DIYmalls DIYmalls-1.44-001

DIYmalls 1.44 inch TFT LCD Display Module (ST7735S) Instruction Manual

1. Product Overview

This document provides detailed instructions for the DIYmalls 1.44 inch TFT LCD Display Screen Module. This module features a 128x128 pixel resolution with 65K RGB colors and utilizes a 4-wire SPI interface with the ST7735S driver. It is designed for use with various microcontrollers, including Arduino UNO, Arduino 2560, and ESP32 boards.

Key Features:

- 1.44 inch TFT LCD display.
- 128x128 pixel resolution.
- 65K RGB color depth.
- 4-Wire SPI communication interface.
- ST7735S driver IC.
- Operates at 3.3V logic.
- No touch functionality.

2. Technical Specifications

Specification	Value
Brand	DIYmalls
Screen Size	1.44 Inches
Resolution	128 x 128 pixels
Aspect Ratio	1:1
Display Type	TFT LCD

Specification	Value
Color Depth	65K RGB
Interface	4-Wire SPI
Driver IC	ST7735S
Operating Voltage	3.3 Volts
Screen Surface	Glossy
Contrast Ratio	1500:1
Model Number	DIYmalls-1.44-001

3. Package Contents

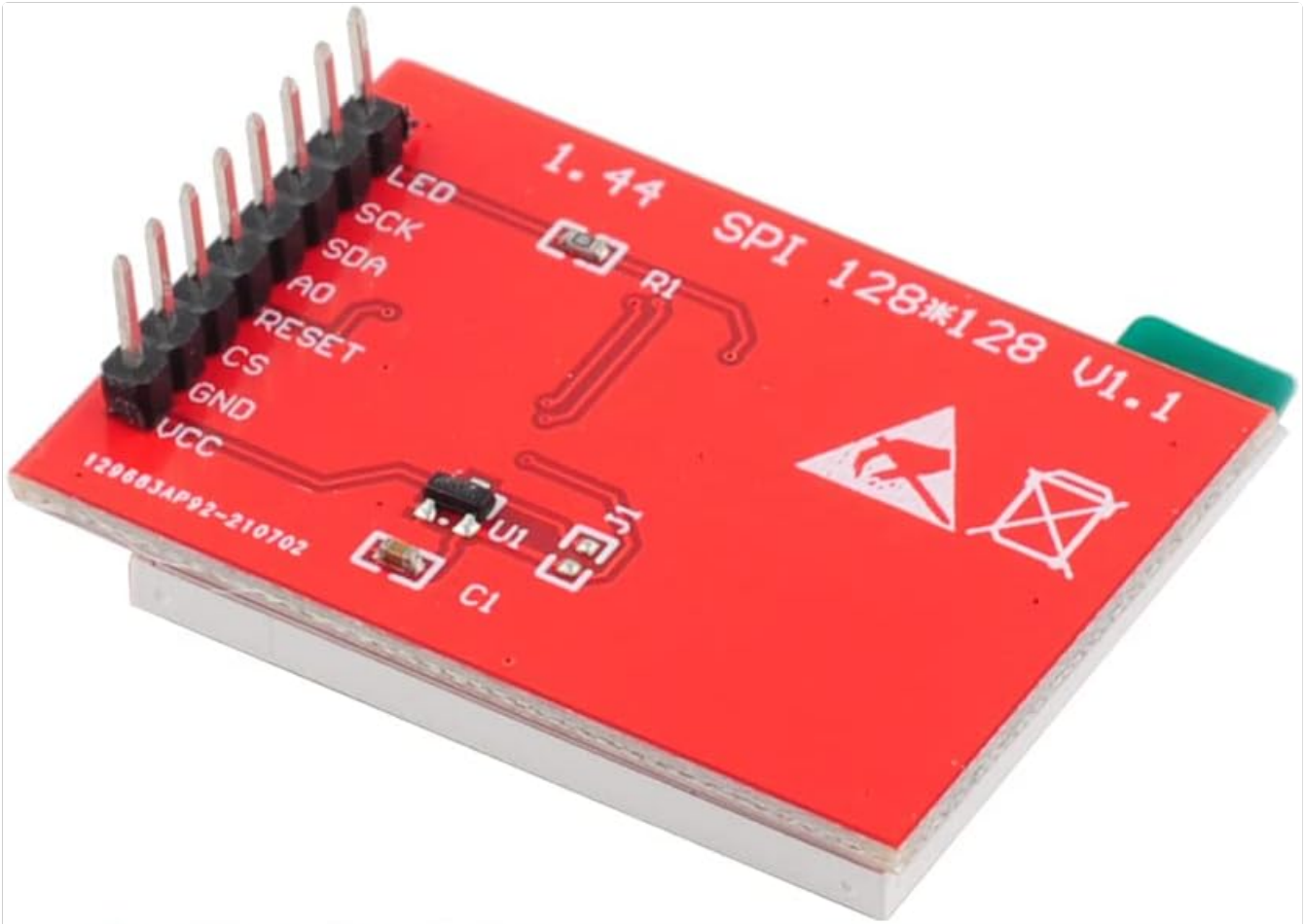
Each package contains:

- 4 x 1.44 inch TFT LCD Display Modules

4. Setup and Wiring Instructions

The DIYmalls 1.44 inch TFT LCD Display operates at 3.3V logic. When connecting to a 5V microcontroller (e.g., some Arduino UNO models), it is crucial to use appropriate voltage level shifters or resistors on the data lines to prevent damage to the display module.

4.1. Pinout Diagram and Description



No	Pin	Description
1	VCC	5V/3.3V power input
2	GND	Ground
3	CS	LCD chip select signal, low level enable
4	RESET	LCD reset signal, low level reset
5	A0	LCD register / data selection signal, high level: register, low level: data
6	SDA	SPI bus write data signal
7	SCK	SPI bus clock signal
8	LED	Backlight control, high level lighting, if not controlled, connect 3.3V always bright

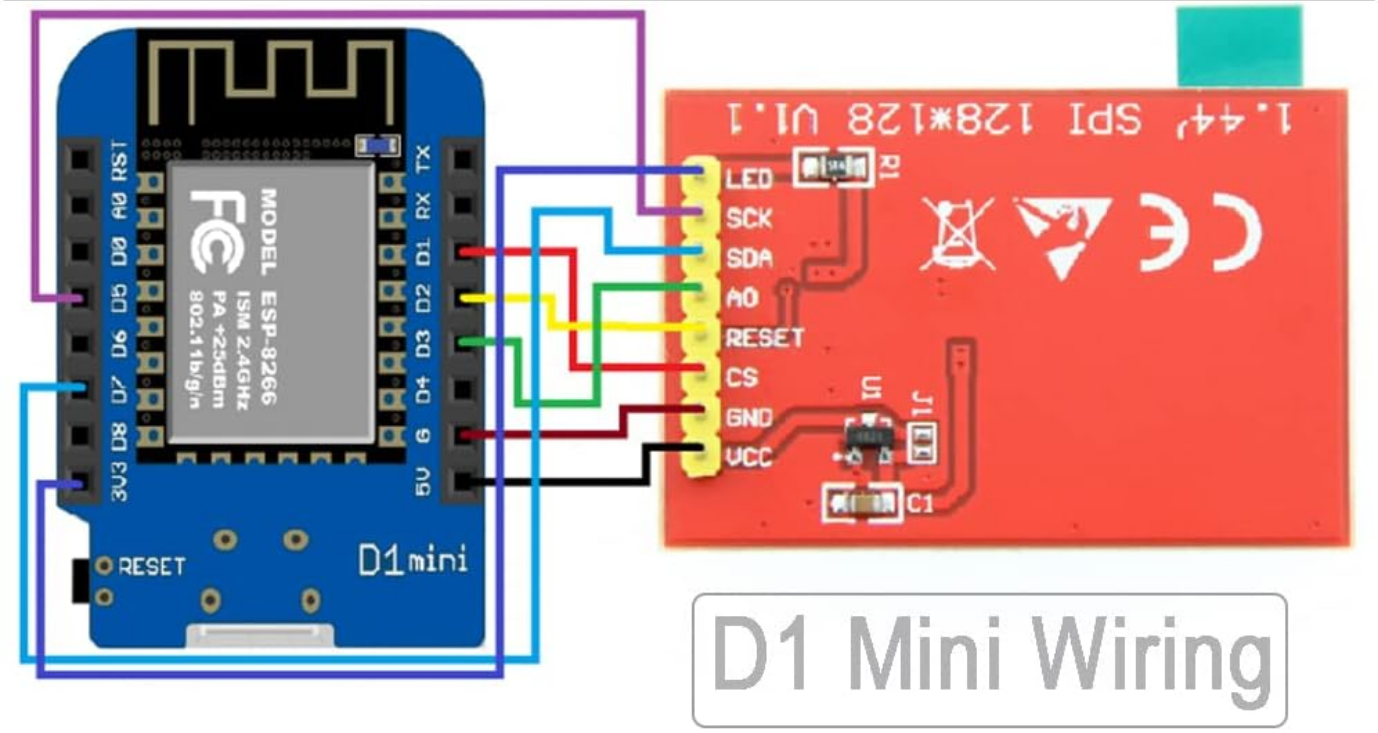
Image: Pinout of the 1.44 inch TFT LCD Display Module.

No.	Pin	Description
1	VCC	5V/3.3V power input
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4.2. Wiring with D1 Mini (ESP8266)

The D1 Mini operates at 3.3V logic, making it directly compatible with this display module without external resistors.



No	Pin	D1 mini board	Pin Description
1	LED	3.3V	LCD backlight control pin(connect to 3.3V)
2	SCK	D5	LCD SPI bus clock pin
3	SDA	D7	LCD SPI bus write data pin
4	A0	D3	LCD register / data selection control pin
5	RESET	D2	LCD reset control pin
6	CS	D1	LCD chip selection control pin
7	GND	G	Power ground
8	VCC	5V	Power positive

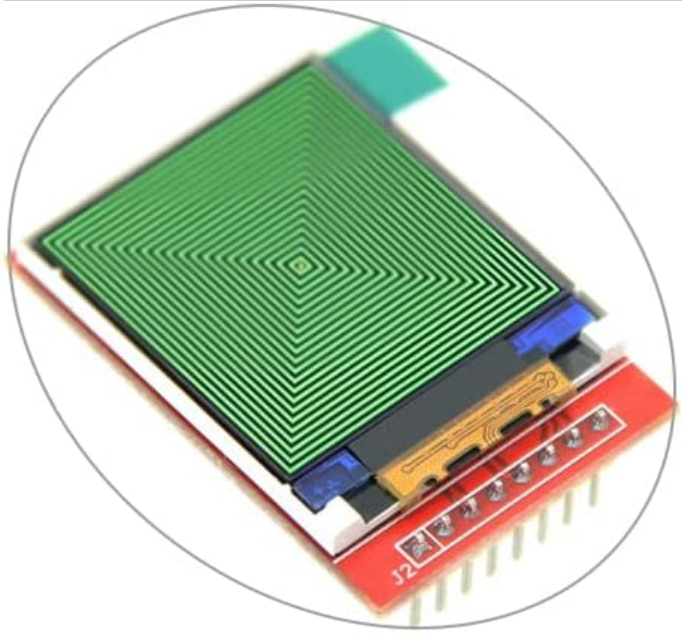
Image: D1 Mini Wiring Diagram.

No.	LCD Pin	D1 Mini Board Pin	Pin Description
1	LED	3.3V	LCD backlight control pin (connect to 3.3V)

No.	LCD Pin	D1 Mini Board Pin	Pin Description
2	SCK	D5	LCD SPI bus clock pin
3	SDA	D7	LCD SPI bus write data pin
4	A0	D3	LCD register / data selection pin
5	RESET	D2	LCD reset control pin
6	CS	D1	LCD chip selection control pin
7	GND	G	Power ground
8	VCC	5V	Power positive

4.3. Wiring with Arduino UNO (5V Microcontroller)

When using a 5V microcontroller like the Arduino UNO,**four 560 Ohm, 680 Ohm, or 1k Ohm resistors are required**for the data lines (SCK, SDA, A0, and CS) to step down the voltage from the Arduino pins to the 3.3V required by the display. Failure to do so may damage the display module.





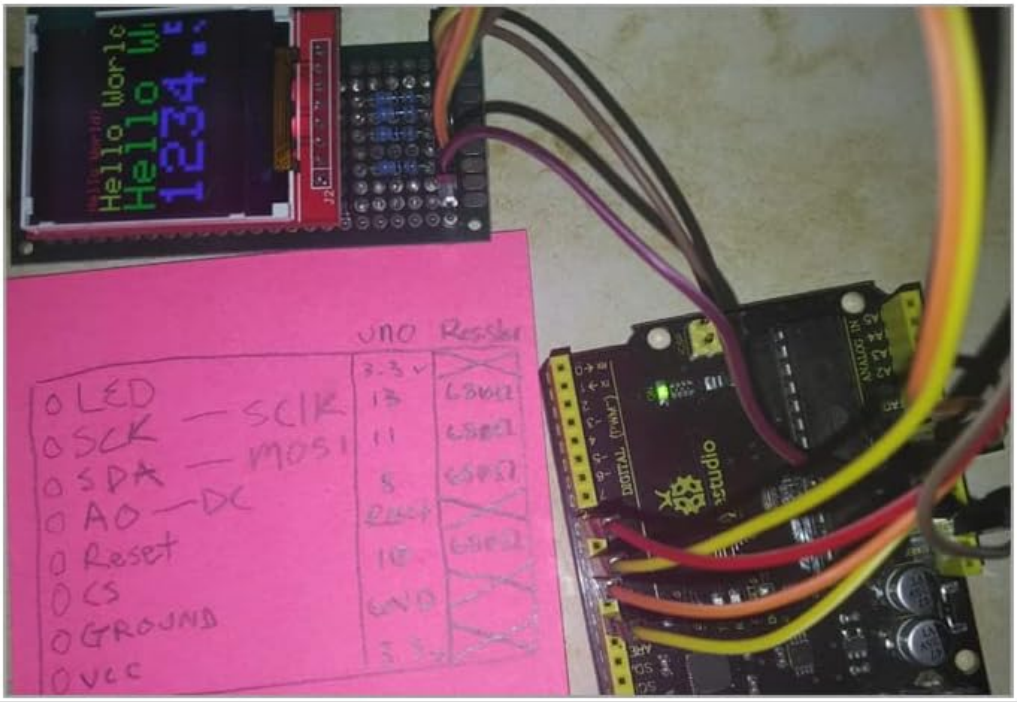


Image: Arduino UNO Wiring Diagram.

No.	LCD Pin	Corresponding to UNO board wiring pins
1	LED	A0
2	SCK	13
3	SDA	11
4	A0	A3
5	RESET	A4
6	CS	A5
7	GND	GND

No.	LCD Pin	Corresponding to UNO board wiring pins
8	VCC	5V/3.3V

4.4. Wiring with Arduino 2560 (5V Microcontroller)

Similar to Arduino UNO, when using an Arduino 2560,**four 560 Ohm, 680 Ohm, or 1k Ohm resistors are required**for the data lines (SCK, SDA, A0, and CS) to step down the voltage from the Arduino pins to the 3.3V required by the display.

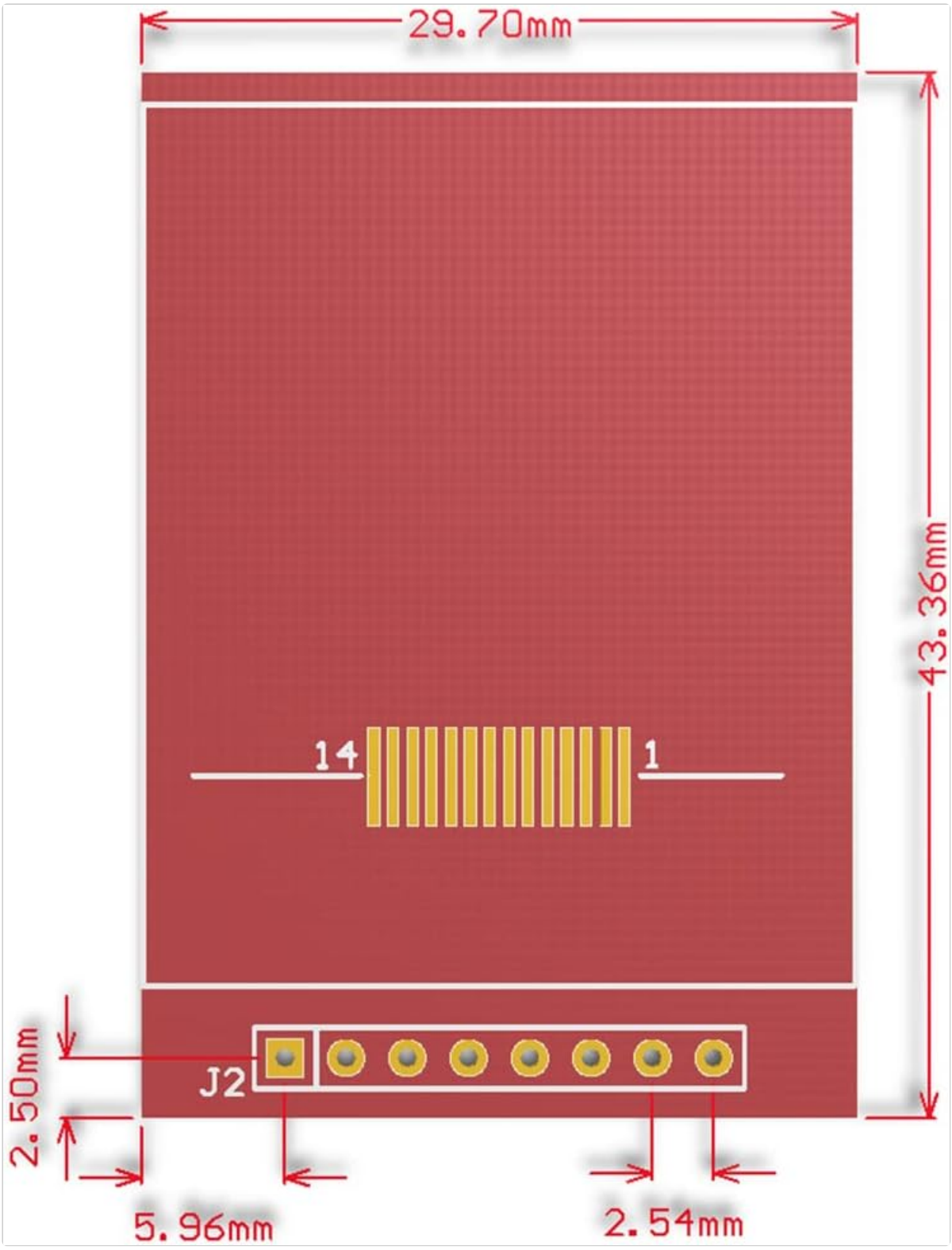


Image: Arduino 2560 Wiring Diagram.

No.	LCD Pin	Corresponding to 2560 board wiring pins
1	LED	A0
2	SCK	52
3	SDA	51
4	A0	A3
5	RESET	A4
6	CS	A5
7	GND	GND
8	VCC	5V/3.3V

5. Operation Guide

To operate the display, you will need to use a compatible library for your chosen microcontroller. For Arduino, libraries such as Adafruit GFX Library and Adafruit ST7735 Library are commonly used. These libraries provide functions for drawing text, shapes, and images on the display.

5.1. Example Display Modes

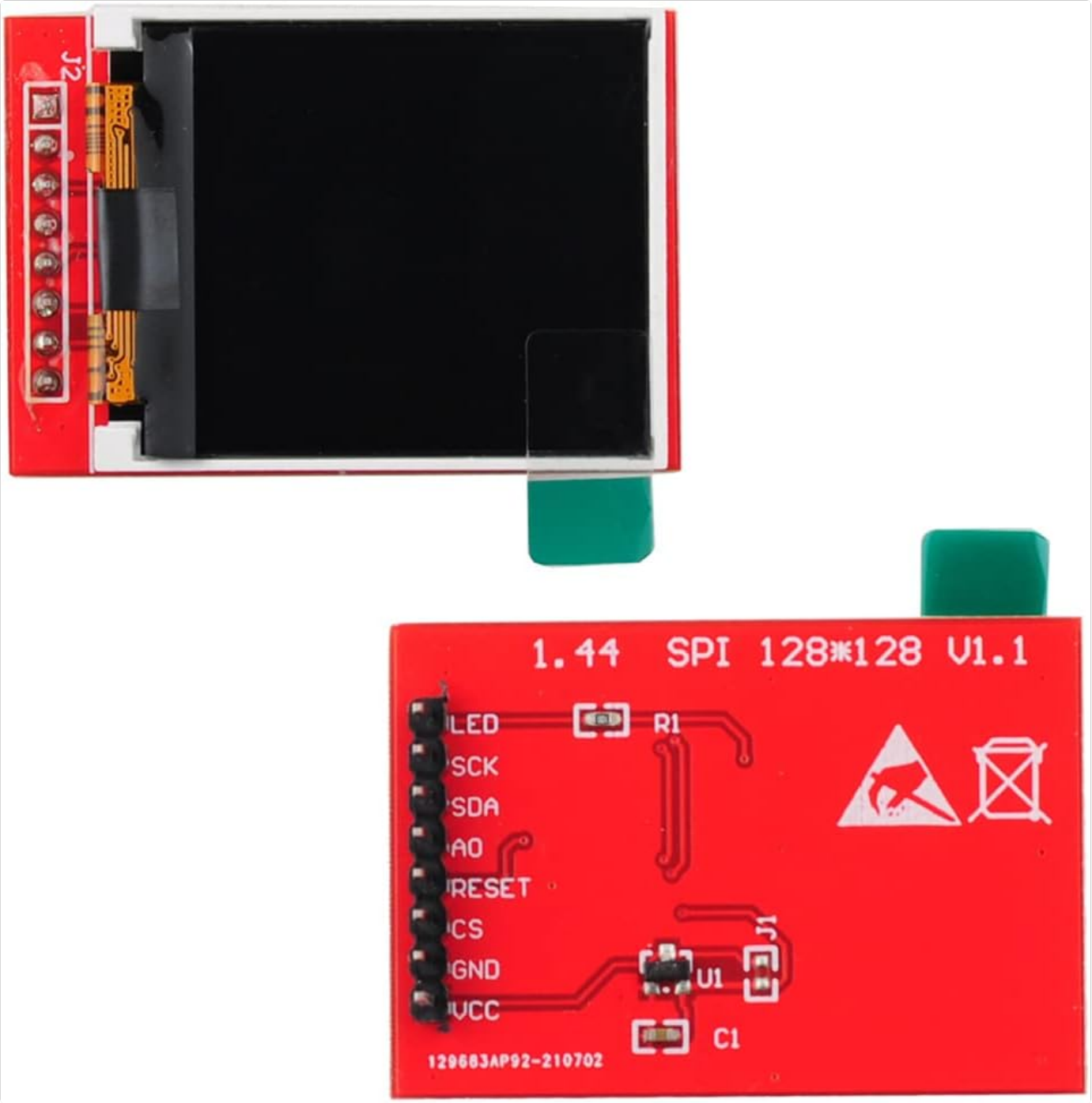


Image: Various display modes and graphics on the 1.44 inch TFT LCD.

5.2. Product Demonstration Video

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Video: A demonstration of the DIYmalls 1.44 inch TFT LCD Display (ST7735S) in operation, showcasing its display capabilities and integration with a microcontroller.

6. Troubleshooting

- **Display not lighting up:** Ensure VCC and GND connections are correct and that the LED pin is connected to 3.3V or controlled by a microcontroller pin set to HIGH.
- **No display output or garbled text:**
  - Verify all SPI data lines (SCK, SDA, A0, CS, RESET) are correctly wired according to the pinout.
  - If using a 5V microcontroller, confirm that voltage level shifters or resistors are correctly implemented on the

data lines.
    - Check that the correct display library (e.g., Adafruit ST7735) is installed and initialized with the correct pin assignments in your code.
    - Ensure the SPI clock speed is compatible with the display.
- **Incorrect colors:** This may indicate an issue with the library initialization or color mode settings in your code. Refer to the library documentation for proper color configuration.
- **Display flickering:** Check power supply stability and ensure all connections are secure.

7. Maintenance

The DIYmalls 1.44 inch TFT LCD Display Module requires minimal maintenance. Follow these guidelines:

- **Handling:** Handle the module by its edges to avoid touching the display surface or the delicate FPC (Flexible Printed Circuit) connector.
- **Cleaning:** If necessary, gently wipe the display surface with a soft, lint-free cloth. Avoid using harsh chemicals or abrasive materials.
- **Storage:** Store the module in an anti-static bag in a dry environment to prevent damage from static discharge or moisture.
- **Power:** Always ensure the correct voltage (3.3V logic) is supplied to the display. Over-voltage can cause permanent damage.

8. Support Information

For further assistance, technical documentation, or to explore other DIYmalls products, please visit the official DIYmalls store or contact customer support.

DIYmalls Store: https://www.amazon.com/stores/DIYmalls/page/0EBC2563-CFD4-44A2-9419-85DD5F15E3EF

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.

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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