

Youmile TS-YM-322-lv-1

Youmile 8x32 Dot Matrix LED Display Module User Manual

Model: TS-YM-322-lv-1

1. PRODUCT OVERVIEW

The Youmile 8x32 Dot Matrix LED Display Module is an integrated serial input/output common cathode display driver designed to connect a microprocessor to an 8-digit numeric LED display. It can also be configured to drive a bar graph display or 64 individual LEDs. This module is compatible with various microcontrollers such as Arduino, MCU, 51, AVR, STM32, and Raspberry Pi.

Key features include:

- Integrated B-type BCD encoder, multi-channel scan loop, segment driver, and 8x8 static RAM for data storage.
- Utilizes a single external resistor to set the segment current for each LED.
- Convenient four-wire serial interface for connection to microprocessors.
- Allows individual data processing without overwriting the entire display during updates.
- Features a 150µA low-power shutdown mode, analog and digital brightness control.
- Includes a scan limit register to display 1 to 8 bits of data and a detection mode to illuminate all LEDs.
- Requires only 3 I/O ports to drive a single dot matrix, ensuring no flickering.
- Equipped with input and output interfaces to support cascading multiple modules.
- Features 64 fixing screw holes with a 3mm aperture for secure mounting.

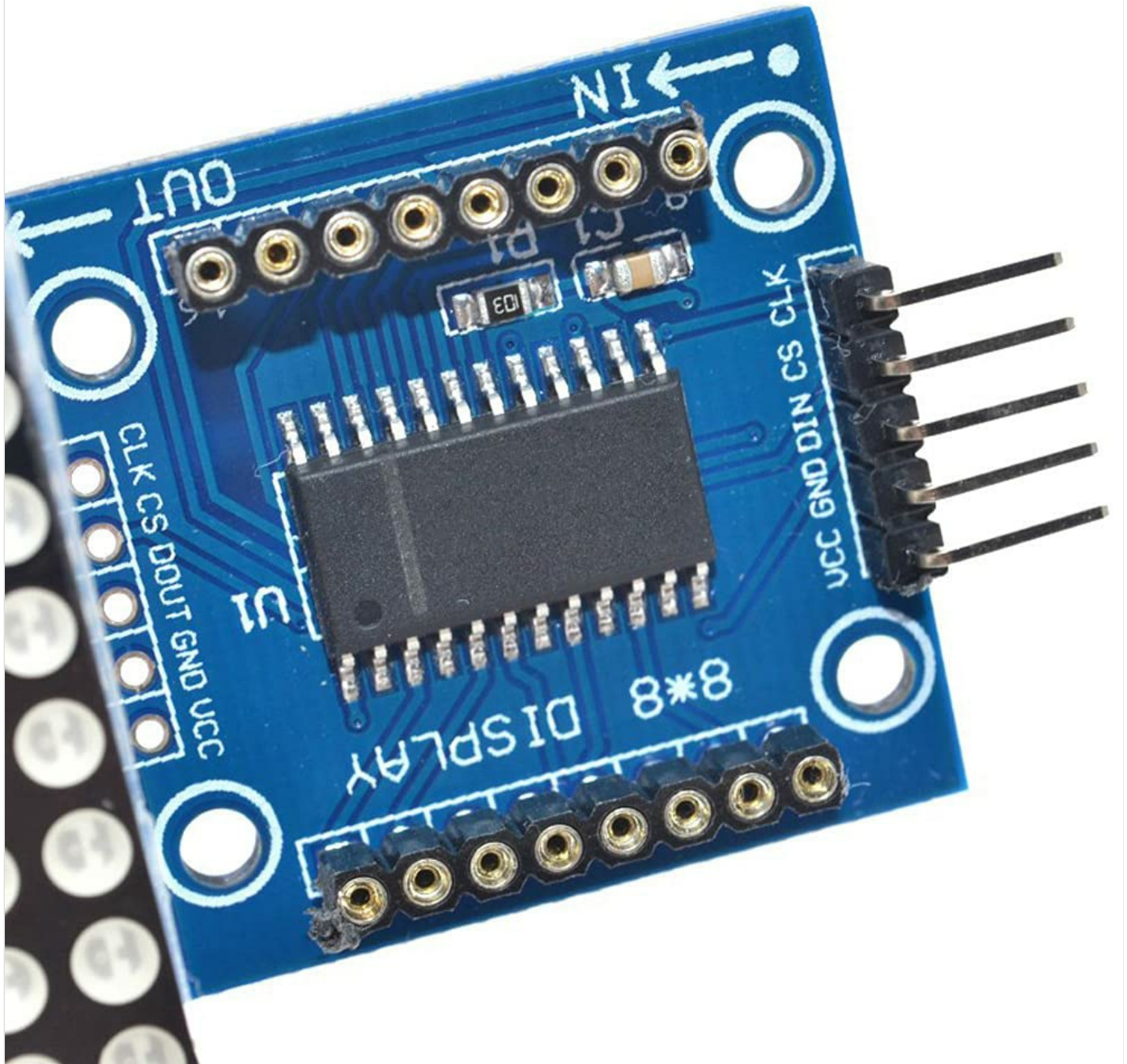


Figure 1: Close-up of the module's input/output pins and main chip.

2. SETUP AND WIRING

This section details the steps for connecting your Youmile 8x32 Dot Matrix LED Display Module to a microcontroller.

2.1 Single Module Connection

When operating a single module, connect its input port directly to your processor.

2.2 Cascading Multiple Modules

The module supports cascading for larger displays. Follow these steps for multiple modules:

1. Connect the input port of the **first module** to your CPU.
2. Connect the output port of the **first module** to the input port of the **second module**.

3. Connect the output port of the **second module** to the input port of the **third module**, and so on for additional modules.



Figure 2: Example of three cascaded modules with DuPont wires.

2.3 Wiring Example (51 MCU)

For a 51 MCU, use the following pin connections:

- **VCC** → 5 V
- **GND** → GND
- **DIN** → P2.2
- **CS** → P2.1
- **CLK** → P2.0

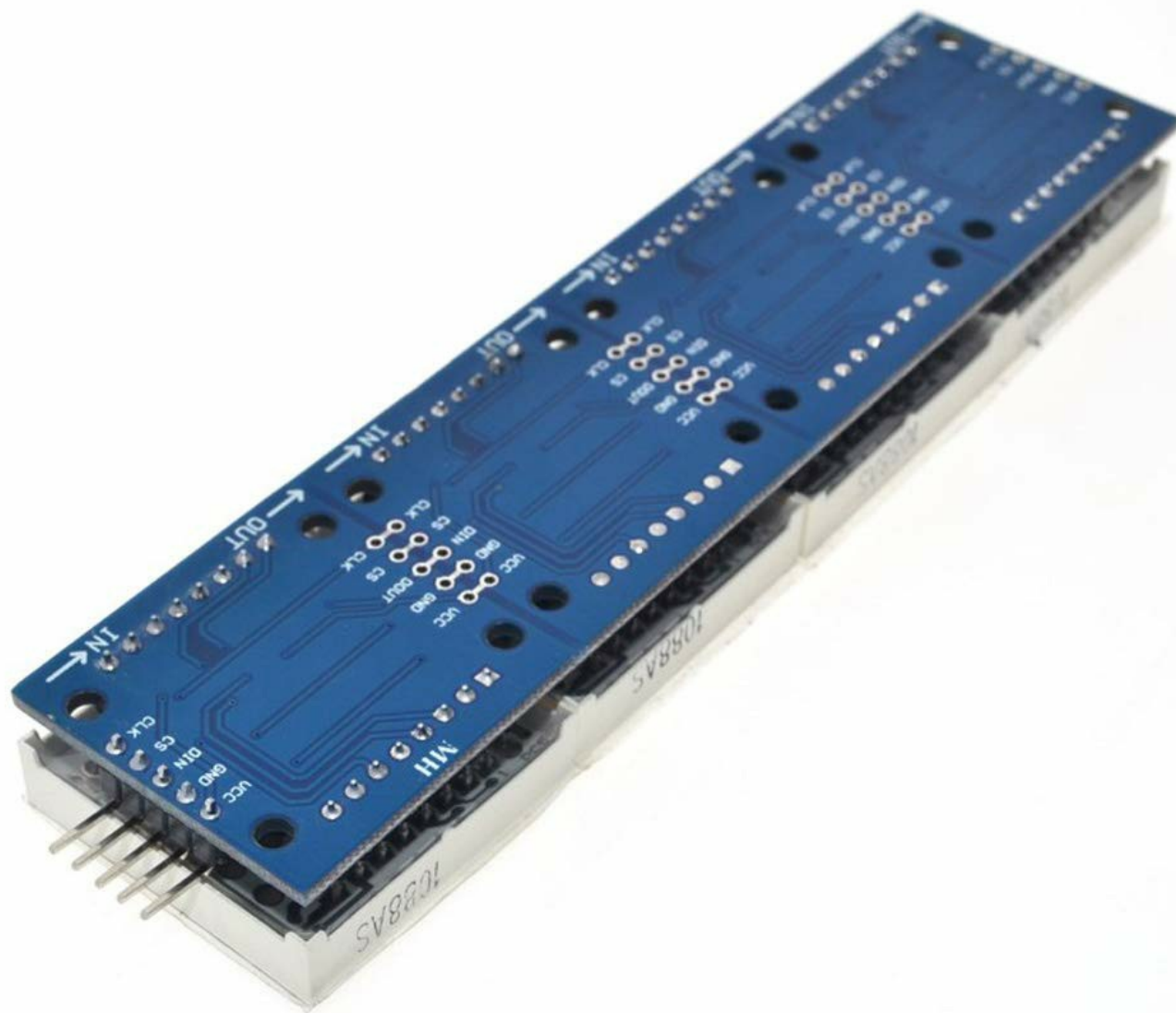


Figure 3: Back view of cascaded modules, illustrating the input/output flow.

3. OPERATING PRINCIPLES

The module's main chip manages display operations efficiently. It supports various modes to optimize performance and power consumption:

- **Low-Power Shutdown Mode:** The device can enter a $150\mu\text{A}$ low-power shutdown mode to conserve energy when not actively displaying.
- **Brightness Control:** Both analog and digital brightness control mechanisms are available, allowing adjustment of LED intensity.
- **Scan Limit Register:** This register enables users to control the number of digits displayed, from 1 to 8 bits of data.
- **Detection Mode:** A dedicated detection mode allows all LEDs to be illuminated, useful for testing and diagnostics.

The four-wire serial interface simplifies communication, allowing data updates without requiring a full display refresh, which enhances efficiency and responsiveness.

4. MAINTENANCE

The Youmile 8x32 Dot Matrix LED Display Module is designed for durability and requires minimal maintenance. Keep the module clean and free from dust and moisture. Avoid exposing it to extreme temperatures or direct mechanical stress. No user-serviceable parts are inside the sealed components.

5. TROUBLESHOOTING

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

- **No Display/Partial Display:** Verify all wiring connections, especially VCC, GND, DIN, CS, and CLK. Ensure the power supply is stable and provides 5V. Check your code for correct initialization and data transmission.
- **Flickering Display:** Ensure your power supply can provide sufficient current, especially when cascading multiple modules. Review your code for timing issues or incorrect refresh rates.
- **Incorrect Characters/Patterns:** Double-check your data encoding and transmission logic in your microcontroller code. Ensure the correct segment current is set via the external resistor.
- **Module Not Responding:** Confirm the microcontroller is powered and running correctly. Test the module with a known working example code if available.

For persistent issues, consult online forums or the Youmile support resources for your specific microcontroller platform.

6. SPECIFICATIONS

Feature	Detail
Model Number	TS-YM-322-lv-1
Operating Voltage	5 V
Module Dimensions	12.8 x 3.2 x 1.3 cm
Fixing Holes	64 holes, 3mm diameter
Display Type	8x8 Common Cathode Dot Matrix (per segment)
Interface	4-wire Serial (DIN, CS, CLK)
Cascading Support	Yes
Manufacturer	YOUMILE
Package Dimensions	17.3 x 9.4 x 2.4 cm
Package Weight	50 grams
Package Contents	1 x Dot Matrix Module, 5 x DuPont Lines

7. WARRANTY AND SUPPORT

Information regarding specific warranty terms and dedicated support channels for the Youmile 8x32 Dot Matrix LED Display Module is not available in the provided product details. Please refer to the retailer or manufacturer's official website for the most current warranty information and customer support options.

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

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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