

FNIRSI LCR-ST1 μίνι έξυπνος ψηφιακός δοκιμαστής τσιμπίδας

FNIRSI · EAN 5907085526966

Machine translation from Polski. In case of doubt the manufacturer's original document prevails.

LCR-ST1

Multifunctional Clamp Meter

User Manual

User Information

- This manual contains detailed information regarding the use of the product, precautions, and other related issues. Before using the product, please read this manual carefully to ensure optimal performance.
- Do not use the device in a flammable or explosive environment.
- Used batteries mentioned in the device and used devices should not be disposed of with municipal waste. They must be disposed of according to the relevant national or local regulations.
- In case of any quality issues with the device or questions regarding its use, please contact the "FNIRSI" customer service online or the manufacturer. We are here to assist you promptly.

1. Product Overview

The LCR-ST1 is the latest model of the LCR clamp bridge developed by our company. It is a multifunctional and portable measuring instrument that allows for precise measurement of resistance, capacitance, inductance, and diodes. Utilizing advanced measurement technology, it ensures high accuracy and stability. The 1.14-inch diagonal color display and magnetic mounting feature enhance user convenience. With a built-in 250 mAh lithium battery, it provides long operating time and supports three frequencies: 100 Hz, 1 kHz, and 10 kHz. The unique clamp design makes the device particularly suitable for precise operations in narrow spaces, allowing for quick testing of electronic components. Its lightweight and portability make it an essential and efficient tool for field engineers and laboratories.

2. Product Appearance

Selection Button Hold/Setting

Type C Charging/Data Transfer Port

Test Probe Indicator Screen Power On/Off

Charging

The illustration shows the product schematic.

Button Action Interface Function Button Action Interface Function

Short Press / Power On Short Press Main Interface Select and adjust

Reset Press voltage, resistance

Long Press Settings Interface Confirm/exit

Power Off selection

Short Press Scroll Data value adjustment

Left/Right Main Interface Numeric

Long Press Input/Output Interface Select options

from settings Up/Down

3. Device Parameters

Product Model LCR-ST1 Display 1.14 inches

Lithium Battery Capacity

Dimensions 28×19×150mm Power Supply Voltage

250 mAh

Weight 41g Charging Specifications USB Type C, 5 V/1 A

Type Range 100Hz 1KHz 10KHz

1mF-22mF 5% reading ± 3 5% reading ± 3 - - -

Capacitance 1uF-1mF 2% reading ± 3 2% reading ± 3 2% reading ± 3

Electrical 1nF-1uF 2% reading ± 3 0.5% reading ± 3 0.5% reading ± 3

1pF-1nF - - - 2% reading ± 3 2% reading ± 3

Type Range 100Hz 1KHz 10KHz

1H-10H 5% reading ± 3 5% reading ± 3 - - -

Inductance 1mH-1H 2% reading ± 3 2% reading ± 3 2% reading ± 3

10uH-1mH 2% reading ± 3 0.5% reading ± 3 0.5% reading ± 3

1uH-10uH - - - - - 2% reading ± 3

1M Ω -10M Ω 5% reading ± 3 5% reading ± 3 - - -

Resistance 1K Ω -1M Ω 1% reading ± 3 0.5% reading ± 3 1% reading ± 3

1 Ω -1K Ω 1% reading ± 3 0.5% reading ± 3 0.5% reading ± 3

10m Ω -1 Ω 2% reading ± 3 2% reading ± 3 2% reading ± 3

4.

Operating Instructions

□ 4.1 □ Interface Appearance 2 3

①Test Range 1 5

②Test Voltage/Frequency 6

③Battery Charge Level

④Measurement Parameters 4 7

⑤Data Stop The illustration shows the appearance of the interface. ⑥Units

⑦Auxiliary Measurement Parameters

□ 4.2 □ Test Probe Installation Instructions

Measuring Arm Screw

Test Probe

The illustration shows the appearance and method of installing and removing the measuring probe. -Insert the alignment hole of the test probe into the measuring arm (make sure that the serrated side of the test probe is facing the inner side of the tweezers). -Rotate the screw to tighten and secure. The measuring arm is not detachable. □ 4.3 □ Operation

Power On/Off: Short press -power on,

long press -power off

Selecting Main Parameters: Using the left and right knob buttons, you can automatically switch between resistance, capacitance, inductance, and diode measurement parameters.

Selecting Test Voltage Level: Press the middle knob button to switch the voltage level area, then use the left and right knob buttons to toggle between test voltages of 0.3 V and 0.6 V.

Selecting Test Frequency: Press the middle knob button to switch the frequency area, then use the left and right knob buttons to toggle between test frequencies of 100 Hz, 1 kHz, and 10 kHz. LCR meters use an AC test signal applied to the device under test (DUT) to measure impedance. Frequency is a fundamental parameter of the AC signal source. Due to component imperfections, stray parameters, and the influence of test leads and connections, the same component may yield different measurement results at different test frequencies.

Short-Circuit Zeroing: First, select the test frequency you want to zero. Insert the shorting element into the test socket using SMD test tweezers or clamps. Press briefly to enter zeroing mode. The device will automatically measure and perform the appropriate short-circuit zeroing after identification.

Data Stop: Press the data stop button briefly. At this moment, the symbol will appear on the screen. Settings page: Press and hold the button to enter system settings. Use the left and right knob buttons to switch between the main menu and the additional menu. Press the middle knob button to enter or exit the additional menu. System settings include the following items:

Settings Function Parameter options

Language Change the system display language Chinese, English

Volume System volume adjustment Level adjustment 0-5

Backlight Screen brightness adjustment Progress bar 0-100 with infinite dimming

Auto Power Off Automatic shutdown without action Off / 5 / 15 / 30 minutes

Restore Restore factory settings Clear all set parameters

Information Display system information Show model and version number

5. Firmware Update

-Turn off the device, then press and hold the number selection button and the power button to go to the firmware update page. -Connect the device to the computer using a data transfer cable. -A window with a folder will automatically appear on the computer. Drag and drop the firmware file into the folder. -After the firmware update is complete, the device will automatically restart.

6. Precautions

-Ensure good contact between the probe tips and the device being tested to avoid measurement errors caused by poor contact. -Do not perform measurements under voltage to prevent damage to the device. -It is not recommended to use for online measurements. Due to the characteristics of external PCBA connections, online measurement values are for informational purposes only and do not guarantee accuracy. -The automatic device does not support diode measurements, and the automatically detected component type is for informational purposes only.

Manufacturer data: Shenzhen FEI NI RUI SI Technology CO., LTD (FNIRSI)

West of Building C, Weihuada Industrial Park, Dalang Street, Longhua District, Shenzhen, Guangdong, China. Code: 518000

business@fnirsi.com

Representative data:

ALTWAY (PL) Sp. z o.o. aleja Grunwaldzka 212, 80-266 Gdańsk, Poland

bok@altway.pl

Battery specifications:

Category: Portable

Type: Lithium

Net weight (kg): 0.005

Capacity (mAh): 250

Exceeded permissible cadmium content (0.002%) or lead (0.004%) (yes/no): no

Environmental protection

Used electronic equipment marked in accordance with the European Union directive must not be placed together with other municipal waste. It is subject to selective collection and recycling at designated points. By ensuring its proper disposal, you prevent potential negative consequences for the natural environment and human health. The collection system for used equipment complies with locally applicable environmental protection regulations regarding waste disposal. Detailed information on this can be obtained from the municipal office, cleaning facility, or the store where the product was purchased. The product meets the requirements of the so-called New Approach directives of the European Union (EU) regarding safety, health protection, and environmental protection, identifying hazards that should be detected and eliminated. This document is a translation of the original user manual created by the manufacturer. Detailed information on the distributor/manufacturer warranty conditions is available on the website

<https://serwis.innpro.pl/gwarancja>

The product should be regularly maintained (cleaned) by the user or by specialized service points at the user's cost and responsibility. In the absence of information about necessary periodic maintenance or service actions in the user manual, the physical condition of the product should be assessed regularly, at least once a week, against that of a physically new product. If any deviation is detected or identified, urgent maintenance (cleaning) or service steps should be taken. Failure to properly maintain (clean) and respond upon detecting a state of deviation may lead to permanent damage to the product. The guarantor is not responsible for damages resulting from neglect.

Importer:

INNPRO Robert Błędowski sp. z o.o. ul. Rudzka 65c

44-200 Rybnik, Poland

tel. +48 533 234 303

hurt@innpro.pl

www.innpro.pl

Safety measures

Before starting to charge, check if the device contacts are clean.

Never leave the device unattended while in use and charging. Ensure that you can quickly disconnect the device from the power source in an emergency. Never expose the device to high temperatures. Charge the device in a dry and well-ventilated area away from flammable materials, maintaining a minimum distance of 1m from other objects. Never cover the device while charging. Never use the power supply, charging station, cables, etc., without the manufacturer's recommendation and certification. Take care of your property; the device is equipped with cells that are difficult to extinguish, so equip yourself with a fire blanket.

LI-ION Battery

The device is equipped with a LI ION (lithium-ion) battery, which, due to its physical and chemical structure, ages over time and with use. The manufacturer specifies the maximum operating time of the device under laboratory conditions, where optimal working conditions for the device exist, and the battery itself is new and fully charged. The actual operating time may differ from that declared in the offer and this is not a defect of the device but a feature of the product. To maintain the maximum lifespan of the battery, it is not recommended to discharge it below 3.18V or 15% of the total capacity. Lower values, such as 2.5V for the cell, permanently damage it and this is not covered by the warranty. If the battery or the entire device is not used for more than one month, the battery should be charged to 50% and its charge level should be checked periodically every two months. Store the battery and device in a dry place, away from sunlight and negative temperatures.

LI-PO Battery

The device is equipped with a LI PO (lithium-polymer) battery, which, due to its physical and chemical structure, ages over time and with use. The manufacturer specifies the maximum operating time of the device under laboratory conditions, where optimal working conditions for the device exist, and the battery itself is new and fully charged. The actual operating time may differ from that declared in the offer and this is not a defect of the device but a feature of the product. To maintain the maximum lifespan of the battery, it is not recommended to discharge it below 3.5V or 5% of the total capacity. Lower values, such as 3.2V for the cell, permanently damage it and this is not covered by the warranty. If the battery or the entire device is not used for more than one month, the battery should be charged to 50% and its charge level should be checked periodically every two months. Store the battery and device in a dry place, away from sunlight and negative temperatures.

Warnings and Safety Information

All information regarding operation and use can be found in the user manual or on the product label. Before using the products, familiarize yourself with its content and follow the instructions contained therein. Also, review the following information before use:

User Safety

1. Use measuring tools according to their intended purpose. Do not use measuring tools for tasks for which they were not designed to avoid damage or incorrect measurement results.
2. Always ensure that the tool is in good technical condition before use. Damaged tools, such as cracked housings or damaged displays, may lead to incorrect measurements or risk of accidents.
3. Regularly calibrate measuring tools to ensure their accuracy and reliability of measurements. Incorrectly calibrated devices may lead to erroneous results.

Precautions

1. Use appropriate eye protection, especially when working with measuring tools that may emit radiation.
2. Keep measuring tools away from children and untrained individuals to prevent accidental damage or misuse.
3. Avoid using measuring tools in extreme temperature, humidity conditions, or in an atmosphere with a high concentration of dust that may affect their accuracy and functionality.
4. When working with measuring tools, exercise caution to avoid damaging delicate measuring elements (e.g., sensors, probes).

Safe Use

1. Always ensure that the measuring tool is properly set up and secured to avoid measurement errors or damage.
2. Use measuring tools only in designated areas that provide adequate stability and minimize the risk of accidents, such as slippery or uneven surfaces.
3. Never perform measurements on live components or in conditions that may pose a safety hazard.

Rules for Use in Appropriate Conditions

1.

Store measuring tools in a dry, cool place, away from moisture and direct sunlight, which may damage the devices or affect their accuracy. 2. When using measuring tools, ensure they are well seated and not exposed to shocks or impacts that may lead to their damage. 3. Avoid using measuring tools in extreme conditions, such as heavy vibrations, hot surfaces, dust, or moisture, unless the tool is designed for such conditions by the manufacturer.

Maintenance instructions 1. Regularly check the condition of measuring tools, especially measuring elements (e.g., sensors, probes, displays) and batteries. 2. Follow the cleaning

instructions provided by the manufacturer. Use appropriate cleaning materials (e.g., soft cloths) to avoid damaging delicate components. 3. Regularly calibrate measuring tools according to the manufacturer's recommendations to maintain measurement accuracy. Safe disposal 1. Worn or damaged measuring tools should be disposed of in accordance with applicable environmental protection and electronic recycling regulations. 2. Do not throw measuring tools into regular waste containers, as they may contain elements harmful to the environment. 3. Contact local authorities or recycling companies for information on the proper disposal of worn measuring tools. Compliance statement Products have been designed in accordance with the safety requirements specified in Regulation (EU) 2023/988 on the general safety of products, ensuring their compliance with applicable safety and health protection standards for users.