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NooElec DSO150

NooElec JYETech DSOShell DSO150 Portable Oscilloscope User Manual

Model: DSO150 | Brand: NooElec

1. INTRODUCTION

This manual provides comprehensive instructions for the setup, operation, and maintenance of your NooElec JYETech DSOShell DSO150 Portable Oscilloscope. The DSO150 is a budget-friendly, fully assembled digital storage oscilloscope featuring a 2.4-inch color TFT LCD, designed for various electronic testing applications.

2. PRODUCT OVERVIEW

2.1 Key Features

- Portable and compact design with a 2.4" color TFT LCD.
- Fully assembled unit, ready for use with a power supply.
- Includes a 1x/10x BNC oscilloscope probe and protective enclosure.
- Improved structure, mechanics, and operation compared to previous models.
- Operates on a 9V DC power supply (not included).

2.2 Components

The DSO150 oscilloscope consists of the main unit, a BNC probe, and an enclosure. Familiarize yourself with the device's layout and controls.



Figure 1: Front view of the DSO150 Oscilloscope, showing the display, control buttons (V/DIV, SEC/DIV, TRIGGER, OK), and the rotary adjustment knob (ADJ).



Figure 2: The included 1x/10x BNC oscilloscope probe, featuring a switch for attenuation selection and a BNC connector for attachment to the oscilloscope.



Figure 3: Rear view of the DSO150, highlighting the 9V DC power input jack and the power ON/OFF switch.



Figure 4: Top view of the DSO150, showing the BNC input connector, the AC/DC/GND coupling switch, and the 1KHz calibration output.

3. SETUP

3.1 Power Supply Connection

The DSO150 requires a 9V DC power supply. The power jack on the mainboard accepts a standard 5.5mm/2.1mm DC plug. Ensure the power supply voltage does not exceed 10V, as higher voltages can permanently damage the unit. A typical current draw is around 90-120mA.

1. Connect a compatible 9V DC power adapter to the power input jack on the rear of the oscilloscope.
2. Flip the PWR switch to the "ON" position. The display should illuminate.

3.2 Probe Connection

1. Connect the BNC end of the included probe to the BNC input connector on the top of the oscilloscope.
2. Set the probe's attenuation switch to either 1x or 10x, depending on your measurement requirements. For most general purpose measurements, 10x is recommended to reduce loading effects on the circuit under test.
3. Connect the probe's ground clip to the ground reference of the circuit you are testing.

4. OPERATING INSTRUCTIONS

The DSO150 features intuitive controls for adjusting waveform display and measurement parameters.

4.1 Basic Controls

- **V/DIV Button:** Adjusts the vertical sensitivity (Volts per Division). Press to cycle through available voltage ranges.
- **SEC/DIV Button:** Adjusts the horizontal time base (Seconds per Division). Press to cycle through available time ranges.
- **TRIGGER Button:** Controls the trigger mode and level. Press to adjust trigger settings.
- **ADJ Knob:** Rotary encoder used for fine adjustment of selected parameters (e.g., trigger level, position).
- **OK Button:** Confirms selections or enters sub-menus.

4.2 Input Coupling (AC/DC/GND)

A slide switch on the top of the unit allows selection of input coupling:

- **AC:** Blocks the DC component of the input signal, displaying only the AC component.
- **DC:** Displays both AC and DC components of the input signal.
- **GND:** Disconnects the input signal and grounds the input, allowing you to set the ground reference on the display. Always remove the input signal or unplug the probe when switching to GND to avoid potential issues.

4.3 Input Voltage Limits

The maximum input voltage for the DSO150 is 50V peak-to-peak (V_{pk}) when the probe is set to 1x. When using the 10x probe setting, the maximum input voltage increases to 100V/DIV, allowing for measurements up to 500V_{pk}. Exceeding these limits can damage the oscilloscope's input circuitry.

5. MAINTENANCE

Proper care and maintenance will ensure the longevity and reliable operation of your DSO150 oscilloscope.

- **Cleaning:** Use a soft, dry cloth to clean the exterior of the unit. Avoid using abrasive cleaners or solvents.
- **Storage:** Store the oscilloscope in a dry, dust-free environment when not in use.
- **Power Supply:** Always use a stable and regulated 9V DC power supply. Unstable or fluctuating power sources can lead to erratic behavior or damage.
- **Probe Care:** Handle the probe carefully. Avoid bending or stressing the cable and connectors.

6. TROUBLESHOOTING

If you encounter issues with your DSO150, consider the following common troubleshooting steps:

- **Erratic Display/No Signal:**
 - Verify your 9V DC power supply is providing stable voltage and sufficient current. Low or unstable power can cause the unit to behave erratically.
 - Ensure the probe is securely connected to both the oscilloscope and the circuit under test.
 - Check the probe's attenuation setting (1x/10x) and ensure it matches your expectations for the signal level.
 - Confirm the input coupling switch (AC/DC/GND) is set appropriately for your signal.
- **No Power:**
 - Ensure the power adapter is correctly plugged into a working outlet and the oscilloscope.
 - Check the power switch on the oscilloscope is in the "ON" position.
- **Display Frozen/Unresponsive:**
 - Try power cycling the device (turn off, wait a few seconds, then turn back on).

For more detailed troubleshooting or advanced issues, refer to online forums and resources dedicated to the JYETech DSO150, or contact NooElec support.

7. SPECIFICATIONS

Feature	Specification
Brand	NooElec
Model Name	DSO Shell (DSO150)
Screen Size	2.4 Inches
Display Resolution Maximum	1080p Full HD <i>(Actual display resolution is typically 320x240 pixels for this model)</i>
Item Weight	6.9 ounces
Product Dimensions (LxWxH)	6.69 x 4.33 x 0.79 inches
Power Source	Corded Electric

Feature	Specification
Voltage	9 Volts DC (Do not exceed 10V)
Included Probe	1x/10x BNC Oscilloscope Probe
Max Input Voltage (1x probe)	50Vpk
Max Input Voltage (10x probe)	500Vpk

8. WHAT'S IN THE BOX

Your NooElec JYETech DSOShell DSO150 package typically includes:

- DSO Shell Oscilloscope Unit (Fully Assembled)
- Enclosure
- 10x BNC Probe

Note: While some listings may indicate a power adapter and USB cable, user feedback and product features suggest these are typically not included and must be acquired separately.

9. WARRANTY AND SUPPORT

For product support, technical inquiries, or warranty information, please contact NooElec directly. You can visit the official NooElec store on Amazon for more information and contact options:

[Visit the NooElec Store](#)

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