HanOaki KWS-X1

HanOaki USB C Tester Power Meter KWS-X1 Instruction Manual

Model: KWS-X1 | Brand: HanOaki

1. Introduction

The HanOaki USB C Tester Power Meter KWS-X1 is a versatile and robust device designed for precise measurement and analysis of USB power delivery. Featuring a durable CNC aluminum shell and a high-definition IPS screen, it provides real-time monitoring of voltage, current, and power, supporting various fast-charge protocols including PD 3.1 EPR. This manual will guide you through the setup, operation, and maintenance of your KWS-X1 tester.

Key Features:

- **High Reliability & Safety:** Premium Type-C voltage/current tester with a lasting aluminum metal shell, designed for 12A high-current detection and fast-charge triggering for mobile devices.
- **Full Fast-Charge Protocol Compatibility:** Supports PD 3.1, QC 4.0, OC 2.0/3.0/4.0, and MTK protocols, ensuring broad compatibility with various quick-charge standards.
- **Advanced 240W Cable Testing Capability:** Accurately detects data cable transmission speed, voltage, and current to assess charging performance and cable quality, supporting up to 240W power for reliable diagnostics.
- **Premium CNC Metal Shell and High-Definition IPS Display:** Built with a dustproof and shock-resistant design, the tester includes a clear IPS screen for real-time monitoring of voltage, current, and power metrics.
- **Compact and Multi-Functional Design for Portability:** Features a space-saving form with 3 display modes, making it easy to carry for travel and daily use, while offering functions like capacity measurement and ripple analysis.

2. Package Contents

- 1x HanOaki USB C Tester Power Meter KWS-X1

3. Product Overview

The KWS-X1 tester features multiple input/output ports and a clear IPS display for comprehensive power monitoring. Its compact design makes it ideal for on-the-go use.

Figure 3.1: The HanOaki KWS-X1 USB C Tester, highlighting its compact form factor and various ports including USB-A, MicroUSB, and Type-C for both input and output. The device features a small display screen.

Figure 3.2: The KWS-X1 USB C Tester connected to a power source and a device, actively displaying real-time voltage, current, and wattage measurements on its IPS screen. This view demonstrates the device's primary function in monitoring power flow.

4. Setup and Connection

To begin using your KWS-X1 tester, follow these simple steps:

1. Identify the appropriate input port on the KWS-X1 (USB-A, Type-C IN, or MicroUSB IN) for your power source.
2. Connect your power source (e.g., wall charger, power bank) to the selected input port of the KWS-X1.
3. Connect your device (e.g., smartphone, tablet) to the corresponding output port on the KWS-X1 (USB-A OUT or Type-C OUT).
4. The device's IPS screen will automatically light up and begin displaying real-time power data.

Figure 4.1: The KWS-X1 USB C Tester connected in-line between a power source and a charging device, illustrating how to set up the tester for real-time monitoring of charging parameters.

5. Operating Modes and Functions

The KWS-X1 offers several modes to analyze power data. Use the toggle button on the side to navigate through the menus and select functions.

5.1 Real-time Monitoring

This is the default display mode, showing live readings of voltage (V), current (A), and wattage (W). It also displays temperature and other basic statistics.

Figure 5.1: The KWS-X1 display showing real-time voltage, current, and power consumption, along with temperature. This is the primary monitoring screen for immediate feedback on charging status.

5.2 Fast Charge Protocol Testing

The tester can automatically detect and trigger various fast-charge protocols to verify compatibility and performance of chargers and devices.

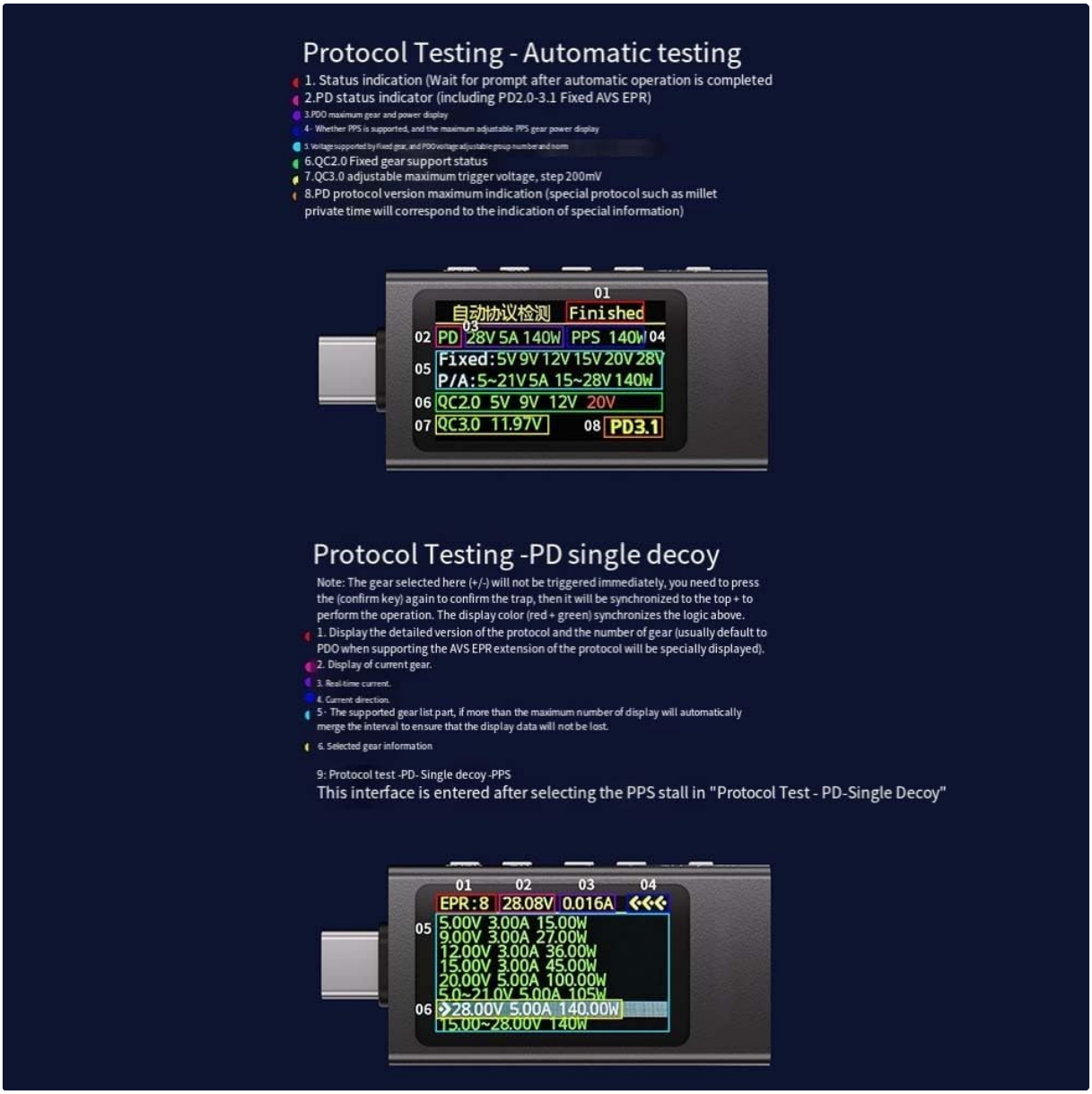

Figure 5.2: The KWS-X1 display showing the results of an automatic fast-charge protocol detection, listing supported protocols like PD 3.0, QC 3.0, and PD 3.1 with their respective voltage and wattage capabilities.

5.3 Cable Testing and Ripple Measurement

Evaluate the quality of your USB cables by measuring their resistance and analyzing power ripple for stable charging.

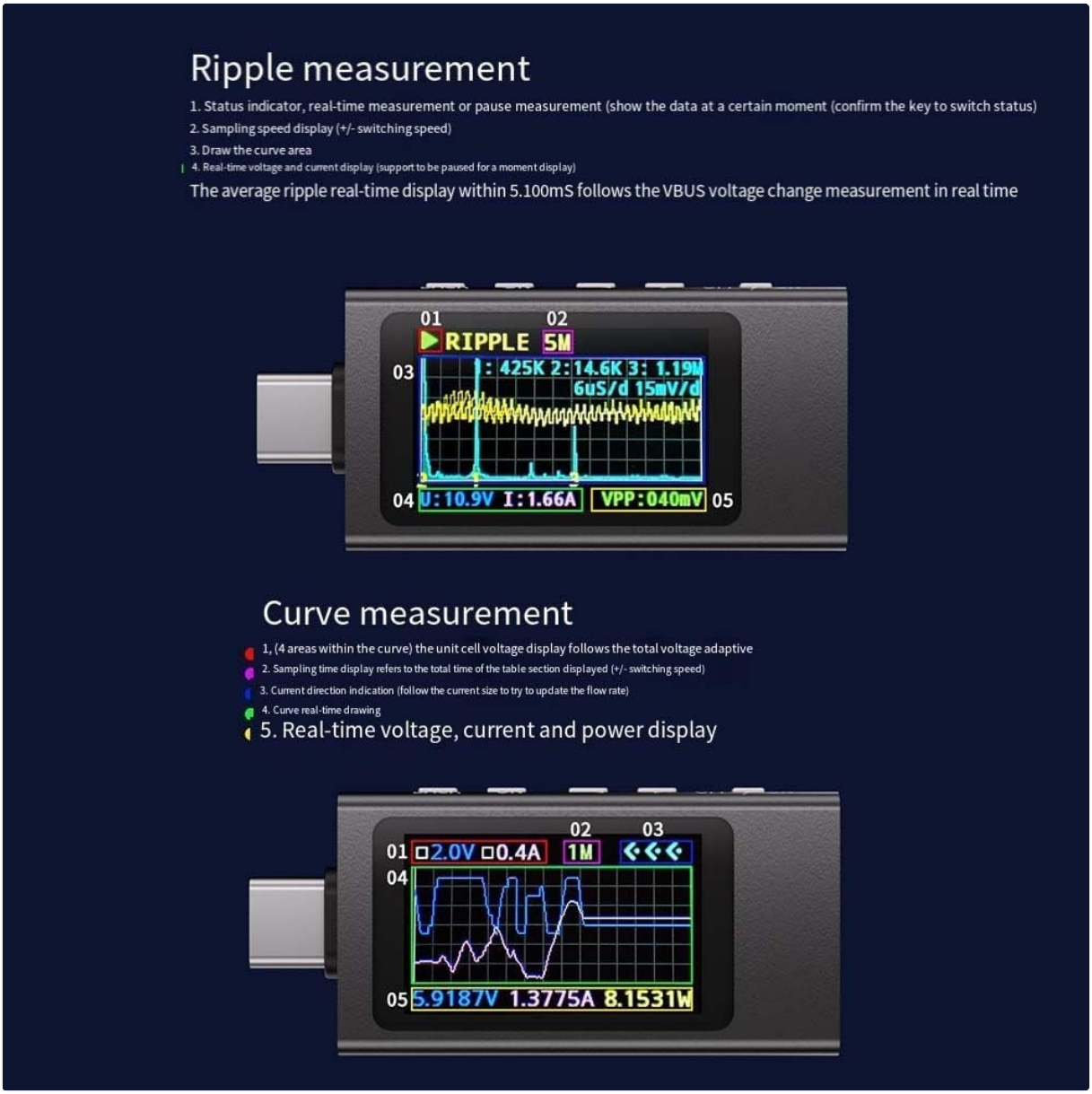

Figure 5.3: The KWS-X1 display showing advanced measurement modes, including a ripple measurement graph (top) indicating voltage stability over time, and a curve measurement graph (bottom) illustrating real-time voltage, current, and power fluctuations.

5.4 Menu Navigation and Settings

The device features an intuitive menu system accessible via a toggle button. This allows users to access various applications, statistics, and system settings.

Video 5.4: This video demonstrates the menu navigation and various functions of the FNB58 USB Tester, including fast charge testing, statistics, toolbox features, and general settings. It shows how to interact with the device's interface to access different measurement and analysis tools.

6. Specifications

Feature	Specification
Model	KWS-X1
Measurement Range (Voltage)	4-30V
Measurement Range (Current)	0.0-12A (Absolute max 16.0A)
Measurement Range (Power)	0.0-280.0W (Absolute max 380.0W)
Measurement Accuracy	±(1% + 5)
Temperature Measurement Range	0.0-99.0 (°C)
Display	High-definition IPS Screen
Shell Material	CNC Aluminum
Dimensions	54.96 x 24.45 x 11.15mm (2.16 x 0.96 x 0.44 inches)
Weight	15g (0.529 ounces)
Supported Protocols	PD 2.0-3.1 AVS EPR, QC 2.0-4.0+, OC 2.0/3.0/4.0, MTK, etc.
Interfaces	USB-A, MicroUSB, Type-C (IN/OUT)

7. Maintenance

To ensure the longevity and optimal performance of your HanOaki KWS-X1 USB C Tester, please follow these maintenance guidelines:

- **Cleaning:** Use a soft, dry cloth to clean the device. Avoid using harsh chemicals, solvents, or abrasive cleaners, as these can damage the screen or casing.
- **Storage:** Store the tester in a cool, dry place away from direct sunlight and extreme temperatures. When not in use, it is recommended to keep it in its original packaging or a protective case to prevent dust and physical damage.
- **Handling:** While the device features a robust aluminum shell, avoid dropping it or subjecting it to strong impacts, which could affect its internal components or screen.
- **Moisture Protection:** Keep the device away from water and high humidity environments. Moisture can cause internal short circuits and damage.

8. Troubleshooting

If you encounter any issues with your KWS-X1 USB C Tester, please refer to the following common troubleshooting steps:

- **No Display/Device Not Powering On:**
  - Ensure the tester is correctly connected to a working power source.
  - Verify that the power source itself is functioning (e.g., try charging a device directly).
  - Check all cable connections for looseness or damage.
- **Inaccurate Readings:**
  - Ensure all connections are secure and free from debris.
  - Try using different cables and power sources to isolate the issue.

- The device has a specified accuracy; minor deviations may be normal.

- **Fast Charge Protocol Not Triggering:**
  - Confirm that both your charger and device support the desired fast-charge protocol.
  - Ensure you are using a compatible cable that supports the required power delivery.
  - Navigate to the 'Fast Charge Test' menu on the tester and manually attempt to trigger the protocol.
- **Device Overheating:**
  - While the aluminum shell aids in heat dissipation, prolonged high-power testing can cause the device to warm up. This is normal.
  - If the device becomes excessively hot, disconnect it immediately and allow it to cool down. Reduce the load or duration of testing.

9. Warranty and Support

For warranty information, technical support, or service inquiries regarding your HanOaki KWS-X1 USB C Tester Power Meter, please refer to the contact information provided with your purchase or visit the official HanOaki website. Please retain your proof of purchase for warranty claims.