Micsig MHO14-100

Micsig MHO14-100 Tablet Oscilloscope with Multimeter User Manual

Model: **MHO14-100** | Brand: **Micsig**

1. Introduction

This manual provides detailed instructions for the safe and effective operation of your Micsig MHO14-100 Tablet Oscilloscope with Multimeter. Please read this manual thoroughly before using the device to ensure proper functionality and to prevent damage. Keep this manual for future reference.

2. What's in the Box

Carefully unpack the contents and verify that all items listed below are present and in good condition. If any items are missing or damaged, please contact your vendor.

- Micsig MHO1 Oscilloscope x1
- Passive probes x4
- Multimeter pen x1 pair
- Power Adapter x1
- Power Cable x1
- Quick Guide Collection x1

Image: The Micsig MHO14-100 package includes the oscilloscope, four passive probes, a pair of multimeter pens, a power adapter, a power cable, and a quick guide.

3. Key Features

- **Built-in Multimeter:** Features a 4½-digit multimeter for voltage, current, resistance, capacitance, diode, and continuity tests. This eliminates the need for a separate device and allows simultaneous oscilloscope and multimeter operation.
- **Ultra-Portable & Slim Design:** With a slim 3.1cm design, the MHO14-100 is designed for portability, fitting easily into backpacks for field diagnostics, lab analysis, or remote projects.
- **Lab-Grade Accuracy:** Equipped with a 12-bit ADC, 100MHz bandwidth, 4 analog channels, 1GSa/s real-time sampling, and 110Mpts memory depth for capturing subtle signal details.
- **8-Inch HD Touchscreen:** An anti-glare 1280×800 display offers sharp visuals and responsive touch control. Users can switch between touch, button, or hybrid control modes.
- **Max Protection & Power:** Integrated 16000mAh lithium-ion battery provides extended runtime and supports over 1000 charge cycles. Power bank charging is supported for true field portability. A shock-absorbing rubber

casing offers impact resistance and a non-slip grip.

- **Remote Control & Storage:** Supports control via SCPI commands, mobile apps (Android/iOS), and PC software. Includes HDMI output for large-screen analysis and segmented storage for efficient capture of multiple trigger events.

Image: The Micsig MHO14-100 Tablet Oscilloscope highlighting its 12-bit vertical resolution, 100MHz bandwidth, 1GSa/s sampling rate, 4 analog channels, and 110Mpts memory depth.

Image: The Micsig MHO14-100 in multimeter mode, showing a voltage measurement and icons representing various measurement capabilities like voltage, current, resistance, and diode testing.

4. Setup

1. **Unpacking:** Carefully remove the oscilloscope and all accessories from the packaging. Inspect for any visible damage.
2. **Charging the Battery:** Connect the provided power adapter to the oscilloscope's DC 12V input port and plug it into a power outlet. The device features a 16000mAh lithium-ion battery. Allow sufficient time for the battery to fully charge before initial use.
3. **Power On/Off:** Press and hold the power button located on the side or front panel to turn the device on or off.
4. **Adjusting the Stand:** The device includes a foldable hidden stand for stable support and easy viewing. Adjust it to your preferred angle.

Image: The Micsig MHO14-100 with its foldable hidden stand extended, illustrating comfortable grip and stable support.

5. Operating Instructions

5.1 Basic Oscilloscope Operation

1. **Connecting Probes:** Connect the passive probes to the desired analog input channels (CH1-CH4) on the front panel. Ensure a secure connection.
2. **Power On:** Turn on the oscilloscope. The 8-inch HD touchscreen will display the main interface.
3. **Input Signal:** Apply the signal you wish to measure to the connected probe.
4. **Auto Setup:** For quick initial setup, press the 'Auto Set' button. The oscilloscope will automatically adjust vertical, horizontal, and trigger settings to display a stable waveform.
5. **Manual Adjustments:** Use the dedicated knobs and touchscreen controls for fine-tuning.
    - **Vertical Controls:** Adjust voltage scale (V/div) and position for each channel.
    - **Horizontal Controls:** Adjust time base (s/div) and horizontal position.
    - **Trigger Controls:** Set trigger level, mode (Edge, Pulse Width, Video, etc.), and source to stabilize the waveform.
6. **Measurements:** Access the measurement menu to perform automatic measurements (e.g., Vpp, Vrms, Frequency, Period) or use cursors for manual measurements.

5.2 Multimeter Functionality

The MHO14-100 integrates a 4½-digit multimeter. To use the multimeter:

1. **Switching Modes:** Select the multimeter function from the main menu or a dedicated button (if available).
2. **Connecting Multimeter Pens:** Connect the multimeter pens to the dedicated input jacks (COM, VΩmA, 10A) on the front panel, corresponding to the measurement type.
3. **Select Measurement Type:** Choose the desired measurement (Voltage, Current, Resistance, Capacitance, Diode, Continuity) on the screen.
4. **Perform Measurement:** Apply the multimeter pens to the circuit or component under test. The measurement will be displayed on the screen.

5.3 Advanced Features

- **Remote Control:** The oscilloscope supports remote control via SCPI commands, mobile applications (Android/iOS), and PC software. Connect the device to a network via the LAN port or USB for remote access.
- **HDMI Output:** Use the HDMI port to connect the oscilloscope to an external display for larger viewing and analysis.
- **Data Storage:** The device offers 110Mpts memory depth and segmented storage, allowing you to capture and analyze complex waveforms and multiple trigger events efficiently. Save waveforms, screenshots, and setup

configurations to internal memory or a connected USB drive.

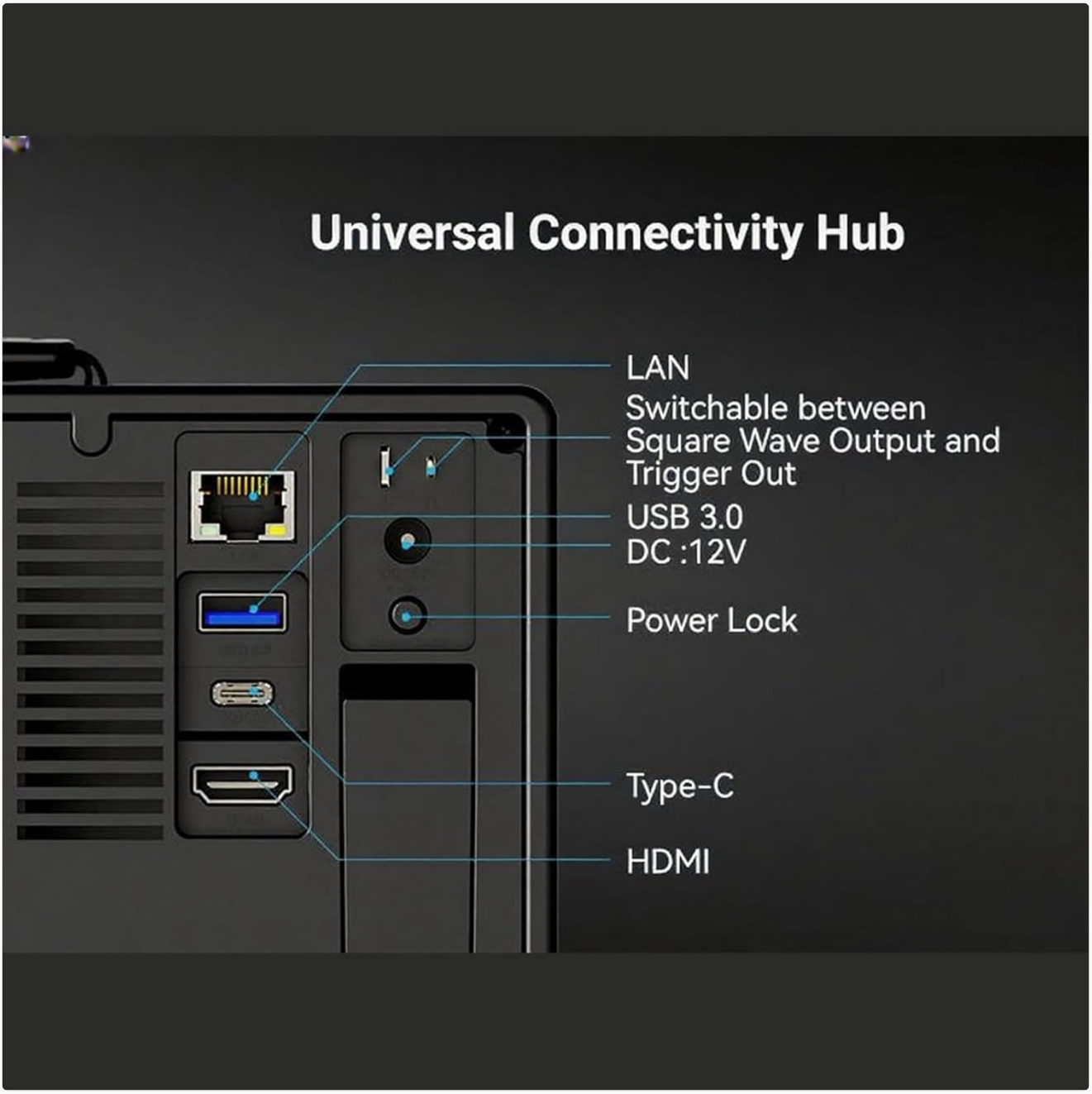

Image: The universal connectivity hub of the Micsig MHO14-100, featuring LAN, USB 3.0, DC 12V power input, Power Lock, Type-C, and HDMI ports.

6. Maintenance

- **Cleaning:** Use a soft, dry cloth to clean the device. For stubborn dirt, a slightly damp cloth with mild detergent can be used. Avoid abrasive cleaners or solvents.
- **Battery Care:** To prolong battery life, avoid fully discharging the battery frequently. Store the device in a cool, dry place if not used for extended periods, and charge it periodically.
- **Software Updates:** Check the manufacturer's website for available firmware updates to ensure optimal performance and access to new features.
- **Probe Calibration:** Periodically check and calibrate your oscilloscope probes according to standard procedures to maintain measurement accuracy.

7. Troubleshooting

- **Device Not Powering On:** Ensure the battery is charged or the power adapter is securely connected and receiving power.
- **No Waveform Display:** Check probe connections, input signal presence, and trigger settings. Try using the 'Auto Set' function.
- **Unstable Waveform:** Adjust the trigger level and trigger mode. Ensure the trigger source is correctly selected.
- **Inaccurate Measurements:** Verify probe compensation and calibration. Ensure correct measurement settings are selected for the multimeter.
- **Touchscreen Unresponsive:** Restart the device. If the issue persists, contact support.

8. Specifications

Feature	Specification
Model Number	MHO14-100
Bandwidth	100MHz
Analog Channels	4
Sampling Rate	1GSa/s
Memory Depth	110Mpts
Vertical Resolution	12-bit
Display	8-inch HD Touch Screen (1280x800)
Battery	16000mAh Lithium-ion
Built-in Multimeter	4½-digit (Voltage, Current, Resistance, Capacitance, Diode, Continuity)
Connectivity	LAN, USB 3.0, Type-C, HDMI
Product Dimensions	10.4 x 6.8 x 1.2 inches
Item Weight	7.7 pounds
Manufacturer	XEAST

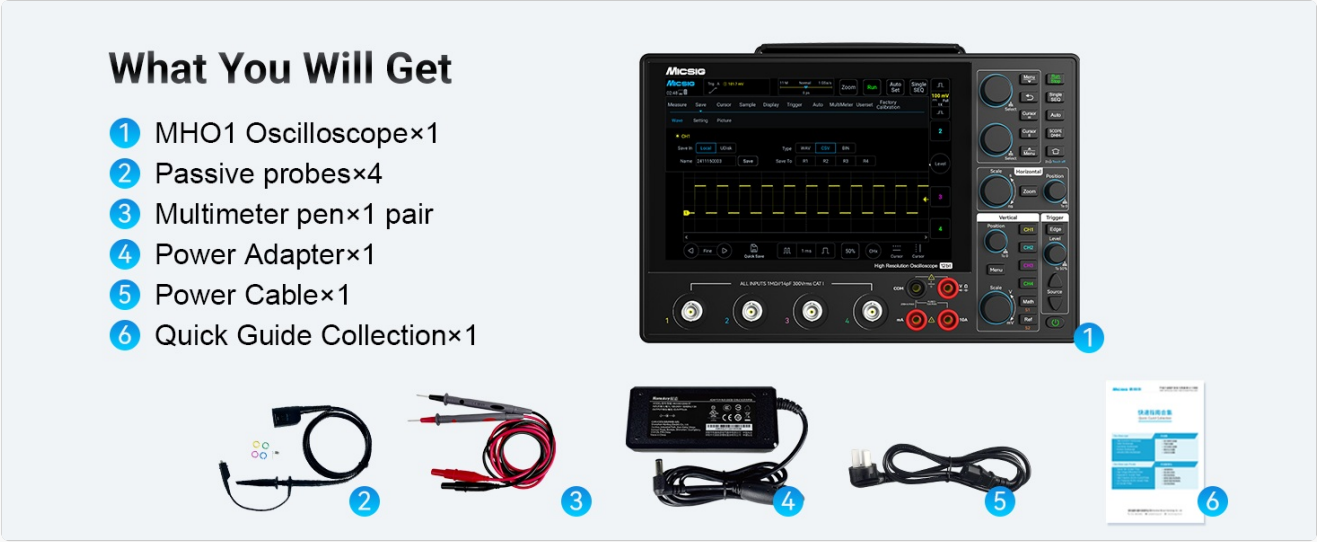

Image: A comparison table showing specifications for MHO14-200 and MHO14-100 models, highlighting the 100MHz bandwidth for the MHO14-100.

9. Warranty and Support

The Micsig MHO14-100 Tablet Oscilloscope is manufactured by XEAST. For warranty information, technical support, or service inquiries, please refer to the warranty card included with your product or visit the official XEAST website. Please retain your proof of purchase for warranty claims.