MATRIX

8X16 Matrix WS28B20 RGB

v1.0

2025-09-29
Rev. A

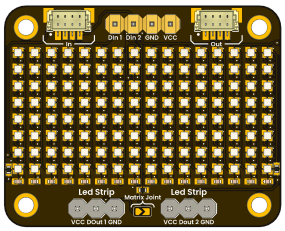
Professional electronic component

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.

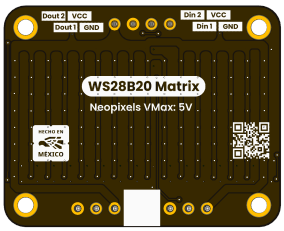
PRODUCT VIEWS

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

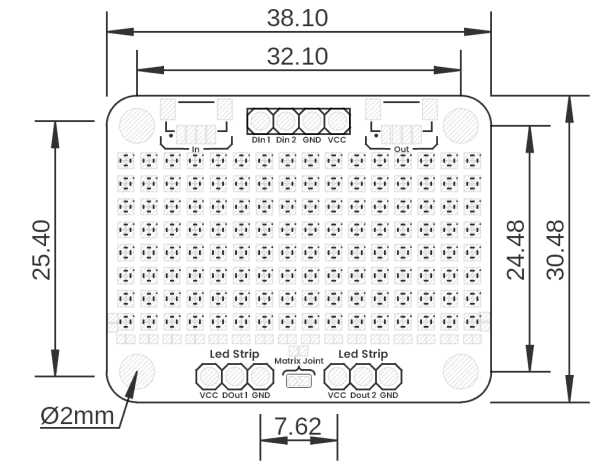
KEY FEATURES

Wide Operating Voltage Range
3.3V to 5V

ADDITIONAL TECHNICAL INFORMATION

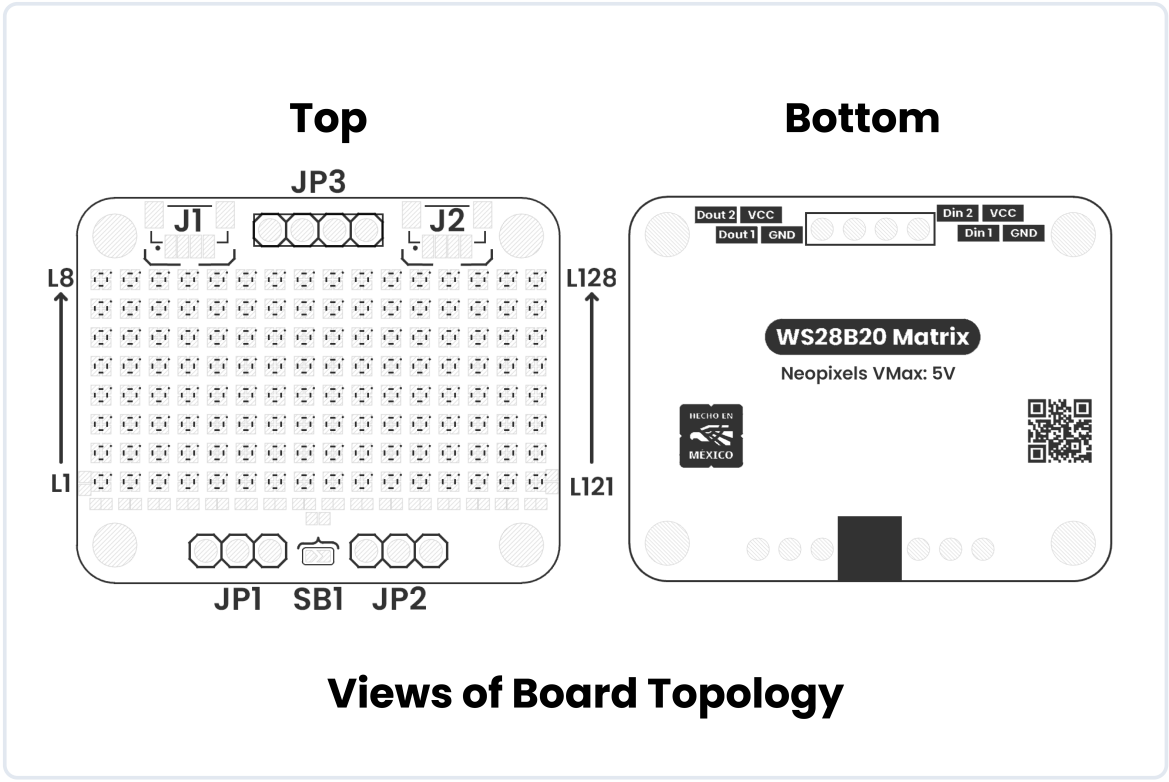
HARDWARE DOCUMENTATION

MECHANICAL DIMENSIONS



Physical dimensions and mounting specifications (measurements in millimeters)

SYSTEM TOPOLOGY



Connection topology and system integration diagram

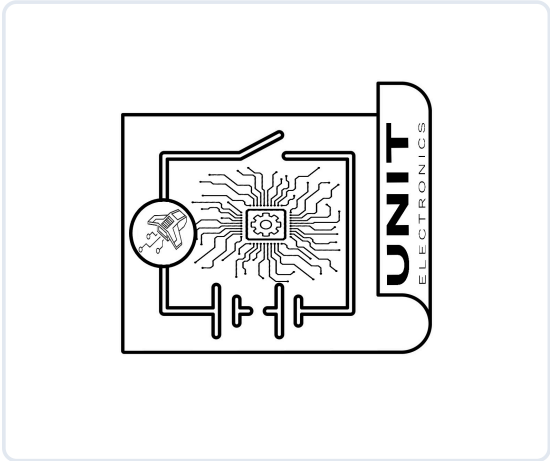
Click image to open in full size

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
JP1	2.54 mm Pin Header
JP2	2.54 mm Pin Header
JP3	2.54 mm Pin Header
J1	JST 1 mm Pitch Connector for Data Input
J2	JST 1 mm Pitch Connector for Data Output
L1-L64	WS28B20 Neopixel for Matrix 1
L65-L128	WS28B20 Neopixel for Matrix 2
SB1	Solder Bridge to Join Both Matrices

CIRCUIT SCHEMATIC



Complete circuit schematic showing all component connections

View Complete Schematic PDF

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 I²C communications.
1.8 V to VCC	Serial clock line for I²C communications.

PIN CONFIGURATION LAYOUT

Physical connector layout and pin positioning

Pin Configuration Layout

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

MATRIX v1.0
Professional Technical Datasheet

Date: 2025-09-29
For commercial distribution