

RF EXPOSURE REPORT

Report No.: 20250117G01666X-W11

Product Name: KEY TOOL MIDI

Model No. : XDKMD

FCC ID: 2AI4T-XDKMD

Applicant: Shenzhen Xhorse Electronics Co., Ltd.

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

Dates of Testing: 01/27/2025–04/11/2025

Issued by: CCIC Southern Testing Co., Ltd.

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

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Test Report

Product.....: KEY TOOL MIDI

Trade Name: Xhorse

Applicant.....: Shenzhen Xhorse Electronics Co., Ltd.

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

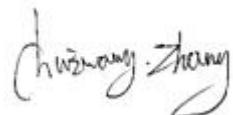
Manufacturer.....: Shenzhen Xhorse Electronics Co., Ltd.

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

Test Standards.....: 47 CFR Part 2.1093

Test Result.....: Pass

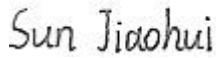
Tested by



2025.04.11

Chuiwang Zhang, Test Engineer

Reviewed by



2025.04.11

Sun Jiaohui, Senior Engineer

Approved by



2025.04.11

Chris You, Manager

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Change History		
Issue	Date	Reason for change
1.0	2025.04.11	First edition

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	KEY TOOL MIDI
Device Type	Portable Device
Frequency Range	13.553–13.567 MHz 22 kHz; 125 kHz 315 MHz, 433 MHz
Modulation Type	ASK
Antenna gain	13.56 MHz: 2.0 dBi 22 kHz & 125 kHz: 2.0 dBi 315 MHz & 433 MHz: 3.0 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 2.1093

2.1. Evaluation method

According to KDB 447498 D01 General RF Exposure Guidance v06, clause 4.3. General SAR test exclusion guidance:

c) For frequencies below 100 MHz, the following may be considered for SAR test exclusion (also illustrated in Appendix C):

- 1) For test separation distances > 50 mm and < 200 mm, the power threshold at the corresponding test separation distance at 100 MHz in step b) is multiplied by $[1 + \log(100/f_{MHz})]$
- 2) For test separation distances ≤ 50 mm, the power threshold determined by the equation in c) 1) for 50 mm and 100 MHz is multiplied by $\frac{1}{2}$
- 3) SAR measurement procedures are not established below 100 MHz.

According to KDB 447498 D04 Interim General RF Exposure Guidance v01 RF Exposure Procedures and Equipment Authorization Policies for Mobile and Portable Devices.

RF Exposure Test Exemptions for Single Source:

Per § 1.1307(b)(3)(i)(A), a single RF source is exempt RF device (from the requirement to show data demonstrating compliance to RF exposure limits, as previously mentioned) if the available maximum time-averaged power is no more than 1 mW, regardless of separation distance.

This exemption applies to all operating configurations and exposure conditions, for the frequency range 100 kHz to 100 GHz, regardless of fixed, mobile, or portable device exposure conditions. This is a standalone exemption, and it cannot be applied in conjunction with any other test exemption.

According to the calculation formula of power:

$$EIRP = P \times G = \frac{(E \times d)^2}{30}, \text{ So } P = \frac{(E \times d)^2}{30 \times G}.$$

Where:

P = Transmitter output power in watts

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

E = Electric field strength in V/m --- $10^{((dB\mu V/m)/20)/10^6}$

d = Measurement distance in meters (m) --- 3 m

2.2. Evaluation Results

Frequency (MHz)	Field strength (dB μ V/m@3 m)	Radiated Power (EIRP)(mW)	Conducted power (mW)	Exclusion Threshold Level (mW)
13.56	10.50	0	0	21.77
0.022	53.22	0	0	21.77
0.125	40.50	0	0	21.77

Notes:

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

EIRP[dBm] = E[dB μ V/m] - 95.2 = 10.50 dB μ V/m - 95.2 = -84.70 dBm \approx 0 mW.

EIRP[dBm] = E[dB μ V/m] - 95.2 = 53.22 dB μ V/m - 95.2 = -41.98 dBm \approx 0 mW.

EIRP[dBm] = E[dB μ V/m] - 95.2 = 40.50 dB μ V/m - 95.2 = -54.70 dBm \approx 0 mW.

Exclusion Threshold Level = $474^{\frac{1}{2}}$ = 21.77 mW.

Frequency (MHz)	Maximum field strength@3 m (dB μ V/m)	Maximum field strength@3 m (V/m)	Ant. Gain (dBi)	Ant. Gain (numeric)	Distance (m)	Output power (mW)	Limit for SAR test exemption (mW)
315	76.96	0.00705	3.0	2.00	3	0.0075	1
433.92	76.20	0.00646	3.0	2.00	3	0.0063	1

2.3. 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 **