

**BMA255**

BMA255 - 3-Axis Digital Accelerometer Module

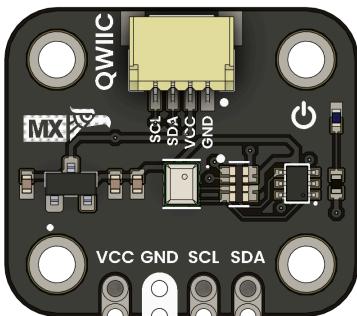
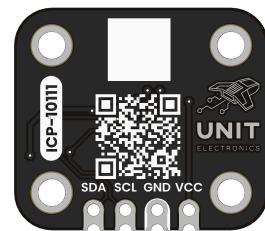
v1.0

2025-09-08
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

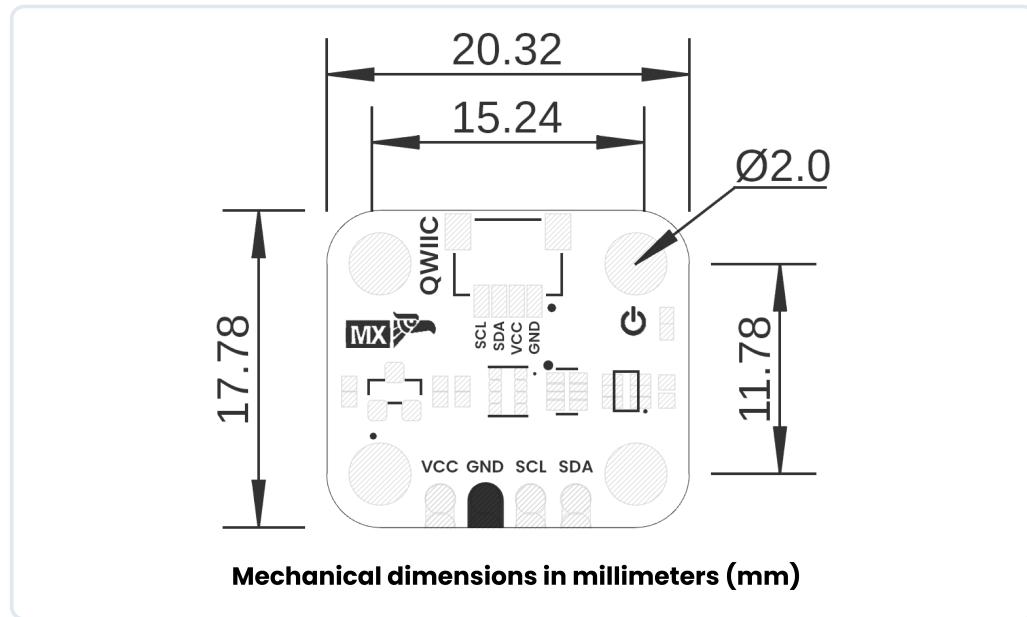
ADDITIONAL TECHNICAL INFORMATION

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 |

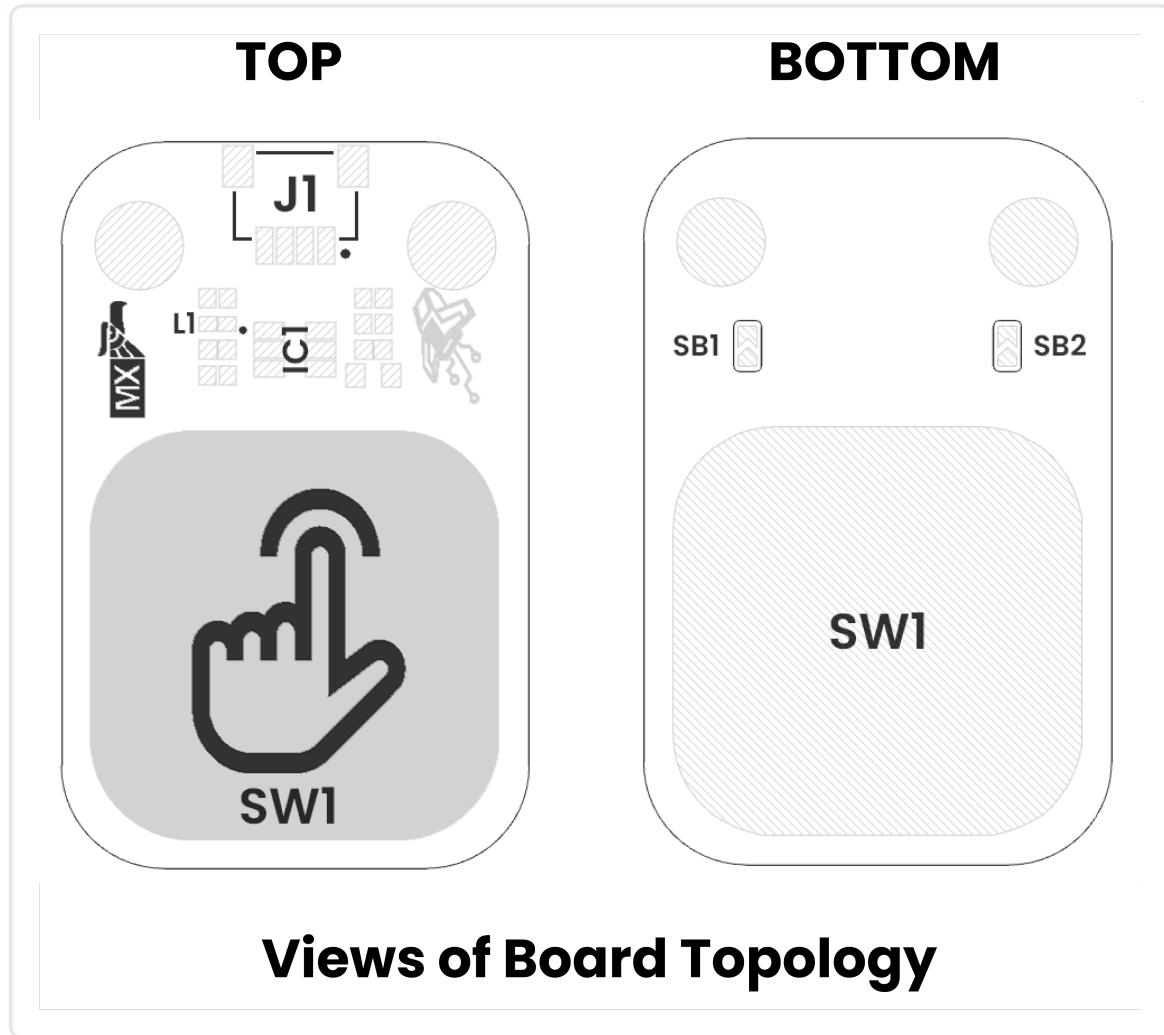
HARDWARE DOCUMENTATION

MECHANICAL DIMENSIONS



Physical dimensions and mounting specifications (measurements in millimeters)

SYSTEM TOPOLOGY



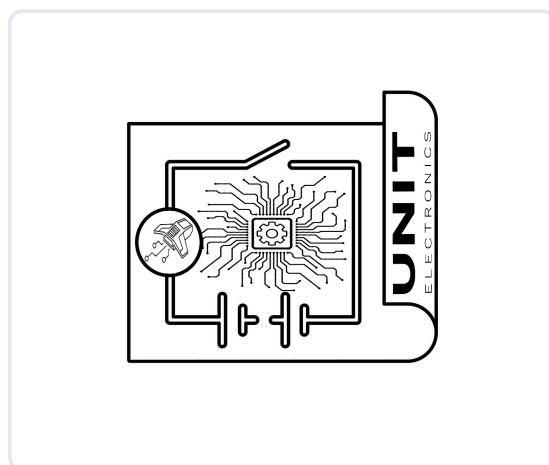
Connection topology and system integration diagram

Click image to open in full size

COMPONENT REFERENCE

| REF. | DESCRIPTION |
|------|--|
| IC1 | {{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

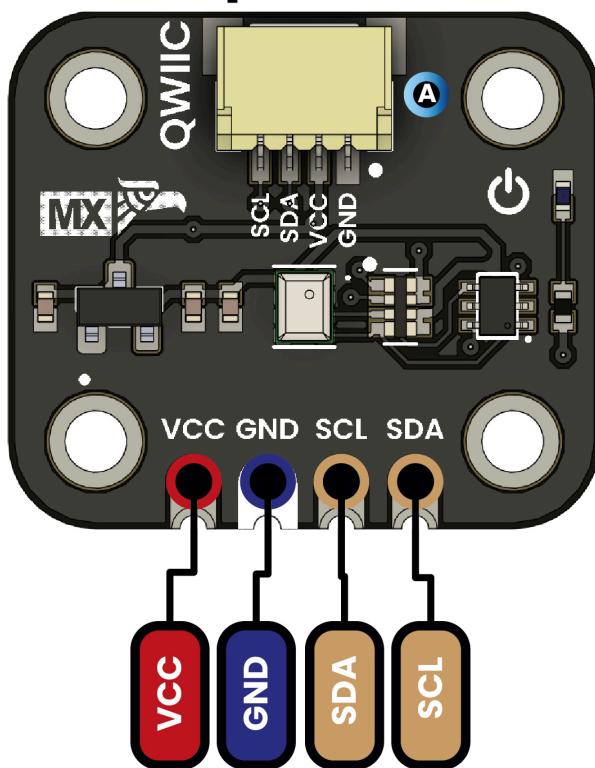
| FUNCTION | NOTES |
|---------------|---|
| Power Supply | 3.3V or 5V |
| Ground | Common ground for all components |
| VOLTAGE LEVEL | FUNCTION |
| 3.3 V – 5.5 V | Provides power to the on-board regulator and sensor core. |
| 0 V | Common reference for power and signals. |
| 1.8 V to VCC | Serial data line for I ² C communications. |
| 1.8 V to VCC | Serial clock line for I ² C communications. |

PIN CONFIGURATION LAYOUT

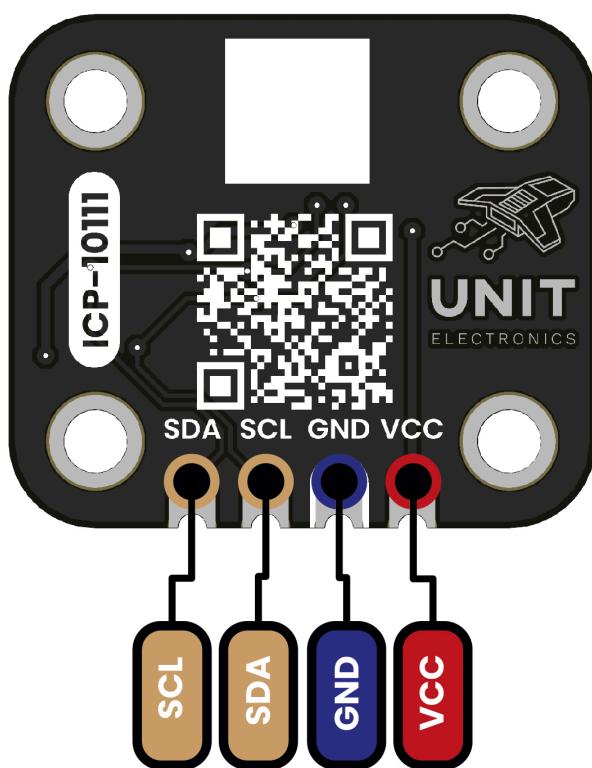
Physical connector layout and pin positioning

PINOUT

Top view



Bottom view



Description:

Supply voltage

I²C

GND

QWIIC[®]

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

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BMA255 v1.0
Professional Technical Datasheet

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For commercial distribution