

Wemay WemayE16640

User Manual for ERYUE DSO2512G Oscilloscope

Model: WemayE16640

1. INTRODUCTION

This manual provides detailed instructions for the operation, maintenance, and troubleshooting of the ERYUE DSO2512G Portable Handheld Dual Channel Oscilloscope. Please read this manual thoroughly before using the device to ensure proper and safe operation.

2. PRODUCT OVERVIEW

The ERYUE DSO2512G is a portable handheld dual-channel oscilloscope featuring a 120M bandwidth and a 2.8-inch display. It integrates ARM and FPGA chip collocation for high-speed signal acquisition and data processing. This device also includes a signal generator capable of outputting various waveforms.



Figure 2.1: Front view of the DSO2512G Oscilloscope. The device features a central display screen showing waveform data, surrounded by control buttons for navigation, menu access, and function selection.

3. KEY FEATURES

- **Bandwidth:** 120M (single channel), 60M (dual channel).
- **Sampling Rate:** 500M.
- **Display:** 2.8-inch screen.
- **Vertical Sensitivity:** 10mV/div to 10V/div.
- **Time Base:** 5ns to 10s.
- **Processor:** ARM and FPGA chip collocation for high-speed processing.
- **Signal Generator:** Outputs 2.5V amplitude waveforms (Sine: 0-10MHz, Others: 0-2MHz).
- **Measurement Options:** Frequency, Peak-to-Peak, Duty cycle, Amplitude, RMS, Average, Period, +Pulse width, -Pulse width, Max, Min, Top, Base, -Duty cycle.
- **FFT:** Supports logarithmic, linear, and music spectrum display modes.
- **Waveform Save/View:** Ability to save and view up to 250 waveforms.
- **XY Mode:** Supported for phase relationship analysis.
- **Trigger Type:** Rise/Fall.
- **Max Voltage:** $\pm 40V$ (x1), $\pm 400V$ (x10).

- **Battery:** 4000mAh lithium battery.

Basic features

- 120M Bandwidth
- Generator-10MHz
- XY mode
- Video output
- Single trigger
- Cursor measurement
- 2.8 inch screen
- 10mV sensitivity
- FFT Spectrum



Figure 3.1: Visual summary of the oscilloscope's basic features, highlighting its technical capabilities and display characteristics.

High Bandwidth

Up to 120M bandwidth can easily cope with measurement tests in various fields. Such as mcu debugging, car repair, home appliance repair, personal DIY, electronic competition, power supply debugging, inverter, etc. It can also be used as a portable tool for on-site debugging.



Figure 3.2: High Bandwidth capability. The 120M bandwidth allows for versatile measurement tests in applications such as MCU debugging, car repair, and home appliance maintenance.

HIGH-PERFORMANCE PROCESSOR

DUAL CHIP FULL SPEED

Adopt the combination of ARM and FPGA chip to provide high-speed signal sampling and high-speed data processing.

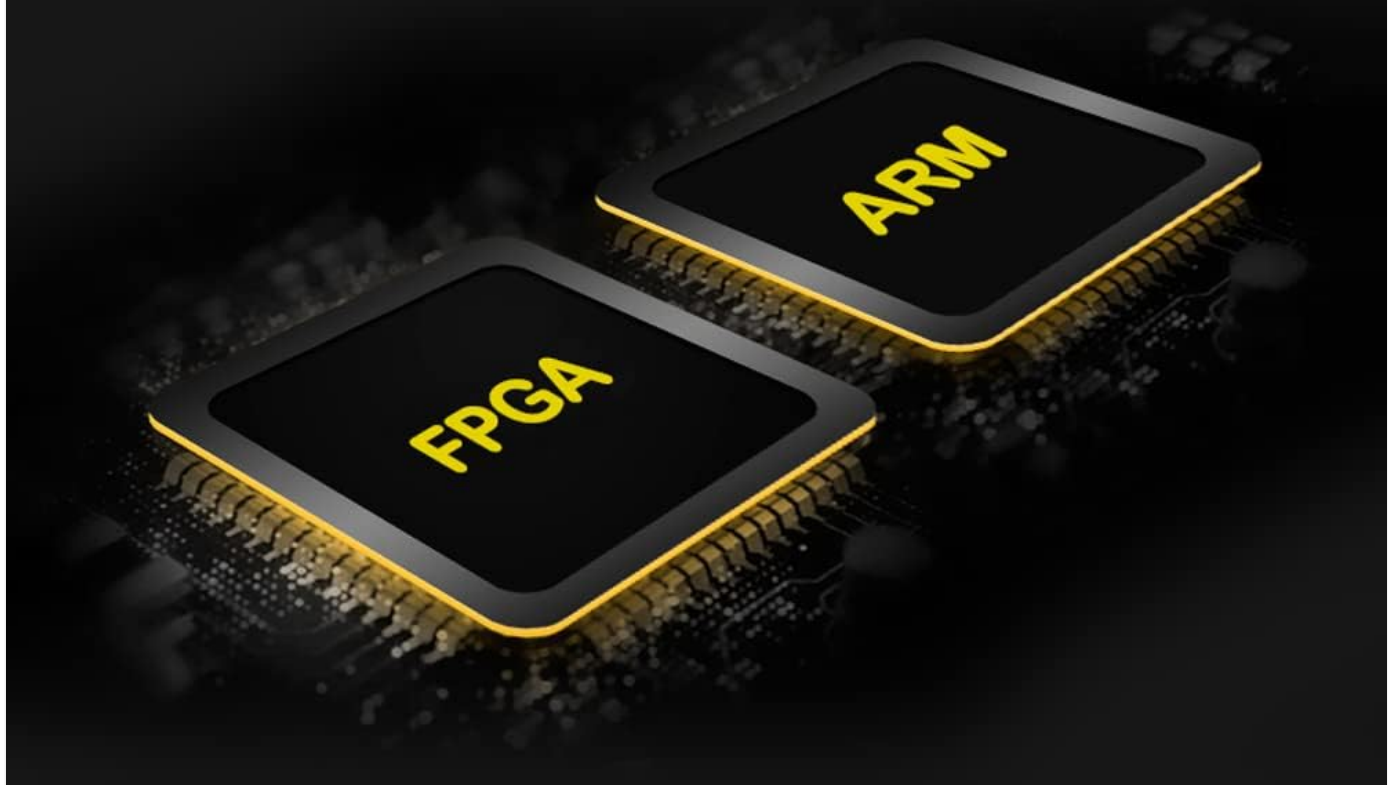


Figure 3.3: High-Performance Processor. The device utilizes a combination of ARM and FPGA chips for efficient signal sampling and data processing.

Signal generator

The bottom of the oscilloscope can output a variety of waveforms with 2.5V amplitude, among which the sine wave frequency adjustment range is 0~10MHz, the other waveform frequency range is 0~2MHz, and the accuracy is up to 0.1Hz.



Figure 3.4: Signal Generator Function. The oscilloscope can output various waveforms with 2.5V amplitude, including sine, square, triangle, half, and single waves. The sine wave frequency range is 0-10MHz, and others are 0-2MHz.

FFT

FFT is used to convert time domain waveforms into frequency domain and is widely used in harmonic analysis and other fields.

Support three display modes:

1. logarithmic
2. linear
3. music spectrum.



Figure 3.5: FFT Spectrum Analysis. The device supports FFT (Fast Fourier Transform) for converting time domain waveforms into frequency domain, with logarithmic, linear, and music spectrum display options.

Waveform save/view

One-click to save the screen waveform, enter the waveform preview page, click the thumbnail to observe the full screen, and up to 250 waveforms can be saved. Unwanted waveforms can be deleted.



Figure 3.6: Waveform Save and View. Users can save screen waveforms and view up to 250 stored waveforms, with the option to delete unwanted ones.

4. WHAT'S IN THE BOX

Upon opening the package, please verify that all components are present and undamaged:

- 1 x ERYUE DSO2512G Oscilloscope
- 2 x Probes
- 1 x Video Cable
- 1 x Gan Cable
- 1 x Storage Bag
- 1 x User Manual (this document)

5. SETUP

5.1 Charging the Battery

The oscilloscope is powered by a built-in 4000mAh lithium battery. Before first use, ensure the device is fully charged. Connect the provided charging cable to the device's charging port and a suitable USB power adapter (not included). The charging indicator will show the charging status.

5.2 Attaching Probes

Connect the oscilloscope probes to the BNC connectors on the top of the device. Ensure a secure connection by twisting the probe connector until it locks into place. The device supports two channels.

5.3 Initial Power On

Press and hold the power button (location typically on the side or front panel) until the display illuminates. The device will perform a self-test and then display the main measurement interface.

6. OPERATING INSTRUCTIONS

6.1 Basic Measurement

1. **Power On:** Turn on the oscilloscope as described in Section 5.3.
2. **Connect Probe:** Attach a probe to the desired channel (CH1 or CH2).
3. **Connect to Circuit:** Connect the probe tip to the test point in your circuit and the ground clip to the circuit's ground.
4. **Auto-Set:** Press the "Auto" button to automatically adjust vertical and horizontal settings for a stable waveform display.
5. **Adjust Settings:** Use the navigation buttons and "Menu" button to fine-tune vertical sensitivity (V/div), time base (s/div), and trigger settings as needed.
6. **Read Measurements:** The display will show real-time waveform data and automatic measurements (e.g., Frequency, P-peak to P-peak).

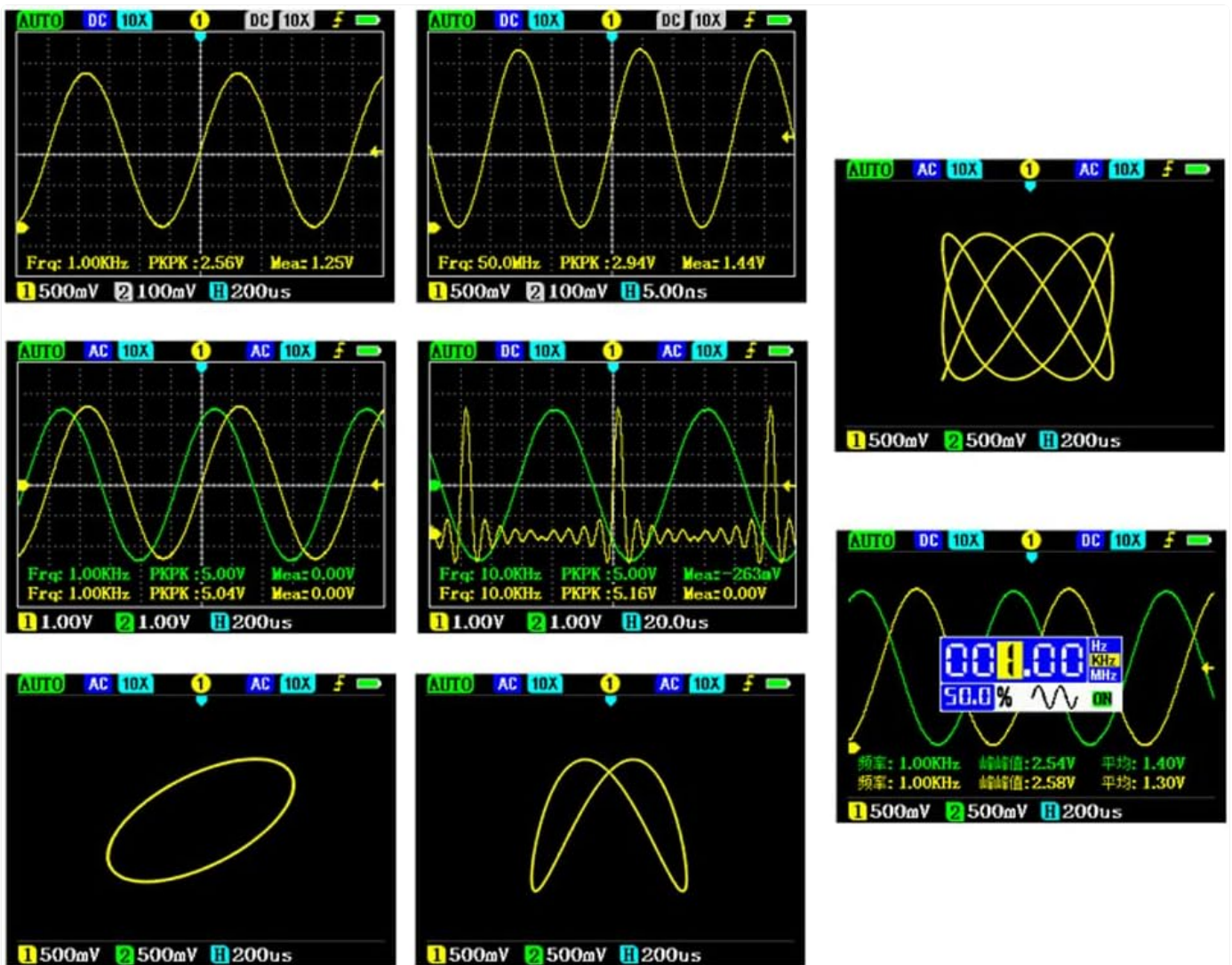


Figure 6.1: Examples of waveform displays on the oscilloscope, demonstrating its ability to capture and analyze different signal types, including sine waves and Lissajous figures in XY mode.

6.2 Signal Generator Function

The oscilloscope can also function as a signal generator. The output port for the signal generator is typically located at the bottom of the device (red hole for signal, black hole for GND).

1. **Access Generator:** Navigate to the signal generator function through the menu.
2. **Select Waveform:** Choose the desired waveform type (sine, square, triangle, etc.).
3. **Set Frequency:** Adjust the output frequency. Sine waves support 0-10MHz, others 0-2MHz.
4. **Connect Output:** Connect the signal generator output to your target circuit.

6.3 FFT Spectrum Analysis

The FFT (Fast Fourier Transform) function allows for frequency domain analysis of signals.

1. **Enter FFT Mode:** Select FFT from the main menu.
2. **Choose Display Mode:** Select between logarithmic, linear, or music spectrum display modes based on your analysis needs.
3. **Analyze Spectrum:** Observe the frequency components of your input signal.

6.4 Waveform Saving and Viewing

To save a waveform displayed on the screen:

1. **Save Waveform:** Press the "Save" button (or navigate via menu) to capture the current waveform.
2. **View Saved Waveforms:** Access the waveform preview page to browse saved waveforms. Up to 250 waveforms can be stored.
3. **Delete Waveforms:** Unwanted waveforms can be deleted from the storage.

7. MAINTENANCE

- **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. Use the provided storage bag for protection.
- **Battery Care:** For long-term storage, charge the battery to approximately 50% every three months to prolong its lifespan.
- **Probe Care:** Handle probes carefully. Avoid bending or damaging the probe tips and cables.

8. TROUBLESHOOTING

Problem	Possible Cause	Solution
Device does not power on.	Battery is depleted.	Charge the device using the provided cable.
No waveform displayed.	Probe not connected correctly; Signal too small or too large; Incorrect trigger settings.	Ensure probes are securely connected. Use "Auto" button. Adjust vertical sensitivity (V/div) and trigger level. Check probe compensation.
Unstable waveform.	Incorrect trigger source or level; Noise in signal.	Adjust trigger level and source. Ensure proper grounding.
Display is frozen.	Software glitch.	Perform a soft reset by holding the power button until the device turns off, then restart.

9. SPECIFICATIONS

Parameter	Value
Brand	Wemay
Model Number	WemayE16640
Channels	2
Bandwidth	120M (single channel), 60M (dual channel)
Sampling Rate	500M
Rise Time	<3ns
Storage Depth	128Kbit
Impedance	1M Ω

Parameter	Value
Vertical Sensitivity	10mV/div~10V/div
Time Base	5ns~10s
Max Voltage	±40V (x1), ±400V (x10)
Battery	4000mAh Lithium
Product Dimensions	8.27 x 5.51 x 4.53 inches
Material	ABS (device body), Lithium (battery)

10. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the contact details provided with your purchase or visit the official Wemay website. Keep your purchase receipt as proof of purchase for warranty claims.

Return Policy: This product is subject to a 30-day refund/replacement return policy from the date of purchase.

