ISM330DLC

iNEMO® 6-axis inertial module for Industry 4.0

3D accelerometer and 3D gyroscope system-in-package with high accuracy and ultra-low power for Industry 4.0

Combining a 3D accelerometer and 3D gyroscope, ST's ISM330DLC system-in-package is the latest generation of high-performance 6-axis MEMS inertial modules specifically designed for Industry 4.0.
The ISM330DLC offers best–in-class accuracy and flexibility with ultra-low power consumption, enabling demanding applications, even battery-operated ones, in the industrial domain.
High-performance, high-quality, small size and low power consumption together with high robustness to mechanical shock makes the ISM330DLC the right choice for the implementation in reliable industrial products.

KEY FEATURES

- Acceleration range: ±2/±4/±8/±16 g
- Angular rate range: ±125/±245/±500/±1000/±2000 dps
- Dedicated low noise, low latency signal processing path for stabilization control loop
- Embedded 4-Kbyte FIFO and smart functions
- Noise density (accel.): 90 µg/√Hz
- Rate noise (gyro.): 3.8 mdps/√Hz
- Embedded sensor hub
- I2C/SPI digital interfaces
- Temperature range: -40 to + 85 °C
- LGA-14 package (2.5 x 3 x 0.83 mm)

KEY APPLICATIONS

- Industrial IoT and connected devices
- Antennas, platforms and optical image and lens stabilization
- Robotics, drones and industrial automation
- Navigation systems and telematics
- Vibration monitoring and compensation

ADVANCED FEATURES

Dual output for General Purpose and control loop usage

- Dedicated configurable signal processing path with low latency, low noise and dedicated filtering specifically intended for stabilization control loops.

Advanced sensor hub

- Data coming from external and internal sensors can be stored, elaborated and efficiently sent to the upper-layer MCU.

Higher thermal stability

- For both offset/sensitivity of accelerometer and gyroscope over the whole operating temperature range from -40 to +85 °C

Advanced digital features

- Event detection and fully configurable interrupts:
  - Free-fall and wakeup
  - 6D orientation
  - Tap and double-tap sensing

- Activity/inactivity recognition
- Tilt detection

APPLICATIONS

Industry 4.0

LONGEVITY 10 YEARS COMMITMENT

Navigation

ISM330DLC

Robotics

Drones

«Antenna platform» stabilization

EVALUATION TOOLS

Part number	Description
X-NUCLEO-IKS01A2	Motion MEMS and environmental sensor expansion board for STM32 Nucleo

For further information please visit http://www.st.com/inemo

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