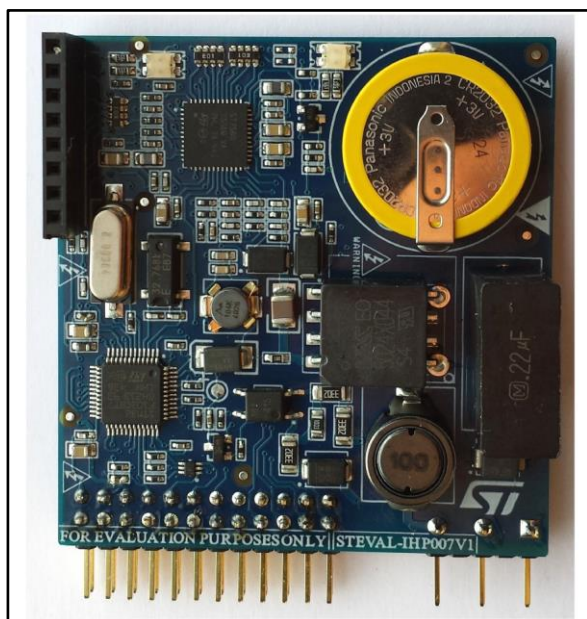


Power line communication module for street lighting

Data brief



Description

The STEVAL-IHP007V1 evaluation board is a power line communication module addition to the STEVAL-ILH007V1 HID ballast module. It provides functions for the management of street lighting network architecture 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 embedded MCU can be easily replaced with an equivalent 48-pin MCU from the STM32F0, STM32F2, STM32F3 families with a few changes.

The module is designed to work with the STEVAL-ILH007V1 HID module, but can be associated with other lighting driver boards with a standard serial communication port.

Note that this board only functions in a network with an EVALKITST7580-1 board designated as the master; this is achieved via UART commands.

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

Schematic diagrams

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

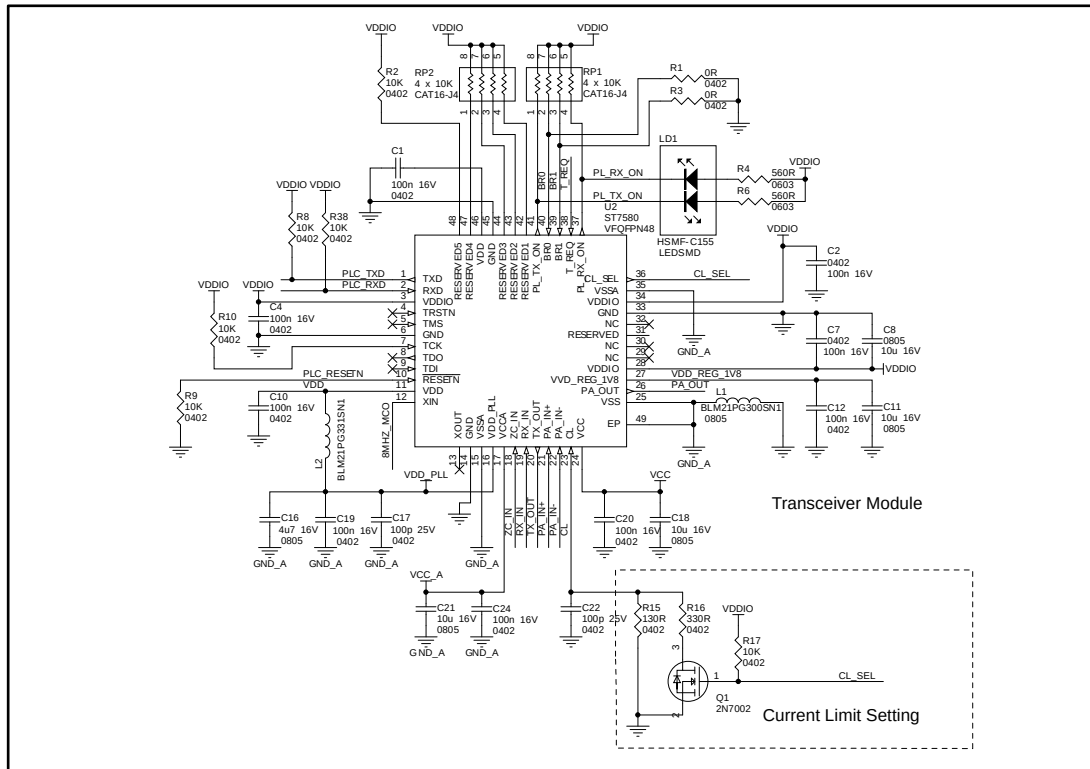


Figure 2: STEVAL-IHP007V1 circuit schematic (2 of 5)

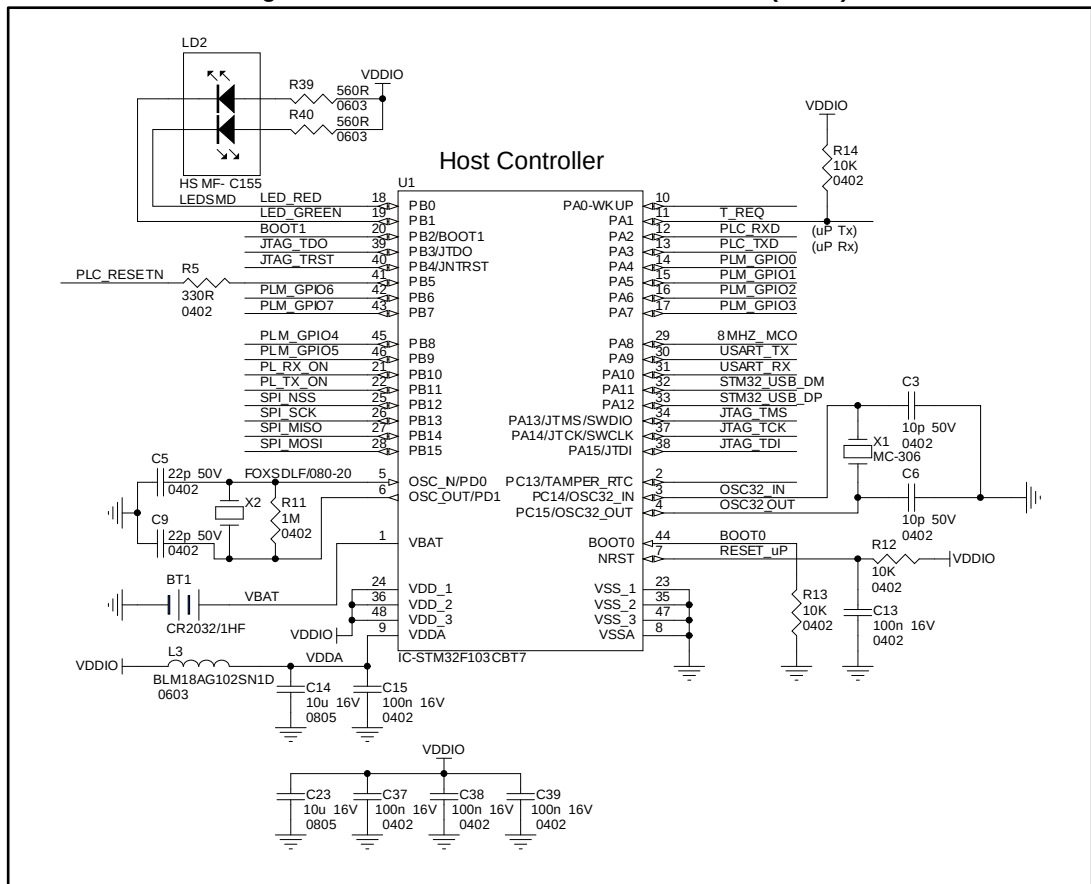


Figure 3: STEVAL-IHP007V1 circuit schematic (3 of 5)

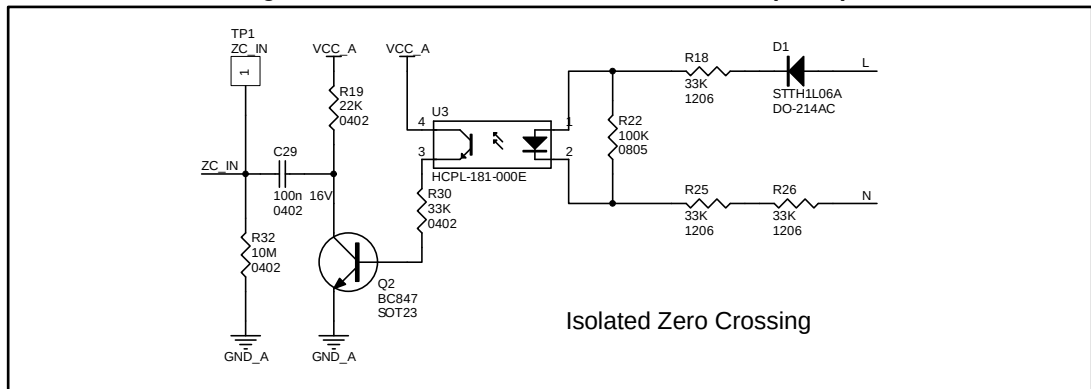


Figure 4: STEVAL-IHP007V1 circuit schematic (4 of 5)

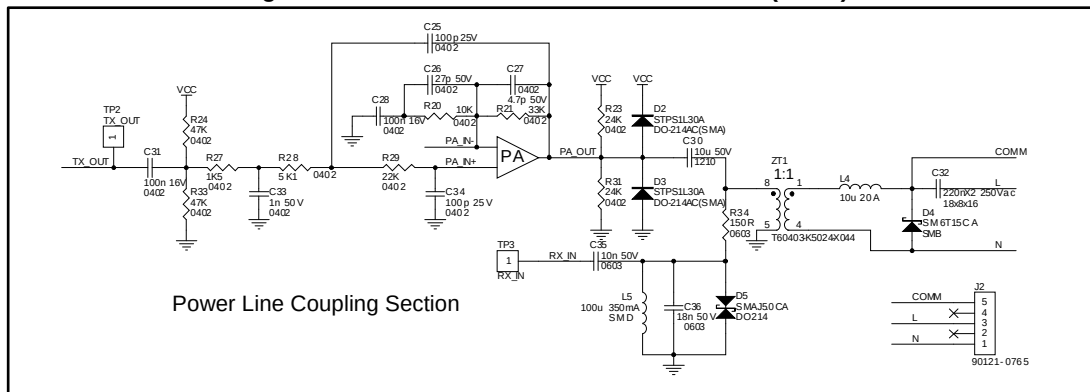
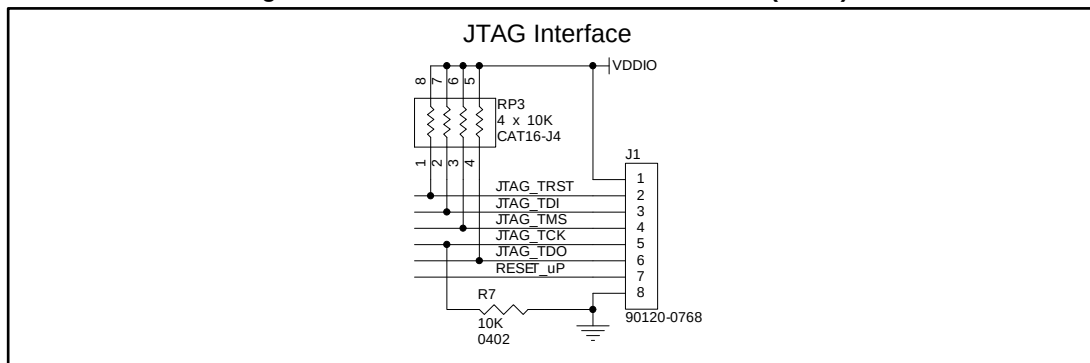


Figure 5: STEVAL-IHP007V1 circuit schematic (5 of 5)



STEVAL-IHP007V1 firmware section

Figure 6: Firmware architecture

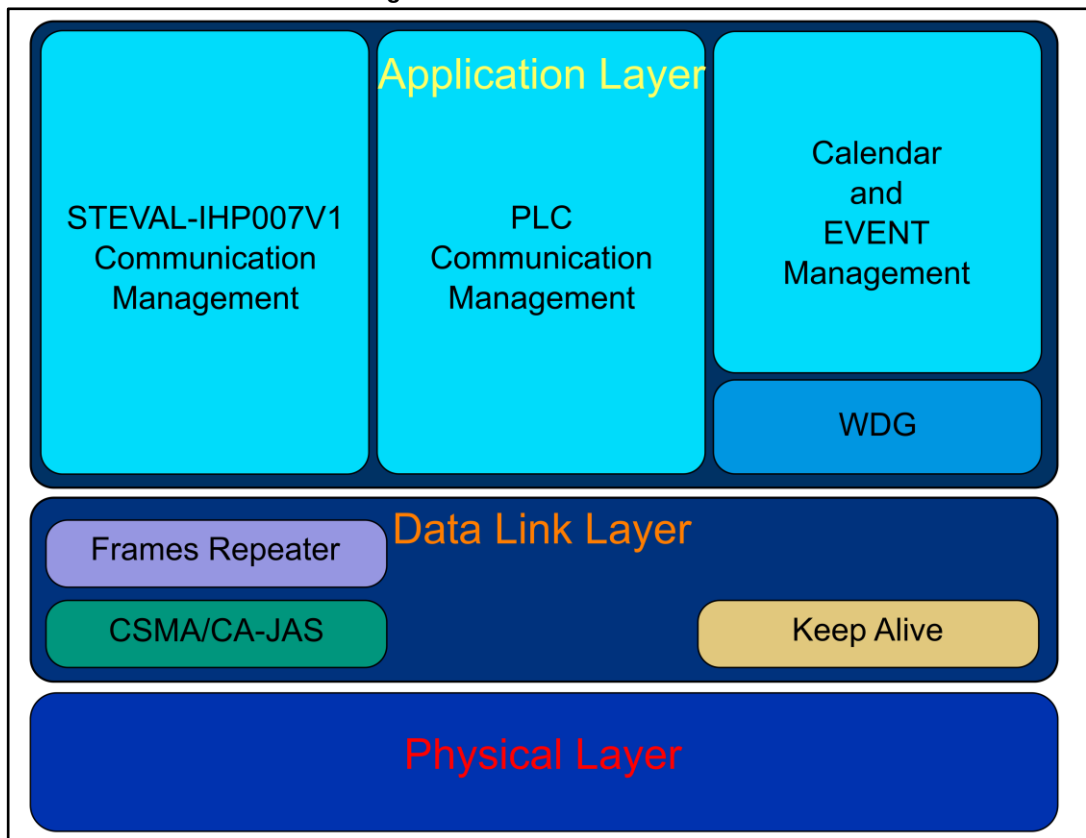


Figure 7: Data link architecture

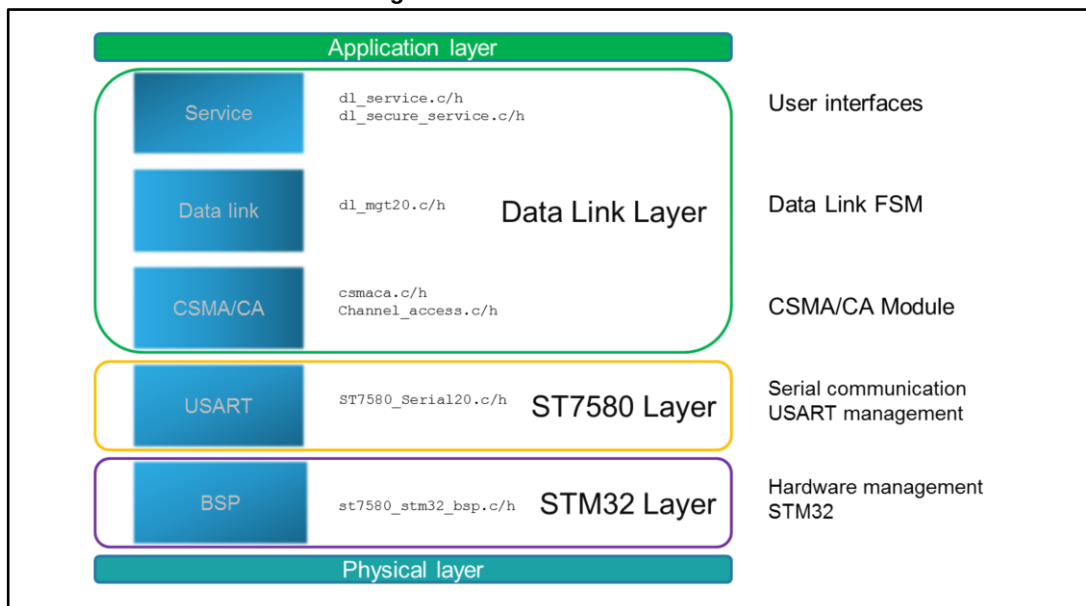
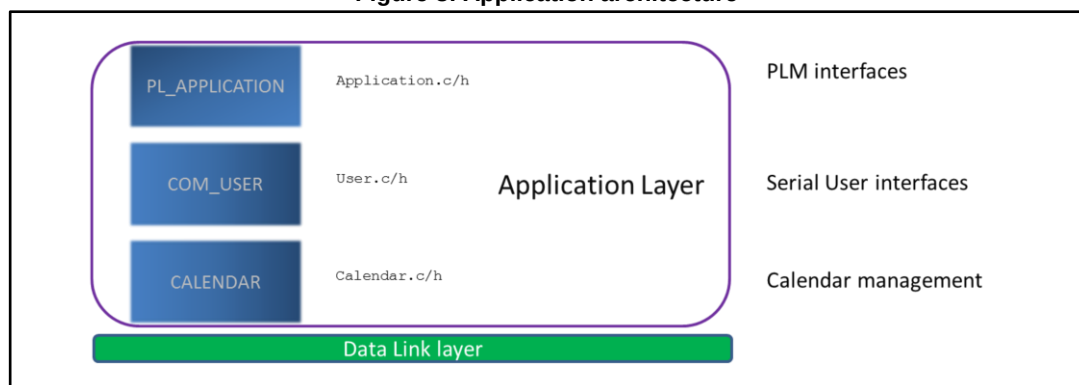


Figure 8: Application architecture

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.
02-Sep-2016	4	Text and formatting changes throughout document. Updated cover page Description. Updated <i>Figure 6: "Firmware architecture"</i>

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-IHP007V1](#)