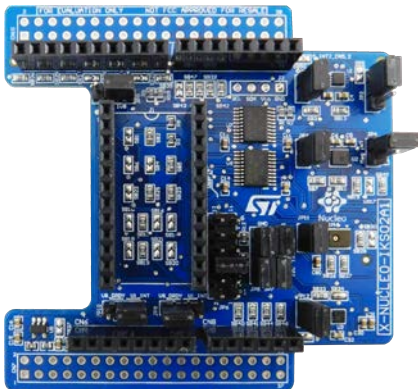


## Motion MEMS and microphone MEMS expansion board for STM32 Nucleo



### Features

- **ISM330DHCX** MEMS 3D accelerometer ( $\pm 2/\pm 4/\pm 8/\pm 16$  g) plus 3D gyroscope ( $\pm 125/\pm 250/\pm 500/\pm 1000/\pm 2000$  dps)
- **IIS2MDC** MEMS 3D magnetometer ( $\pm 50$  gauss)
- **IIS2DLPC** MEMS 3D accelerometer low power ( $\pm 2/\pm 4/\pm 8/\pm 16$  g)
- **IMP34DT05** MEMS digital omnidirectional microphone (-26 dBFS,  $\pm 3$  dB sensitivity)
- DIL 24-pin socket available for additional MEMS adapters and other sensors
- Free comprehensive development firmware library and samples for all sensors compatible with **STM32Cube** firmware
- Available I<sup>2</sup>C sensor hub features on **ISM330DHCX**
- Compatible with **STM32 Nucleo** boards
- Equipped with Arduino UNO R3 connector
- RoHS and WEEE compliant

### Description

The **X-NUCLEO-IKS02A1** industrial motion MEMS sensor expansion board is compatible with the Arduino UNO R3 connector layout.

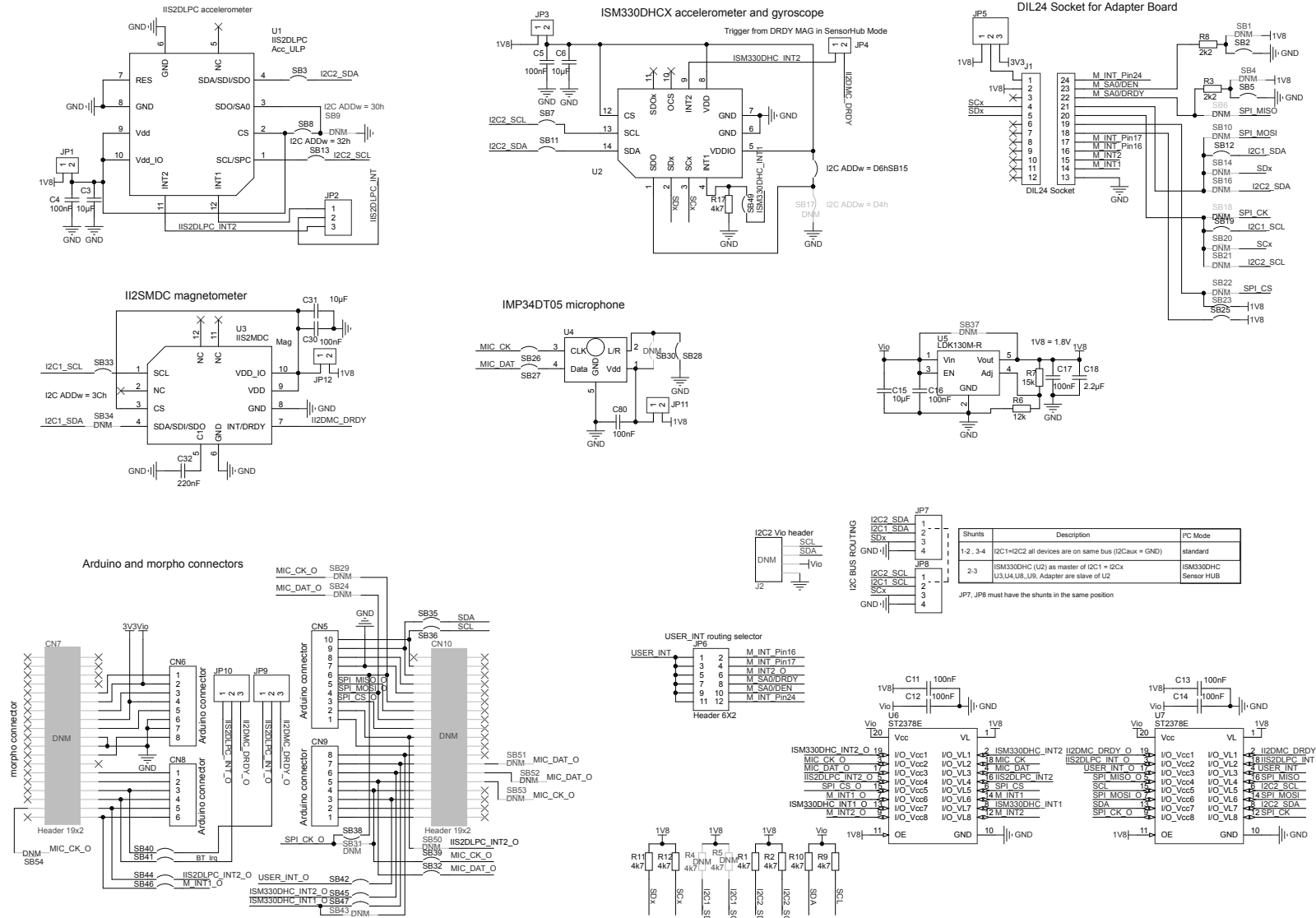
It embeds the **ISM330DHCX** 3-axis accelerometer and 3-axis gyroscope, the **IIS2MDC** 3-axis magnetometer, the **IIS2DLPC** 3-axis accelerometer, the **IMP34DT05** digital microphone.

The **X-NUCLEO-IKS02A1** interfaces with the STM32 microcontroller via I<sup>2</sup>C pin, with the possibility of changing the default I<sup>2</sup>C port.

Product summary	
Motion MEMS and microphone MEMS expansion board for STM32 Nucleo	<b>X-NUCLEO-IKS02A1</b>
iNEMO inertial module: always-on 3D accelerometer and 3D gyroscope with digital output for industrial applications	<b>ISM330DHCX</b>
High performance, ultra-low-power 3-axis accelerometer for industrial applications	<b>IIS2DLPC</b>
High accuracy, ultra-low-power, 3-axis digital output magnetometer	<b>IIS2MDC</b>
MEMS audio sensor omnidirectional digital microphone for industrial applications	<b>IMP34DT05</b>
Application	<b>Industrial Sensors</b>

# 1 Schematic diagram

Figure 1. X-NUCLEO-IKS02A1 circuit schematic



## Revision history

**Table 1. Document revision history**

Date	Version	Changes
11-Nov-2019	1	Initial release.