Rigol DHO802

RIGOL DHO802 Digital Oscilloscope User Manual

Model: DHO802

1. INTRODUCTION

The RIGOL DHO802 Digital Oscilloscope is a high-performance instrument designed for precise signal analysis. It features ultra-low background noise for pure signal acquisition and a 12-bit hardware high resolution across all series. With up to 70MHz analog bandwidth and 2 analog channels, it supports real-time sampling rates up to 1.25 GSa/s and a storage depth of up to 25 Mpts. The Ultra Aqua mode provides an impressive 1 million wfms/s waveform capture rate, making it ideal for capturing transient events.
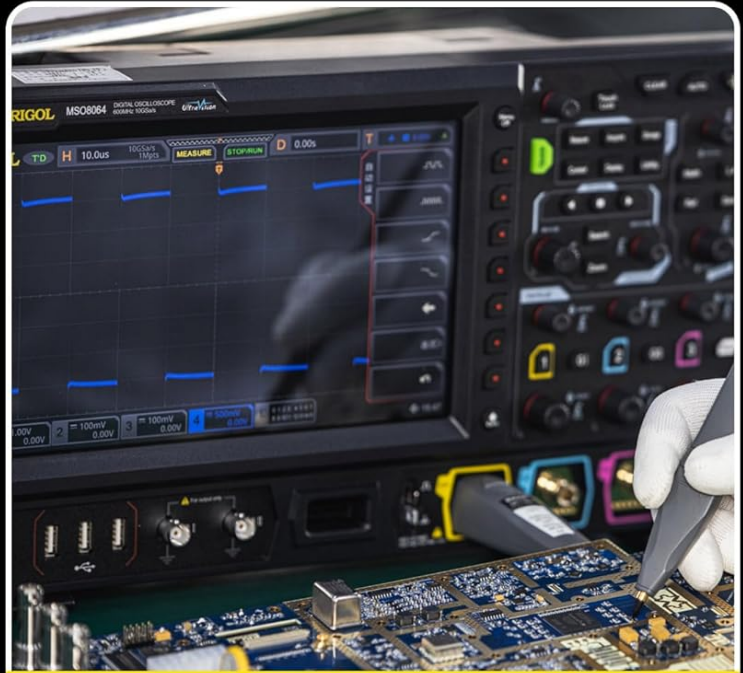
Key features include gray scale digital real-time brightness function, waveform search and navigation, a 7-inch 1024x600 high-definition touch screen, and a new Flex knob for enhanced interactive experience. Connectivity options include USB Device & Host, LAN, and HDMI ports. The compact design ensures convenient maneuverability, and it supports online version upgrades.
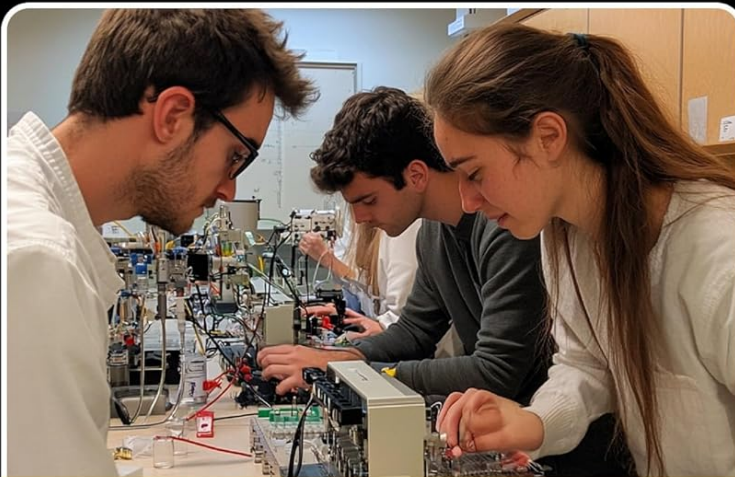
Figure 1.1: Common applications for the DHO802 Digital Oscilloscope, such as embedded development, factory production lines, instrument maintenance, education and research, and automotive manufacturing.

2. WHAT'S IN THE BOX

- Main Unit (1)
- Passive Probes (150MHz) (2)
- Power Supply (1)
- USB Cable (1)
- Grounding Cable (1)
- Warranty Card (1)
- Calibration Certificate (1)
- Card Certificate of Conformity (1)

Figure 2.1: Contents of the RIGOL DHO802 Digital Oscilloscope packaging, including the main unit, probes, power supply, USB cable, grounding cable, and documentation.

3. SETUP

3.1 Unpacking and Inspection

Carefully remove the oscilloscope and all accessories from the packaging. Inspect all items for any signs of damage during transit. If any damage is found, contact your supplier immediately.

3.2 Power Connection

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

3.3 Probe Connection

The DHO802 comes with two passive probes. To connect a probe:

1. Align the BNC connector of the probe with one of the input channels (CH1 or CH2) on the front panel.
2. Push the connector in and twist clockwise until it locks into place.
3. Attach the probe's ground clip to a common ground point in your circuit.
4. For accurate measurements, ensure the probe compensation is correctly adjusted. Refer to the "Probe Compensation" section in the full manual for detailed instructions.
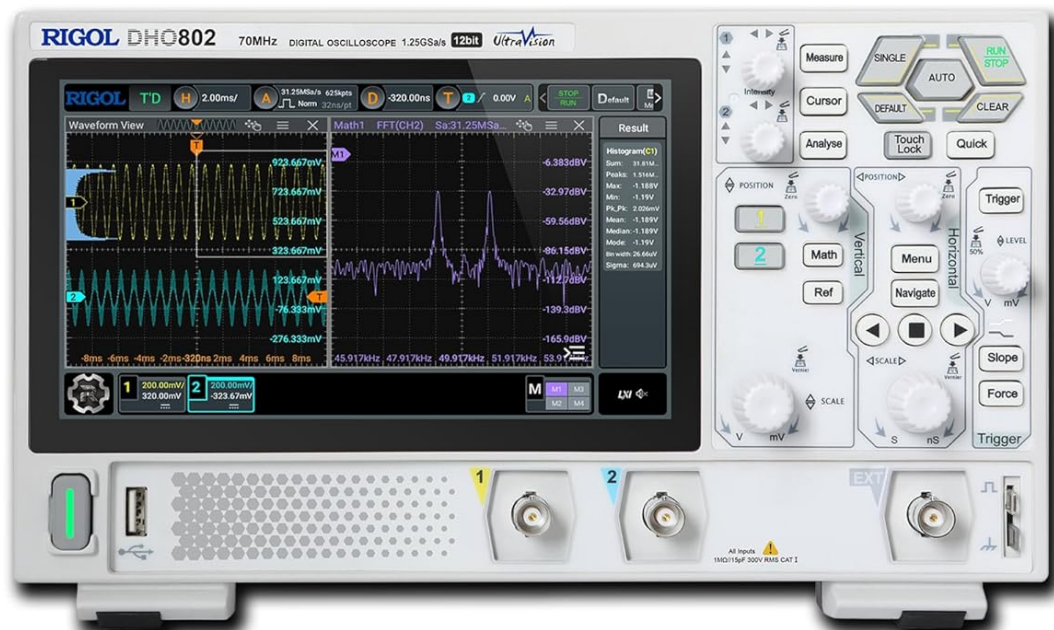

Figure 3.1: The RIGOL DHO802 Digital Oscilloscope with its included probes and cables, ready for setup.

4. OPERATING INSTRUCTIONS

4.1 Front Panel Overview

The front panel of the DHO802 features a 7-inch 1024x600 high-definition touch screen and various controls for intuitive

operation. Key controls include vertical scale and position knobs for each channel, horizontal scale and position knobs, trigger controls, and dedicated function buttons.
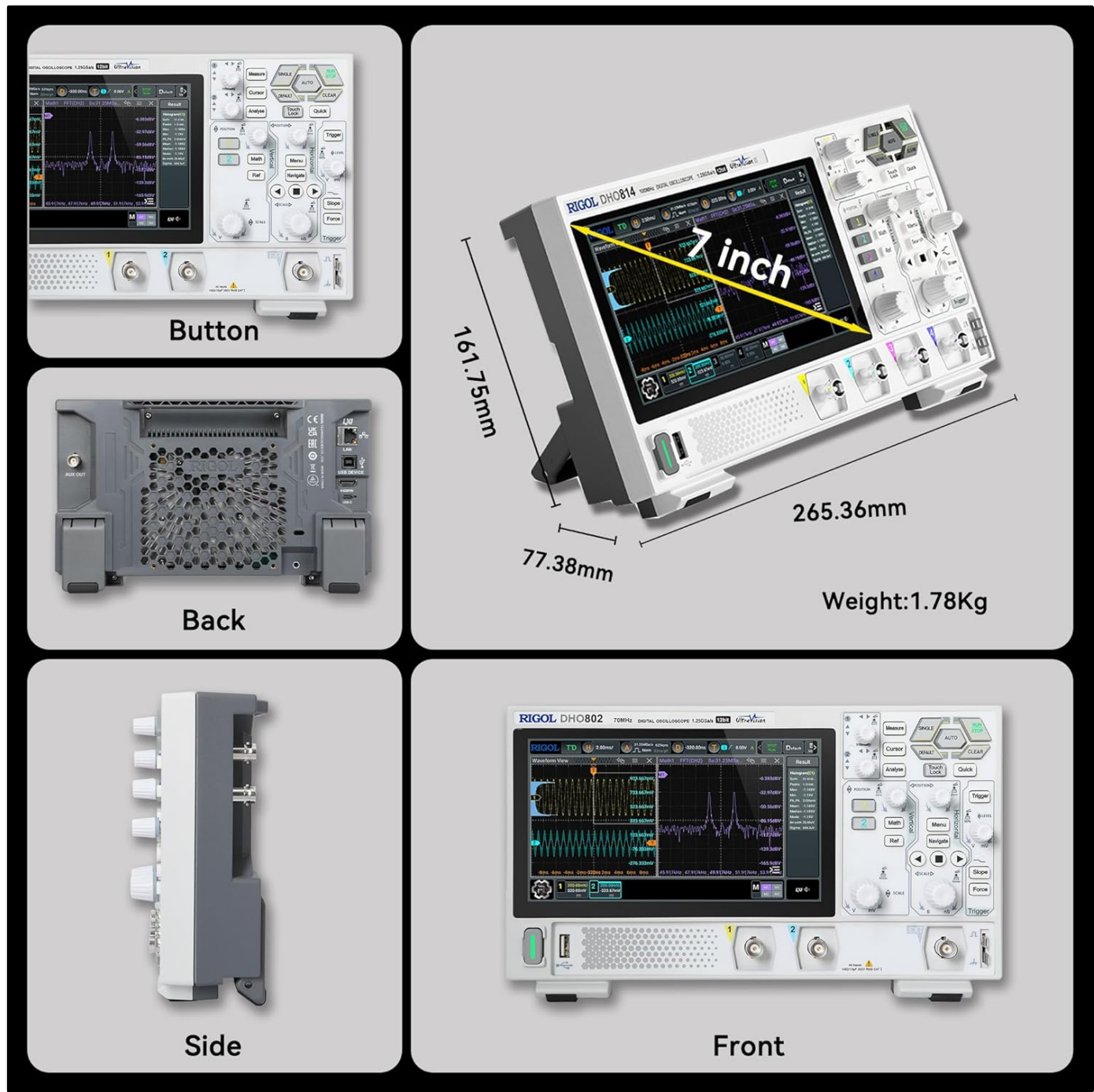

Figure 4.1: Front view of the DHO802, highlighting the touch screen and physical controls.

4.2 Basic Waveform Acquisition

1. Connect the probe to the signal source you wish to measure.
2. Press the **Auto** button on the front panel for automatic setup of vertical, horizontal, and trigger parameters.
3. Adjust the **Vertical Scale** (V/div) and **Vertical Position** knobs for each channel to optimize the waveform display.
4. Adjust the **Horizontal Scale** (s/div) and **Horizontal Position** knobs to view the desired time duration of the waveform.
5. Use the **Trigger** controls to stabilize repetitive waveforms.

4.3 Advanced Features

The DHO802 supports various advanced features accessible via the touch screen and Flex knob:

- **Waveform Search and Navigation:** Utilize the touch screen to easily navigate and search for specific events within long waveform records.
- **Gray Scale Digital Real-time Brightness:** Enhance waveform visibility with 256 levels of brightness, revealing signal details that might otherwise be hidden.
- **Connectivity:** Use the USB, LAN, and HDMI ports for data transfer, remote control, and external display.

The oscilloscope's system supports switching between 8 major languages, including Chinese, English, German, French, Korean, Portuguese, Polish, and Japanese.

Technical Data

DHO802 Digital Oscilloscope

Bandwidth:	70 MHz
No.Channels:	2+EXT
Sample Rate:	1.25G Sa/s
Memory Depth:	25 Mpts
Waveform capture rate:	1,000,000 wfms/s
Vertical Resolution:	12 bit
Min. Vertical Sensitivity:	500uV/div
Min. Timebase:	2 ns/div
Decode Types:	RS232/I2C/SPI/CAN
FFT Functions:	Standard

Figure 4.2: The DHO802 display demonstrating multi-language support.

4.4 Video Demonstration

No official product videos from the seller were available for embedding at this time, as per the embedding guidelines.

5. MAINTENANCE

- Keep the oscilloscope clean and free from dust. Use a soft, dry cloth for cleaning the exterior.

- Avoid exposing the device to extreme temperatures, humidity, or direct sunlight.
- Do not block the ventilation openings on the rear and sides of the instrument.
- Regularly check the probes and cables for any signs of wear or damage. Replace if necessary.
- For internal cleaning or repair, contact qualified service personnel.

6. TROUBLESHOOTING

- **No Power:** Ensure the power cable is securely connected and the power outlet is functional. Check the power button.
- **No Waveform Display:** Verify probes are correctly connected to the input channels and the signal source. Check vertical and horizontal scale settings. Ensure the trigger is properly set or use the Auto button.
- **Unstable Waveform:** Adjust the trigger level and trigger mode. Ensure the trigger source is appropriate for the signal.
- **Software Freezing:** If the software locks up, try restarting the device. If the issue persists, check for available online firmware updates.
- **Distorted Waveform:** Check probe compensation. Ensure the input signal does not exceed the oscilloscope's maximum input voltage.

For persistent issues, refer to the comprehensive help file built into the device or contact RIGOL customer support.

7. SPECIFICATIONS

Feature	Specification
Bandwidth	70 MHz
Analog Channels	2 + EXT
Real-time Sample Rate	Up to 1.25 GSa/s
Memory Depth	Up to 25 Mpts
Waveform Capture Rate	Up to 1,000,000 wfms/s (Ultra Aqua mode)
Vertical Resolution	12-bit
Vertical Sensitivity Range	500 µV/div to 10 V/div
Display	7-inch 1024 x 600 HD Touch Screen
Connectivity	USB Device & Host, LAN, HDMI
Product Dimensions	10.5 x 6.4 x 3.0 inches (265.36 x 161.75 x 77.38 mm)
Product Weight	3.9 lbs (1.78 kg)

Figure 7.1: Key technical specifications of the DHO802 Digital Oscilloscope, highlighting its 70MHz bandwidth and 12-bit resolution.
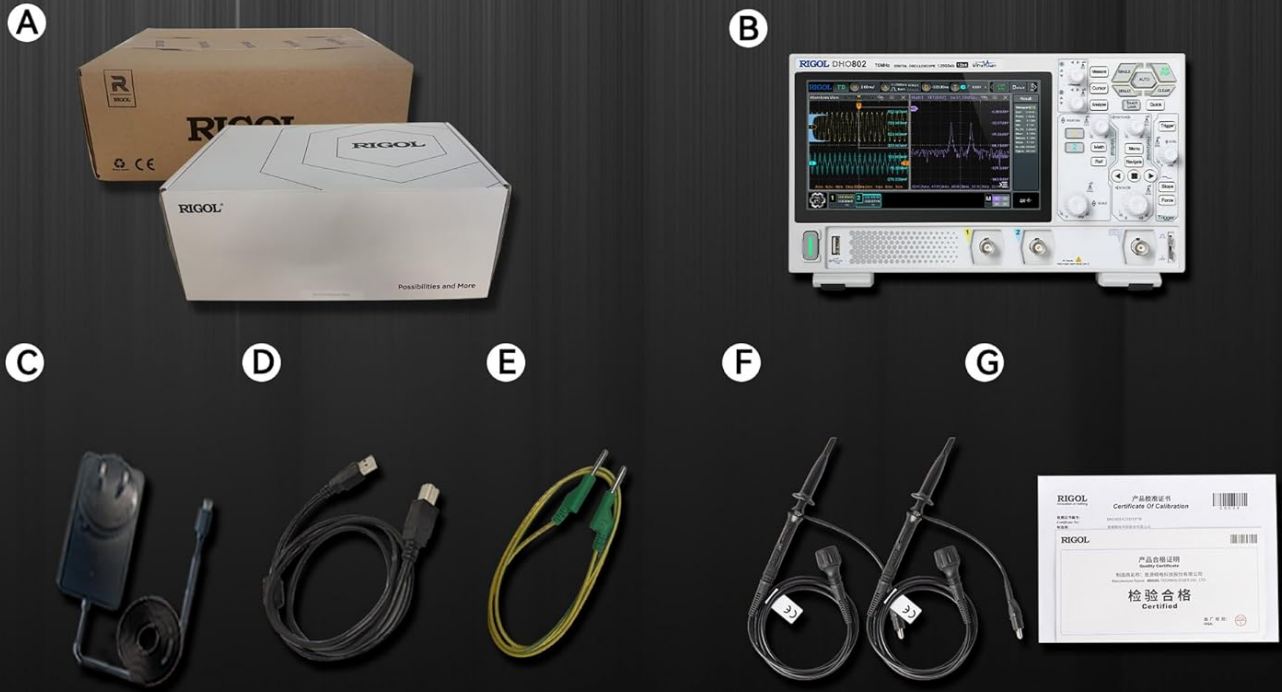
Figure 7.2: Physical dimensions and weight of the RIGOL DHO802 Digital Oscilloscope.

8. WARRANTY AND SUPPORT

The main body of RIGOL equipment, including the DHO802 Digital Oscilloscope, comes with a standard 3-year warranty.
For detailed warranty terms and conditions, please refer to the warranty card included in the product packaging.
For further support, technical assistance, or service inquiries, please visit the official Rigol Store on Amazon: Rigol Store.

Related Documents - DHO802

	[RIGOL DHO800 Series Digital Oscilloscope Quick Guide](#) Quick guide for the RIGOL DHO800 Series Digital Oscilloscope, covering safety, setup, operation, and remote control. Features include 12-bit resolution, 25 Mpts memory depth, and 1,000,000 wfms/s capture rate.
	[RIGOL DHO800 Series Digital Oscilloscope Quick Guide](#) Get started quickly with the RIGOL DHO800 Series Digital Oscilloscope. This guide covers essential safety information, product overview, front and rear panel details, user interface, preparation for use, touch screen gestures, parameter setting, and remote control options.
	[RIGOL DHO800 Series Digital Oscilloscope Quick Guide](#) This quick guide provides essential information for the RIGOL DHO800 series digital oscilloscopes, covering safety precautions, product overview, preparation steps, user interface, touch gestures, parameter setting, remote control, and additional product information. It details the DHO802, DHO804, DHO812, and DHO814 models.
	[RIGOL DHO800 Series Digital Oscilloscope Quick Guide](#) A quick guide to the RIGOL DHO800 Series Digital Oscilloscope, covering safety requirements, product overview, preparation for use, touch screen gestures, parameter setting, remote control, and more. Includes model specifications and operational details.
	[RIGOL DHO800 Series Digital Oscilloscope Quick Guide - Safety, Features, and Operation](#) Comprehensive Quick Guide for the RIGOL DHO800 Series Digital Oscilloscope. Learn about safety requirements, product overview, front/rear panel details, user interface, preparation, and basic operations. Includes model specifications and operational gestures.

MHO98
Digital Oscilloscope

Data Sheet
DSA48102-1110
Sept. 2025

[RIGOL MHO98 Digital Oscilloscope Data Sheet - High-Performance Test Equipment](#)
Detailed data sheet for the RIGOL MHO98 Special Edition Digital Oscilloscope, featuring 1 GHz bandwidth, 4 GSa/s sample rate, 12-bit resolution, 500 Mpts memory, and a 7-inch touch screen. Includes specifications, features, applications, and accessories.