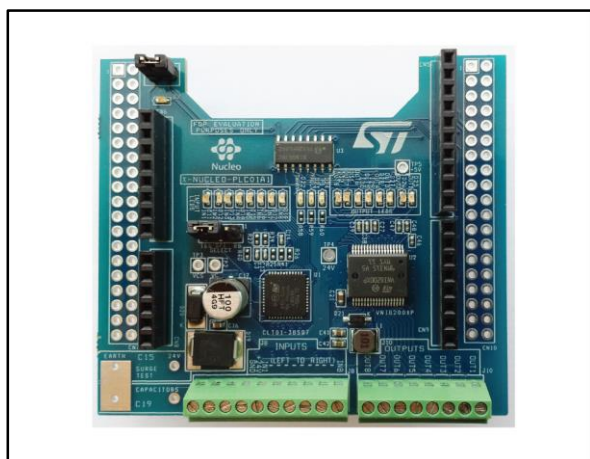


Industrial input/output expansion board based on VNI8200XP and CLT01-38SQ7 for STM32 Nucleo



Features

- Enables a PLC (Programmable Logic Controller) function subset on STM32 Nucleo
- 8x input with CLT01-38SQ7 high-speed protected digital termination array
- 8x output with VNI8200XP high-side solid state relay
- Status LEDs: Fault, Thermal, Power
- IO (input/output) activity LEDs 24 V power supply
- Free comprehensive development firmware library and example compatible with STM32Cube firmware
- Compatible with STM32 Nucleo boards
- Compatible with Arduino UNO R3 connector
- RoHS compliant

Description

The X-NUCLEO-PLC01A1 is an industrial input/output evaluation board which expands the STM32 Nucleo board functionality with a PLC (programmable logic controller) function subset. It is compatible with the Arduino UNO R3 connector layout and is designed around VNI8200XP (solid state relay) and CLT01-38SQ7 (octal digital termination array). The X-NUCLEO-PLC01A1 interfaces with the STM32 MCU via the SPI peripheral. Moreover, it is equipped with a set of diagnostic and activity LEDs to facilitate application debugging. It can accept other STM32 plug-on expansion boards to further extend the STM32 Nucleo board functionality. The X-NUCLEO-PLC01A1 allows the rapid evaluation of the ICs on board performing a basic set of PLC operations in conjunction with the X-CUBE-PLC1 software package. X-NUCLEO-PLC01A1 is not intended to evaluate the single devices at their full specifications. VNI8200XP includes advanced protection and fault detection features. CLT01-38SQ7 provides protection and isolation in industrial operating conditions as well as an 'energy-less' status indication for each of the eight input channels, featuring minimal power consumption; it is designed for situations that are required to pass the IEC61000-4-2 8 kV and 15 kV test standards. Both the CLT01-38SQ7 and the VNI8200XP are designed to meet the most common industrial requirements (i.e. IEC61000-4-2, IEC61000-4-4, IEC61000-4-5 or IEC61131-2); to evaluate them further, refer to the single-product evaluation boards, available at www.st.com.

1 Schematic diagrams

Figure 1: X-NUCLEO-PLC01A1 schematic, part 1

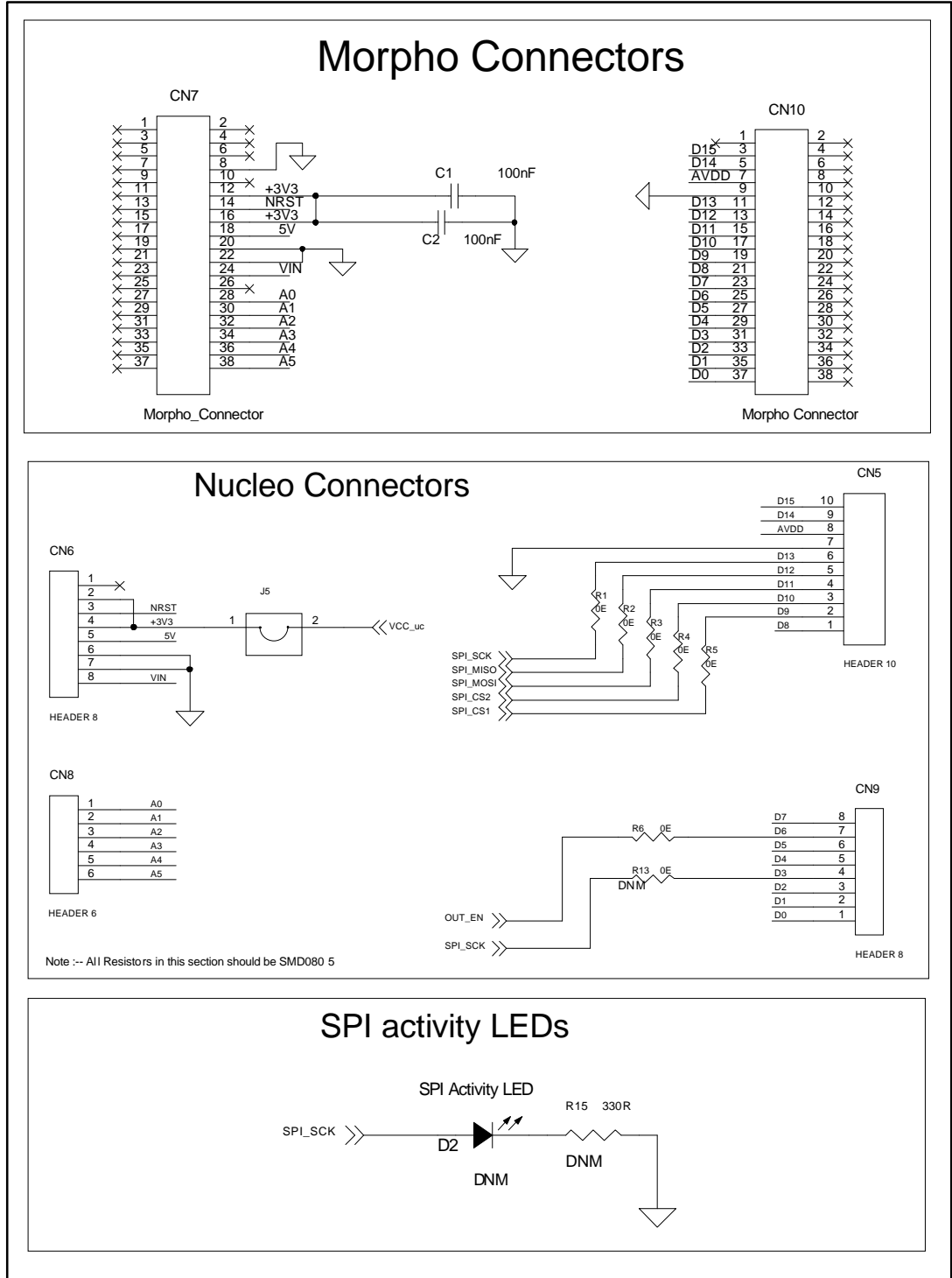


Figure 2: X-NUCLEO-PLC01A1 schematic, part 2

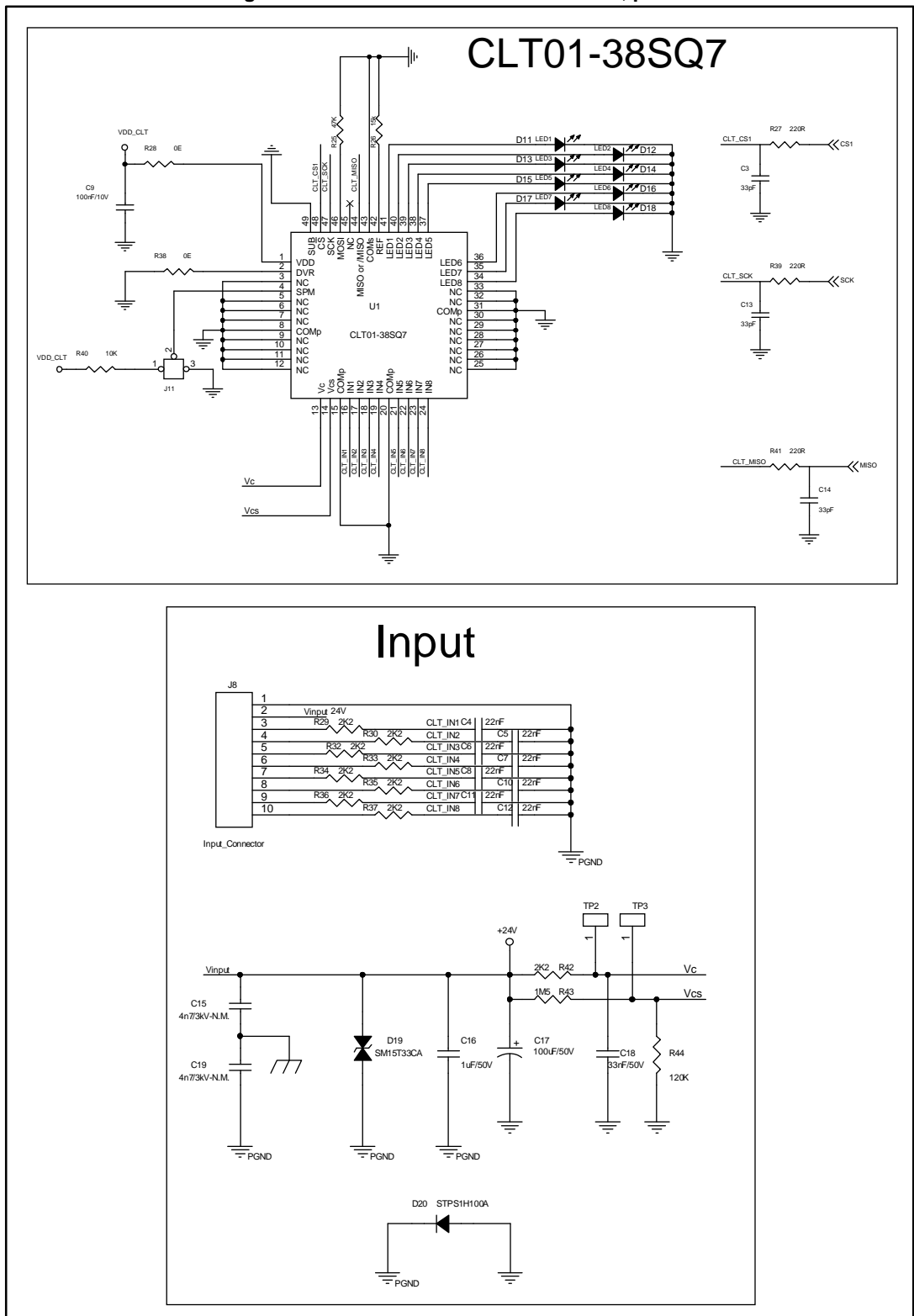


Figure 3: X-NUCLEO-PLC01A1 schematic, part 3

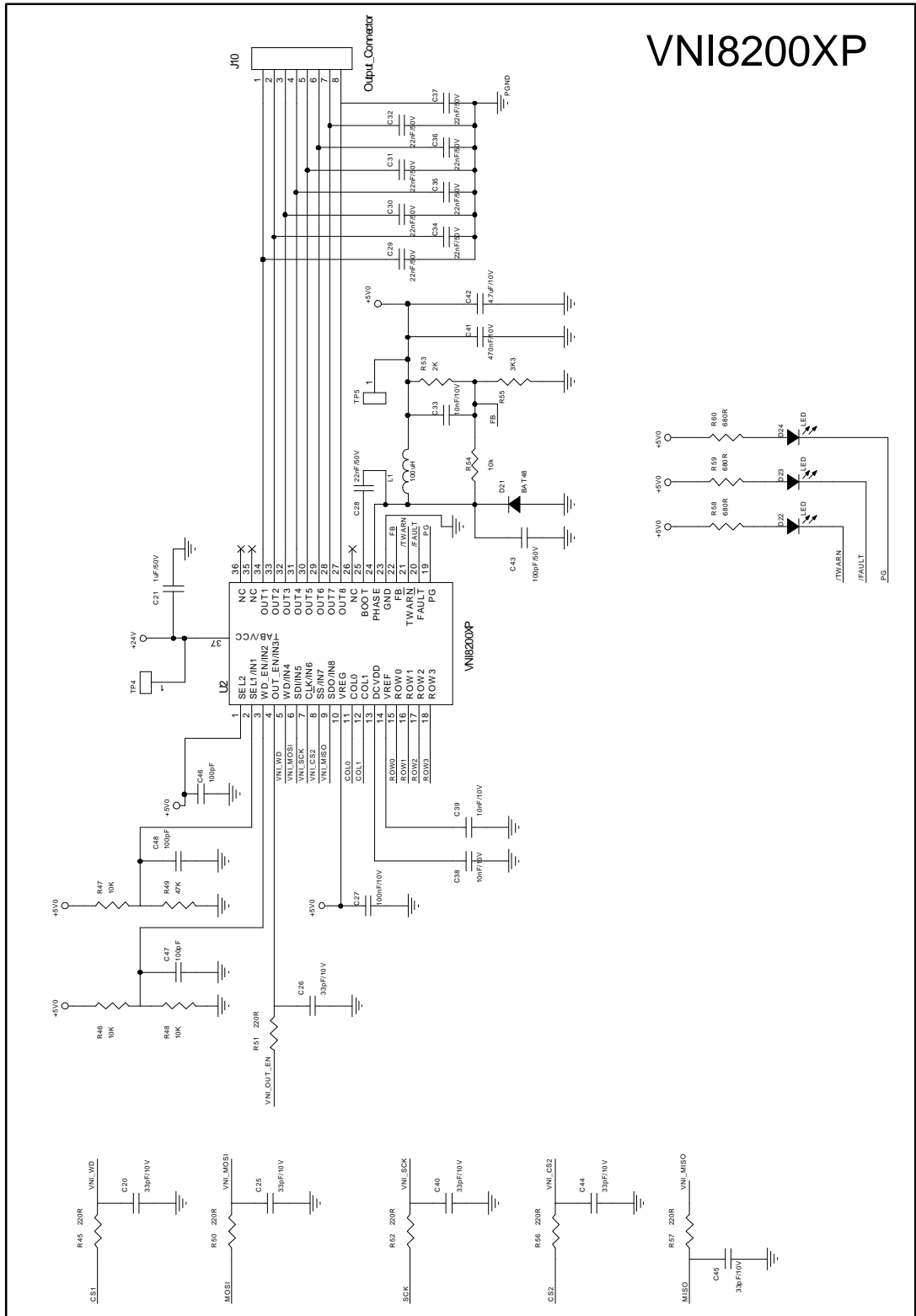
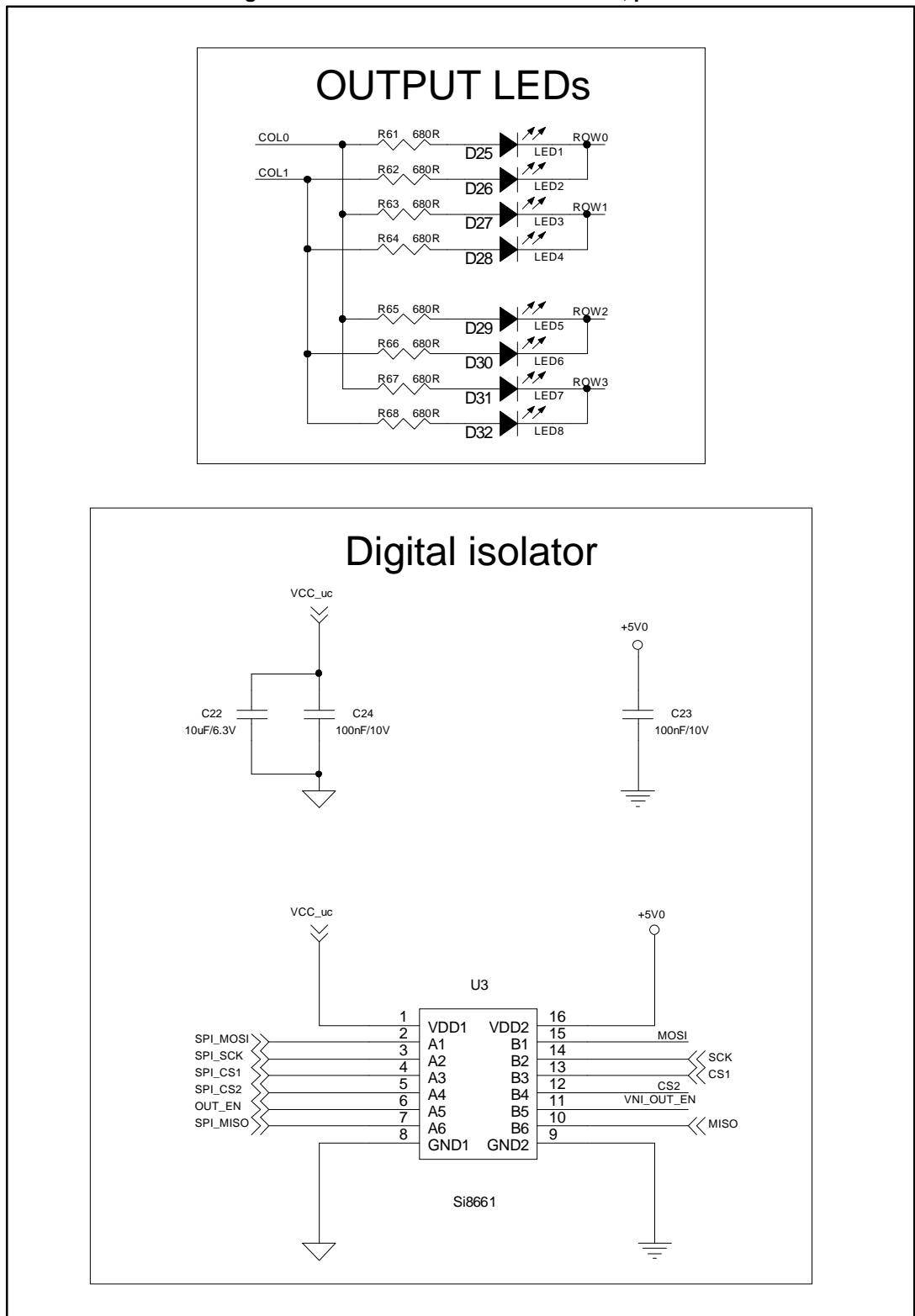


Figure 4: X-NUCLEO-PLC01A1 schematic, part 4



2 Revision history

Table 1: Document revision history

Date	Version	Changes
17-Jul-2015	1	Initial release.

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