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> HANMATEK HO11 Handheld Digital Oscilloscope - 10MHz Bandwidth, 48MSa/s High-Precision Sampling, 2.8" TFT Display, USB Rechargeable, Advanced Trigger System, Portable for Fieldwork Professional 10 Mhz

HANMATEK HO11

HANMATEK HO11 Handheld Digital Oscilloscope User Manual

Model: HO11 | Brand: HANMATEK

1. INTRODUCTION

This user manual provides comprehensive instructions for the HANMATEK HO11 Handheld Digital Oscilloscope. It covers product features, setup procedures, operating guidelines, maintenance tips, and troubleshooting information to ensure optimal performance and longevity of your device. The HO11 is a portable and versatile tool designed for precise waveform capture and measurement in various applications.

2. SAFETY INFORMATION

Please read and understand all safety precautions before operating the device. Failure to follow these instructions may result in electric shock, fire, or damage to the device.

- **Power Source:** Use only the specified charging cable and adapter. Ensure the power source matches the device's voltage requirements.
- **Environment:** Operate the device in a dry environment. Avoid exposure to moisture, extreme temperatures, or corrosive substances.
- **Handling:** Handle the device with care. Avoid dropping or subjecting it to strong impacts.
- **Maintenance:** Do not attempt to disassemble or repair the device yourself. Refer all servicing to qualified personnel.
- **Probes:** Ensure probes are correctly connected and rated for the voltage being measured. Always connect the ground clip before connecting the probe tip to a live circuit.
- **Voltage Limits:** Do not exceed the maximum input voltage ratings specified in the technical specifications. The device supports up to $\pm 400V$ with appropriate probe attenuation.

3. PRODUCT OVERVIEW

3.1. Components and Accessories

The HANMATEK HO11 Handheld Digital Oscilloscope comes with the following components:

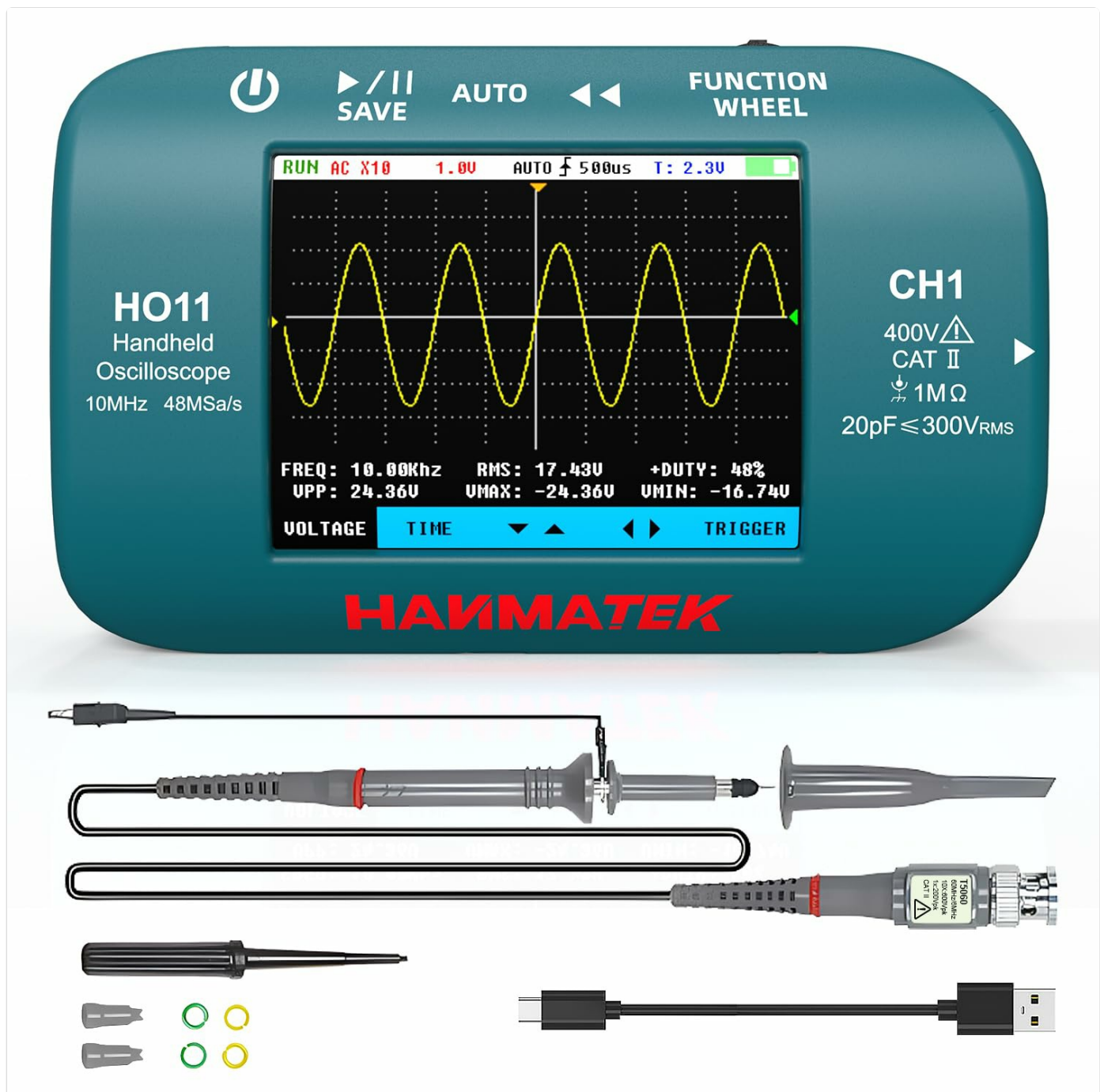


Figure 3.1: The HO11 oscilloscope along with its standard accessories, including the main unit, oscilloscope probe, USB Type-C cable, and other small components.

- **HO11 Main Unit:** The handheld digital oscilloscope.
- **Oscilloscope Probe:** For connecting to circuits and measuring signals.
- **USB Type-C Cable:** For charging and data transfer.
- **User Manual:** This document.

3.2. Controls and Display

Familiarize yourself with the device's controls and display features for efficient operation.

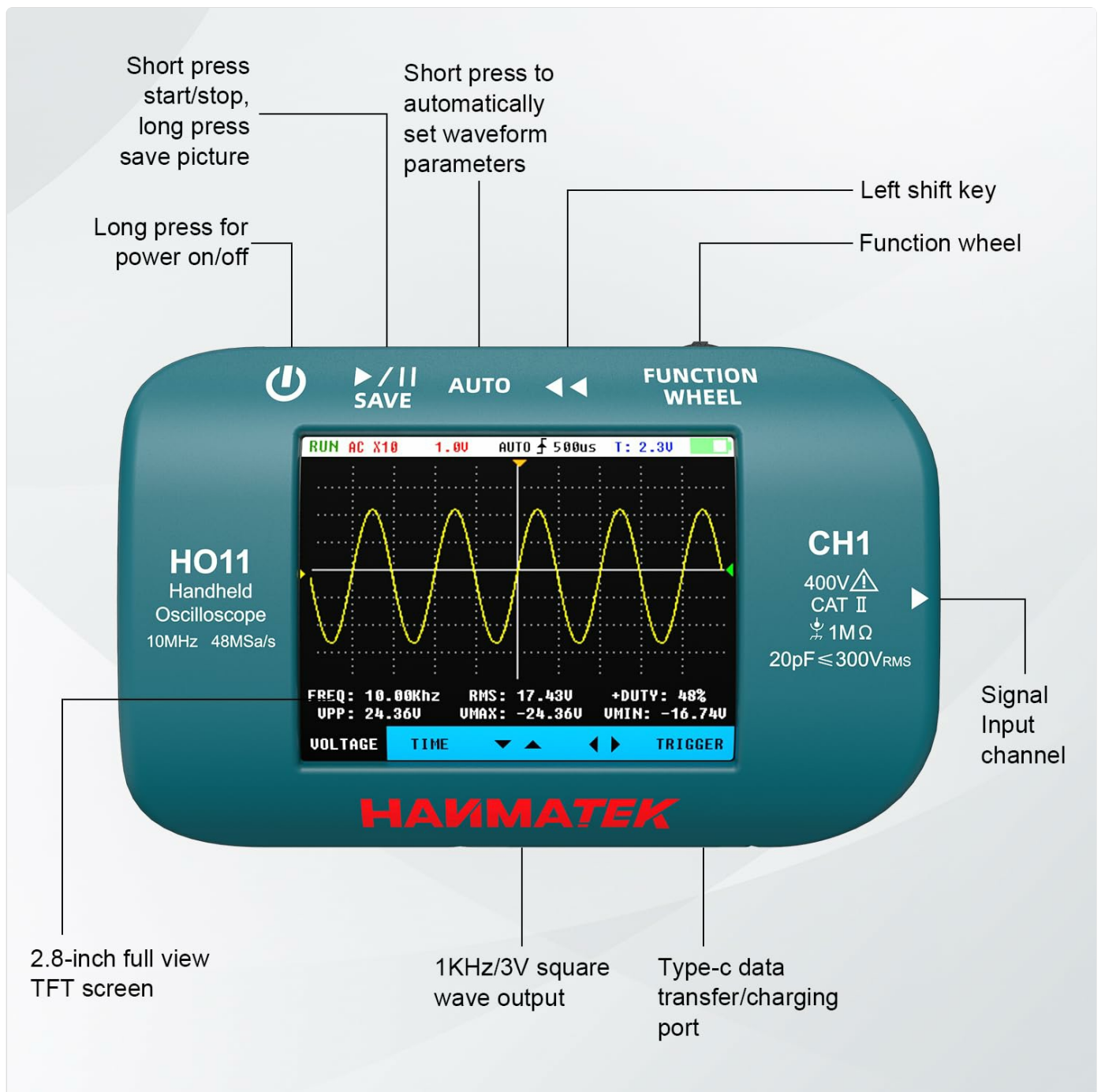


Figure 3.2: Labeled diagram of the HO11's buttons, ports, and screen. Key features include the power button, save button, auto-set button, left shift key, function wheel, 2.8-inch full-view TFT screen, 1KHz/3V square wave output, Type-C data transfer/charging port, and signal input channel.

- **Power Button:** Long press to power on/off. Short press to start/stop measurements.
- **Save Button:** Long press to save the current waveform screenshot.
- **AUTO Button:** Short press to automatically set waveform parameters for optimal display.
- **Left Shift Key:** Used for navigation and parameter adjustment.
- **Function Wheel:** Rotates to navigate menus and adjust values.
- **2.8-inch Full-View TFT Screen:** High-resolution color display for waveform visualization and data.
- **1KHz/3V Square Wave Output:** A dedicated port for generating a square wave signal.
- **Type-C Data Transfer/Charging Port:** For charging the internal battery and connecting to a computer.
- **Signal Input Channel (CH1):** BNC connector for oscilloscope probe input.

PAY ATTENTION TO DETAILS



Figure 3.3: Close-up views highlighting the save button for capturing images, the integrated foldable stand for hands-free operation, the convenient Type-C charging port, and the gear toggle button for easy adjustments.

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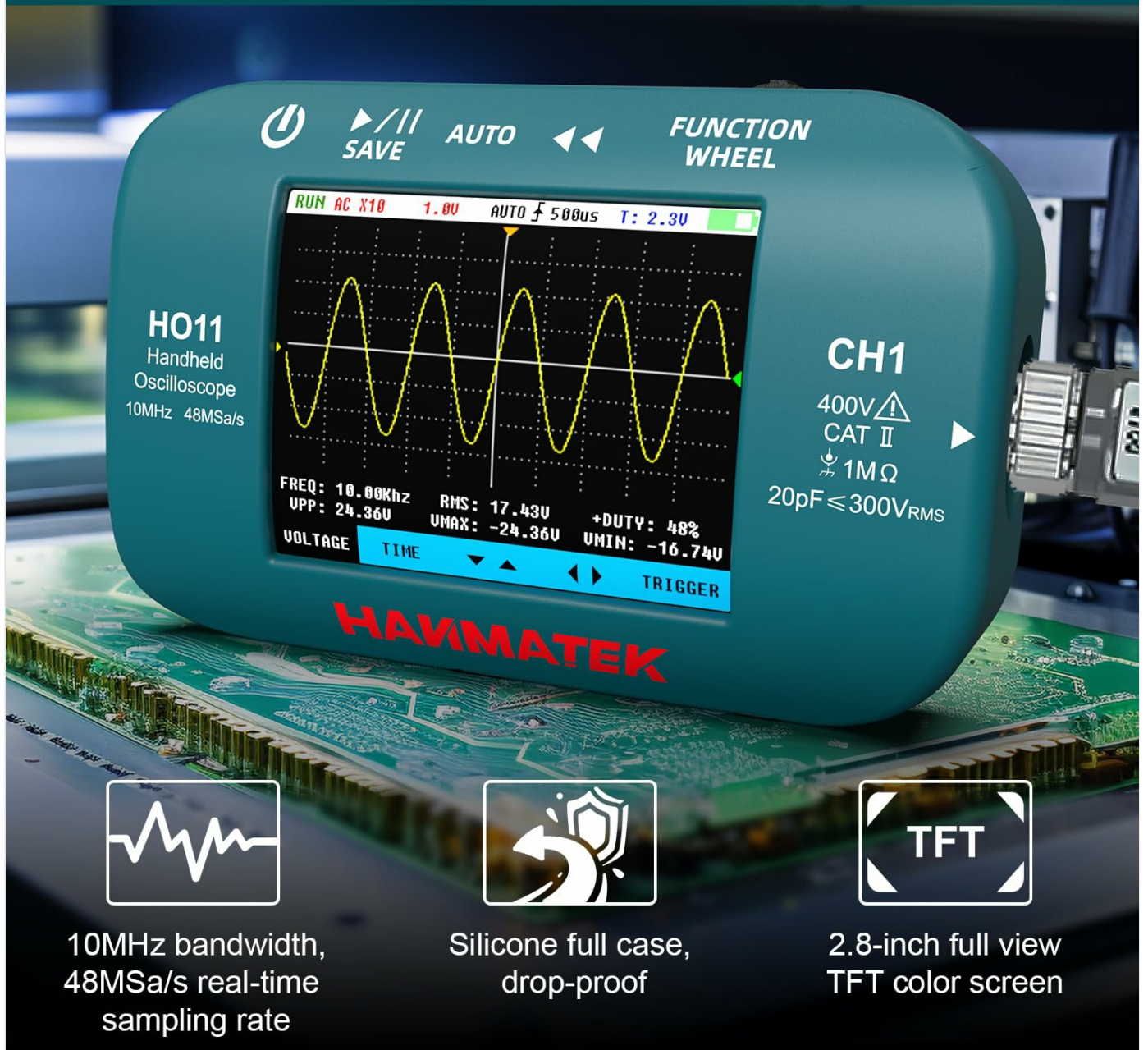


Figure 4.1: The compact size of the HO11, emphasizing its portability and key features such as 10MHz bandwidth, 48MSa/s real-time sampling rate, silicone full case for drop protection, and a 2.8-inch colorful TFT screen.

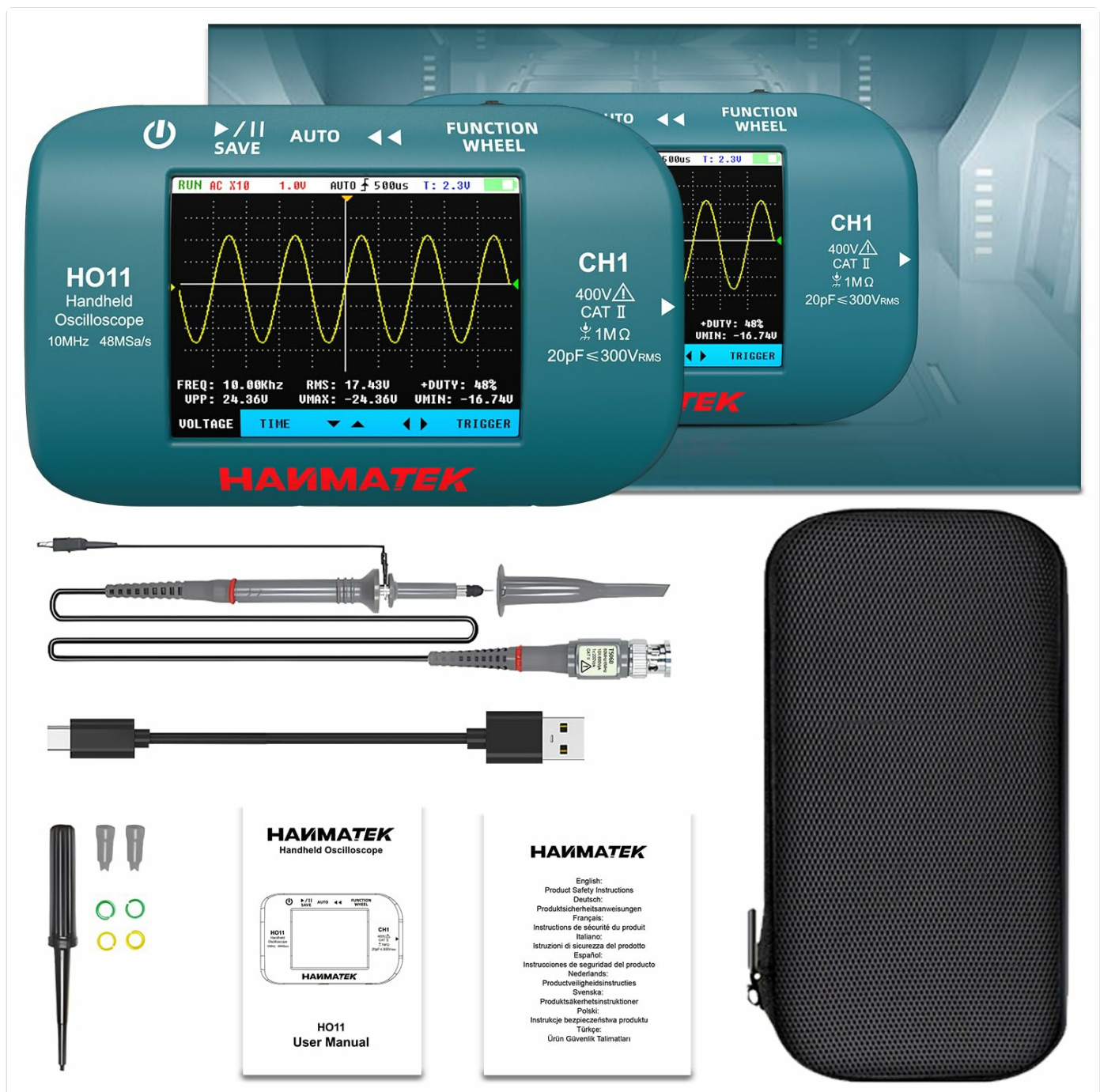


Figure 4.2: The HO11's compact design allows it to be easily carried in a bag, making it ideal for fieldwork and on-the-go measurements.

4.3. Connecting Probes

To perform measurements, connect the oscilloscope probe to the device.

1. Ensure the HO11 is powered off before connecting or disconnecting probes.
2. Align the BNC connector of the oscilloscope probe with the CH1 input channel on the HO11.
3. Push and twist the connector clockwise until it locks securely.
4. Attach the ground clip of the probe to a known ground point in your circuit.
5. Connect the probe tip to the test point in your circuit.

5. OPERATING INSTRUCTIONS

5.1. Power On/Off

To power on the device, long press the power button (refer to Figure 3.2). The screen will illuminate, and the device will

boot up. To power off, long press the power button again until the screen turns off.

5.2. Basic Oscilloscope Measurement

The HO11 is designed for easy signal analysis.

1. Ensure the probe is correctly connected to the CH1 input and the circuit under test.
2. Power on the device.
3. Press the **AUTO** button to automatically adjust the vertical and horizontal scales, and trigger settings for a stable waveform display.
4. Use the **Function Wheel** and **Left Shift Key** to manually adjust parameters such as Voltage (V/div), Time (s/div), and Trigger level if needed.
5. The screen will display the waveform along with key measurements like Frequency (FREQ), RMS voltage (RMS), Peak-to-Peak voltage (VPP), and Duty Cycle (DUTY).

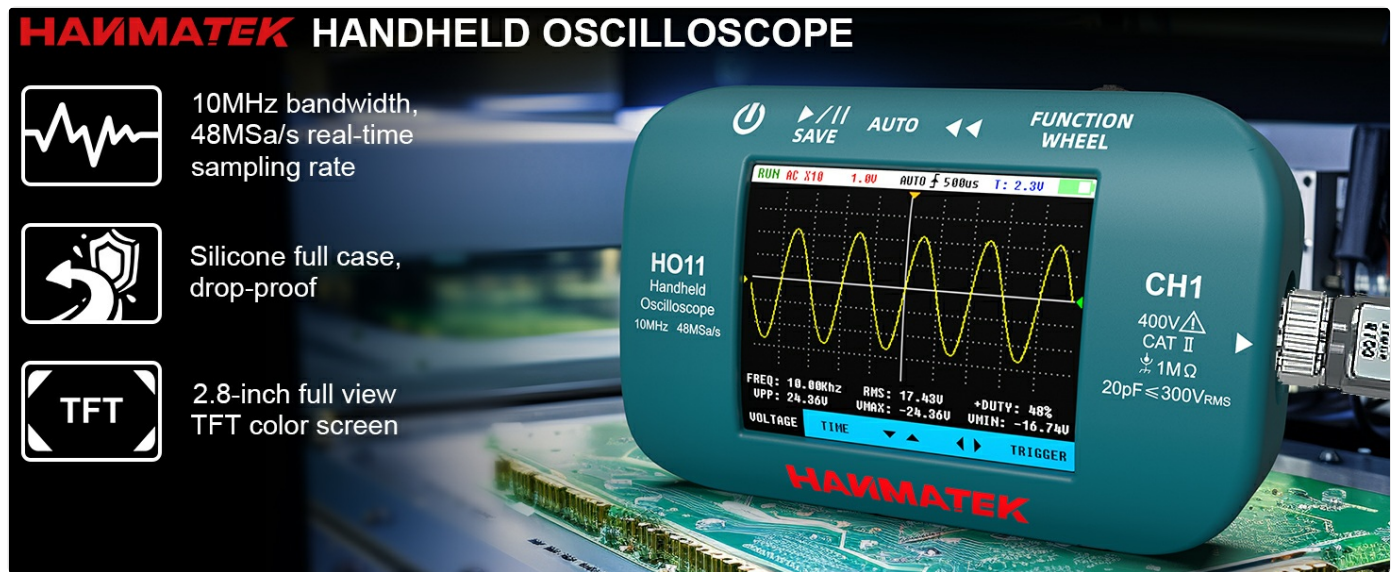


Figure 5.1: The HO11 in action, demonstrating its capability to display waveforms for both switching power supply detection and mains detection, showcasing its versatility in different electrical environments.

Highly sensitive response signal for fast and accurate measurement

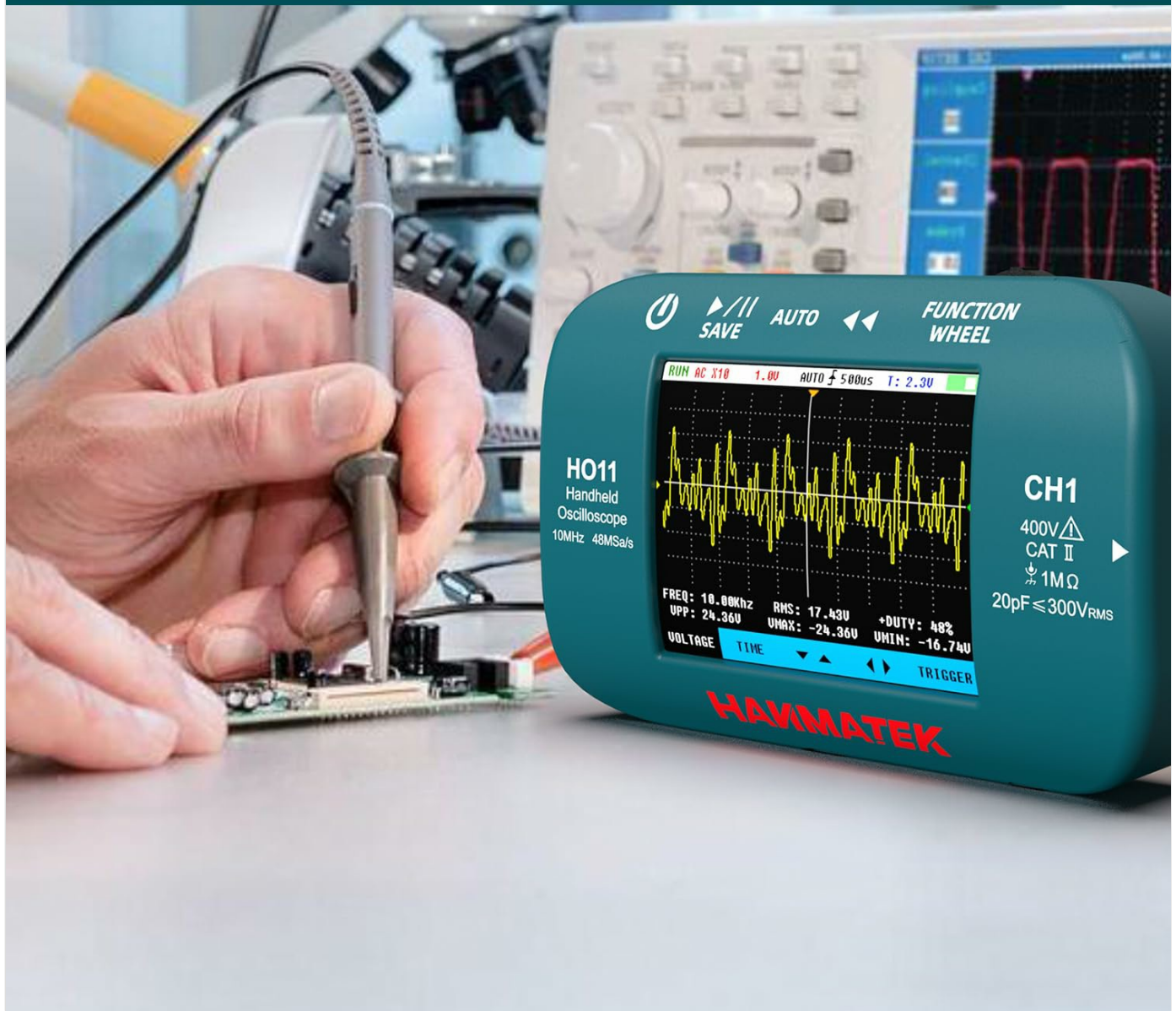


Figure 5.2: The HO11 is shown in an electronic repair scenario, with a user measuring signals on a circuit board, highlighting its utility for detailed component-level diagnostics.

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Figure 5.3: The HO11 capturing a signal with high sensitivity, illustrating its capability for fast and accurate measurements in complex electronic systems.

5.3. Automatic Waveform Identification

The HO11 features a one-click automatic identification function that can recognize various waveforms.

1. Connect the probe to the signal source.
2. Press the **AUTO** button. The device will attempt to automatically detect and display the waveform, adjusting settings as needed.
3. This feature simplifies setup for quick measurements across different signal types.

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Video 5.1: Demonstration of the HANMATEK Handheld Oscilloscope's automatic waveform identification and measurement capabilities, showing how it quickly adapts to different signals and displays key parameters.

5.4. Saving Screenshots

You can save screenshots of the displayed waveform for later analysis or documentation.

1. Once you have the desired waveform displayed, long press the **SAVE** button.
2. A confirmation message or indicator will appear, signifying that the screenshot has been saved to the device's internal memory.
3. Saved images can typically be accessed by connecting the device to a computer via the Type-C port.

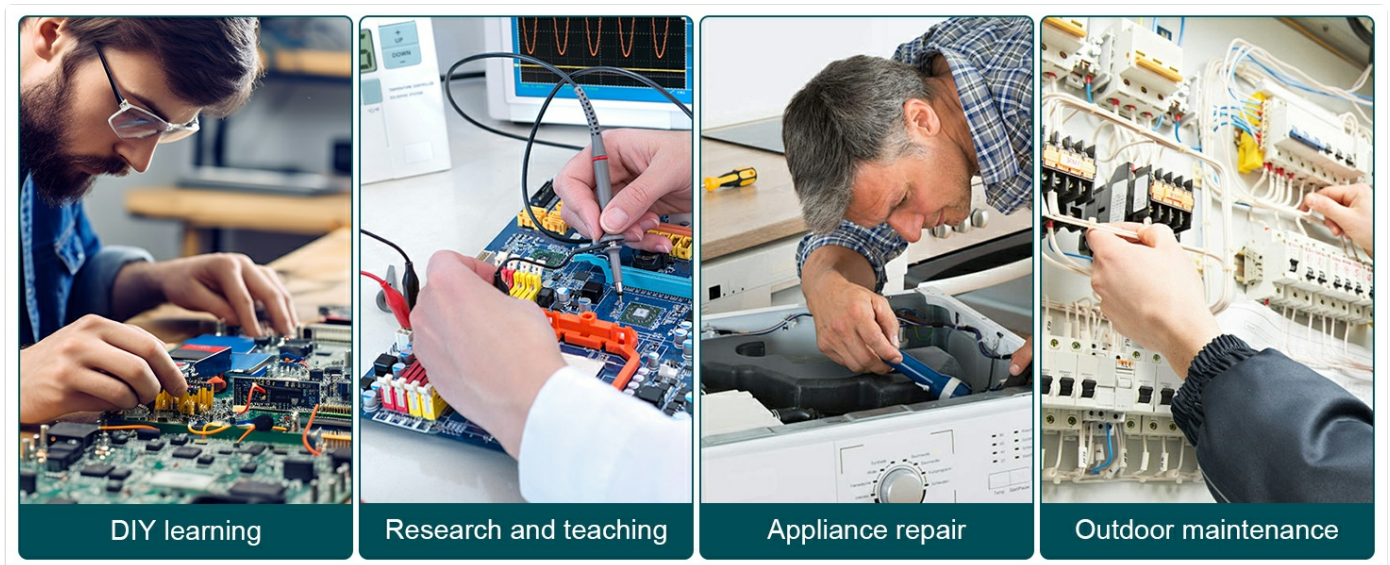


Figure 5.4: The HO11 is suitable for a wide range of applications, from DIY learning and academic research to professional appliance repair and outdoor maintenance tasks.

6. MAINTENANCE

6.1. Cleaning

- Always power off the device and disconnect all probes and cables before cleaning.
- Use a soft, dry cloth to wipe the exterior of the device.
- For stubborn dirt, slightly dampen the cloth with water or a mild, non-abrasive cleaner. Do not use harsh chemicals or solvents.
- Avoid getting any liquid into the ports or openings.

6.2. Storage

- Store the HO11 in a cool, dry place, away from direct sunlight and extreme temperatures.
- If storing for an extended period, ensure the battery is charged to approximately 50-70% to preserve battery health. Recharge every few months if not in use.
- Keep the device and accessories in their original packaging or a protective case to prevent damage.

6.3. Battery Care

- Avoid fully discharging the battery frequently, as this can reduce its lifespan.
- Do not expose the device to temperatures above 60°C (140°F) or below -10°C (14°F).
- If the device will not be used for a long time, charge it periodically to maintain battery capacity.

7. TROUBLESHOOTING

This section addresses common issues you might encounter with your HANMATEK HO11.

Problem	Possible Cause	Solution
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Problem	Possible Cause	Solution
Device does not power on.	Battery is depleted.	Connect the device to a power source using the USB Type-C cable and charge it.
No waveform displayed.	Probe not connected correctly; Signal too small or too large; Incorrect trigger settings.	Ensure probe is securely connected. Press the AUTO button. Adjust V/div or s/div settings manually. Check trigger level.
Waveform is unstable or noisy.	Poor probe connection; External interference; Incorrect trigger mode.	Ensure probe ground clip is firmly connected. Move device away from strong electromagnetic fields. Adjust trigger mode (Auto, Normal, Single).
Screen is unresponsive.	Device frozen.	Long press the power button for 10 seconds to force a restart.
Cannot save screenshots.	Insufficient memory.	Connect to a computer and transfer/delete existing screenshots to free up space.

If the problem persists after attempting these solutions, please contact HANMATEK customer support.

8. SPECIFICATIONS

Detailed technical specifications for the HANMATEK HO11 Handheld Digital Oscilloscope.

Feature	Detail
Model Number	HO11
Bandwidth	10MHz
Sampling Rate	48MSa/s
Display	2.8" TFT Full-Color Display
Voltage Measurement Range	±40V (X1 probe), ±400V (X10 probe)
Battery	1800mAh Lithium Polymer (included)
Charging Interface	USB Type-C
Trigger Modes	Auto, Normal, Single
Item Weight	200 Grams (7.05 ounces)
Product Dimensions (L x W x H)	3.94 x 3.15 x 1.97 inches
Manufacturer	Shenzhen Hanmatek Precision Technology Co.,Ltd.
Country of Origin	China

9. WARRANTY AND SUPPORT

HANMATEK provides a standard warranty for the HO11 Handheld Digital Oscilloscope. For specific warranty terms, conditions, and duration, please refer to the warranty card included with your product or visit the official HANMATEK

website.

For technical support, troubleshooting assistance beyond this manual, or inquiries regarding repairs and parts, please contact HANMATEK customer service through their official channels. Keep your purchase receipt and product serial number (SN: ZXZ1240900668, visible on the back of the device) readily available when contacting support.

You can visit the [HANMATEK Store on Amazon](#) for more information and product updates.