User Manual

UT70 USB Tester User Manual

High Performance USB Tester

User Manual

Revision history

Version	Date	Modify
V1.00	2023/09/18	First release

Catalogue

Thank you for purchasing this product. We recommend that you spend some time reading this user manual in order that you fully understand all the operational features it offers.

Notes

1, When using the fast charge trigger function (AUTO or MANUAL), please do not connect to any other devices (such as computer, mobile phone, tablet, etc.), otherwise the high voltage may damage your device, and our company will not be responsible!!!

Note: except usb hid interface on the side of the button, other interfaces are all connected together. If any interface has high voltage, all interfaces will output high voltage. At this time, if electrical equipment is connected, it is likely to burn out!!!

2, USB-A port and Type-C power input port, the input voltage cannot exceed 28V!

3, The input voltage of USB HID interface cannot exceed 5.5V!

4, When working at high power, the UT70 tester will have a certain heating phenomenon, it is ok.

5, The key is a side key. Please do not press it hard to avoid damaging the key.

6, Unauthorized disassembly of the machine will not be guaranteed.

7, It is normal for some fast charging protocols to induce the equipment to power down / restart .

8, After the power bank mode is turned on, the fake load may cause intermittent changes in the monitoring voltage/current and the machine is slightly hot, which is a normal phenomenon.

9, When the load current of some fast charging adapters / power bank is low (< 50mA), the external power supply may be stopped. At this time, the power bank mode of UT70 can be used to provide fake load and maintain power supply.

1, Characteristic

UT70 USB tester is a high-performance USB tester. The product mainly has the following characteristics:

- Rich interfaces, including 2 USB-A, 2 Type-C and 2 Micro-USB ports.
- Accurate measurement, using high-precision alloy sampling resistance and 16 bit high-precision ADC measurement chip.
- Full power, supporting 3.6 ~ 28V input voltage and maximum 7A current.
- Rich functions,supports various fast charging protocols, waveform display, etc.
- Rich display, using 0.96-inch 160 * 80 IPS screen, the display content is richer.
- Small size, private mold, integrated molding, exquisite and beautiful, easy to carry.

Detailed specification parameters of UT70 USB tester are shown in Table 1.1:

Items	Description
Basic parameters	Product model: UT70 Screen size: 0.96 inch IPS screen LCD resolution: 160 * 80 Product size: 67.5mm * 24.5mm * 10.5mm Net weight: 15g
Interface Characteristics	USB-A IN（Public seat）：7A[1] USB-A OUT（FEMALE）：7A[1] TYPE C IN/OUT：6.5A Micro USB IN：2A Micro USB HID：only communication
Measurement system	ADC resolution: 16bit Sampling resistance: high precision alloy resistance Measurement speed: 1kHz (max) [2] Voltage range: 0~28V Current range: 0~7A
Fast charging protocol	BC1.2 detection QC2.0,QC3.0 detection and trigger PD2.0, PD3.0, PD3.1 detection and trigger Huawei FCP and SCP detection and trigger Samsung AFC detection and trigger MTK PE detection VOOC detection VIVO VFCP detection and trigger APPLE 2.4A detection UFCS detection and trigger
Tool	Wire resistance measurement E-marker cable chip reading Dash cable chip reading
Data record	Record points:10200points Recording speed (local): 0.1Sa/S, 0.5 Sa/S, 1 Sa/S, 5 Sa/S Recording speed (computer): 4 Sa/S, 200 Sa/S, 500Sa/S, 1000Sa/S Record start threshold is settable(local) Recording mode: manual mode, automatic mode
Computer software	Using HID drive free design, plug and play Rich functions and can realize all functions of the tester Excellent interaction experience, more convenient to use Real time curve drawing (voltage, current, power, etc.) Programmable maximum acquisition speed 1000 Sa/S[3] Support online data recording and storage (unlimited points) Support offline data reading and curve drawing Support firmware upgrade Support log function

	Support multi language settings
Other functions	Support screen display direction set Support for power bank mode

Note 1: 7A can work for a short time, and the cable must support 7A.

Note 2: this speed can be achieved only when the computer is connected and use computer to records.

Note 3: the maximum recording speed of 1000 Sa/S can be achieved when use computer to records.

Table 1.1 UT70 specification

The performance of UT70 USB tester are shown in Table 1.2:

Items	Range	Resolution	Precision
Monitoring voltage	0 ~ 28V[1]	0.0001V	±(1.0‰+2)
Monitoring current	±7A	0.0001A	±(1.0‰+3)
Monitoring power	0 ~ 196W	0.0001W	±(1.0‰+2)
D+/D- voltage	0 ~ 3.3V	0.001V	±(1.0%+2)
Capacity	0 ~ 9999.9Ah	0.0001Ah	
Electric quantity	0 ~ 9999.9Wh	0.0001Wh	
Time	99 H 59 M 59 S	1S	
Wire resistance	0 ~ 999.9Ω	0.001Ω	

Note 1: When the measurement is less than 3.6, connect the HID interface for power supply and please do not input more than 28V to the USB tester, otherwise the equipment may be burned.

Table 1.2 UT70 performance

2, Quick Start

2.1 data preparation

Before using the UT70 USB tester, in addition to familiarizing yourself with the human-computer interaction of the tester through the next two sections, there are some necessary preparations to be made.

(1) Used in conjunction with PC to download good UT70 USB tester data package, there is a configuration software, for a link below: http://www.openedv.com/docs/tool/USB/index.html

(2) The configuration software needs to run on the Windows operating system and needs to run the.NET 4.0 environment, which is usually integrated with newer versions of Windows (older versions such as Windows XP do not). NET 4.0 is available in the link, please install the environment and try to use the configuration software, otherwise the configuration software may not work.

(3) For the first time, please read the following document.

2.2 Appearance description

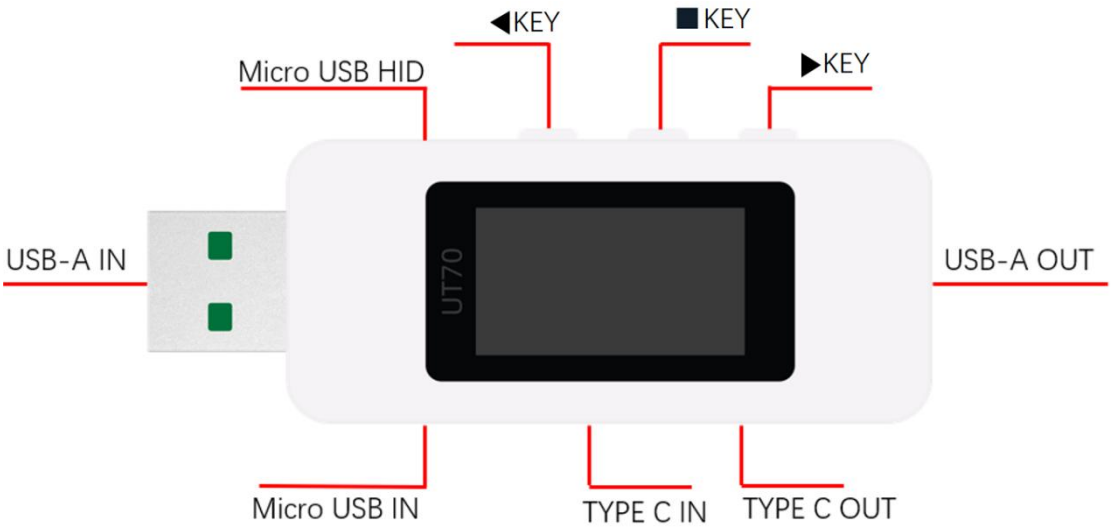


Figure 2.1 UT70 Appearance

USB-A IN Port : Traditional USB input interface, maximum 7A
USB-A OUT Port : Traditional USB output interface, maximum 7A
Type-C IN Port : Type-C input interface, maximum 6.5A
Type-C OUT Port : Type-C output interface, maximum 6.5A
Micro-USB IN Port: Micro-USB input interface, maximum 2A
Micro-USB HID : Communication interface between device and computer (USB HID)

2.3 KEY function

◀ KEY: Click: left / up; Long press: decreasing
■ KEY: Click: confirm / select; Long press: return.
▶ KEY: Click: right / down; Long press: increasing

The human-machine interaction of the UT70 USB tester is achieved through buttons. Left/right buttons can slide through the interface or select from top, bottom, left, and right. Short press the middle button to achieve different functions on different interfaces, and long press to return to the previous menu level.

2.4 Function Description

2.4.1 Main interface

The UT70 USB tester has four main interfaces, and when the main interface can switch states, these four main interfaces can be switched by sliding the left/right buttons.

1. Basic measurement interface

The basic measurement interface is used to display the most basic measurement parameters, including voltage, current, power, operation time, electric quantity and other information.

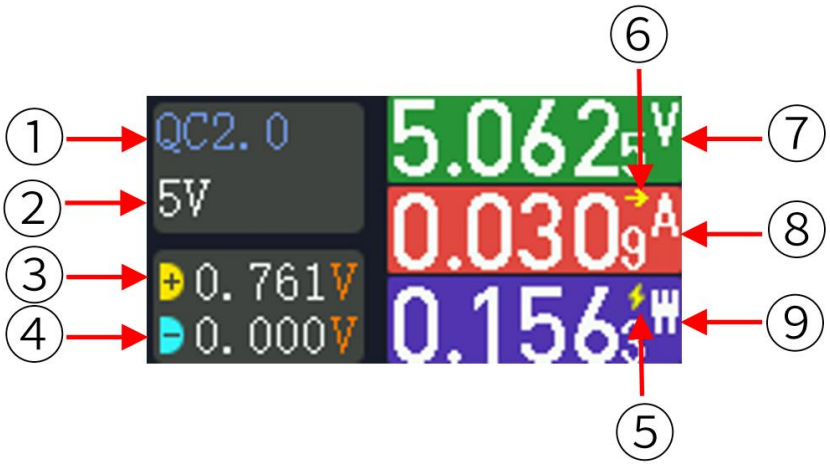


Figure 2.2 Basic measurement interface

Interface introduction:

① The type of fast charging protocol currently monitored, if none, it will be displayed as -- NA--[1]

② The current monitored fast charging voltage, if none, is displayed as - NA--

③ Measure and display the current USB D+voltage value.

④ Measure and display the current USB D-voltage value.

⑤ The false load conduction icon flashes once for every conduction of the internal false load when the power bank mode is turned on[2].

⑥ Current direction flag, forward current (in to out): →, reverse current (out to in): ←.

⑦ Monitoring voltage, real-time monitoring voltage value, unit: volt (V).

⑧ Monitoring current, real-time monitoring current value, unit: ampere (A).

⑨ Monitoring power, real-time monitoring power value, unit: watt (W).

Note 1: When using protocol monitoring, you need to enable protocol monitoring on the setting interface to monitor the fast charge protocol type, especially when using two C2C lines, you must first enable protocol monitoring in the setting. Due to the variety of fast charging categories, some fast charging protocols have similar characteristics, so the monitored fast charging protocols may have a certain probability of misjudgment or identification, and the overall accuracy of judgment is about: PD > QC2 > QC3 > BC1.2 > APPLE 2.4A > VOOC > FCP > SCP > AFC > VFCP. It is worth noting that if two CC lines are used, at this time, the HID interface should be connected to power on first to keep the power supply, choose to turn on the monitoring (keep monitoring) to complete the initialization, and then access two C lines and electrical equipment. At the same time, the two CC lines can not be inserted blind, that is, C1 to C1 surface, not C1C2, if you can not establish communication, first change any plug on the tester to a surface and try again.

Note 2: The power bank mode only works in the basic measurement interface.

Operating instructions:

Short press: ◄ Key to switch to the previous main interface.

Short press the ■ key to switch the upload frequency.

Short press: ► Key to switch to the next main interface.

2. Waveform display interface

The waveform display interface is used to display the waveform of the current monitored voltage, current, USB D+/D -, etc. Default: voltage + current waveform, as shown in the following figure.

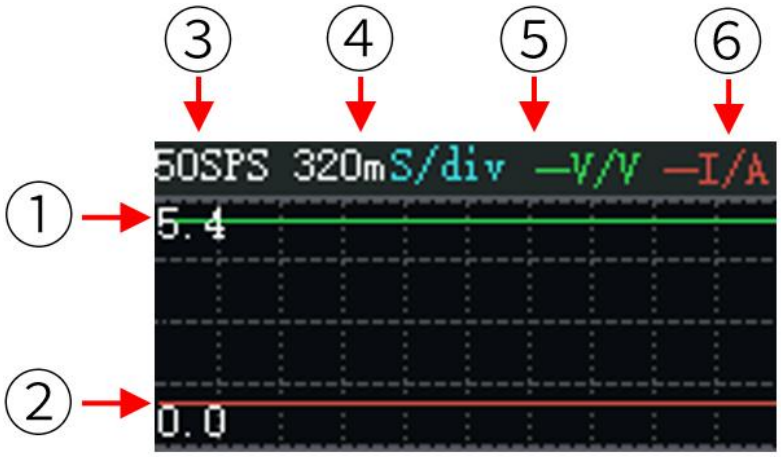


Figure 2.3 Waveform display interface

Interface introduction:

① Voltage waveform: The maximum voltage value range displayed in the current waveform diagram is 5.4V, and the current vertical scale can be calculated as 5.4/4≈1.35V/div (cell), and the voltage represented by the display position of the current waveform is further estimated to be 3.72*1.35≈5.00V.

② Current waveform. The maximum current value that can be displayed in the current waveform diagram is 5.4A, and the current vertical scale can be calculated as 5.5/4≈1.35A/div (cell). It is further estimated that the current represented by the display position of the current waveform is 0.70*1.35≈0.95A.

③ Represents the display rate of the current waveform, which refreshes the display by 50 points in 1 second.

④ The time scale is currently 320mS/div (grid).

⑤ Waveform type: The color waveform is the voltage waveform.

⑥ Waveform type: The color waveform is the current waveform.

Operating instructions:

Short press: ◄ Key to switch to the previous main interface.

Short press the ■ Key to switch between the types of waveforms.

Short press: ► Key to switch to the next main interface.

3. Data recording interface

The data recording interface is used to record the Ah/Wh flowing from the power supply to the device offline. It supports a maximum of 4 groups of data records (10200 points/group, the default is recorded once every 1 second, the interval can be set). Click the middle key to select the record group first, and then click again to start recording.

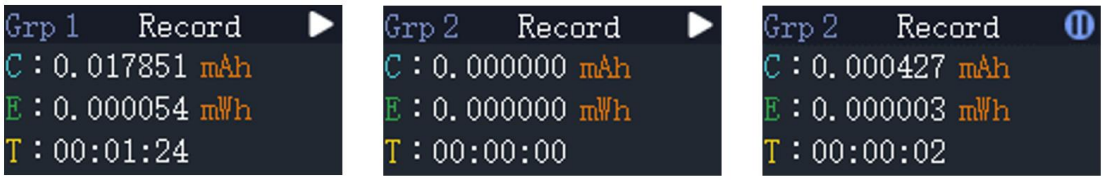


Figure 2.4 Data Recording Interface

The electric quantity mAh in the above figure represents the cumulative value of hourly current (mA). If discharged at a current of 1000mA for 1 hour, it is equal to 1000mAh, and 1000mAh is also equal to 1Ah.

Energy mWh represents the accumulated value of hourly voltage (V) multiplied by current (mA). For example, when a 10V output is applied and the load is 1000mA, it is equal to 10W. This means that after 1 hour of discharge, 10000mWh is obtained, which is converted into Wh and converted into 10Wh. If converted into household electricity meter units, it is equivalent to 0.01 kWh, and 1 kWh is equivalent to 1000Wh.

Therefore, this interface can be used to evaluate the battery capacity of mobile phones, tablets, and charging banks. If the statistics show that a charge consumes 17.251Wh(17251.00mWh), and the operating voltage of the internal lithium battery pack of the mobile phone tablet is 3.7V, the general conversion efficiency can be estimated to be 90% when charging the mobile phone tablet. Then the battery capacity in the mobile phone tablet is about 27.251Wh/3.7V * 0.9 = 4.196Ah.

After the offline data recording starts, you need to import the offline data recording time period curve to the upper computer. Note Only the recorded voltage and current curve data is uploaded for offline data. Wh waveform curve data is not uploaded or (the uploaded data is incorrect). The offline data is saved in CSV file through the host computer, and a correct total value is recorded in the last column of Wh.

Operating instructions：

Short press: ◄ key, switch to the previous main interface when the group switch status is not selected, and switch the group number when the group switch status is selected.

Short press: ■ key , enter the data recording group selection status. At this time, the group number will turn white and a flashing prompt will appear. After selecting, press again to start recording.

Long press: ■ key , exit the data recording group status.

Short press: ► key, switch to the previous main interface when the group switch status is not selected, and switch the group number when the group switch status is selected.

4. Application Function Interface

The application function interface is used to select different functions, achieve protocol detection, tool detection, settings, etc., as shown in the following figure.

Figure 2.5 Function Application Interface

Operating instructions:

Short press: ◄ Key to switch to the previous main interface (when not selected).
Short press: ■ key to enter the function application selection.
Long press: ■ key to exit the function application selection.
Short press: ► Key to switch to the next main interface (when not selected).

2.4.2 Fast charging protocol testing interface

1. Automatic detection interface

In the "Application function" interface, click the icon of "Pro" to enter the automatic detection and trigger selection interface. When entering the interface for the first time, it will remind you to unplug all external devices. After clicking "OK", select "Auto detect " option to start automatic detection, as shown in the following figure.

Figure 2.6 Entering the Automatic Detection Interface

After the detection is completed, the fast charging protocol and detailed parameters supported by the power supply equipment can be viewed through left/right button switching on the automatic detection completion interface, as shown in the following figure.

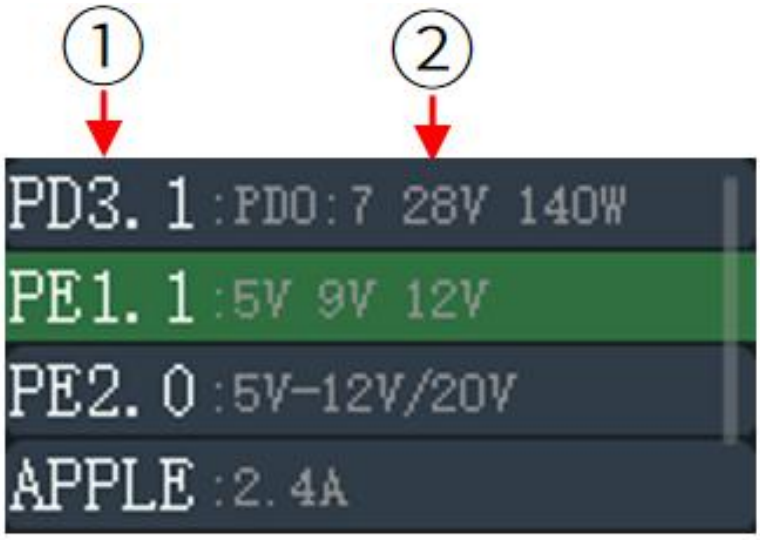


Figure 2.7 Automatic detection completion interface

Interface Introduction:

① The name of the detected fast charging protocol.

② The detection results of the corresponding protocol may vary depending on the protocol description.

Operating instructions:

When automatic detection is in progress:

Long press: ■ key to forcibly exit the ongoing automatic detection and return to the previous level.

After automatic detection is completed:

Short press: ◄ Key to switch to the previous protocol result.

Short press: ► Key to switch to the next protocol result.

Long press: ■ key to exit the automatic detection completion interface and return to the previous level.

Attention: When automatically detecting the fast charging protocol, various high voltages will be triggered. Please do not connect any electrical equipment to prevent high voltage from damaging the equipment or causing a fire. Otherwise, we are not responsible for equipment damage and other situations! At the same time, when testing some fast charging protocols, it is normal to have a power outage and a black screen that lights up again. Normal use is sufficient.

2. Manual triggering interface

The manual triggering interface is used to manually select the fast charging protocol and the corresponding triggering voltage. After the protocol is successfully triggered, the voltage of each protocol and the supported voltage can be manually triggered and adjusted by pressing the button.

This article takes PD protocol triggering as an example. In the [Application Function]

interface, click the Select Application Function [Pro] icon to enter the automatic detection and trigger selection interface. The first time you enter, you will be prompted to unplug all external devices. After clicking [OK], select the [PD] option to start PD protocol triggering, as shown in the following figure.

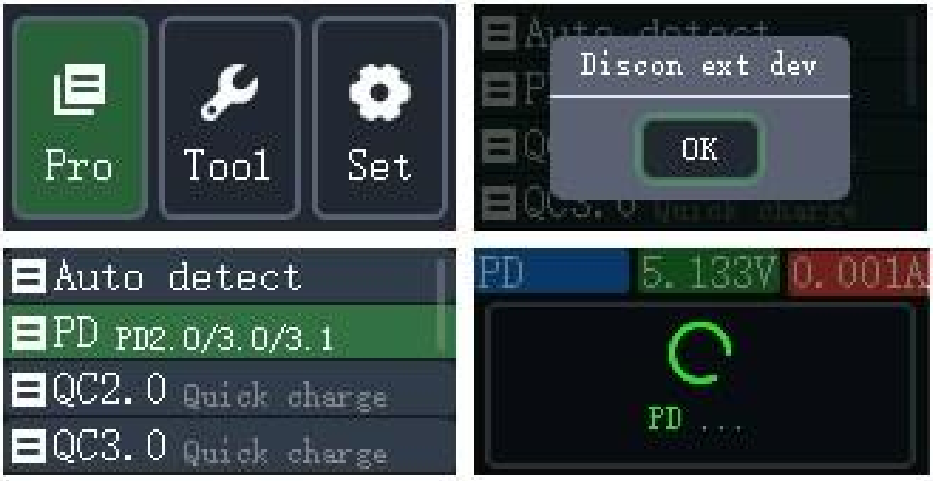


Figure 2.8 PD Protocol Manual Trigger Interface

If the protocol can be successfully triggered, enter the adjustable voltage interface of the protocol, as shown in the following figure.

Figure 2.9 PD Protocol Manual Trigger Voltage Adjustment Interface

Interface Introduction:

① The type of protocol currently triggered.

② The parameter range information of the current protocol.

③ The optional voltage range for the current protocol, where PD3.1 protocol has fixed range and PPS step voltage regulation range.

④ The current voltage displays the current monitored voltage value in real time. If the trigger voltage of the protocol is selected and the middle confirmation button is pressed, it becomes closer here, indicating that the tested device supports this fast charging method.

⑤ Current current, real-time display of current monitored current value.

Operating instructions:

When triggering:

Long press: ■key to forcibly exit the ongoing automatic detection and return to the previous level.

After successful triggering, voltage selection:

Short press: ◄ Key, cycle up to switch the desired voltage/step voltage reduction.

Short press: ► Key, cycle down to switch the desired voltage/step voltage increase.

Long press: ■ Key, exit the current page voltage selection and return to the previous level.

Attention: When manually triggering different fast charging protocols, various high voltages will be triggered. Please do not connect any electrical equipment to prevent high voltage from damaging the equipment or causing a fire. Otherwise, we are not responsible for equipment damage and other situations! At the same time, when manually triggering some fast charging protocols, it is normal to have a power outage and a black screen that lights up again. Normal use is sufficient.

2.4.3 Tool interface

1. E-Marker Identification interface

The E-Marker identifies the chip information used to read the E-Marker cable and displays it on the screen. Connect the C cable connector to the female port of the C port of the tester, and then operate the [Application Function] main interface—>[Tool] icon options—>[E-Marker] option to enter the E-Marker cable identification interface. After successful identification, it is shown in the following figure.

Figure 2.11 E-Markey Identification Interface

Interface Introduction:

① The type of cable currently detected is E-Marker.

② The power specifications and voltage and current carrying capacity of the current type of cable.

③ The transmission speed of the current type of cable.

④ Approximate length of the current cable.

⑤ The current voltage displays the current monitored voltage value in real-time.

⑥ Current current, real-time display of the current monitored value.

Operating instructions:

When conducting cable identification:

Long press: ■ key to forcibly exit the identification cable.

After successful cable identification:

Short press : ■ key to restart cable identification.

When testing E-marker cables, it is important to note that it is recommended not to use the Type-C port for power supply (it is recommended to use Micro USB power supply or USB A port power supply instead), otherwise it may cause abnormal testing.

2. Dash Cable Identification Interface

Dash cable recognition is used to read the chip information of VOOC cables and display it on the screen. Connect the A-end connector of the VOOC cable to the A female port of the tester, and then operate the [Application Functions] main interface—>[Tool] icon options—>[Dash] option to enter the Dash cable identification interface. After successful identification, the Dash cable information is shown in the following figure.

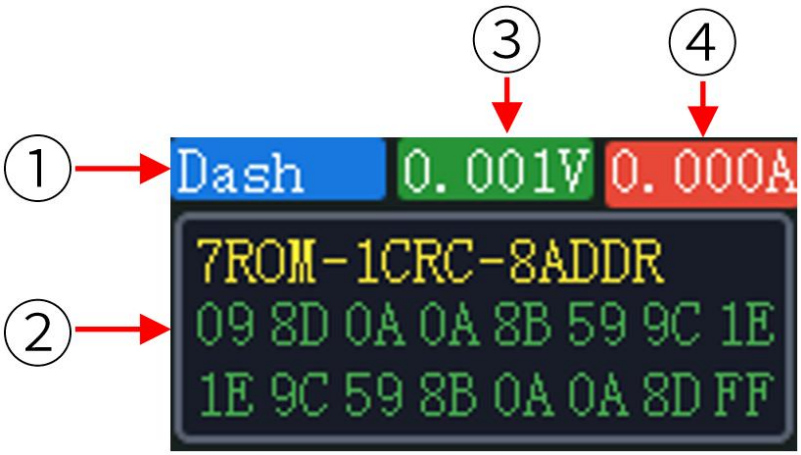


Figure 2.12 Dash recognition interface

Interface Introduction:

① The type of cable currently detected is Dash.
② Information about the current type of cable.
③ The current voltage displays the current monitored voltage value in real-time.
④ Current current, real-time display of the current monitored value.

Operating instructions:

When conducting cable identification:

Long press: ■ key to forcibly exit identifying the cable.

3. Line resistance measurement interface

The line resistance measurement interface is used to measure the internal resistance (i.e., line resistance) of the power supply line. To measure the pressure difference method, you need to bring

a constant current load device that can provide more than 500mA of current and a power supply device for auxiliary measurement. The line resistance measured by this method is an estimate and is for reference only

This test requires at least: 1 cable under test, 1 load of more than 500mA (preferably constant current load), 1 power supply device (support output current of more than 500mA).

Operate [Application function] main interface [Tool] icon option [Line res] option in turn to start the wire resistance measurement, as shown in the following picture:

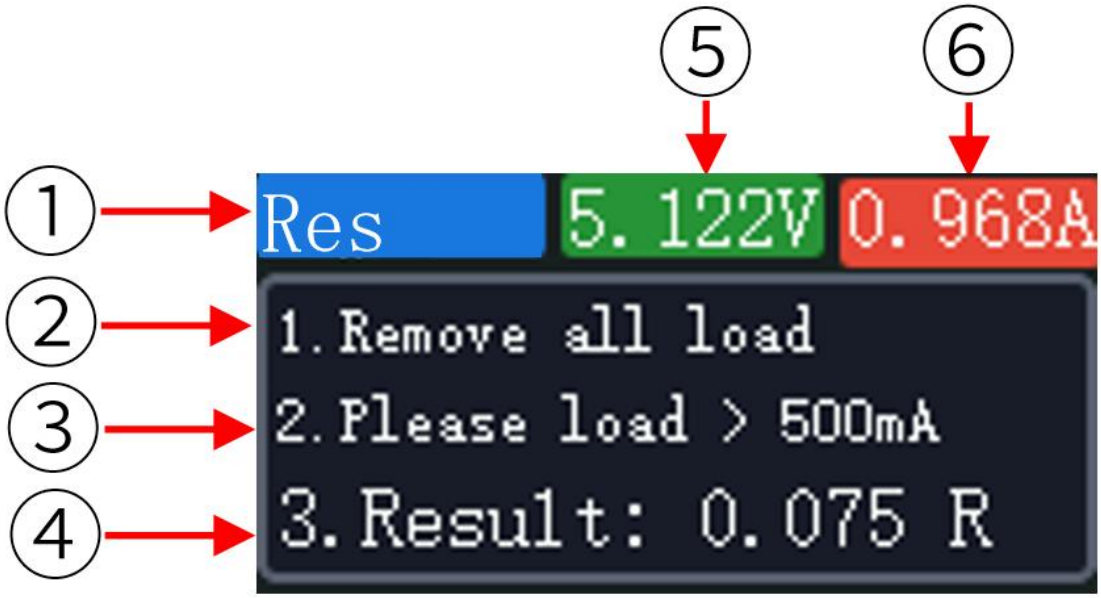


Figure 2.13 Start of line resistance measurement

The measurements were performed as follows:
1. Connect the UT70 to the power supply device using the cable to be tested (do not connect the UT70 to any load, and the current is displayed as 0).
2, when the second step of the screen blinks, the >500mA load is connected to the UT70.
3. Wait for the measurement result. The internal resistance of the current cable will be displayed on the screen.

Operating instructions:

After entering the line resistance measurement interface:

①. Line resistance measurement function identification。
②. Step 1 Prompt message (Please remove all loads)。
③. Step 2 Prompt message (Add a load whose current is greater than 500mA. Prepare the load yourself.)
④. Cable internal resistance measurement results (differential pressure measurement)。
⑤. Current voltage, real-time display of the current monitoring voltage value。
⑥. Current, real-time display of the current value of the current monitoring。

2.4.4 Setting interface

Operate the [Application Functions] main interface in sequence —>[Set] icon option to enter the settings interface, as shown in the following figure.

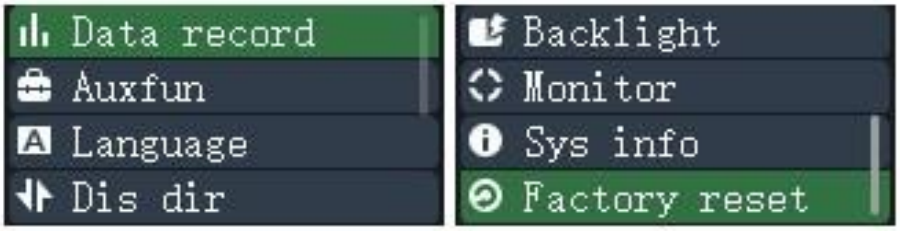


Figure 2.15 Setting interface

1. Data Record Setting Interface

In the [Settings] interface above, select the [Data Record] option and briefly press to enter the data record settings interface. The settings for data records are shown in the table below.

Function items	Interpretation	Operation mode	Adjustable range
Set up groups	Which group of rules are currently set for	Middle key short press ->Left and right key adjustment	Group numbers 1-4
Save every	Set the interval for offline data recording for this group	Middle key short press ->Left and right key adjustment	Interval 50mS-120S
Start Rule	Set the start rule for offline data records in this group	Middle key short press ->Left and right key adjustment	Manual/threshold start
End Rule	Set the start rule for offline data records in this group	Middle key short press ->Left and right key adjustment	Manual/Threshold End
Data List	View information for all group data record points	Middle key short press	
Delete all data	Delete information for all group records	Operation mode	

Table 2.3.4.1 Data Record Setting Options

After setting the data recording rules for this group, you can return to the [data recording interface] on the main interface to start offline recording.

2. Auxiliary function setting interface

In the [Settings] interface above, select the [Auxiliary Function] option and briefly press to enter the auxiliary function settings interface. The auxiliary function settings are shown in the table below.

Function items	Interpretation	Operation mode	Adjustable range
Power Bank mode	Start this mode, conduct false loads at intervals, simulate device power consumption, and prevent power loss due to low current of the power bank (only intermittently start false loads when the voltage is 5V on the basic measurement interface)	Middle key short press to turn on	
Load conduction interval	How many seconds does the dummy load conduct in the power bank mode (dummy load current: 300mA)	Middle key short press ->Left and right key adjustment	1-10S

Table 2.3.4.2 Auxiliary Function Setting Options

3. Language setting interface

In the [Settings] interface above, select the [Language Settings] option and briefly press to enter the language settings interface. The language settings are shown in the table below.

Function items	Interpretation	Operation mode	Adjustable range
Language settings	Set the language displayed on the interface	Middle key short press ->Left and right key adjustment	Simplified Chinese

Table 2.3.4.3 Language Setting Options

4. Display direction setting interface

In the [Settings] interface above, select the [Display Direction] option and briefly press to enter the display direction setting interface. The setting items for the display direction are shown in the table below.

functionality	Interpretation	Operation mode	Adjustable range
Display direction	Set the display direction of the interface	Middle key short press ->Left and right key adjustment	Forward display Reverse Display

Table 2.3.4.4 Display Direction Options

5. Backlight setting interface

In the [Settings] interface above, select the [Display Direction] option and briefly press to enter the display direction setting interface. The setting items for the display direction are shown in the table below.

Function items	Interpretation	Operation mode	Adjustable range
Automatic	Set the automatic adjustment of	Middle key short press	OFF/1-15

brightness	backlight after how long it takes	->Left and right key adjustment	minutes
brightness	Set the default brightness for backlight display	Middle key short press ->Left and right key adjustment	3%-100%

Table 2.3.4.5 Backlight Setting Options

6. Protocol monitoring setting interface

In the [Settings] interface above, select the [Protocol Monitoring] option and briefly press to enter the protocol monitoring settings interface. The settings for protocol monitoring are shown in the table below

Function items	Interpretation	Operation mode	Adjustable range
Enable monitoring	Start protocol monitoring and display it on the basic interface	Middle key short press	

Table 2.3.4.6 Protocol Monitoring Options

Note: When using protocol monitoring, you need to enable protocol monitoring on the setting interface to monitor the fast charge protocol type, especially when using two C2C lines, you must first enable protocol monitoring in the setting. Due to the variety of fast charging categories, some fast charging protocols have similar characteristics, so the monitored fast charging protocols may have a certain probability of misjudgment or identification, and the overall accuracy of judgment is about: PD > QC2 > QC3 > BC1.2 > APPLE 2.4A > VOOC > FCP > SCP > AFC > VFCP. It is worth noting that if two CC lines are used, at this time, the HID interface should be connected to power on first to keep the power supply, choose to turn on the monitoring (keep monitoring) to complete the initialization, and then access two C lines and electrical equipment. At the same time, the two CC lines can not be inserted blind, that is, C1 to C1 surface, not C1C2, if you can not establish communication, first change any plug on the tester to a surface and try again.

7. System Information Interface

In the [Settings] interface above, select the [Protocol Monitoring] option and briefly press to enter the protocol monitoring settings interface. The settings for protocol monitoring are shown in the table below.

Function items	Interpretation	Operation mode	Adjustable range
system information	Display the current manufacturer and software and hardware version	Middle key short press	

Table 2.3.4.7 System Information Options

8. Factory Restore Interface

In the [Settings] interface above, select the [Protocol Monitoring] option and briefly press to enter the protocol monitoring settings interface. The settings for protocol monitoring are shown in

the table below.

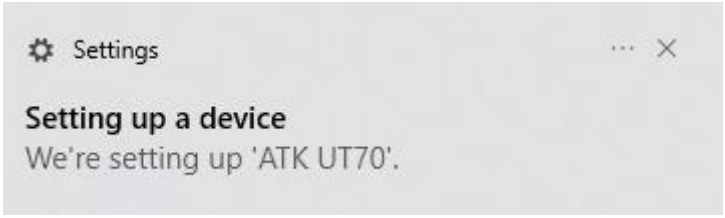
Function items	Interpretation	Operation mode	Adjustable range
Factory Restore	Restore factory settings, clear all data	Middle key short press	

Table 2.3.4.8 Factory Restore Options

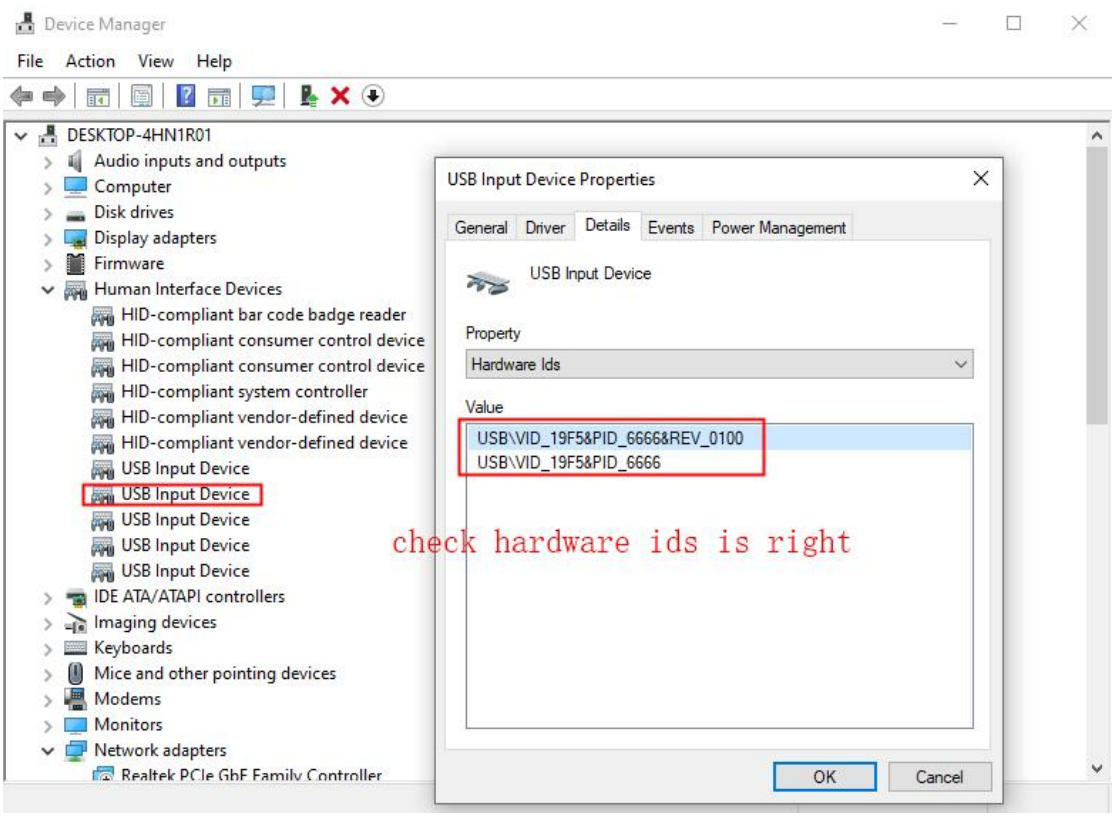
3, ATK-UT70 Instructions

3.1 UT70 USB test driver installed

When the UT70 USB tester is connected to the computer through the Micro USB cable for the first time, the computer will automatically install the driver for it. Please wait until the driver is installed before it can be used with the upper computer. Automatic installation of the driver is shown in the following figure.



The driver is integrated into the computer operating system and no additional supply is required. After the driver is installed, a USB input device (HID-compliant device) will appear in the device Manager of the computer in the man-machine connection device field, and the hardware ID information page is "VID_19F5&PID_6666", as shown in the following figure.



3.2 Install the running environment of the upper computer software

If the user's computer does not have it installed. NET4.0 running environment, you can use the downloaded data pack inside. To install the running environment, go to the UT70 USB Tester Data Pack/Configuration software/Software Running environment dotNetFx40_Full_x86_x64.exe. If it has already been installed, click the environment installation package to install it, and the following message will be displayed indicating that the computer has been installed and there is no need to reinstall it.

3.3 ATK-UT70 Function description

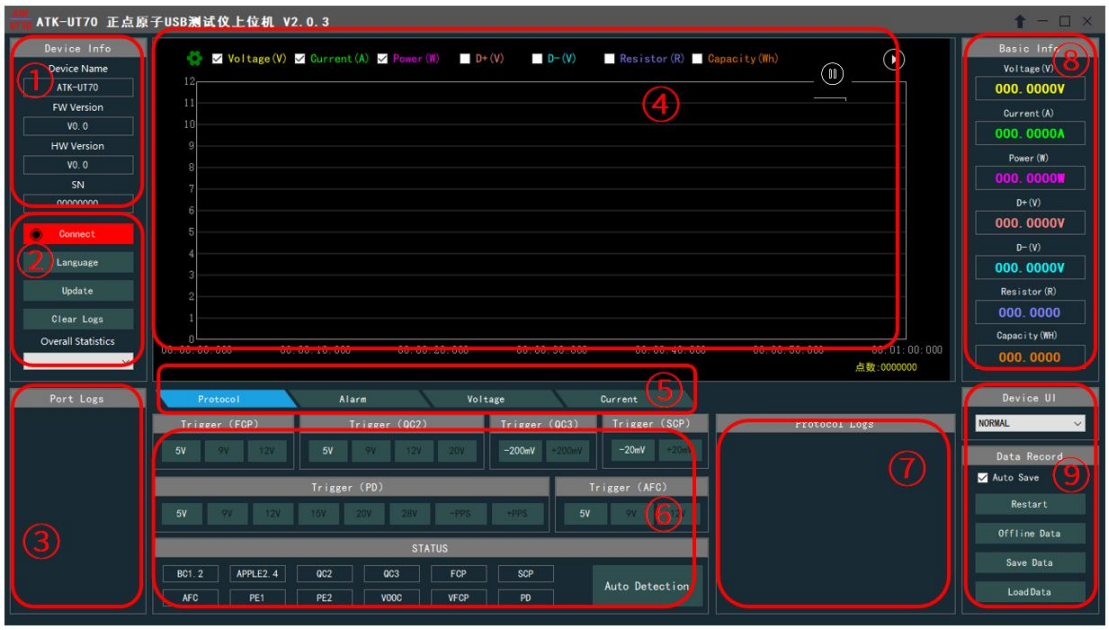


Figure 3.2.1 ATK-UT70 main interface

Interface introduction:

① Device information: display the model and version of UT70 (USB tester).

② Equipment / Host computer function control

1, Reconnect / Disconnect: controls and displays the current connection status.

2, Language: set software language.

3, Update: upgrade UT70 firmware.

4,Clear logs: clear port logs and protocol logs。

5, Frequency, setting the frequency of data upload.

③ Port logs: auxiliary information printed during the operation of the UT70.

④ Waveform display: you can select the type of waveform displayed, zoom and drag to view, and press and hold the right button to display the detailed value of waveform. In addition, the button in the upper right corner can pause / resume the waveform display.

⑤ Function Control bar, you can select protocol trigger or check, alarm setting, voltage data statistics, current data statistics and so on.

⑥ In the protocol trigger control bar, the upper computer triggers various voltage and automatic detection buttons: highlighted indicates that the corresponding protocol is detected or triggered.

⑦ Different control bar log output information, for example, the fast charge function is related to the transmission of fast charge operations.

⑧ Voltage and current display: The lower computer only uploads voltage and current, while power and other data are calculated and displayed by the upper computer.

⑨ Device UI and Data Record

1, Set UI: display / control the function interface of UT70.

2, Auto save: save the voltage and current data obtained by the computer as CSV data table[1].

3, Restart: clear the waveform data, redisplay and record.

4, Offline data: obtain the offline recording data information of USB tester, and each group of

offline data obtained can be displayed through waveform.

5, Save data: save all currently received voltage, current and other data.

6, Load data; read previously saved data(.csv) and display it by waveform.

Note 1: If Auto Save is selected, the higher the frequency of uploading, the larger the CSV file will be generated on the disk within the same time period. At this time, the maximum recording time for the file is only half an hour.

3.2 ATK-UT70 Firmware upgrade

The firmware update of ATK-UT70 software supports two upgrade modes: local mode and net mode.

Local mode: users need to obtain the latest firmware from the positive atom themselves, and then upgrade according to the operations shown in the image below.

Net mode: the software automatically obtains the latest firmware from the server and prompts the firmware version without downloading the latest firmware by yourself. Other operations are the same as local mode.

The net mode upgrade process is shown in the figure below :

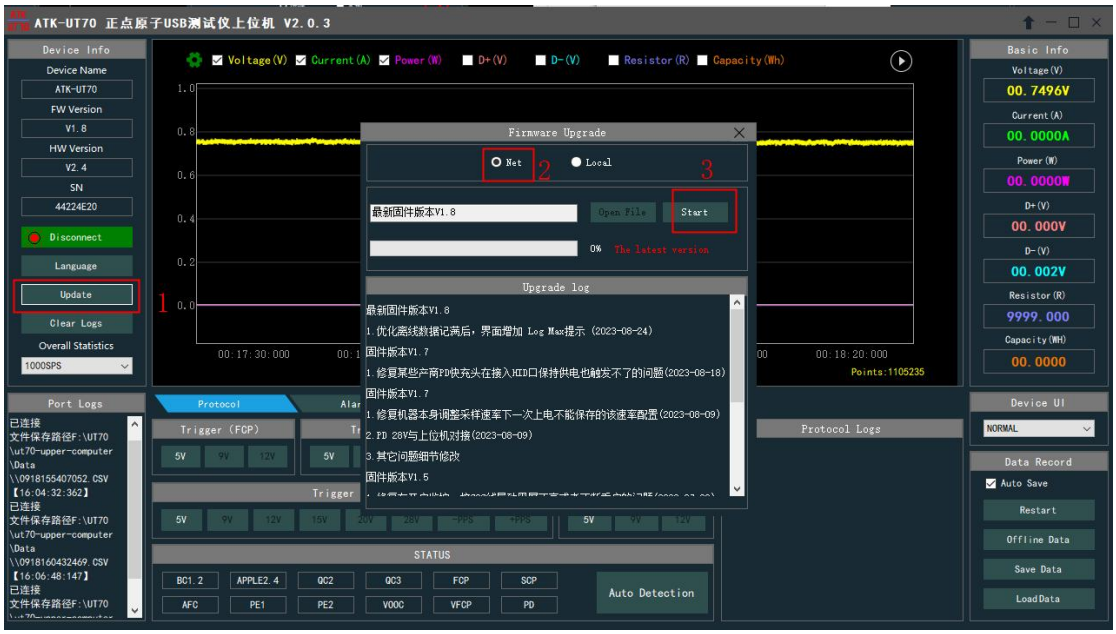


Figure 3.2.1 ATK-UT70 Firmware upgrade

Operating instructions:

First press the right button of the tester to power on the tester to enter the upgrade mode, and wait for the host computer to recognize successfully, as shown in the following figure:

Then operate the host computer in the following steps:

① Click on the "Update" option on the upper computer, and an upgrade window will pop up. Select "Net mode",
② Then Click on the "Start Upgrade" option in the upper computer upgrade window, and the tester itself will jump to the upgrade mode to display the upgrade interface. At the same time, wait for the upper computer to recognize that the lower computer is in upgrade mode.
③ After identifying the changes, the firmware will automatically update when it is correct.

Note: If the remote online upgrade fails or cannot be successfully upgraded for some reason, you can contact our company or obtain the local firmware, and then upgrade the firmware in local mode, select "Open file" to select the upgraded firmware, and finally click "Start Upgrade" to perform the local upgrade.

3.3 Firmware update precautions

If there is an update failure that prevents normal use, you can first press and hold the tester ▶ After pressing the key, then connect to the Micro USB HID port and power it on again. After the upper computer recognizes it again, try the above operation again to upgrade the firmware.

4, FAQ

4.1 Solve different problems first

If the user UT70 has a problem, he can give priority to updating the upper computer and updating the firmware of the tester to see if the problem disappears. If these problems persist, you can ask us after sales for help and support.

4.2 CC cable E-Marker cable cannot be detected

1) During the test, one end of the C line is inserted into the mother base of the C port of the tester, and the other end can not connect anything to the test. If you connect the charging head at the other end, the test will conflict and may lead to no detection;
2) Not all CC lines on the market have E-Marker chips, some do not, CC lines without core, overcurrent ability is weak. If you suspect that our inspection is inaccurate, you can set up a third-party tool to check and compare if conditions permit, or you can send the line or send the line purchase link to us to buy back for comparison and confirmation.

4.3 The Dash cable cannot be detected

1) Dash cable is currently exclusive to OPPO A-port cable, and it is possible that not all OPPO data cables on the market are wired, and if there is no OPPO data cable corresponding to the wire core, it can not be detected. If you suspect that our inspection is inaccurate, you can use a third-party tool to check and compare if possible, or you can send the line or send the line purchase link to us to buy back for comparison and confirmation.

2) When testing, the data cable is connected to the tester's A port base, and the other end can not connect anything to the test. If you access the charging head at the other end, the test may conflict, resulting in no detection.

4.4 Third-party devices (such as mobile phones) access usage protocol monitoring/triggering fast charge precautions

Need to be in the basic interface, and need to follow the following sequence of steps to use:

1) To first access the HID online power to maintain power supply (some mobile phones and

other electrical equipment and the fast charge head in the negotiation of the fast charge agreement may restart the fast charge head without voltage output, so it is necessary to access the HID power supply to keep the tester working), the device to open the monitoring, re-power to choose to maintain monitoring, after the monitoring initialization is completed, and then access the line and equipment。

2) If you access two C lines to monitor, you can't blind plug, C1 to C1 surface, not C1C2, because there is only one line in the C line for communication, C_IN is C1 communication, C_OUT side should also be connected to C1 communication. If communication cannot be established (trigger fast charge), first change any C-line plug on the tester to another side and try again.

3) Fast charging protocol monitoring is likely to be inaccurate or inaccurate, because there are many types of fast charging protocols and they are similar, we can only constantly increase the accuracy of fast charging protocol monitoring according to actual tests.

4.5 The fast charge protocol detects and triggers exceptions

1) If some fast charge heads keep restarting when detecting and triggering, and cannot complete the detection or triggering normally, you can connect the HID wire to keep the power supply to complete the triggering/detection.

2) Because there are a lot of fast charge heads on the market, we may not test all of them, if it is suspected that the tester did not detect this head has the protocol we determined to support in the baby description, if there are conditions, you can find a third-party tool to detect and compare, or you can send the head or send the purchase link to buy the head for us to compare and confirm, if there are later we test.

4.6 Support description of the fast charge protocol

1) We only support a certain version of the fast charge protocol of some manufacturers, such as OPPO in addition to VOOC, there are SVOOC, we currently only support VOOC detection, trigger retention later support, the maximum voltage and fast charge of this fast charge protocol will be less than SVOOC.

2) In the later stage, what we can support after research, we will also try to increase some private fast charge agreements of different manufacturers as much as possible.

4.7 D+/D- Displays the situation description

1) Common computer USB A port or some charging head, generally there is no fast charge function, and the BC1.2 protocol is generally used by default for external power supply, and

the D+/D- voltage will be about 0V at the beginning of access, this is not the tester is broken or not allowed. If these ports use other protocols for external output, the D+/D- voltage will change.

4.8 HID port on the button side

1) The HID on the key side has no measurement function, and is only used to connect the computer and identify the upper computer. If only this port is connected, the voltage and current will be infinitely close to 0, and D+/D- will be similarly close to 0.

5, Services

1. After – sales Service:

UT70 has a one-year free warranty service in the case of non-artificial damage. Please contact the dealer for warranty service.

2. Website

Download : www.alientek.com/download
Company : www.alientek.com
Aliexpress : www.aliexpress.com/store/1102909571

3. Contact US

E-mail : fae-smt@alientek.com