

# IMU Pro Mini Unit

SKU:U171



## Description

**IMU Pro Mini Unit** is a versatile and integrated inertial motion unit. It incorporates advanced six-axis attitude sensors (BMI270), a three-axis geomagnetic sensor (BMM150), and an atmospheric pressure sensor (BMP280) to provide comprehensive measurement and detection capabilities for users. Whether it is measuring acceleration and angular velocity, detecting the direction and intensity of the geomagnetic field, or measuring atmospheric pressure, IMU Pro Mini Unit can handle it all.

In addition, IMU Pro Mini Unit features a compact design and an I2C communication interface, making it adaptable to various application scenarios and compatible with various microcontrollers and systems. It delivers excellent performance in navigation, automation control, robotics, aircraft navigation, weather monitoring, and geolocation.

Equipped with the BMI270, IMU Pro Mini Unit can achieve a precision of 0.05% when measuring object acceleration and 0.05°/s for angular velocity with programmable configurations. Furthermore, through user-defined development, it can also realize functions such as gesture recognition, scene detection, and activity recognition to meet different application needs.

The built-in BMM150 three-axis digital magnetometer features low power consumption (170uA), low noise (0.3-1.4uT), low temperature drift ( $\pm 0.01\%/K$ ), high resolution (0.3uT),

and high pointer accuracy (maximum error  $\pm 2.5^{\circ}$  @ 30uT horizontal magnetic field component @ 25°C), enabling IMU Pro Mini Unit to function as a professional compass.

With the BMP280, a professional absolute pressure sensor designed for mobile applications, IMU Pro Mini Unit can measure atmospheric pressure with an absolute accuracy of  $\pm 1$  hPa and temperature with an accuracy of  $\pm 1.0^{\circ}\text{C}$ . Due to the variation of atmospheric pressure with altitude and the high precision of pressure measurement, users can also use it as an altimeter with an accuracy of  $\pm 1$  meter.

## Features

- Multifunctional sensor unit
- High-precision measurement
- I2C communication interface is adopted
- Miniaturized design
- Programming platforms: UIFlow, Arduino, etc

## Includes

- 1x IMU Pro Mini Unit
- 1x HY2.0-4P Cable(5cm)

## Applications

- Navigation
- Automation Control
- Robot Technology
- Aero craft Navigation
- Geolocation

## Specification

Resources	Parameters
Six-axis Attitude Sensor (BMI270)	Accuracy: 0.05% (acceleration), 0.05°/s (angular velocity)



Resources	Parameters
	I2C address:0x68(default)
Three-axis Geomagnetic Sensor  (BMM150)	Accuracy: 0.3μT  I2C Address: 0x10
Atmospheric Pressure Sensor  (BMP280)	Accuracy: ±1°C (temperature), ±1 Pa (air pressure)  I2C Address: 0x76
Product Size	24*24*8mm
Package Size	136* 92*10mm
Product Weight	3.3g
Package Weight	6.6g



## Products related to this item

[IMU \(U095\)](#)

[M5StickC PLUS \(K016-P\)](#)

[CoreS3 \(K128\)](#)

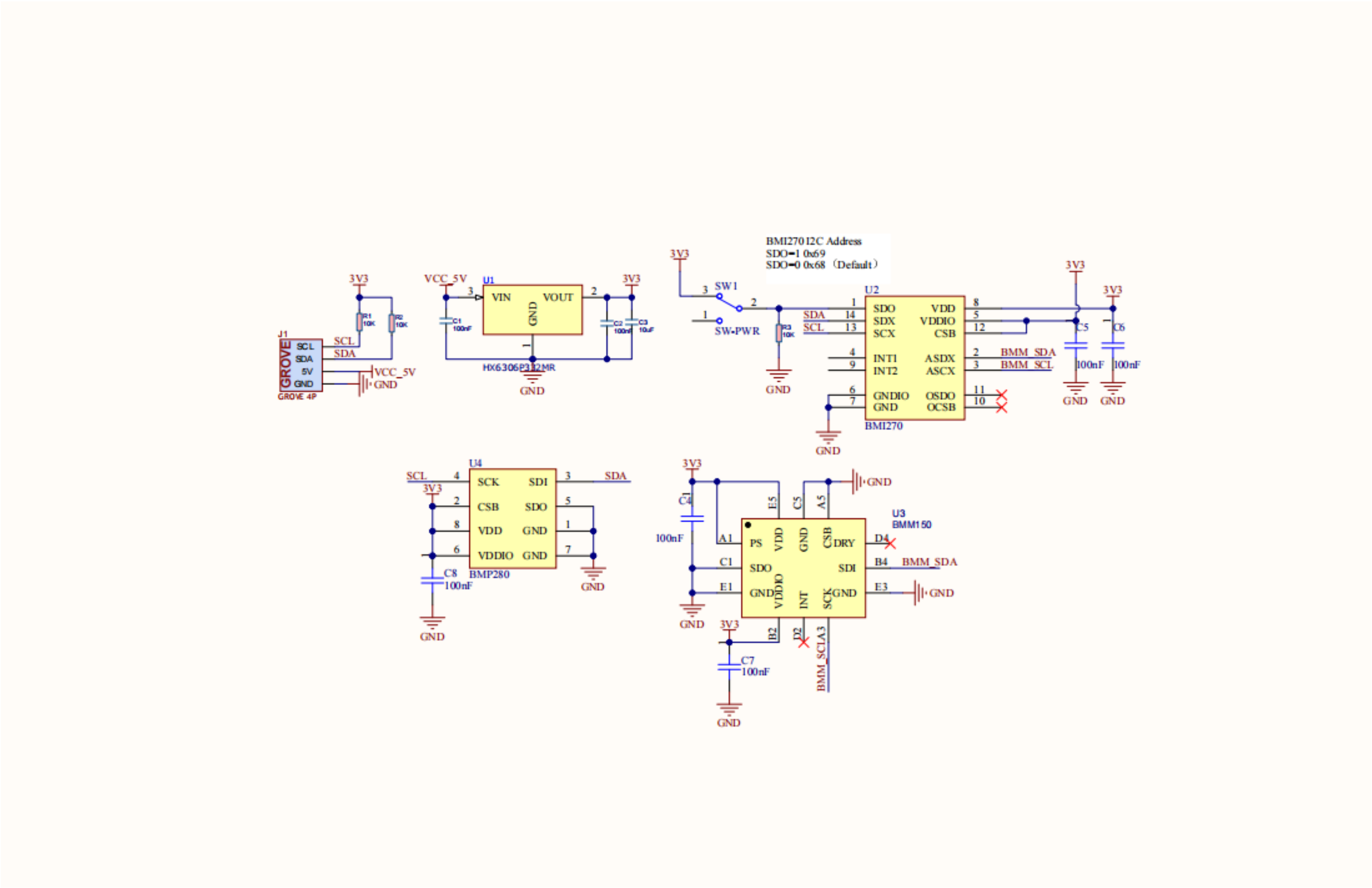
[M5PAPER v1.1 \(K049-B\)](#)

[AtomS3 \(C123\)](#)

## Related Link

- [BMI270](#)
- [BMM150](#)
- [BMP280](#)

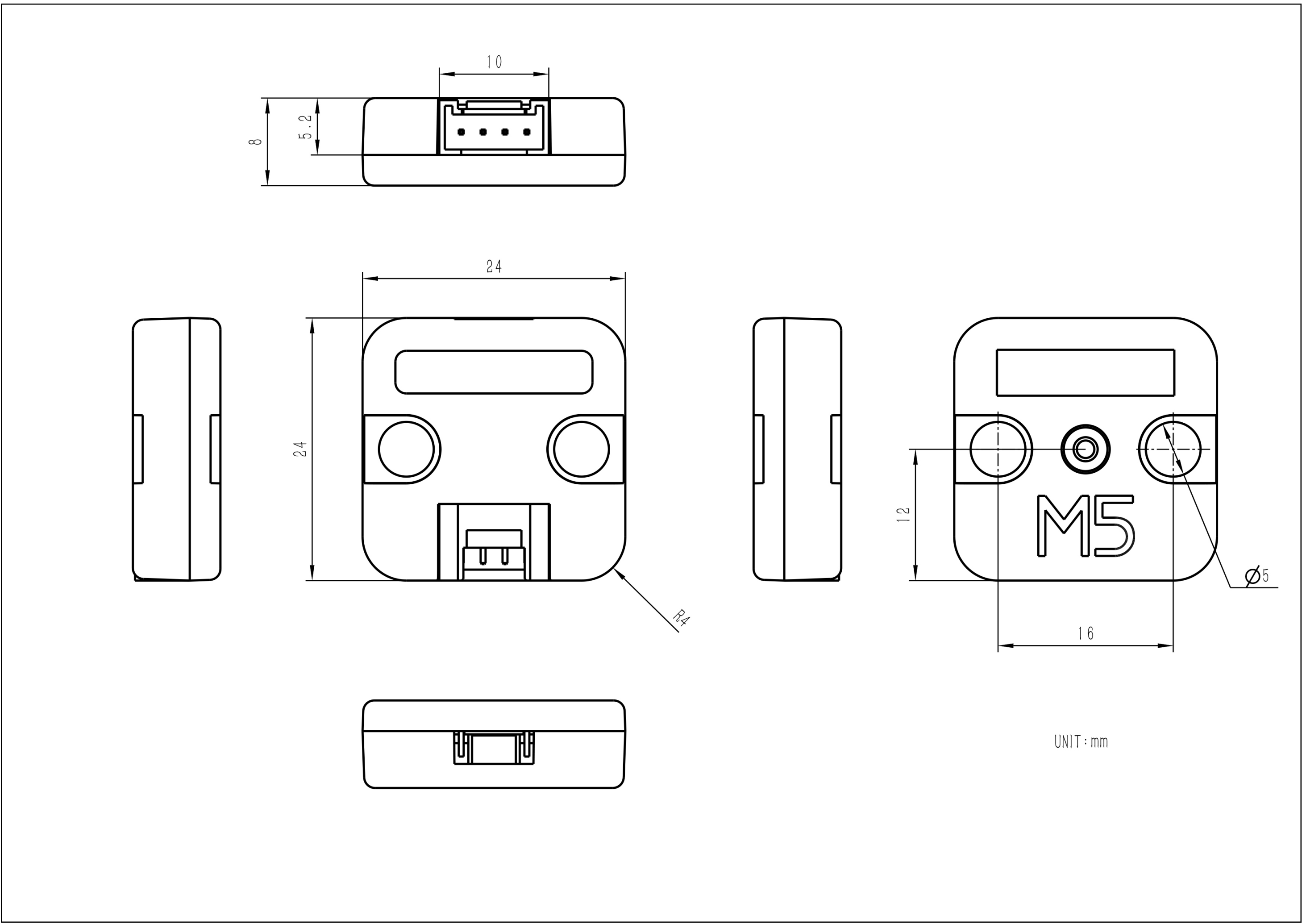
# Schematic



# PinMap

PORT A	SCL	SDA	VCC	GND
Core(Basic)	G22	G21	5V	GND
Core2	G33	G32	5V	GND
CoreS3	G1	G2	5V	GND

# Module Size



# Examples

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## Arduino

- [IMU Pro Mini Library](#)
- [Obtain original values such as attitude barometric force](#)
- [Gets the xyz axis Angle value](#)

# Video

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- [IMU Pro Mini Unit application](#)

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