



RF EXPOSURE REPORT

Report No.: 20250517G11391X-W4

Product Name: BLUETOOTH DIGITAL SMART KEY

Model No. : XSBTK0

FCC ID: 2AI4T-XSBTK0

Applicant: Shenzhen Xhorse Electronics Co., Ltd.

Address: Floor 28, Block A, Building NO.6, International Innovation Valley,
Nanshan District, Shenzhen

Dates of Testing: 05/20/2025–06/19/2025

Issued by: CCIC Southern Testing Co., Ltd.

Lab Location: Electronic Testing Building, No.43, Shahe Road, Xili Street,
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Test Report

Product.....: BLUETOOTH DIGITAL SMART KEY
Trade Name: Xhorse
Applicant.....: Shenzhen Xhorse Electronics Co., Ltd.
Applicant Address.....: Floor 28, Block A, Building NO.6, International Innovation Valley, Nanshan District, Shenzhen
Manufacturer.....: Shenzhen Xhorse Electronics Co., Ltd.
Manufacturer Address.....: Floor 28, Block A, Building NO.6, International Innovation Valley, Nanshan District, Shenzhen
Test Standards.....: 47 CFR Part 2.1091
Test Result.....: Pass

Tested by:  2025.06.19

Chuiwang Zhang, Test Engineer

Reviewed by.....:  2025.06.19

Sun Jiaohui, Senior Engineer

Approved by.....:  2025.06.19

Chris You, Manager



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Change History		
Issue	Date	Reason for change
1.0	2025.06.19	First edition

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	BLUETOOTH DIGITAL SMART KEY
Device Type	Mobile Device
Frequency Range	Bluetooth LE 315 MHz, 433 MHz
Modulation Type	Bluetooth LE: GFSK 315 MHz, 433 MHz: ASK
Antenna gain	Bluetooth LE: 2.87 dBi 315 MHz & 433 MHz: 2.0 dBi
Antenna Type	Internal Antenna

Note 1: The information of antenna gain and cable loss is provided by the manufacturer and our lab is not responsible for the accuracy of the antenna gain and cable loss information.

1.2. EUT Description

EUT has been tested according to the following standards.

No.	Identity	Document Title
1	47 CFR Part 1	Practice and Procedure
2	47 CFR Part 2	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
3	KDB 447498 D01 General RF Exposure Guidance v06	RF Exposure Procedures and Equipment Authorization Policies for Mobile and Portable Devices

1.3. Laboratory Facilities and Accreditation Certificate

☒ CCIC-SET Lab 1

Address: Electronic Testing Building, No.43, Shahe Road, Xili Street, Nanshan District, Shenzhen, Guangdong, China

FCC-Registration No.: CN1283

CCIC Southern Testing Co., Ltd EMC Laboratory has been registered 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: CN1283, valid time is until Jun. 30th, 2025.

ISED Registration: 11185A, CAB number: CN0064

CCIC Southern Testing Co., Ltd. EMC Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 11185A on Aug. 04, 2016, valid time is until Jun. 30th, 2025.

A2LA Code: 5721.01

CCIC-SET is a third party testing organization accredited by A2LA according to ISO/IEC 17025. The accreditation certificate number is 5721.01.

CNAS L1659

CCIC Southern Testing Co., Ltd. CCIC is a third party testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L1659.

☐ CCIC-SET Lab 4

Address: No.125, Hongmei Section, Wangsha Road, Hongmei Town, Dongguan City, Guangdong Province, China

CNAS L1659

CCIC Southern Testing Co., Ltd. CCIC is a third party testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L1659.

2. Technical Requirements Specification in CFR Title 47 Part 2.1091

2.1. Evaluation method

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 1.1307(b).

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	1824/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
(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
300-1500	/	/	f/1500	< 30
1500-100,000	/	/	1.0	< 30
Note: f = frequency in MHz. * = Plane-wave equivalent power density.				

2.2. Predication of MPE limit at a given distance

Refer to formulas on page 19 of OET Bulletin 65, Edition 97-01.

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

Where:

S = power density (in appropriate units, e.g. mW/cm²)

P = power input to the antenna (in appropriate units, e.g., mW)

G = numeric gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the centre of radiation of the antenna (appropriate units, e.g., cm)

2.3. Evaluation Results

Worst-Case mode Conducted Output Power Results for UHF/BT

Frequency (MHz)	Field strength (dB μ V/m@3 m)	Radiated Power (EIRP)(mW)	Conducted power (mW)	Exclusion Threshold Level (mW)
315	46.52	0	0	0.000014
433.92	73.64	0	0	0.006982

Notes:

Conducted power = Radiated Power (EIRP) - Antenna Gain.

EIRP[dBm] = E[dB μ V/m] - 95.2 = 46.52 dB μ V/m - 95.2 = -48.68 dBm = 0.000014 mW.

EIRP[dBm] = E[dB μ V/m] - 95.2 = 73.64 dB μ V/m - 95.2 = -21.56 dBm = 0.006982 mW.

Operation Mode	Frequency (MHz)	Maximum Output power (dBm)	Max Tune up power (dBm)	Max Tune up power (mW)
BLE	2426	7.14	7 $\pm$ 1	6.31

Calculation results: Worst-Case mode

Operation Mode	Antenna Gain (dBi)	Antenna Gain (numeric)	Distance (cm)	Result (mW/cm ²)	Power Density (mW/cm ²)	Ratio
315 MHz	2.0	1.58	20	0.000000004	0.21	0.000000021
433.92 MHz	2.0	1.58	20	0.000002201	0.29	0.000007591
BLE	2.0	1.94	20	0.002	1.00	0.002

Simultaneous Transmission Calculation (Worst-case mode)

No.	Transmitter Combinations	Scenario Supported or not
1	BLE + 315 MHz	Yes
2	BLE + 433.92 MHz	Yes

Max Simultaneous Transmission Calculation (Worst-case mode)

No.	Worst Mode	MPE Ratio	Limit	Results
1	BLE + 433.92 MHz	0.002	$\leq$ 1.0	Pass

2.4. Conclusion

Since the source-based time-averaging conducted output power is well below the SAR low threshold level, so the EUT is considered to comply with SAR requirement without testing.

**** END OF REPORT ****