P-NUCLEO-IOD01A1

Data brief

STM32 Nucleo pack for IO-Link multi-sensor device with stack v1.1.3

Product summary	
STM32 Nucleo pack for IO-Link multi-sensor device with Stack v1.1.3	P-NUCLEO-IOD01A1
IO-Link v1.1.3 sensor software for P-NUCLEO-IOD01A1	STSW-IOD01
IO-Link device evaluation board based on L6362A with Arduino connectors for STM32 Nucleo	STEVAL-IOD003V1
IO-Link communication transceiver device IC	L6362A
Motion MEMS and environmental sensor expansion board for STM32 Nucleo	X-NUCLEO-IKS01A2
Applications	Factory Automation IO-Link connectivity

Features

- Equipped with Arduino UNO R3 connectors and compatible with STEVAL-IOD003V1, X-NUCLEO-IKS01A2 and NUCLEO-L073RZ boards
- The STEVAL-IOD003V1 features:
  - IO-Link (PHY) device layer based on L6362A
  - Operating voltage range 6.5 to 35 V
  - Dedicated CQ overload pin (wake-up)
  - Diagnostics pin (UVLO, overtemperature and cut-off)
  - UART interface
  - Linear regulators for independent supply from +24 V bus (12 mA 3.3 V and 100 mA 12 V)
  - LEDs for status and diagnostics
  - Overload and overheating protections with non-dissipative cut-off function
  - Full reverse polarity on IO-Link interface pins
  - EMC protections according to IO-Link v1.1 and IEC 60947-5-2
  - Ground and V_{CC} wire break protections
- The X-NUCLEO-IKS01A2 features:
  - LSM6DSL 3D accelerometer and 3D gyroscope
  - LSM303AGR 3D accelerometer and 3D magnetometer
  - LPS22HB pressure sensor
  - HTS221 capacitive digital relative humidity and temperature
  - DIL24 socket for additional MEMS adapters and other sensors
  - Free comprehensive development firmware library and samples for all sensors compatible with STM32Cube firmware
- The NUCLEO-L073RZ features:
  - STM32L073RZT6 32-bit microcontroller based on ARM® Cortex®-M0+ core
  - Pre-programmed with STSW-IOD01 (IO-Link device stack v1.1.3)
  - Arduino UNO R3 connectivity and ST morpho extension pin headers
  - Mbed-enabled (http://mbed.org)
  - On-board ST-LINK/V2-1 debugger/programmer with SWD connector

Description

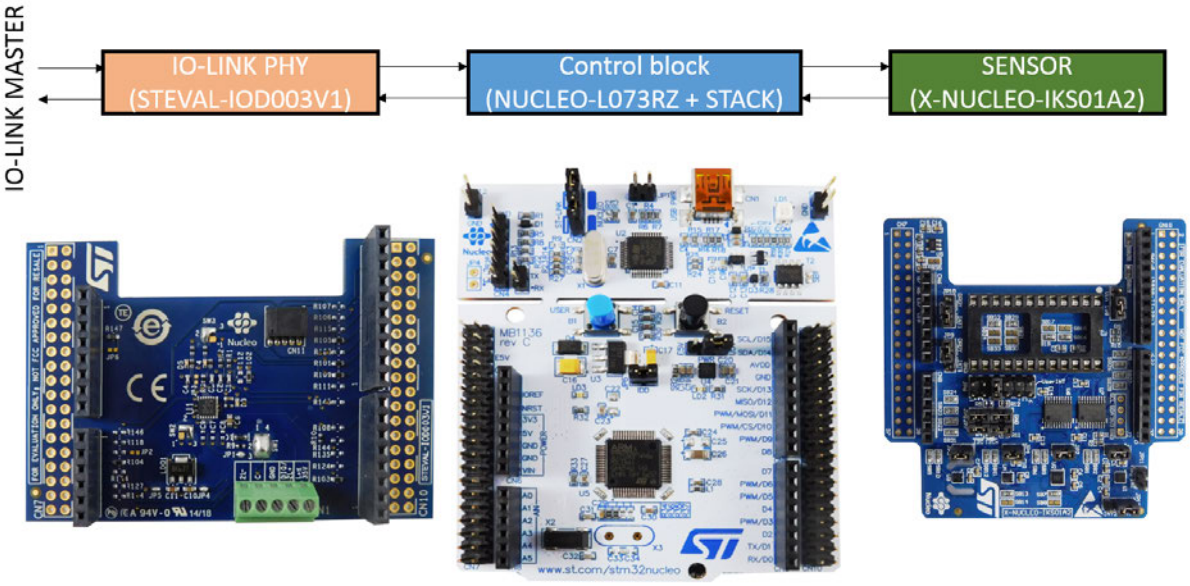
The P-NUCLEO-IOD01A1 is an STM32 Nucleo pack composed of the NUCLEO-L073RZ development board, the STEVAL-IOD003V1 evaluation board and the X-NUCLEO-IKS01A2 expansion board.

The STEVAL-IOD003V1 offers an IO-Link device PHY layer (L6362A) while the NUCLEO-L073RZ runs the IO-Link stack v1.1.3 included in the STSW-IOD01 (developed by and property of TEConcept Gmbh) and the firmware controlling the X-NUCLEO-IKS01A2 sensors.

The STM32 Nucleo pack provides an affordable and easy-to-use solution for the development of IO-Link and SIO applications, L6362A communication features and robustness, together with the STM32L073RZT6 computation performance.

1 P-NUCLEO-IOD01A1 main blocks

Figure 1. **P-NUCLEO-IOD01A1 block details**



Revision history

Table 1. Document revision history

Date	Version	Changes
06-Jun-2018	1	Initial release.
04-Jul-2018	2	Removed schematic diagrams.
09-Oct-2018	3	Updated cover page features.
09-Jun-2020	4	Added references to STSW-IOD01 IO-Link v1.1.3 sensor software.

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