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YEREADW UT003

YEREADW USB C Tester Power Meter User Manual

Model: UT003

1. INTRODUCTION

Thank you for choosing the YEREADW USB C Tester Power Meter. This 2-in-1 digital multimeter is designed to accurately measure voltage, current, and other critical parameters for various USB and Type-C devices. It is an essential tool for monitoring charging performance, assessing power bank capacity, and ensuring the safety of your electronic devices. Please read this manual thoroughly before use to ensure proper operation and to maximize the benefits of your new device.

2. PRODUCT OVERVIEW

The YEREADW USB C Tester (Model UT003) is a versatile diagnostic tool featuring a vibrant IPS color display and multiple input/output ports. It supports a wide range of fast-charging protocols and offers comprehensive safety protections.



Figure 2.1: YEReadW USB C Tester Power Meter (Model UT003)

This image shows the main unit of the YEReadW USB C Tester, highlighting its USB-A input, Micro USB input, Type-C input, USB-A output, and Type-C output ports. The clear IPS display shows real-time voltage and current readings.

2.1. What's in the Box

- USB Tester
- Micro USB Adapter
- User Manual
- Storage Case

2.2. Product Dimensions and Port Identification



Figure 2.2: Product Dimensions

This image illustrates the physical dimensions of the USB C Tester, showing its length, width, and thickness in both millimeters and inches for precise understanding of its size.

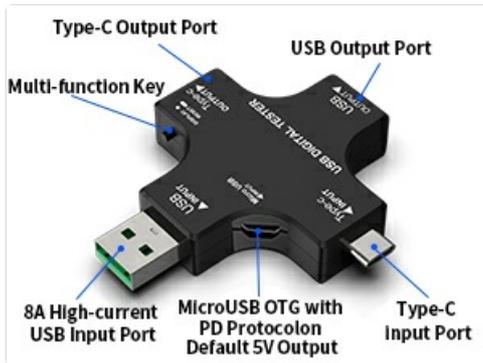


Figure 2.3: Port Identification

This image labels the various ports and buttons on the USB C Tester, including the 8A High-current USB Input Port, MicroUSB OTG with PD Protocol Default 5V Output, Type-C Input Port, Type-C Output Port, USB Output Port, and the Multi-function Key.

3. FEATURES

- **Superior Charging Performance Monitoring:** Accurately measures voltage (3.6V-32V) and current (0-8.0A) for USB and Type-C devices.
- **Broad Compatibility:** Supports PD3.0/2.0, QC3.0/2.0, and BC1.2 fast-charging protocols. Compatible with a wide range of devices including iPhones, MacBooks, Dell XPS, Chromebooks, and Surface Pro.
- **Comprehensive Safety Protections:** Features over-voltage, over-current, under-voltage, and low energy protection, automatically cutting off power to prevent device damage.
- **IPS Color Display:** Vivid, high-resolution display with eight color-screen interfaces for easy monitoring of voltage, current, capacity, power, load impedance, and more.
- **Precise Power Bank Capacity Testing:** Allows accurate testing of power bank capacity through direct load testing or calculation.
- **Data Retention:** Saves data during sudden power outages.
- **Multi-functional 2-in-1 Design:** Combines USB-A and Type-C testing capabilities.
- **Built-in High Precision Chip:** Ensures precise measurement of electricity data.
- **Premium OTG Adapter:** Supports reading data from keyboard, mouse, and gaming controllers.

4. SPECIFICATIONS

Parameter	Value
Model Number	UT003
Voltage Measurement Range	3.6V - 32V
Current Measurement Range	0A - 8.0A
Supported Protocols	PD3.0/2.0, QC3.0/2.0, BC1.2, Apple 2.4A, Huawei FCP/SCP, MTK-PE
Display Type	IPS Color Display
Safety Protections	Over-voltage, Over-current, Under-voltage, Low Energy
Dimensions	3.27 x 2.91 x 0.75 inches (approx. 83 x 74 x 19 mm)
Weight	1.76 ounces (approx. 50 grams)
Power Source	USB, Type-C
Color	Black
Manufacturer	YEREADW

5. SETUP

The YEREADW USB C Tester is designed for plug-and-play operation. No complex setup or software installation is required.

- Identify Ports:** Familiarize yourself with the USB-A input, Type-C input, Micro USB input, USB-A output, and Type-C output ports on the tester.
- Connect Power Source:** Plug the USB C Tester into a power source (e.g., wall charger, power bank, computer USB port) using either the USB-A input or Type-C input. The display will illuminate.
- Connect Device:** Connect the device you wish to test (e.g., smartphone, tablet, laptop) to the appropriate output port (USB-A or Type-C) on the tester.



Figure 5.1: Connecting the USB C Tester

This image demonstrates the correct way to connect the USB C Tester. On the left, the tester is shown without a connected device, resulting in no display. On the right, the tester is connected to a power source and a smartphone, showing the display illuminated and active measurements.

6. OPERATING INSTRUCTIONS

6.1. Display Interface Navigation

The tester features an IPS color display with multiple interfaces to show various parameters. Use the multi-function key to navigate through these screens.

- **Short Press:** Switch between different display interfaces (e.g., Main Interface, Large Display Interface 1, Large Display Interface 2, USB Four-wire Detection, Ripple Value of a Charger, Voltage/Current Graph View, System Settings).
- **Long Press:** Enter system settings or reset specific data (e.g., capacity, energy).
- **Double Click:** Rotate the screen display.
- **Triple Click:** Reduce the displayed value (e.g., for calibration).
- **Keep Pressing:** Add or continue to add values.

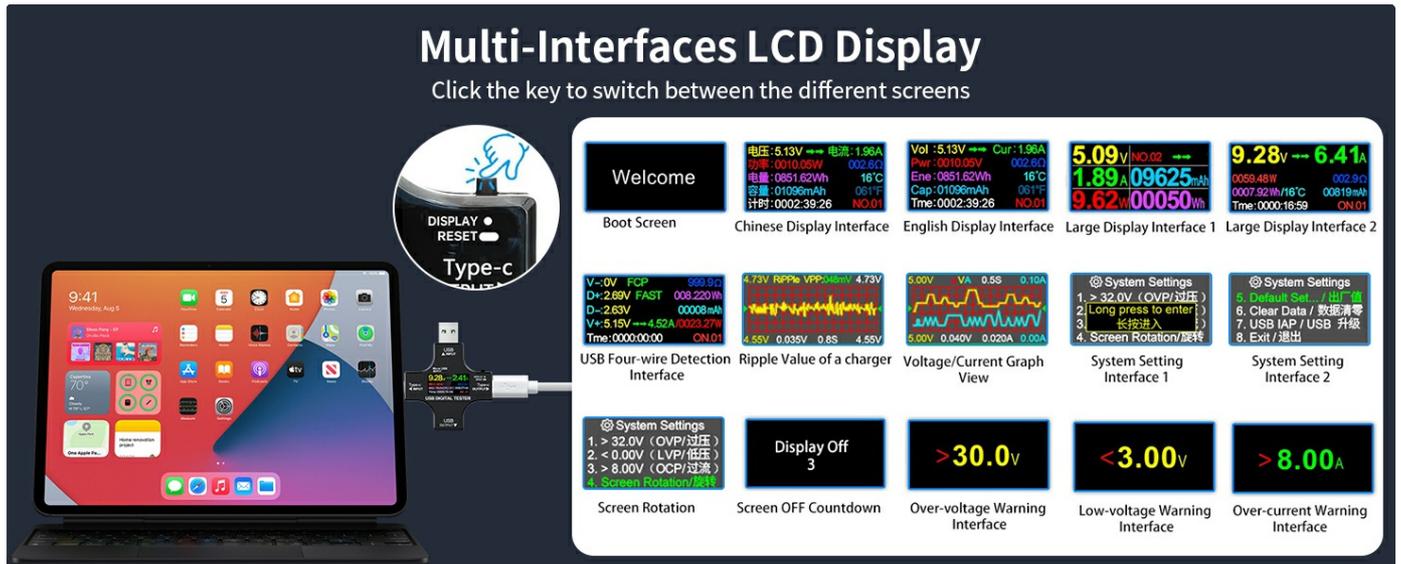


Figure 6.1: Multi-Interfaces LCD Display

This image displays the various screens available on the USB C Tester's IPS display, including detailed views of voltage, current, power, capacity, temperature, and graphical representations of ripple and voltage/current over time. It also shows the system settings menus.

6.2. Automatic Protocol Identification

The tester automatically identifies multiple fast-charging protocols, ensuring accurate readings for various devices.



Figure 6.2: Automatic Protocol Identification

This image highlights the tester's ability to automatically detect and support various fast charging protocols such as QC3.0, QC2.0, Qualcomm Fast Charge, Android BC1.2, Apple 2.4A, Huawei FCP/SCP, and MTK-PE, ensuring compatibility with a wide range of modern

7. TESTING PROCEDURES

7.1. Testing Power Bank Capacity by Discharging

To accurately determine the capacity of a power bank:

1. Ensure the power bank is fully charged before starting the test.
2. Plug the USB tester into the power bank's output port.
3. Long press the button on the tester to reset the capacity (Wh) and electric energy (mAh) readings.
4. Connect a rated load (e.g., a fixed load or an adjustable constant current load) to the tester's output port.
5. Allow the power bank to discharge completely until its power is drained.
6. Read the Wh and mAh values displayed on the tester after the power bank has fully discharged.
7. **Formula for Power Bank Battery Capacity (mAh):** $Wh / 3.75V \times 1000 \times 90\%$ (Note: 3.75V is the default battery voltage).

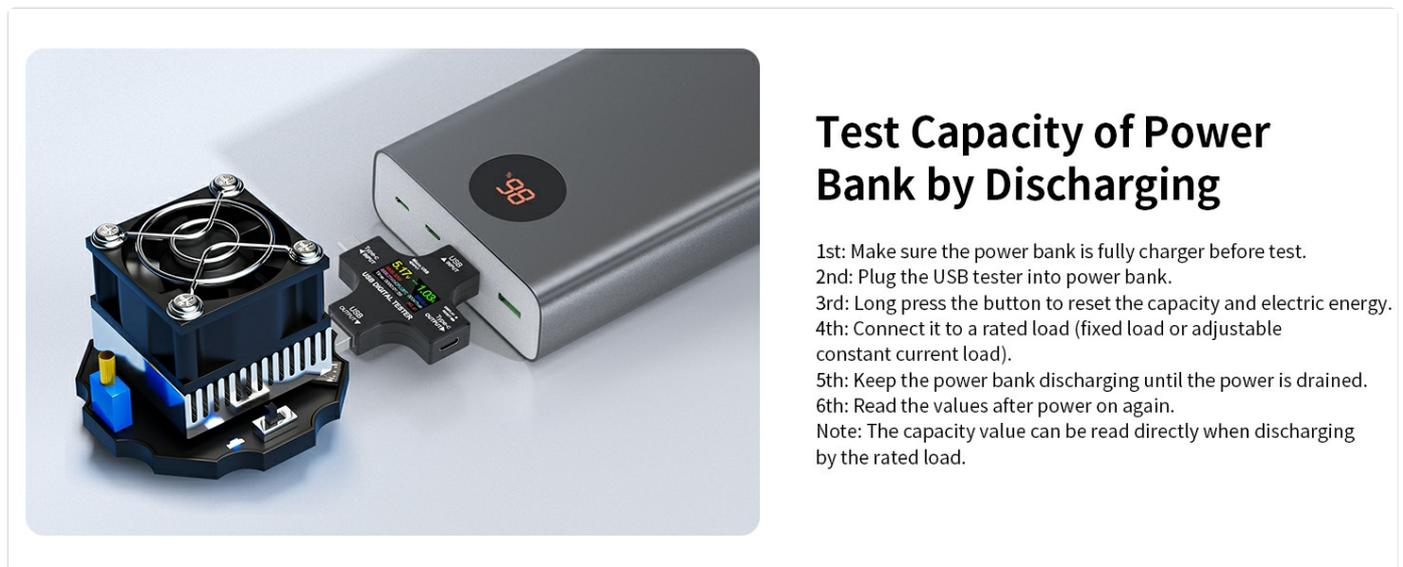


Figure 7.1: Testing Power Bank Capacity by Discharging

This image demonstrates the setup for testing a power bank's capacity by discharging it through the USB C Tester connected to an external load. The tester displays the accumulated energy (Wh) and capacity (mAh) during the discharge process.

7.2. Testing Power Bank Capacity by Charging

To determine the capacity of a power bank by charging:

1. Ensure the power bank is fully discharged before testing.
2. Plug the USB tester into the power bank's input port.
3. Long press the button to reset the capacity (Wh) and energy readings.
4. Connect the tester to a USB charger.
5. Keep the power bank charging until it reaches 100% capacity.
6. Read the data after a full charge.
7. **Formula for Power Bank Battery Capacity (mAh):** $Wh / 3.75V \times 1000 \times 90\%$ (Note: 3.75V is the default battery voltage).



Testing Power Bank Capacity by Charging

- 1st: Make sure the power bank is fully discharged before testing.
 - 2nd: Plug the USB tester into power bank.
 - 3rd: Long press the button to reset the capacity and energy.
 - 4th: Connect it to USB charger.
 - 5th: Keep the power bank charging until the power to 100%.
 - 6th: Reading data after a full charge.
- Formula: Power bank battery capacity (mAh) = Wh / 3.75V x 1000 x 90%
 (Note: 3.75V is default battery voltage)

Figure 7.2: Testing Power Bank Capacity by Charging

This image illustrates the process of testing a power bank's capacity by charging it through the USB C Tester. The tester monitors the incoming energy (Wh) and capacity (mAh) as the power bank charges.

7.3. Testing Charger Performance (Ripple Graph View)

The tester can help distinguish the quality of a charger by analyzing its ripple value.

- Connect the charger to the USB C Tester's input.
- Connect a suitable load to the tester's output.
- Navigate to the "Ripple Value of a Charger" interface on the display.
- Observe the ripple graph and compare the VPP (peak-to-peak voltage) value to the guidelines below:

Ripple (VPP)	Charger Performance
< 30 mV	Excellent
30 - 120 mV	Normal
120 - 200 mV	Slightly Poor
> 200 mV	Poor



Quickly Distinguish the Quality of a Charger via Ripple Graph View

- Ripple < 30 mV: Excellent
- 30~120 mV: Normal
- 120~200 mV: Slightly Poor
- Ripple > 200 mV: Poor

Figure 7.3: Charger Ripple Graph View

This image shows the USB C Tester connected to a charger and a load, displaying the ripple graph. The graph helps in evaluating the stability and quality of the charger's output based on the ripple voltage (VPP) readings.

7.4. Testing USB Cable Quality

The tester can help evaluate the quality of USB cables by measuring voltage drop under load.

Under constant power supply and sustained load, a larger voltage and lower voltage drop detected by the USB Tester means that the better quality of USB cables will be.



Figure 7.4: Testing USB Cable Quality

This image illustrates how to test the quality of different USB cables (Micro-USB, USB-A to USB-C, USB-C to USB-C) using the tester and a load. The display shows voltage and current readings, allowing users to compare cable performance based on voltage drop.

8. SAFETY PRECAUTIONS

- Do not exceed the maximum voltage (32V) or current (8.0A) ratings of the tester.
- Avoid exposing the device to extreme temperatures, humidity, or direct sunlight.
- Do not disassemble or modify the tester. Unauthorized modifications can lead to malfunction and void the warranty.
- Keep the device away from water and other liquids.
- Use the tester in a well-ventilated area.
- If the device shows signs of damage or malfunction, discontinue use immediately.
- The tester is equipped with automatic power cut-off for over-voltage, over-current, under-voltage, and low energy conditions to protect connected devices.

9. TROUBLESHOOTING

Problem	Possible Cause	Solution
Display does not light up.	No power input; incorrect connection; device is DOA.	Ensure the tester is properly connected to a working power source. Check if the connected device is drawing power. If still no display, contact support.
Inaccurate readings.	Poor cable connection; faulty cable; device malfunction.	Ensure all connections are secure. Try a different cable or power source. If the issue persists, the tester may require service.

Tester automatically shuts off.	Over-voltage, over-current, under-voltage, or low energy protection triggered.	Check the voltage and current of the connected power source and device. Ensure they are within the tester's specified limits. Remove and reconnect the device.
Cannot switch display interfaces.	Multi-function key not pressed correctly.	Ensure you are performing a short press on the multi-function key. Refer to section 6.1 for detailed button operations.

10. WARRANTY AND SUPPORT

YEREADW is committed to providing high-quality products and excellent customer service.

- **Warranty:** This product comes with an 18-month warranty from the date of purchase.
- **Returns:** You may return the product within 30 days of purchase without reason.
- **Customer Support:** For any questions, technical assistance, or warranty claims, please contact our customer support team. We aim to provide support within 24 hours.

Manufacturer: Shenzhen Yier Technology Co., Ltd.

Email: ServiceYEREADW@outlook.com

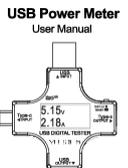
Web: www.yereadw.com

Tel: +86-18681583491

Manufacturer's Address: Room 604, Caiwuwei Development Building, Guiyuan Street, Luohu District, Shenzhen, China, 518022

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Related Documents - UT003

 <p>USB Power Meter User Manual</p>	<p>YOJOCK USB Power Meter User Manual</p> <p>User manual for the YOJOCK USB Power Meter, detailing product parameters, operating instructions, and testing procedures for charging speed, quality, and power bank capacity.</p>
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