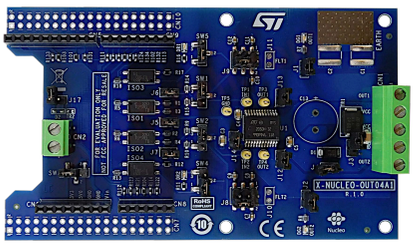
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X-NUCLEO-OUT04A1

Data brief

Industrial digital output expansion board based on IPS2050H-32 for STM32 Nucleo



Features

- Based on IPS2050H-32 dual high-side switch, which features:
  - Operating range up to 60 V/5.7 A
  - Low power dissipation ($R_{ON(MAX)}$ = 50 mΩ)
  - Fast decay for inductive loads
  - Smart driving of capacitive load
  - Under-voltage lock-out
  - Per-channel overload and over-temperature protection
  - PSSO24 package
- Application board operating range: 8 to 33 V/0 to 5.7 A
- Extended voltage operating range (J3 open) up to 60 V
- Green LEDs for output on/off status
- Red LEDs for per-channel diagnostic (overload and overheating)
- 5 kV galvanic isolation
- Supply rail reverse polarity protection
- EMC compliance with IEC61000-4-2, IEC61000-4-3, IEC61000-4-5
- Compatible with STM32 Nucleo development boards
- Equipped with Arduino UNO R3 connectors
- CE certified
- RoHS and China RoHS compliant

Product summary	
Industrial digital output expansion board based on IPS2050H-32 for STM32 Nucleo	X-NUCLEO-OUT04A1
Dual high-side smart power solid state relay	IPS2050H-32
Applications	Programmable Logic Controllers

Description

The X-NUCLEO-OUT04A1 industrial digital output expansion board for STM32 Nucleo provides a powerful and flexible environment for the evaluation of the driving and diagnostic capabilities of the IPS2050H-32 (dual high-side smart power solid state relay) in a digital output module connected to 5.7 A (max.) industrial loads.

The X-NUCLEO-OUT04A1 interfaces with the microcontroller on the STM32 Nucleo via 5 kV optocouplers driven by GPIO pins, Arduino UNO R3 (default configuration) and ST morpho (optional, not mounted) connectors.

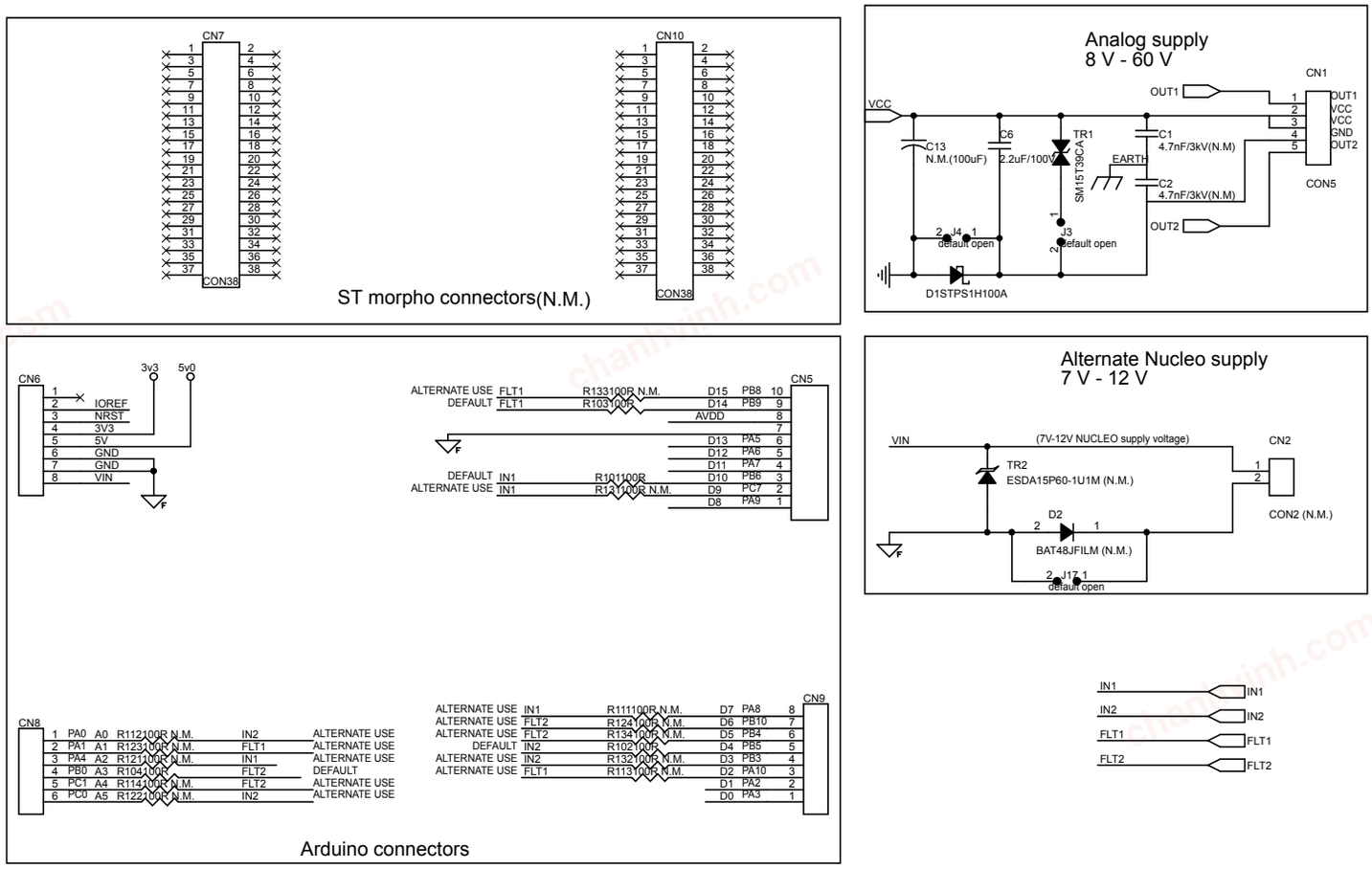
The expansion board can be connected to either a NUCLEO-F401RE or NUCLEO-G431RB development board.

It is also possible to evaluate a system composed by up to four stacked X-NUCLEO-OUT04A1 expansion boards.
As an example, a system with four X-NUCLEO-OUT04A1 expansion boards allows you to evaluate an eight-channel digital output module with 5.7 A (max.) capability each.

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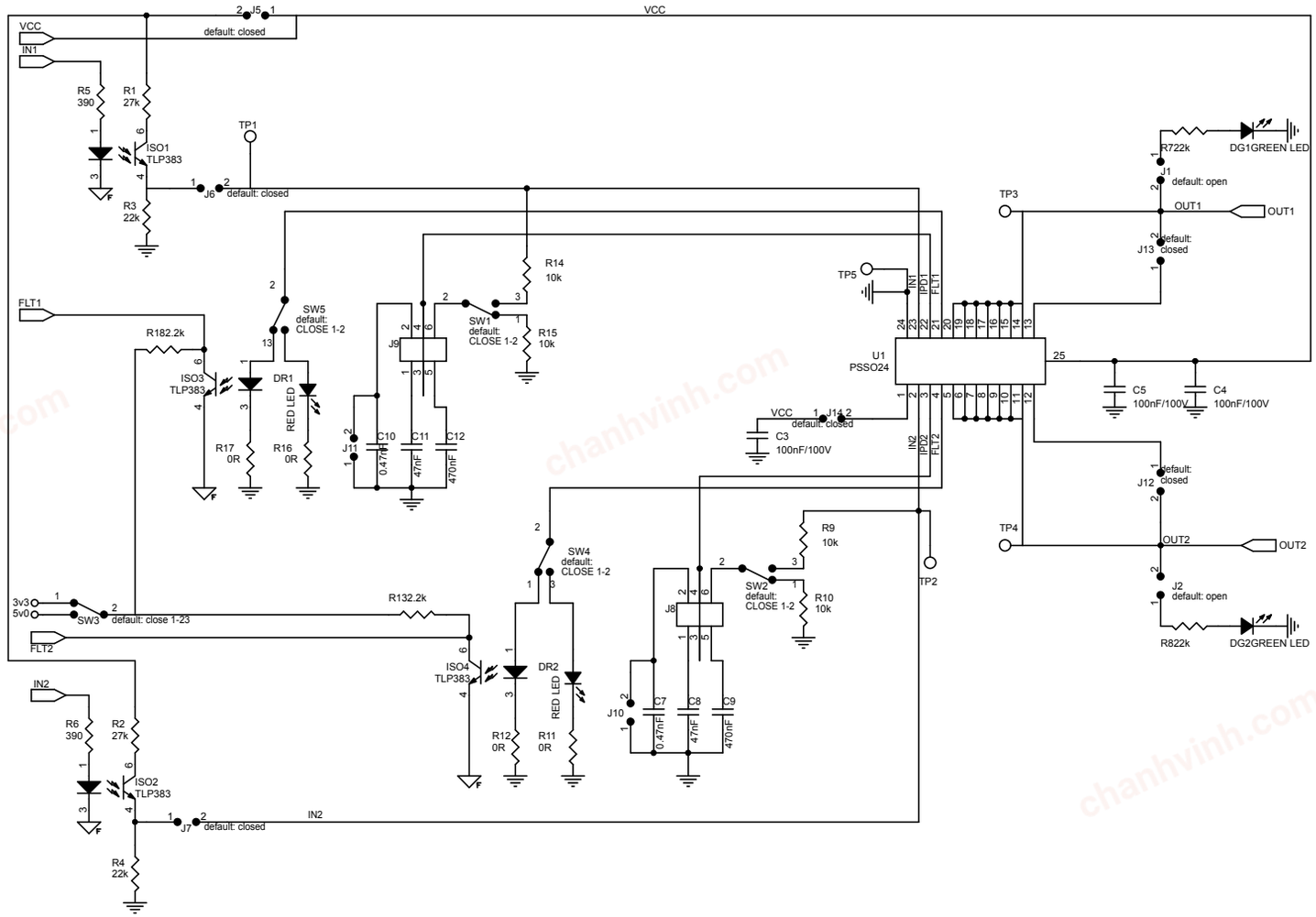
1 Schematic diagrams

Figure 1. **X-NUCLEO-OUT04A1 circuit schematic (1 of 2)**



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Figure 2. X-NUCLEO-OUT04A1 circuit schematic (2 of 2)



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Revision history

Table 1. **Document revision history**

Date	Version	Changes
04-Aug-2021	1	Initial release.

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