P-NUCLEO-IOD7A1

Data brief

STM32 Nucleo pack for IO-Link device applications based on L6364Q transceiver, IPS4260LM power switch and STM32G071RB

Features

- X-NUCLEO-IOD02A1 IO-Link transceiver expansion board based on the L6364Q device
- X-NUCLEO-OUT07A1 industrial digital output expansion board for STM32 Nucleo providing a powerful and flexible environment for the evaluation of the driving and diagnostic capabilities of the IPS4260LM (quad low-side intelligent power switch) in a digital output module connected to 0.5 A (per channel) / 2 A (one channel) industrial loads
- NUCLEO-G071RB development board embedding the STM32G071RB based on high-performance Arm® Cortex®-M0+ 32-bit RISC core operating at up to 64 MHz frequency. Offering a high level of integration, it is suitable for a wide range of applications in consumer, industrial and appliance domains and ready for the Internet of Things (IoT) solutions.
  The device incorporate a memory protection unit (MPU), high-speed embedded memories (36 Kbytes of SRAM and up to 128 Kbytes of Flash program memory with read protection, write protection, proprietary code protection, and securable area), DMA, an extensive range of system functions, enhanced I/Os, and peripherals.
- FP-IND-IODOUT1 function pack featuring IO-Link demo-stack for X-NUCLEO-IOD02A1 and control software for X-NUCLEO-OUT07A1

Product summary	
STM32 Nucleo pack for IO-Link and power switch device applications based on L6364Q transceiver, IPS4260LM power switch and STM32G071RB	P-NUCLEO-IOD7A1
STM32Cube function pack for P-NUCLEO-IOD7A1, with IO-Link stack, IODD	FP-IND-IODOUT1
Dual channel transceiver IC for SIO and IO-Link sensor applications	L6364Q
Dual channel IO-Link device expansion board based on L6364Q for STM32 Nucleo	X-NUCLEO-IOD02A1
Industrial digital output expansion board based on IPS4260LM for STM32 Nucleo	X-NUCLEO-OUT07A1
Applications	Factory Automation IO-Link connectivity

Description

The P-NUCLEO-IOD7A1 is an STM32 Nucleo pack composed of the X-NUCLEO-IOD02A1 and X-NUCLEO-OUT07A1 expansion boards stacked on the NUCLEO-G071RB development board.

The X-NUCLEO-IOD02A1 features the L6364Q IO-Link device transceiver for the physical connection to an IO-Link master while the X-NUCLEO-OUT07A1 features an industrial digital output expansion board for STM32. The NUCLEO-G071RB features the necessary hardware resources to run the FP-IND-IODOUT1 function pack and to control the transceiver and the power switch.

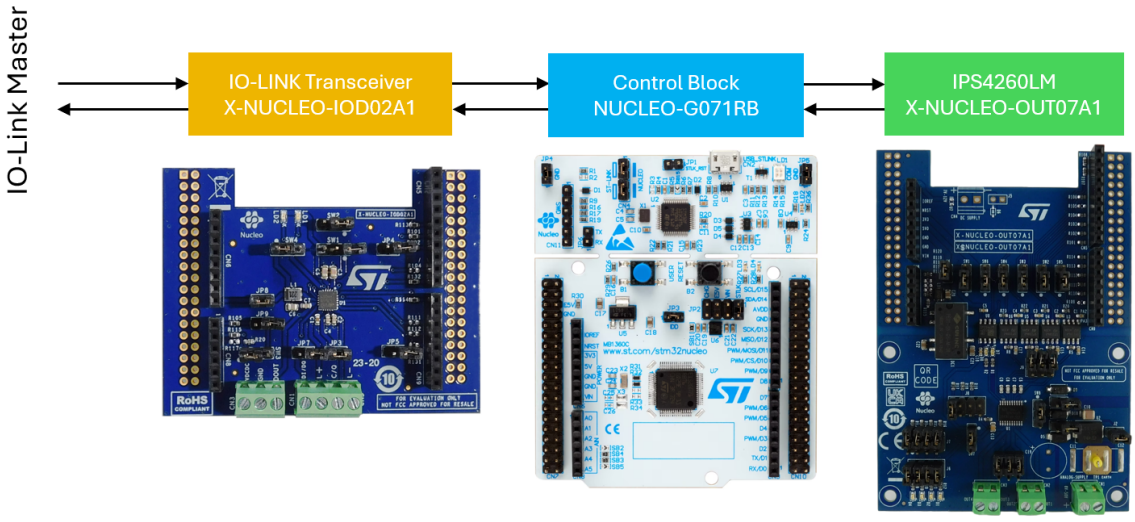
The FP-IND-IODOUT1 combines an IO-Link demo stack library (derived from X-CUBE-IOD02) with the X-CUBE-IPS and features an example of IO-Link device sensor and actuator node.

The P-NUCLEO-IOD7A1 can be used for evaluation purpose and as a development environment.

The STM32 Nucleo pack provides an affordable and easy-to-use solution for the development of an IO-Link and SIO applications for the evaluation of IPS4260LM low side capabilities together with the STM32G071RB computation performance.

1 P-NUCLEO-IOD7A1 main blocks

Figure 1. **P-NUCLEO-IOD7A1 block details**



Revision history

Table 1. **Document revision history**

Date	Revision	Changes
03-Sep-2024	1	Initial release.