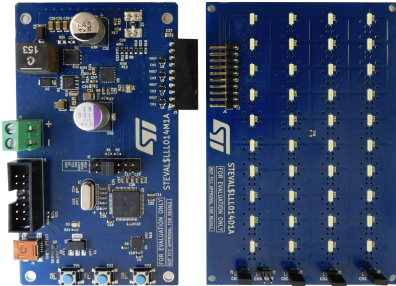


Automotive LED driver 4-channel evaluation kit based on ALED7709



Features

- 4.5 to 42V supported input voltage
- Boost disabled if $V_{in} < 6\text{ V}$
- Boost works at 400 kHz with spread spectrum
- 150mA adjustable current per channel
- Mixed PWM and analog dimming supported
- Adaptive boost voltage to comply with different LED conditions
- NTC to keep under control the LED temperature
- SPC582B60E1 automotive grade MCU
 - PWM generation for ALED analog dimming
 - PWM generation for ALED FSW synchronization

Description

The [STEVAL-LLL014V1](#) is a four LEDs strings evaluation kit based on the [ALED7709](#) LED driver configured in boost.

The [ALED7709](#) is an automotive LED driver (AEC-Q100 Grade1 qualified), it includes a DC/DC controller usable as boost or SEPIC, and four low-side constant-current sinkers.

The integration of the boost controller with the LED sinkers, gives the possibility of adapting the boost voltage for the different LED conditions, minimizing the power dissipation in the [ALED7709](#) and as consequence increasing the overall efficiency.

The evaluation kit houses also the [SPC582B60E1](#), a 32bit automotive grade microcontroller. The MCU controls the [ALED7709](#) via the I²C interface.

The [STEVAL-LLL014V1](#) can be configured and controlled with the [STSW-LLL014GUI](#) software, which runs on a PC connected to the board through the USB bus.

The [STEVAL-LLL014V1](#) is designed in the way that [ALED7709](#) can be disconnected from the on board MCU and controlled with an external customer I²C system.

| Product summary | |
|---|-------------------------------------|
| Automotive LED driver 4-channel evaluation kit based on ALED7709A | STEVAL-LLL014V1 |
| Software for STEVAL-LLL014V1 evaluation kit | STSW-LLL014FW |
| GUI for STEVAL-LLL014V1 evaluation kit | STSW-LLL014GUI |
| Automotive LED driver 4-channel 200 mA with a DC-DC converter controller | ALED7709ATR |
| 32-bit Power Architecture MCU for Automotive General Purpose Applications - Chorus family | SPC582B60E1MH00Y |
| Applications | Led Lighting System |

1 Schematic diagrams

Figure 1. STEVAL-LLL014M1 schematic diagram

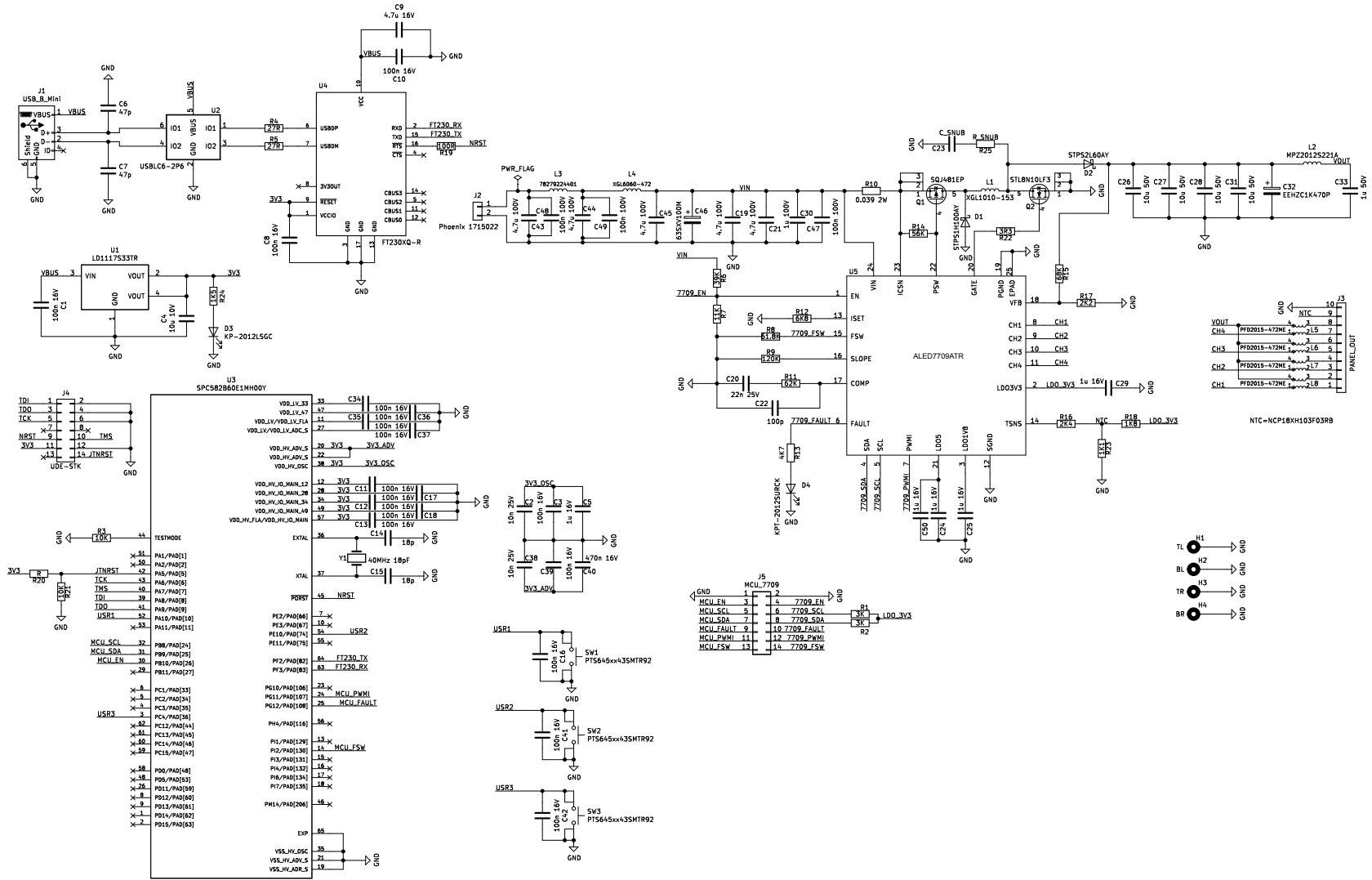
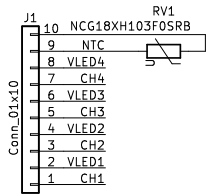
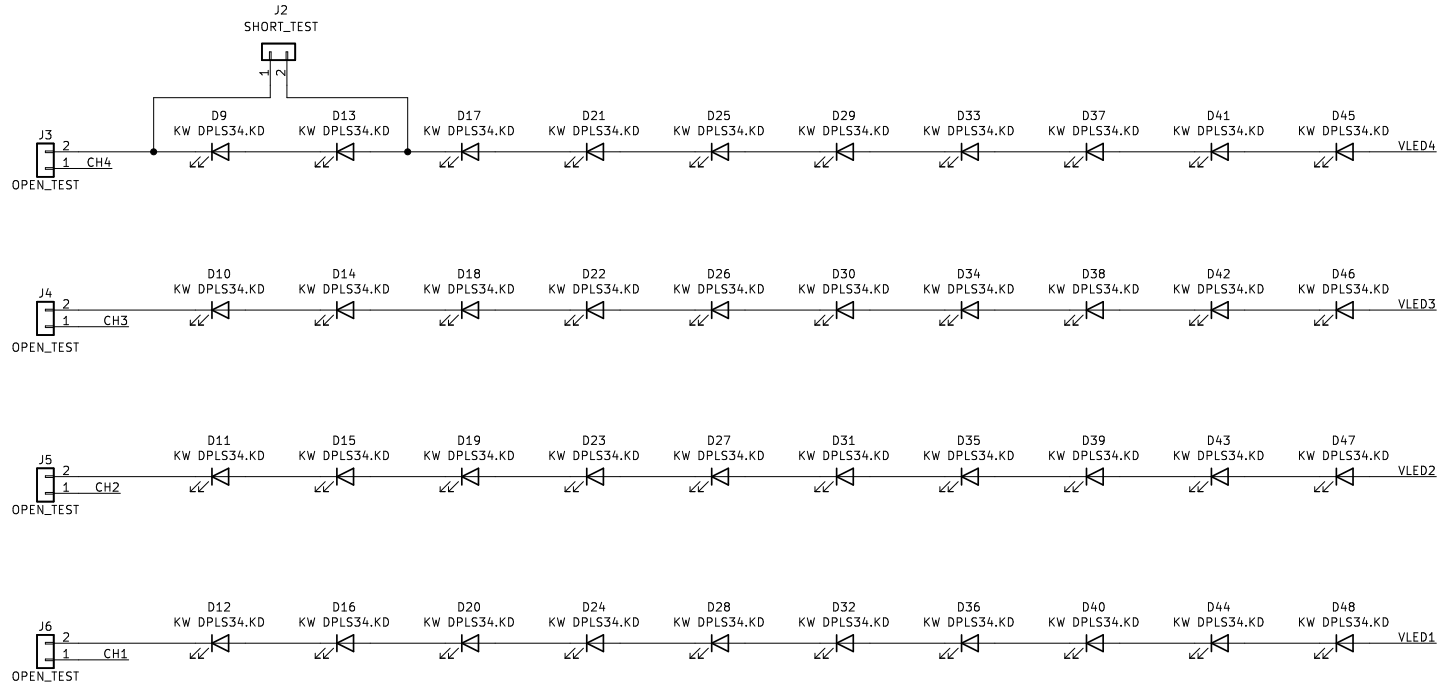


Figure 2. STEVAL-LLL014D1 schematic diagram



2 Kit versions

Table 1. STEVAL-LLL014V1 versions

| PCB version | Schematic diagrams | Bill of materials |
|----------------------------------|--------------------------------------|-------------------------------------|
| STEVAL\$LLL014V1A ⁽¹⁾ | STEVAL\$LLL014V1A schematic diagrams | STEVAL\$LLL014V1A bill of materials |

1. This code identifies the STEVAL-LLL014V1 evaluation kit first version. The kit consists of a STEVAL-LLL014M1 whose version is identified by the code STEVAL\$LLL014M1A and a STEVAL-LLL014D1 whose version is identified by the code STEVAL\$LLL014D1A.

Revision history

Table 2. Document revision history

| Date | Revision | Changes |
|-------------|----------|------------------|
| 18-May-2023 | 1 | Initial release. |

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