X-NUCLEO-IKS02A1
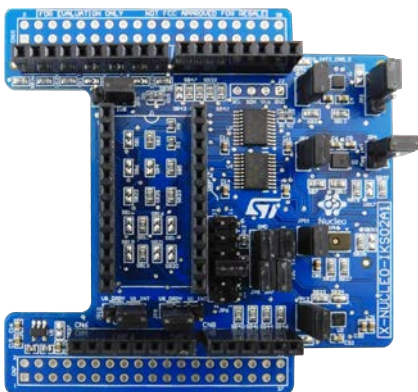
Motion MEMS and microphone MEMS expansion board for STM32 Nucleo

Features

- ISM330DHCX MEMS 3D accelerometer (±2/±4/±8/±16 g) plus 3D gyroscope (±125/±250/±500/±1000/±2000 dps)
- IIS2MDC MEMS 3D magnetometer (±50 gauss)
- IIS2DLPC MEMS 3D accelerometer low power (±2/±4/±8/±16 g)
- IMP34DT05 MEMS digital omnidirectional microphone (-26 dBFS, ±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 I²C 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.
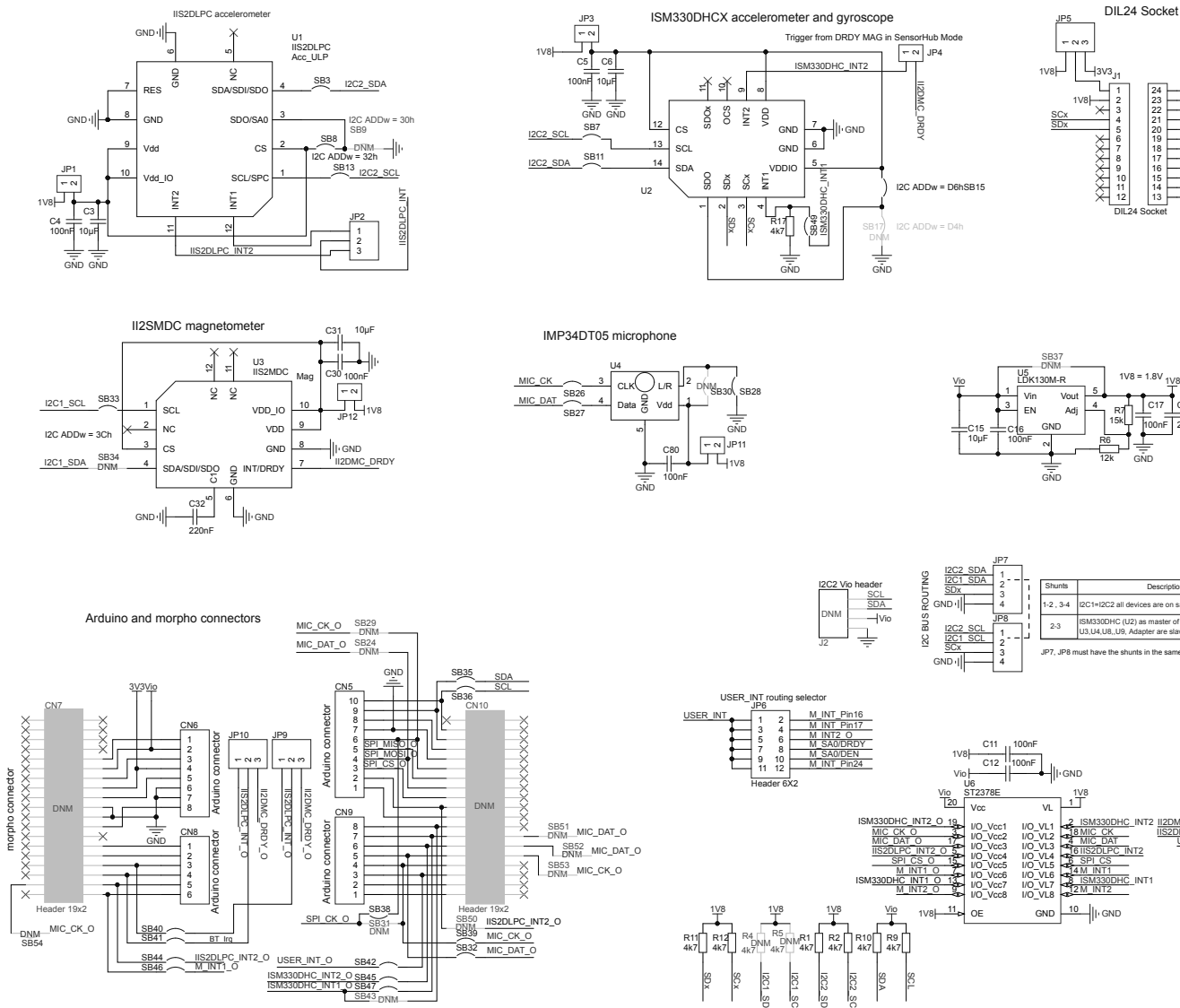
It embeds the ISM330DHCX 3-axis accelerometer and 3-axis gyroscope, the IIS2MDC 3-axis magnetometer, the IIS2DLPC 3-axis accelerometer, the IMP34DT05 digital microphone.

The X-NUCLEO-IKS02A1 interfaces with the STM32 microcontroller via I²C pin, with the possibility of changing the default I²C port.

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

DB4015 - Rev 1 - November 2019
For further information contact your local STMicroelectronics sales office.

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1 Schematic diagram

Figure 1. X-NUCLEO-IKS02A1 circuit schematic

IIS2DLPC accelerometer

ISM330DHCX accelerometer and gyroscope

DIL24 Socket

II2SMDC magnetometer

IMP34DT05 microphone

Arduino and morpho connectors

Revision history

Table 1. Document revision history

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

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