Midzooparts 0802 LCD Module

Midzooparts 0802 LCD Module 8x2 Character Display User Manual

Model: 0802 LCD Module
Brand: Midzooparts

1. Introduction

This manual provides comprehensive instructions for the Midzooparts 0802 LCD Module. This compact 8-character by 2-line Liquid Crystal Display (LCD) module is designed for integration into various electronic projects, particularly those involving microcontrollers like Arduino. It features an LED backlight and supports both 3.3V and 5V power supplies, making it versatile for different applications.

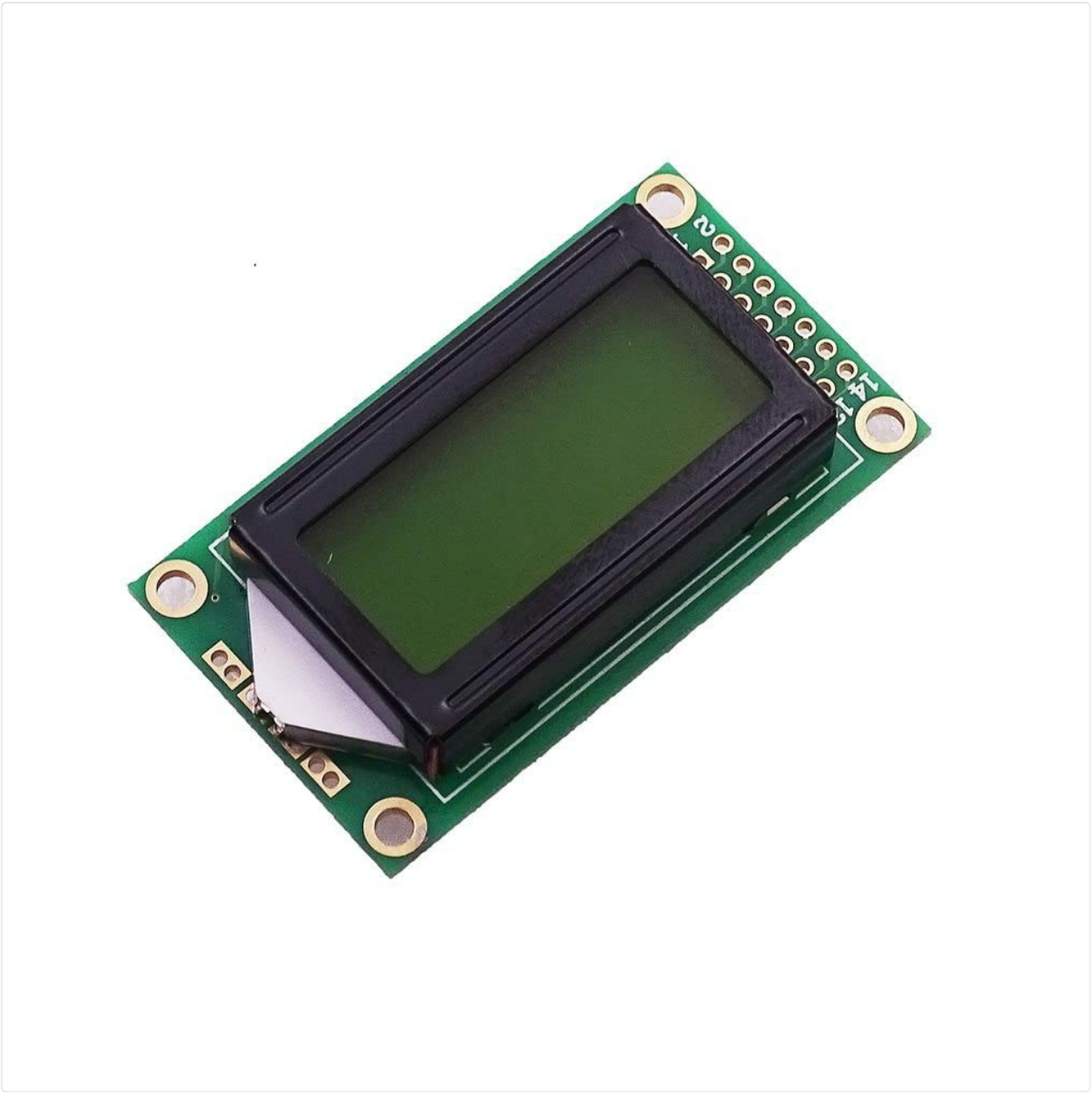

Figure 1: Front view of the Midzooparts 0802 LCD Module, showing the 8x2 character display area and mounting holes.

2. Safety Information

- Always ensure the power supply voltage matches the module's requirements (3.3V or 5V) to prevent damage.
- Handle the module by its edges to avoid touching the display surface or electronic components.
- Protect the module from electrostatic discharge (ESD) by using appropriate grounding measures.
- Avoid exposing the module to extreme temperatures, humidity, or direct sunlight.
- Do not attempt to disassemble or modify the module, as this may void any potential warranty and cause damage.

3. Package Contents

Please verify that all items are present upon opening the package:

- 1 x Midzooparts 0802 LCD Module
- *(Additional components such as pin headers or connecting wires may be included depending on the*

specific kit version.)

4. Features

- **Display Format:** 8 characters x 2 lines
- **Backlight:** LED (Blue/Yellow Green options available)
- **Operating Voltage:** 3.3V / 5V compatible
- **Controller:** SPLC78D (or compatible)
- **Interface:** Standard parallel interface (compatible with HD44780-based libraries)
- **Compact Size:** Ideal for space-constrained projects

5. Specifications

Parameter	Value
Display Format	8 characters x 2 lines
LED Backlight Color	Blue / Yellow Green
Module Outline Size	58.0 mm * 32.0 mm * 10.0 mm
View Area	37.8 mm * 16.0 mm
Controller IC	SPLC78D
Working Temperature	-20°C to +70°C
Storage Temperature	-30°C to +80°C
Operating Voltage	3.3V / 5V DC

6. Setup and Connection

This section details how to connect the 0802 LCD module to a microcontroller, such as an Arduino board.

6.1 Pinout Diagram

Figure 2: Back view of the Midzooparts 0802 LCD Module, illustrating the pin headers and controller chip.

The 0802 LCD module typically uses a 16-pin interface. Below is a common pinout configuration:

Pin No.	Symbol	Description
1	VSS	Ground (0V)
2	VDD	Power Supply (3.3V or 5V)
3	VO	Contrast Adjustment (Connect to potentiometer)
4	RS	Register Select (0=Command, 1=Data)
5	RW	Read/Write (0=Write, 1=Read)
6	E	Enable Signal
7-14	DB0-DB7	Data Bus Lines (8-bit mode)
15	A (LED+)	Backlight Anode (Positive supply for backlight)
16	K (LED-)	Backlight Cathode (Ground for backlight)

Note: For 4-bit mode operation, only DB4-DB7 are used, reducing the number of required data pins from the microcontroller.

6.2 Power Supply

Connect VDD to your microcontroller's 3.3V or 5V output and VSS to ground. The backlight pins (A and K) should be connected to the appropriate power supply, often with a current-limiting resistor for the anode (A) if not already integrated on the module.

7. Operation

Operating the 0802 LCD module typically involves using a compatible library (e.g., LiquidCrystal library for Arduino) to send commands and data to the display.

7.1 Initializing the Display

Before displaying any characters, the LCD must be initialized. This involves setting the display mode (e.g., 4-bit or 8-bit interface), number of lines, and character font. Refer to your chosen library's documentation for specific initialization functions.

7.2 Displaying Characters

Once initialized, characters can be sent to the display. The 0802 module supports 8 characters per line across 2 lines. You can set the cursor position to specify where text will appear.

```
// Example (Arduino LiquidCrystal Library)
#include <LiquidCrystal.h>

// Initialize the library with the numbers of the interface pins
LiquidCrystal lcd(RS, E, D4, D5, D6, D7);

void setup() {
  lcd.begin(8, 2); // Set up the LCD's number of columns and rows
  lcd.print("Hello"); // Print a message to the LCD
  lcd.setCursor(0, 1); // Set the cursor to column 0, line 1
  lcd.print("World!");
}

void loop() {
  // Your main code here
}
```

7.3 Backlight Control

The LED backlight can be controlled by applying power to pins 15 (A) and 16 (K). For basic on/off control, connect A to VDD (via a resistor if needed) and K to GND. For brightness control, you may use Pulse Width Modulation (PWM) on the anode pin if your microcontroller supports it and the module design allows.

8. Maintenance

- **Cleaning:** Use a soft, dry, lint-free cloth to gently wipe the display surface. Avoid abrasive cleaners or solvents.
- **Storage:** Store the module in a cool, dry place, away from direct sunlight and extreme temperatures.

Keep it in anti-static packaging when not in use.

- **Handling:** Always handle the module by its PCB edges to prevent damage to the display or components.

9. Troubleshooting

- **No Display/Blank Screen:**
  - Check power connections (VDD, VSS).
  - Adjust the contrast potentiometer (VO pin).
  - Verify backlight connections (A, K).
  - Ensure the LCD is correctly initialized in your code.
- **Garbled Characters:**
  - Double-check all data and control pin connections (RS, RW, E, DB0-DB7).
  - Confirm the correct pin assignments in your software library.
  - Ensure proper timing for data transfer (often handled by libraries).
- **Backlight Not Working:**
  - Verify power to pins A and K.
  - Check for a current-limiting resistor if required and its value.
- **Display Too Dim/Bright:**
  - Adjust the contrast potentiometer connected to the VO pin.

10. Warranty Information

Specific warranty details for the Midzooparts 0802 LCD Module are not provided in this document. For information regarding warranty coverage, terms, and conditions, please refer to the product packaging or contact the seller directly at the point of purchase.

11. Customer Support

If you encounter issues not covered in this manual or require further assistance, please contact the Midzooparts customer support team or the retailer from whom you purchased the product. Provide your product model number and a detailed description of the issue for efficient support.