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> [JYETech DSO 138 DIY KIT 13803K Digital Oscilloscope Instruction Manual](#)

JYETech DSO 138

JYETech DSO 138 DIY KIT 13803K Digital Oscilloscope Instruction Manual

BRAND: JYETECH | MODEL: DSO 138 DIY KIT 13803K

1. Product Overview

The DSO138 is engineered as a training oscilloscope kit, emphasizing fundamental oscilloscope functions for straightforward assembly and operation. It incorporates a Cortex-M3 ARM processor (STM32F103C8) and a 2.4-inch TFT LCD, providing clear waveform visualization. This specific 13803K kit features pre-soldered Surface Mount Device (SMD) components and a pre-programmed Microcontroller Unit (MCU), which simplifies the initial assembly process.

2. Setup and Assembly

While the SMD components are pre-soldered and the MCU is pre-programmed, the assembly of through-hole components and general soldering are still required for other parts of the kit. Please refer to the detailed assembly instructions and schematics provided with your physical kit for precise, step-by-step guidance.

Power Supply Requirement: A 9V DC power supply is essential for the operation of the DSO138 and is not included with this kit. Ensure that the power supply you use is compatible with the device's specifications.



Figure 2.1: All components included in the JYE DSO 138 DIY KIT 13803K.

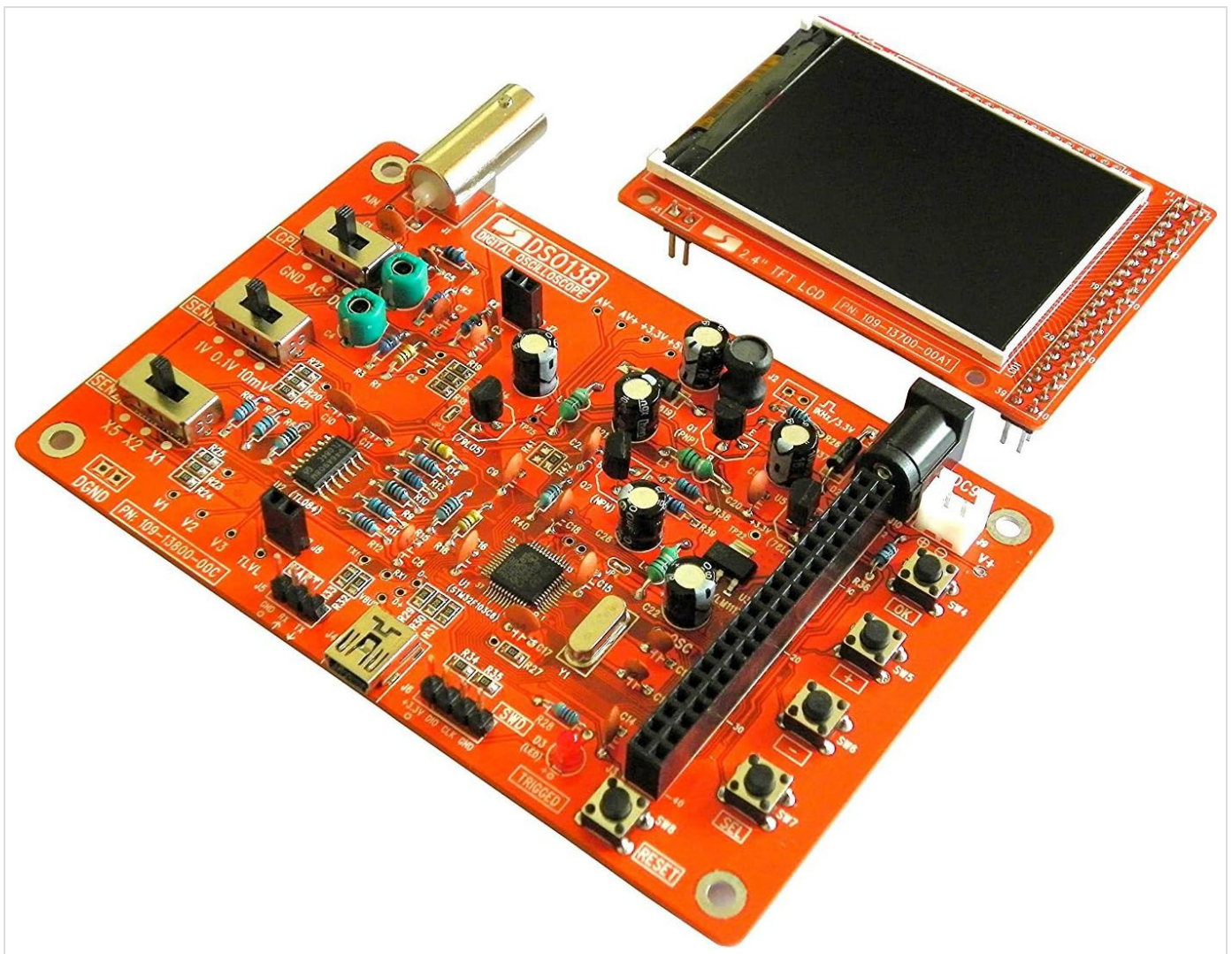


Figure 2.2: The assembled circuit board and display module of the DSO 138 kit.

Your browser does not support the video tag.

Video 2.1: This video demonstrates general soldering techniques for DIY kits. While it features a different mini oscilloscope kit, the soldering principles are applicable to the DSO 138 kit assembly.

3. Operating Instructions

The DSO138 provides essential oscilloscope functionalities for signal analysis.

Key Features:

- **Analog Bandwidth:** 0 - 200KHz
- **Sampling Rate:** 1Msps max
- **Sensitivity:** 10mV/Div - 5V/Div
- **Vertical Resolution:** 12-bit
- **Timebase:** 10us/Div - 500s/Div
- **Record Length:** 1024 points
- **Test Signal:** Built-in 1KHz/3.3V test signal for calibration and testing
- **HOLD Function:** Waveform frozen (HOLD) function available for detailed analysis

Connecting and Displaying Waveforms:

Connect your signal source to the input BNC connector. Utilize the onboard controls to adjust the vertical sensitivity (V/Div) and timebase (s/Div) settings. These adjustments are crucial for properly scaling and displaying the waveform on

the 2.4-inch TFT LCD in real-time.

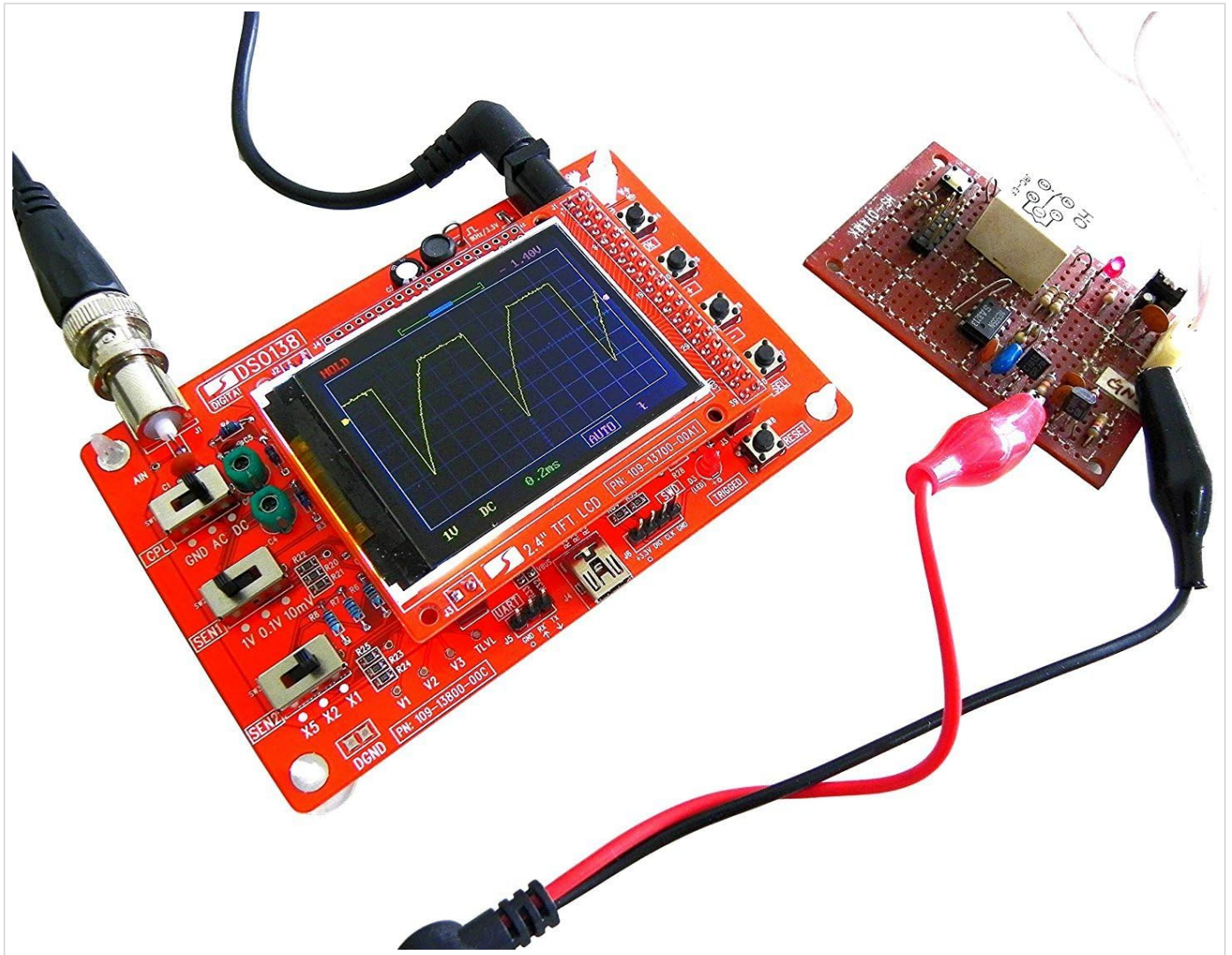


Figure 3.1: The DSO 138 digital oscilloscope actively displaying a waveform from an external source.

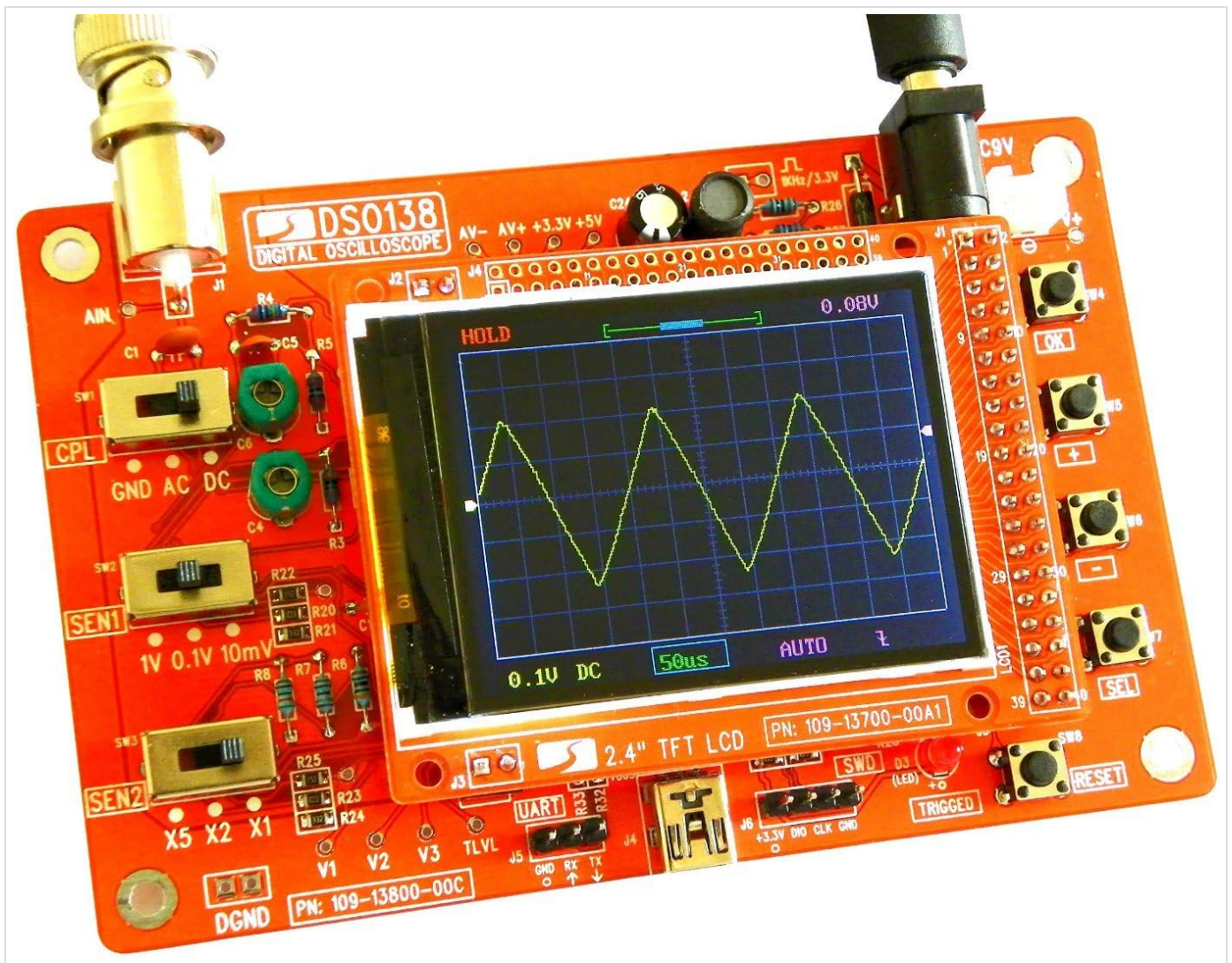


Figure 3.2: A detailed view of the DSO 138's 2.4-inch TFT LCD, showing a clear sine wave display.

Your browser does not support the video tag.

Video 3.1: This video demonstrates various waveform measurements and probe calibration on a '138 Pro' model. While not the exact DSO 138 DIY KIT, it illustrates general oscilloscope usage and measurement principles that are applicable.

4. Maintenance

To ensure the longevity and optimal performance of your DSO138 oscilloscope, follow these maintenance guidelines:

- **Cleaning:** Keep the device clean and free from dust. Use a soft, dry cloth for cleaning. Avoid abrasive cleaners or solvents.
- **Environmental Conditions:** Do not expose the oscilloscope to extreme temperatures, high humidity, or direct sunlight. Store it in a dry, stable environment.
- **Handling:** Handle the device with care to prevent physical damage. Avoid dropping or subjecting it to strong impacts.
- **Modifications:** Do not attempt to modify the internal circuitry beyond the intended assembly steps. Unauthorized modifications can void any potential warranty and may damage the device.

5. Troubleshooting

This section addresses common issues you might encounter with your DSO138 kit.

Common Issues:

- **No Display or Power:** Ensure the 9V DC power supply is correctly connected and functioning. If the kit was recently assembled, double-check all power-related connections and soldering points for continuity and shorts.
- **Distorted or Unstable Waveforms:** Verify that the probe is securely connected and that its 1X/10X switch (if present) is set appropriately for your measurement. Adjust the vertical sensitivity (V/Div) and timebase (s/Div) settings on the oscilloscope to properly scale the waveform.
- **Component Overheating:** If any component, such as a diode (e.g., D2), becomes excessively hot during operation, immediately disconnect power. This often indicates a short circuit, an incorrectly installed component, or a faulty part. Consult the provided schematic for correct component placement and values.

For more detailed troubleshooting steps, refer to the comprehensive troubleshooting guide and schematic included with your kit. If issues persist, contact JYETech customer support for further assistance.

6. Specifications

Detailed technical specifications for the JYETech DSO 138 DIY KIT 13803K:

- **Analog Bandwidth:** 0 - 200KHz
- **Sampling Rate:** 1Msps max
- **Sensitivity:** 10mV/Div - 5V/Div
- **Vertical Resolution:** 12-bit
- **Timebase:** 10us/Div - 500s/Div
- **Record Length:** 1024 points
- **Display:** 2.4-inch TFT LCD (320 x 240 dot matrix, 262K colors)
- **Processor:** Cortex-M3 ARM (STM32F103C8)
- **Test Signal:** Built-in 1KHz/3.3V
- **Power Supply:** 9V DC (not included)
- **Dimensions (Product):** Approximately 4 x 3 x 1 inches
- **Item Weight:** Approximately 3.99 ounces

7. Warranty and Customer Support

For specific warranty terms, conditions, and to access technical support, please refer to the official documentation provided with your JYETech DSO 138 DIY KIT 13803K or visit the official JYETech website. Contact information for customer service is typically found within the product packaging or on the manufacturer's website.