BMA255

BMA255 - 3-Axis Digital Accelerometer Module

Professional electronic component

v1.0

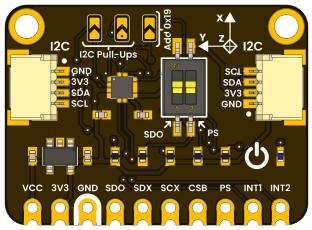
2025-09-26
Rev. A

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 .

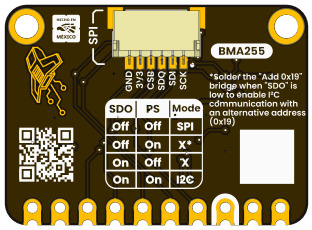
PRODUCT VIEWS

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

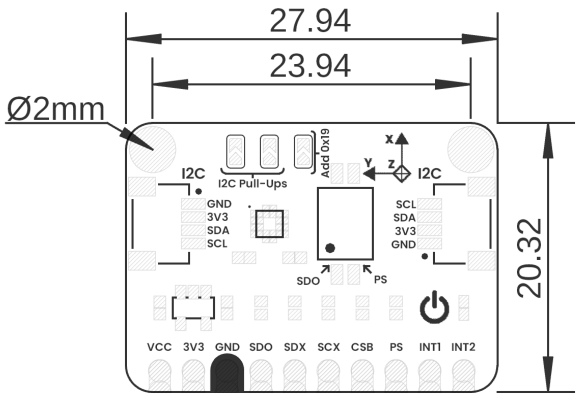
ADDITIONAL TECHNICAL INFORMATION

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

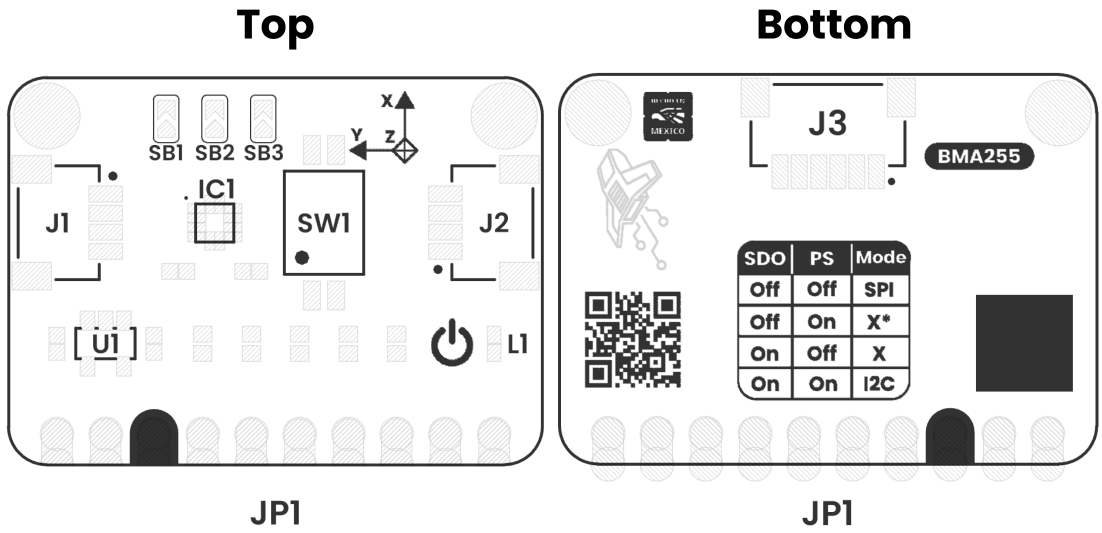
MECHANICAL DIMENSIONS



Board Dimensions in Millimeters

Physical dimensions and mounting specifications (measurements in millimeters)

SYSTEM TOPOLOGY



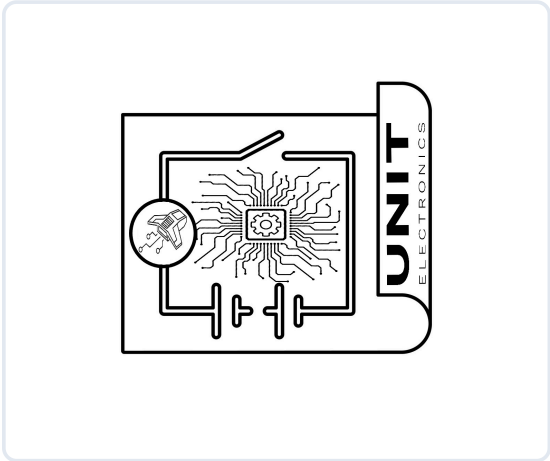
Connection topology and system integration diagram

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 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

BMA255 v1.0
Professional Technical Datasheet

Date: 2025-09-26
For commercial distribution