PCE-FCT 5

MULTI-PORT USB TESTER
MANUAL

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用户须知

●本手册详细介绍了产品的使用方法和注意事项，请仔细阅读本手册按说明规范使用本产品，以便发挥产品的最佳性能。

●不要在易燃、易爆的环境中使用仪器。

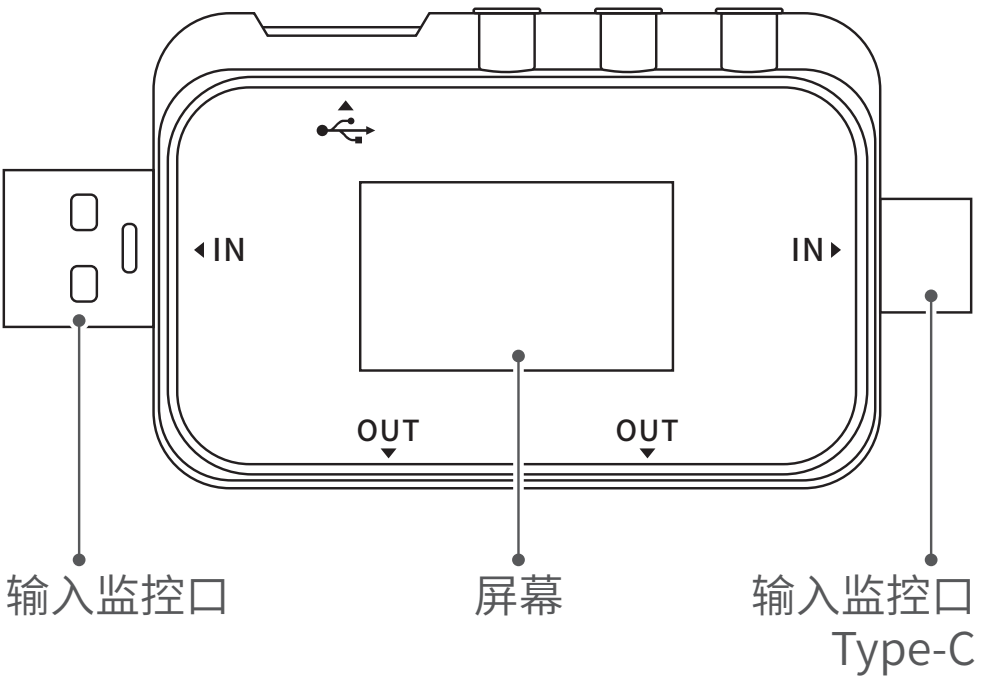
●仪器更换的废旧电池和报废的仪器不可与生活垃圾一同处理，请按国家或者当地的相关法律规定处理。

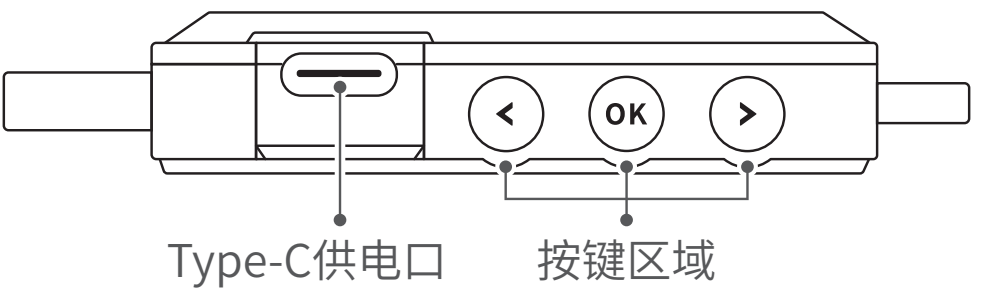
●当仪器出现任何质量问题或对仪器使用有疑问时，可联系 PCE Instruments 在线客服，我们将第一时间为您解决。

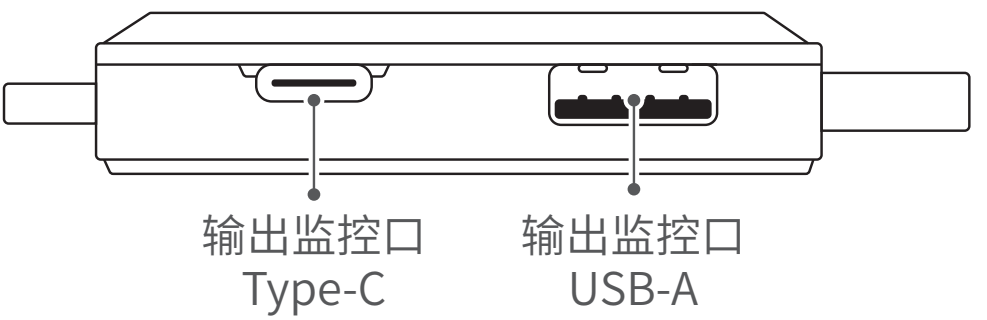
一、产品概述

PCE-FCT 5 USB 测试仪是一款多功能接口 USB 电压电流测试仪和移动通信终端快速充电触发仪。采用全彩超宽视角 TFT LCD 显示屏，集成 USB-A、Type-C 公母接口，适用于多种应用场合。使用外置16位ADC芯片，测量精度高。可用于测量USB接口、手机充电器、U盘等产品的供电或耗电情况；可用于测量手机充电功率、移动电源输入输出状况；可用于充电器快充协议测试。

二、面板介绍


IN
IN
OUT
OUT
输入监控口
屏幕
输入监控口
Type-C


OK
Type-C供电口
按键区域


输出监控口
Type-C
输出监控口
USB-A

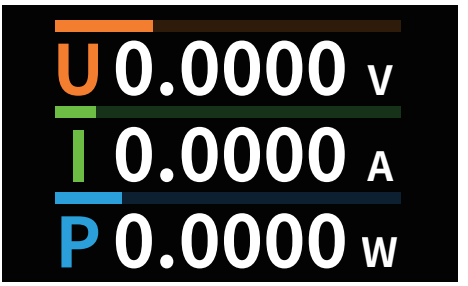
三、参数介绍

	量程	分辨率	精度
款　　式	PCE-FCT 5	/	/
屏　　幕	1.06寸	/	/
监控电压	4~24V	0.001V	±(0.2‰+2)
监控电流	0~6.5A	0.001A	±(0.2‰+2)
监控功率	0~156W	0.001W	±(0.2‰+2)
设备温度	℃	1℃	±(1.2%+3)
	℉	1℉	±(1.2%+4)
运行时间	/	1秒	/
尺　　寸	73×36×12mm	/	/
重　　量	21g	/	/

四、主界面

●除特殊说明，单击 < / > 切换页面/菜单，单击 OK 确认/唤出功能菜单，长按 OK 返回到上一级界面。

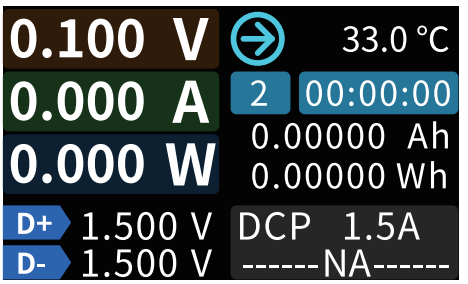
【4.1】简洁页面



●只显示电压、电流、功率三个关键参数

●单击OK键切换显示方向

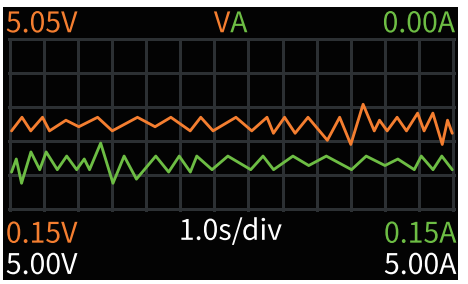
【4.2】检测页面



●长按 < 键或者 > 键进行切换下一组计时组时间

●长按 OK 键清空当前计时组时间

【4.3】波形页面



●长按 < 键：时基减小

●长按 > 右键：时基增加

●单击OK键：启动/暂停曲线

●长按OK键：切换波形模式

【4.4】应用页面

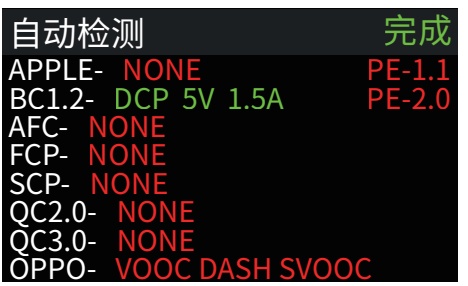
- 快充
- 工具箱
- 设置
- 设备运行时间

五、快充应用

在应用界面按**OK**进入选择快充应用，进入快充应用时会弹出一个警告，请仔细阅读按**OK**确认进入。进入后通过 **<** / **>** 键选择选项功能如下：

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

【5.1】自动检测



在快充页面选择自动检测按 OK 键进入

- 该模式下，仪表依次尝试触发各种协议，将测试结果显示在屏幕上，**红色为不支持**，**绿色为支持**，在测试过程中，如测量PD充电器，发生重启并继续检测的状况，属正常现象。

●在测试过程中，禁止在后端接入任何设备。
●检测期间不响应任何按键操作，若想在检测期间退出，请直接拔掉仪表。
●检测完成后，短按**OK**键，可再次启动检测；长按**OK**键，返回上一页面。

【5.2】QC2.0检测页面

在快充页面选择QC2.0按 OK 键进入

●QC2.0触发模式下，通过 < / > 键选择触发电压
●长按 **OK** 键返回上一页面

【5.3】QC3.0检测页面

在快充页面选择QC3.0按 OK 键进入

●QC3.0触发模式下，通过 < / > 键减少/增加选择触发电压
●长按 </ > 键可以快速减少/增加电压
●长按 **OK** 键返回上一页面

【5.4】FCP触发

操作方式与QC2.0触发相同

【5.5】SCP触发

操作方式与QC3.0触发相同

【5.6】AFC触发

操作方式与QC2.0触发相同

【5.7】VOOC/WARP触发

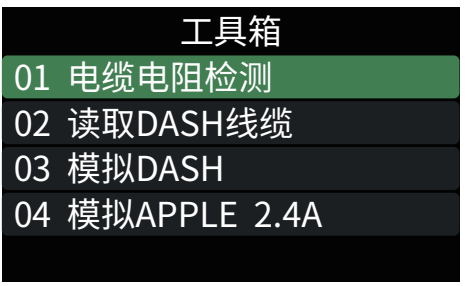
操作方式与QC3.0触发相同

【5.8】SVOOC 1.0/SVOOC 2.0触发

Super VOOC需要后端接大于500mA的负载进行诱骗，且Super VOOC仅有10.5V一档电压，因此进入页面只能按 **OK** 键退出，并无其他操作

六、工具箱

在应用选择页面下选择工具箱按 **OK** 键进入，功能选项如下，按 **OK** 键 进入各个功能选项



①电缆电阻检测
②读取DASH线缆
③模拟DASH
④模拟APPLE 2.4A

【6.1】电缆电阻检测

使用压差法测量线缆内阻，需要配合恒流负载使用。
单击OK键：将当前电压电流值作为参考值

测量步骤：

1.连接：充电器 + PCE-FCT 5 + 恒流负载（电流调节至约 0.5-1A），按确定记录参考值

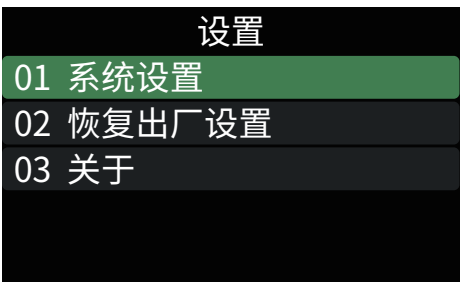
2.连接：充电器 + 电缆 + PCE-FCT 5 + 恒流负载（电流调整为 0.5-1A 左右，需与记录参考值时的电流相近），系统自动计算电缆的内阻

【6.2】模拟APPLE 2.4A

苹果设备在检测到充电头D+及D-为2.7V的时候才能以5V-2.4A充电，开启之后，此功能将D+及D-设置为2.7V

七、设置

在应用选择页面下选择设置按 **OK** 键进入，功能选项如下，按 **OK** 键 进入各个功能选项



①系统设置
②恢复出厂设置
③关于

【7.1】系统设置

在设置页面中选择二级菜单系统设置，按 OK 键进入

通过 < > 键选择，短按 OK 键确认，长按 OK 键进行返回操作

- **显示亮度：**设置屏幕亮度,可调范围1-100级。
- **待机亮度：**设置待机屏幕亮度,可调范围0-100级。
- **待机时间：**设置待机时间,最后一次操作按键开始计时，达到待机时间，进入待机状态。
- **温度符号：**可选择板载温度显示为℃/°F。
- **系统语言：**中/英文
- **开机页面：**开/关开机页

【7.2】系统

重置所有数据，恢复到出厂状态

【7.3】关于

查看制造商/型号/软件版本等信息

八、固件升级

●打开上位机软件

●仪表处于关机状态时，按紧中键，使用带有数据传输的数据线接入PC联机端口，电脑端显示上位机软件主页面即为连接成功。

●点击系统--点击文件夹--选择固件。

●点击升级符号,开始升级固件。升级完成后，仪表将自动重启并进入主界面

九、注意事项

- ●监控接口请勿接入超过24V的电源
- ●PC联机端口请勿接入超过16V的电源
- ●同一时间只能有一对监控接口(一个输入口、一个输出口)工作，当已有一对监控接口工作时，禁止在其他监控接口接入设备。(PC联机端口除外，PC端口可接外置电源)
- ●在使用快充触发模块时，请勿在任何监控接口接入不能承受高压的设备
- ●请勿在快充触发后给手机充电，因此造成手机损坏，厂商概不承担。

十、生产信息

见第 26 页

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.

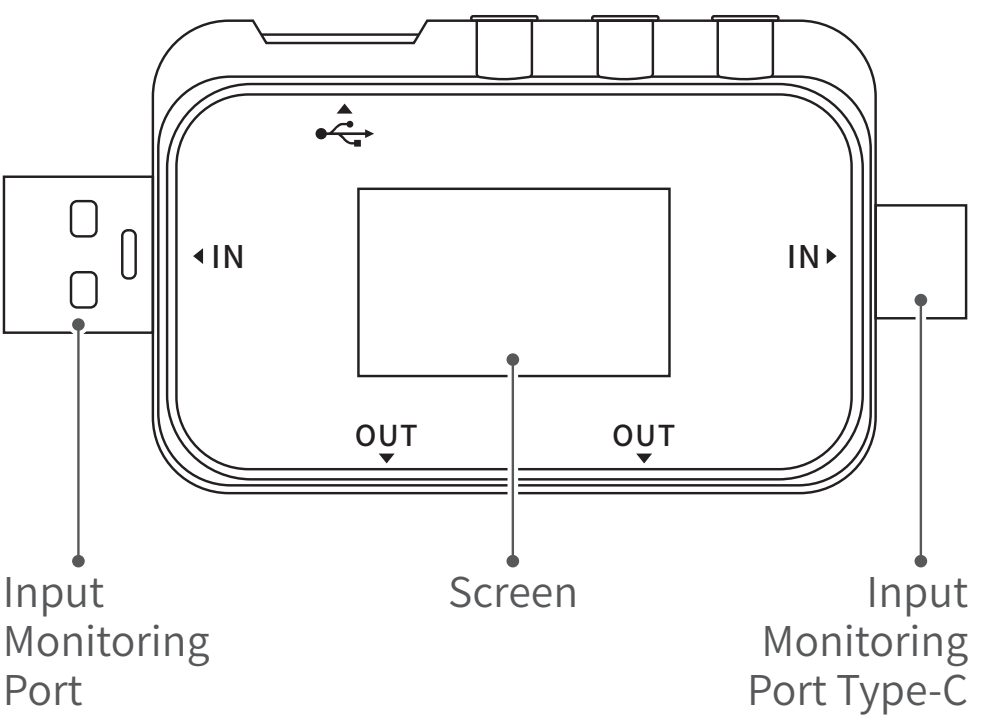
● If you encounter any quality issues with the instrument or have any questions about its use, please contact online customer service. We will assist you as soon as possible.

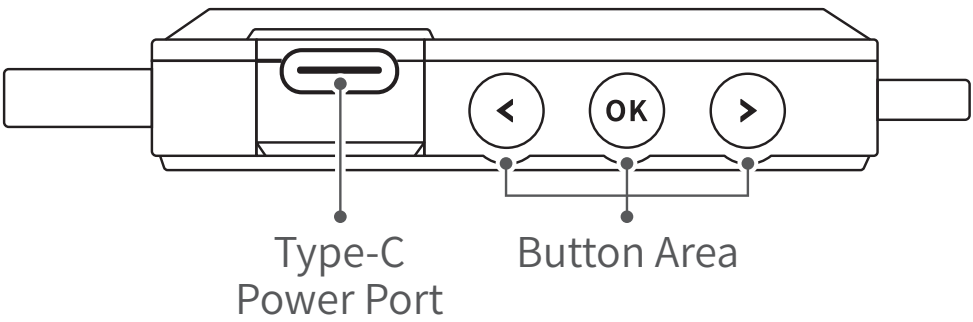
1.PRODUCT OVERVIEW

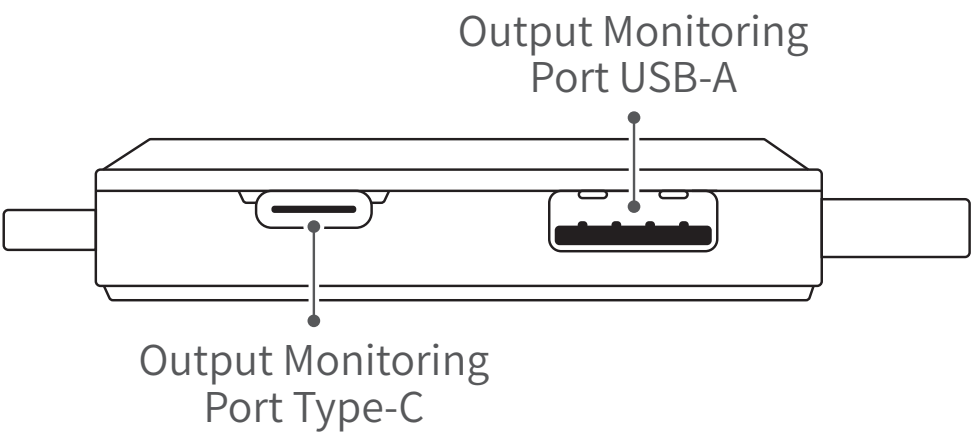
The **PCE-FCT 5** USB Tester is a multifunctional USB voltage and current meter, as well as a quick charge trigger device for mobile communication terminals. It features a full-color, ultra-wide viewing angle TFT LCD display and integrates multiple interfaces,

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




OK
Type-C
Power Port
Button Area


Output Monitoring
Port USB-A
Output Monitoring
Port Type-C

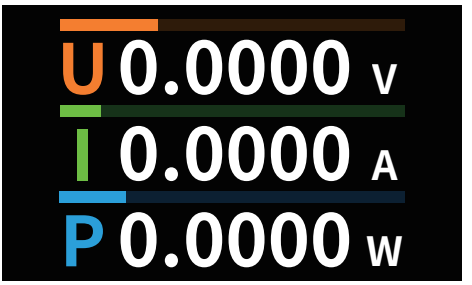
3.PARAMETER DESCRIPTION

	Range	Resolution	Accuracy
Model	PCE-FCT 5	/	/
Screen	1.06inch	/	/
Monitored Voltage	4~24V	0.001V	±(0.2‰+2)
Monitored Current	0~6.5A	0.001A	±(0.2‰+2)
Monitored Power	0~156W	0.001W	±(0.2‰+2)
Device Temperature	℃	1℃	±(1.2%+3)
	℉	1℉	±(1.2%+4)
Operating Time	/	1S	/
Dimensions	73×36 ×12mm	/	/
Weight	21g	/	/

4.MAIN INTERFACE

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

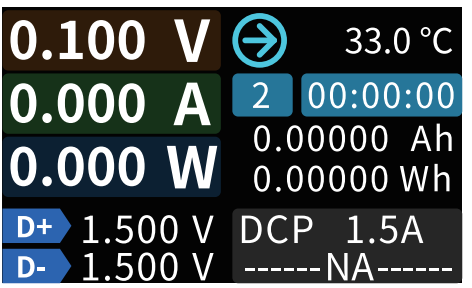
【4.1】Simplified Page



●Only displays the three key parameters:voltage, current, and power.

●Click the **OK** button to switch the display orientation.

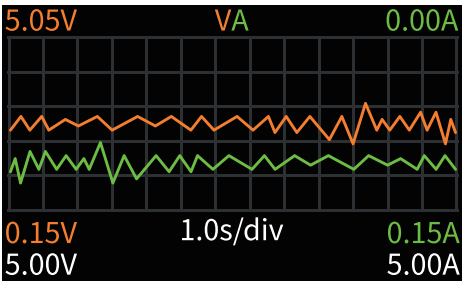
【4.2】Monitoring Page



●Long press the **<** or **>** button to switch to the next timing group.

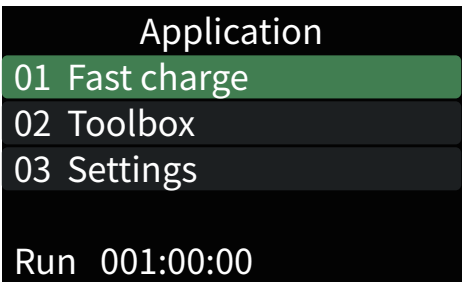
●Long press the **OK** button to reset the current timing group.

【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
- Toolbox
- Settings
- Device Operating Time

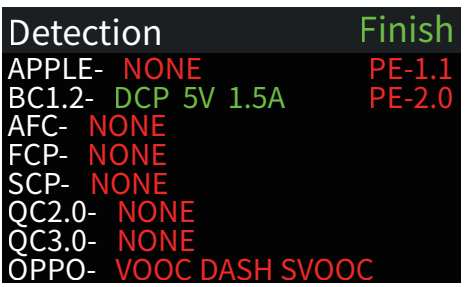
5.QUICK CHARGE APPLICATION

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:

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

【5.1】Automatic Detection

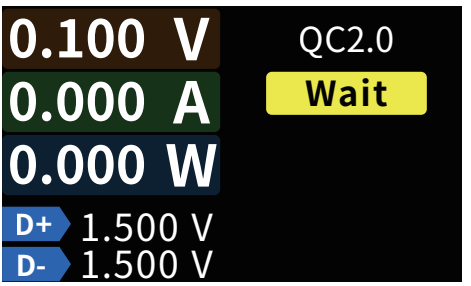


In the Quick Charge page, select Automatic Detection and press the OK button to enter.

- 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

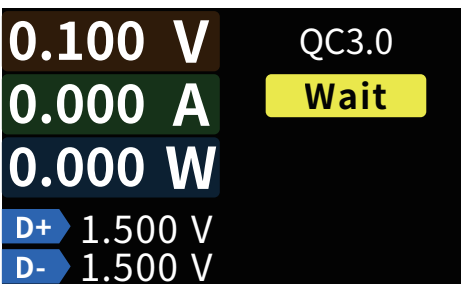


In the Quick Charge page, select QC2.0 and press the OK button to enter.

●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

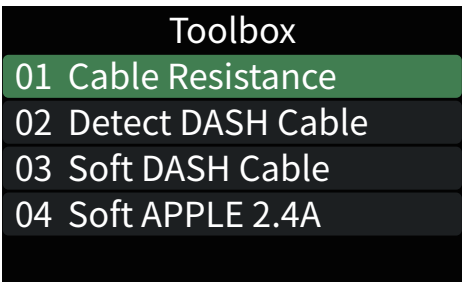
The operation is the same as QC3.0 trigger.

【5.8】SVOOC 1.0/SVOOC 2.0 Trigger

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

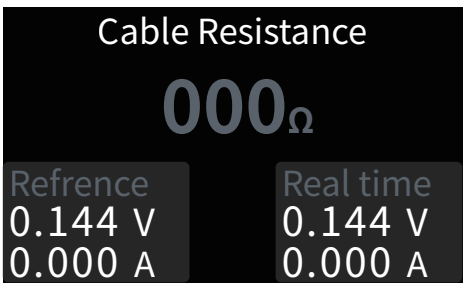
6.TOOLBOX

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:



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

【6.1】Cable Resistance



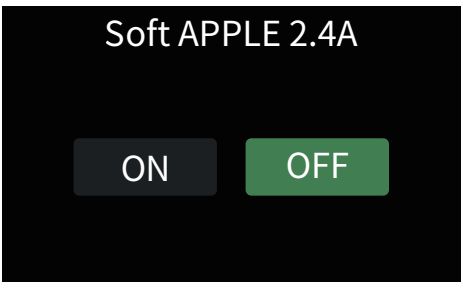
Measure the internal resistance of the cable using the pressure difference method, which requires the use of a constant current load.

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

Measurement Steps:

1. Connection Method: Charger + PCE-FCT 5 + Constant Current Load (adjust current to around 0.5-1A), press OK button to record reference value.
2. Connection Method: Charger + Cable + PCE-FCT 5 + Constant Current Load (adjust current to around 0.5-1A, close to the current when recording reference value), the system automatically calculates the cable resistance.

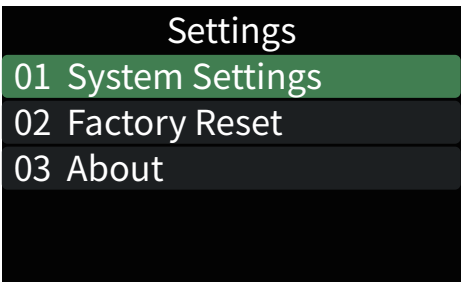
【6.2 】Soft APPLE 2.4A



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

7.SETTINGS

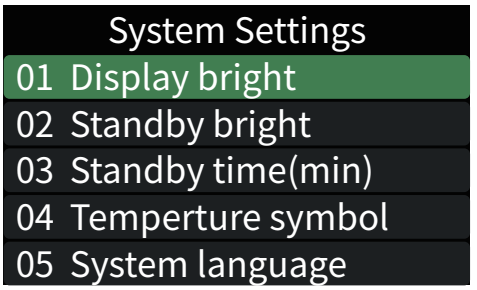
In the application selection page, select Settings and press the **OK** button to enter. The function options are as follows, press the **OK** button to enter each function option:

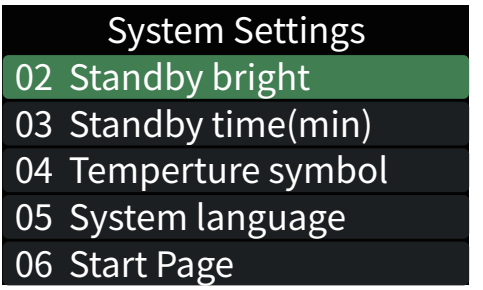


①System Settings
②Factory Reset
③About

【7.1】System Settings

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





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/°F.
- **System Language:** Select Chinese/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.

9.PRECAUTIONS

- Do not connect a power source exceeding 24V to the monitoring interface.
- Do not connect a power source exceeding 16V 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 (except for 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

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