DIYmall 0.96" I2C OLED Display Module (SSD1306)

DIYmall 0.96" I2C OLED Display Module (SSD1306) User Manual

Model: 0.96" I2C OLED Display Module (SSD1306) | Brand: DIYmall

1. Introduction

This manual provides detailed instructions for the setup, operation, and integration of the DIYmall 0.96-inch I2C OLED Display Module, featuring the SSD1306 driver. This compact display is ideal for various microcontroller projects, including those involving Arduino, ESP32, and Raspberry Pi.

What's Included:

- 1 x DIYmall 0.96" White OLED Module

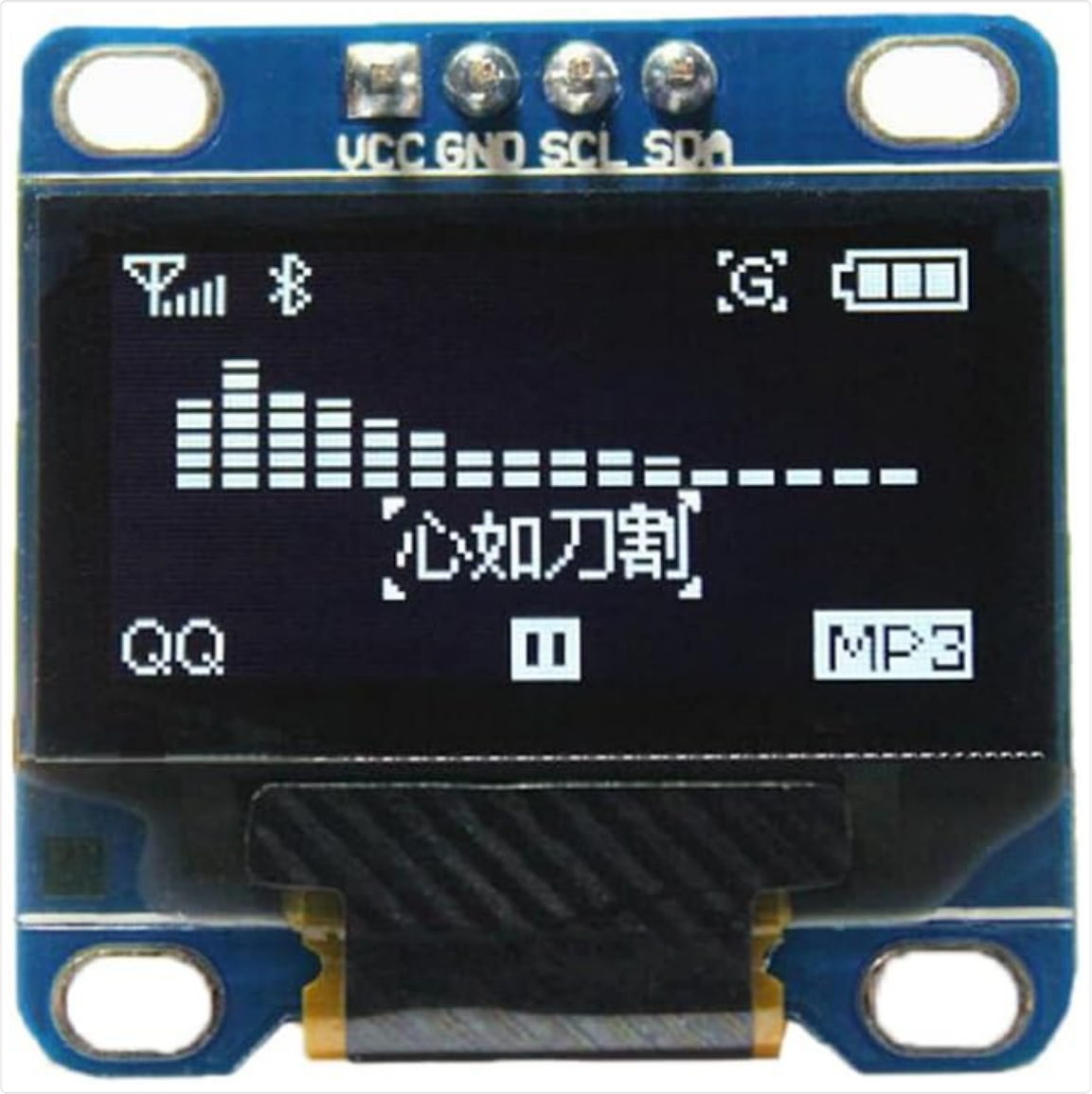


Figure 1: Front view of the DIYmall 0.96" White OLED Display Module.

2. Specifications

Feature	Detail
Display Size	0.96 inches
Display Type	OLED (Organic Light Emitting Diode)
Resolution	128x64 pixels
Driver IC	SSD1306
Interface	I2C (Inter-Integrated Circuit) / IIC Serial
Operating Voltage	3.3V - 5V
Color	White
Mounting Type	Panel Mount
Connector Type	Through Hole
Product Dimensions	0.96"W x 0.96"H (approx. 24.4mm x 24.4mm)

Feature	Detail
Item Model Number	0.96 taiwan oled screen
UPC	702795761066, 702795765828

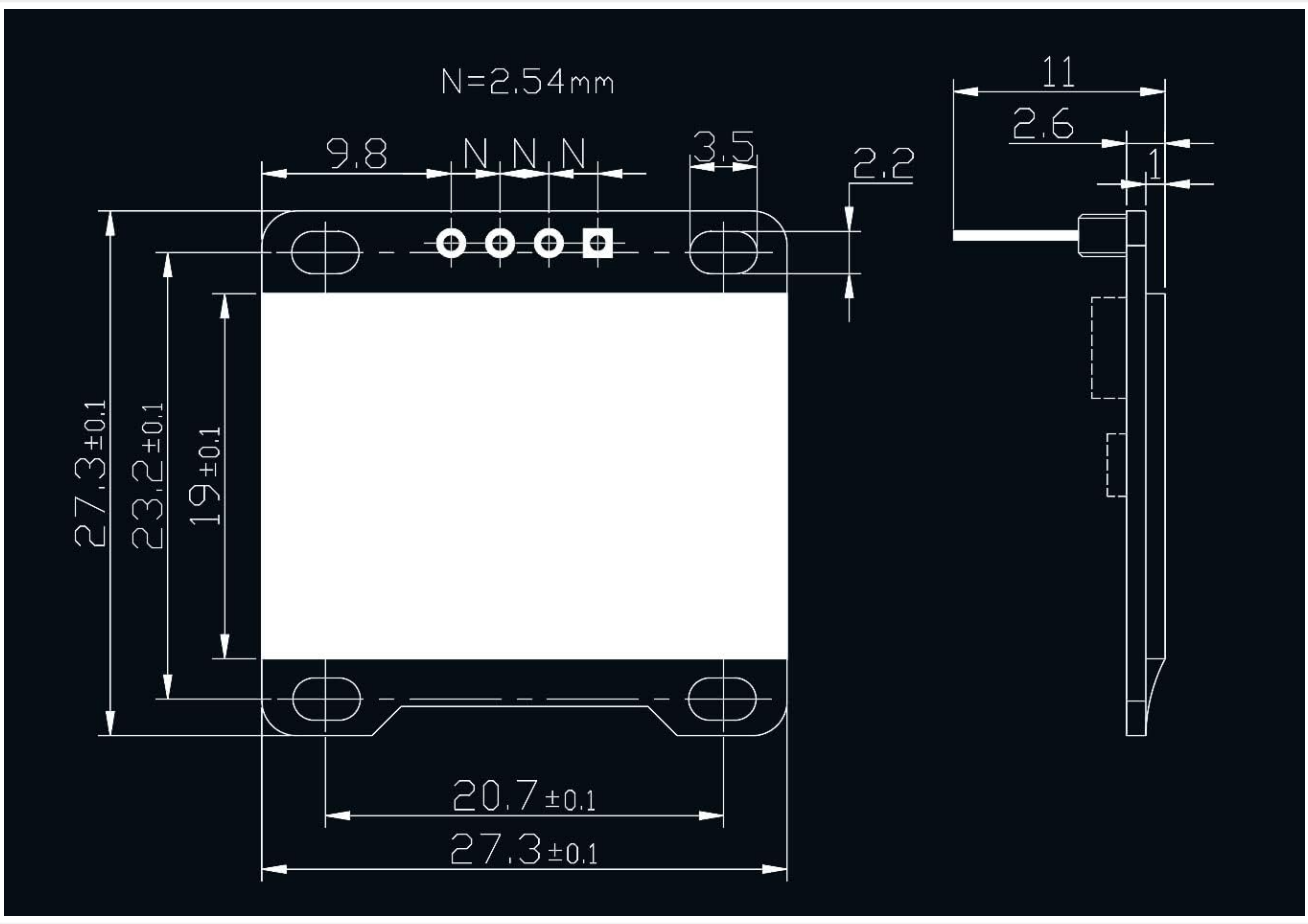


Figure 2: Technical drawing with dimensions of the OLED module.

3. Setup and Installation

This section guides you through connecting the OLED module to common microcontrollers and preparing your development environment.

3.1 Pinout and I2C Address

The module typically features four pins: VCC, GND, SCL, and SDA. The default I2C address for this module is 0x3C. Some modules may have jumpers to change the address to 0x3D.

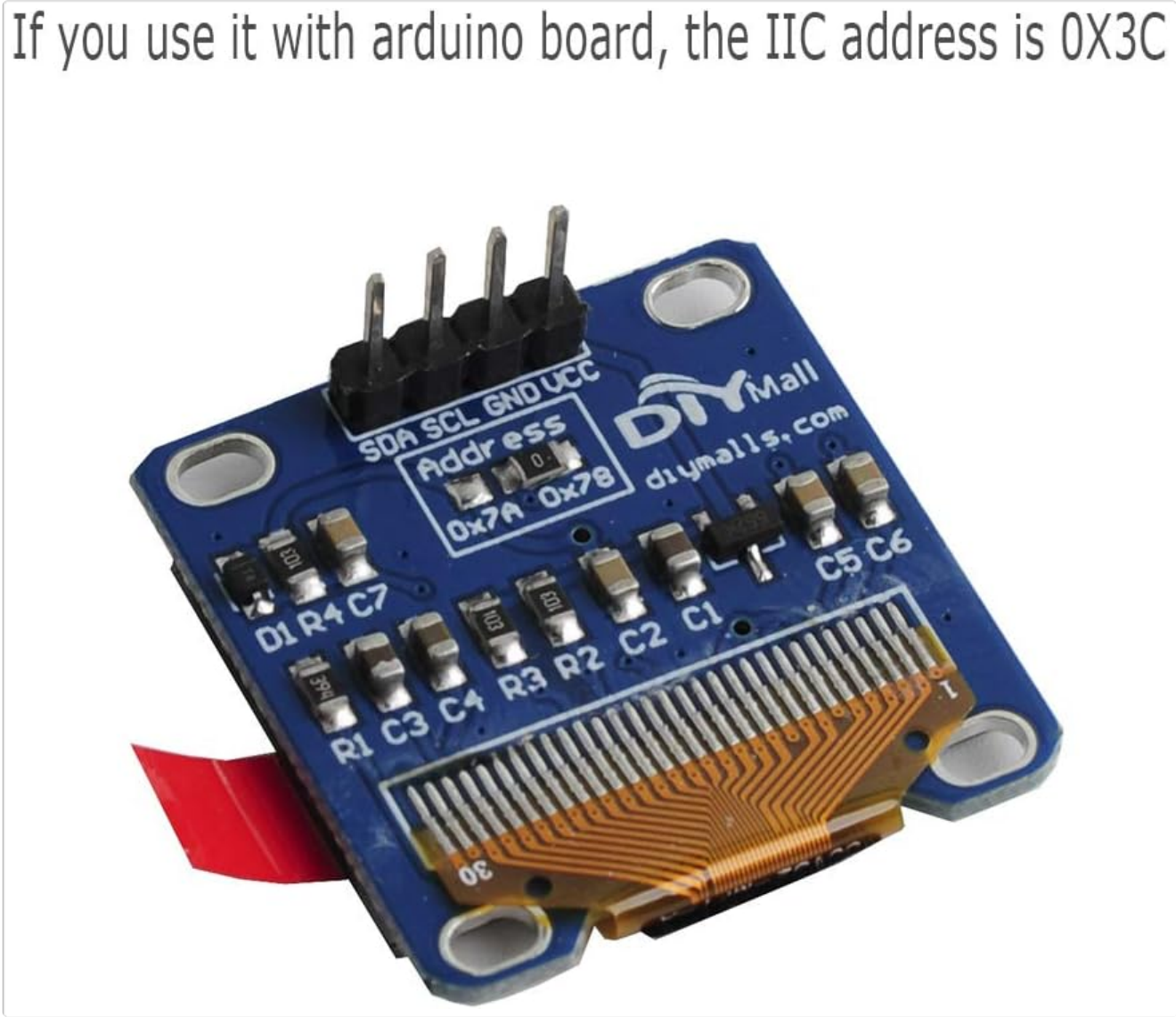


Figure 3: Back of the OLED module, highlighting the I2C address configuration.

3.2 Wiring with Arduino

To connect the 0.96" OLED module to an Arduino board, follow these connections:

- **VCC** to Arduino **5V** (or 3.3V, depending on your Arduino model and module compatibility)
- **GND** to Arduino **GND**
- **SCL** to Arduino **A5** (for Uno/Nano) or **D21** (for Mega)
- **SDA** to Arduino **A4** (for Uno/Nano) or **D20** (for Mega)

Figure 4: Example wiring of the OLED module with an Arduino board. Note the I2C address change to 0x3C in the code.

3.3 Wiring with NodeMCU (ESP8266)

For NodeMCU (ESP8266) boards, use the following connections:

- **VCC** to NodeMCU **3V3**
- **GND** to NodeMCU **GND**
- **SCL** to NodeMCU **D1**
- **SDA** to NodeMCU **D2**

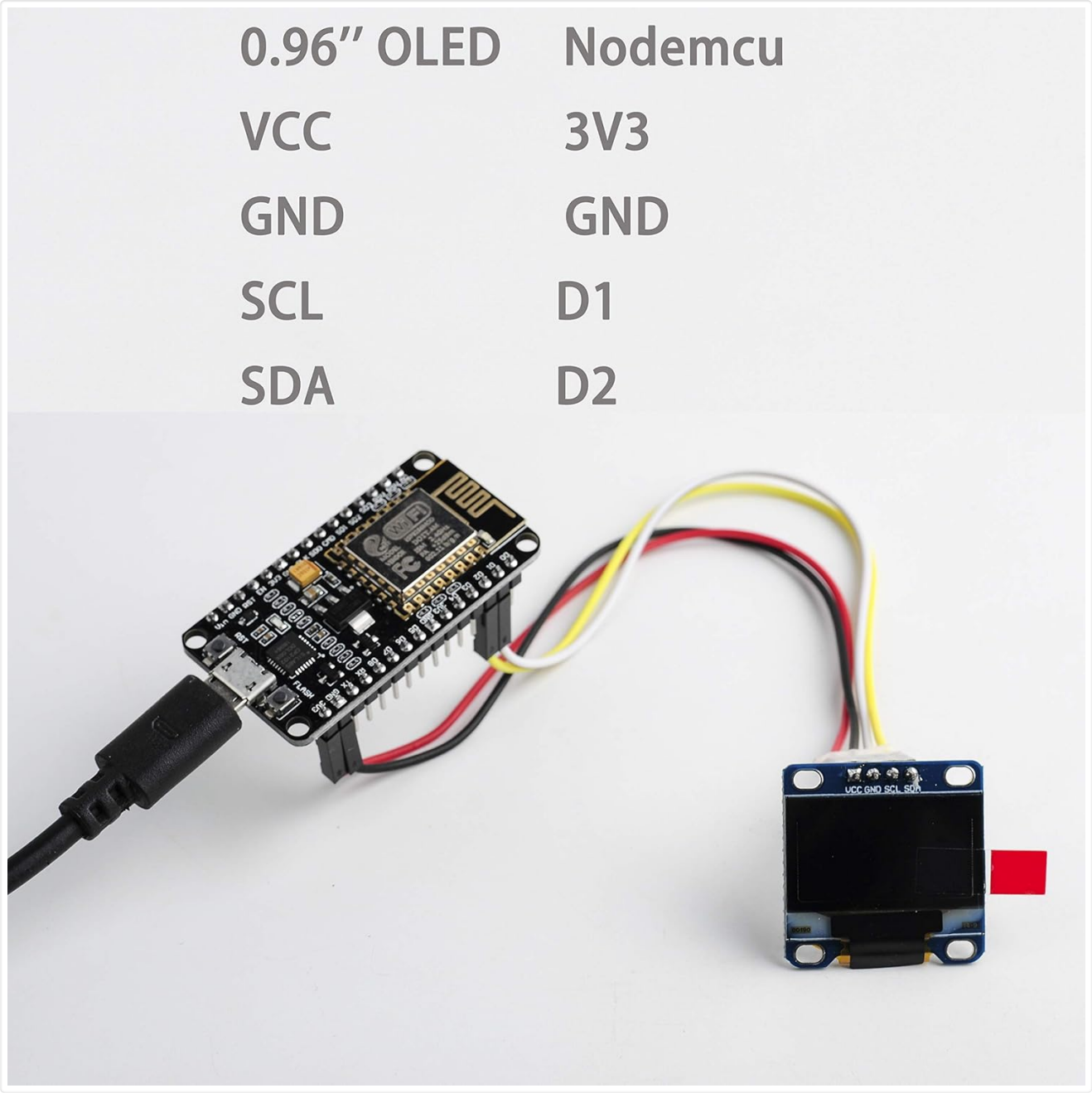


Figure 5: Example wiring of the OLED module with a NodeMCU ESP8266 board.

4. Operating Instructions

To operate the OLED display, you will need to install specific libraries in your Arduino IDE and upload example code.

4.1 Library Installation

Install the following libraries in your Arduino IDE via the Library Manager (Sketch > Include Library > Manage Libraries...):

- **Adafruit SSD1306**
- **Adafruit GFX Library**
- **RTClib** (if using a Real-Time Clock module)

4.2 Example Code and Usage

After wiring and installing libraries, you can upload example sketches to test the display. Ensure the I2C address in your code matches the module's address (typically 0x3C).
For detailed instructions on connecting the ESP32 with a DS3231 clock module and the OLED, refer to the official DIYmall video below:

Your browser does not support the video tag.

Video 1: Tutorial on connecting ESP32 with DS3231 clock module and OLED display, provided by DIYmall.

5. Troubleshooting

- **Display is blank after power-up:** The OLED display will appear blank until it is correctly initialized by your microcontroller and code. Ensure your code is uploaded and running, and the I2C address in the code matches the module's address (0x3C or 0x3D).
- **Incorrect display output:** Double-check your wiring connections for SDA, SCL, VCC, and GND. Verify that the correct libraries are installed and included in your sketch.
- **Compilation errors:** Ensure you have the latest versions of the Adafruit SSD1306 and Adafruit GFX libraries. Some older library versions or Arduino IDE versions might require minor code adjustments (e.g., adding `const` to `PROGMEM` definitions).
- **I2C communication issues:** Use an I2C scanner sketch to confirm the module's address. Ensure no other I2C devices are conflicting on the bus.
- **Power issues:** While the module supports 3.3V-5V, ensure your power supply is stable and provides sufficient current.

6. Maintenance

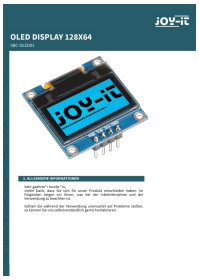
The DIYmall 0.96" OLED Display Module is a robust electronic component. Follow these guidelines for optimal performance and longevity:

- **Handling:** Handle the module by its edges to avoid touching the display surface or delicate components.
- **Storage:** Store in a dry, anti-static environment, away from direct sunlight and extreme temperatures.
- **Cleaning:** If necessary, gently clean the display surface with a soft, lint-free cloth. Avoid abrasive materials or harsh chemicals.
- **Power Supply:** Always use a stable power supply within the specified voltage range (3.3V-5V).

7. Warranty and Support

For warranty information, technical support, or further assistance, please refer to the official DIYmall store or contact their customer service directly. Product support resources, including additional tutorials and code examples, may be available on the DIYmall website.

Related Documents - 0.96" I2C OLED Display Module (SSD1306)

	[DIYmall 4WD Technical Car Chassis Building Kit with IR Remote Control] Discover the DIYmall 4WD Technical Car Chassis Building Kit, designed for enthusiasts and creators. This kit includes essential components such as an IR remote control, M servo motor, and AA battery box, enabling the construction of advanced robotic and vehicle models. Compatible with LEGO-style MOC projects, it offers a versatile platform for technical building.
	[Velleman WPI438 0.96-inch OLED Display with I2C for Arduino - User Manual] User manual for the Velleman WPI438 0.96-inch OLED display module. Learn about its features, specifications, pin layout, and how to connect and program it with Arduino using I2C.
	[JOY-IT SBC-OLED01 OLED Display 128x64 Bedienungsanleitung] Diese Anleitung beschreibt die Inbetriebnahme und Verwendung des JOY-IT SBC-OLED01 OLED Displays (128x64) mit Arduino und Raspberry Pi. Enthält Anschlussdiagramme, Beispielcode und Installationsschritte.
	[1.54inch OLED SSD1309 IIC Module MC154GW/MC154GB User Manual] User manual for the LCDWIKI 1.54-inch OLED SSD1309 IIC Module (MC154GW/MC154GB), detailing its features, specifications, interface, working principle, and usage with various development platforms like Arduino, STM32, Raspberry Pi, and MSP430.
	[Joy-IT 1.3" OLED Display Module: SPI & I2C Interface User Guide] Comprehensive guide for the Joy-IT 1.3" OLED Display Module (SBC-OLED01.3), covering its features, SPI and I2C interfaces, and application examples for Arduino and Raspberry Pi. Includes setup instructions, library information, and support details.
	[ArduCam MEGA SPI Camera Getting Started Guide] A comprehensive guide to getting started with the ArduCam MEGA SPI Camera, detailing connection, setup, and operation with Arduino microcontrollers and other platforms.