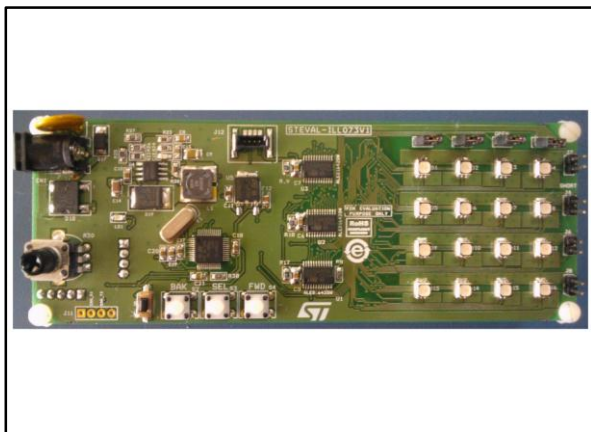


RGB LED driver for automotive lighting based on ALED1642GW and STM8A

Data brief



Features

- High brightness 4 x 4 RGB LED matrix
- Complete hardware and software package
- Various preconfigured and programmable patterns
- Open / short error simulation and real-time detection
- 6 to 28 V DC polarity-independent power supply
- GUI for advanced driver configuration
- USB-UART bridge for PC connection
- RoHS compliant

Description

The STEVAL-ILL073V1 is a high brightness, RGB LED array driver system evaluation board with local dimming and diagnostics based on the ALED1642GW independent PWM LED driver controlled through an STM8A microcontroller SPI interface.

A 16 RGB LED matrix is driven by three ALED1642GW LED drivers, one for each channel; i.e., Red, Green and Blue.

The on-board A7986A DC-DC converter, accepting standard adapter input voltages, provides the voltages and power for the overall operation of the board. The STEVAL-ILL073V1 includes a USB-UART daughterboard bridge for communication with a PC.

The evaluation board is also equipped with jumpers to simulate LED open circuit and LED short circuit faults, and a 4-pin SWIM connector to debug and to develop the STM8 microcontroller firmware.

The STEVAL-ILL073V1 has two modes of operation: in standalone mode, the evaluation board is controlled via on-board buttons and a potentiometer; in GUI mode, a Graphical User Interface is provided to represent the drivers. When connected to PC, the evaluation board enters GUI mode and the GUI has control of the board.

1 Schematic diagram

Figure 1: STEVAL-ILL073V1 circuit schematic (1/9)

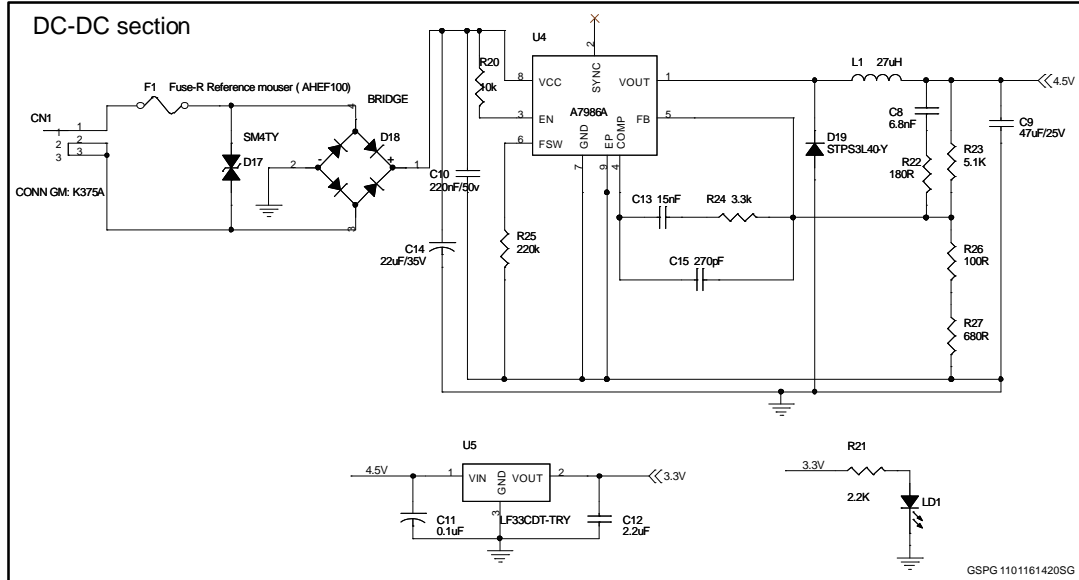


Figure 2: STEVAL-ILL073V1 circuit schematic (2/9)

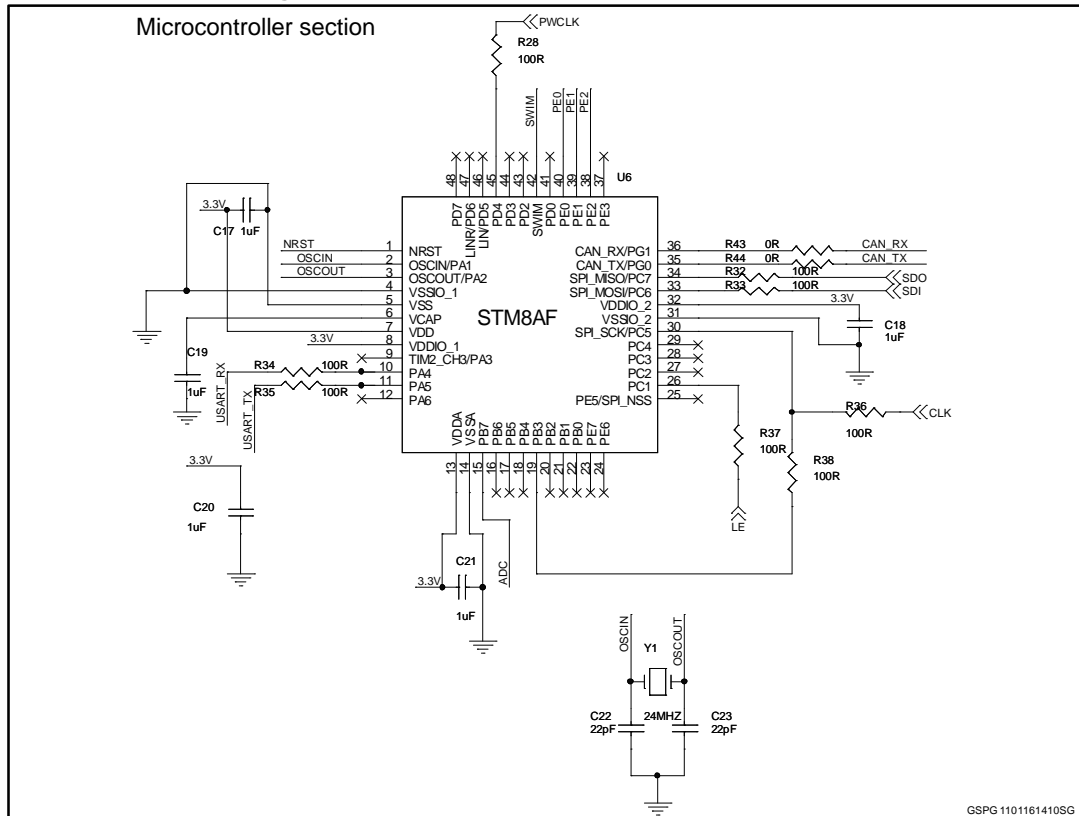


Figure 3: STEVAL-ILL073V1 circuit schematic (3/9)

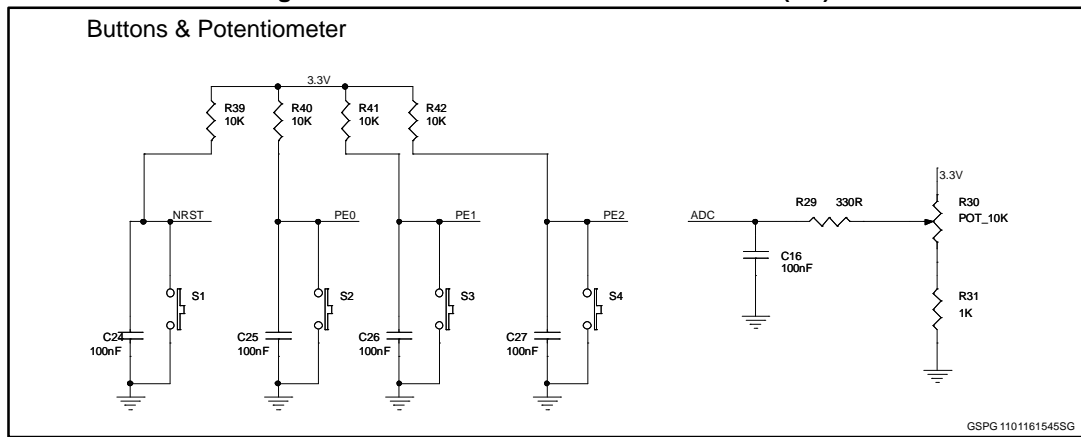


Figure 4: STEVAL-ILL073V1 circuit schematic (4/9)

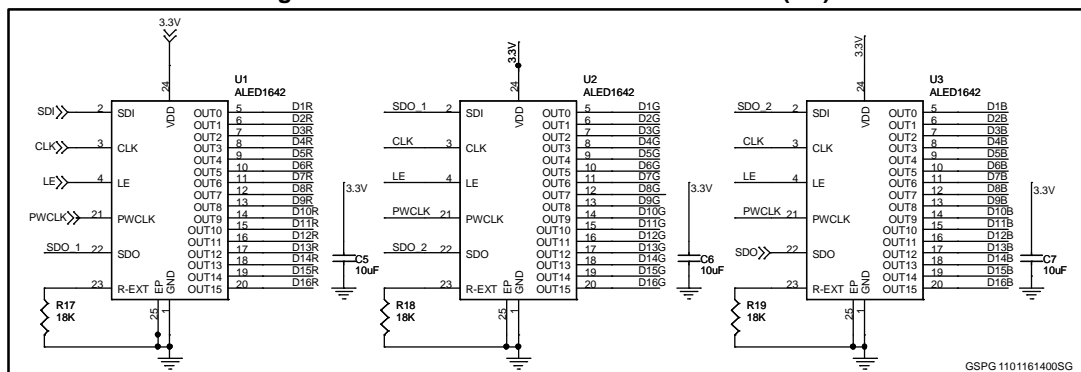


Figure 5: STEVAL-ILL073V1 circuit schematic (5/9)

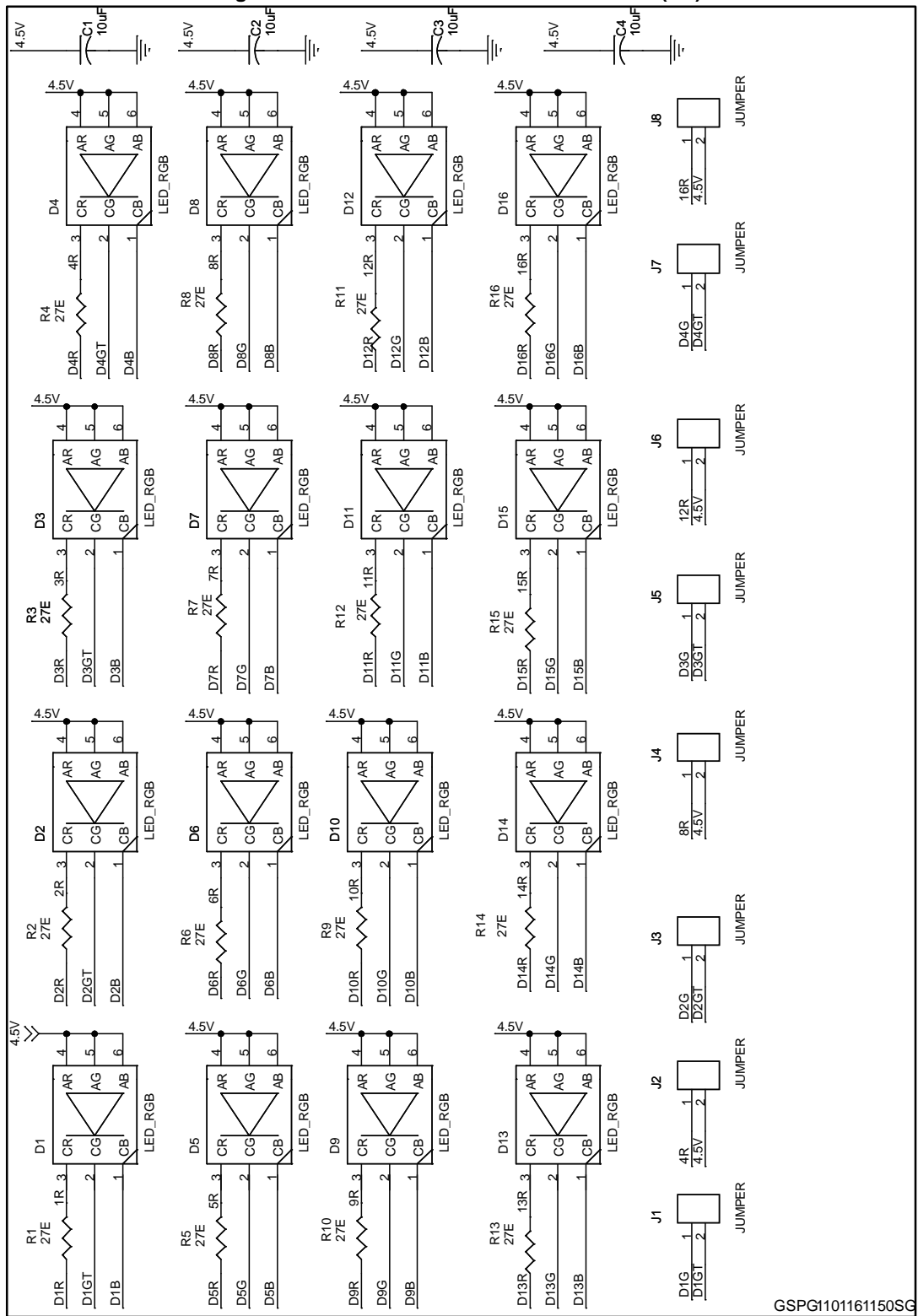


Figure 6: STEVAL-ILL073V1 circuit schematic (6/9)

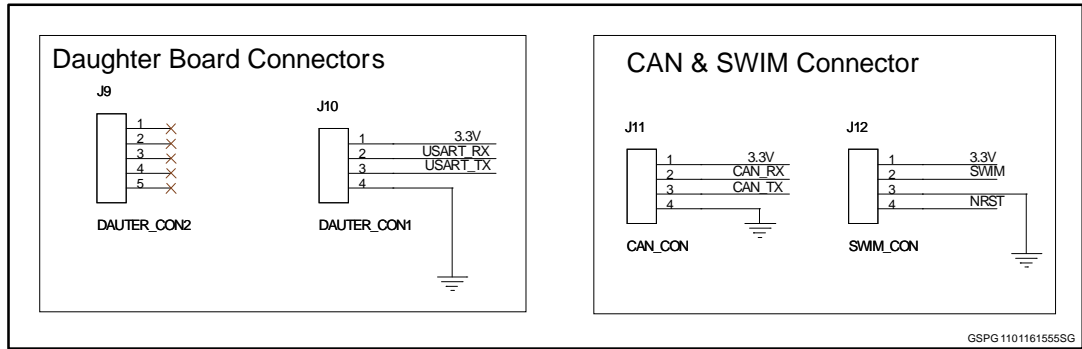


Figure 7: STEVAL-ILL073V1 circuit schematic (7/9)

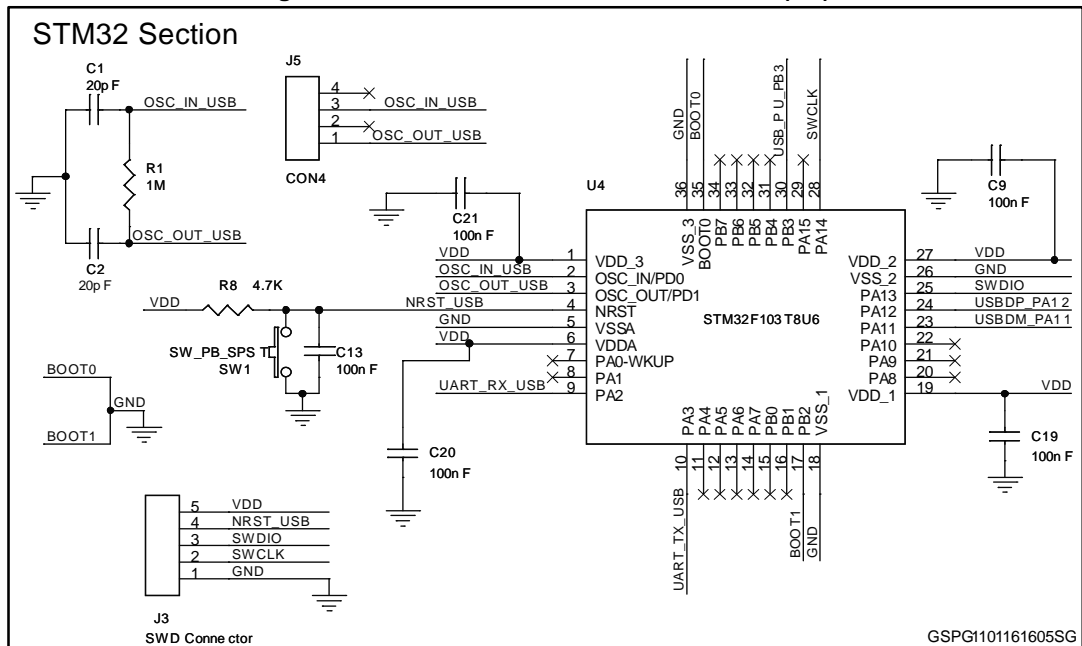


Figure 8: STEVAL-ILL073V1 circuit schematic (8/9)

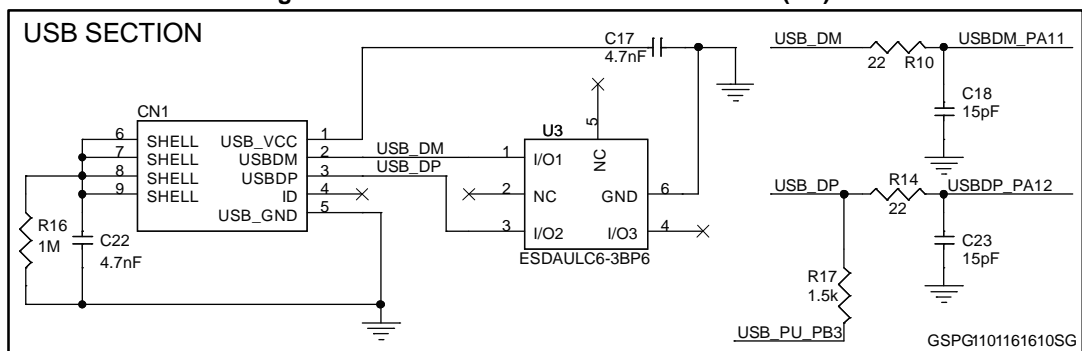
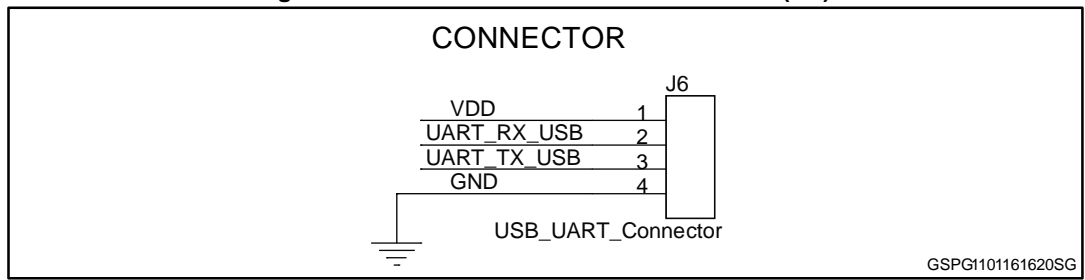


Figure 9: STEVAL-ILL073V1 circuit schematic (9/9)



2 Revision history

Table 1: Document revision history

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

IMPORTANT NOTICE – PLEASE READ CAREFULLY

STMicroelectronics NV and its subsidiaries ("ST") reserve the right to make changes, corrections, enhancements, modifications, and improvements to ST products and/or to this document at any time without notice. Purchasers should obtain the latest relevant information on ST products before placing orders. ST products are sold pursuant to ST's terms and conditions of sale in place at the time of order acknowledgement.

Purchasers are solely responsible for the choice, selection, and use of ST products and ST assumes no liability for application assistance or the design of Purchasers' products.

No license, express or implied, to any intellectual property right is granted by ST herein.

Resale of ST products with provisions different from the information set forth herein shall void any warranty granted by ST for such product.

ST and the ST logo are trademarks of ST. All other product or service names are the property of their respective owners.

Information in this document supersedes and replaces information previously supplied in any prior versions of this document.

© 2016 STMicroelectronics – All rights reserved

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[STMicroelectronics:](#)

[STEVAL-ILL073V1](#)