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Hantek 6254BE

Hantek 6254BE Digital Automotive PC Oscilloscope User Manual

Model: 6254BE

1. INTRODUCTION

This manual provides detailed instructions for the proper use, setup, and maintenance of the Hantek 6254BE Digital Automotive PC Oscilloscope. This device is designed for automotive diagnostics and general electronic measurements, offering high performance and versatility when connected to a personal computer.

2. SAFETY INFORMATION

Please read and understand all safety instructions before operating the device to prevent injury or damage. Keep this manual for future reference.

- Always connect the oscilloscope to a computer via the provided USB cable.
- Ensure all connections are secure before applying power or making measurements.
- Do not expose the device to moisture, extreme temperatures, or direct sunlight.
- Avoid using the device in environments with strong electromagnetic interference.
- Only use accessories and probes supplied or approved by Hantek.
- Refer servicing to qualified personnel only.

3. PACKAGE CONTENTS

Verify that all items listed below are present in your package. If any items are missing or damaged, contact your vendor immediately.



Figure 3.1: Hantek 6254BE Digital Oscilloscope and included accessories. This image displays the main oscilloscope unit, various test leads, probes, USB cable, and a software CD.

- Hantek 6254BE Digital Oscilloscope Unit
- USB Cable
- Test Probes (Quantity and type may vary by package)
- Alligator Clip Leads
- Software CD (or download link)
- User Manual (this document)

4. PRODUCT OVERVIEW

The Hantek 6254BE is a 4-channel PC-based digital oscilloscope designed for a wide range of applications, particularly in automotive diagnostics. It features a 250MHz bandwidth, 1GSa/s real-time sampling rate, and high input sensitivity.

4.1. Key Features

- **Channels:** 4
- **Bandwidth:** 250MHz
- **Real-time Sampling Rate:** 1GSa/s
- **Input Sensitivity:** 2mV-10V/DIV
- **Automatic Measurements:** Over 20 types, including PASS/FAIL check.
- **Connectivity:** USB 2.0 (Plug and Play)
- **System Compatibility:** Supports Windows 7, 8, 10, 11.

4.2. Device Layout



Figure 4.1: Front and rear panel views of the Hantek 6254BE. The front panel shows the four BNC input channels (CH1, CH2, CH3, CH4).

The rear panel includes the USB connection port and a 5V power input, though the USB XITM interface is noted as non-functional.

1. **CH1-CH4 BNC Inputs:** Connect test probes and leads here.
2. **USB Port:** Connects to your PC for data transfer and power.
3. **5V Power Input:** Optional external power supply connection (if required by specific applications or PC USB power

limitations).

4. **Vents:** Located on the sides and bottom for heat dissipation, ensuring stable performance.



VENTS

Improve heat dissipation efficiency, thereby creating a more stable performance output environment.



Figure 4.2: Dimensions of the Hantek 6254BE (175mm x 105mm x 25mm) and an illustration of its ventilation system. The vents are crucial for maintaining optimal operating temperature and device longevity.

5. SETUP INSTRUCTIONS

Follow these steps to set up your Hantek 6254BE oscilloscope.

5.1. System Requirements

- Operating System: Windows 7, Windows 8, Windows 10, or Windows 11.
- USB 2.0 port or higher.
- Sufficient free disk space for software installation.

5.2. Software Installation

1. Insert the provided software CD into your computer's CD-ROM drive. If no CD drive is available, download the latest software and drivers from the official Hantek website.
2. Run the installer executable (e.g., "setup.exe") and follow the on-screen prompts.
3. During installation, ensure that all necessary drivers for the Hantek 6254BE are selected and installed.
4. Restart your computer if prompted after installation is complete.

5.3. Connecting the Oscilloscope

1. Connect one end of the USB cable to the USB port on the rear panel of the Hantek 6254BE.
2. Connect the other end of the USB cable to an available USB 2.0 port on your computer.
3. The operating system should automatically detect the device and install any remaining drivers.
4. Launch the Hantek oscilloscope software from your desktop or Start Menu.

One computer could connect with multiple oscilloscopes

**Support WIN10、WIN8、WIN7
Support tablet PC
USB 2.0 interface**

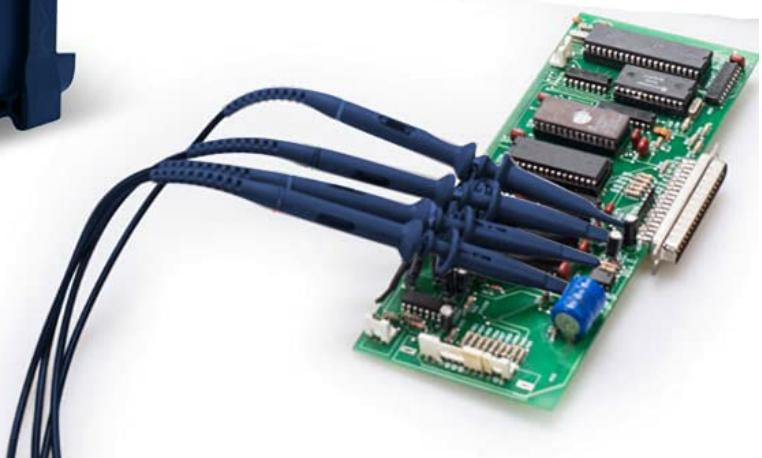


Figure 5.1: The Hantek 6254BE connected to a tablet PC, demonstrating its compatibility with various Windows-based devices. Multiple units can be connected to a single computer for expanded channel capabilities.

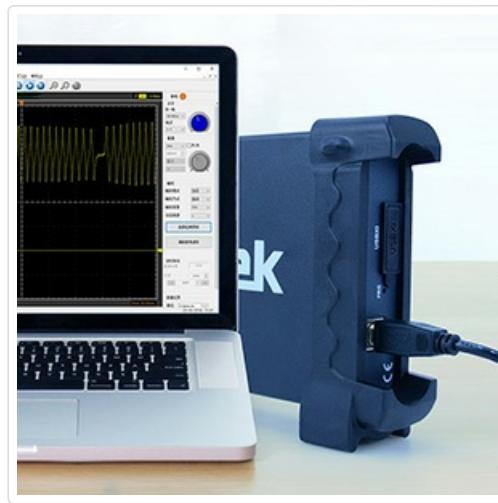


Figure 5.2: The Hantek 6254BE connected to a laptop, displaying the oscilloscope software interface. This setup illustrates the typical operating environment for the device.

6. OPERATING INSTRUCTIONS

This section outlines the basic operation of the Hantek 6254BE using the PC software.

6.1. Software Interface Overview

Upon launching the software, you will see the main waveform display area, control panels for each channel, trigger settings, time base controls, and measurement functions. Familiarize yourself with the layout.

6.2. Connecting Probes and Making Measurements

1. Select the appropriate probe for your measurement. For general purpose, use the provided passive probes. For automotive applications, specialized probes (e.g., ignition probes, current clamps) may be required.
2. Connect the probe to one of the BNC input channels (CH1-CH4) on the oscilloscope.
3. Attach the probe tip to the test point and the ground clip to a suitable ground reference in the circuit under test.
4. In the software, enable the corresponding channel and adjust the vertical scale (Volts/Div) and horizontal scale (Time/Div) to view the waveform clearly.
5. Adjust trigger settings (Type, Source, Level) to stabilize the waveform.

6.3. Automotive Measurement Functions

The Hantek 6254BE is equipped with extensive automotive diagnostic capabilities, including over 80 types of pre-configured measurements.

Virtual Oscilloscope

80 types of automotive measurement function
USB 2.0 interface plug and play



Figure 6.1: The Hantek 6254BE in use for automotive diagnostics, connected to an engine. The software displays various waveforms, indicating its capability for ignition analysis, sensor testing, and bus diagnosis.

- **Ignition Action:** Analyze ignition patterns.
- **Sensor Diagnosis:** Test various automotive sensors (e.g., O2, MAP, Crankshaft Position).
- **Bus Diagnosis:** Monitor CAN bus, LIN bus, etc.
- **Charging Circuits:** Evaluate battery and alternator performance.
- **Starter Circuits:** Diagnose starter motor issues.

Access these functions through the dedicated automotive menu within the software. Each function typically provides guided setup and analysis tools.

6.4. Automatic Measurement and Analysis

The software offers more than 20 types of automatic measurements (e.g., Vpp, Vmax, Vmin, Freq, Period, Rise Time, Fall Time). These can be displayed directly on the screen for quick analysis.

- **PASS/FAIL Check:** Configure limits for specific waveform parameters. The system will automatically indicate if a waveform passes or fails these criteria.
- **Dynamic Cursor Tracking:** Use cursors to precisely measure voltage and time differences on the waveform.
- **Waveform Record and Replay:** Capture and save long waveform sequences for later review and analysis.

7. MAINTENANCE

Proper maintenance ensures the longevity and accuracy of your Hantek 6254BE oscilloscope.

- **Cleaning:** Use a soft, dry cloth to clean the device. Do not use abrasive cleaners or solvents.
- **Storage:** Store the oscilloscope in a cool, dry place, away from direct sunlight and extreme temperatures.
- **Probe Care:** Handle probes carefully. Avoid bending or stressing the cables. Calibrate probes regularly if the software provides this option.

- **Software Updates:** Periodically check the Hantek website for software and driver updates to ensure optimal performance and access to new features.

8. TROUBLESHOOTING

This section addresses common issues you might encounter with your Hantek 6254BE.

Problem	Possible Cause	Solution
Device not recognized by PC.	Drivers not installed correctly. Faulty USB cable or port. Software not running.	Reinstall drivers from the CD or Hantek website. Try a different USB cable or port. Ensure the Hantek software is launched.
No waveform displayed.	Channel disabled in software. Incorrect vertical/horizontal scale. Trigger settings not optimized. Probe not connected or faulty.	Enable the desired channel in the software. Adjust Volts/Div and Time/Div settings. Adjust trigger level and mode. Check probe connection and integrity.
Unstable or noisy waveform.	Improper grounding. External interference. Trigger level too low or high.	Ensure proper grounding of the probe and device. Move the device away from strong electrical noise sources. Adjust trigger level to a stable point on the waveform.

9. SPECIFICATIONS

Detailed technical specifications for the Hantek 6254BE Digital Automotive PC Oscilloscope.

Parameter	Value
Model	6254BE
Channels	4
Bandwidth	250 MHz
Real-time Sampling Rate	1 GSa/s
Input Sensitivity	2mV/DIV - 10V/DIV
Vertical Resolution	8 Bit
Input Coupling	DC, AC, GND
Input Impedance	1MΩ 25pF
Max Input Voltage	40V (Probe X1)

Parameter	Value
Time Base Range	2ns/div - 1000s/div
Trigger Modes	Edge, Pulse, Video, Slope, Overtime, Window, Pattern, Interval, Under time, UART, LIN, CAN, SPI, IIC
Automatic Measurements	Over 20 types (Vpp, Vmax, Vmin, Vtop, Vbase, Vamp, Vavg, Vrms, Overshoot, Preshoot, Freq, Period, Rise Time, Fall Time, Positive Width, Negative Width, Duty Cycle, Delay A→B↑, Delay A→B↓, Phase A→B↑, Phase A→B↓)
Interface	USB 2.0
Operating System Support	Windows 7, Windows 8, Windows 10, Windows 11
Dimensions (L x W x H)	175mm x 105mm x 25mm (approx. 6.9" x 4" x 1")
Weight	Approx. 1.35 kg (2.98 lbs)

10. WARRANTY AND SUPPORT

Hantek provides a limited warranty for this product against defects in materials and workmanship. The warranty period typically starts from the date of purchase. Please refer to the warranty card included with your product or visit the official Hantek website for detailed warranty terms and conditions.

For technical support, software updates, or service inquiries, please contact Hantek customer service through their official website or the contact information provided in your product documentation. When contacting support, please have your product model (6254BE) and serial number ready.

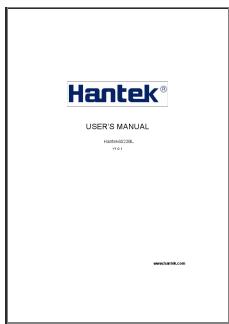
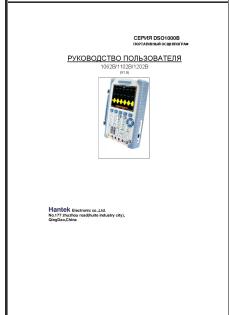
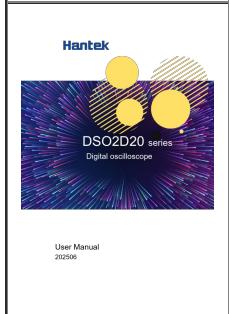
Manufacturer: Hantek

Website: www.hantek.com

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Related Documents - 6254BE

 <small>USER'S MANUAL</small> <small>Hantek 6022BE</small> <small>www.hantek.com</small>	<p>Hantek 6022BE User Manual: Portable PC Oscilloscope Guide</p> <p>Download the Hantek 6022BE user manual for this portable PC-based USB oscilloscope. Learn about its features, setup, operation, and troubleshooting for testing, research, and educational applications.</p>
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	<p><u>Hantek 6022BL User's Manual: Getting Started, Operation, and Features</u></p> <p>Comprehensive user manual for the Hantek 6022BL USB digital storage oscilloscope. Covers system requirements, software installation, driver setup, general features, operating basics, understanding functions, application examples, and technical specifications.</p>
	<p><u>Hantek2D82 Automotive Diagnostic Oscilloscope User Manual Comprehensive Guide</u></p> <p>Explore the Hantek2D82 Automotive Diagnostic Oscilloscope. This user manual provides detailed information on its features, operation, safety, technical specifications, and troubleshooting for automotive diagnostics, DMM, and waveform generation.</p>
	<p><u>Hantek DSO2D20</u> -</p> <p>Hantek DSO2D20</p>
	<p><u>Руководство пользователя Hantek DSO1000B: Портативный осциллограф</u></p> <p>Подробное руководство пользователя для портативных осциллографов Hantek серии DSO1000B, включая модели 1062B, 1102B и 1202B. Ознакомьтесь с установкой, настройкой, функциями и техническими характеристиками.</p>
	<p><u>Hantek DSO2D20 Series Digital Oscilloscope User Manual</u></p> <p>Comprehensive user manual for the Hantek DSO2D20 series digital oscilloscopes, detailing features, operation, troubleshooting, and specifications for accurate signal analysis.</p>