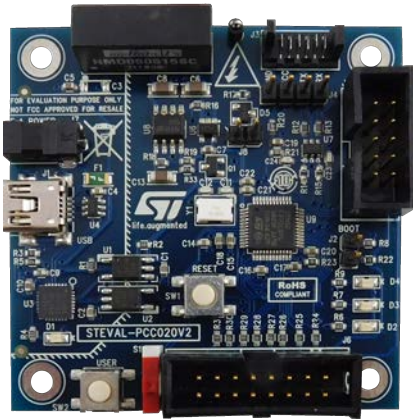


## Interface board USB to I2C/UART to be used with STNRG digital power controller products (STNRG01x and STone)



### Features

- Bidirectional communication between PC (USB) and STone/STNRG01x controller chip
- Self-powered from the USB line
- Electric isolation on USB and on board's devices
- On-board VCC generation for chip NVM/Flash programming
- 1x I2C bus running at 400 kHz
- 1x UART bus running up to 115200bps
- UART and I2C bus mixed together on the same interface
- Dedicated connector for autonomous programming support
- Onboard firmware upgrade through USB port
- RoHS compliant

### Description

The STEVAL-PCC020V2 is a board with the purpose to interface a Windows® based PC with HVDPS products such as STNRG01x or STone. It is basically a bidirectional bridge between USB and I<sup>2</sup>C/UART buses.

The board is self-supplied through the 5 V coming from the USB port. An isolated DC/DC module is available in order to provide the correct supplies to the remaining devices. The board is also able to provide to the target device the requested VCC voltage in order to program the NVM or Flash parameters.

Communication between the interface board and the PC is managed by a standard USB to serial bridge, in this way the USB connection is converted into a virtual COM port.

UART RX and TX signals are then isolated thanks to opto-couplers and connected to an onboard STM32 MCU keeping the USB port and the remaining devices isolated from the mains.

The microcontroller is in charge of making the bridge between host UART and Target UART/I<sup>2</sup>C buses and protocols. (Dedicated GUIs are also available to handle STNRG01x or STone specific protocols and features).

The board also offers a dedicated connector able to support autonomous programming for mass production purposes (e.g. updating the NVM content using automation tools instead of a standard USB connection).

#### Product summary

Interface board USB to I2C/UART to be used with STNRG011 digital power controller products (STNRG011 and STone)	STEVAL-PCC020V2
Digital combo multi-mode PFC and time-shift LLC resonant controller	STNRG01x

# 1 Schematic diagrams

Figure 1. STEVAL-PCC020V2 board schematic (1 of 2)

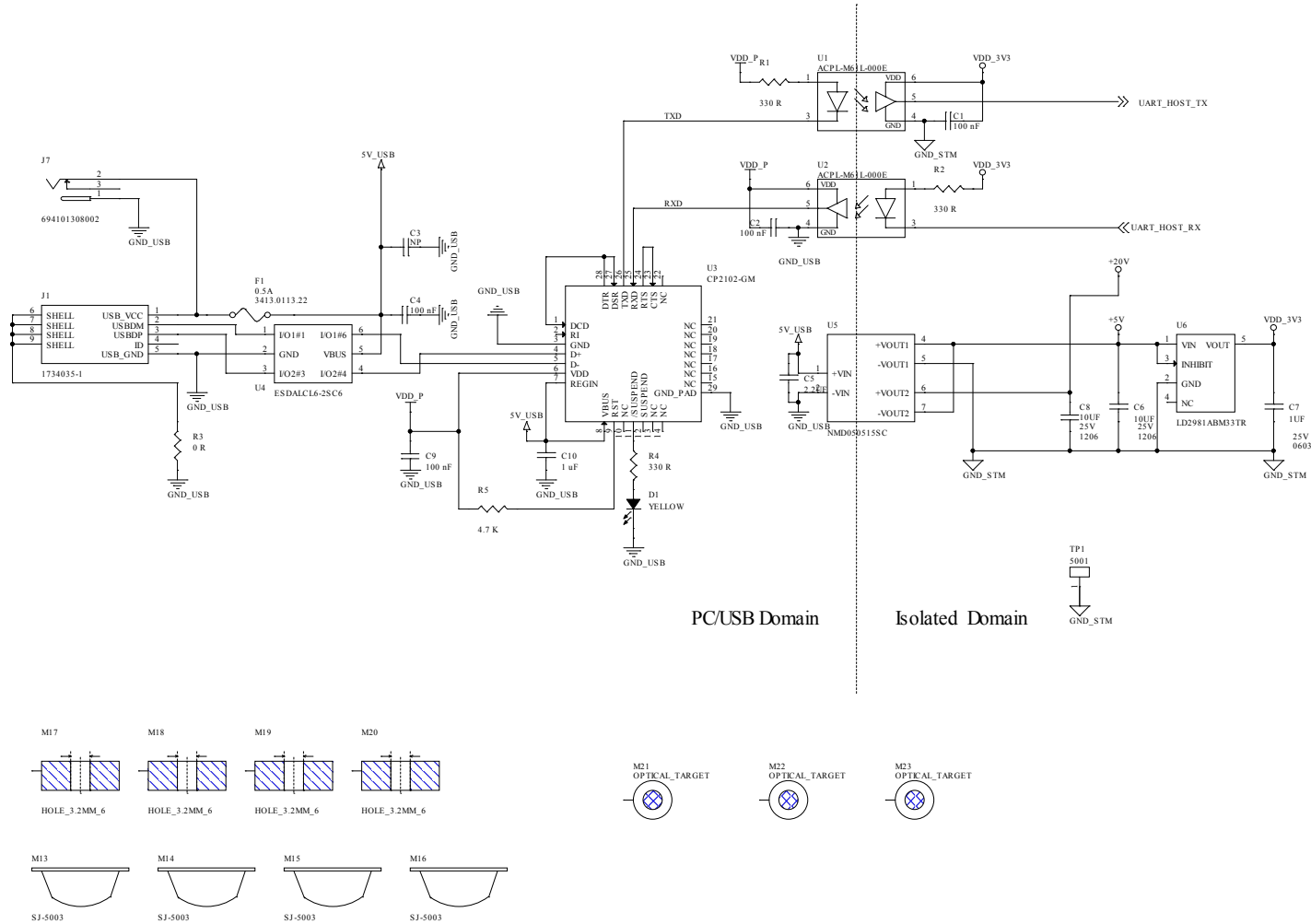
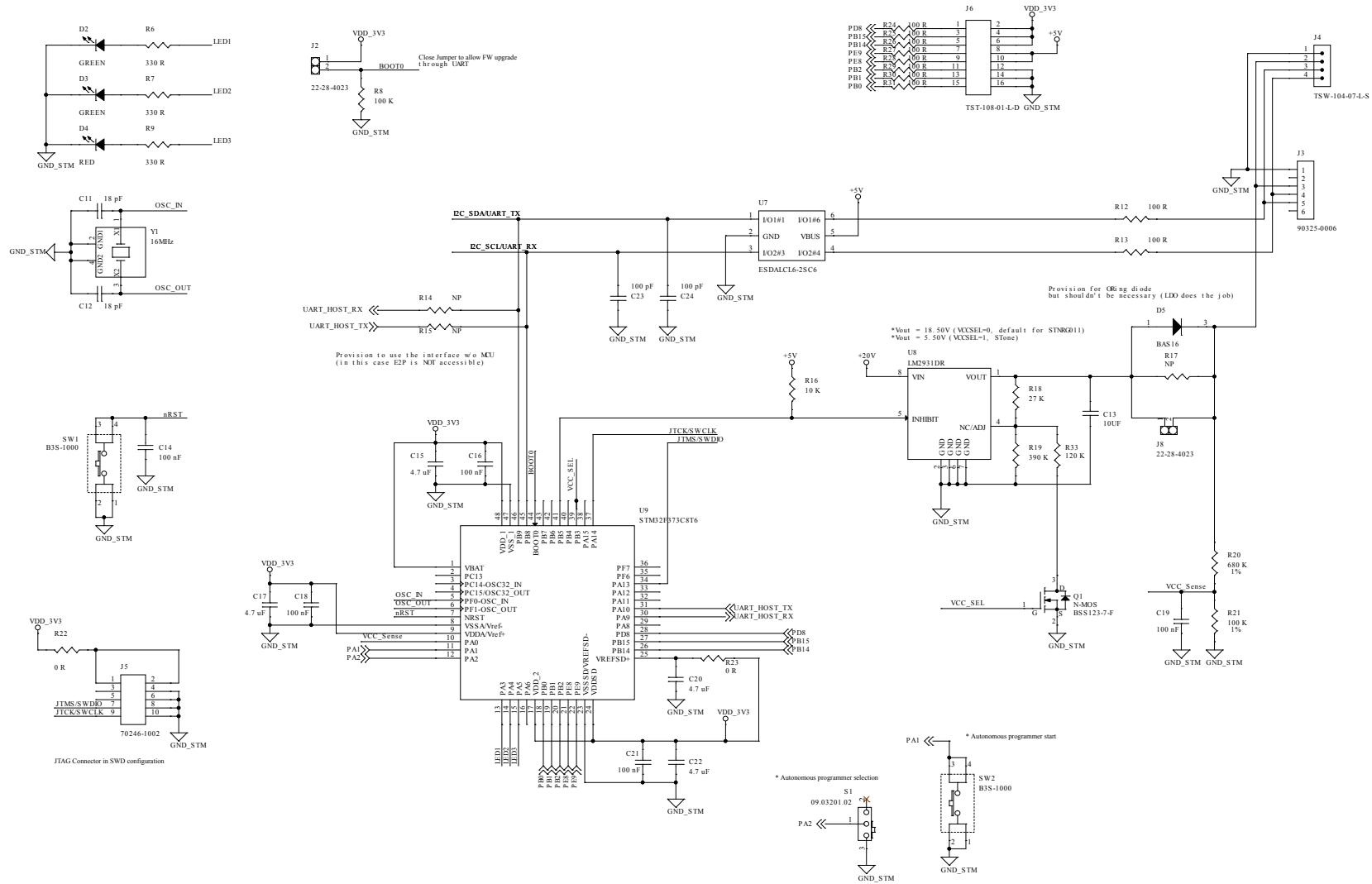


Figure 2. STEVAL-PCC020V2 board schematic (2 of 2)



## Revision history

**Table 1. Document revision history**

Date	Version	Changes
10-Dec-2020	1	Initial release.

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