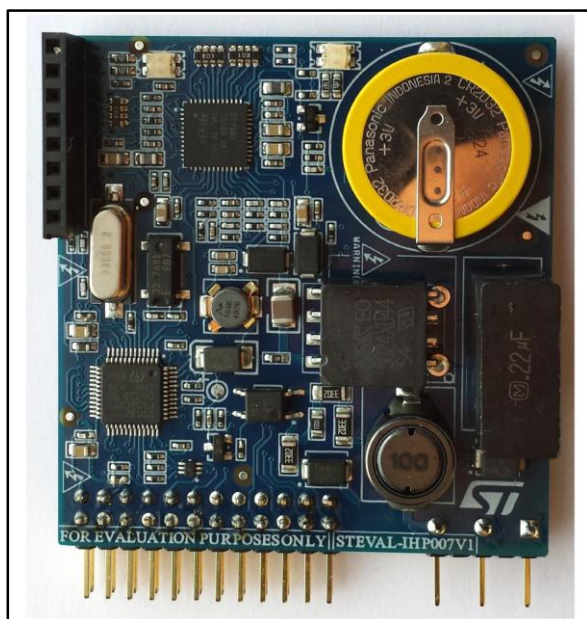


Power line communication module for street lighting

Data brief



Description

The STEVAL-IHP007V1 evaluation board is a power line communication module which is an addition to the STEVAL-ILH006V3 and STEVAL-ILH007V1 HID ballast module. Providing features to manage street lighting network architecture, the module is designed to work in the CENELEC A-B-D bands. The module is based on an STM32F103CBT7 ARM Cortex-M3 microcontroller and an ST7580 PSK narrow band power line modem with up to 28.8 kbps data rate. The assembled MCU can be easily replaced with an equivalent 48-pin MCU from the STM32F0, STM32F2, STM32F3 families with just a few assembly changes. The module is designed to work with the STEVAL-ILH006V3 and STEVAL-ILH007V1 module, but can be associated with other lighting driver boards with a standard serial communication port.

Features

- SM6T15CA: Transil 600 W TVS diode
- SMAJ5.0CA-TR: Transil 400 W TVS diode
- ST7580: FSK, PSK multi-mode power line networking system-on-chip
- STM32F103CBT7: STM32 ARM-based 32-bit MCU
- STPS1L30: low drop power Schottky rectifier 1 A, 30 V, 0.3 V
- STTH1L06A: Turbo 2 ultrafast high voltage rectifier
- RoHS compliant

Figure 1: STEVAL-IHP007V1 circuit schematic (1 of 5)

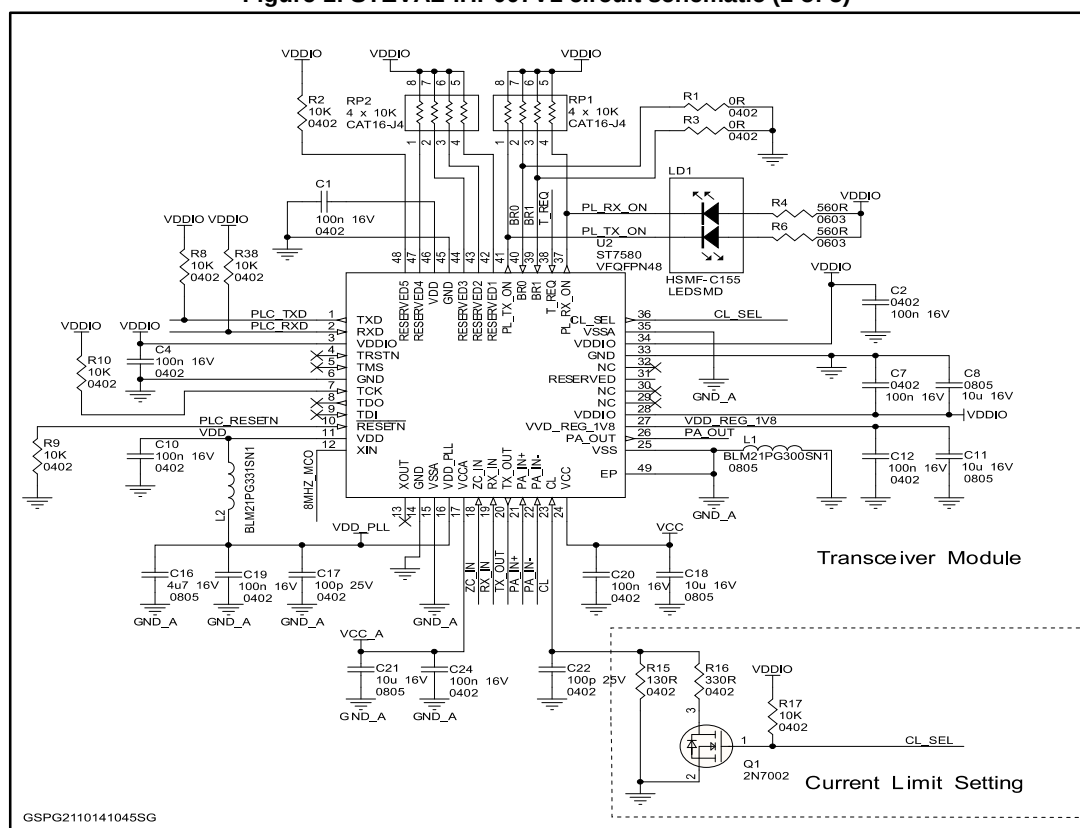


Figure 2: STEVAL-IHP007V1 circuit schematic (2 of 5)

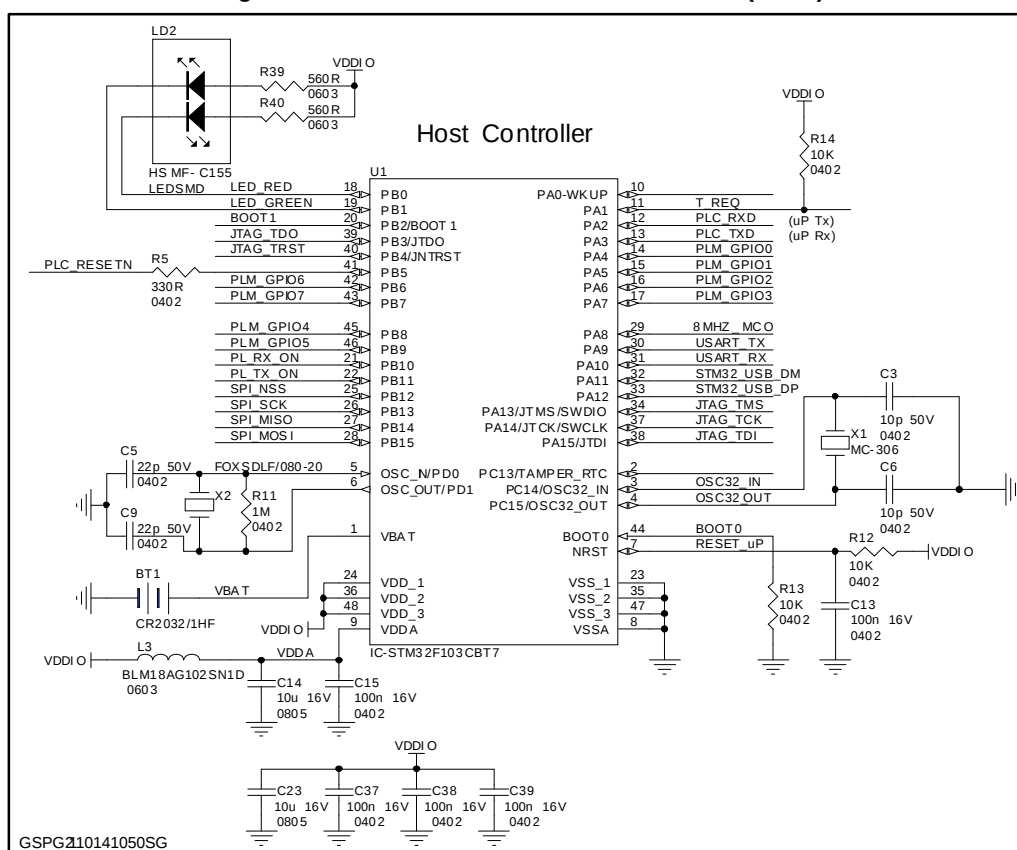


Figure 3: STEVAL-IHP007V1 circuit schematic (3 of 5)

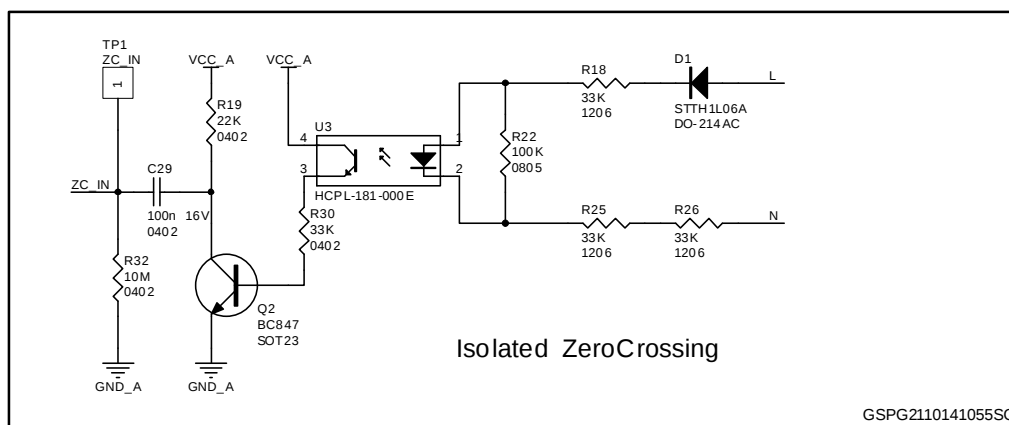


Figure 4: STEVAL-IHP007V1 circuit schematic (4 of 5)

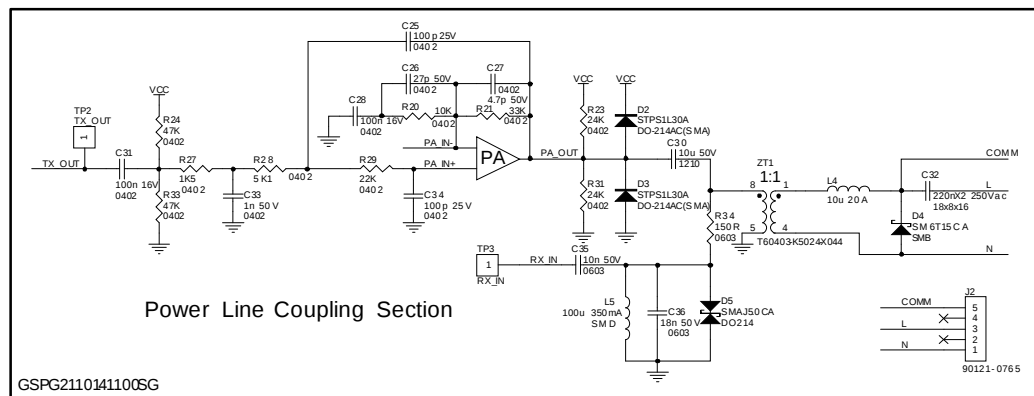
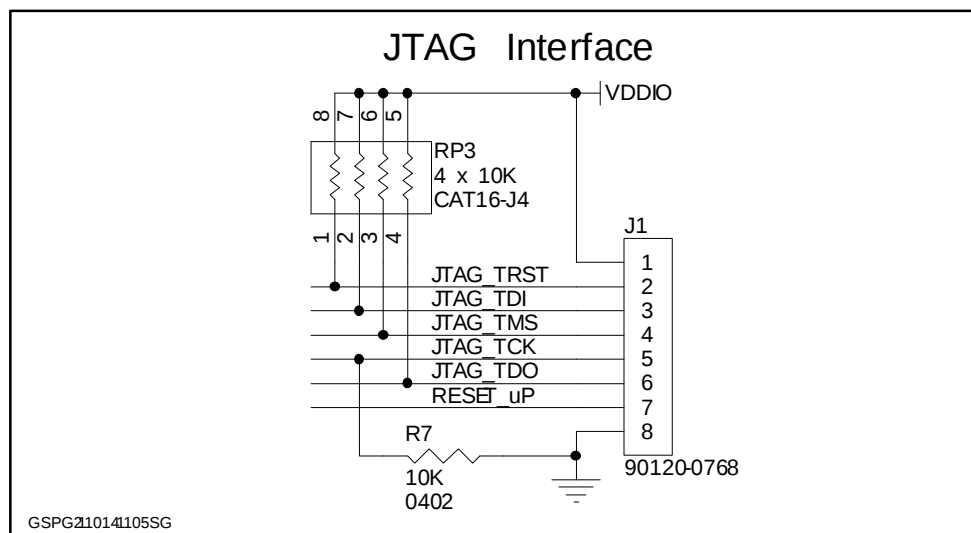


Figure 5: STEVAL-IHP007V1 circuit schematic (5 of 5)



2 STEVAL-IHP007V1 firmware section

Figure 6: Firmware architectures

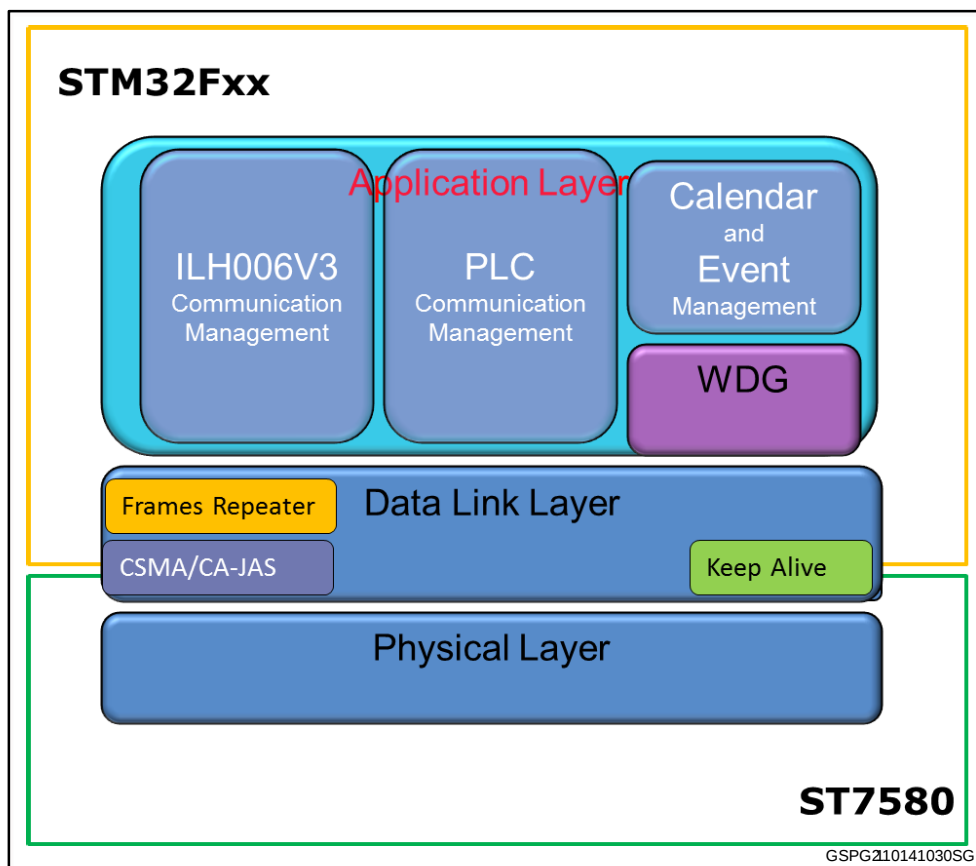


Figure 7: Data link architectures

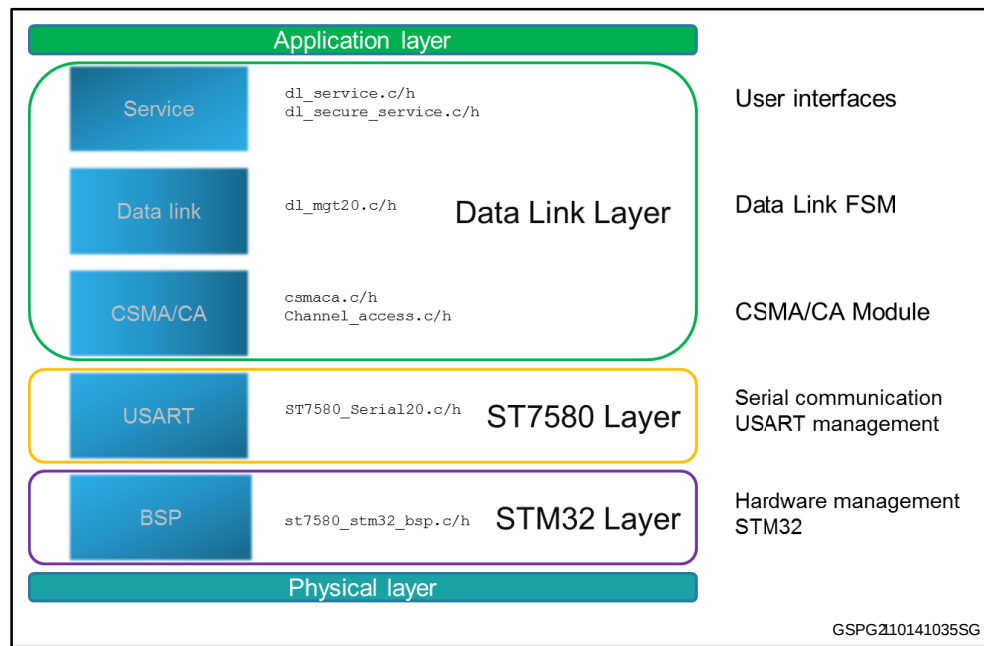
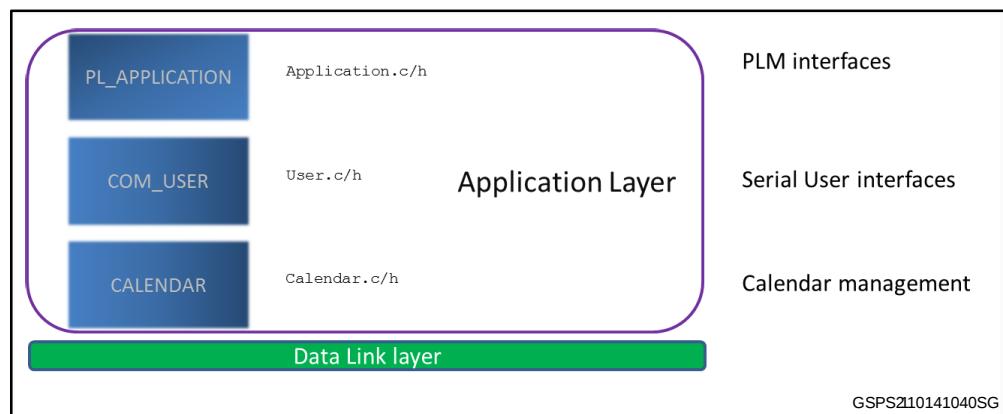


Figure 8: Application architectures



3 Revision history

Table 1: Document revision history

Date	Rev	Changes
09-Feb-2015	1	First release.
23-Jul-2015	2	Description has been updated.
07-Jan-2016	3	Updated board photo on the cover page.

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