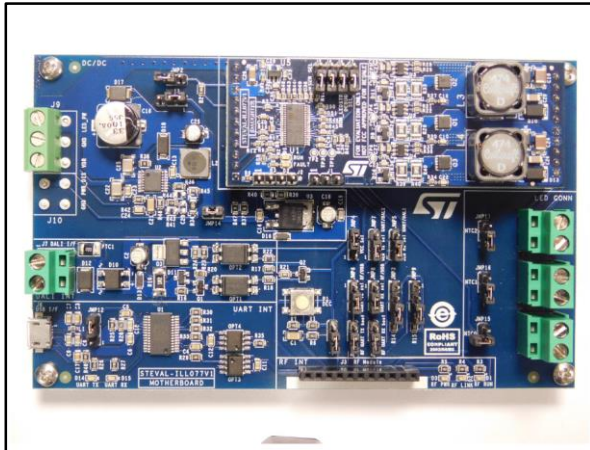


60 W, digital 3-LED channel evaluation board with STNRG388A-controlled current regulation and dimming

Data brief



Features

- Based on the STNRG388A digital controller
- Up to 3 LED channels
- Maximum total output power: 60 W
- Maximum single LED channel output power: 30 W
- Adjustable LED channel current: 10 - 700 mA
- LED channel current setting resolution: 1 mA
- Dimming mode programmable for every LED channel (analogue or digital)
- LED channel voltage range: 6 - 44 V
- LED channel voltage estimated without the need for measurement circuitry
- LED channel current regulation (as opposed to input power supply or LED channel voltage regulation)
- Real-time fault detection and protection (e.g., short or open circuit)
- Opto-isolated DALI interface
- Opto-isolated bridge USB to serial UART interface
- Single input power supply: 48 V - 56 V
- PCB board dimensions: 135 mm x 82 mm
- RoHS compliant

Description

The STEVAL-ILL077V1 evaluation board is a complete and configurable solution able to independently manage up to 3 LED channels using the features of the STNRG388A digital controller.

The STNRG388A is a part of the STMicroelectronics STLUX product family and embeds advanced peripherals tailored to generate high resolution PWM signals (SMED). Every LED channel current is adjusted with a reverse buck converter that, via appropriate SMED peripheral configuration, can implement fixed off time and frequency fold back control techniques, for analogue (10 - 700 mA current range) and digital (50 - 700 mA current range) dimming modes, respectively.

Current dimming can be managed via USB, using a PC GUI to send serial commands to the board, or via DALI interface to send protocol commands through the connected DALI master.

Every LED channel can be configured through the same GUI to set certain parameters like maximum LED channel voltage and current, and dimming mode.

1 Schematic diagram

Figure 1: STEVAL-ILL077V1 Daughter board circuit schematic (1 of 3)

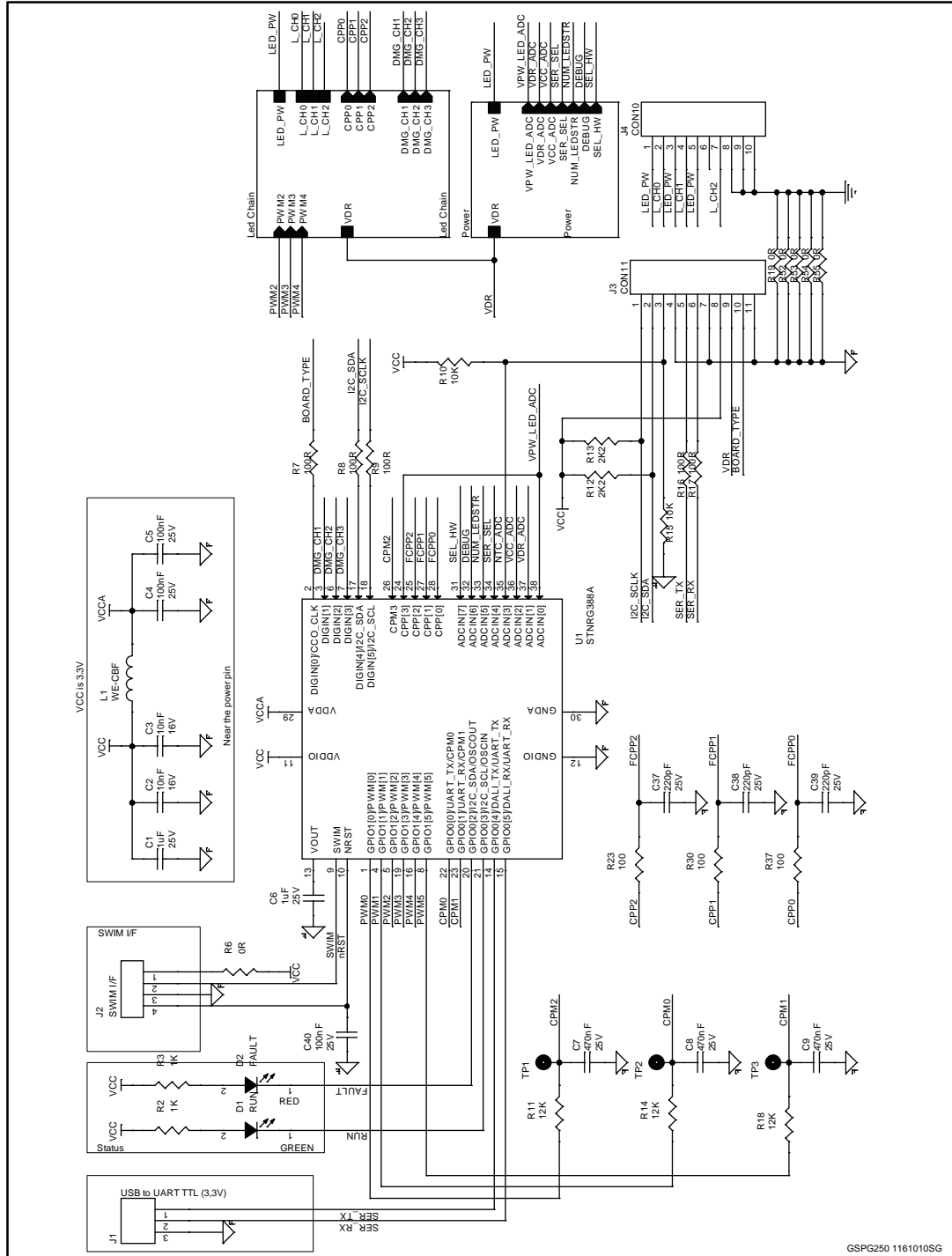


Figure 3: STEVAL-ILL077V1 Daughter board circuit schematic (3 of 3)

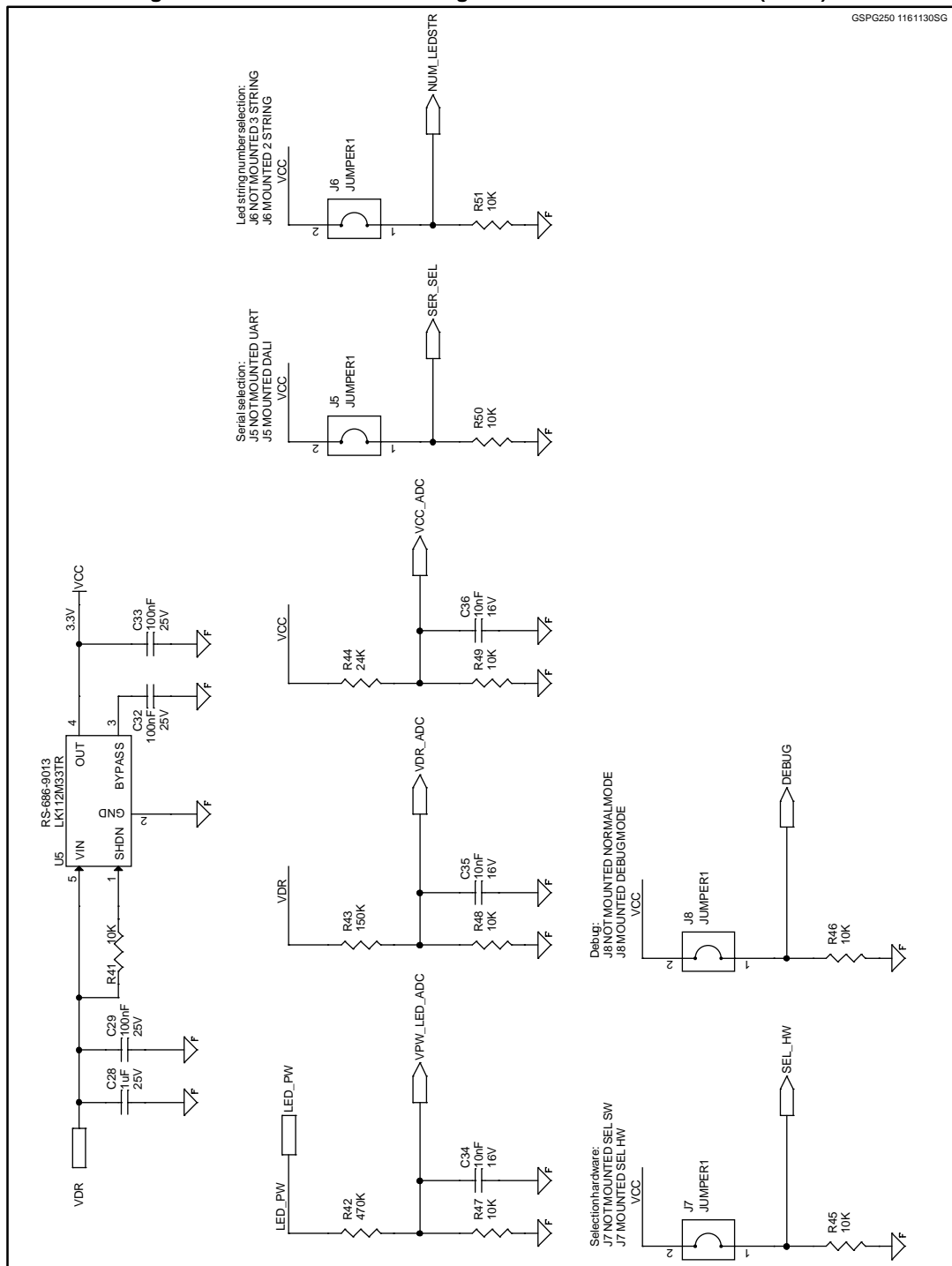


Figure 4: STEVAL-ILL077V1 Mother board circuit schematic (1 of 3)

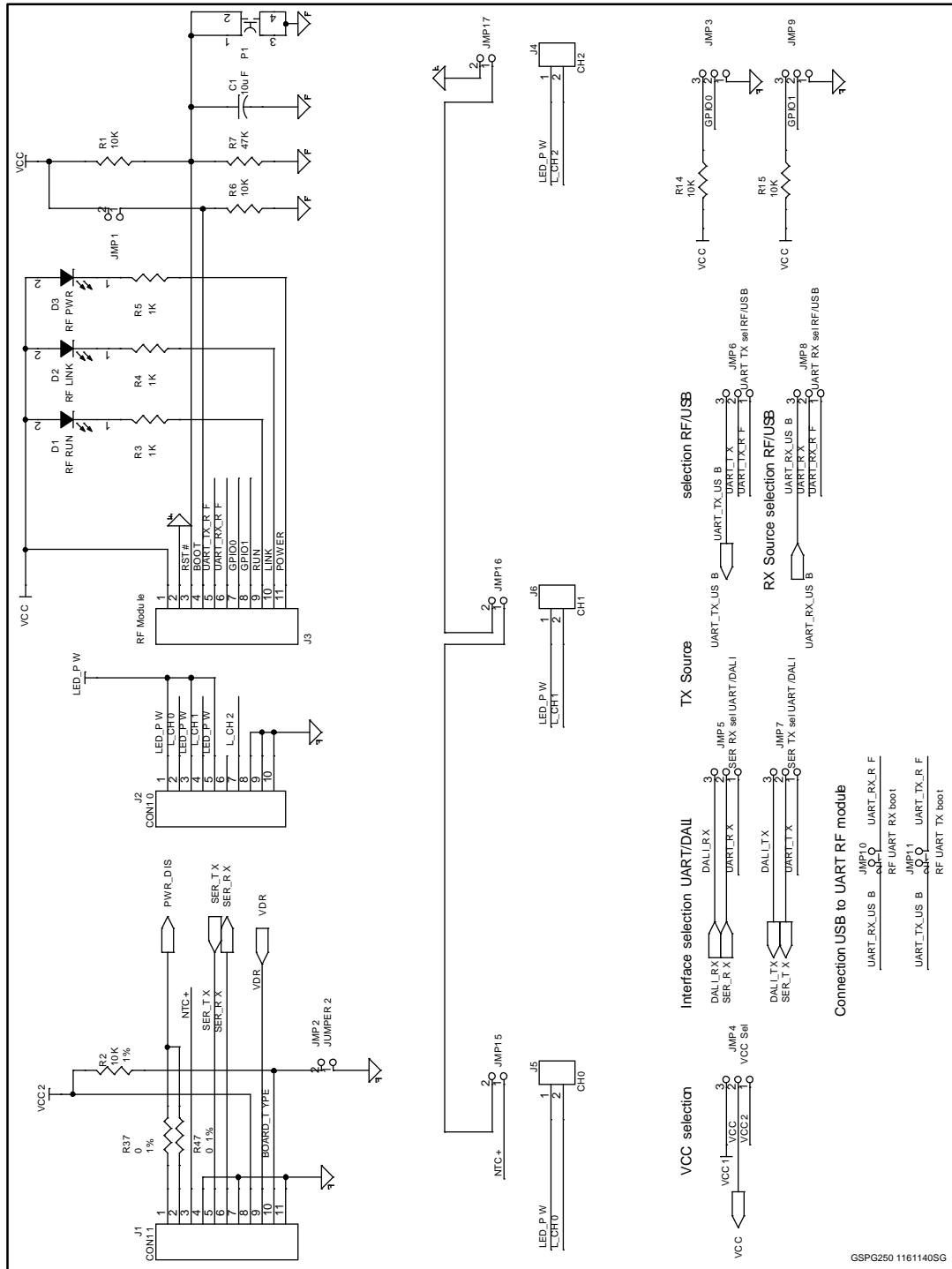
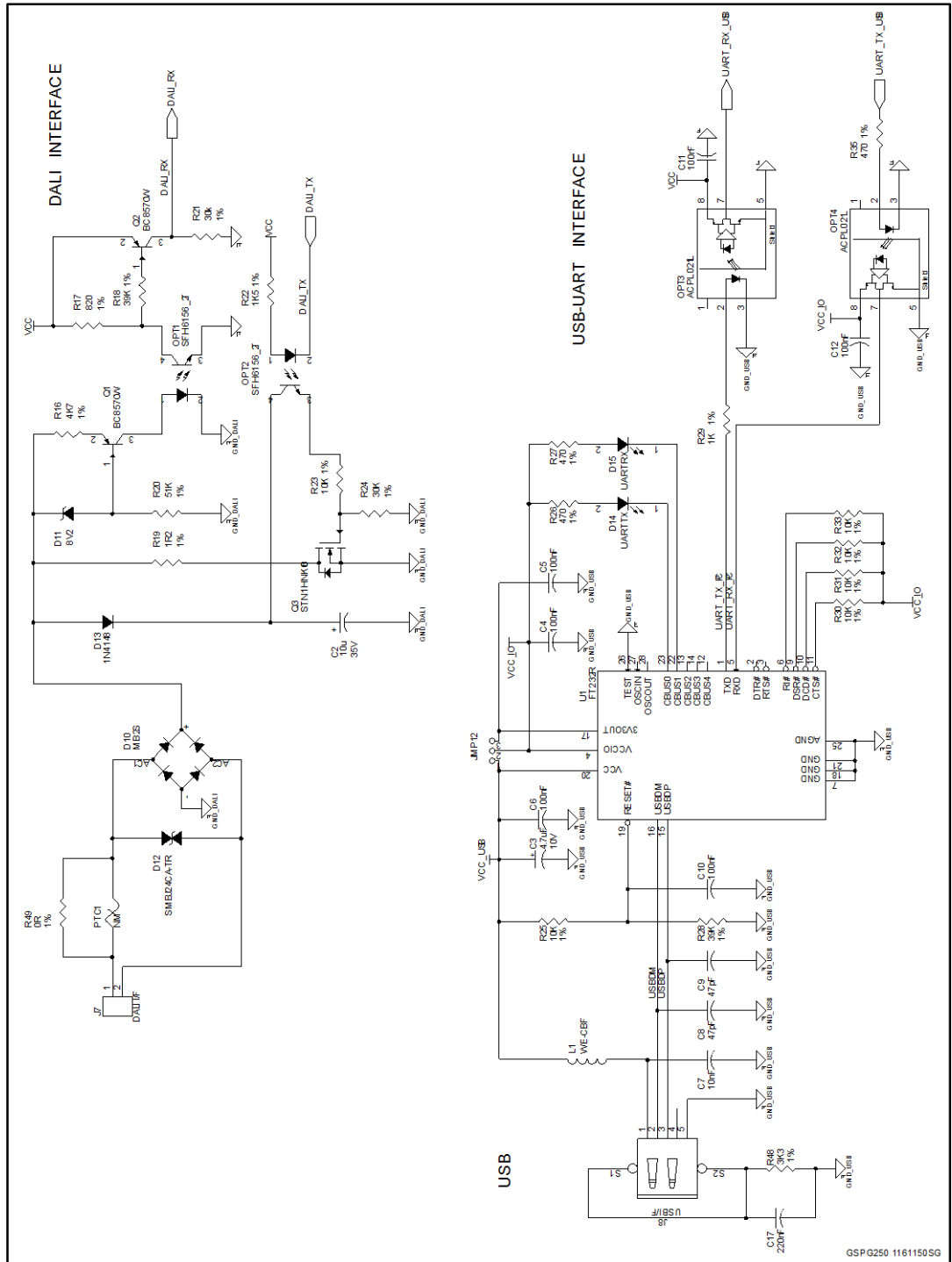


Figure 5: STEVAL-ILL077V1 Mother board circuit schematic (2 of 3)



2 Revision history

Table 1: Document revision history

Date	Version	Changes
27-Jan-2016	1	Initial release.

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