

BMA255

BMA255 - 3-Axis Digital Accelerometer Module

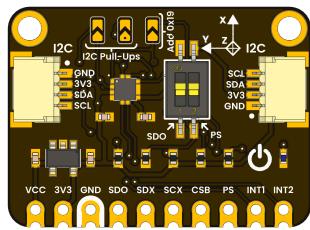
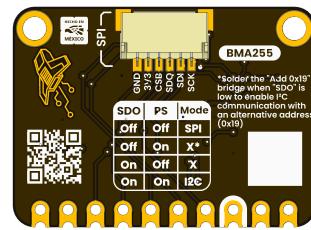
v1.0

2025-09-26
Rev. A*Professional electronic component*

PRODUCT OVERVIEW

This module features the BMA255, a 3-axis digital accelerometer designed for motion sensing applications. It offers a standard I2C interface, making it easy to integrate into various applications requiring precise acceleration data.

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

Digital Communication

I²C and SPI interfaces for easy integration

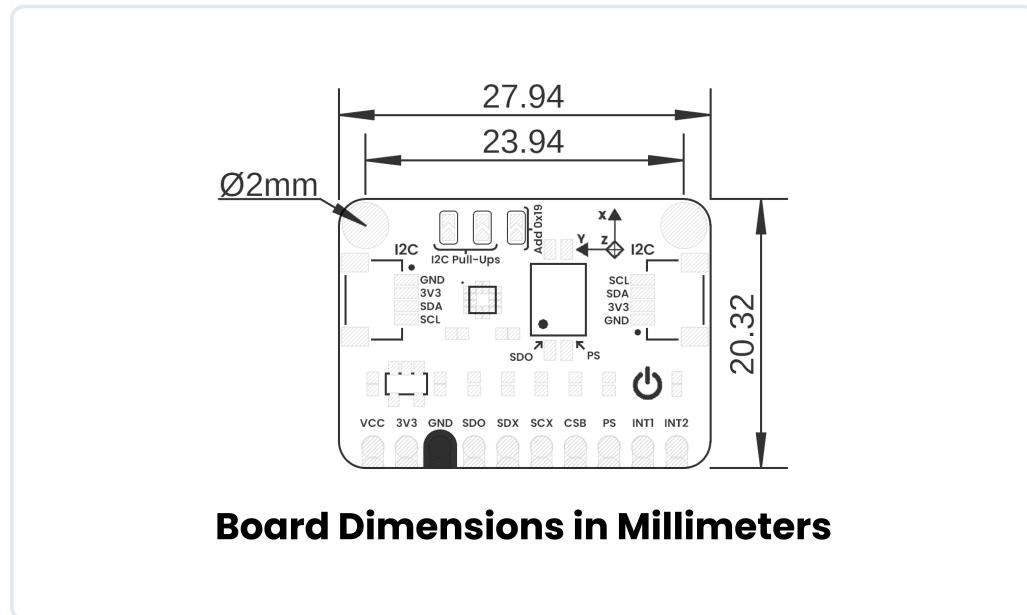
ADDITIONAL TECHNICAL INFORMATION

TYPICAL APPLICATIONS

APPLICATION	DESCRIPTION
Motion Detection	Detects movement and orientation changes
Vibration Monitoring	Monitors vibrations in machinery and equipment
Gesture Recognition	Recognizes user gestures for interactive applications
Device Orientation	Determines the orientation of devices

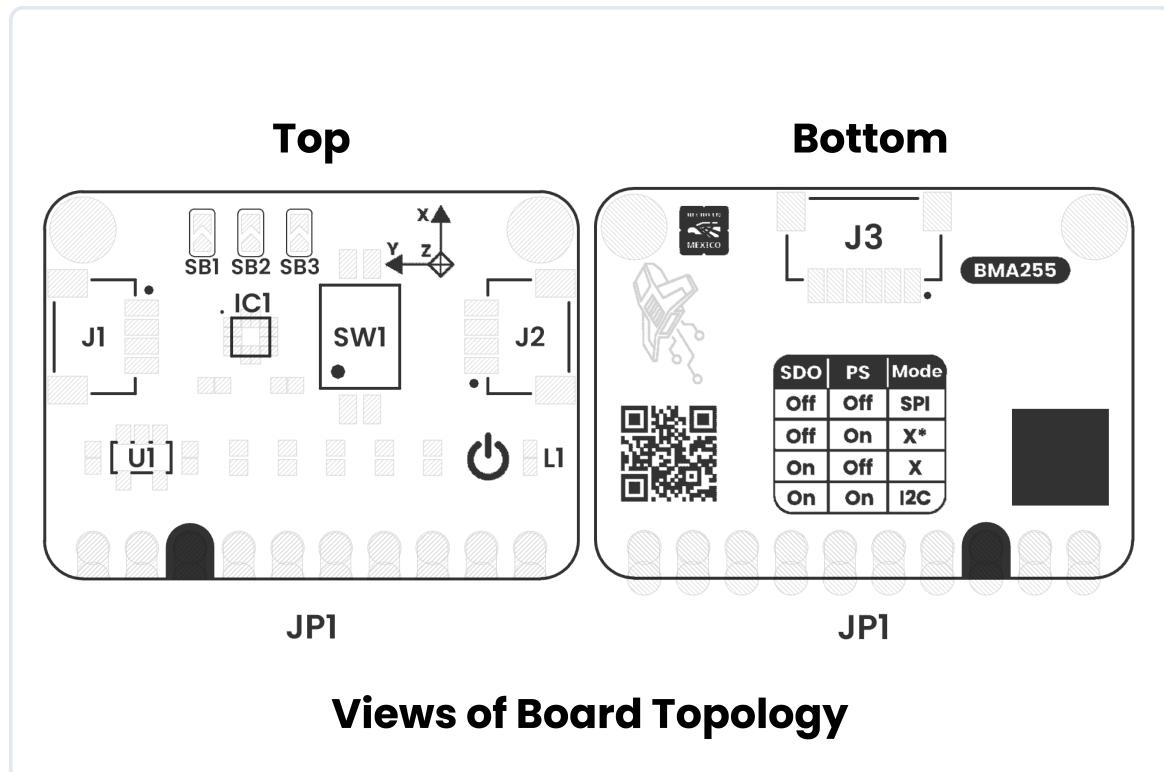
HARDWARE DOCUMENTATION

MECHANICAL DIMENSIONS



Physical dimensions and mounting specifications (measurements in millimeters)

SYSTEM TOPOLOGY

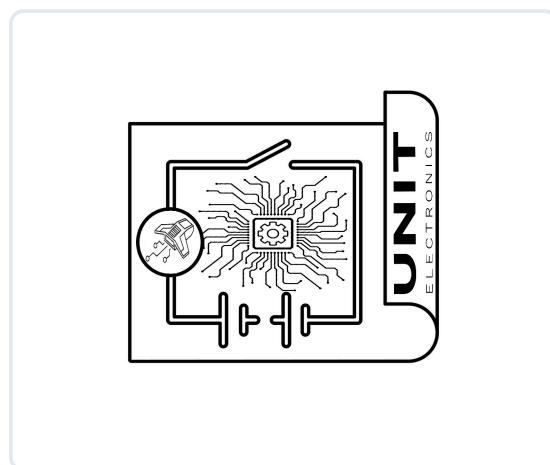


Connection topology and system integration diagram
Click image to open in full size

COMPONENT REFERENCE

REF.	DESCRIPTION
IC1	BMA255
L1	Power On LED
U1	AP2112K 3V3 Regulator
JP1	2.54 mm Castellated Holes
J1	QWIIC Connector (JST 1 mm pitch) for I2C
J2	QWIIC Connector (JST 1 mm pitch) for I2C
J3	JST 1 mm pitch for SPI
SW1	Dip Switch for Mode Selection
SB1	Solder Bridge for I2C Pull-Ups
SB2	Solder Bridge for I2C Pull-Ups
SB3	Solder Bridge for I2C Address

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 I ² C communications.
1.8 V to VCC	Serial clock line for I ² C 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

