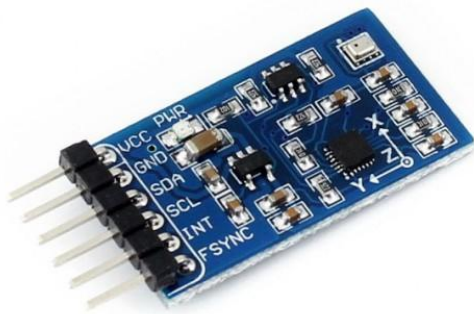


# 10 DOF IMU Sensor, Low Power



## Description

10 DOF IMU Sensor (C), Inertial Measurement Unit, Lower Power Consumption

## Overview

10 DOF IMU Sensor (C) is good at motion monitor, as well as detecting/measuring the position, height, and temperature. It would be helpful for making your own copter or balancing robot, provides great man-machine interaction.

## Features

- **MPU9255:** 3-axis gyroscope, 3-axis accelerometer, and 3-axis compass/magnetometer
  - Internal Digital Motion Processing™ (DMP™) engine, offloads complicated fusion calculation, sensor synchronization, gesture recognition, etc.
  - Comparing with MPU6050, it is lower power consumption, and more suitable for wearable devices
- **BMP280:** barometric pressure sensor
  - Embedded temperature sensor for temperature compensation
  - Comparing with BMP180, it is lower power consumption, and higher performance
- You can get the 10 DOF data through I2C interface

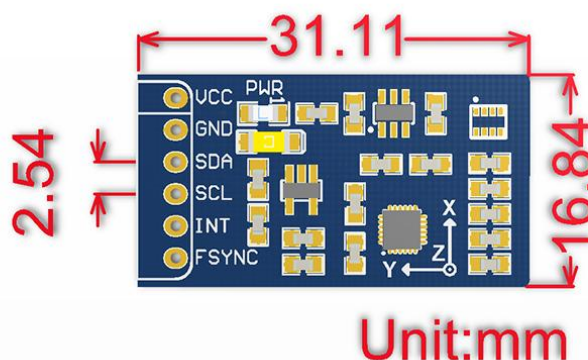
## Specifications

- Power: 3.3V~5.5V (internal voltage regulation with low dropout)
- Accelerometer
  - Resolution: 16 bit
  - Measurement range (configurable):  $\pm 2$ ,  $\pm 4$ ,  $\pm 8$ ,  $\pm 16g$
  - Operating current: 450uA
- Gyroscope
  - Resolution: 16 bit
  - Measurement range (configurable):  $\pm 250$ ,  $\pm 500$ ,  $\pm 1000$ ,  $\pm 2000^\circ/\text{sec}$
  - Operating current: 3.2mA
- Compass/Magnetometer
  - Resolution (configurable): 14 or 16 bit
  - Measurement range:  $\pm 4800\mu\text{T}$
  - Operating current: 280uA
- Barometric pressure sensor
  - Barometric resolution: 0.0016hPa
  - Temperature resolution: 0.01°C
  - Measurement range: 300~1100hPa (altitude: +9000m ~ -500m)
  - Barometric relative accuracy (700hPa~900hPa, 25°C~40°C):  $\pm 0.12\text{hPa}$  ( $\pm 1\text{m}$ )
  - Operating current (1Hz update rate, ultra-low power mode): 2.8uA

## Interface

PIN NO.	SYMBOL	DESCRIPTION
1	VCC	3.3V~5.5V power supply
2	GND	power ground
3	SDA	I2C data pin
4	SCL	I2C clock pin
5	INT	MPU9255 digital interrupt output
6	FSYNC	MPU9255 frame sync signal

## Dimension



## Development Resources

**Wiki:** [www.waveshare.com/wiki/10\\_DOF\\_IMU\\_Sensor\\_\(C\)](http://www.waveshare.com/wiki/10_DOF_IMU_Sensor_(C))