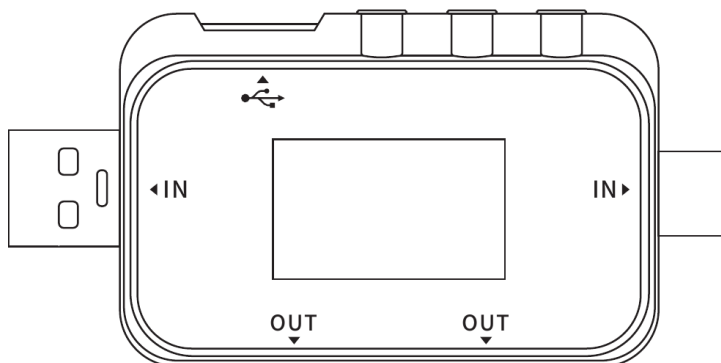




FNAC-28

Multi-port USB Tester
User Manual



Read this manual carefully before first use. Do not connect a power source exceeding 24 V to the monitoring interfaces, or a power source exceeding 16 V to the PC online port.

Contents

User Notice

1. Product Overview

2. Panel Introduction

3. Parameter Description

4. Main Interface

4.1 Simplified Page

4.2 Monitoring Page

4.3 Waveform Page

4.4 Application Page

5. Quick Charge Application

5.1 Automatic Detection

5.2 QC2.0 Detection Page

5.3 QC3.0 Detection Page

5.8 SVOOC 1.0 / SVOOC 2.0 Trigger

6. Toolbox

6.1 Cable Resistance

6.2 Soft APPLE 2.4A

7. Settings

7.1 System Settings

8. Firmware Upgrade

9. Precautions

10. Production Information

11. Information for the EU and Czech Market

11.1 Importer and responsible person in the EU

11.2 Product conformity

11.3 Disposal of electrical equipment

12. Warranty and rights arising from defective performance

User Guide

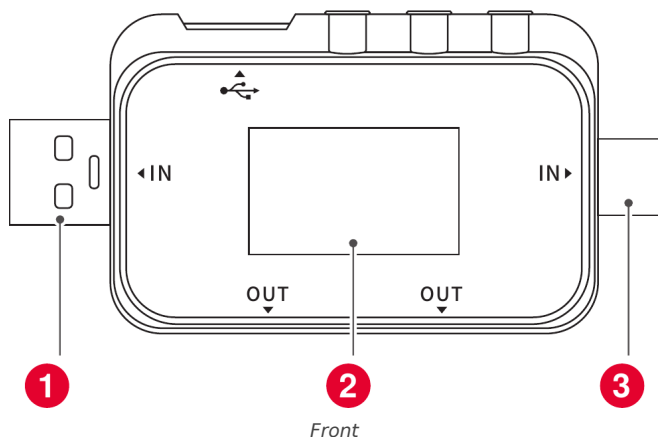
- This manual provides detailed instructions on how to use the product and important precautions. Please read this manual carefully and follow the instructions to ensure optimal performance of the product.
- Do not use the instrument in flammable or explosive environments.
- Used batteries and discarded instruments must not be disposed of with household waste. Please follow national or local regulations for proper disposal; for the Czech Republic see Chapter 11.3.
- If you encounter any quality issues with the instrument or have any questions about its use, please contact **FNIRSI** online customer service, the manufacturer, or the importer stated in Chapter 11.1. We will assist you as soon as possible.

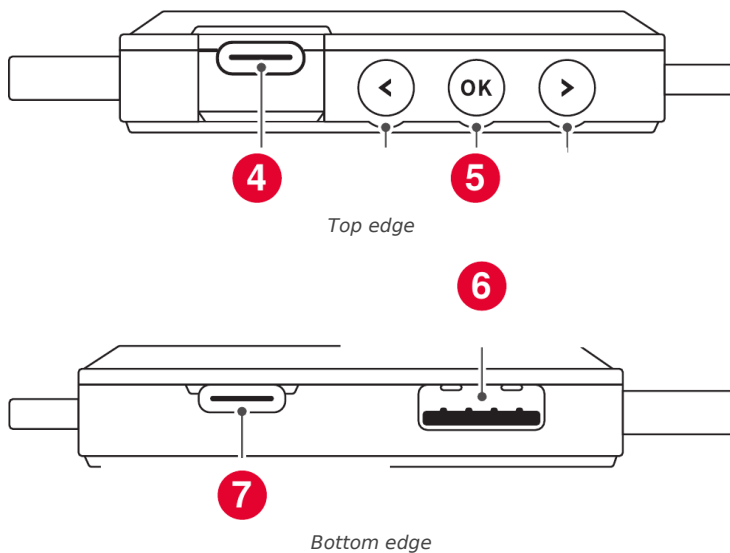
1. Product Overview

The FNAC-28 USB Tester is a multifunctional USB voltage and current meter, as well as a quick charge trigger device for mobile communication terminals. It features a full-color, ultra-wide viewing angle TFT LCD display and integrates multiple interfaces, including USB-A and Type-C male and female connectors, ensuring broad compatibility.

Utilizing an external 16-bit ADC chip, it offers high measurement accuracy. This device can measure the power supply or consumption of USB interfaces, phone chargers, USB drives, and other products. It can also measure phone charging power, and the input and output conditions of power banks, and perform quick charge protocol testing for chargers.

2. Panel Introduction





Description of parts:

- ① Input Monitoring Port
- ② Screen
- ③ Input Monitoring Port Type-C
- ④ Type-C Power Port
- ⑤ Button Area
- ⑥ Output Monitoring Port USB-A
- ⑦ Output Monitoring Port Type-C

3. Parameter Description

Parameter	Range	Resolution	Accuracy
Model	FNAC-28	/	/
Screen	1.06inch	/	/
Monitored voltage	4~24 V	0.001 V	$\pm(0.2\% + 2)$
Monitored current	0~6.5 A	0.001 A	$\pm(0.2\% + 2)$
Monitored power	0~156 W	0.001 W	$\pm(0.2\% + 2)$
Device temperature	°C	1 °C	$\pm(1.2\% + 3)$
	°F	1 °F	$\pm(1.2\% + 4)$
Operating time	/	1 s	/
Dimensions	73 × 36 × 12 mm	/	/
Weight	21 g	/	/

4. Main Interface

- Unless otherwise specified, click < / > to switch pages/menus, click **OK** to confirm or summon the function menu, and long press **OK** to return to the previous interface.

4.1 Simplified Page



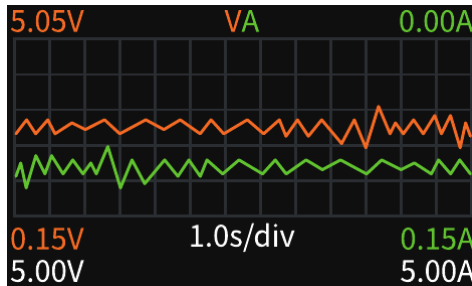
- Only displays the three key parameters: voltage, current, and power.
- Click the **OK** button to switch the display orientation.

4.2 Monitoring Page



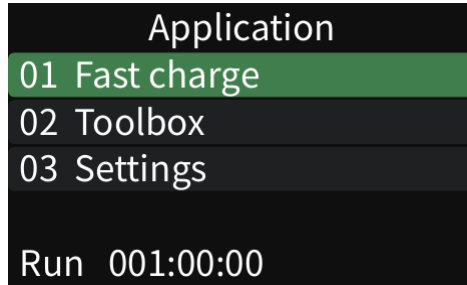
- Long press the < or > button to switch to the next timing group.
- Long press the **OK** button to reset the current timing group.

4.3 Waveform Page



- Long press the < button to decrease the time base.
- Long press the > button to increase the time base.
- Click the **OK** button to start/pause the curve.
- Long press the **OK** button to switch waveform modes.

4.4 Application Page



Fast charge – quick charge protocols

Toolbox – tools

Settings – settings

Run – device operating time

5. Quick Charge Application

Press **OK** in the application interface to enter the Quick Charge selection. A warning will pop up when entering the Quick Charge application. Please read it carefully and press **OK** to confirm.

After entering, use the < / > buttons to select options with the following functions:

① Automatic Detection	⑥ AFC 9 V 12 V
② QC2.0 5 V 9 V 12 V 20 V	⑦ VOOC/WARP
③ QC3.0 3.4–20 V	⑧ SVOOC 1.0
④ FCP 9 V 12 V 20 V	⑨ SVOOC 2.0
⑤ SCP 5.5–6.0 V	

5.1 Automatic Detection

Detection	Finish
APPLE- NONE	PE-1.1
BC1.2- DCP 5V 1.5A	PE-2.0
AFC- NONE	
FCP- NONE	
SCP- NONE	
QC2.0- NONE	
QC3.0- NONE	
OPPO- VOOC DASH SVOOC	

In the Quick Charge page, select **Automatic Detection** and press the **OK** button to enter.

- In this mode, the instrument will sequentially attempt to trigger various protocols and display the test results on the screen, with **red** indicating unsupported protocols and **green** indicating supported ones. During the testing process, if measuring a PD charger, it is normal for it to restart and continue detection.
- Do not connect any devices to the rear end during the testing process.
- The instrument will not respond to any button operations during detection. If you wish to exit during detection, please directly unplug the instrument.
- After detection is complete, short press the **OK** button to start detection again; long press the **OK** button to return to the previous page.

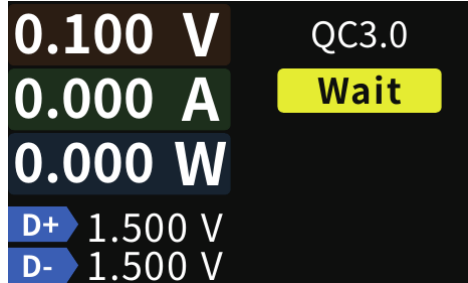
5.2 QC2.0 Detection Page

0.100 V	QC2.0
0.000 A	Wait
0.000 W	
D+ 1.500 V	
D- 1.500 V	

In the Quick Charge page, select **QC2.0** and press the **OK** button to enter.

- In QC2.0 trigger mode, use the **< / >** buttons to select the trigger voltage.
- Long press the **OK** button to return to the previous page.

5.3 QC3.0 Detection Page



In the Quick Charge page, select **QC3.0** and press the **OK** button to enter.

- In QC3.0 trigger mode, use the **< / >** buttons to decrease/increase the selected trigger voltage.
- Long press the **< / >** buttons to quickly decrease/increase the voltage.
- Long press the **OK** button to return to the previous page.

5.4 FCP Trigger

The operation is the same as QC2.0 trigger.

5.5 SCP Trigger

The operation is the same as QC3.0 trigger.

5.6 AFC Trigger

The operation is the same as QC2.0 trigger.

5.7 VOOC/WARP Trigger

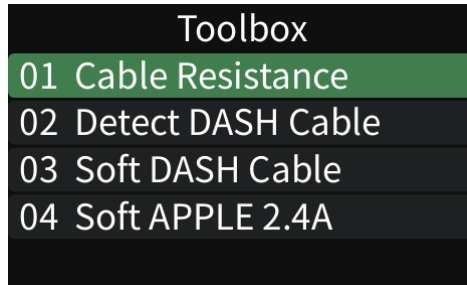
The operation is the same as QC3.0 trigger.

5.8 SVOOC 1.0 / SVOOC 2.0 Trigger

Super VOOC requires a load of more than 500 mA to be connected to the rear end for deception, and Super VOOC only has one voltage level at 10.5 V. Therefore, when entering the page, you can only press the **OK** button to exit, and there are no other operations.

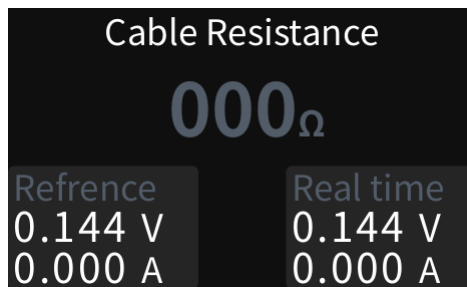
6. Toolbox

In the application selection page, select **Toolbox** and press the **OK** button to enter. The function options are as follows, press the **OK** button to enter each function option:



- ① **Cable Resistance**
- ② **Detect DASH Cable**
- ③ **Soft DASH Cable**
- ④ **Soft APPLE 2.4A**

6.1 Cable Resistance



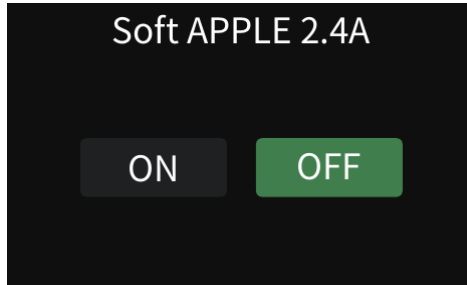
Measure the internal resistance of the cable using the pressure difference method, which requires the use of a constant current load.

Click the **OK** button: use the current voltage and current values as reference values.

Measurement Steps:

1. Connection Method: Charger + FNAC-28 + Constant Current Load (adjust current to around 0.5-1 A), press the **OK** button to record the reference value.
2. Connection Method: Charger + Cable + FNAC-28 + Constant Current Load (adjust current to around 0.5-1 A, close to the current when recording the reference value). The system automatically calculates the cable resistance.

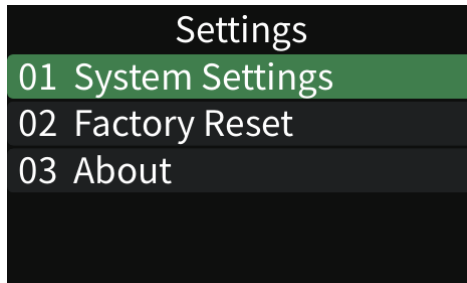
6.2 Soft APPLE 2.4A



Apple devices can only charge at 5 V-2.4 A when detecting D+ and D- of the charger as 2.7 V. After activation, this function sets D+ and D- to 2.7 V.

7. Settings

In the application selection page, select **Settings** and press the **OK** button to enter. The function options are as follows, press the **OK** button to enter each function option:



- ① **System Settings**
- ② **Factory Reset**
- ③ **About**

7.1 System Settings

In the Settings page, select the sub-menu **System Settings** and press the **OK** button to enter.

System Settings	System Settings
01 Display bright	02 Standby bright
02 Standby bright	03 Standby time(min)
03 Standby time(min)	04 Temperture symbol
04 Temperture symbol	05 System language
05 System language	06 Start Page

Use the < > keys to navigate, short press the **OK** button to confirm, and long press the **OK** button to return.

- **Display Bright:** set the screen brightness, adjustable range from 1 to 100 levels.
- **Standby Bright:** set the standby screen brightness, adjustable range from 0 to 100 levels.
- **Standby Time(min):** set the standby time. The countdown starts from the last key operation. When the standby time is reached, the device enters standby mode.
- **Temperature Symbol:** choose to display onboard temperature as °C or °F.
- **System Language:** select Chinese or English.
- **Start Page:** turn on/off the boot page.

7.2 System Reset

Reset all data and restore to factory settings.

7.3 About

View manufacturer/model/software version, etc. information.

8. Firmware Upgrade

- Open the host software.
- When the device is powered off, press the middle key firmly, and connect it to the PC's online port using a data cable. When the host software main page appears on the computer, the connection is successful.
- Click on *System* - click on the folder - select firmware.
- Click on the upgrade symbol to start upgrading the firmware. After the upgrade is complete, the device will automatically restart and enter the main interface.



Manual, app and
software download:
www.fnirsi.cn

9. Precautions

- Do not connect a power source exceeding **24 V** to the monitoring interface.
- Do not connect a power source exceeding **16 V** to the PC online port.
- Only one pair of monitoring interfaces (one input port, one output port) can work at a time. When one pair of monitoring interfaces is already in use, do not connect devices to other monitoring interfaces. The exception is the PC online port, which can be connected to an external power source.
- When using the quick charge trigger module, do not connect devices that cannot withstand high voltage to any monitoring interface.
- Do not charge your phone after quick charge triggering, as it may damage the phone. The manufacturer will not be liable for any damages caused.

10. Production Information

Any FNIRSI's users with any questions who comes to contact us will have our promise to get a satisfactory solution + an extra 6 months warranty to thanks for your support! By the way, we have created an interesting community, welcome to contact FNIRSI staff to join our community.

Manufacturer	Shenzhen FNIRSI Technology Co., LTD.
Address	West of Building C, Weida Industrial Park, Dalang Street, Longhua District, Shenzhen, Guangdong, P. R. China
E-mail	fnirsiofficial@gmail.co (Business) fnirsiofficialcs@gmail.com (Equipment service)
Phone	0755-28020752 / +86 135 3688 4686
Website	www.fnirsi.cn

11. Information for the EU and Czech Market

11.1 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

11.2 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 (FNAC-28) is given on the product and on its packaging; the firmware version can be found in *Settings* → *About*.

11.3 Disposal of electrical equipment



- 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 does not contain a built-in rechargeable battery or any batteries that would have to be removed before handing it over.
- 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>.

12. 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.

- 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). If the consumer withdraws from the contract, the seller shall return the funds no later than within 14 days (Section 1832 of the Civil Code).
- Claims should be made with the retailer from whom you purchased the product. A claim must be settled no later than within **30 days** of the date on which it was made (Section 19 of the Consumer Protection Act). The importer's contact details are given in Chapter 11.1.
- The supervisory authority and at the same time the body competent for the **out-of-court settlement of consumer disputes** is the **Czech Trade Inspection Authority**, Central Inspectorate, Gorazdova 1969/24, 120 00 Prague 2, adr.coi.gov.cz, www.coi.gov.cz.

❖ **The manufacturer has not issued separate warranty terms for this product; none are stated in the original manual. The scope of the buyer's rights is therefore governed exclusively by Czech law in accordance with the points above.**