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Siglent SDS5034X

SIGLENT SDS5000X Series Oscilloscope User Manual

Model: SDS5034X

INTRODUCTION

This manual provides comprehensive instructions for the setup, operation, maintenance, and troubleshooting of the SIGLENT SDS5000X Series Digital Storage Oscilloscope, specifically model SDS5034X. This instrument is designed for precise electronic signal analysis, offering advanced features for various applications.



This image shows the front view of the SIGLENT SDS5000X Series Oscilloscope. A hand is visible, pointing towards the large 10.1-inch capacitive touchscreen display, which shows two distinct waveform signals. The front panel features various control knobs and buttons, along with input channels and USB ports. The device is supported by two sturdy feet.

What's in the Box

Upon unpacking, please verify that all components are present and undamaged. The standard package for the SDS5000X Series Oscilloscope includes:

- SIGLENT SDS5000X Series Oscilloscope (Model SDS5034X)
- Power Cord
- USB Cable
- Passive Probes (quantity may vary by model configuration)
- Quick Start Guide
- Product Certification

If any items are missing or damaged, please contact your vendor or SIGLENT customer support immediately.

Setup

1. Power Connection

1. Ensure the oscilloscope is placed on a stable, level surface with adequate ventilation.
2. Connect the provided power cord to the AC power input on the rear panel of the oscilloscope.
3. Plug the other end of the power cord into a grounded AC power outlet.
4. Press the power button located on the front panel to turn on the device.

2. Probe Connection

1. Connect the BNC connector of the passive probe to one of the input channels (CH1, CH2, CH3, CH4) on the front panel.
2. Attach the probe's ground clip to the circuit's ground reference.
3. Connect the probe tip to the test point on your circuit.
4. Perform probe compensation as described in the operating section for accurate measurements.

Operating Instructions

The SDS5000X Series features a 10.1-inch capacitive touchscreen display supporting multi-touch gestures, alongside traditional knob and button controls for intuitive operation.

Basic Waveform Display and Control

- **Vertical Controls:** Use the vertical scale knobs (V/div) and position knobs for each channel to adjust the vertical sensitivity and offset of the waveform.
- **Horizontal Controls:** Use the horizontal scale knob (s/div) and position knob to adjust the time base and horizontal offset.
- **Trigger System:** The trigger system allows for stable display of repetitive signals. Access trigger settings via the dedicated trigger menu. Supported modes include:
  - Level, Flank, Pulse, Window, Runt, Interval, Dropout, Pattern, Qualified, and Video (HDTV support).
- **Touchscreen Interface:** Utilize pinch-to-zoom for scaling waveforms, drag-and-drop for positioning, and tap for menu selections.

Advanced Features

- **Serial Bus Decoding:** The oscilloscope supports decoding for various serial protocols including I2C, SPI, UART, CAN, LIN, CAN FD, FlexRay, I2S, and MIL-STD-1553B. Access these functions through the 'Decode' menu.
- **Segmented Acquisition Mode (Sequence):** This mode allows the division of the maximum record length into up to 100,000 segments. It captures qualified events with minimal downtime between segments, ideal for capturing rare or intermittent signals.
- **History Waveform Record Function:** The device can record up to 100,000 frames of historical waveforms, enabling detailed review and analysis of past events.
- **Connectivity:** The SDS5000X features USB and LAN interfaces with an integrated web server for remote control and data transfer.

Maintenance

Cleaning the Instrument

To maintain the performance and longevity of your oscilloscope, follow these cleaning guidelines:

- Always disconnect the power cord before cleaning.
- Use a soft, damp cloth with a mild detergent to clean the exterior surfaces. Avoid abrasive cleaners or solvents.
- For the display, use a soft, lint-free cloth specifically designed for electronic screens. Do not spray liquid directly onto the screen.
- Ensure no liquid enters the instrument through ventilation openings or ports.

Environmental Considerations

Operate and store the oscilloscope in a clean, dry environment, away from direct sunlight, excessive dust, and extreme temperatures. Ensure proper ventilation to prevent overheating.

Troubleshooting

This section provides solutions to common issues you might encounter. For problems not listed here, please contact SIGLENT customer support.

Problem	Possible Cause	Solution
No power	Power cord not connected; Power outlet faulty; Instrument fuse blown.	Check power cord connection; Test power outlet; Contact service for fuse replacement.
No waveform display	Input signal too small/large; Vertical scale incorrect; Trigger not set correctly.	Adjust vertical scale (V/div); Check input signal connection; Adjust trigger level and mode.
Unstable waveform	Incorrect trigger source/mode; Noise interference.	Select appropriate trigger source and mode; Ensure proper grounding; Reduce environmental noise.
Touchscreen unresponsive	Temporary software glitch; Screen calibration issue.	Restart the oscilloscope; Refer to the full user manual for screen calibration procedures.

Specifications

Key technical specifications for the SIGLENT SDS5000X Series Oscilloscope (Model SDS5034X):

- **Bandwidth:** 350 MHz (available in 1 GHz, 500 MHz, and 350 MHz variants)
- **Channels:** 4 Analog Channels, 16 Digital Channels (Mixed Signal Analysis)
- **Maximum Sample Rate:** 5 GSa/s
- **Maximum Recording Length:** 250 Mpts/ch
- **Waveform Capture Rate:** Up to 110,000 wfm/s (normal mode), up to 500,000 wfm/s (sequence mode)
- **Display:** 10.1-inch Capacitive Touch Screen, 1024 x 600 Pixels
- **Intensity Grading:** 256 levels
- **Vertical Scale:** 0.5 mV/div to 10 V/div
- **Dimensions (Product):** 19 x 12 x 15 inches
- **Weight (Product):** 13.73 Pounds
- **Manufacturer:** SIGLENT Technologies Germany GmbH
- **Country of Origin:** China

Warranty and Support

SIGLENT products are designed for reliability and performance. For specific warranty terms and conditions, please refer to the warranty card included with your product or visit the official SIGLENT website. Keep your purchase receipt as proof of purchase.

Customer Support

For technical assistance, service, or inquiries, please contact SIGLENT customer support through their official website or the contact information provided in your product documentation. When contacting support, please have your model number (SDS5034X) and serial number ready.
You can also visit the Siglent Store on Amazon for additional product information and resources.

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