Features

• Based on the ISO808A-1 octal high-side switch, which features:
  – Operating range 9.2 to 36 V
  – Low power dissipation ($R_{ON(MAX)} = 260 \text{ m\Omega}$)
  – Process side operating current: up to 1.0 A per channel
  – Embedded 2.5k V$_{RMS}$ galvanic isolation
  – PGOOD ($V_{CC}$ voltage level alarm signalization)
  – 20 MHz SPI with daisy chaining
  – Fast decay for inductive loads
  – Undervoltage lock-out
  – Overload and overtemperature protections
  – Loss of ground protection
  – TFQFPN32 package

• Application board process side operating range: 10 (J10 open) to 33 V (J9 closed)
• Extended operating range of process side from 9.2 (J10 closed) up to 36 V (J9 open)
• Application board logic side operating voltage 3.3 to 5 V
• Green LEDs for outputs on/off status (J6 and J7 close 1-2, 3-4, 5-6, 7-8)
• Red LED for common overheating and communication error diagnostic (J3 close 1-2)
• Red LED for PGOOD signalization (J3 close 3-4)
• Yellow LED for output enable status signalization (J3 close 5-6)
• Process and logic supply rails reverse polarity protections
• Compatible with STM32 Nucleo development boards
• Equipped with Arduino® UNO R3 connectors
• RoHS and China RoHS compliant
• CE certified

Description

The STEVAL-IFP048V1 is an industrial digital output expansion board based on ISO808A-1 and compatible with STM32 Nucleo.

It provides a powerful and flexible environment for the evaluation of the driving and diagnostic capabilities of the ISO808A-1 octal high-side smart power solid state relay, with embedded galvanic isolation and 20MHz SPI control interface, in a digital output module connected to 1.0 A industrial loads.

The STEVAL-IFP048V1 directly interfaces with the microcontroller on the STM32 Nucleo driven by GPIO pins and Arduino® R3 connectors, ensuring connectivity with either a NUCLEO-F401RE or a NUCLEO-G431RB development board.

The galvanic isolation between the microcontroller and the process stage is guaranteed by the ISO808A-1.

It is also possible to evaluate a 16 channel output system enabling the daisy chaining feature on two STEVAL-IFP048V1 stacked expansion boards.
Figure 1. STEVAL-IFP048V1 circuit schematic (1 of 2)

Analog supply

10-36 V

EXT_Vid

ISO808AQTR-1 direct supply voltage:
- set to max 3.3 V when STEVAL-IFP048V1 is used with NUCLEO board
- can be set to max 5.5 V when STEVAL-IFP048V1 is used stand-alone

(7-12 V NUCLEO supply voltage)

VCC

OUT1

OUT2

OUT3

OUT4

OUT5

OUT6

OUT7

OUT8

OUT9

OUT10

OUT11

OUT12

Vin

SPI_CLK

SPI_MISO

SPI_MOSI

SPI_SSI

PGOOD

DaisyChain

STATUS

OUT_EN

DaisyChain

STATUS

OUT_EN

Arduino connectors

Morpho connectors

(Not mounted)
Figure 2. STEVAL-IFP048V1 circuit schematic (2 of 2)
2 Board versions

Table 1. STEVAL-IFP048V1 versions

<table>
<thead>
<tr>
<th>PCB version</th>
<th>Schematic diagrams</th>
<th>Bill of materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEVAL$IFP048V1A(1)</td>
<td>STEVAL$IFP048V1A schematic diagrams</td>
<td>STEVAL$IFP048V1A bill of materials</td>
</tr>
</tbody>
</table>

1. This code identifies the STEVAL-IFP048V1 evaluation board first version. It is printed on the board PCB.
### Revision history

**Table 2. Document revision history**

<table>
<thead>
<tr>
<th>Date</th>
<th>Revision</th>
<th>Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>13-Sep-2023</td>
<td>1</td>
<td>Initial release.</td>
</tr>
</tbody>
</table>