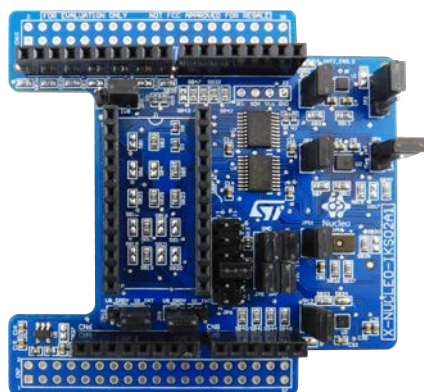


Motion MEMS and microphone MEMS expansion board for STM32 Nucleo



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 (± 50 gauss)
- **IIS2DLPC** MEMS 3D accelerometer low power ($\pm 2/\pm 4/\pm 8/\pm 16$ 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.

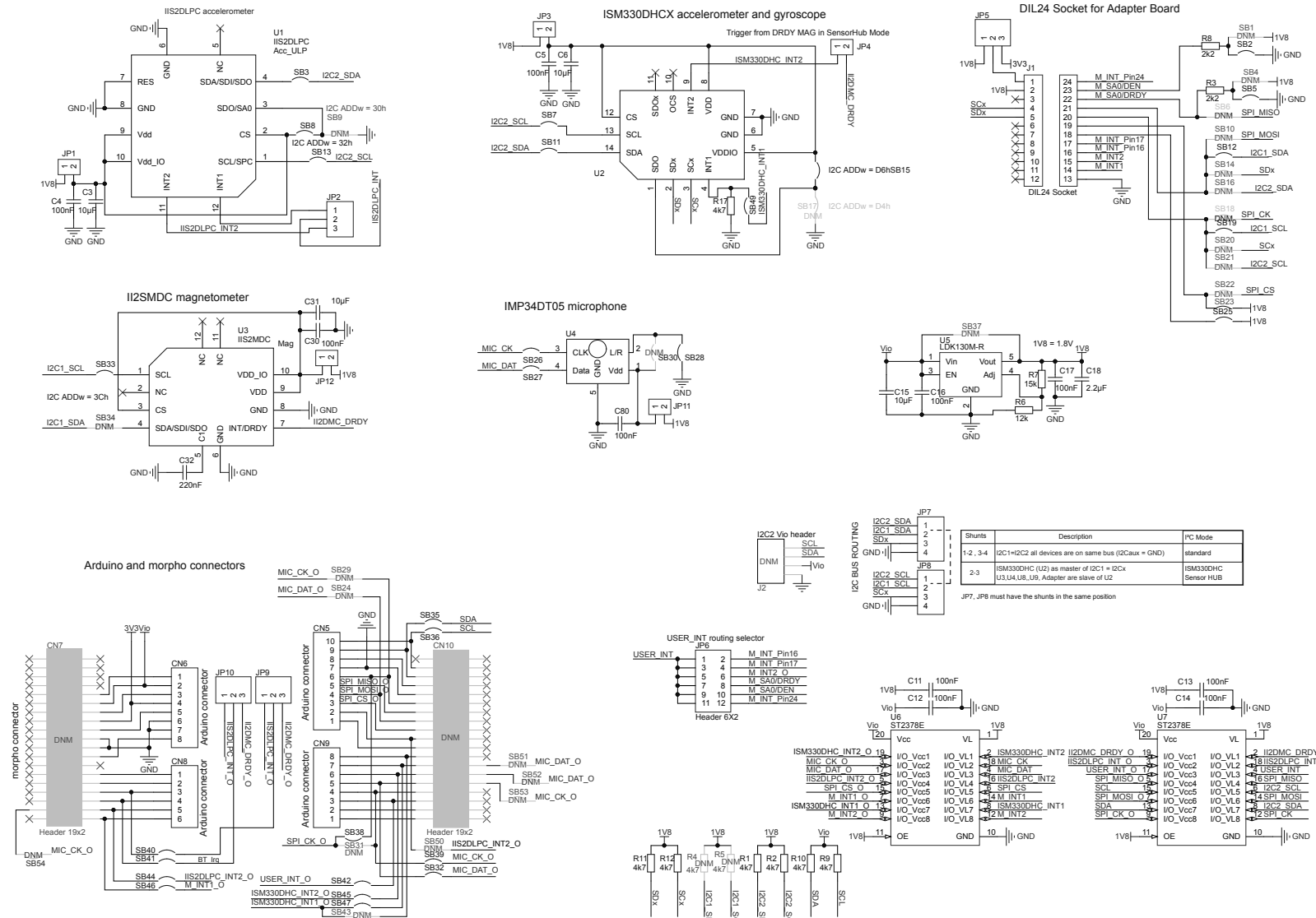
It embeds the **ISM330DHCX** 3-axis accelerometer and 3-axis gyroscope, the **IIS2MDC** 3-axis magnetometer, the **IIS2DLPC** 3-axis accelerometer, the **IMP34DT05** digital microphone.

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

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.

IMPORTANT NOTICE – PLEASE READ CAREFULLY

STMicroelectronics NV and its subsidiaries ("ST") reserve the right to make changes, corrections, enhancements, modifications, and improvements to ST products and/or to this document at any time without notice. Purchasers should obtain the latest relevant information on ST products before placing orders. ST products are sold pursuant to ST's terms and conditions of sale in place at the time of order acknowledgement.

Purchasers are solely responsible for the choice, selection, and use of ST products and ST assumes no liability for application assistance or the design of Purchasers' products.

No license, express or implied, to any intellectual property right is granted by ST herein.

Resale of ST products with provisions different from the information set forth herein shall void any warranty granted by ST for such product.

ST and the ST logo are trademarks of ST. For additional information about ST trademarks, please refer to www.st.com/trademarks. All other product or service names are the property of their respective owners.

Information in this document supersedes and replaces information previously supplied in any prior versions of this document.

© 2019 STMicroelectronics – All rights reserved