Hantek DSO2D10

Hantek DSO2D10 Digital Storage Oscilloscope User Manual

Model: DSO2D10

1. Introduction

This user manual provides comprehensive instructions for the safe and efficient operation of your Hantek DSO2D10 Digital Storage Oscilloscope. Please read this manual thoroughly before using the device to ensure proper functionality and to prevent damage.

2. Safety Information

Always observe the following safety precautions to avoid personal injury and prevent damage to the instrument or other connected devices.

- Use the correct power cord.
- Connect and disconnect probes properly.
- Ground the instrument.
- Observe all terminal ratings.
- Do not operate in wet or damp conditions.
- Do not operate in explosive atmospheres.
- Keep product surfaces clean and dry.
- Refer servicing to qualified personnel.

3. Package Contents

Verify that all items listed below are included in your package. If any items are missing or damaged, please contact your dealer.



Image: The Hantek DSO2D10 Digital Storage Oscilloscope along with its included accessories, such as probes, USB cable, power cord, and user manual.

- Hantek DSO2D10 Digital Storage Oscilloscope
- Oscilloscope Probes (2)
- USB Cable
- Power Cord
- User Manual (Printed)
- BNC to Alligator Clip Cable

4. Product Overview

The Hantek DSO2D10 is a 2-channel digital storage oscilloscope with a 100MHz bandwidth and a 1GSa/s sampling rate. It features an 8M memory depth and a built-in 1-channel signal generator. This section details the main features and components of the device.

4.1 Key Features



Image: Visual representation of the oscilloscope's key features, including dual channel input, 8M memory storage, USB 2.0 interface, 7-inch screen, 100MHz bandwidth, and 1GSa/s sampling rate.

- **Dual Channels:** Two independent input channels for simultaneous waveform display.
- **Bandwidth:** 100MHz analog bandwidth.
- **Sampling Rate:** Up to 1 GSa/s real-time sampling rate.
- **Memory Depth:** 8M memory depth for capturing long waveforms.
- **Built-in Signal Generator:** 1-channel arbitrary waveform generator (AWG).
- **Display:** 7-inch TFT LCD display.
- **Connectivity:** USB 2.0 interface for data transfer and PC connectivity.

4.2 Front Panel Controls and Connectors

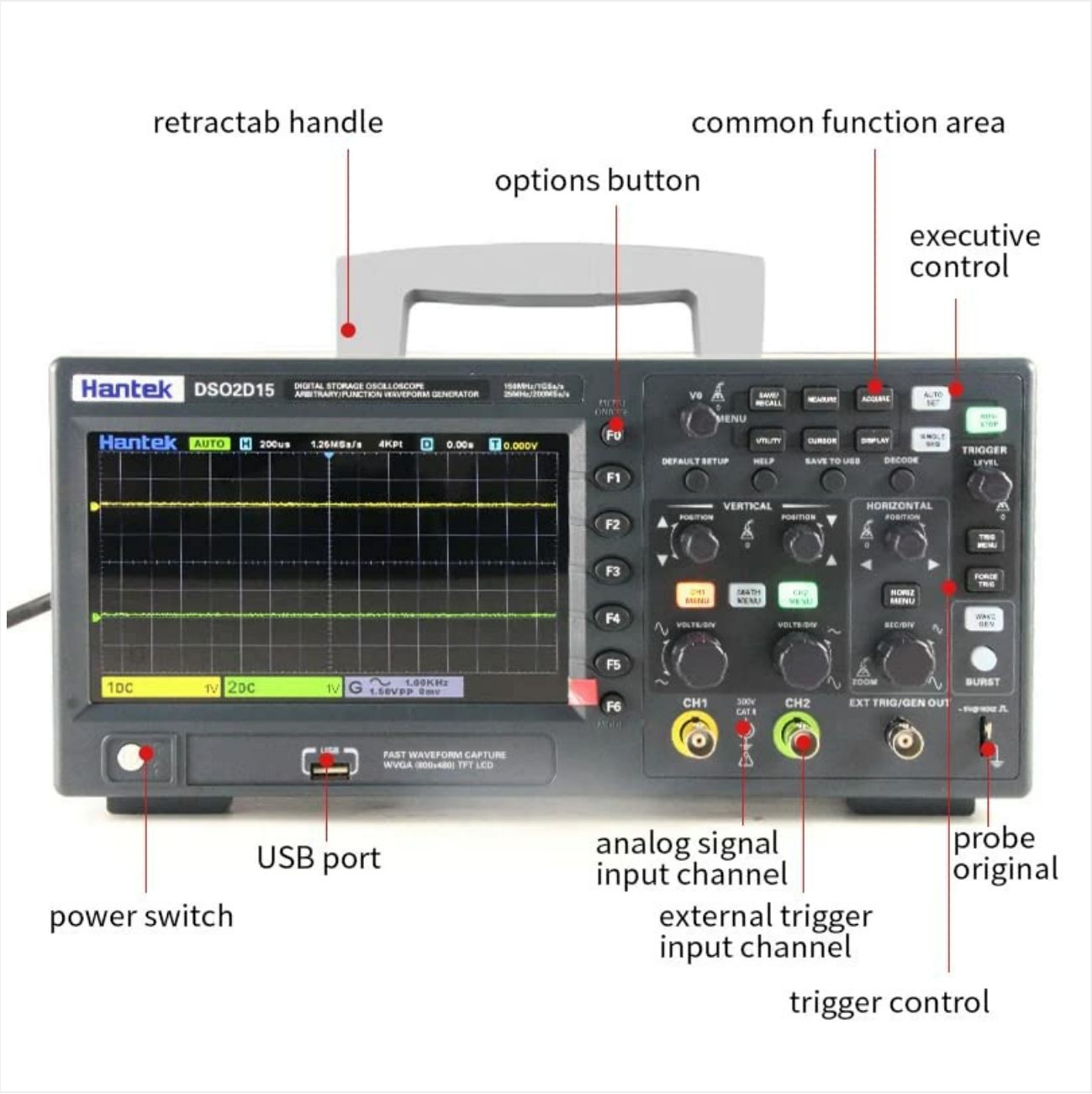


Image: Detailed view of the Hantek DSO2D10 front panel, highlighting the power switch, USB port, analog signal input channels (CH1, CH2), external trigger input, probe compensation output, trigger control, options buttons (F0-F6), common function area, executive control buttons, and retractable handle.

The front panel provides access to all essential controls and input/output connectors:

- **Power Switch:** Turns the device on/off.
- **USB Port:** For connecting to a PC or USB storage device.
- **Analog Signal Input Channels (CH1, CH2):** BNC connectors for connecting oscilloscope probes.
- **External Trigger Input (EXT TRIG/GEN OUT):** BNC connector for external trigger signals or signal generator output.
- **Probe Compensation Output (PROBE ORIGINAL):** Used for adjusting probe compensation.
- **Trigger Control:** Knobs and buttons for setting trigger level, mode, and source.
- **Vertical Controls:** Knobs for adjusting vertical position and volts/division for each channel.
- **Horizontal Controls:** Knobs for adjusting horizontal position and time/division.
- **Function Buttons (F0-F6):** Context-sensitive buttons for menu navigation and quick access to functions.
- **Common Function Area:** Buttons for menu, default setup, help, save, acquire, display, measure, cursor, utility.

- **Executive Control:** Buttons like AUTO, RUN/STOP, SINGLE.
- **Retractable Handle:** For portability.

5. Setup

5.1 Initial Power-Up

1. Connect the power cord to the oscilloscope's power input and then to a grounded AC power outlet.
2. Press the power switch on the front panel to turn on the oscilloscope.
3. The device will perform a self-test and display the boot screen.

5.2 Probe Connection and Compensation

1. Connect the probe to one of the analog input channels (CH1 or CH2).
2. Attach the probe tip to the "PROBE ORIGINAL" terminal on the front panel.
3. Adjust the compensation screw on the probe until a flat-top square wave is displayed on the screen. This ensures accurate measurements.

6. Operation

6.1 Basic Measurement

1. Connect the compensated probe to the circuit you wish to measure.
2. Press the **AUTO** button for automatic waveform setup.
3. Adjust the **VERTICAL** (Volts/Div) and **HORIZONTAL** (Time/Div) knobs to fine-tune the waveform display.
4. Use the **POSITION** knobs to move the waveform vertically or horizontally.

6.2 Using the Built-in Signal Generator (DSO2D10/DSO2D15 models only)

The DSO2D10 model includes a 1-channel arbitrary waveform generator. The output is available via the**EXT TRIG/GEN OUT** BNC connector.

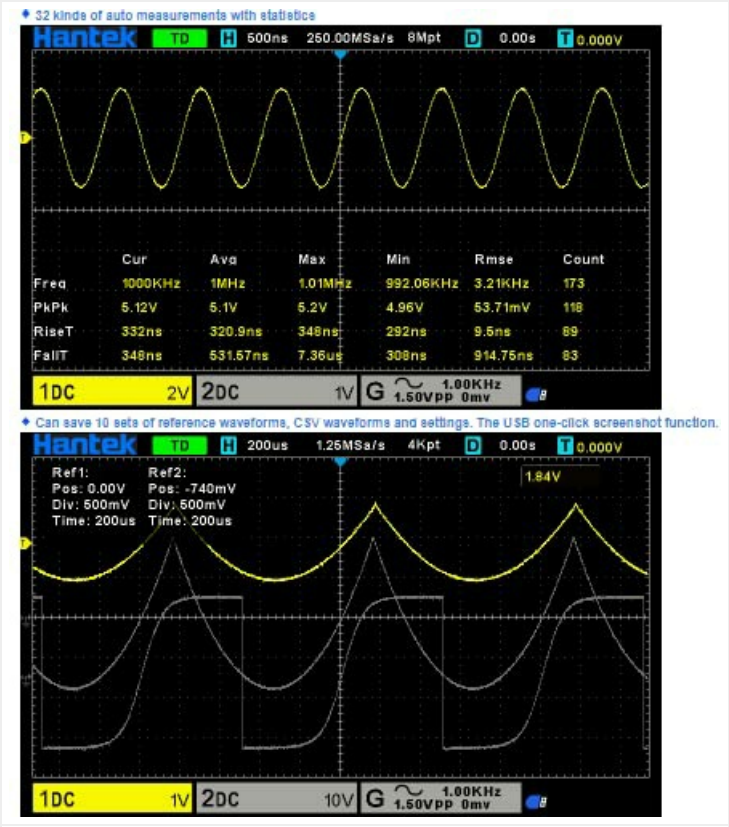


Image: Screenshot of the oscilloscope display showing a sine wave generated by the built-in signal generator, with frequency and amplitude parameters visible.

1. Connect a BNC cable from the **EXT TRIG/GEN OUT** port to an input channel (e.g., CH1) to view the generated waveform.
2. Access the signal generator menu (refer to the on-screen menu for specific navigation).
3. Select the desired waveform type (e.g., sine, square, triangle), frequency, amplitude, and offset.
4. Enable the output to generate the signal.

6.3 Advanced Measurement Functions

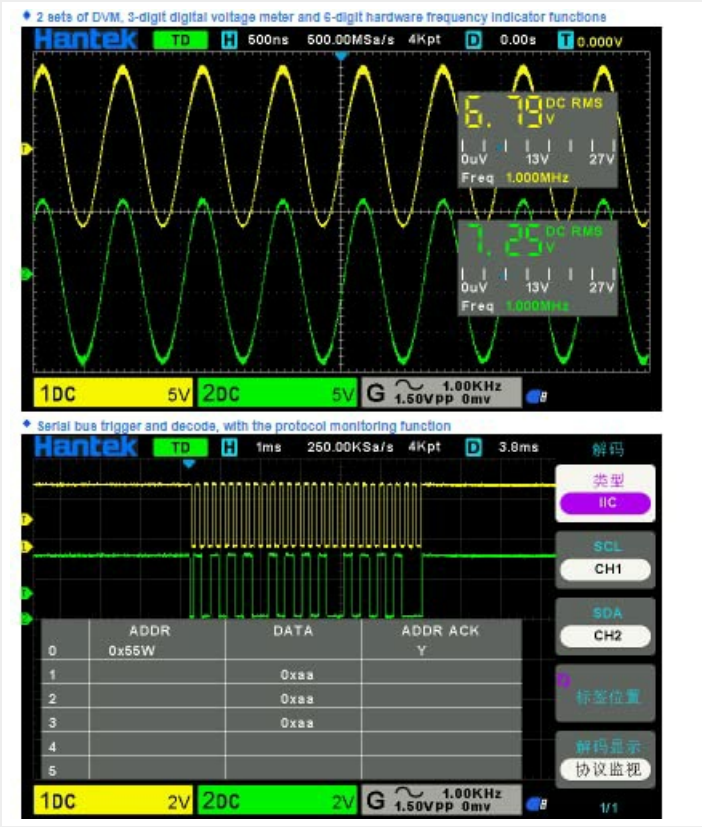


Image: Oscilloscope screen displaying automatic measurements with statistics, including frequency, peak-to-peak voltage, rise time, and fall time for a captured waveform.

PRODUCT MODEL



Model	DSO2C10	DSO2C15	DSO2D10	DSO2D15
Channels	2CH	2CH	2CH+1CH	2CH+1CH
Bandwidth	100MHZ	150MHZ	100MHZ	150MHZ
Sample Rate	1GSa/S	1GSa/S	1GSa/S	1GSa/S
Storage depth	8M	8M	8M	8M
Built-in signal source	N/A	N/A	1CH	1CH
Rise Time at BNC (typical)	3.5NS	2.3NS	3.5NS	2.3NS
Display type	7" TFT LCD display diagonally	7" TFT LCD display diagonally	7" TFT LCD display diagonally	7" TFT LCD display diagonally
Oscilloscope size	318*140*150mm	318*140*150mm	318*140*150mm	318*140*150mm

Image: Oscilloscope screen showing two advanced functions: a 3-digit digital voltage meter (DVM) and a 6-digit hardware frequency indicator, along with a serial bus trigger and decode function displaying I2C protocol data.

- **Automatic Measurements:** Press the **MEASURE** button to display various waveform parameters automatically (e.g., Vpp, Vmax, Freq, Period).
- **Cursor Measurements:** Use the **CURSOR** button to enable cursors for precise manual measurements of voltage and time differences.
- **Digital Voltage Meter (DVM):** The device includes a DVM function for precise voltage readings.
- **Serial Bus Decode:** Supports decoding of common serial protocols like I2C, SPI, UART (check specific model capabilities).
- **Waveform Storage:** Save waveforms and settings to internal memory or a USB drive using the **SAVE** function.

7. Maintenance

7.1 Cleaning

To maintain the appearance and prolong the life of the instrument, clean the case and front panel regularly. Use a soft

cloth dampened with a mild detergent and water. Do not use abrasive cleaners or solvents.

7.2 Calibration

The oscilloscope is factory calibrated. For optimal performance, periodic calibration by qualified personnel is recommended, typically every 1-2 years, depending on usage.

8. Troubleshooting

Problem	Possible Cause	Solution
No display after power-on.	Power cord not connected; power switch off; internal fault.	Check power cord connection; ensure power switch is on; contact support if issue persists.
No waveform displayed.	Probe not connected; input signal too small/large; trigger settings incorrect; channel off.	Connect probe correctly; adjust Volts/Div; adjust trigger level/mode; ensure channel is enabled. Press AUTO.
Waveform is unstable.	Incorrect trigger source or mode; noisy signal.	Adjust trigger source/mode (e.g., Edge, Auto); ensure stable input signal.
USB connection issues.	Incorrect cable; driver not installed; software not running.	Use provided USB cable; install necessary drivers on PC; ensure PC software is running.

9. Specifications

The following table outlines the key technical specifications for the Hantek DSO2D10 Digital Storage Oscilloscope and related models.

◆ Model

Model	Channel	Bandwidth	Sample rate	Memory depth	AWG
DSO2C10	2 CH	100 MHz	1GSa/S	8M	Without
DSO2C15	2 CH	150 MHz	1GSa/S	8M	Without
DSO2D10	2 CH+1CH	100 MHz	1GSa/S	8M	1CH
DSO2D15	2 CH+1CH	150 MHz	1GSa/S	8M	1CH

◆ 1CH 25MHz waveform generator, support arbitrary waveform burst output, support modulation wavefor

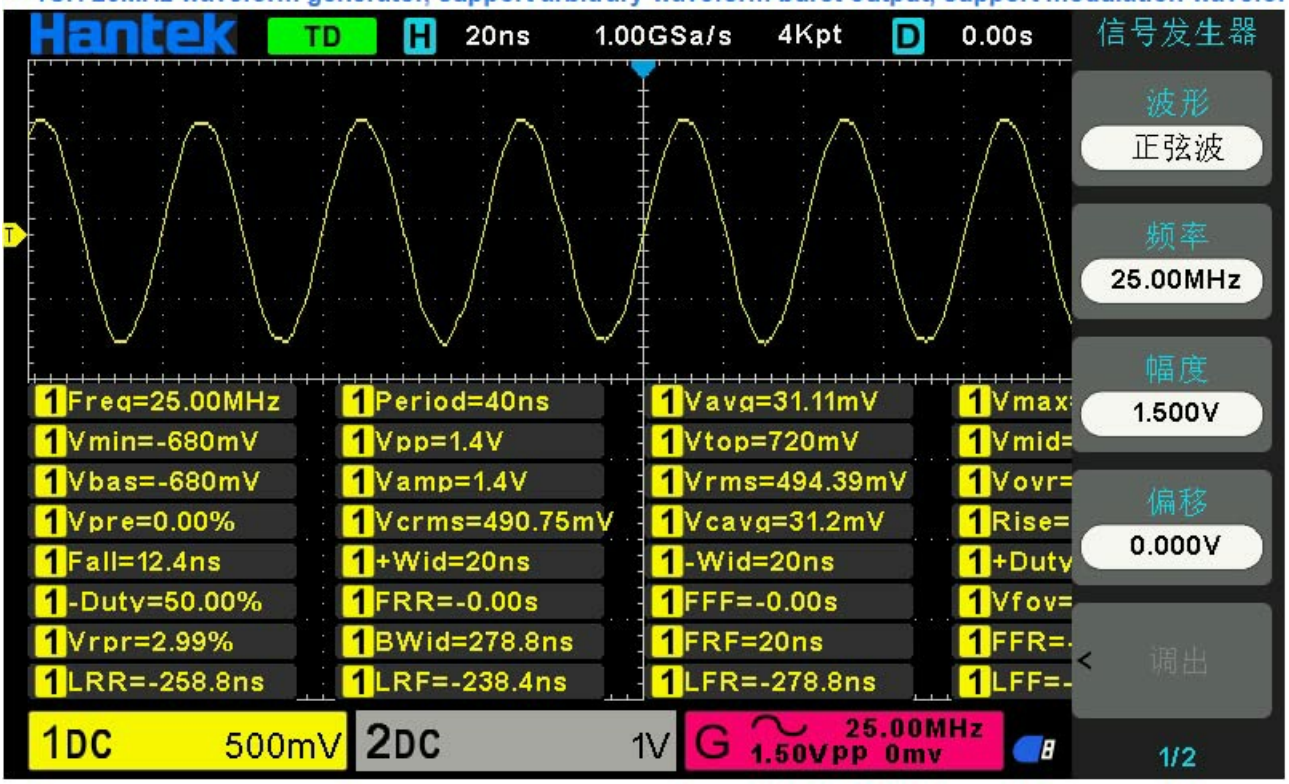


Image: A comparison table detailing specifications for Hantek DSO2C10, DSO2C15, DSO2D10, and DSO2D15 models, including channels, bandwidth, sample rate, storage depth, built-in signal source, rise time, display type, and oscilloscope size.

Parameter	Specification (DSO2D10)
Model	DSO2D10
Channels	2 CH + 1 CH (AWG)
Bandwidth	100 MHz
Sample Rate	1 GSa/s
Storage Depth	8 M
Built-in Signal Source	1 CH (Arbitrary Waveform Generator)
Rise Time at BNC (typical)	3.5 NS
Display Type	7" TFT LCD display diagonally
Oscilloscope Size	318*140*150mm
Product Dimensions	8.66 x 5.91 x 4.72 inches

Parameter	Specification (DSO2D10)
Item Weight	1.1 Pounds
Batteries	1 Lithium Ion battery required (included)

10. Warranty and Support

Hantek products are designed for reliability and performance. For warranty information, technical support, or service inquiries, please refer to the warranty card included with your product or visit the official Hantek website. Keep your purchase receipt as proof of purchase.
For further assistance, you may also contact your local distributor or reseller.

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Ask a question about this manual

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

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Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

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