ISM330DLC
iNEMO® 6-axis inertial module 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

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

Robotics

Drones

Navigation

«Antenna platform» stabilization

EVALUATION TOOLS

<table>
<thead>
<tr>
<th>Part number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>X-NUCLEO-IKS01A2</td>
<td>Motion MEMS and environmental sensor expansion board for STM32 Nucleo</td>
</tr>
</tbody>
</table>

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