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› JUWEIAT A3 USB Power Meter Tester User Manual

JUWEIAT ATORCH-A3

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Model: ATORCH-A3

1. INTRODUCTION

The JUWEIAT A3 USB Power Meter Tester is a multi-functional instrument designed to monitor various electrical parameters during USB charging. It features a 1.44-inch TFT high-definition color screen and supports multiple port types including USB-A, Type-C, and Micro USB. This device allows users to observe voltage, current, power, energy, capacity, temperature, and internal resistance, providing essential data for assessing charger, cable, and device performance.

2. PRODUCT OVERVIEW

The A3 USB Tester is compact and features a durable design with 18K gold-plated technology and four metal pure copper knurled columns. It is equipped with a 1.44-inch TFT color LCD display for clear data visualization.



Figure 2.1: Front view of the JUWEIAT A3 USB Power Meter Tester, showing its compact design and color display.

Key Components and Ports:



Figure 2.2: Labeled diagram indicating the Type-C Input, Micro USB Input, USB Input, Type-C Output, USB Output, 1.44-inch TFT Color LCD Screen, and Function Buttons.

- **USB Input (3.6-32V):** Standard USB-A male connector for power input.
- **Type-C Input:** USB-C port for power input.
- **Micro USB Input:** Micro USB port for power input.
- **USB Output (0-7.000A):** Standard USB-A female port for connecting devices.
- **Type-C Output:** USB-C port for connecting devices.
- **1.44 Inch TFT Color LCD Screen:** Displays all measurement data and settings.
- **Function Buttons:** Used for navigation and setting adjustments (labeled as HELP and NEXT).

3. SETUP AND CONNECTION

The A3 USB Power Meter Tester is designed for inline measurement. Connect it between your power source (charger, power bank, computer USB port) and the device you wish to test.

1. **Connect Power Source:** Plug the input side of the A3 tester (USB-A male, Type-C input, or Micro USB input) into your power source.
2. **Connect Device:** Plug your device's charging cable into the output side of the A3 tester (USB-A female

or Type-C output).

3. **Power On:** The tester will automatically power on and display real-time data once a power source and a load (device) are connected.



Figure 3.1: The USB Power Meter Tester connected in-line, monitoring the charging of a smartphone from a wall charger.

Note on Type-C PD Connection: When using the Type-C input, the tester may not light up or function if only the Type-C input is connected without a device (load) on the Type-C output. A device that supports the Power Delivery (PD) protocol must be connected to the Type-C output for the tester to activate and provide a voltage output. This is a normal operating principle, not a malfunction.

4. OPERATING INSTRUCTIONS

4.1 Display Interfaces

The A3 tester features multiple display interfaces to show various data points. Use the 'NEXT' button to cycle through these screens.

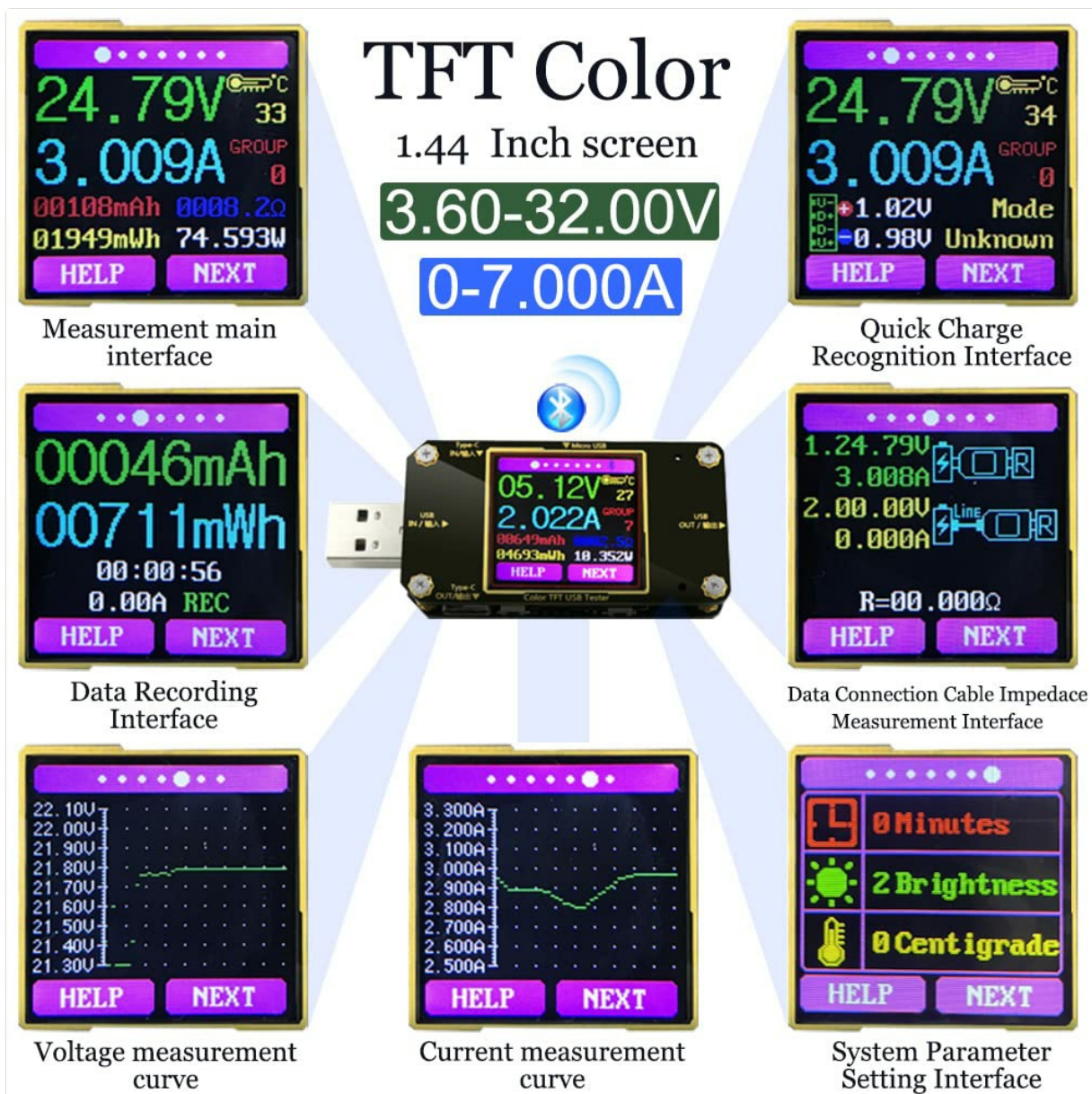


Figure 4.1: Examples of different display interfaces, including main measurement, quick charge recognition, data recording, impedance measurement, voltage curve, current curve, and system settings.

- **Main Measurement Interface:** Displays real-time voltage (V), current (A), power (W), cumulative capacity (mAh), and energy (Wh).
- **Quick Charge Recognition Interface:** Identifies quick charge protocols such as QC2.0 and QC3.0. Other protocols may show as 'Unknown'.
- **Data Recording Interface:** Shows cumulative capacity, energy, and elapsed time.
- **Data Connection Cable Impedance Measurement Interface:** Displays calculated impedance.
- **Voltage Measurement Curve:** Graphical representation of voltage over time.
- **Current Measurement Curve:** Graphical representation of current over time.
- **System Parameter Setting Interface:** Allows adjustment of screen brightness and auto screen-off time.

4.2 Navigation and Settings

- **'NEXT' Button:** Press briefly to cycle through the different display interfaces.
- **'HELP' Button:** Press briefly to access help information or specific function options within an interface.
- **Screen Orientation:** The display can automatically adjust its orientation based on how the device is

held or connected.



Figure 4.2: The tester's screen automatically rotates to maintain readability regardless of its physical orientation.

- **Screen Brightness Setting:** Navigate to the System Parameter Setting Interface. Use the buttons to adjust brightness from level 0-5.
- **Auto Screen Off Time:** In the System Parameter Setting Interface, set the auto screen-off time from 1-9 minutes.

5. TECHNICAL SPECIFICATIONS

Parameter	Value
Voltage Measuring Range	3.6V ~ 32.00V
Voltage Resolution Precision	0.01V
Current Measuring Range	0.000A ~ 7.000A
Current Resolution Precision	0.001A

Parameter	Value
Power Cumulative Range	0 ~ 99999 WH
Power Resolution Precision	±(0.8%+3 digit)
Capacity Range	0 ~ 99999 mAH
Capacity Resolution Precision	±(0.2%+1 digit)
Temperature Range	-10°C 100°C / 0°F 200°F
Temperature Resolution Precision	±3°C / ±6°F
D+ Voltage	0.000V ~ 2.99V
D- Voltage	0.000V ~ 2.99V
Load Impedance	0 ~ 999 ohm
Load Impedance Resolution Precision	1 ohm
Power Metering Range	0 ~ 155W
Timing Maximum Time	99 H 59 M 59 S
Timing Resolution Precision	1 S
Screen Brightness Setting	0-5 level
Auto Screen Off Time	1-9 minutes
Display Screen	1.44 Inch color LCD display
Quick Charge Recognition Mode	QC2.0, QC3.0
Refresh Rate	2Hz
Time to Refresh	> 500 ms/time
Measurement Rate	0.5 times/s
Product Size	74.5 x 32.3 x 10.0 mm
Power Flow (Self-consumption)	< 0.003 A (< 3mA)
Working Temperature	-10°C 100°C / 0°F 200°F
Working Humidity	10 ~ 80 (non-condensing)
Working Pressure	80 ~ 106 kpa

6. MAINTENANCE

- **Cleaning:** Use a soft, dry cloth to clean the device. Avoid using liquids or abrasive cleaners.
- **Storage:** Store the tester in a cool, dry place away from direct sunlight and extreme temperatures.

- **Handling:** Handle the device with care to prevent physical damage to the screen or ports.

7. TROUBLESHOOTING

Tester does not power on or display data:

Ensure both a power source and a load (device) are properly connected to the tester. For Type-C input, a PD-compatible device must be connected to the Type-C output to activate the tester.

Inconsistent readings or no charging:

Check all cable connections. Ensure cables are fully inserted and not damaged. Some USB-C cables may exhibit sensitivity to orientation; try flipping the USB-C connectors at both the input and output ends of the tester if issues persist.

Quick Charge protocol shows 'Unknown':

The tester specifically recognizes QC2.0 and QC3.0 protocols. Other fast charging protocols may not be explicitly identified and will display as 'Unknown'. This does not necessarily indicate a malfunction.

Screen is too dim or too bright:

Navigate to the System Parameter Setting Interface using the 'NEXT' button and adjust the screen brightness level (0-5) as needed.

8. SUPPORT

For further assistance or inquiries regarding your JUWEIAT A3 USB Power Meter Tester, please refer to the seller's support channels or contact the manufacturer directly. Keep your purchase receipt for any warranty claims.