diymore U-18

Diymore U-18 USB-C Tester User Manual

Multi-Function Voltage and Current Meter

1. Introduction

The Diymore U-18 USB-C Tester is a versatile 2-in-1 device designed for monitoring USB-C power delivery, voltage, current, and other charging parameters. It features a 1.77-inch TFT color LCD screen for clear data display and supports various fast charging protocols, including PD and QC2.0/3.0. This manual provides comprehensive instructions for its safe and effective use.

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Video 1: Overview of the Diymore U-18 USB-C Tester. This video demonstrates the physical appearance and basic functionality of the device, showcasing its compact design and display.

2. Product Overview

2.1 Key Features

- **High-Definition Display:** 1.77-inch TFT screen shows real-time voltage, current, power, and charging data.
- **Multi-Protocol Support:** Compatible with PD and QC2.0/3.0 charging protocols.
- **Comprehensive Measurements:** Monitors voltage (4-25V), current (up to 6.5A), power output, and charging protocols with ±0.1V/0.01A accuracy.
- **Customizable Interface:** Features 7 different display interfaces for various charging parameters and statistics.
- **Advanced Diagnostics:** Measures wire internal resistance using the pressure difference method to evaluate charging efficiency and cable quality.

2.2 Components and Interface

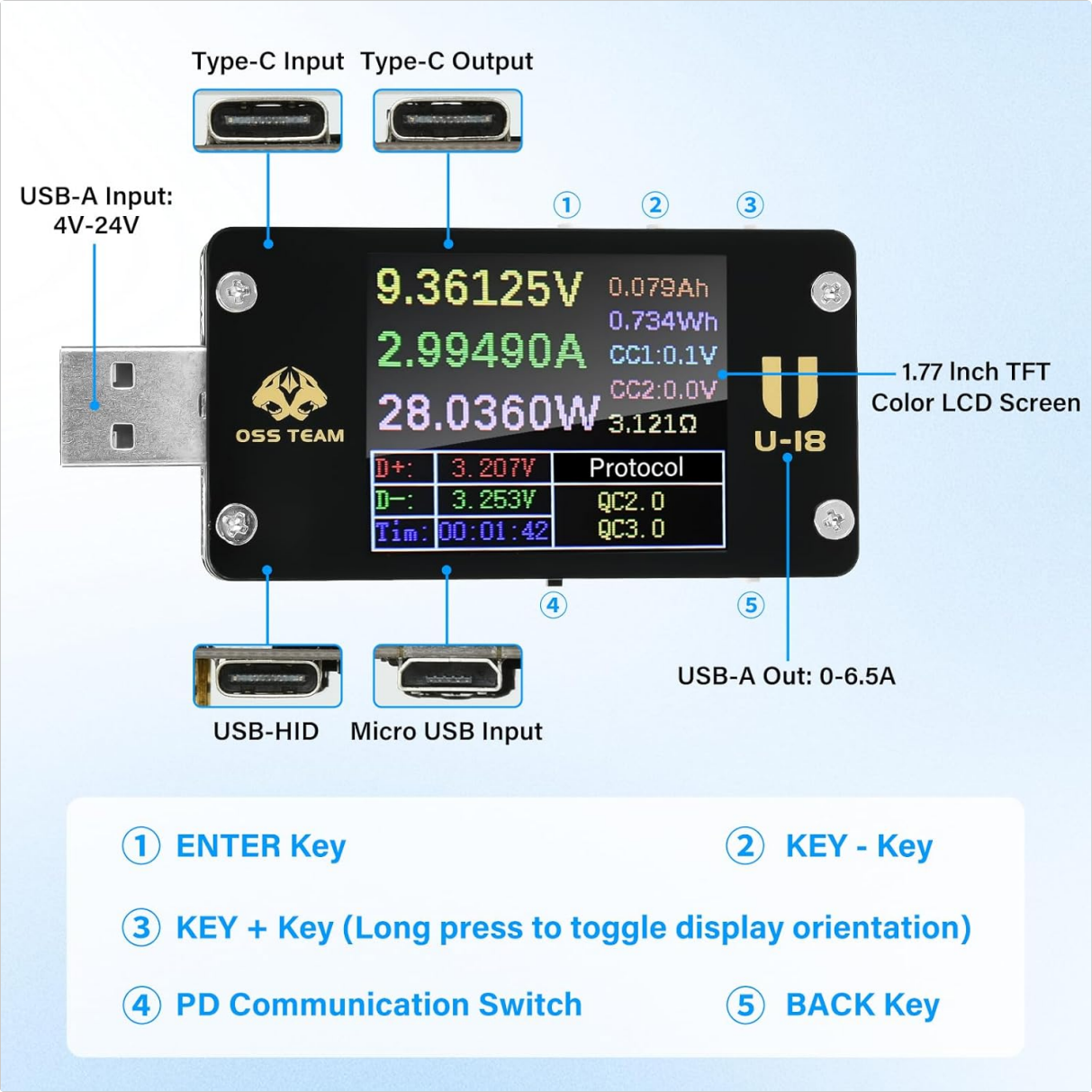

Figure 1: Diagram illustrating the various ports and control buttons on the Diymore U-18 USB-C Tester. This includes the Type-C Input, Type-C Output, USB-A Input, USB-A Output, USB-HID, Micro USB Input, and the control keys (ENTER, KEY-, KEY+, PD Communication Switch, BACK Key).

The U-18 tester features multiple input/output ports and control buttons:

1. **Type-C Input:** Connects to the power source (e.g., charger).
2. **Type-C Output:** Connects to the device being charged/tested.
3. **USB-A Input (4V-24V):** Connects to a USB-A power source.
4. **USB-A Output (0-6.5A):** Connects to a USB-A device being charged/tested.
5. **USB-HID:** For data communication with a computer (if supported by firmware).
6. **Micro USB Input:** For external power supply or firmware updates.
7. **1.77-inch TFT Color LCD Screen:** Displays all measurement data.
8. **(1) ENTER Key:** Confirms selections or enters menus.
9. **(2) KEY - Key:** Navigates down or decreases values.
10. **(3) KEY + Key:** Navigates up or increases values. *(Long press to toggle display orientation)*
11. **(4) PD Communication Switch:** Activates/deactivates PD communication.
12. **(5) BACK Key:** Returns to the previous screen or menu.

3. Setup and Basic Operation

3.1 Connecting the Tester

1. Identify the appropriate input port (USB-A or Type-C) on the tester based on your power source.
2. Connect the power source (e.g., wall charger, power bank) to the tester's input port.
3. Connect the device you wish to test (e.g., smartphone, tablet) to the tester's corresponding output port (USB-A or Type-C).
4. The tester's screen should illuminate and begin displaying real-time data.

3.2 Reading Basic Measurements

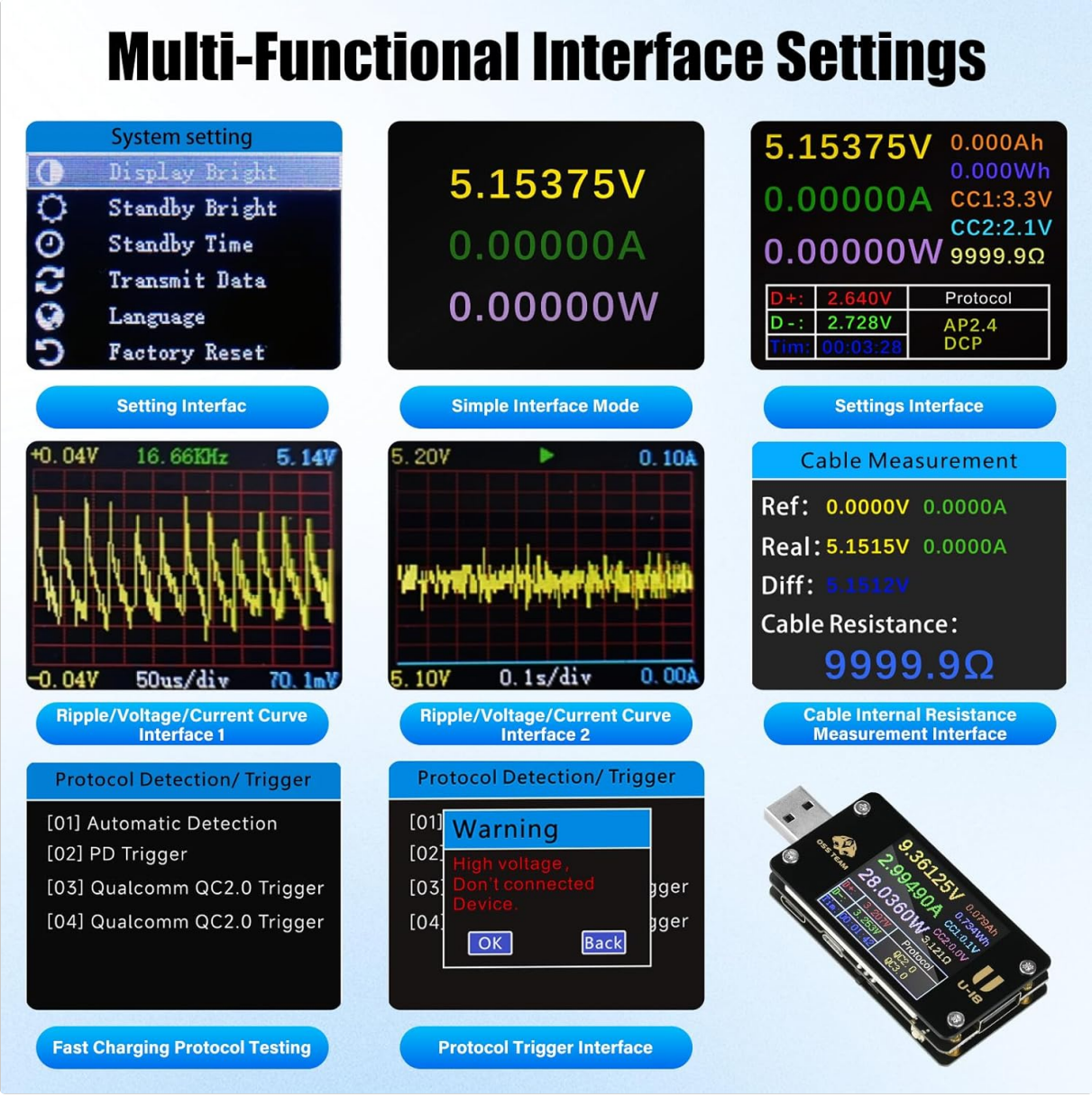

Figure 2: Example of the tester's display showing various measurement data, including voltage, current, power, energy statistics, capacity statistics, and fast charging protocol information.

Upon connection, the main display will show key parameters:

- **Voltage (V):** The electrical potential difference.
- **Current (A):** The flow rate of electric charge.
- **Power (W):** The rate at which electrical energy is transferred.
- **Capacity (Ah):** Accumulated charge over time.

- **Energy (Wh):** Accumulated energy over time.
- **D+/D- Voltage:** Data line voltages, useful for protocol detection.
- **Protocol:** Indicates detected fast charging protocols (e.g., QC2.0, QC3.0, PD).

4. Advanced Functions

4.1 Interface Navigation and Settings

Figure 3: Various display interfaces and settings menus available on the Diymore U-18 USB-C Tester, including system settings, simple interface mode, cable measurement, and protocol detection/trigger options.

Use the **ENTER**, **KEY -**, **KEY +**, and **BACK** keys to navigate through different display interfaces and settings menus. A long press on the **KEY +** button can rotate the display orientation.

- **System Settings:** Adjust display brightness, standby time, language, and perform a factory reset.
- **Simple Interface Mode:** Provides a streamlined view of essential data.
- **Ripple/Voltage/Current Curve Interface:** Displays real-time graphs of voltage and current fluctuations.

4.2 Cable Internal Resistance Measurement

Figure 4: The tester performing a wire internal resistance measurement, displaying reference voltage/current, real voltage/current, difference, and calculated cable resistance.

To measure cable internal resistance:

1. Navigate to the 'Cable Measurement' interface using the navigation keys.
2. Connect the power source directly to the tester's input, and then connect the cable to be tested to the tester's output.
3. The tester will employ the voltage drop method to measure the resistance, automatically calculating and displaying the cable resistance value. A lower resistance indicates a more efficient cable.

4.3 Fast Charging Protocol Detection and Trigger

The tester can automatically detect and trigger various fast charging protocols. Navigate to the 'Protocol Detection/Trigger' interface to:

- **Automatic Detection:** The tester will attempt to identify the fast charging protocol supported by the connected power source.
- **Manual Trigger:** You can manually select and trigger specific protocols like PD, QC2.0, or QC3.0 to test compatibility and performance.

5. Specifications

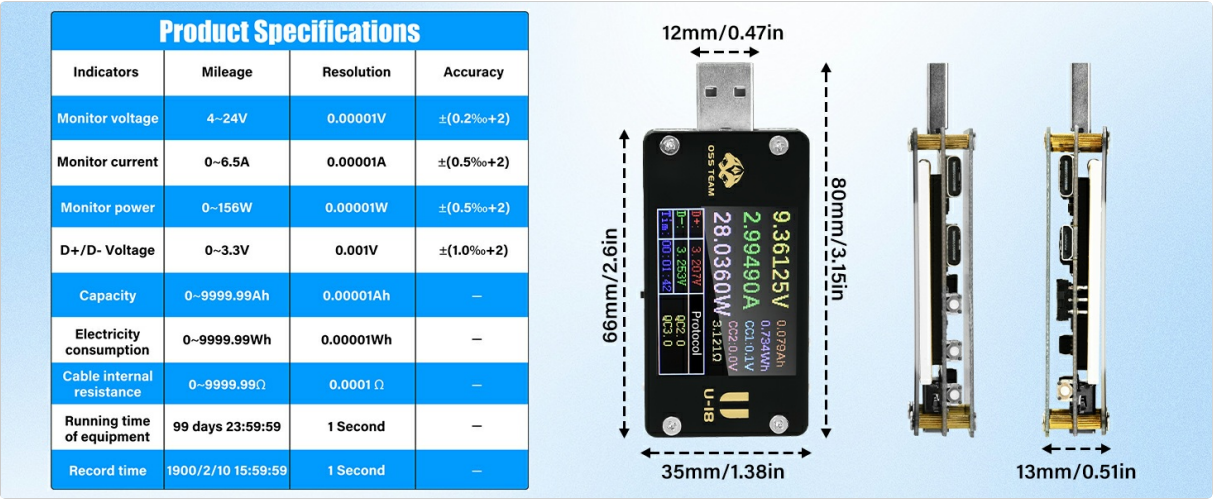

Figure 5: Detailed product specifications for the Diymore U-18 USB-C Tester, including measurement ranges, resolution, and accuracy for various parameters.

Indicator	Range	Resolution	Accuracy
Monitor Voltage	4-24V	0.00001V	±(0.2%+2)
Monitor Current	0-6.5A	0.00001A	±(0.5%+2)
Monitor Power	0-156W	0.00001W	±(0.5%+2)
D+/D- Voltage	0-3.3V	0.001V	±(1.0%+2)
Capacity	0-9999.99Ah	0.00001Ah	-
Electricity Consumption	0-9999.99Wh	0.00001Wh	-
Cable Internal Resistance	0-9999.9Ω	0.0001Ω	-
Running Time of Equipment	99 days 23:59:59	1 Second	-
Record Time	1900/2/10 15:59:59	1 Second	-

Dimensions: 3.94 x 2.56 x 0.59 inches (L x W x H)
Power Source: USB-C
Operating Temperature Range: 32°F to 140°F (0°C to 60°C)

6. Troubleshooting

6.1 Display Not Lighting Up with Type-C PD

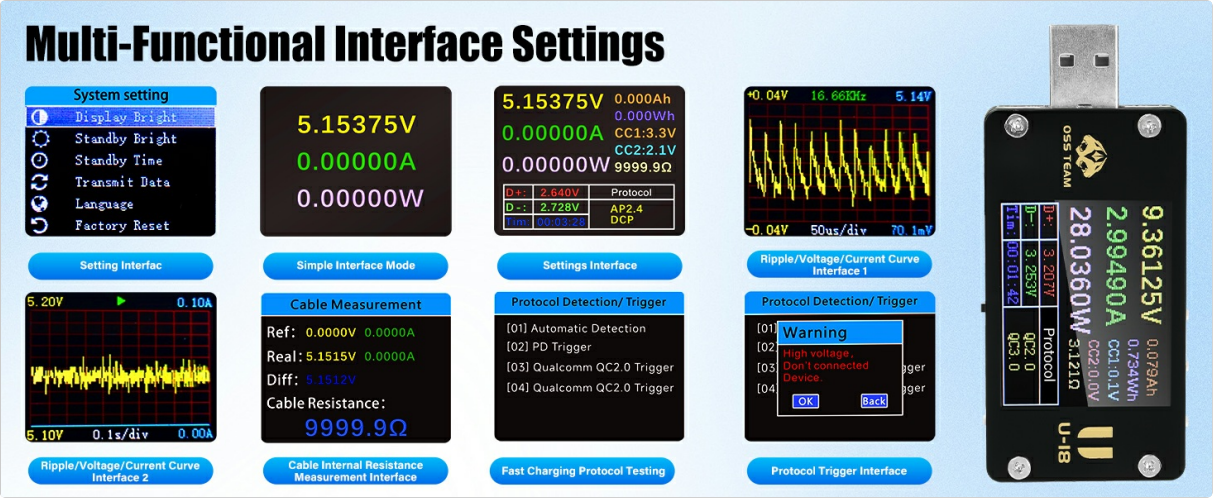

Figure 6: Visual guide for troubleshooting when the tester screen does not light up with a Type-C PD connection, showing solutions like flipping the connector or using the built-in Type-C interface.

If the tester screen does not light up when connected to a Type-C PD power source:

1. **Flip the Type-C connector:** Type-C connectors are reversible. Try unplugging and re-inserting the connector with the opposite orientation.
2. **Use the built-in Type-C interface:** Ensure you are using the dedicated Type-C input/output ports on the tester for PD connections.

Note: When the PD power supply is not connected to a fast charging device, it may not be powered by default.

6.2 Inaccurate Readings

- Ensure all connections are secure and free from debris.
- Test with a different cable or power source to rule out external factors.
- Perform a factory reset via the system settings menu if persistent issues occur.

7. Safety Information

- Do not expose the device to extreme temperatures, moisture, or direct sunlight.
- Avoid dropping or subjecting the device to strong impacts.
- Do not attempt to disassemble or modify the device, as this will void the warranty and may cause damage or injury.
- Keep out of reach of children.

8. Warranty and Support

Diymore products are designed for quality and reliability. This product comes with an**18-month warranty** from the date of purchase. We also offer a **30-day return policy** for any reason. For technical assistance or warranty claims, please contact Diymore customer support. Our team is available for **24-hour customer support** to address any questions or concerns you may have.
For further assistance, please visit the Diymore Store on Amazon.