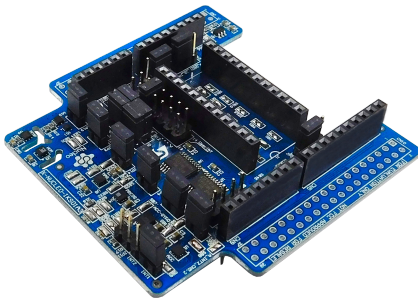


## Motion MEMS and environmental sensor expansion board for STM32 Nucleo



### Features

- LSM6DO: MEMS 3D accelerometer ( $\pm 2/\pm 4/\pm 8/\pm 16$  g) + 3D gyroscope ( $\pm 125/\pm 250/\pm 500/\pm 1000/\pm 2000$  dps)
- LIS2MDL: MEMS 3D magnetometer ( $\pm 50$  gauss)
- LIS2DW12: MEMS 3D accelerometer ( $\pm 2/\pm 4/\pm 8/\pm 16$  g)
- LPS22HH: MEMS pressure sensor, 260-1260 hPa absolute digital output barometer
- HTS221: capacitive digital relative humidity and temperature
- STTS751: Temperature sensor ( $-40$  °C to  $+125$  °C)
- DIL 24-pin socket available for additional MEMS adapters and other sensors
- Free comprehensive development firmware library and example for all sensors compatible with STM32Cube firmware
- I<sup>2</sup>C sensor hub features on LSM6DSO available
- Compatible with STM32 Nucleo boards
- Equipped with Arduino UNO R3 connector
- RoHS compliant
- WEEE compliant

### Description

The X-NUCLEO-IKS01A3 is a motion MEMS and environmental sensor evaluation board system.

It is compatible with the Arduino UNO R3 connector layout and features the [LSM6DSO](#) 3-axis accelerometer + 3-axis gyroscope, the [LIS2MDL](#) 3-axis magnetometer, the [LIS2DW12](#) 3-axis accelerometer, the [HTS221](#) humidity and temperature sensor, the [LPS22HH](#) pressure sensor, and the [STTS751](#) temperature sensor.

The X-NUCLEO-IKS01A3 interfaces with the STM32 microcontroller via the I<sup>2</sup>C pin, and it is possible to change the default I<sup>2</sup>C port.

#### Product summary

iNEMO inertial module, 3-axis accelerometer, 3-axis gyroscope, always-on eco power mode [LSM6DSO](#)

Magnetic sensor, digital output, 50 gauss magnetic field dynamic range, ultra-low power high performance 3-axis magnetometer [LIS2MDL](#)

3-axis MEMS accelerometer, ultra low power, configurable single/double-tap recognition, free-fall, wakeup, portrait/landscape, 6D/4D orientation detections [LIS2DW12](#)

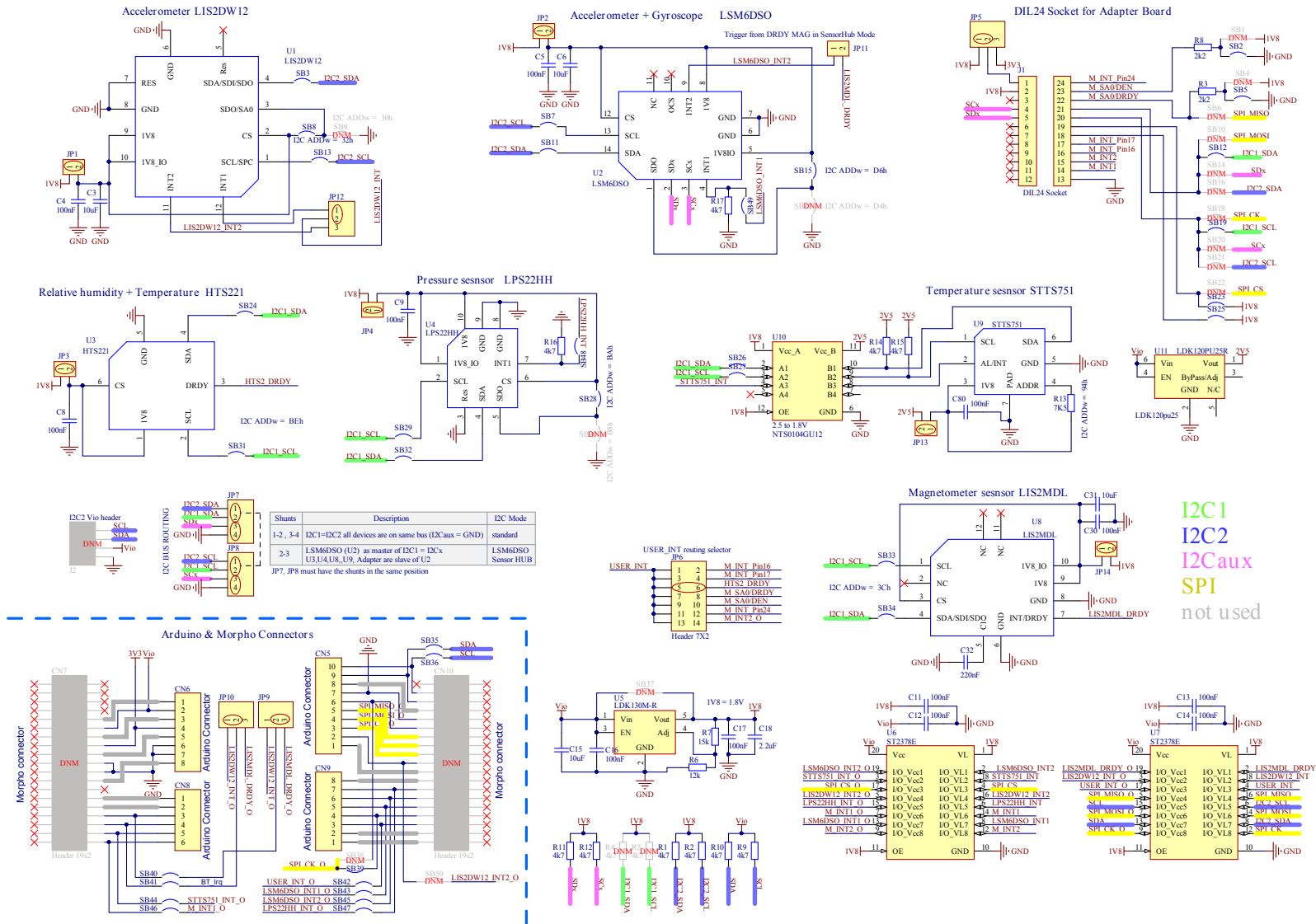
High-performance MEMS nano pressure sensor: 260-1260 hPa absolute digital output barometer [LPS22HH](#)

Capacitive digital sensor for relative humidity and temperature [HTS221](#)

2.25 V low-voltage local digital temperature sensor [STTS751](#)

# 1 Schematic diagrams

Figure 1. X-NUCLEO-IKS01A3 board schematics



## Revision history

**Table 1. Document revision history**

Date	Version	Changes
13-Feb-2019	1	Initial release.

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