

ZEZEFUFU DSO150

ZEZEFUFU DSO150 Digital Oscilloscope User Manual

Model: DSO150

1. INTRODUCTION

The ZEZEUFUFU DSO150 is a fully assembled digital oscilloscope designed for various electrical testing and measurement applications. It features an ARM Cortex-M3 processor (STM32F103C8) and a 2.4-inch color TFT display, providing clear waveform visualization and parameter readouts. This manual provides essential information for setting up, operating, and maintaining your DSO150 oscilloscope.

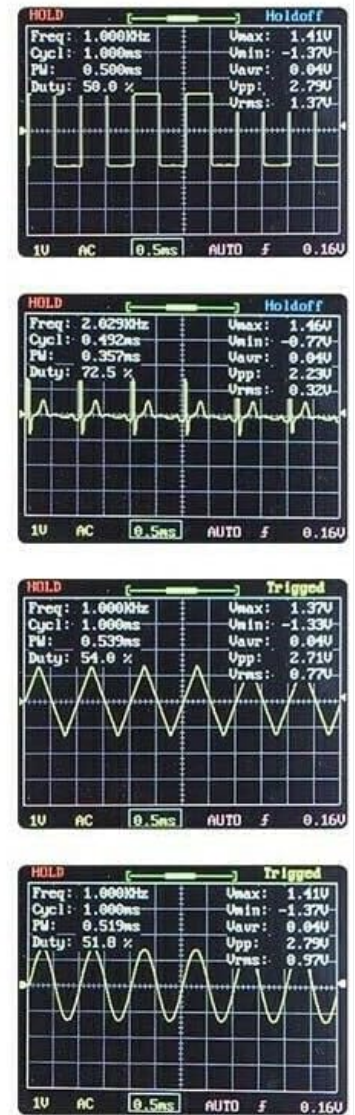


Figure 1: The ZEZEUFU DSO150 Digital Oscilloscope in operation, showing a waveform on its 2.4-inch LCD screen.

Handheld Digital Oscilloscope

Analog Bandwidth:200 kHz

PWM Square Wave Signal Output

-Adjustable Frequency:0-80kHz

-Adjustable Duty:0-100%



Figure 2: The DSO150 Handheld Digital Oscilloscope highlighting its analog bandwidth and PWM square wave signal output capabilities.

Key Features:

- Integrated ARM Cortex-M3 processor (STM32F103C8) for efficient performance.
- 2.4-inch color TFT display for clear waveform visualization.
- Multiple trigger modes: Automatic, Normal, and Single, for capturing various signal types.
- Digital display of waveform parameters including frequency, cycle, pulse width, duty cycle, maximum, minimum, average, peak value, and effective value.
- Adjustable trigger level and vertical displacement for precise signal analysis.
- Built-in 1KHz / 3.3V square wave test signal source.
- Waveform save and recall functionality, retaining data even after power off.

2. PACKAGE CONTENTS

Please verify that all items listed below are included in your package:

- 1 x ZEZEUFU DSO150 Digital Oscilloscope (Fully Assembled)
- 1 x Alligator Clip Probe

Note: A 9V 1A power adapter with a 5.5x2.1mm connector is required but not included in the package.

3. SETUP

3.1 Power Connection

1. Obtain a compatible 9V 1A DC power adapter with a 5.5x2.1mm connector.
2. Locate the power input jack on the side of the DSO150 unit.
3. Connect the power adapter to the oscilloscope.
4. Ensure the power switch (located near the power input) is in the 'OFF' position before connecting.
5. Once connected, switch the power to 'ON'. The device display should illuminate.

3.2 Probe Connection

1. Connect the BNC connector of the alligator clip probe to the BNC input port on the top of the oscilloscope.
2. Ensure a secure connection.
3. The alligator clip can then be connected to the circuit or signal source you wish to measure.

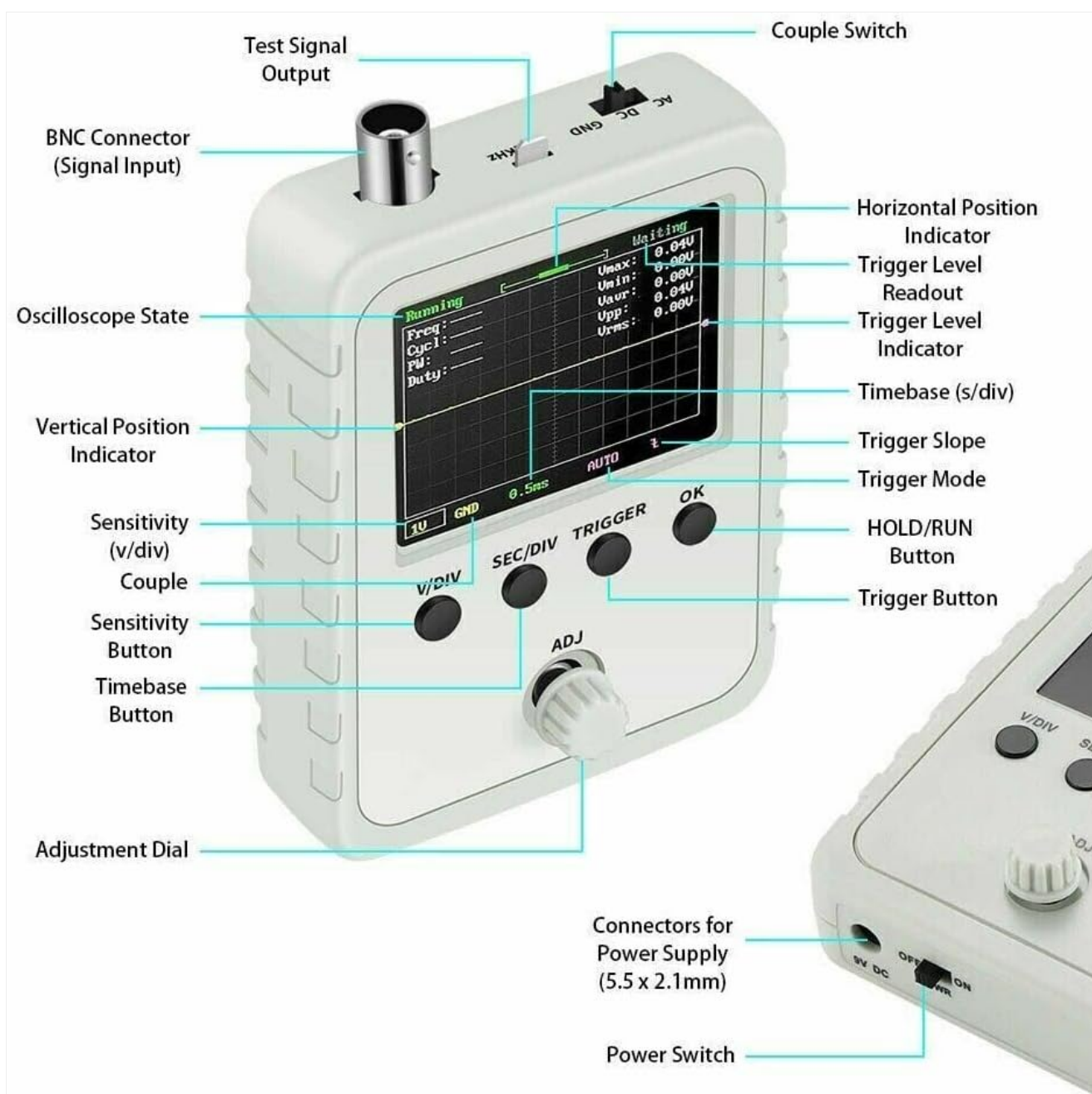


Figure 3: Detailed diagram illustrating the various components and connection points of the DSO150 oscilloscope, including the BNC connector and power input.

4. OPERATING INSTRUCTIONS

This section outlines the basic operation of your DSO150 oscilloscope. Refer to Figure 3 for the location of controls.

4.1 Basic Controls

- **V/DIV Button:** Adjusts the vertical sensitivity (volts per division).
- **SEC/DIV Button:** Adjusts the horizontal time base (seconds per division).
- **TRIGGER Button:** Cycles through trigger modes (Auto, Normal, Single).
- **OK Button:** Confirms selections or enters menus.
- **ADJ Dial:** Multi-function adjustment dial for fine-tuning parameters like trigger level, vertical position, and horizontal position.
- **HOLD/RUN Button:** Pauses or resumes waveform acquisition.
- **Couple Switch (AC/DC/GND):** Selects the input coupling mode.

- **AC:** Blocks DC components, showing only the AC part of the signal.
- **DC:** Shows both AC and DC components of the signal.
- **GND:** Disconnects the input signal, displaying a ground reference line.

4.2 Trigger Modes

- **Auto:** The oscilloscope attempts to trigger on a stable signal. If no trigger condition is met, it will display an untriggered waveform.
- **Normal:** The oscilloscope waits for a trigger event. If no trigger occurs, the display remains blank or shows the last triggered waveform. Useful for stable, repetitive signals.
- **Single:** The oscilloscope waits for a single trigger event, captures one waveform, and then stops. Ideal for capturing non-repetitive or transient events.

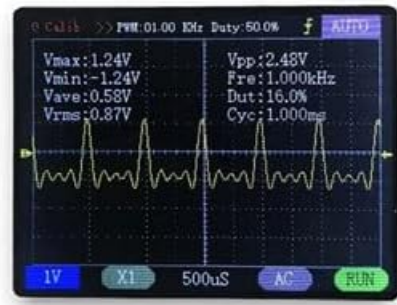
4.3 Waveform Parameter Display

The DSO150 automatically calculates and displays various waveform parameters on the screen, including:

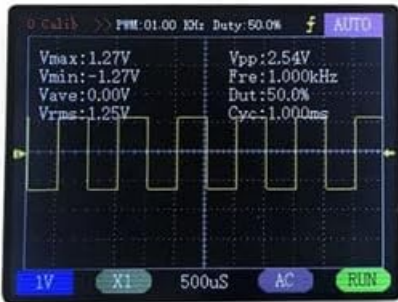
- Frequency (Freq)
- Cycle (Cycl)
- Pulse Width (PW)
- Duty Cycle (Duty)
- Maximum Voltage (U_{max})
- Minimum Voltage (U_{min})
- Average Voltage (U_{avr})
- Peak-to-Peak Voltage (U_{pp})
- Effective Value (U_{rms})



Oblique wave



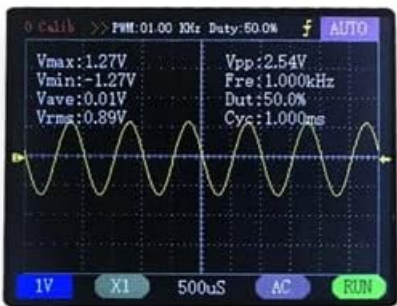
ECG wave



Square wave



Positive triangular wave



Sine wave

Figure 4: Examples of different waveform types (Sine, Square, Oblique, ECG, Triangular) as they appear on the DSO150 display, along with their calculated parameters.

4.4 1KHz / 3.3V Test Signal Source

The oscilloscope includes a built-in 1KHz / 3.3V square wave test signal source. This can be used to test the probe or to verify the basic functionality of the oscilloscope. Connect the probe to the designated test signal output port (refer to Figure 3).

5. MAINTENANCE

To ensure the longevity and optimal performance of your DSO150 oscilloscope, follow these maintenance guidelines:

- **Cleaning:** Use a soft, dry cloth to clean the exterior of the device. Do not use abrasive cleaners or solvents.
- **Storage:** Store the oscilloscope in a dry environment, away from direct sunlight and extreme temperatures.
- **Handling:** Avoid dropping the device or subjecting it to strong impacts.
- **Power:** Always use the recommended power adapter (9V 1A DC, 5.5x2.1mm connector).

6. TROUBLESHOOTING

If you encounter issues with your DSO150 oscilloscope, refer to the following common troubleshooting steps:

- **Device does not power on:**

- Ensure the power adapter is correctly connected and providing the specified 9V 1A DC output.
- Check the power switch is in the 'ON' position.
- Verify the power outlet is functional.

- **No waveform displayed:**

- Check if the probe is securely connected to both the oscilloscope and the signal source.
- Ensure the input coupling switch is set to 'AC' or 'DC' (not 'GND').
- Adjust the V/DIV and SEC/DIV settings to an appropriate range for your signal.
- Try adjusting the trigger level using the ADJ dial.
- Switch between trigger modes (Auto, Normal, Single) to see if a trigger event is being missed.
- Test with the built-in 1KHz / 3.3V square wave test signal source to confirm basic functionality.

- **Unstable waveform:**

- Adjust the trigger level and trigger slope (if applicable, typically adjusted via ADJ dial in trigger menu).
- Ensure the signal source is stable.
- Try different trigger modes.

For further assistance, please contact ZEZEUFUFU customer support.

7. SPECIFICATIONS

The following are the technical specifications for the ZEZEUFUFU DSO150 Digital Oscilloscope:

Feature	Specification
Processor	ARM Cortex-M3 (STM32F103C8)
Display	2.4-inch Color TFT
Maximum Real-time Sampling Rate	1 MSa/s
Analog Bandwidth	0 - 200 KHz
Sensitivity Range	5 mV/div – 20 V/div
Maximum Input Voltage	50 Vpk (1X probe)
Input Impedance	1M ohms / 20pF
Accuracy	12 bits
Record Length	1024 points
Coupling Modes	DC / AC / GND
Time Base Range	500s/Div – 10us / Div
Trigger Modes	Auto, Normal, Single
Trigger Position	Center of buffer
Supply Voltage	DC 9V (8 – 10 V)

Feature	Specification
Current Consumption	~120 mA @ 9 V
Power Adapter (Recommended)	9V 1A DC, 5.5x2.1mm connector (not included)
Package Dimensions	3.94 x 3.15 x 0.79 inches
Item Weight	4.9 ounces



Figure 5: Physical dimensions of the DSO150 oscilloscope, showing approximate measurements in centimeters and inches.

8. WARRANTY AND SUPPORT

For information regarding warranty coverage, technical support, or service, please contact the manufacturer, ZEZEUFU, directly. Refer to the product packaging or the seller's information for contact details.