JESSINIE GC9A01 1.28 Inch TFT LCD Display Module

JESSINIE 1.28 Inch TFT LCD Display Module User Manual

Model: GC9A01 1.28 Inch TFT LCD Display Module

Brand: JESSINIE

1. Product Overview

The JESSINIE 1.28-inch circular TFT LCD display module is designed for integration into various electronic projects, particularly those utilizing microcontrollers like Arduino. It features a built-in GC9A01 driver chip and communicates via a 4-wire SPI interface. The display offers a resolution of 240x240 pixels with a pixel size of 0.135x0.135mm, capable of displaying 65K colors for clear visual output. Its IPS screen type ensures wide viewing angles.

Image 1.1: Three JESSINIE 1.28-inch round TFT LCD display modules.

The module is compact, measuring 36 x 38.8 x 9.4mm, and includes M3 screw holes for secure mounting. It operates with a working voltage of 3.3V/5V, making it compatible with common development boards.

2. Package Contents

- 3 x JESSINIE 1.28 Inch TFT LCD Display Modules
- PH2.0 to DuPont female head wire (for connectivity)

3. Setup and Connections

This display module uses a 4-wire SPI interface for communication. Proper connection to your microcontroller is essential for functionality. The module supports both 3.3V and 5V operating voltages.

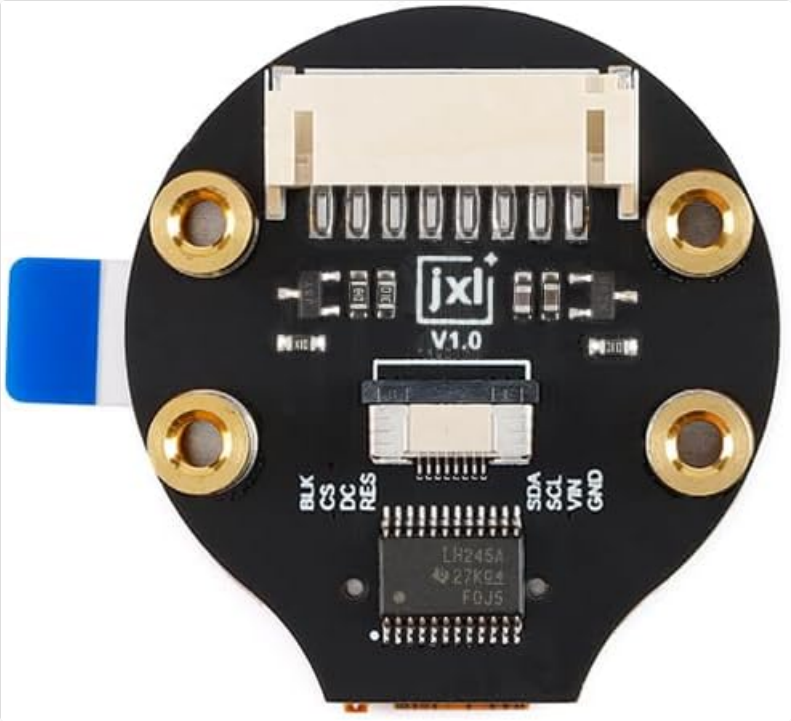

Image 3.1: Pinout diagram for the display module.

Refer to the pinout diagram above for connecting the module to your development board. The included PH2.0 to DuPont female head wire can be used for these connections.

- **BLK:** Backlight control (if applicable, often connected to VCC for always-on)
- **CS:** Chip Select for SPI communication
- **DC:** Data/Command selection
- **RES:** Reset pin
- **SDA:** SPI Data (MOSI)
- **SCL:** SPI Clock
- **VIN:** Power input (3.3V or 5V)
- **GND:** Ground

For physical mounting, the module includes M3 screw holes. Ensure proper alignment and avoid overtightening screws to prevent damage to the PCB or display.

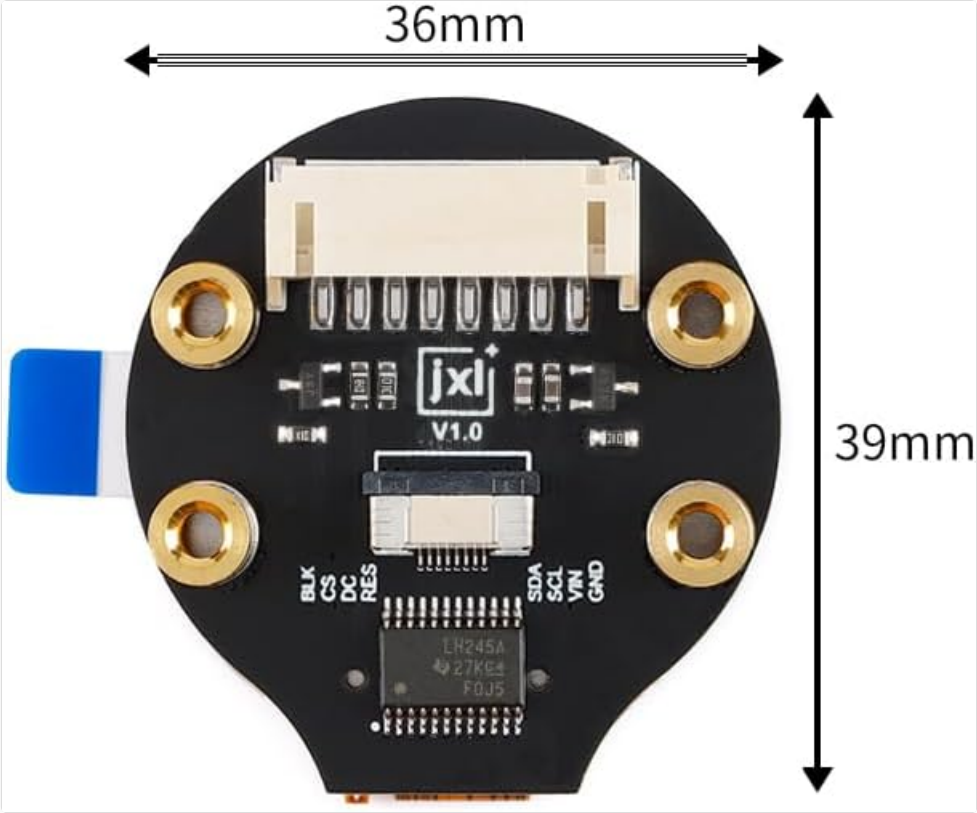

Image 3.2: Module dimensions for integration.

4. Operating Instructions

The JESSINIE 1.28-inch TFT LCD module is controlled via a 4-wire SPI interface. To operate the display, you will need to use a compatible microcontroller (e.g., Arduino, ESP32) and appropriate display libraries (e.g., Adafruit GFX, LovyanGFX, or libraries specific to the GC9A01 driver).

These libraries provide functions to initialize the display, set colors, draw shapes, display text, and render images. The 65K color capability allows for vibrant and detailed graphics within the 240x240 pixel resolution.

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Video 4.1: Demonstration of various graphical patterns and text display on a 1.28-inch round TFT LCD module.

The video above illustrates the display's capability to render dynamic patterns, text, and a functional clock interface, showcasing its potential for diverse applications.

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Video 4.2: Brief overview of a 1.28-inch IPS Round Display module, showing its physical appearance and a quick power-on sequence.

This video provides a quick look at the module's physical form and initial operation.

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Video 4.3: Demonstration of a 1.28-inch Round Display with Capacitive Touch functionality. Note: This video features a capacitive touch version, which may differ from the standard SPI display module.

While the primary product is a standard SPI display, this video demonstrates a similar 1.28-inch round display with capacitive touch, offering insight into potential advanced applications or alternative versions.

5. Specifications

Feature	Description
Display Type	1.28-inch Circular TFT IPS LCD
Driver Chip	GC9A01
Resolution	240x240 pixels
Pixel Size	0.135x0.135mm
Color Depth	65K colors
Communication Interface	4-wire SPI
Working Voltage	3.3V / 5V
Mounting Method	M3 screw (fixed to copper column)
Module Size (LxWxH)	36 x 38.8 x 9.4mm
Included Components	PH2.0 to DuPont female head wire

6. Maintenance

To ensure the longevity and optimal performance of your JESSINIE display module, follow these maintenance guidelines:

- Keep the module clean and free from dust and debris. Use a soft, dry cloth for cleaning.
- Avoid exposing the module to extreme temperatures or humidity.
- Handle the module with care to prevent physical damage to the screen or PCB.
- Ensure all connections are secure but not overly strained.

7. Troubleshooting

If you encounter issues with your JESSINIE 1.28-inch TFT LCD display module, consider the following troubleshooting steps:

- **No Display Output:**
  - Verify all wiring connections (BLK, CS, DC, RES, SDA, SCL, VIN, GND) are correct and secure.
  - Ensure the power supply (VIN) is within the specified 3.3V/5V range.
  - Check if the backlight (BLK pin) is properly enabled (often connected to VCC or controlled by a GPIO).
  - Confirm that your microcontroller's SPI interface is correctly configured and initialized in your code.
- **Incorrect or Garbled Display:**
  - **SPI Frequency:** Some users have reported success by adjusting the SPI clock frequency. If using libraries like Adafruit GC9A01A, try reducing the `SPI_DEFAULT_FREQ` (e.g., from 24MHz to 8MHz or 21MHz) in your code or library configuration.
  - **SPI Data Mode:** Ensure the correct SPI data mode is set. For some GC9A01 drivers,

`SPI_MODE0` has been found to work effectively.
    - **Chip Select (CS) Toggling:** Verify that the Chip Select pin is being correctly toggled by your software during SPI communication.
    - **Connection Length:** Long or poor-quality wires can introduce signal integrity issues. Keep SPI connection wires as short as possible and ensure good contact.
    - **Library Compatibility:** Ensure you are using a display library compatible with the GC9A01 driver chip.
- **Physical Damage:** Inspect the module for any visible physical damage, such as cracked screen or bent pins.

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8. Warranty and Support

JESSINIE products are designed for reliability and performance. For technical support, troubleshooting assistance beyond this manual, or warranty inquiries, please contact JESSINIE customer service through the platform where the product was purchased. Please provide your order number and a detailed description of the issue to facilitate prompt assistance.
