

DAOKAI WE-DA-361

DAOKAI 0.91" 128x32 I2C OLED Display Module Instruction Manual

1. INTRODUCTION

This manual provides detailed instructions for the DAOKAI 0.91 inch 128x32 I2C OLED Display Module. This self-illuminating display offers high contrast and clear readability, making it suitable for various embedded projects with microcontrollers like Arduino, Raspberry Pi, ESP8266, and STM32.

Key Features:

- **Display Size:** 0.91 inch
- **Resolution:** 128 x 32 pixels
- **Interface:** I2C (IIC)
- **Operating Voltage:** DC 3.3V - 5V
- **Display Color:** White
- **Self-Luminous:** No backlight required, high contrast.
- **Compatibility:** Compatible with Raspberry Pi, Arduino, ESP8266, STM32, and other platforms.

PARAMETERS

0.91 INCH
(WHITE)



- Pins: 4 pins
- Display: White
- Resolution: 128x32
- Viewing angle: full view
- Working voltage: 3.3V-5V
- Communication interface: IIC
- Pin definition: GND, VCC, SCL, SDA

Image 1.1: Overview of the 0.91 inch OLED module parameters, showing pins, display color, resolution, viewing angle, working voltage, and communication interface.

2. PRODUCT COMPONENTS

The package includes the following items:

- 5 x 0.91" OLED Display Modules (White)
- 20 x Male to Female Dupont Wires

3. SPECIFICATIONS

3.1 General Specifications

Characteristic	Value
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Characteristic	Value
Display Size	0.91 inches
Resolution	128 x 32 pixels
Operating Voltage	DC 3.3V - 5V
Interface Type	IIC (I2C)
Display Color	White
Operating Temperature	-40°C to 85°C
Display Area	22.384 x 5.584 mm
Pixel Size	0.159 x 0.159 mm
Pixel Pitch	0.175 x 0.175 mm

3.2 Physical Dimensions

SIZE

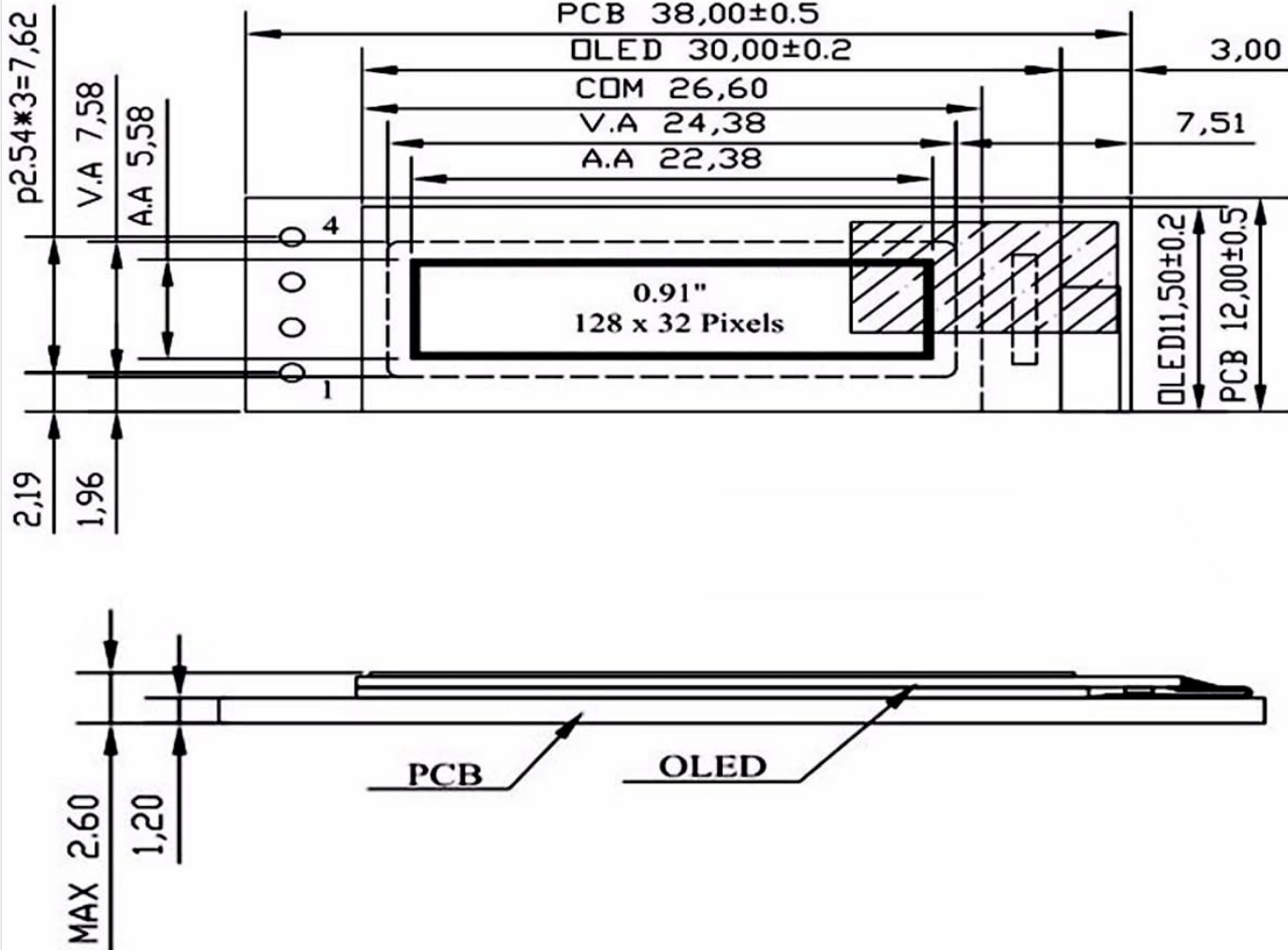


Image 3.1: Detailed physical dimensions of the OLED module, including PCB size, OLED area, and overall thickness.

The module has a physical size of approximately 38 x 12 mm. Refer to Image 3.1 for detailed measurements including PCB dimensions and display area.

3.3 DC Characteristics

DC CHARACTERISTICS

3.2 DC Characteristics

Characteristics	Symbol	Conditions	Min	Typ	Max	Unit
Supply Voltage for Logic	VDD		1.65	2.8	3.3	V
Supply Voltage for Display (Supplied Externally)	Vcc	Note 5 (Internal DC/DC Disable)	6.4	-	9	V
Supply Voltage for DC/DC	VBAT	Internal DC/DC Enable	3.5	-	4.2	V
Supply Voltage for Display (Generated by Internal DC/DC)	Vcc	Note 6 (Internal DC/DC Enable)	7	7.25	7.2	V
High Level Input	VIH	IouT = 100pA, 3.3MHz	0.8 x VDD	-	VDD	V
Low Level Input	VIL	IouT = 100pA, 3.3MHz	0	-	0.2 x VDD	V
High Level Output	VOH	IouT = 100pA, 3.3MHz	0.9 x VDD	-	VDD	V
Low Level Output	VOL	Iou = 100pA, 3.3MHz	0	-	0.1 x VDD	V
Operating Current for VDD	IDD		-	180	300	uA
Operating Current for Vcc (Vcc Supplied Externally)	ICC	Note 7	-	10	16	mA
Operating Current for VBAT (Vcc Generated by Internal DC/DC)	IBAT	Note 8	-	23	29	mA
Sleep Mode Current for VDD	IDD,SLEEP		-	1	5	uA
Sleep Mode Current for Vcc	ICC,SLEEP		-	2	10	uA

Note 5 & 6: Brightness (L_{br}) and Supply Voltage for Display (Vcc) are subject to the change of the panel characteristics and the customer's request.

Note 7: VDD = 2.8V, Vcc = 7.25V, 100% Display Area Turn on.

Note 8: VDD = 2.8V Vcc = 7.25V 100% Display Area Turn on.

* Software configuration follows Section 4.4 Initialization.

Image 3.2: Table detailing the DC electrical characteristics of the OLED module, including supply voltages, input/output levels, and operating currents.

Image 3.2 provides a comprehensive table of DC characteristics, including supply voltages for logic (VDD) and display (VCC), high/low level input/output voltages, and various operating currents. Note that brightness and display supply voltage (VCC) are subject to panel characteristics and customer requests.

4. PIN DEFINITION AND CIRCUIT DIAGRAM

4.1 Pin Definition



PIN DEFINITION

GND: Power ground

VCC: Power positive (3.3-5V)

SCL: IIC clock line

SDA: IIC data line



Image 4.1: Pinout diagram for the 0.91 inch OLED module, showing GND, VCC, SCL, and SDA connections. The module features a 4-pin interface for I2C communication. The pins are defined as follows:

- **GND:** Power Ground
- **VCC:** Power Supply + (DC 3.3V - 5V)
- **SCL:** IIC Clock Line
- **SDA:** IIC Data Line

4.2 Circuit Diagram

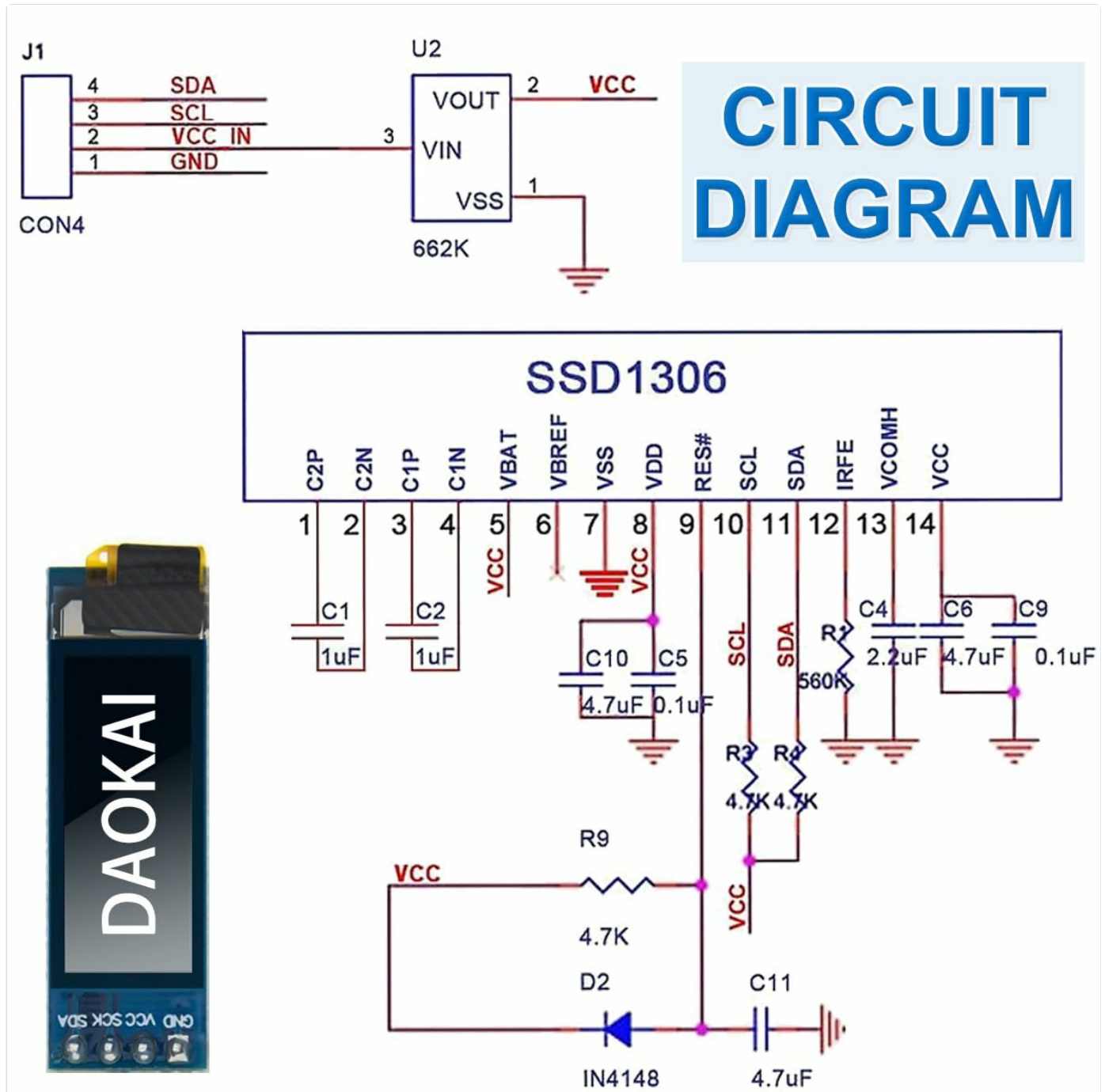


Image 4.2: Internal circuit diagram of the OLED module, featuring the SSD1306 driver IC and associated components.

Image 4.2 illustrates the internal circuit diagram of the OLED module, highlighting the SSD1306 driver IC. This diagram is for reference and shows the internal connections and components.

5. SETUP AND CONNECTION

5.1 Power Supply

Ensure the module receives a stable DC power supply between 3.3V and 5V. Connect the VCC pin to the positive power rail and the GND pin to the ground rail of your microcontroller or power source. **Caution: Do not reverse VCC and GND connections, as this may damage the OLED display.**

5.2 I2C Interface Connection

The module communicates via the I2C protocol, requiring only two data lines (SCL and SDA) in addition to power. Connect the SCL pin of the OLED module to the SCL pin of your microcontroller, and the SDA pin of the OLED module to the SDA pin of your microcontroller.

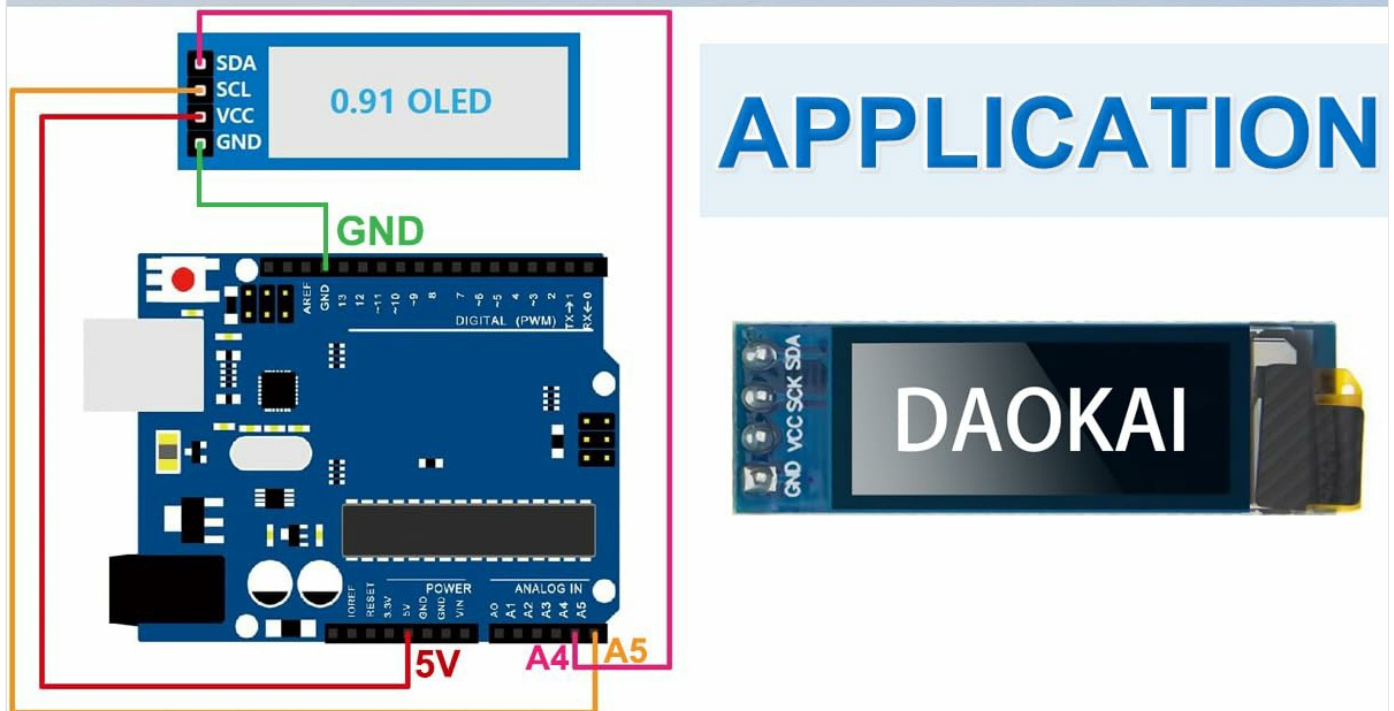
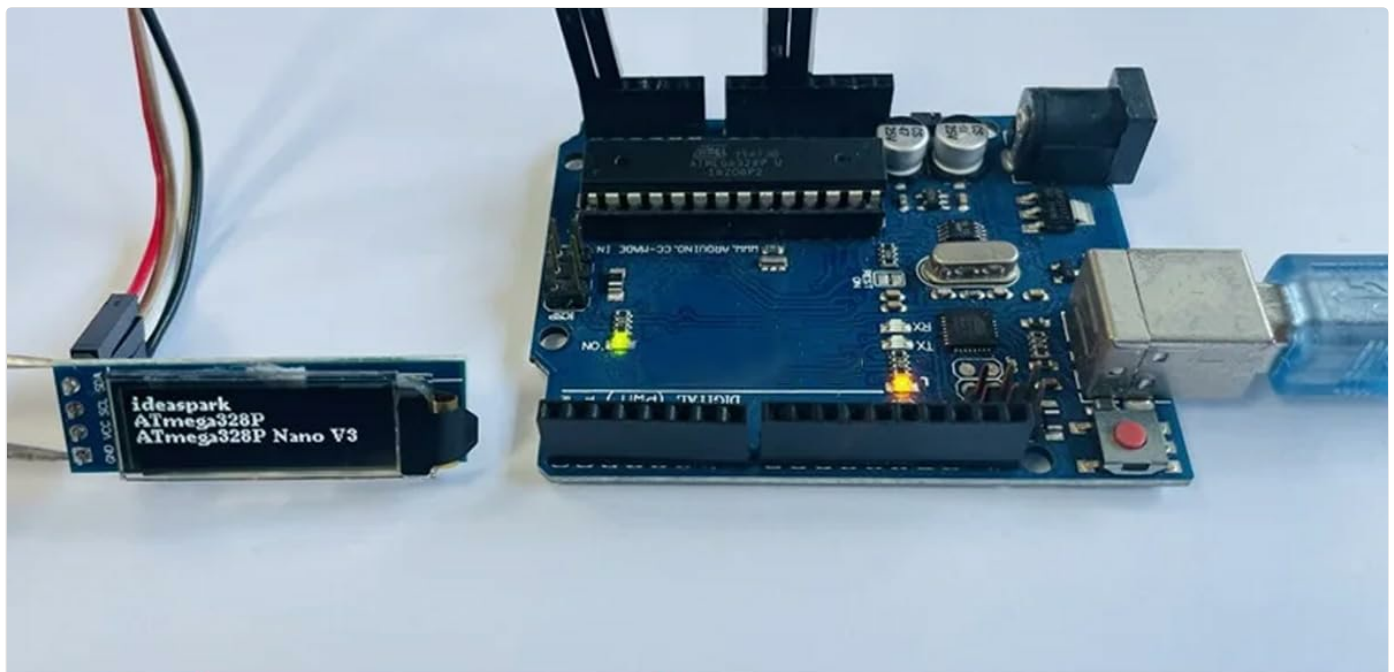


Image 5.1: Example connection diagram showing the 0.91 inch OLED module connected to an Arduino board.

Image 5.1 demonstrates a typical connection setup with an Arduino board. For Arduino, SDA is typically on analog pin A4 and SCL on analog pin A5. Refer to your specific microcontroller's documentation for correct I2C pin assignments.

6. OPERATION

6.1 Basic Operation

To operate the OLED module, you will typically use a library compatible with the SSD1306 driver IC (which is commonly used with this module). Libraries like Adafruit GFX and Adafruit SSD1306 are widely available for Arduino and other platforms. These libraries provide functions to initialize the display, draw text, shapes, and images.

A typical operational flow involves:

1. Include the necessary libraries in your code.
2. Initialize the OLED display object, specifying the I2C address (commonly 0x3C or 0x3D) and resolution.
3. Clear the display buffer.

4. Set text size, color, and cursor position.
5. Write text or draw graphics to the buffer.
6. Call the display function to update the physical screen.

6.2 Font Customization

The OLED controller does not have an embedded font. Users can create custom fonts using font generating software. This allows for flexible display options tailored to specific project requirements.

7. TROUBLESHOOTING

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

- **No Display/Blank Screen:**
 - Verify power connections (VCC and GND) are correct and within the 3.3V-5V range.
 - Check I2C connections (SCL and SDA) for proper wiring.
 - Ensure the I2C address in your code matches the module's address (typically 0x3C or 0x3D). You might need to run an I2C scanner sketch to find the correct address.
 - Confirm that the display initialization code is correct and that the `display()` function is being called to update the screen.
- **Garbled or Incorrect Display:**
 - Check the resolution setting in your code (should be 128x32).
 - Ensure the correct library for the SSD1306 driver is being used.
 - Verify that your microcontroller's I2C bus speed is compatible.
- **Module Not Detected by I2C Scanner:**
 - Double-check all wiring, especially power and I2C lines.
 - Ensure the module is receiving power.
 - Some microcontrollers require external pull-up resistors on SDA and SCL lines, though many development boards have them built-in.

8. MAINTENANCE

The DAOKAI OLED Display Module is a sensitive electronic component. Follow these guidelines for proper maintenance:

- **Handling:** Handle the module by its edges to avoid touching the display surface or electronic components. Static electricity can damage the module, so use anti-static precautions when handling.
- **Cleaning:** If necessary, gently clean the display surface with a soft, lint-free cloth. Avoid using harsh chemicals or abrasive materials.
- **Storage:** Store the modules in a dry, cool environment, away from direct sunlight and extreme temperatures. Keep them in their original packaging or an anti-static bag when not in use.
- **Power:** Always ensure the correct voltage is applied. Over-voltage or reverse polarity can cause permanent damage.

9. WARRANTY AND SUPPORT

For warranty information, technical support, or any inquiries regarding the DAOKAI 0.91" 128x32 I2C OLED Display

Module, please contact the manufacturer or your point of purchase. Keep your purchase receipt for any warranty claims.

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.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

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