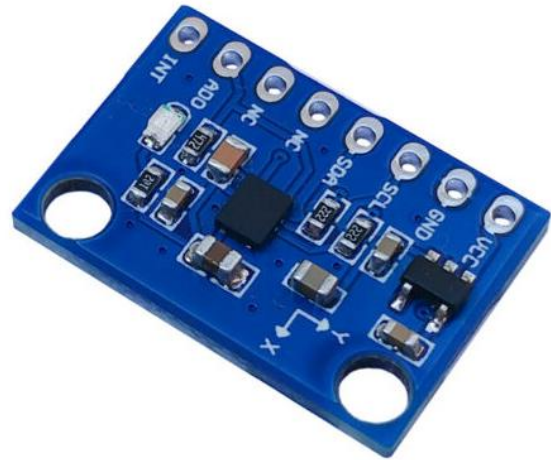


Introduction

The IM-621 module is an accelerometer and gyroscope module based on the ICM42688 from TDK InvenSense. The ICM-42688-P is a 6-axis MEMS Motion Tracking device that combines a 3-axis gyroscope and a 3-axis accelerometer. It has a configurable host interface that supports I2C serial communication, features a 2 kB FIFO and 2 programmable interrupts with ultralow-power wake-on-motion support to minimize system power consumption.



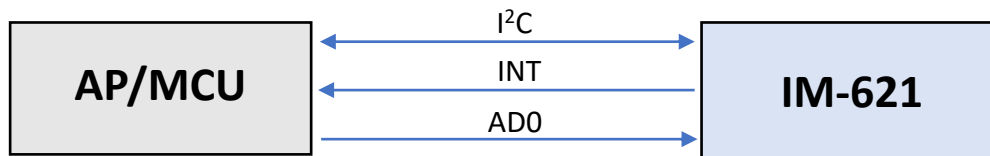
IM-621 FEATURES

- supply voltage: 3.3V to 5V
- Gyroscope Noise: 2.8 mdps/ $\sqrt{\text{Hz}}$
- Accelerometer Noise: 70 $\mu\text{g}/\sqrt{\text{Hz}}$
- consumption of 0.88 mA
- User selectable Gyro Full-scale range (dps):
 $\pm 15.6/31.2/62.5/125/250/500/1000/2000$
- User selectable Accelerometer Full-scale range (g): $\pm 2/4/8/16$
- APEX Motion Functions:
 - o Pedometer, Tilt Detection, Tap Detection
 - o Wake on Motion, Raise to Wake/Sleep, Significant Motion Detection
- Host interface: 1 MHz I2C
- Compact size, 14 x 21 mm

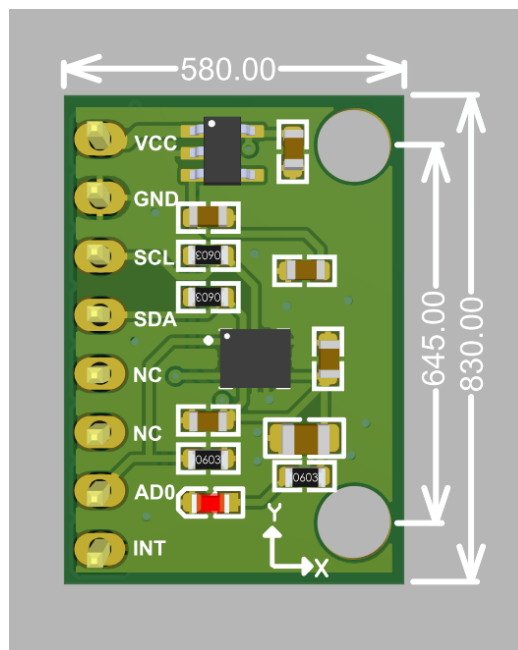
APPLICATIONS

- AR/VR Controllers
- Head Mounted Displays
- Wearables
- Sports
- Robotics
- IoT Applications

BLOCK DIAGRAM



Pinout



| Pin Number | Pin Name | Pin Description |
|------------|----------|--|
| 1 | VCC | Power supply voltage |
| 2 | GND | Power supply ground |
| 3 | SCL | I2C serial clock |
| 4 | SDA | I2C serial data |
| 5 | AD0 | I2C slave address LSB , HIGH Address will be 0x69 , LOW address will be 0x68 |
| 6 | INT | All interrupts mapped to this pin |

INT - This is the interrupt pin. You can setup the IM-621 to pull this low when certain conditions are met such as new measurement data being available. Consult the datasheet and register map for usage.

AD0 - I2C Address pin. Pulling this pin high or bridging the solder jumper on the back will change the I2C address from 0x68 to 0x69.

I2C communication

Data output and settings are available via I2C. The maximum I2C clock frequency can be 1MHZ. It is possible to connect 3.3V or 5V microcontrollers (STM32, Arduino, etc.) directly without using a logic level converter circuit.

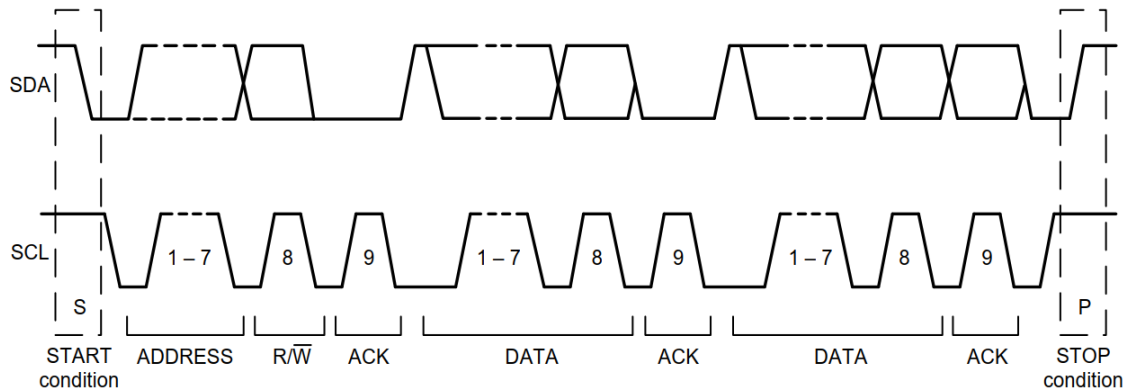


Figure 14. Complete I²C Data Transfer

Schematic

