



DSO-152

Handheld digital oscilloscope
User manual



Read this manual carefully and fully charge the device before first use.

Manufacturer: Shenzhen FNIRSI Technology Co., LTD. · Importer: Rotorama, s.r.o.

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1. Safety information

This manual describes the use of the product, precautions and related matters in detail. Before using the product, please read the manual carefully in order to get the best performance from the device, and keep it for future reference.

- Do not use the device in a flammable or explosive environment.
- After receiving the device, fully charge it before use.
- The attenuation setting of the oscilloscope (X1/X10) must always match the setting of the probe. In X1 mode, voltages up to $\pm 40\text{V}$ can be measured; in X10 mode, up to $\pm 400\text{V}$.
- When measuring high voltage, do not touch any metal part of the oscilloscope, to avoid the risk of electric shock.
- Try not to perform high-voltage measurements while charging.
- Use a charging voltage within the specification given in this manual (5V/1A).
- When calibrating, unplug the probe, or short the positive and negative poles of the probe.
- During a firmware upgrade, do not copy any files other than the released firmware to the device, otherwise it may cause unrecoverable consequences.

The $\pm 400\text{V}$ (800Vpp) range is only available with an X10 attenuation probe. Such a probe is not included in the package.

2. Product introduction

DSO152 is a handheld digital oscilloscope aimed at the maintenance industry and at research and education. It has a real-time sampling rate of **2.5MS/s**, a bandwidth of **200kHz** and complete trigger functions (single, normal and automatic). It can be used for both periodic analog signals and non-periodic digital signals, and can measure voltages up to **±400V** (with an X10 probe). The one-key **AUTO** function displays the measured waveform without cumbersome adjustments.

The oscilloscope has a **2.8" LCD screen** with a resolution of 320×240 and a built-in **1000mAh** lithium battery, which can be used continuously for about 4 hours after being fully charged.

2.1 Package contents

- 1x DSO152 oscilloscope
- 1x Test lead with alligator clips
- 1x USB cable (Type-C)
- 1x Lanyard
- 1x User manual

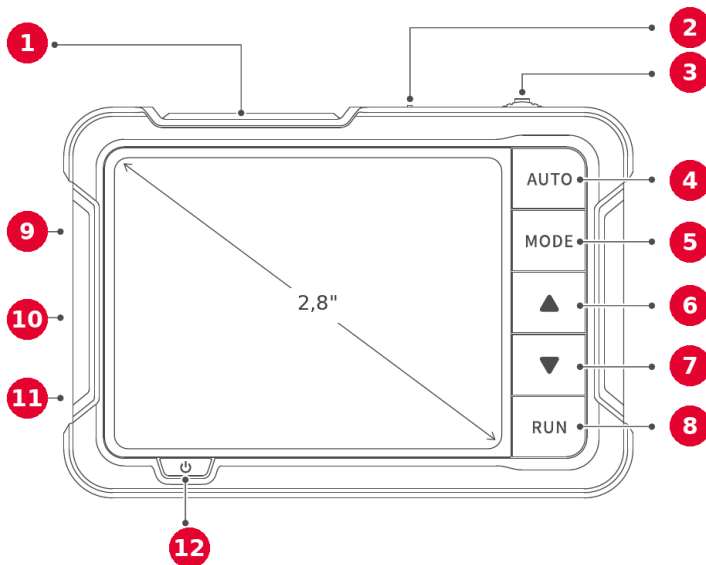
2.2 Charging

The oscilloscope is charged via the **USB-C** port at 5V and 1A. The charging indicator lights red during charging and green when fully charged.

2.3 Manufacturer

Manufacturer	Shenzhen FNIRSI Technology Co., LTD.
Address	West of Building C, Weida Industrial Park, Dalang Street, Longhua District, Shenzhen, Guangdong, China
E-mail	fnirsiofficial@gmail.com (business) fnirsiofficialcs@gmail.com (equipment service)
Phone	0755-28020752 / +8613536884686
Web	www.fnirsi.cn

3. Panel introduction



Controls and connectors of the oscilloscope

- ① Signal input for the probe (MCX connector)
- ② Square wave calibration output
- ③ Trackwheel button (left, OK, right)
- ④ AUTO button
- ⑤ MODE button
- ⑥ Up button (▲)
- ⑦ Down button (▼)
- ⑧ RUN button
- ⑨ Reset hole
- ⑩ Charging indicator (red – charging, green – fully charged)
- (11) USB-C charging port (5V/1A)
- (12) Power switch button

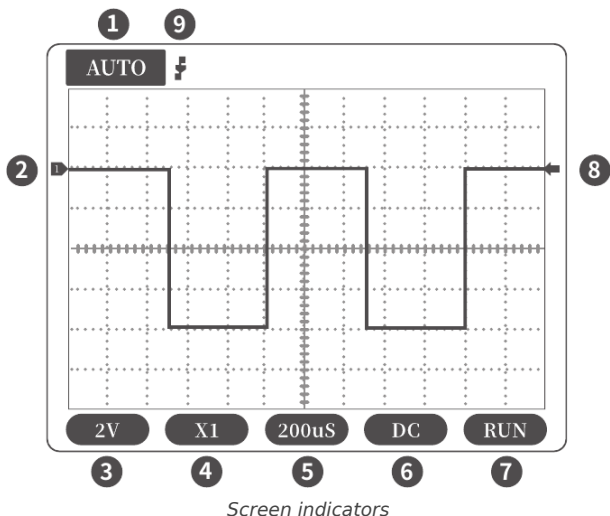
4. Key functions

Button	Press	Function
Trackwheel – turn left	short	Parameter function selection
Trackwheel – press (OK)	short	Exit auto calibration (auto calibration page)
	long	Enter the auto calibration page
Trackwheel – turn right	short	Parameter function selection
AUTO	short	Automatic adjustment (signals with a frequency below 45Hz cannot be adjusted correctly)
MODE	short	Auto / Single / Normal trigger switching
	long	Rising edge / falling edge switching
▲	short	Increase parameter value
▼	short	Decrease parameter value
RUN	short	Run / pause waveform (other pages); start auto calibration (auto calibration page)
	long	Show / hide detailed parameters
Power switch	short	Off
	long	On

4.1 Auto calibration

- ① Unplug the probe, or short the probe tip to its ground clip.
- ② Long-press the trackwheel (OK) to open the auto calibration page.
- ③ Short-press the RUN button to start the calibration.
- ④ Short-press the trackwheel (OK) to exit the calibration page.

5. Screen instructions



- ① Trigger mode: Auto – automatic trigger, Single – single trigger, Normal – normal trigger.
- ② Baseline indicator – marks the position of 0V.
- ③ Vertical sensitivity – the voltage represented by one large grid division in the vertical direction.
- ④ 1X/10X mode – must match the 1X/10X switch setting on the probe handle. If the probe is in 1X mode, the oscilloscope must also be set to 1X. 1X measures voltages up to $\pm 40V$, 10X up to $\pm 400V$.
- ⑤ Horizontal time base – the time represented by one large grid division in the horizontal direction.
- ⑥ Input coupling: AC – AC coupling, DC – DC coupling.
- ⑦ Run status: RUN – running, STOP – paused.
- ⑧ Trigger voltage indicator.
- ⑨ Trigger edge indicator.

6. Specifications

Parameter	Value
Sampling rate	2.5 MS/s
Bandwidth	200 kHz
Vertical sensitivity	10 mV/div – 10 V/div (1-2-5 steps)
Time base range	10 μ s/div – 50 s/div (1-2-5 steps)
Voltage range	X1: ± 40 V (80 Vpp) X10: ± 400 V (800 Vpp)
Trigger mode	Auto / Normal / Single
Input coupling	AC / DC
Display	2.8", 320×240
USB charging	5 V / 1 A
Battery capacity	1000 mAh (lithium)
Calibration signal	square wave, 1 kHz, duty cycle 50 %
Dimensions	99×68.3×19.5 mm
Weight	100 g

** Size and weight are measured manually and may differ slightly. Please refer to the actual product.*

7. Firmware upgrade

The firmware is upgraded via USB – in upgrade mode the device connects to the computer as a USB drive. The firmware upgrade is only supported on computers running **Windows 10** or later. Firmware and other downloads are available at **www.fnirsi.cn**.

- ① Hold down the trackwheel (OK) and press the power button – the device enters upgrade mode.
- ② Connect the oscilloscope to the computer with a USB-C cable. A drive named **DSO BOOT** appears on the computer.
- ③ Drag the firmware file onto this drive. The firmware upgrade is then complete.

Do not copy any files other than the released firmware to the DSO BOOT drive - this may cause unrecoverable damage to the device.

8. Information for the EU and Czech Market

The information in chapters 8 and 9 describes the situation in the Czech Republic, where the product was purchased. If you use the product in another country, also follow the regulations of the country in which you operate it – in particular regarding the take-back and disposal of electrical waste.

8.1 Importer and responsible person in the EU

The product is placed on the European Union market by the importer stated below, who is at the same time the responsible person within the meaning of Article 16 of Regulation (EU) 2023/988 of the European Parliament and of the Council on general product safety (GPSR).

Importer / responsible person in the EU	Rotorama, s.r.o.
Company ID (IČO)	051 57 692
VAT ID (DIČ)	CZ05157692
Registered office	Okrajová 1351, 674 01 Třebíč, Czech Republic
E-mail	info@rotorاما.cz
Phone	+420 252 252 098
Website	www.rotorاما.cz

8.2 Product conformity



- The product bears the **CE** marking and complies with the requirements of the applicable European Union harmonisation legislation.
- A copy of the **EU Declaration of Conformity** is available from the importer at the address stated above or at the e-mail address info@rotorاما.cz.
- **Product identification:** the type designation (DSO152) and the serial or batch number are given on the product or on its packaging.

8.3 Disposal of electrical equipment and batteries



- The crossed-out wheeled bin symbol on the product, its packaging or in the documentation means that at the end of its service life the product **must not be disposed of together with mixed municipal waste**.
- Hand it over at a take-back point for electrical equipment – at a collection yard, at a take-back point of a collective system, or at the retailer when purchasing a new equivalent product. Take-back is free of charge for the end user.
- The product contains a built-in rechargeable battery. Where possible, hand it over together with the device – do not dispose of the battery in mixed waste or in fire.
- The obligations under Act No. 542/2020 Coll., on end-of-life products, are fulfilled by the importer through a collective take-back system.
- Proper disposal helps prevent negative impacts on the environment and human health and contributes to the reuse of secondary raw materials.

Through its contractual partner **ASEKOL a.s.**, the company ensures the take-back of waste electrical equipment from households and the separate collection of waste electrical equipment, batteries and accumulators in accordance with the applicable legislation. The customer is entitled to hand over old electrical equipment or a battery or accumulator at any collection point of the above contractual partner. The addresses of these take-back points are listed at www.asekol.cz, www.ecobat.cz and also <https://visoh2.mzp.cz/RegistrMistZO/RegistrMistZOPublic/MapaMistZpetOdberu>.

9. Warranty and rights arising from defective performance

The rights and obligations of the contracting parties are governed by Czech law, in particular by Act No. 89/2012 Coll., the Civil Code, and Act No. 634/1992 Coll., on consumer protection. Any warranty terms of the manufacturer **do not in any way limit** the buyer's rights arising from these regulations.

- The seller is liable to the buyer for the product being free of defects on receipt. If the buyer is a consumer, a defect may be notified **within two years of receipt** of the product (Section 2165 of the Civil Code).
- If a defect appears within **one year** of receipt, the product is deemed to have been defective already at the time of receipt (Section 2161(5) of the Civil Code).
- When purchasing online, a consumer has the right to **withdraw from the contract within 14 days** of receiving the goods without giving a reason (Section 1829 of the Civil Code).
- Claims should be made with the retailer from whom you purchased the product. The importer's contact details are given in Chapter 8.1.
- The competent body for out-of-court settlement of consumer disputes is the **Czech Trade Inspection Authority**, Štěpánská 796/44, 110 00 Prague 1, www.coi.cz.