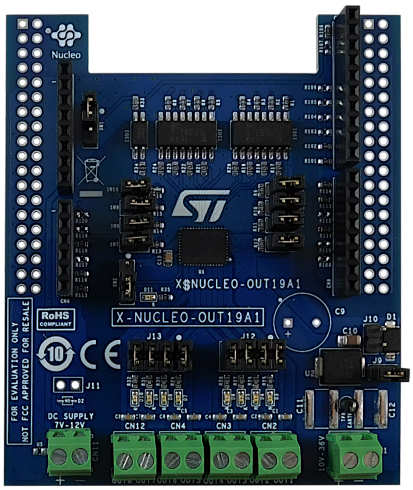
X-NUCLEO-OUT19A1

Data brief

Industrial digital output expansion board based on IPS8160HQ-1 for STM32 Nucleo



STM32 Nucleo

Features

- Based on the IPS8160HQ-1 octal high-side switch, which features:
  - Operating range 10.5 to 36 V
  - Low power dissipation ($R_{ON(MAX)}$ = 280 mΩ)
  - Fast decay for inductive loads
  - Under-voltage lock-out
  - Overload and over-temperature protections
  - Loss of ground protection
  - QFN48L 8x6 mm package
- Application board voltage operating range: 15 to 33 V
- Extended voltage operating range (J9 open) up to 36 V
- Operating current: up to 1 A per channel
- Green LEDs for outputs on/off status (J12 and J13 close 1-2, 3-4, 5-6, 7-8)
- Red LED for common overheating diagnostic (SW2 close 2-3)
- 3 kV galvanic isolation
- Supply rail reverse polarity protection
- Compatible with STM32 Nucleo development boards
- Equipped with Arduino® UNO R3 connectors
- RoHS and China RoHS compliant
- CE certified

Product summary	
Industrial digital output expansion board based on IPS8160HQ-1 for STM32 Nucleo	X-NUCLEO-OUT19A1
Software expansion for STM32Cube driving industrial digital output based on intelligent power switch (IPS)	X-CUBE-IPS
Octal high-side smart power solid-state relay	IPS8160HQ-1
Applications	Programmable Logic Controllers

Description

The X-NUCLEO-OUT19A1 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 IPS8160HQ-1 octal high-side smart power solid state relay, in a digital output module connected to 1 A industrial loads.

The X-NUCLEO-OUT19A1 interfaces with the microcontroller on the STM32 Nucleo via 3 kV and 3.7 kV optocouplers driven by GPIO pins and Arduino® R3 connectors.

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

It is also possible to evaluate a system composed of a X-NUCLEO-OUT19A1 stacked on other expansion boards.

1 Schematic diagrams

Figure 1. **X-NUCLEO-OUT19A1 circuit schematic (1 of 2)**

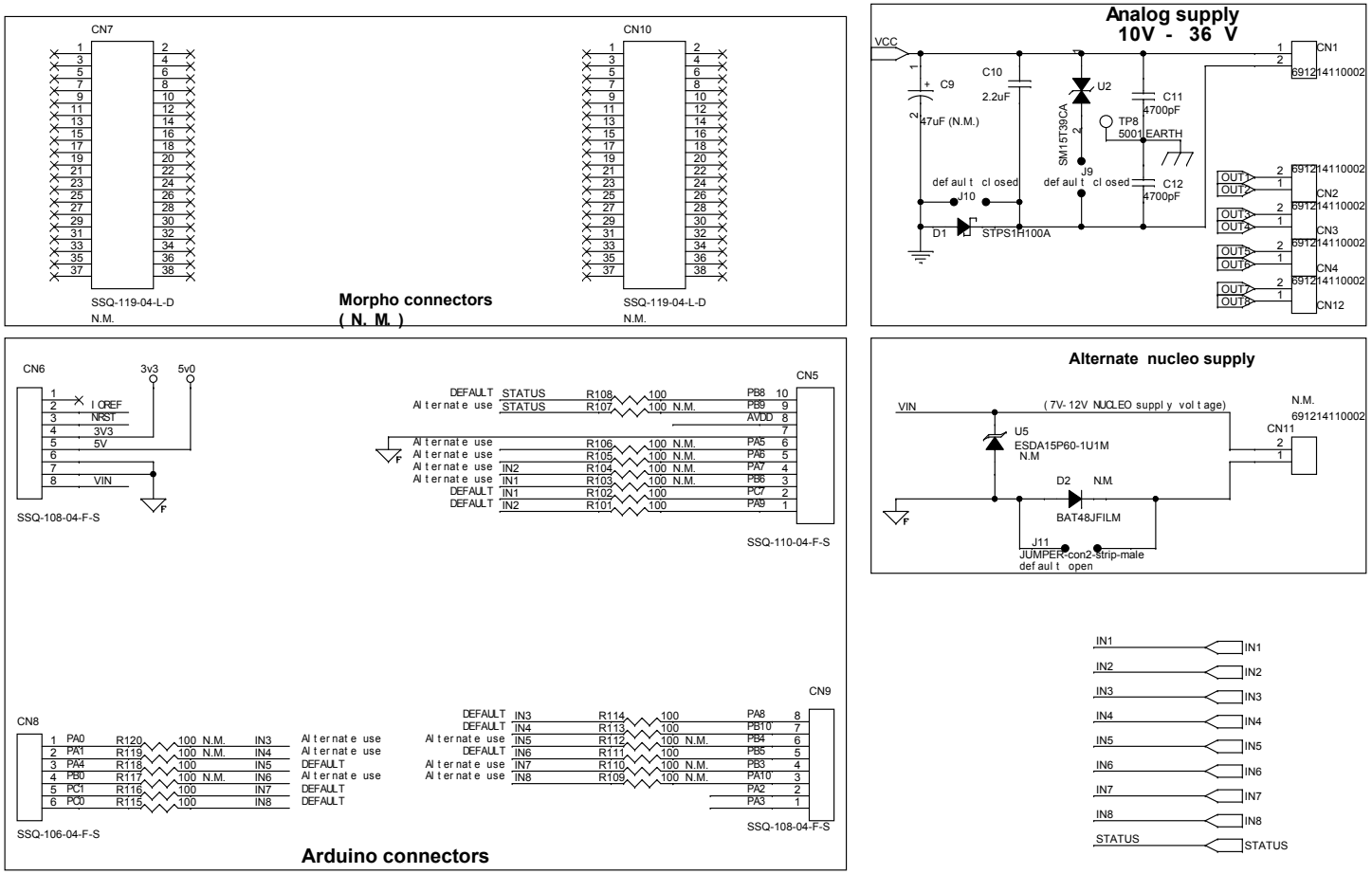
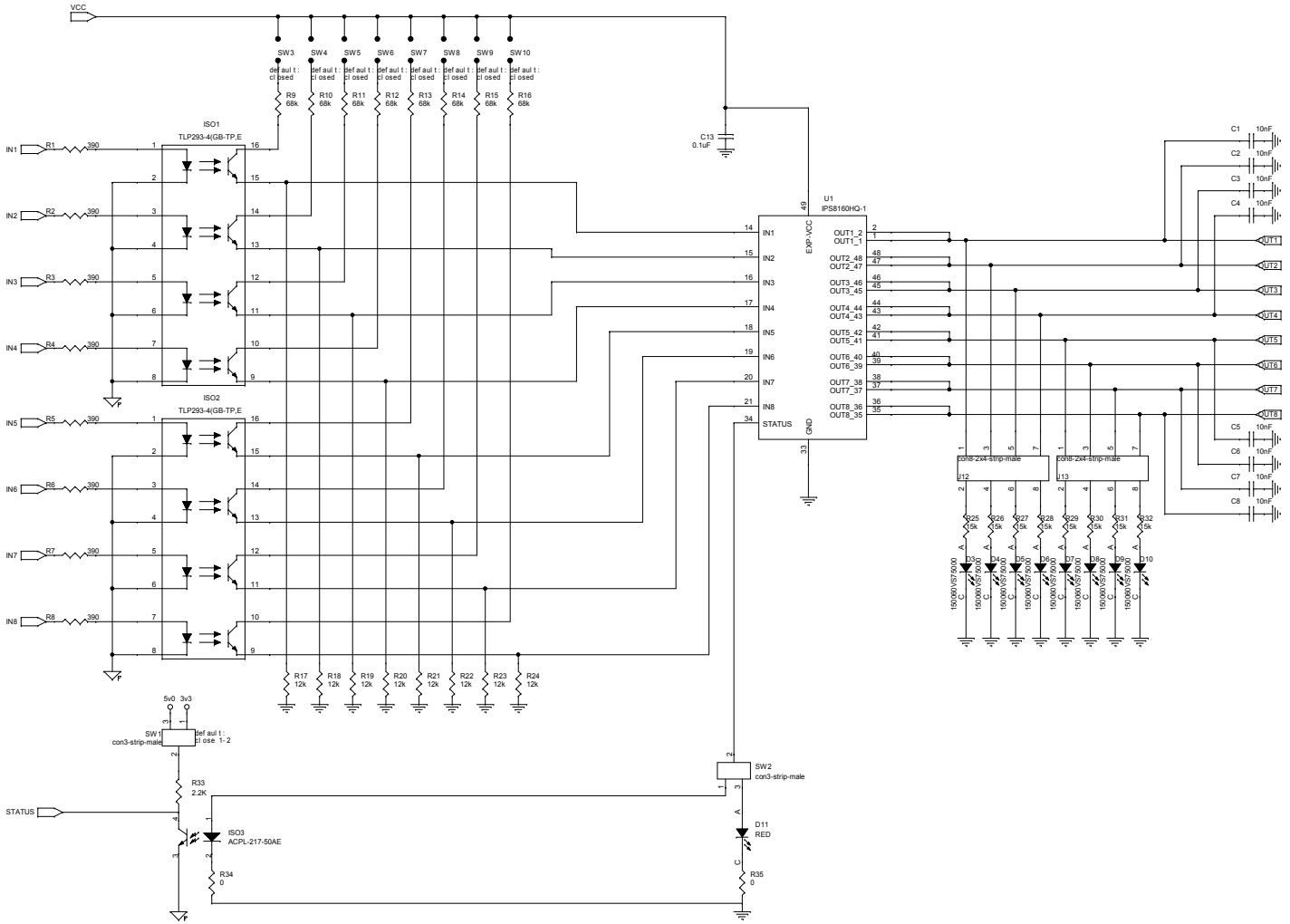


Figure 2. **X-NUCLEO-OUT19A1 circuit schematic (2 of 2)**



2 Board versions

Table 1. **X-NUCLEO-OUT19A1 versions**

Finished good	Schematic diagrams	Bill of materials
X$NUCLEO-OUT19A1 (1)	X$NUCLEO-OUT19A1 schematic diagrams	X$NUCLEO-OUT19A1 bill of materials

1. *This code identifies the X-NUCLEO-OUT19A1 evaluation board first version.*

Revision history

Table 2. **Document revision history**

Date	Revision	Changes
25-Oct-2022	1	Initial release.