

DWEII SSD1315

DWEII 0.96 Inch OLED Display Module (SSD1315) User Manual

Model: 0.96 Inch OLED Display Module SSD1315

1. INTRODUCTION

This manual provides detailed instructions for the DWEII 0.96 Inch OLED Display Module, featuring a 128x64 resolution and SSD1315 chipset. This module is designed for integration into various microcontroller projects, offering a compact and clear display solution.

Package Contents

- 6 x 0.96 Inch I2C Display Module (Blue Light)
- 6 x 4-Pin Header

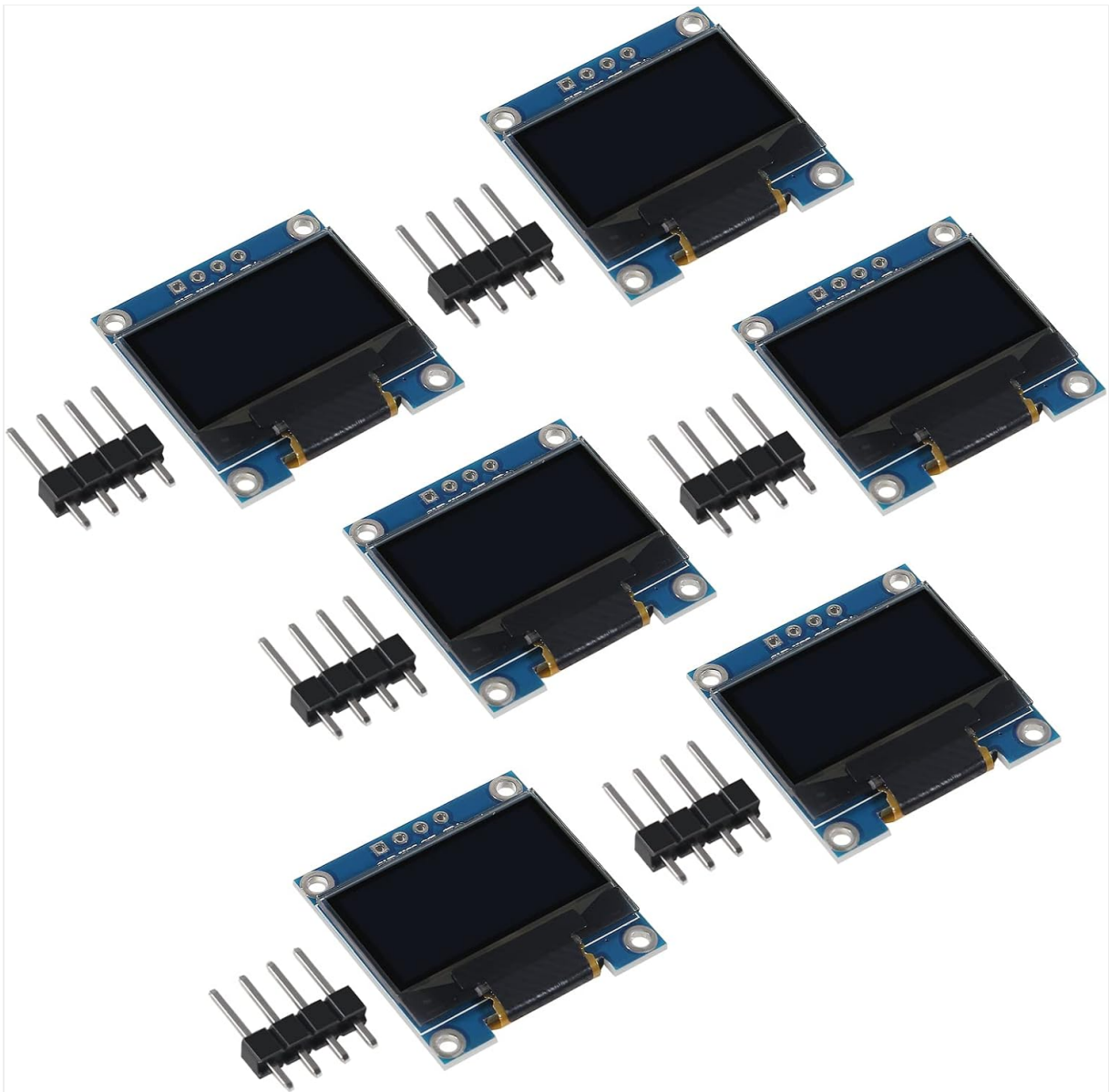


Image 1.1: Six 0.96 Inch OLED Display Modules with accompanying 4-pin headers.

2. SPECIFICATIONS

Feature	Description
Display Mode	Passive Matrix
Display Color	Blue
Resolution	128 x 64 pixels
Driver IC	SSD1315
Interface	I2C (IIC)
Operating Voltage	3.3V - 5V DC
Power Consumption	0.04W (normal), 0.08W (full screen lit)
View Angle	> 160°
Panel Size	24.74 × 16.9 × 1.42 mm

Feature	Description
Active Area	21.74 × 10.86 mm
Pixel Pitch	0.17 × 0.17 mm
Pixel Size	0.15 × 0.15 mm
Working Temperature	-30°C ~ 70°C



Image 2.1: Physical dimensions of the 0.96 inch OLED module, showing approximate measurements of 27.5mm x 27.5mm.

3. SETUP AND INSTALLATION

The DWEII 0.96 Inch OLED Display Module utilizes an I2C communication interface, making it compatible with a wide range of microcontrollers such as Arduino, Raspberry Pi, and STM32. Follow these steps for proper connection.

3.1 Pinout Description

The module features a 4-pin interface for easy connection:

- **GND**: Ground connection.
- **VCC**: Power supply input (3.3V - 5V).
- **SCL**: Serial Clock line for I2C communication.
- **SDA**: Serial Data line for I2C communication.

FRONT

BACK

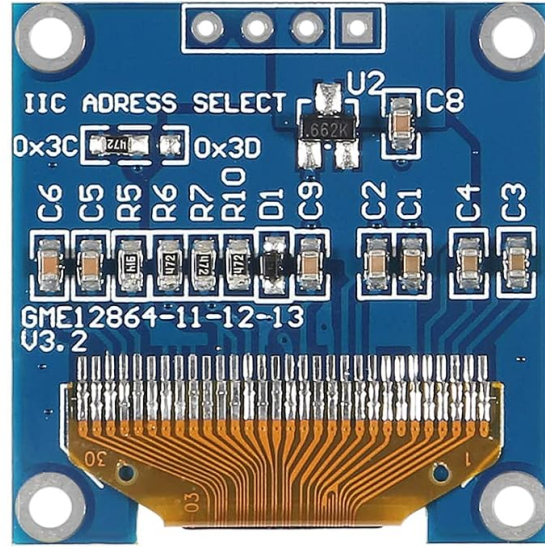
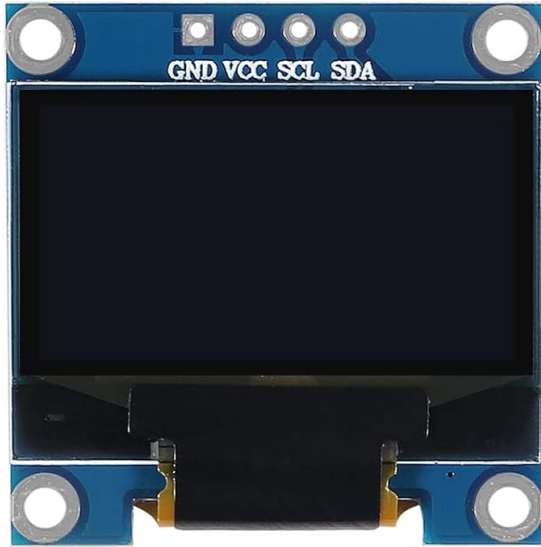
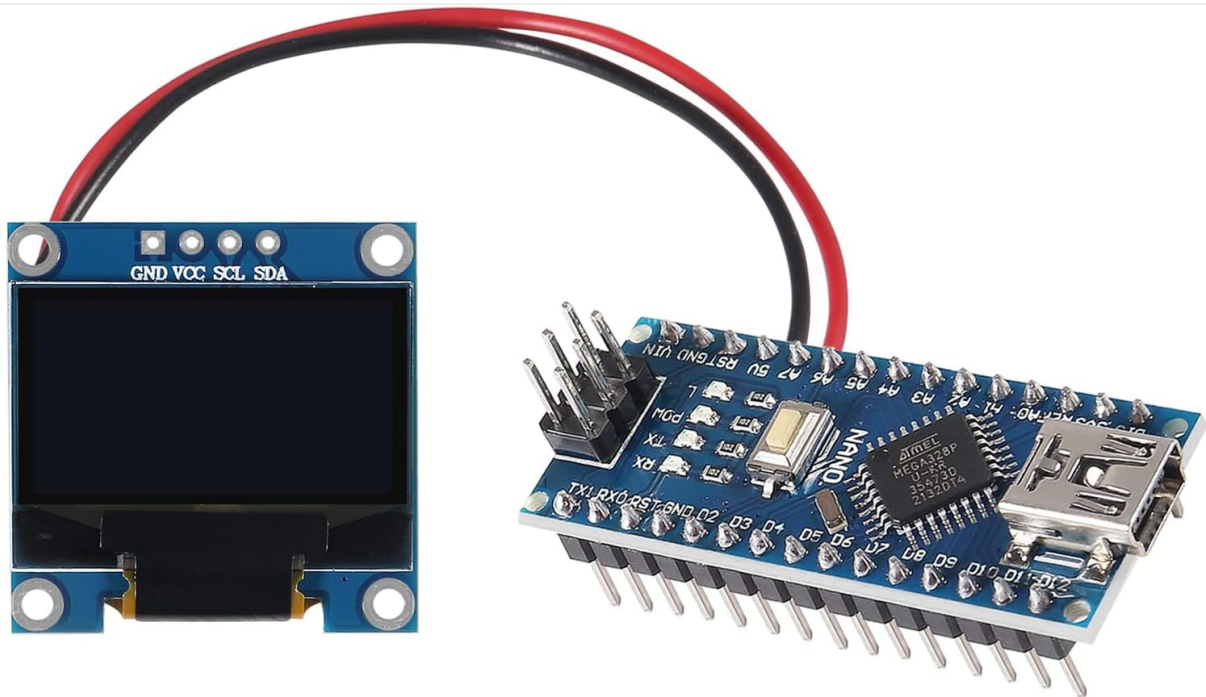


Image 3.1: Front and back view of the OLED module. The front shows GND, VCC, SCL, SDA pins. The back shows IIC address selection jumpers.



GND : Ground

VCC : 3.3V~5V

SCL : I2C Serial Clock

SDA : I2C Serial Data

Image 3.2: Example connection of the OLED module to a microcontroller, illustrating the pin assignments: GND (Ground), VCC (3.3V~5V),

3.2 Connection Steps

1. Connect the **GND** pin of the OLED module to the Ground pin of your microcontroller.
2. Connect the **VCC** pin of the OLED module to a 3.3V or 5V power supply pin on your microcontroller. Ensure the voltage matches the module's operating range.
3. Connect the **SCL** pin of the OLED module to the I2C Serial Clock pin of your microcontroller.
4. Connect the **SDA** pin of the OLED module to the I2C Serial Data pin of your microcontroller.

Ensure all connections are secure and correctly aligned to prevent damage to the module or microcontroller.

3.3 I2C Address Selection

The I2C address of the module can be changed, which is useful when multiple I2C devices are used on the same bus. Refer to the back of the module (Image 3.1) for jumper settings to select between common addresses like 0x3C or 0x3D. Consult your microcontroller's I2C library documentation for how to specify the address in your code.

4. OPERATING INSTRUCTIONS

To operate the DWEII OLED display, you will need to use a compatible I2C library for your chosen microcontroller platform. Common libraries include Adafruit SSD1306 (often compatible with SSD1315) for Arduino, or `luma.oled` for Raspberry Pi.

4.1 Software Setup (Example for Arduino)

1. **Install Libraries:** Open your Arduino IDE, go to **Sketch > Include Library > Manage Libraries...** Search for "Adafruit SSD1306" and "Adafruit GFX Library" and install them.
2. **Include Headers:** In your Arduino sketch, include the necessary libraries:

```
#include <Wire.h> // Required for I2C communication
#include <Adafruit_GFX.h> // Core graphics library
#include <Adafruit_SSD1306.h> // Hardware-specific library for SSD1306/SSD1315
```

3. **Define Display Parameters:**

```
#define SCREEN_WIDTH 128 // OLED display width, in pixels
#define SCREEN_HEIGHT 64 // OLED display height, in pixels
#define OLED_RESET -1 // Reset pin # (or -1 if sharing Arduino reset pin)
#define SCREEN_ADDRESS 0x3C // I2C address for 128x64 OLED (can be 0x3D)
Adafruit_SSD1306 display(SCREEN_WIDTH, SCREEN_HEIGHT, &Wire, OLED_RESET);
```

4. **Initialize Display:** In your `setup()` function, initialize the display:

```
if(!display.begin(SSD1306_SWITCHCAPVCC, SCREEN_ADDRESS)) {
  Serial.println(F("SSD1306 allocation failed"));
  for(;;); // Don't proceed, loop forever
}
display.display(); // Show initial Adafruit logo
delay(2000);
display.clearDisplay(); // Clear the buffer
```

5. **Display Text/Graphics:** Use functions like `display.setTextSize()`, `display.setTextColor()`, `display.setCursor()`, `display.println()`, `display.drawPixel()`, `display.drawCircle()`, etc., followed by `display.display()` to update the screen.

Refer to the specific library's documentation and examples for more advanced usage and graphic functions.

5. MAINTENANCE

The DWEII OLED Display Module is a robust electronic component, but proper care can extend its lifespan and ensure optimal performance.

- **Handling:** Always handle the module by its edges to avoid touching the display surface or sensitive electronic components.
- **Cleaning:** If necessary, gently clean the display surface with a soft, dry, lint-free cloth. Avoid using liquid cleaners or abrasive materials.
- **Storage:** Store the module in a dry, anti-static environment, away from direct sunlight and extreme temperatures.
- **Power Supply:** Ensure the power supply voltage is within the specified range (3.3V - 5V) to prevent damage.
- **Static Electricity:** Take precautions against electrostatic discharge (ESD) when handling the module, as it can damage sensitive electronics.

6. TROUBLESHOOTING

If you encounter issues with your OLED display module, consider the following troubleshooting steps:

- **Display Not Lighting Up:**
 - Verify power connections (VCC and GND) are correct and providing the specified voltage.
 - Check I2C connections (SCL and SDA) for continuity and correct pin assignment on your microcontroller.
 - Ensure your code initializes the display correctly and the I2C address (0x3C or 0x3D) matches the module's setting.
 - Confirm that the necessary libraries are installed and included in your project.
- **Garbled or Incorrect Display:**
 - Double-check the I2C address in your code against the module's jumper settings.
 - Ensure the display resolution (128x64) is correctly defined in your software.
 - Verify that the correct display driver (e.g., SSD1306/SSD1315) is selected in your library.
 - Check for loose connections or interference on the I2C lines.
- **No I2C Device Detected:**
 - Run an I2C scanner sketch on your microcontroller to confirm if the module is detected at its expected address.
 - Ensure pull-up resistors are present on the SCL and SDA lines if your microcontroller or development board does not provide them internally.

7. WARRANTY AND SUPPORT

DWEII products are designed for reliability and performance. For technical support, troubleshooting assistance, or warranty inquiries, please contact your retailer or the manufacturer directly. Keep your purchase receipt as proof of purchase.

For additional resources, including example code and community forums, search online for "SSD1315 OLED Arduino tutorial" or "SSD1315 Raspberry Pi tutorial" to find extensive community support and project examples.