

# ISM330DLC

## iNEMO<sup>®</sup> 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 are 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. 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:  $\pm 2/\pm 4/\pm 8/\pm 16$  g
- Angular rate range:  $\pm 125/\pm 245/\pm 500/\pm 1000/\pm 2000$  dps
- Dedicated low noise, low latency signal processing path for stabilization control loop
- Embedded 4-Kbyte FIFO and smart functions
- Noise density (accel.):  $90 \mu\text{g}/\sqrt{\text{Hz}}$
- Rate noise (gyro.):  $3.8 \text{ mdps}/\sqrt{\text{Hz}}$
- 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

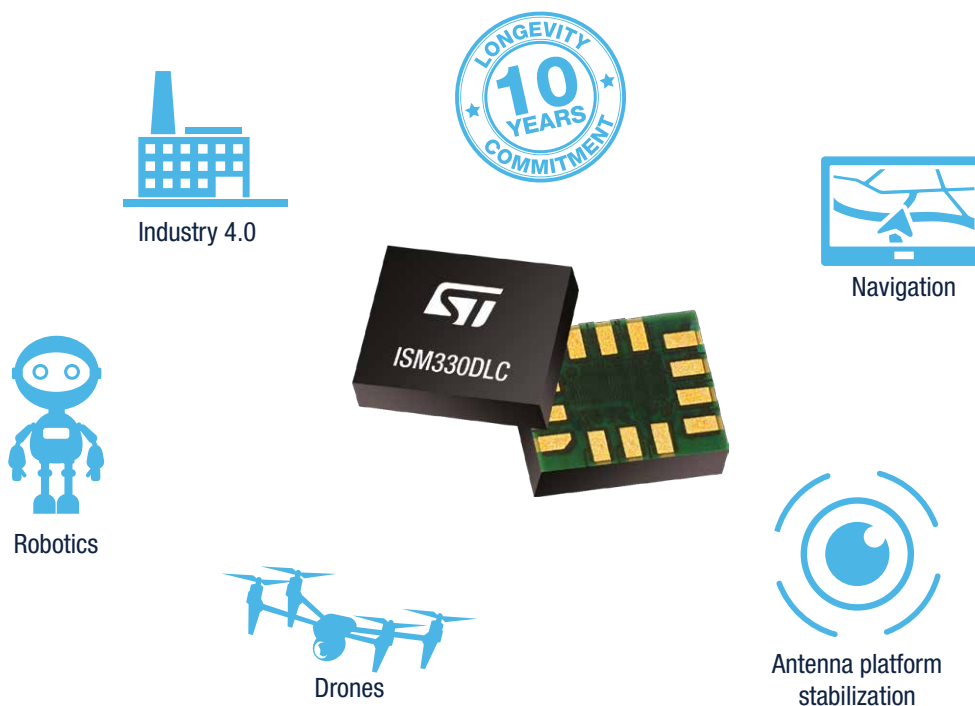
- For both offset/sensitivity of accelerometer and gyroscope over the whole operating temperature range from -40 to +85 °C

### 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



## Evaluation tools

Part number	Description
X-NUCLEO-IKS01A3	Motion MEMS and environmental sensor expansion board for STM32 Nucleo
STEVAL-MKI182V2	ISM330DLC adapter board for a standard DIL24 socket

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



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