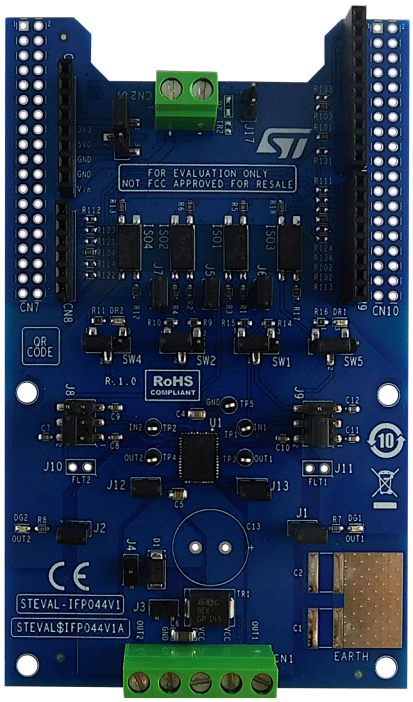
STEVAL-IFP044V1

Data brief

Industrial digital output expansion board based on IPS2050H-32 in a QFN48L package



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 protections
  - QFN48L 8x6 mm 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
- Compatible with STM32 Nucleo development boards
- Equipped with Arduino UNO R3 connectors
- CE certified
- RoHS and China RoHS compliant
- Not FCC approved for resale

Product summary	
Industrial digital output expansion board based on IPS2050H-32	STEVAL-IFP044V1
Dual high-side smart power solid state relay	IPS2050HQ-32
Software expansion for STM32Cube driving industrial digital output based on IPS	X-CUBE-IPS
Applications	Programmable Logic Controllers

Description

The STEVAL-IFP044V1 is an industrial digital output expansion board. It 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 STEVAL-IFP044V1 can interface 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 STEVAL-IFP044V1 expansion boards.

As an example, a system with four STEVAL-IFP044V1 expansion boards allows you to evaluate an eight-channel digital output module with 5.7 A (max.) capability each.

1 Schematic diagrams

Figure 1. STEVAL-IFP044V1 circuit schematic (1 of 2)

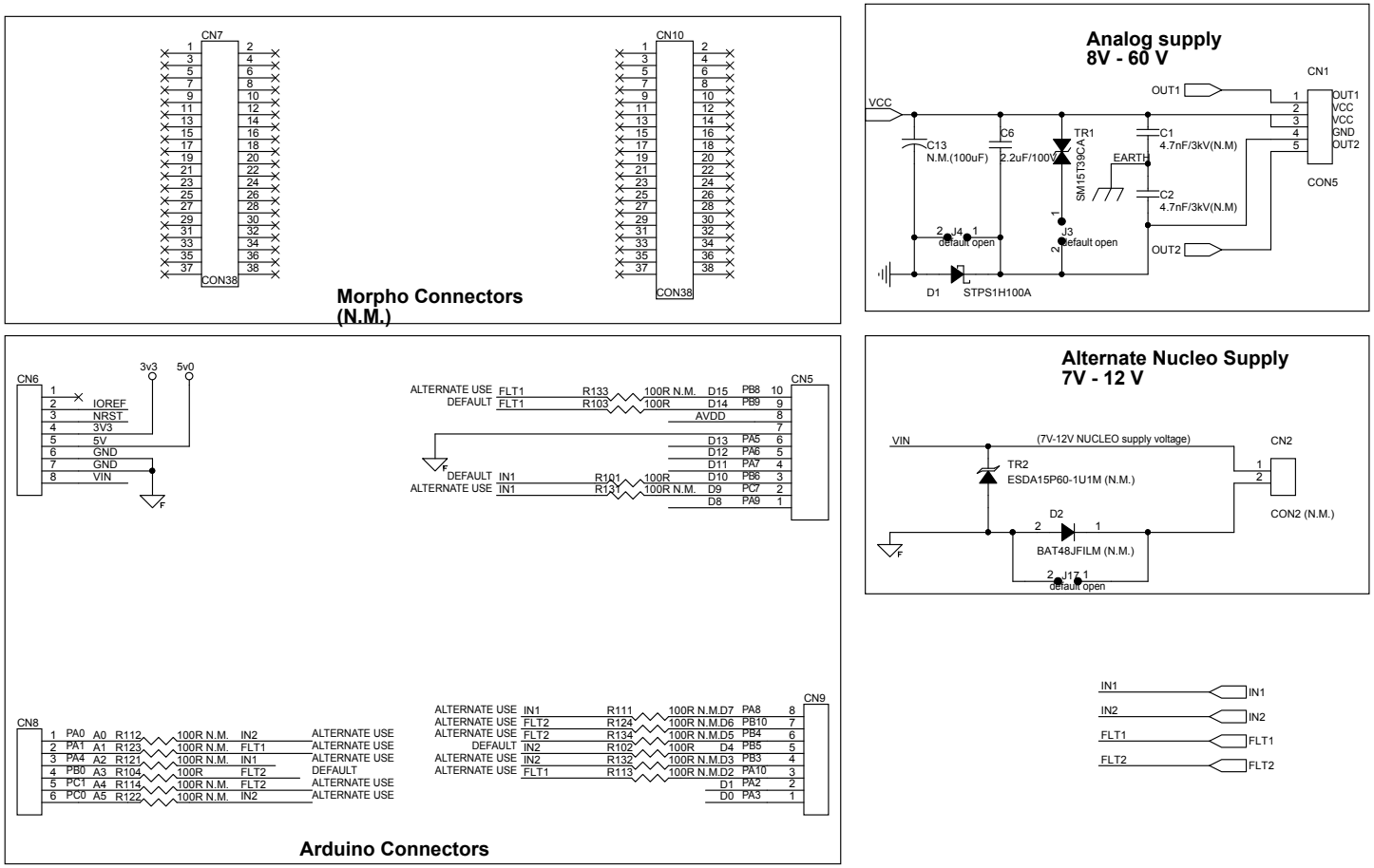
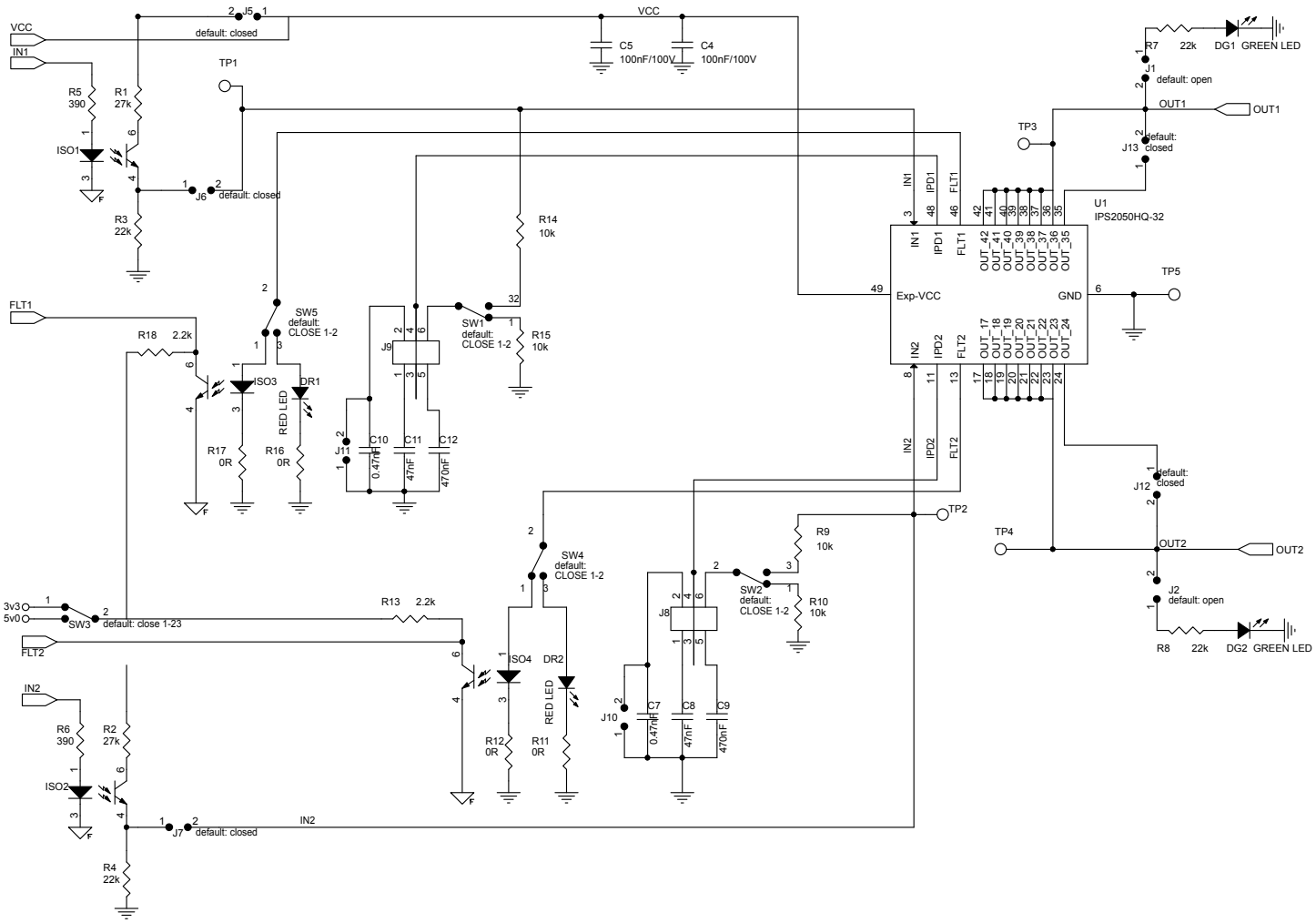


Figure 2. **STEVAL-IFP044V1 circuit schematic (2 of 2)**



2 Board versions

Table 1. STEVAL-IFP044V1 versions

PCB version	Schematic diagrams	Bill of materials
STEVAL$IFP044V1A (1)	STEVAL$IFP044V1A schematic diagrams	STEVAL$IFP044V1A bill of materials

1. *This code identifies the STEVAL-IFP044V1 evaluation board first version. It is printed on the board PCB.*

Revision history

Table 2. **Document revision history**

Date	Revision	Changes
29-Aug-2022	1	Initial release.

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