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Hantek Hantek2D42

Hantek 2D42 Digital Oscilloscope, Waveform Generator, and Multimeter User Manual

Model: Hantek 2D42

1. Introduction

The Hantek 2D42 is a versatile, portable 3-in-1 test instrument that integrates a digital oscilloscope, a waveform generator, and a multimeter into a single compact device. Designed for engineers, technicians, and hobbyists, it offers a range of functions for various electrical measurement and signal generation tasks. This manual provides detailed instructions for the safe and effective use of your Hantek 2D42.

2. Safety Information

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

- Do not use the device if it appears damaged or is not operating correctly.
- Ensure proper grounding when connecting to circuits.
- Do not exceed the maximum input ratings specified for each function.
- Avoid operating the device in wet or damp conditions.
- Use only the specified power adapter and USB cable for charging.
- Keep the device away from strong electromagnetic fields.

3. Package Contents

Carefully unpack the box and check for the following items:

- Hantek 2D42 Unit
- Oscilloscope Probe(s)
- Multimeter Test Leads
- USB Type-C Cable
- 5V/2A Power Adapter
- User Manual (Printed)

Figure 3.1: Hantek 2D42 unit and its standard accessories, including probes, test leads, USB cable, and power adapter.

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Video 3.1: An overview of the Hantek 2D42 digital oscilloscope, demonstrating its features and included components.

4. Device Overview

4.1 Front Panel and Controls

The front panel features a color LCD screen for waveform display and measurement readings, along with various function buttons and navigation keys.



Figure 4.1: Front view of the Hantek 2D42, highlighting the LCD display, function buttons (Scope, DMM, AWG, Menu), navigation keys, and input jacks.

- **LCD Screen:** Displays waveforms, measurement data, and menu options.
- **Function Buttons:** *Scope* (Oscilloscope mode), *DMM* (Multimeter mode), *AWG* (Arbitrary Waveform Generator mode), *Menu* (Access settings).
- **Navigation Keys:** Up, Down, Left, Right arrows for menu navigation and parameter adjustment. *Enter* key for selection.
- **AUTO Button:** One-key automatic setup for oscilloscope measurements.
- **Input Jacks:** Dedicated inputs for oscilloscope probes and multimeter test leads.

4.2 Rear Panel and Ports

The rear panel houses the battery compartment and charging/data port.



Figure 4.2: Rear view of the Hantek 2D42, showing the battery compartment for 18650 lithium batteries and the Type-C port for charging and data transfer.

- **Battery Compartment:** Houses replaceable 18650 lithium batteries.
- **Type-C Port:** Used for charging the internal batteries and for data communication with a computer.

5. Setup

5.1 Charging the Device

1. Connect the provided USB Type-C cable to the device's Type-C port.
2. Connect the other end of the USB cable to the 5V/2A power adapter or a computer USB port.
3. The charging indicator on the device will show the charging status. A full charge typically takes about 2 hours. The device can be used while charging.

5.2 Powering On/Off

- **To Power On:** Press and hold the power button (usually integrated with a function button or a dedicated button) until the screen illuminates.
- **To Power Off:** Press and hold the power button again until the screen turns off.

5.3 Language Settings

To change the display language (Chinese/English):

1. Press the **Menu** button.

2. Navigate to the 'System Settings' or 'Language' option using the arrow keys.
3. Select your desired language (English or Chinese) and press **Enter**.

6. Operating Modes

6.1 Oscilloscope Mode

The oscilloscope function allows for the visualization and analysis of electrical signals.



Figure 6.1: The Hantek 2D42 operating in Oscilloscope mode, displaying a dual-channel waveform with measurement parameters.

1. Press the **Scope** button to enter Oscilloscope mode.
2. Connect the oscilloscope probe to the input channel and to the circuit under test.
3. Press the **AUTO** button for automatic waveform display and scaling.
4. Use the vertical (V/div) and horizontal (Time/div) controls to adjust the waveform display.
5. Adjust the trigger level and mode (Edge, Pulse, Video) to stabilize the waveform.
6. Access the menu for advanced features like cursor measurements, reference waveforms, and waveform storage.

6.2 Waveform Generator Mode (AWG)

The waveform generator can output various standard waveforms for testing circuits.



Figure 6.2: The Hantek 2D42 in Waveform Generator mode, showing options for sine wave output and frequency settings.

1. Press the **AWG** button to enter Waveform Generator mode.
2. Use the navigation keys to select the desired waveform type (Sine, Square, Triangle, Trapezoidal, etc.).
3. Adjust the frequency and amplitude of the output signal using the corresponding controls.
4. Connect the output to the circuit you wish to test.

6.3 Multimeter Mode (DMM)

The multimeter function provides standard electrical measurements.

1. Press the **DMM** button to enter Multimeter mode.
2. Connect the multimeter test leads to the appropriate input jacks (VΩmA, COM).
3. Select the desired measurement function (Voltage, Current, Resistance, Diode, Capacitance, Continuity) using the navigation keys.
4. Connect the test leads to the circuit or component to be measured.
5. Read the measurement value displayed on the screen.

7. Maintenance

- **Cleaning:** Use a soft, dry cloth to clean the device. Do not use abrasive cleaners or solvents.
- **Battery Care:** For long-term storage, ensure the battery is partially charged (around 50%). Remove the battery if the device will not be used for extended periods.
- **Storage:** Store the device in a cool, dry place, away from direct sunlight and extreme temperatures.
- **Self-Calibration:** The device features a self-calibration function to maintain accuracy over time. Refer to the device menu for initiating self-calibration.

8. Troubleshooting

Problem	Possible Cause	Solution
Device does not power on	Low battery; Battery not installed correctly; Device fault	Charge the device; Check battery installation; Contact support
No waveform displayed in Oscilloscope mode	Probe not connected; Signal too small/large; Incorrect settings	Check probe connection; Adjust V/div and Time/div; Use AUTO button
Multimeter readings are inaccurate	Test leads faulty; Incorrect function selected; Device needs calibration	Check/replace test leads; Select correct function; Perform self-calibration

9. Specifications

Feature	Specification
Model	Hantek 2D42
Oscilloscope Bandwidth	40 MHz
Sampling Rate	250 MSa/s
Channels	2 Channels (Oscilloscope)
Vertical Resolution	10mV~10V/div
Waveform Generator Output	Sine (1Hz~25MHz), Square (1Hz~10MHz), Triangle (1Hz~1MHz), Trapezoidal (1Hz~5MHz)
Multimeter Functions	Voltage, Current, Resistance, Diode, Capacitance, Continuity
Display	Color LCD
Battery	18650 Lithium Battery (Replaceable)
Charging Interface	USB Type-C (5V/2A)
Dimensions (L x W x H)	7.83 x 3.54 x 1.57 inches (approx.)
Certifications	CE, ISO 9001, RoHS

Figure 9.1: Comparison table of Hantek 2000 series models, including the 2D42, highlighting key differences in features like bandwidth and signal source capabilities.

10. Warranty and Support

10.1 Warranty Information

The Hantek 2D42 comes with a **1-year warranty** from the date of purchase, covering manufacturing defects. This warranty does not cover damage caused by misuse, accidents, unauthorized modifications, or improper operation.

10.2 Technical Support

For technical assistance, troubleshooting, or warranty claims, please contact Hantek customer support through their

official website or the retailer from whom you purchased the device. Please have your product model and purchase details ready when contacting support.

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