RF Exposure Evaluation

For

Zhuhai Xuanqi Trading Co., LTD

Nightstands

Test Model: ELQ551

Additional Model No.: Please Refer to Page 6

Prepared for	:	Zhuhai Xuanqi Trading Co., LTD
Address	:	103, Building 4, Haiyun Garden, Haiyiwanpan, Tangjiawan Town Zhuhai Guangdong China
Prepared by	:	Guangzhou LCS Compliance Testing Laboratory Ltd.
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Mail	:	webmaster@LCS-cert.com
Date of receipt of test sample	:	August 19, 2025
Number of tested samples	:	2
Sample No.	:	A250818064-1, A250818064-2
Serial number	:	Prototype
Date of Test	:	August 19, 2025 ~ August 26, 2025
Date of Report	:	August 27, 2025

RF Exposure Evaluation		
Report Reference No.	**:**	**LCSC08125010EC**
Date of Issue	:	August 27, 2025
Testing Laboratory Name	**:**	**Guangzhou LCS Compliance Testing Laboratory Ltd.**
Address.....	:	No.44-1, Qianfeng North Road, Shiqi, Panyu District, Guangzhou, Guangdong, China
Testing Location/ Procedure.....	:	Full application of Harmonised standards ■ Partial application of Harmonised standards □ Other standard testing method □
Applicant's Name.....	**:**	**Zhuhai Xuanqi Trading Co., LTD**
Address.....	:	103, Building 4, Haiyun Garden, Haiyiwanpan, Tangjiawan Town Zhuhai 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 2.1091
Test Report Form No.	**:**	TRF-4-E-215 A/0
TRF Originator.....	:	Guangzhou LCS Compliance Testing Laboratory Ltd.
Master TRF.....	:	Dated 2011-03
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Test Item Description.	**:**	**Nightstands**
Trade Mark	:	N/A
Test Model	:	ELQ551
Ratings.....	:	Please Refer to Page 6
Result	**:**	**Pass**

Compiled by:	**Supervised by:**	**Approved by:**
Lifeng Le/ Administrator	Justin Zhu/ Technique principal	Gavin Liang/ Manager

RF Exposure Evaluation

Test Report No. : LCSC08125010EC	August 27, 2025 Date of issue

EUT.....	:	Nightstands
Test Model.....	:	ELQ551
Applicant.....	**:**	**Zhuhai Xuanqi Trading Co., LTD**
Address.....	:	103, Building 4, Haiyun Garden, Haiyiwanpan, Tangjiawan Town Zhuhai Guangdong China
Telephone.....	:	/
Fax.....	:	/
Manufacturer.....	**:**	**Zhuhai Xuanqi Trading Co., LTD**
Address.....	:	103, Building 4, Haiyun Garden, Haiyiwanpan, Tangjiawan Town Zhuhai Guangdong China
Telephone.....	:	/
Fax.....	:	/
Factory.....	**:**	**Zhuhai Xuanqi Trading Co., LTD**
Address.....	:	103, Building 4, Haiyun Garden, Haiyiwanpan, Tangjiawan Town Zhuhai Guangdong China
Telephone.....	:	/
Fax.....	:	/

Test Result	**Pass**

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	August 27, 2025	Initial Issue	---

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Description **Page**

1. Product Information

EUT	:	Nightstands
Test Model	:	ELQ551
Additional Model No.	:	ELQ502, ELQ503, ELQ504, ELQ545, ELQ529, ELQ531
Model Declaration	:	PCB board, structure and internal of these model(s) are the same, So no additional models were tested
Ratings	:	Input: 12V⎓2A For AC Adapter: Input:100-240V~, 50/60Hz Output: 12V⎓2A
Hardware Version	:	YYSZ-ZCW-USBLE-V12
Software Version	:	/
Bluetooth	:	
Frequency Range	:	2402MHz~2480MHz
Channel Number	:	79 channels for Bluetooth V6.0 (DSS) 40 channels for Bluetooth V6.0 (DTS)
Channel Spacing	:	1MHz for Bluetooth V6.0 (DSS) 2MHz for Bluetooth V6.0 (DTS)
Modulation Type	:	GFSK, π/4-DQPSK, 8-DPSK for Bluetooth V6.0 (DSS) GFSK for Bluetooth V6.0 (DTS)
Bluetooth Version	:	V6.0
Antenna Description	:	PCB Antenna, -2.9dBi (max.)
Exposure category	:	General population/uncontrolled environment
EUT Type	:	Production Unit
Device Type	:	Mobile 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

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 0.2m normally can be maintained between the user and the device, and below RF Permissible Exposure limit shall comply with.
In accordance with KDB447498D01 for Simultaneous transmission MPE test exclusion applies when the sum of the MPE ratios for all simultaneous transmitting antennas incorporated in a host device, based on the calculated/estimated, numerically modelled or measured field strengths or power density, is ≤ 1.0. The MPE ratio of each antenna is determined at the minimum test separation distance required by the operating configurations and exposure conditions of the host device, according to the ratio of field strengths or power density to MPE limit, at the test frequency. Either the maximum peak or spatially averaged results from measurements or numerical simulations may be used to determine the MPE ratios. Spatial averaging does not apply when MPE is estimated using simple calculations based on far-field plane-wave equivalent conditions. The antenna installation and operating requirements for the host device must meet the minimum test separation distances required by all antennas, in both standalone and simultaneous transmission operations, to satisfy compliance.

3. Limit

3. 1 Refer Evaluation Method

ANSI C95.1–2019: IEEE Standard for Safety Levels with Respect to Human Exposure to Electric, Magnetic, and Electromagnetic Fields, 0 Hz to 300 GHz
FCC KDB publication 447498 D01 General 1 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 2.1091: Radiofrequency radiation exposure evaluation: mobile devices.

3. 2 Limit

Limits for Maximum Permissible Exposure (MPE)/Controlled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm^2)	Averaging Time (minute)
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 – 1500	/	/	f/300	6
1500 – 100,000	/	/	5	6

Limits for Maximum Permissible Exposure (MPE)/Uncontrolled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm^2)	Averaging Time (minute)
Limits for Occupational/Uncontrolled Exposure				
0.3 – 3.0	614	1.63	(100) *	30
3.0 – 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
*=Plane-wave equivalent power density

4. MPE Calculation Method

Predication of MPE limit at a given distance
Equation from page 18 of OET Bulletin 65, Edition 97-01

$S=PG/4\pi R^2$

Where: S=power density
P=power input to antenna
G=power gain of the antenna in the direction of interest relative to an isotropic radiator
R=distance to the center of radiation of the antenna

5. Conducted Power

[BT]

Mode	Channel	Frequency (MHz)	Peak Conducted Output Power (dBm)
GFSK	0	2402	-1.26
	39	2441	-0.8
	78	2480	-1.87
π/4DQPSK	0	2402	0.71
	39	2441	0.94
	78	2480	-0.12
8DPSK	0	2402	1.17
	39	2441	**1.41**
	78	2480	0.28

[BLE 1M]

Mode	Channel	Frequency (MHz)	Peak Conducted Output Power (dBm)
BLE 1M	0	2402	0.32
	19	2440	**0.72**
	39	2480	-0.18

6. Manufacturing Tolerance

[BT]

GFSK (Peak)			
Channel	Channel 0	Channel 39	Channel 78
Target (dBm)	-1.0	0	-1.0
Tolerance ±(dB)	1.0	1.0	1.0
π/4-DQPSK (Peak)			
Channel	Channel 0	Channel 39	Channel 78
Target (dBm)	0	0	0
Tolerance ±(dB)	1.0	1.0	1.0
8DPSK (Peak)			
Channel	Channel 0	Channel 39	Channel 78
Target (dBm)	1.0	1.0	0
Tolerance ±(dB)	1.0	1.0	1.0

[BLE 1M]

GFSK (Peak)			
Channel	Channel 0	Channel 19	Channel 39
Target (dBm)	0	0	0
Tolerance ±(dB)	1.0	1.0	1.0

7. Measurement Results

7.1 Standalone MPE Evaluation

As declared by the Applicant, the EUT is a wireless device used in a fix application, at least 20 cm from any body part of the user or nearby persons; from the maximum EUT RF output power, the minimum separation distance, r =20cm, as well as the gain of the used antenna refer to antenna information, the RF power density can be obtained.

[BT]

Modulation Type	Output power		Antenna Gain (dBi)	Antenna Gain (linear)	MPE (mW/cm2)	MPE Limits (mW/cm2)
	dBm	mW				
GFSK	1.0	1.2589	-2.9	0.5129	0.0001	1.0000
π/4-DQPSK	1.0	1.2589	-2.9	0.5129	0.0001	1.0000
8-DPSK	2.0	1.5849	-2.9	0.5129	0.0002	1.0000

[BLE 1M]

Modulation Type	Output power		Antenna Gain (dBi)	Antenna Gain (linear)	MPE (mW/cm2)	MPE Limits (mW/cm2)
	dBm	mW				
GFSK	1.0	1.2589	-2.9	0.5129	0.0001	1.0000

Remark:
1. Output power including tune-up tolerance;
2. Output power was adjusted to duty cycle at 100% if measured duty cycle less than 98%;
3. MPE evaluate distance is 20cm from user manual provide by manufacturer.

7.2 Simultaneous Transmission MPE Evaluation

The EUT equipped with one BT antenna and the other is WPT antenna. So, need consider simultaneous transmission.

Simultaneous Transmission MPE

BLE Max MPE (Ratio)	WPT Max MPE (Ratio)	simultaneous MPE (Ratio)	MPE Limits (Ratio)
0.0002	0.1447	0.1449	1.0000

8. Conclusion

The measurement results comply with the FCC Limit per 47 CFR 2.1091 for the uncontrolled RF Exposure of mobile device.

9. Description of Test Facility

CNAS Registration Number is L11555

A2LA Certificate Number: 5099.01

FCC Designation Number is CN1379

Test Firm Registration Number: 729882

10. Measurement Uncertainty

BT/BLE:

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----------