Noteflora DSO183

Noteflora DSO183 Digital Oscilloscope DIY Kit User Manual

Model: DSO183 | Brand: Noteflora

1. Introduction

This manual provides detailed instructions for the assembly, operation, and maintenance of the Noteflora DSO183 Digital Oscilloscope DIY Kit. The DSO183 is a compact, single-board digital oscilloscope designed for electronics enthusiasts, offering a 500kHz bandwidth and 12-bit accuracy for various electronic circuit testing applications. It includes a built-in signal generator and waveform storage capabilities.

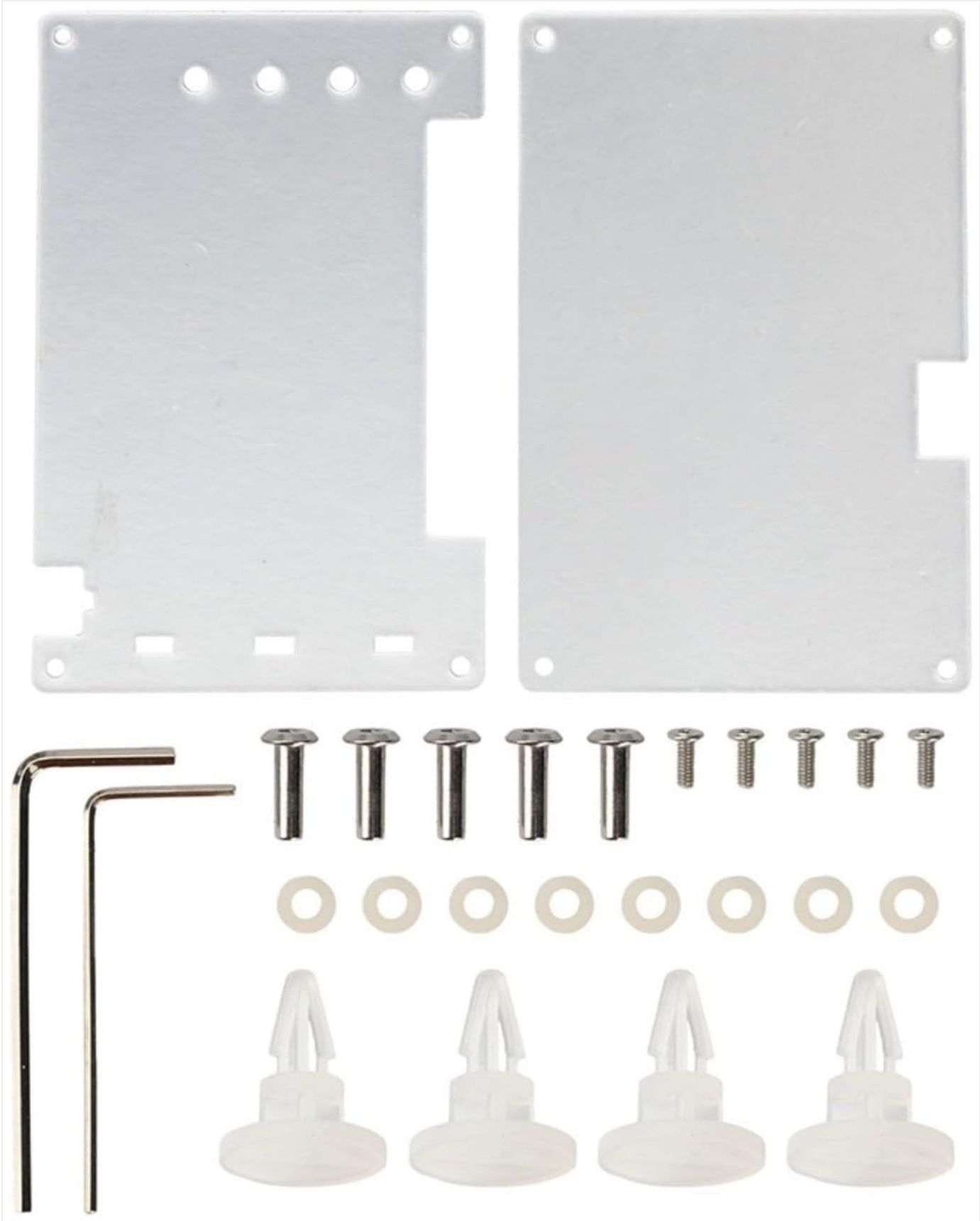


Image 1.1: Overview of the Noteflora DSO183 Digital Oscilloscope DIY Kit, showing various components and the assembled device.

2. Setup and Assembly

The DSO183 is provided as a DIY kit, requiring assembly. Follow these steps carefully to ensure proper functionality.

2.1 Kit Contents



Image 2.1: All components included in the DSO183 Digital Oscilloscope DIY Kit, including the main PCB, various electronic parts, and probes.

Before starting assembly, verify that all components listed in the kit contents are present. Refer to the provided circuit diagram for component placement and values.

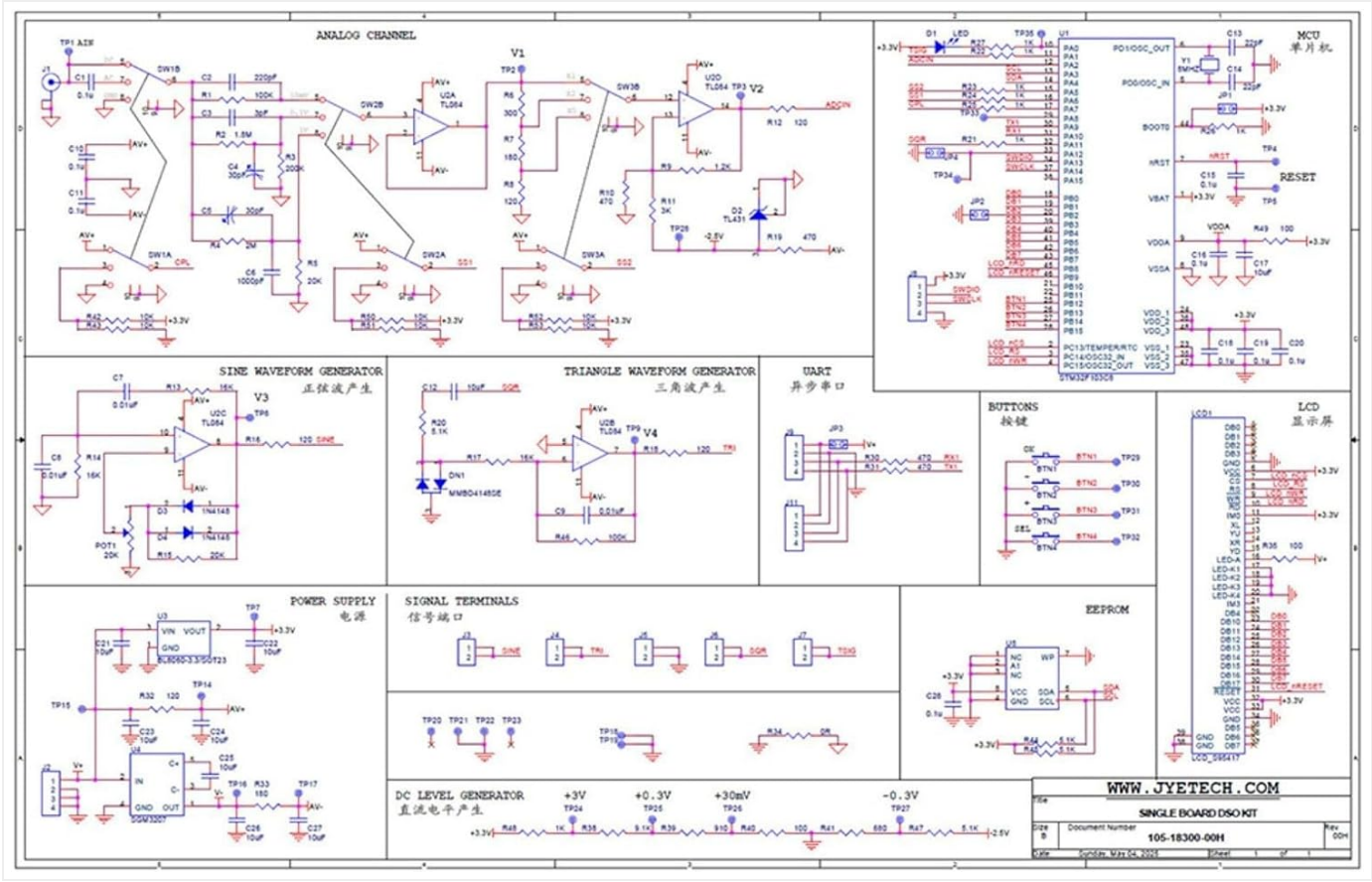


Image 2.2: Detailed circuit diagram for the DSO183 Digital Oscilloscope, showing component connections and values.

2.2 Assembly Steps

Please install components in the numbered order as indicated on the assembly guide. Use a multimeter to confirm resistance values before soldering, as color codes can sometimes be difficult to read accurately.

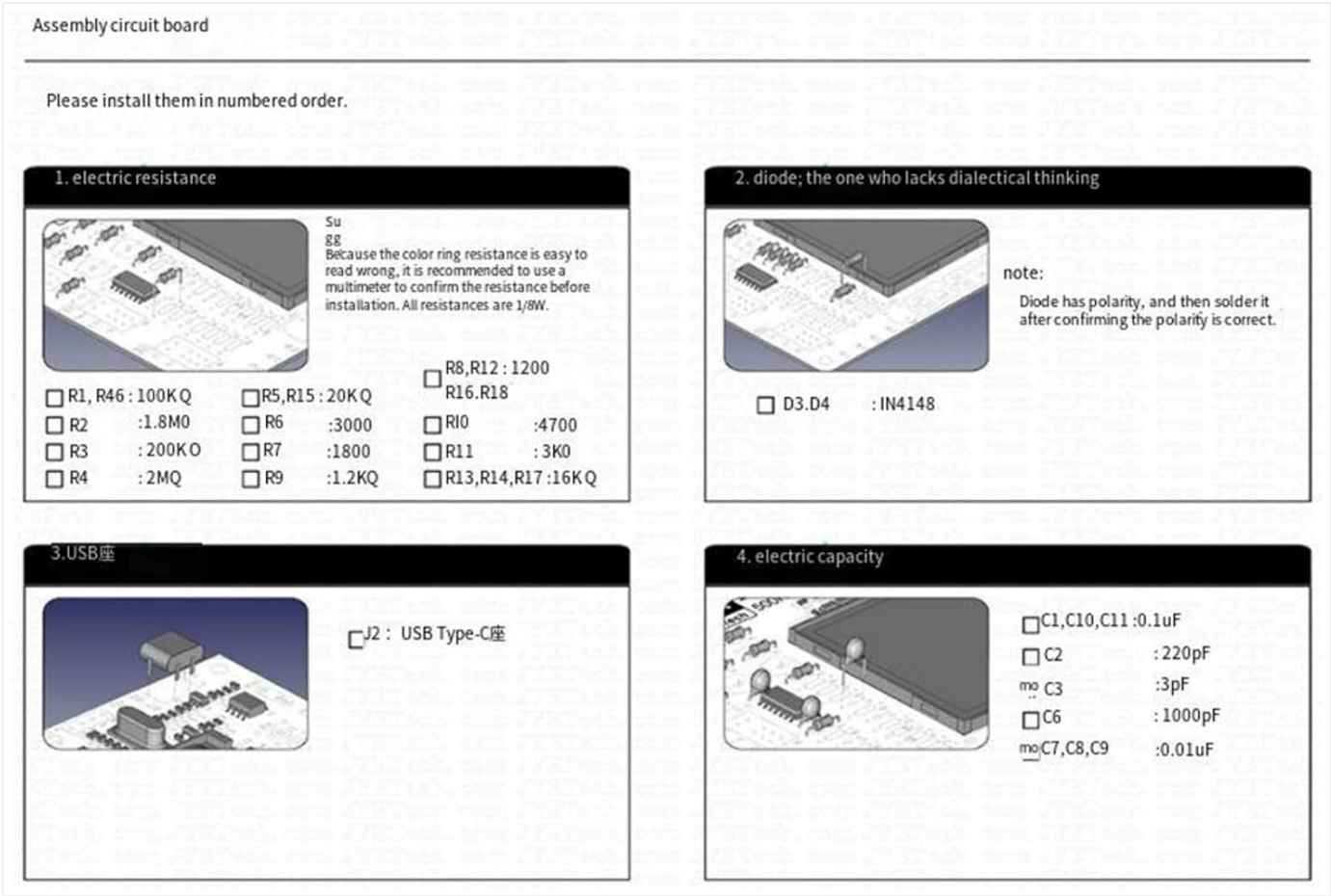


Image 2.3: Visual guide for component placement during assembly, detailing resistors, diodes, USB connector, and capacitors.

1. **Electric Resistance:** Install resistors according to their marked values. It is recommended to use a multimeter to confirm the resistance before installation. All resistors are 1/8W.
    - R1, R46: 100KΩ
    - R2: 1.8MΩ
    - R3: 200KΩ
    - R4: 2MΩ
    - R5, R15: 20KΩ
    - R6: 3000Ω
    - R7: 1800Ω
    - R9: 1.2KΩ
    - R8, R12: 1200Ω
    - R16, R18: 4700Ω
    - R10: 3KΩ
    - R11: 16KΩ
    - R13, R14, R17: 16KΩ
2. **Diode:** Install diodes D3 and D4 (IN4148). Note that diodes have polarity; ensure correct orientation before soldering.
3. **USB Connector:** Install the J2 USB Type-C connector.
4. **Electric Capacity:** Install capacitors according to their values.
    - C1, C10, C11: 0.1uF
    - C2: 220pF
    - C3: 3pF
    - C6: 1000pF
    - C7, C8, C9: 0.01uF
5. Continue installing all remaining components such as buttons, switches, and connectors as indicated on the PCB and assembly diagram.
6. Once all components are soldered, inspect all connections for cold solder joints or bridges.

2.3 Power Connection

Connect the assembled oscilloscope to a DC 5V power source via the Type-C USB port. The device consumes less than 100mA.

3. Operating Instructions

Once assembled and powered, the DSO183 is ready for operation. The device features a display and control buttons for navigation and settings adjustment.



Image 3.1: The DSO183 display showing a captured sine wave, along with the various control buttons for mode selection and adjustments.

3.1 Basic Controls

- **Navigation Buttons:** Use the directional buttons (up, down, left, right) to navigate through menus and adjust parameters.
- **OK/SEL Button:** Confirm selections or enter sub-menus.
- **Mode Buttons:** Buttons labeled 'SINE', 'TRI', 'GND', 'SQR', '1KHz', '3.3V' are likely for the built-in signal generator or quick settings.

3.2 Signal Generator

The DSO183 includes a built-in signal generator capable of producing sine, triangle, and square waves. Select the desired waveform using the dedicated buttons on the device. This feature is useful for testing circuits without an external signal source.

3.3 Waveform Capture and Analysis

- **Vertical Sensitivity:** Adjust the vertical sensitivity (10mV/gram - 5V/gram) to scale the input signal appropriately on the display.
- **Horizontal Timebase:** Adjust the horizontal timebase (1µs/gram - 500s/gram) to control the time duration displayed on the screen.
- **Trigger Mode:** Select from Auto, Normal, or Single trigger modes to stabilize repetitive waveforms or capture single-shot events.
- **Coupling:** Choose between DC, AC, or GND coupling for the input signal. DC coupling shows the entire signal, AC coupling blocks the DC component, and GND sets the input to ground for reference.
- **Waveform Storage:** The device supports waveform storage and quick recall, allowing for comparison and analysis of captured signals. Refer to the on-screen menu for specific storage and recall functions.

4. Maintenance

Proper maintenance ensures the longevity and accuracy of your DSO183 oscilloscope.

- **Cleaning:** Use a soft, dry cloth to clean the device. Avoid using abrasive cleaners or solvents that could damage the casing or display.
- **Storage:** Store the oscilloscope in a dry, dust-free environment away from direct sunlight and extreme temperatures.
- **Handling:** Handle the device with care to prevent physical damage, especially to the display and connectors.

5. Troubleshooting

If you encounter issues with your DSO183, refer to the following common problems and solutions:

- **No Power:**
  - Ensure the Type-C USB cable is securely connected to a 5V DC power source.
  - Verify the power source is functional.
  - Check for any visible damage to the power input port or internal connections if it's a DIY assembly issue.
- **No Signal Displayed:**
  - Check the probe connection to the input BNC connector and to the circuit under test.
  - Ensure the probe is correctly set (e.g., 1X or 10X, if applicable).
  - Adjust the vertical sensitivity and horizontal timebase settings.
  - Verify the trigger settings are appropriate for the signal being measured. Try 'Auto' trigger mode first.
  - Ensure the input coupling (DC/AC/GND) is set correctly for your signal.
- **Unstable Waveform:**
  - Adjust the trigger level and trigger slope.
  - Select an appropriate trigger mode (e.g., 'Normal' for stable, repetitive signals).
- **Incorrect Readings:**
  - Ensure the probe compensation is correctly adjusted (if using a passive probe with compensation adjustment).
  - Verify the input impedance of the oscilloscope (1MΩ) is suitable for your measurement.

6. Specifications

Feature	Specification
Bandwidth	500kHz
ADC Accuracy	12-bit
Real-time Sampling Rate	1.5Msps
Waveform Buffer Length	1024 points
Vertical Sensitivity Range	10mV/gram - 5V/gram
Input Impedance	1MΩ
Maximum Input Voltage	50Vpk
Coupling	DC, AC, GND
Horizontal Timebase Range	1µs/gram - 500s/gram
Trigger Mode	Auto, Normal, Single
Power Supply	DC 5V (via Type-C)
Current Consumption	<100mA
Dimensions	118 x 76 x 12mm (4.65 x 2.99 x 0.47 inches)
Item Weight	1.52 ounces

7. Warranty and Support

7.1 Warranty Information

For specific warranty details, please refer to the documentation provided with your purchase or contact the seller directly. Warranty terms typically cover manufacturing defects for a specified period from the date of purchase.

7.2 Technical Support

If you require further assistance with assembly, operation, or troubleshooting that is not covered in this manual, please contact the Noteflora customer support or the seller from whom you purchased the product. Provide your model number (DSO183) and a detailed description of the issue for efficient support.

Ask a question about this manual

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. Privacy details.

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question