

MATRIX



8X16 Matrix WS28B20 RGB

Professional electronic component

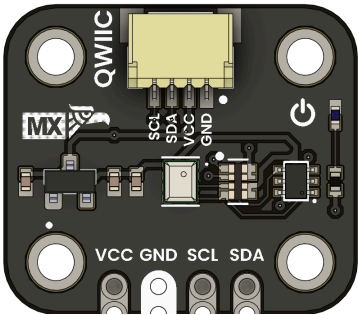
v1.0  
2025-09-09  
Rev. A

PRODUCT OVERVIEW

The matrix 8x16 RGB with ws28b20 is a compact and versatile LED display module designed for vibrant visual effects and animations. It features a grid of 128 individually addressable RGB LEDs, allowing for dynamic color patterns and lighting effects. The module is ideal for applications such as digital signage, decorative lighting, and interactive displays.

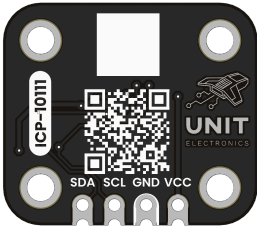
PRODUCT VIEWS

TOP VIEW



Component placement and connectors

BOTTOM VIEW



Underside components and connections

# KEY TECHNICAL SPECIFICATIONS



## CONNECTIVITY

Primary Interface: **GPIO (Interrupt)**  
Connector Type: **JST 4-pin 1.0mm**  
Logic Levels: **VCC-referenced (2V – 5.5V tolerant)**

## PIN CONFIGURATION

FUNCTION	NOTES
Power Supply	3.3V or 5V
Ground	Common ground for all components

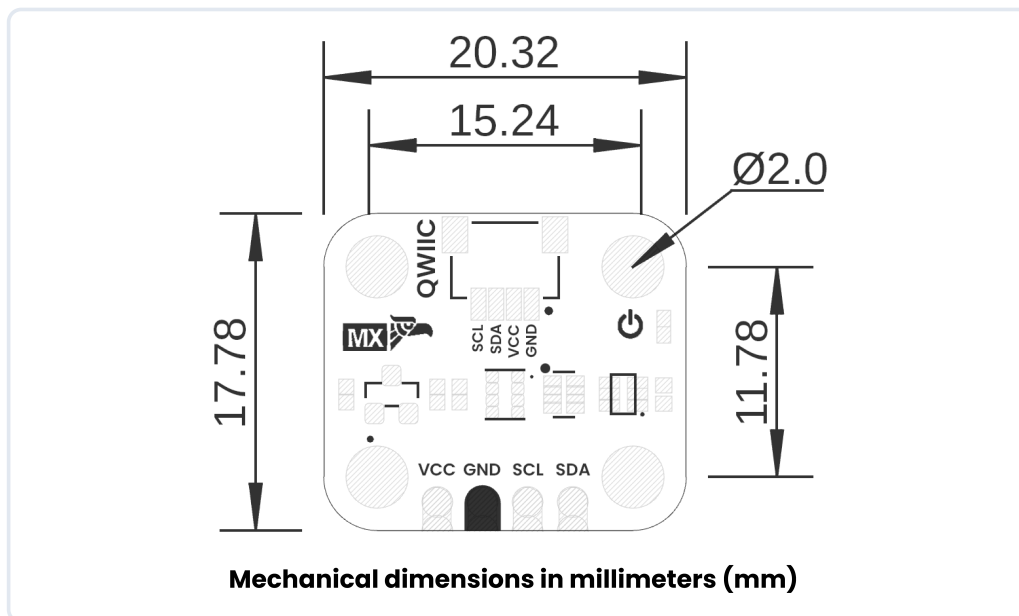
## KEY FEATURES

Wide Operating Voltage Range  
3.3V to 5V

## ADDITIONAL TECHNICAL INFORMATION

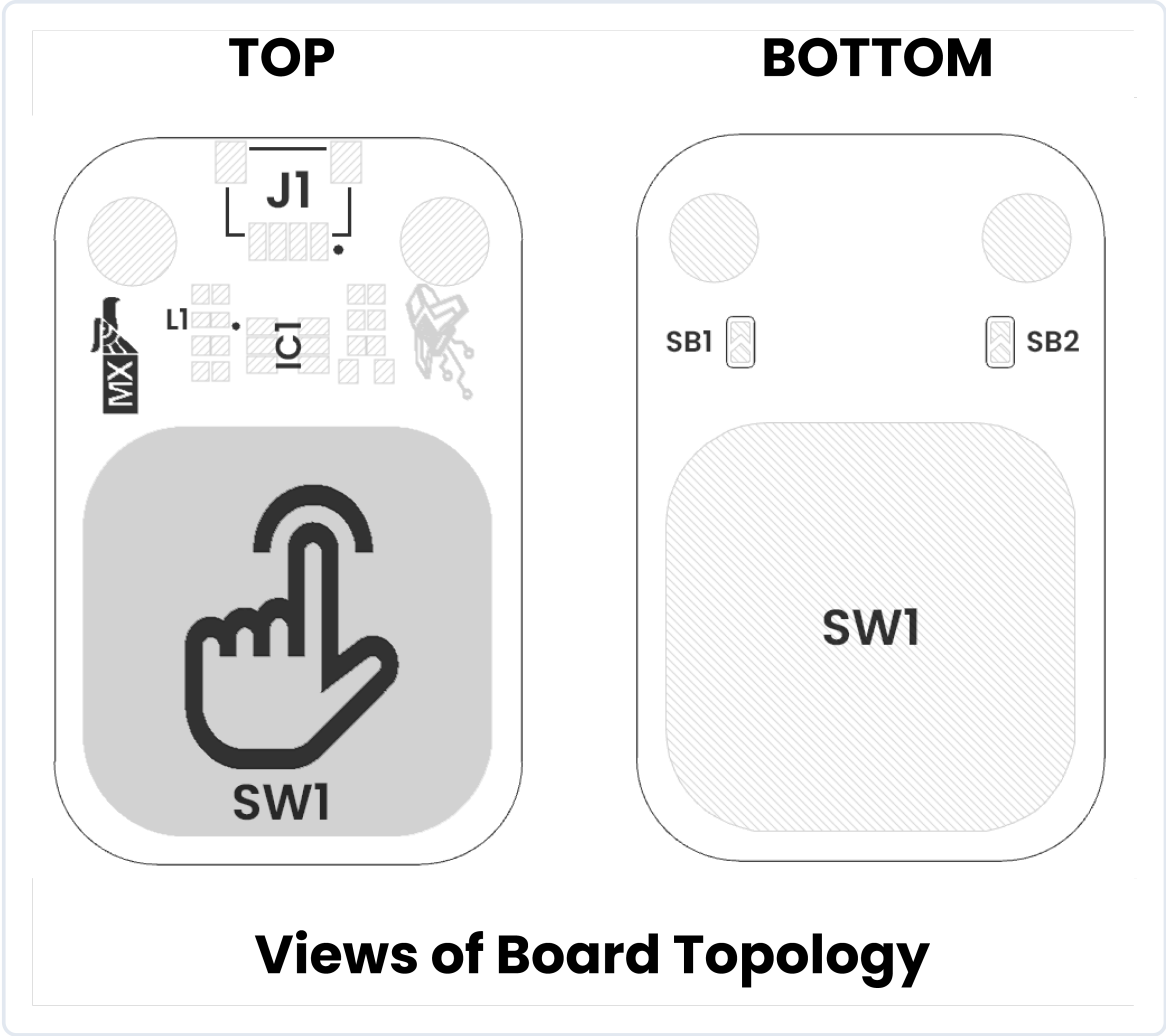
## HARDWARE DOCUMENTATION

## MECHANICAL DIMENSIONS



Physical dimensions and mounting specifications (measurements in millimeters)

SYSTEM TOPOLOGY



Connection topology and system integration diagram

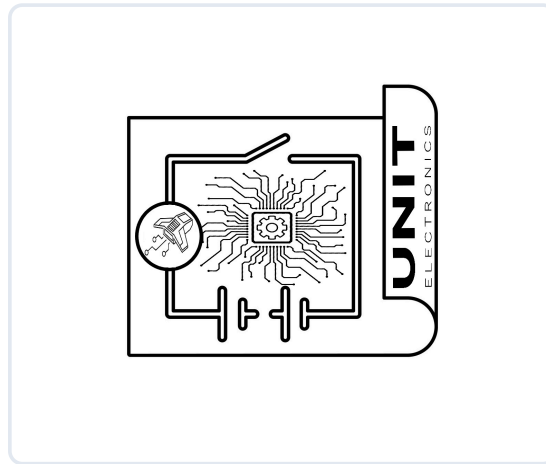
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COMPONENT REFERENCE

APPLICATION	DESCRIPTION
Digital Signage	Create dynamic signs and displays with vibrant colors.
Decorative Lighting	Enhance environments with customizable lighting effects.
Interactive Displays	Engage users with interactive LED patterns and animations.
Wearable Tech	Integrate into clothing or accessories for eye-catching designs.
Art Installations	Use in art projects to add visual interest and interactivity.

REF.	DESCRIPTION
IC1	{{sensor_description}}
L1	Power On LED
U1	{{regulator_description}}
JP1	2.54 mm Castellated Holes
J1	QWIIC Connector (JST 1 mm pitch) for I2C

## CIRCUIT SCHEMATIC



Complete circuit schematic showing all component connections

# PIN DESCRIPTION

*Detailed pin assignment and electrical specifications*

## SIGNAL DESCRIPTION

FUNCTION	NOTES
Power Supply	3.3V or 5V
Ground	Common ground for all components

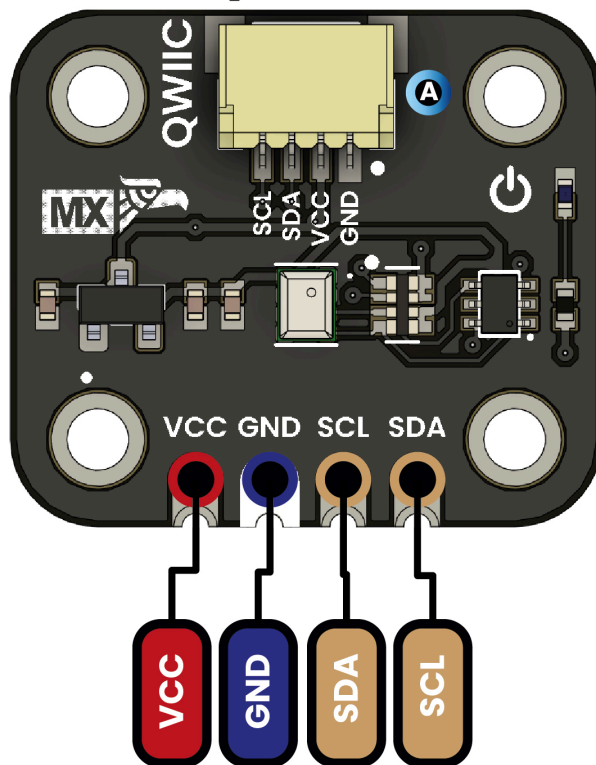
VOLTAGE LEVEL	FUNCTION
3.3 V – 5.5 V	Provides power to the on-board regulator and sensor core.
0 V	Common reference for power and signals.
1.8 V to VCC	Serial data line for I <sup>2</sup> C communications.
1.8 V to VCC	Serial clock line for I <sup>2</sup> C communications.

# PIN CONFIGURATION LAYOUT

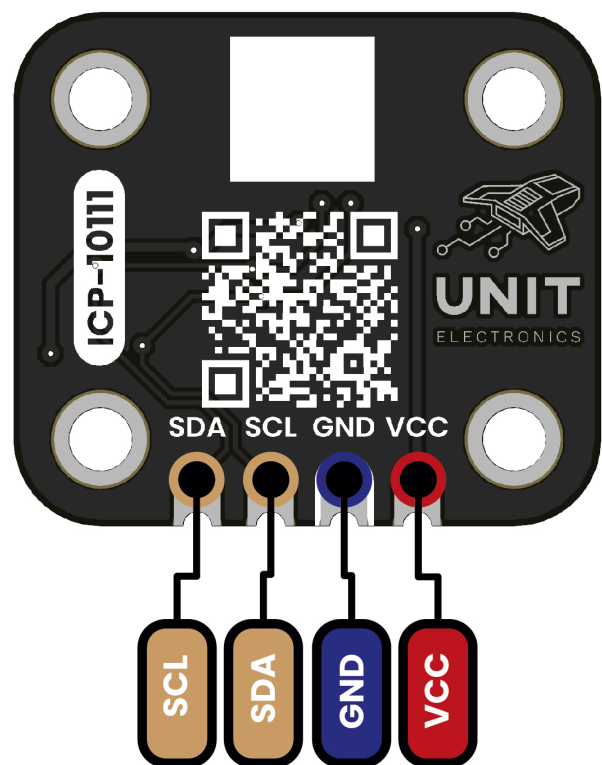
*Physical connector layout and pin positioning*

## PINOUT

**Top view**



**Bottom view**



## Description:

 Supply voltage

 GND

 I2C

 **QWIIC**<sup>®</sup>

Complete pin configuration diagram showing all connectors, pin assignments, and electrical connections for proper integration