Keep the EUT in continuous transmitting by select channel

2.2. Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Equipment	Model No.	Serial No.	FCC ID	Trade Name
/	/	/	/	/

Note:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.

2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

3. For conducted measurements (Output Power, 20dB Occupied Bandwidth, Carrier Frequencies Separation, Hopping Channel Number, Dwell Time, Spurious Emissions), the antenna of EUT is connected to the test equipment via temporary antenna connector, the antenna connector is soldered on the antenna port of EUT, and the temporary antenna connector is listed in the Test Instruments.

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3. Facilities and Accreditations

3.1. Facilities

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

- FCC - Registration No.: 645098

  SHENZHEN TONGCE TESTING LAB

  Designation Number: CN1205

  The testing lab has been registered and fully described in a report with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

- IC - Registration No.: 10668A

  SHENZHEN TONGCE TESTING LAB

  CAB identifier: CN0031

  The testing lab has been registered by Innovation, Science and Economic Development Canada for radio equipment testing.

3.2. Location

SHENZHEN TONGCE TESTING LAB

Address: 2101 & 2201, Zhenchang Factory, Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China

TEL: +86-755-27673339

4. Limit

According to §1.1310, the limit is as follow,

TABLE 1 TO § 1.1310(E)(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)
(I) 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
(II) 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.*

5. Test Results and Measurement Data

According to §1.1307(b), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

Remark: 1) **For BT:** The maximum output power for antenna is 1.83dBm (1.52mW) at 2441MHz, 3.32dBi antenna gain(with 2.15 numeric antenna gain.)
For BLE: The maximum output power for antenna is 1.00dBm (1.26mW) at 2402MHz, 3.32dBi antenna gain(with 2.15 numeric antenna gain.)
For 2.4G WIFI: The maximum output power for antenna is 12.65dBm (18.41mW) at 2412MHz, 3.32dBi antenna gain(with 2.15 numeric antenna gain.)
For 5G WIFI: The maximum output power for antenna is 11.80dBm(15.14mW) at 5180MHz, 3.29dBi antenna gain(with 2.13 numeric antenna gain.)

2) For mobile or fixed location transmitters, no SAR consideration applied. The minimum separation generally be used is at least 20cm, even if the calculation indicate that the MPE distance would be lesser.

Calculation

Given $E = \frac{\sqrt{30 \times P \times G}}{d}$ & $S = \frac{E^2}{3770}$

Where E = *Field Strength in Volts / meter*
P = *Power in Watts*
G=*Numeric antenna gain*
d=*Distance in meters*
S=*Power Density in milliwatts / square centimeter*

Substituting the MPE safe distance using d=20cm into above equation.
Yields: S=0.000199*P*G

Mode	Power (dBm)	Power (mW)	numeric antenna gain	Power density (mW/cm^2)	Limit (mW/cm^2)	Result
BT	1.83	1.52	2.15	0.000650	1.00	PASS
BLE	1.00	1.26	2.15	0.000539	1.00	
2.4G WIFI	12.65	18.41	2.15	0.007877	1.00	
5G WIFI	11.80	15.14	2.13	0.006417	1.00	

Note: BT/2.4G WIFI Can be transmitted simultaneously, MPE calculate is as follow,
MPE=0.000650/1.00+0.007877/1.00=0.008527<1.
BT/5G WIFI Can be transmitted simultaneously, MPE calculate is as follow,
MPE=0.000650/1.00+0.006417/1.00=0.007067<1.
BLE/2.4G WIFI Can be transmitted simultaneously, MPE calculate is as follow,
MPE=0.000539/1.00+0.007877/1.00=0.008416<1.
BLE/5G WIFI Can be transmitted simultaneously, MPE calculate is as follow,
MPE=0.000539/1.00+0.006417/1.00=0.006956<1.

********END OF REPORT********

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