AVHzY CT3

AVHzY CT3 USB Tester Digital Multimeter

Instruction Manual

1. Introduction

The AVHzY CT3 is a versatile digital multimeter designed for measuring the charging performance of USB devices. It accurately measures voltage, current, and power, and supports various fast charging protocols. This manual provides detailed instructions for its setup, operation, and maintenance.

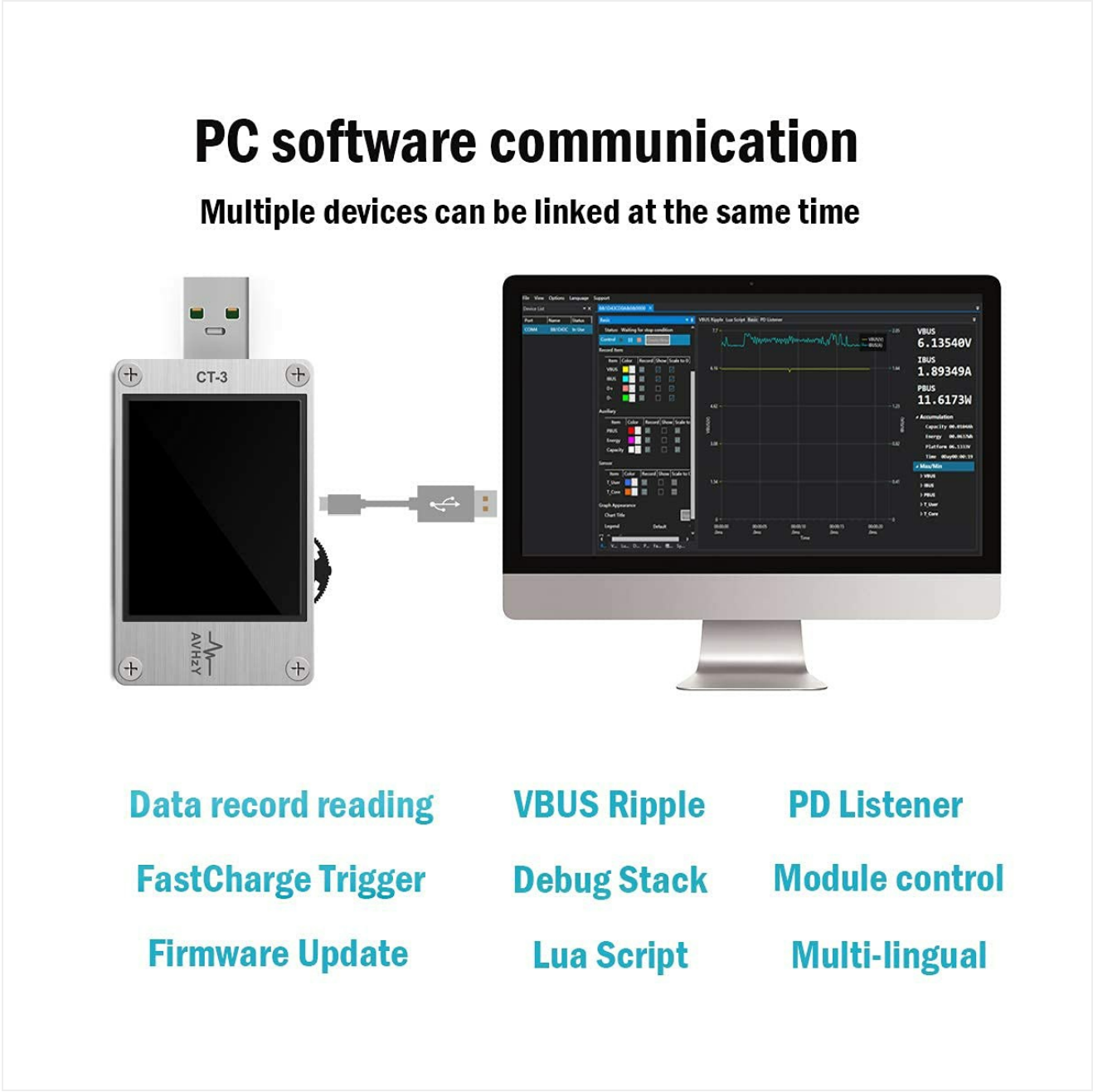


Figure 1: The AVHzY CT3 USB Tester Digital Multimeter.

2. Safety Information

Please read and understand the following safety precautions before using the device:

- **High Voltage Warning:** After high voltage is triggered, inserting any device which has a maximum operating voltage below that high voltage may cause damage to the device plugged in.
- **Monitoring Voltage:** When the power meter is monitoring the voltage and current on the two ports, DO NOT plug any device into the other ports. This will cause damage.
- **High Voltage Devices:** Exercise caution when connecting devices that require high voltage. The manufacturer is not responsible for any result of a faulty operation.
- Avoid exposing the device to extreme temperatures, direct sunlight, or moisture.
- Do not attempt to disassemble or modify the device. This will void the warranty and may cause damage or injury.

3. Package Contents

Verify that all items are present in the package:

- 1x AVHzY CT3 USB Tester Digital Multimeter
- 1x USB Cable (1 meter)
- 1x Quick Start Guide

4. Product Overview

The AVHzY CT3 features a compact design with a full-color TFT display and multiple connectivity options.

4.1 Physical Features

- **Display:** 1.44" 128*128 TFT full-color screen.
- **USB-A Ports:** 2 ports (input/output).
- **USB Type-C Ports:** 2 ports (input/output).
- **Micro USB Port:** For PC connection.
- **PD Trigger Switch:** For Power Delivery triggering.
- **Control Button:** A single multi-function button for navigation and selection.



Figure 2: Quick Start Guide illustrating device ports and controls.

5. Setup

To begin using your AVHzY CT3 USB Tester:

1. **Connect Power Source:** Plug the USB Tester into a USB power source (e.g., wall charger, power bank, computer USB port) using one of the input ports (USB-A or USB-C). The device will power on automatically.
2. **Connect Device Under Test:** Connect the device you wish to test (e.g., smartphone, tablet, another power bank) to one of the output ports of the USB Tester.

3. **Initial Display:** The main screen will display real-time voltage, current, and power readings.

6. Operating Instructions

6.1 Basic Navigation

The device is operated using a single multi-function button:

- **Press:** Short press to cycle through different display screens or menu options.
- **Press Twice:** Double press to enter a menu or confirm a selection.
- **Press and Hold:** Long press to return to the previous screen or exit a menu.



Figure 3: Examples of various display screens and measurement modes.

6.2 Fast Charge Trigger

The CT3 supports various fast charging protocols including QC2.0 (5V/9V/12V/20V), QC3.0, QC4.0 (PPS), PD2.0, PD3.0 with PPS, Apple (0.5A/1A/2.1A/2.4A), USB-DCP, Huawei FCP/SCP, and Samsung AFC. Use the PD trigger switch or navigate through the menu to activate specific fast charge protocols for testing compatibility and performance.

6.3 Offline Curve Recording

The device can record data offline with 4 sets of data, each containing up to 3750 data points. The recording speed is programmable, and you can set start/stop thresholds. Recorded curves can be uploaded to PC software for detailed analysis.

6.4 PC Software Communication

Connect the CT3 to a PC via the micro USB port to access advanced features and data analysis. The PC software allows for:

- **Data Logging:** Record voltage, current, D+, and D- with a sample rate up to 1000 samples per second (sps).
- **VBUS Ripple Analysis:** View VBUS ripple with a sample rate up to 3.2 Msps and 8kpt depth.
- **PD Listener:** Monitor Power Delivery communication protocols.
- **Fast Charge Trigger Control:** Trigger various fast charge protocols from the PC interface for easy diagnosis.
- **Firmware Update:** Update the device firmware to the latest version.
- **Lua Scripting:** Customize features and automate tasks using Lua scripts.

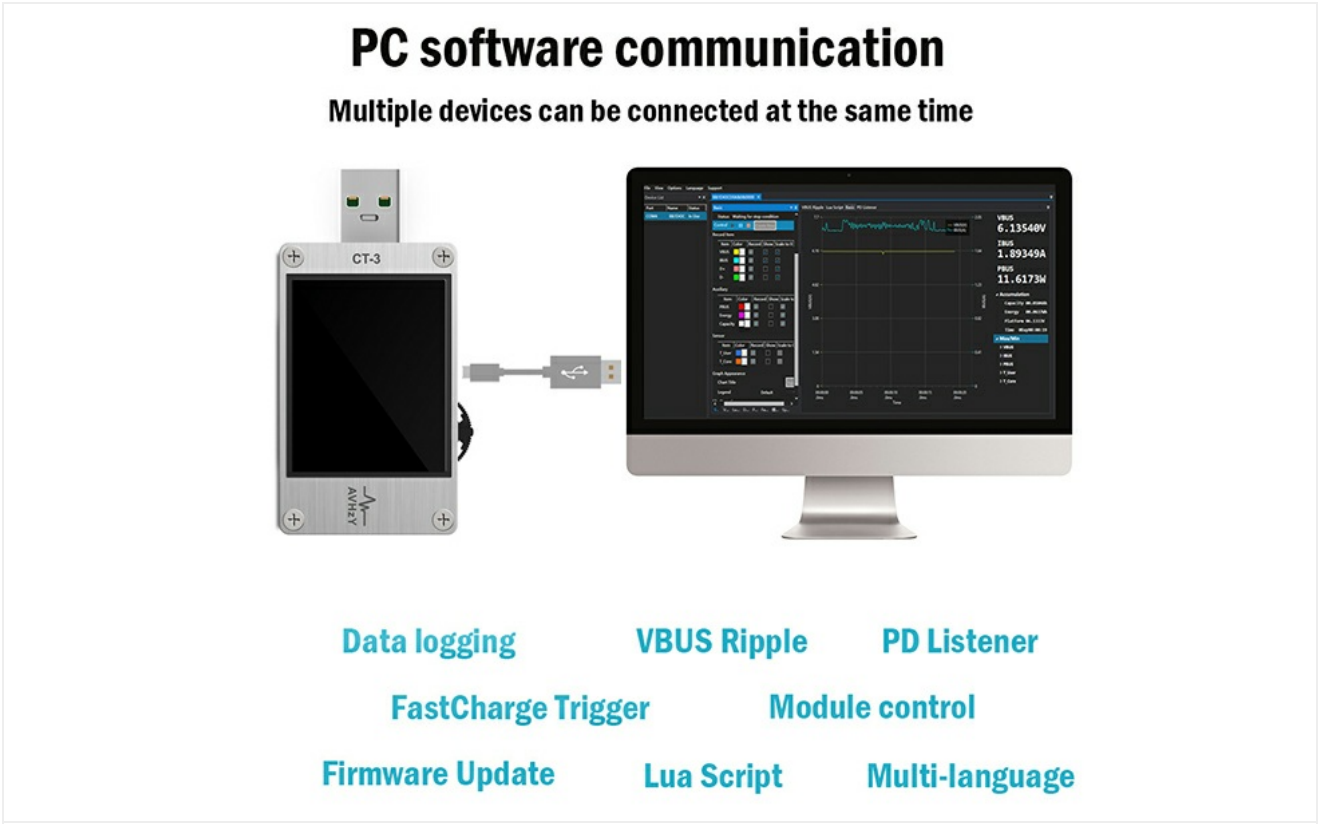


Figure 4: Overview of PC software communication capabilities.

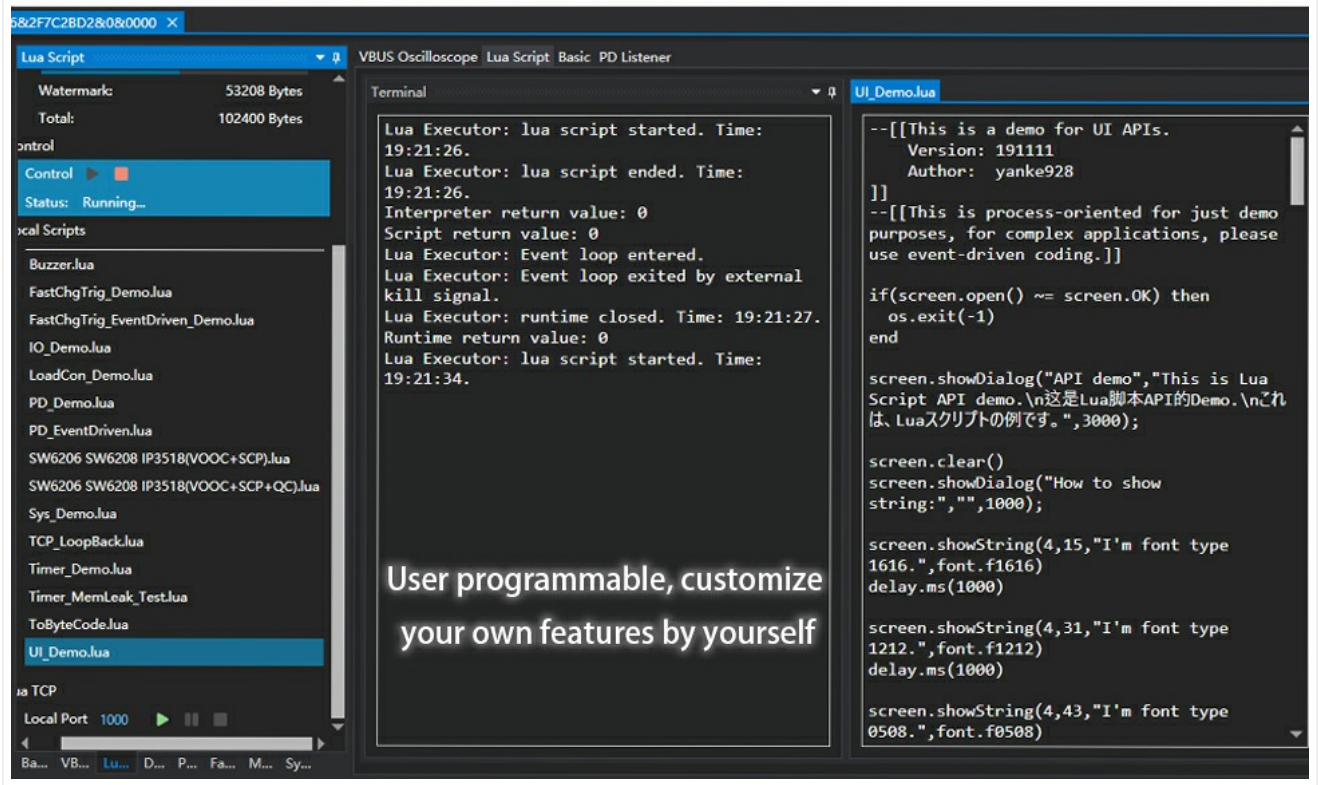


Figure 5: PC software displaying data logger with voltage and current graphs.

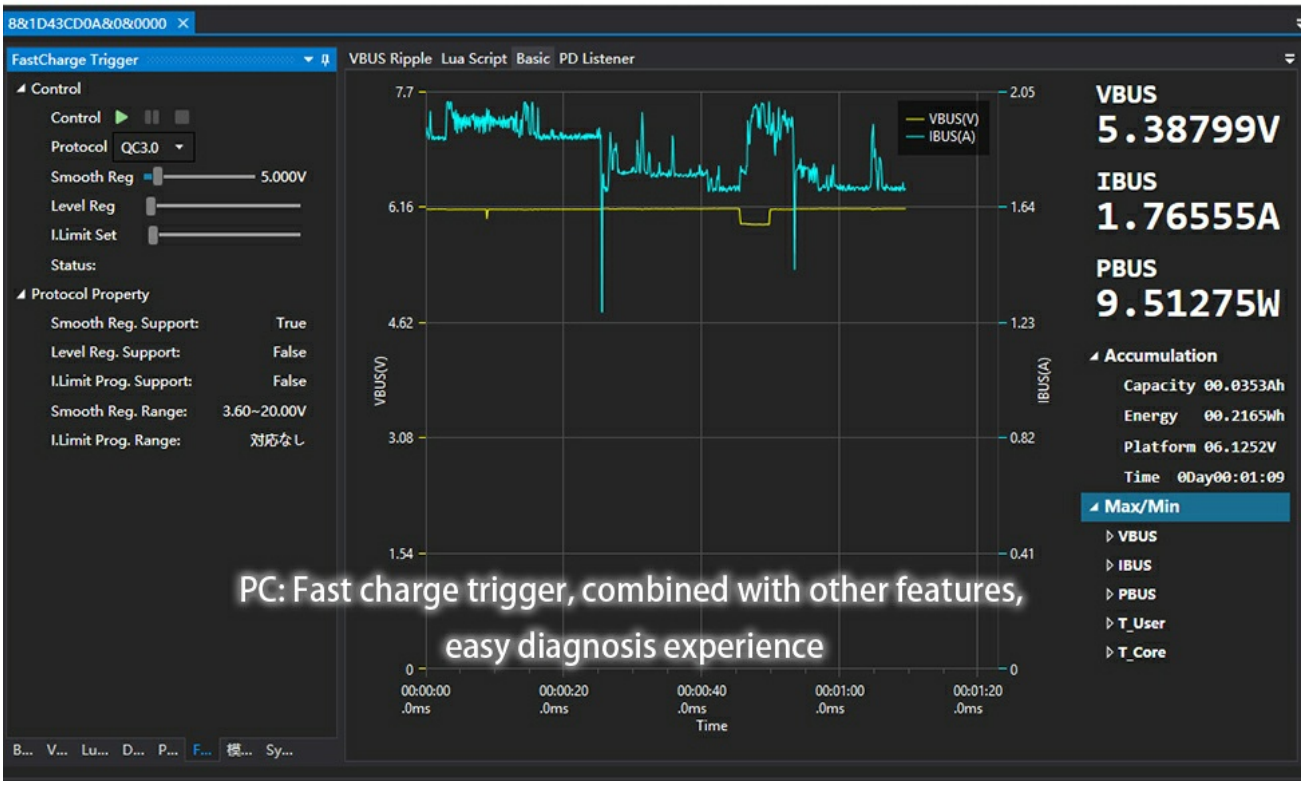


Figure 6: PC software interface for Fast Charge Trigger.

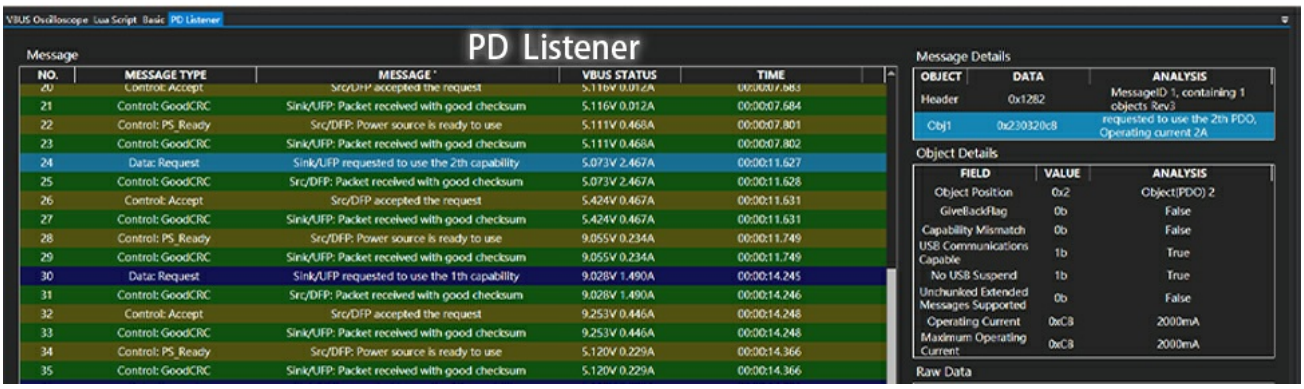


Figure 7: PC software displaying PD Listener for monitoring Power Delivery messages.



Figure 8: PC software interface for VBUS ripple analysis.

6.5 Firmware Update

Firmware updates can be performed via the PC software. Regularly check the official AVHzY website for the latest firmware versions to ensure optimal performance and access to new features.



Figure 9: PC software screen for firmware updates.

6.6 Lua Scripting

The device supports Lua scripting, allowing advanced users to create custom functions and automate specific testing scenarios. This feature provides flexibility for specialized applications.

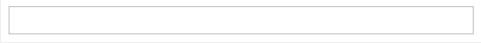


Figure 10: PC software interface for Lua scripting.

7. Specifications

Feature	Specification
Voltage Measurement Range	0.1-26V
Voltage Resolution	0.0001V
Current Measurement Range	0-6A

Feature	Specification
Current Resolution	0.0001A
Accuracy	0.1% +/- 2d
Standby Current	0.4mA (at DC 5V), 0mA with independent USB power
Display	1.44" 128*128 TFT Full-Color Screen
Connectivity	2x USB-A (Input/Output), 2x USB Type-C (Input/Output), 1x Micro USB (PC Connection)
Fast Charge Protocols	QC2.0, QC3.0, QC4.0 (PPS), PD2.0, PD3.0 (PPS), Apple 0.5A/1A/2.1A/2.4A, USB-DCP, Huawei FCP/SCP, Samsung AFC
Offline Recording	4 data sets, 3750 data points/set, programmable speed, threshold recording
Dimensions	8.9 x 6.2 x 1.9 cm
Weight	70 g
Model Number	CT3
UPC	607994058743

8. Troubleshooting

If you encounter issues with your AVHzY CT3, refer to the following common problems and solutions:

- **Device not powering on:** Ensure the USB Tester is properly connected to a functioning USB power source. Try a different cable or power source.
- **No readings displayed:** Verify that the device under test is correctly connected to an output port and is drawing power. Check cable connections.
- **Inaccurate readings:** Ensure all connections are secure. Calibrate the device if necessary (refer to PC software instructions).
- **PC software connection issues:** Ensure the micro USB cable is securely connected to both the tester and the PC. Install the necessary drivers if prompted. Try a different USB port on your PC.
- **USB-C port issues:** Some users have reported issues with USB-C ports. If a cable doesn't work, try flipping it or using a different USB-C cable.

9. Maintenance

To ensure the longevity and optimal performance of your AVHzY CT3:

- Clean the device with a soft, dry cloth. Do not use liquid cleaners or solvents.
- Store the device in a cool, dry place away from direct sunlight and extreme temperatures.
- Avoid dropping or subjecting the device to strong impacts.
- Keep the ports free from dust and debris.

10. Warranty and Support

The AVHzY CT3 USB Tester comes with a one-year warranty and customer service. For technical support, firmware updates, or warranty claims, please visit the official AVHzY website or contact their customer service department. Users can download firmware updates from the official AVHzY webpage.