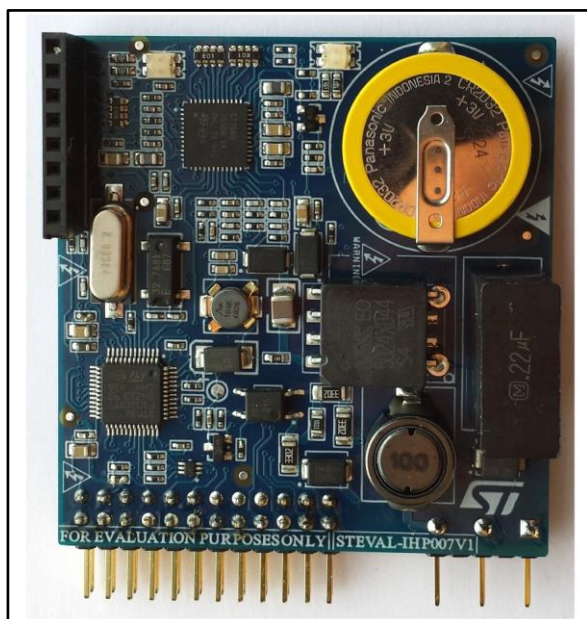


Power line communication module for street lighting

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)

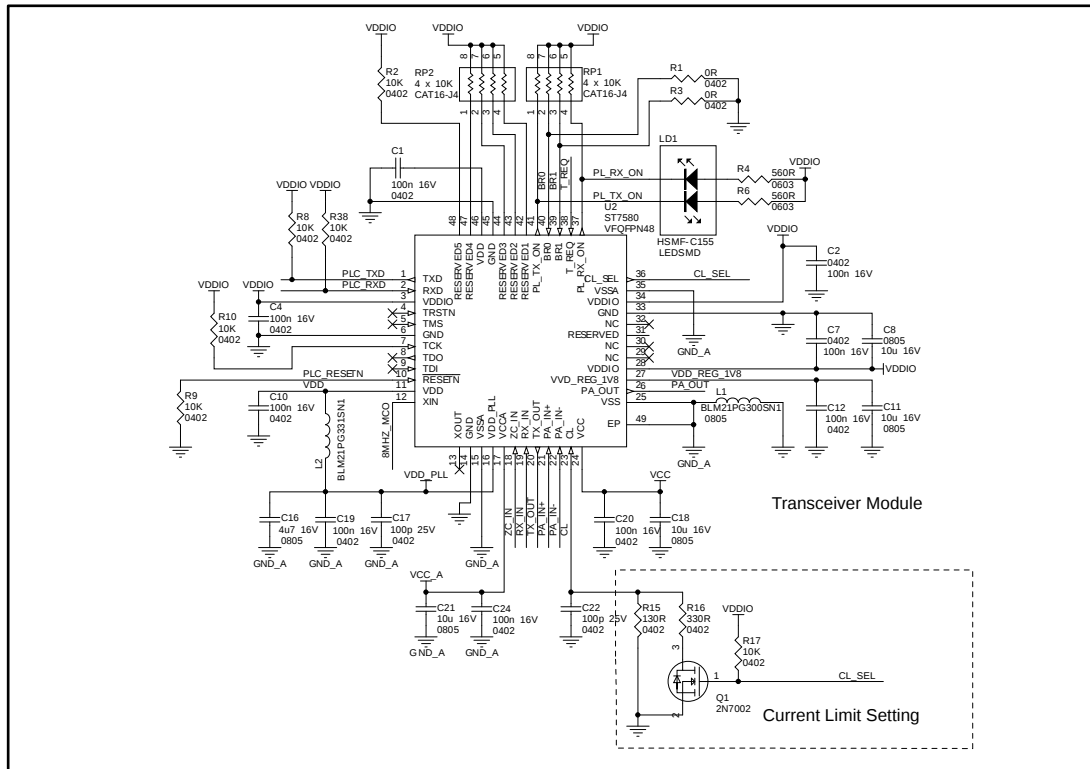


Figure 2: STEVAL-IHP007V1 circuit schematic (2 of 5)

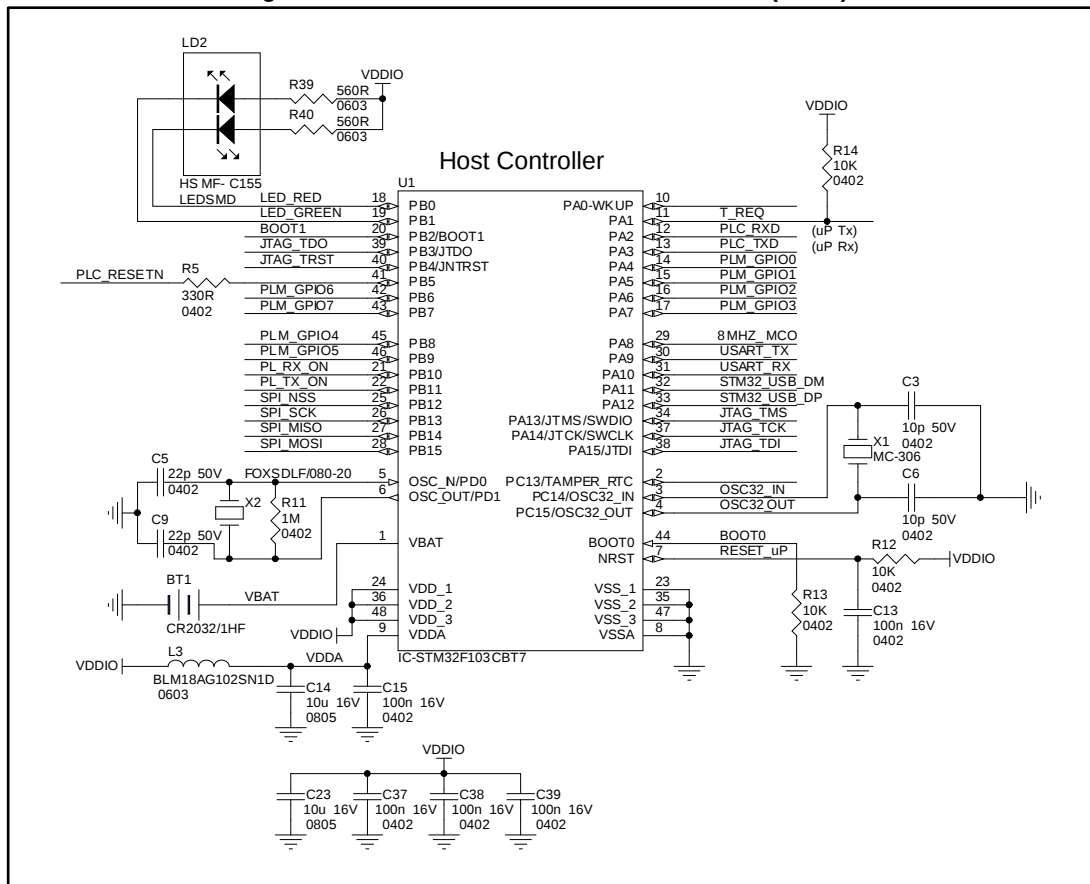


Figure 3: STEVAL-IHP007V1 circuit schematic (3 of 5)

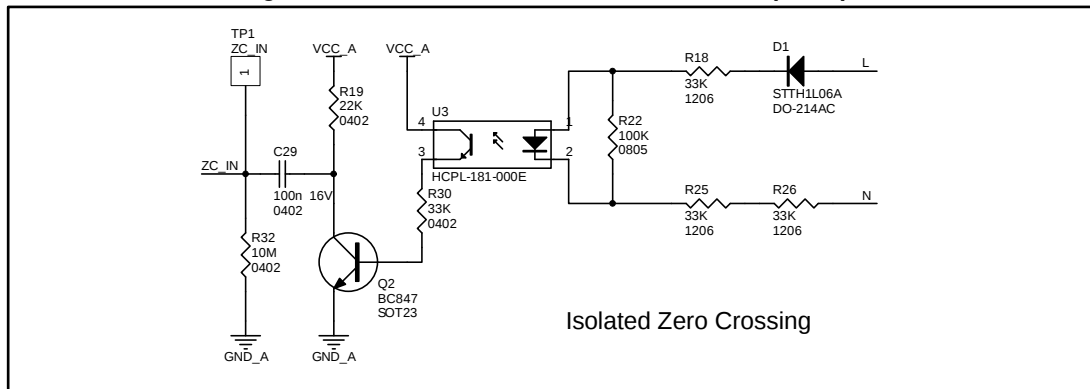


Figure 4: STEVAL-IHP007V1 circuit schematic (4 of 5)

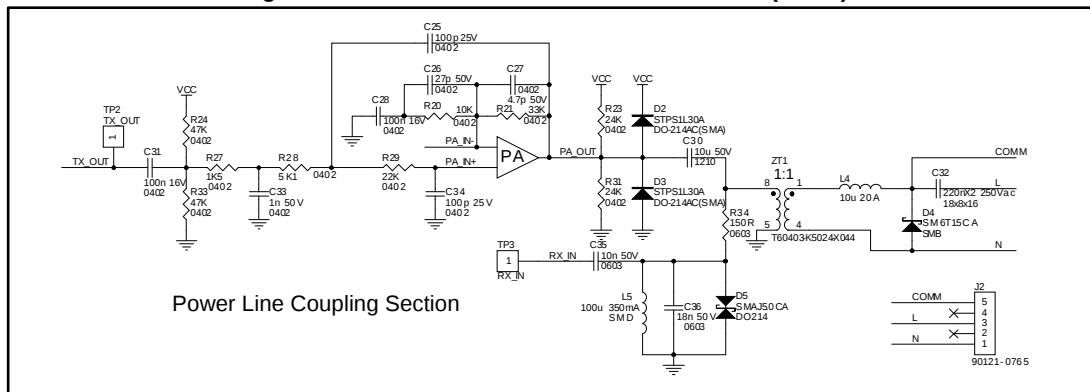
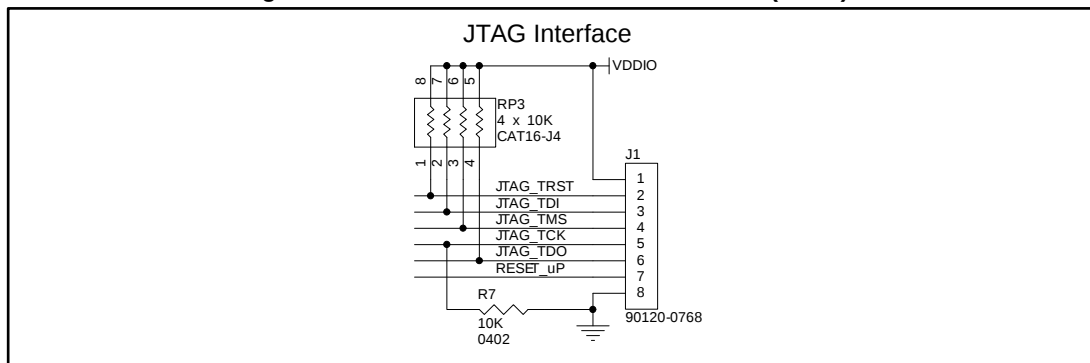


Figure 5: STEVAL-IHP007V1 circuit schematic (5 of 5)



STEVAL-IHP007V1 firmware section

Figure 6: Firmware architecture

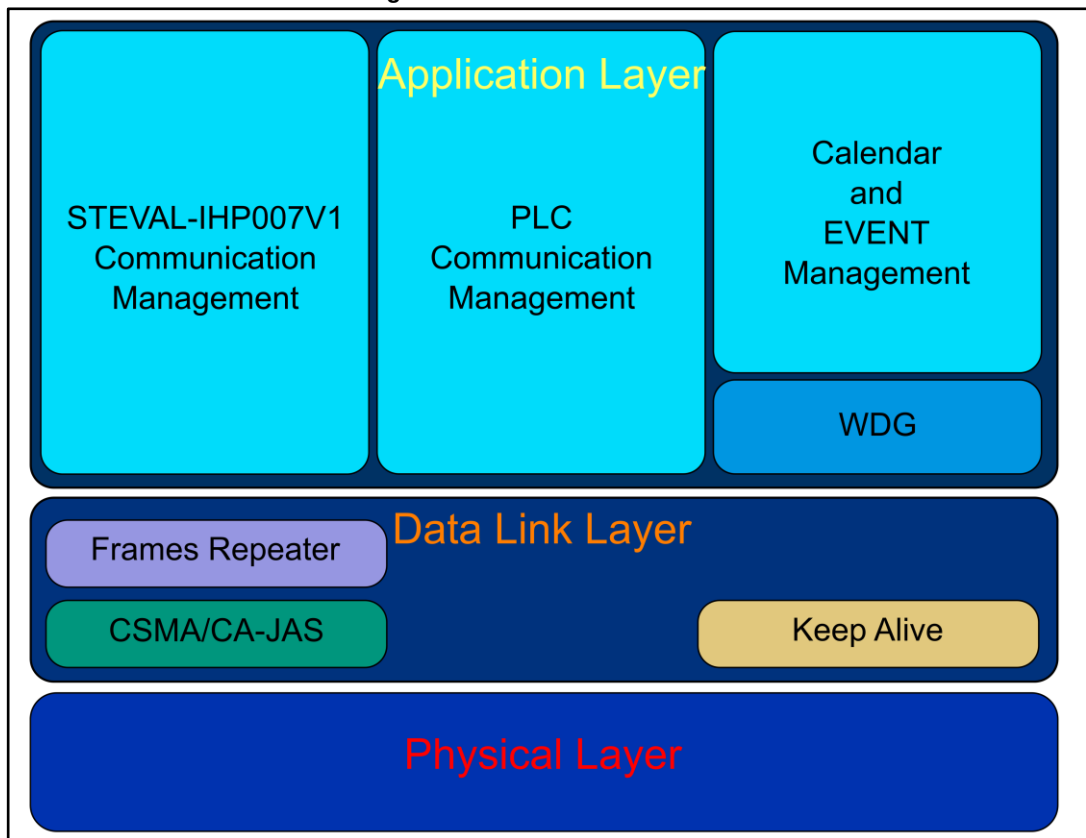


Figure 7: Data link architecture

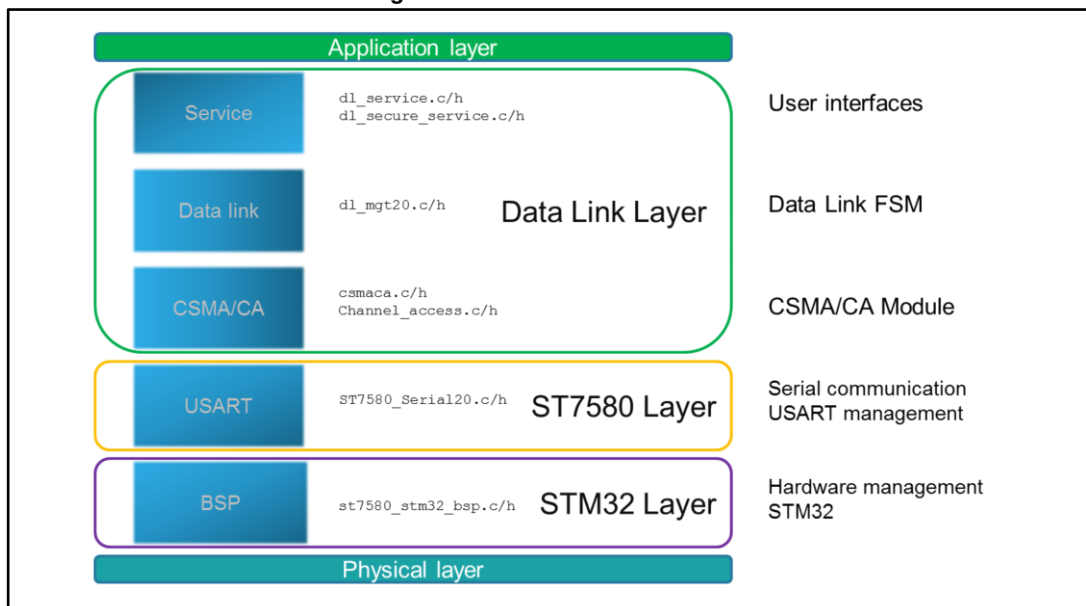
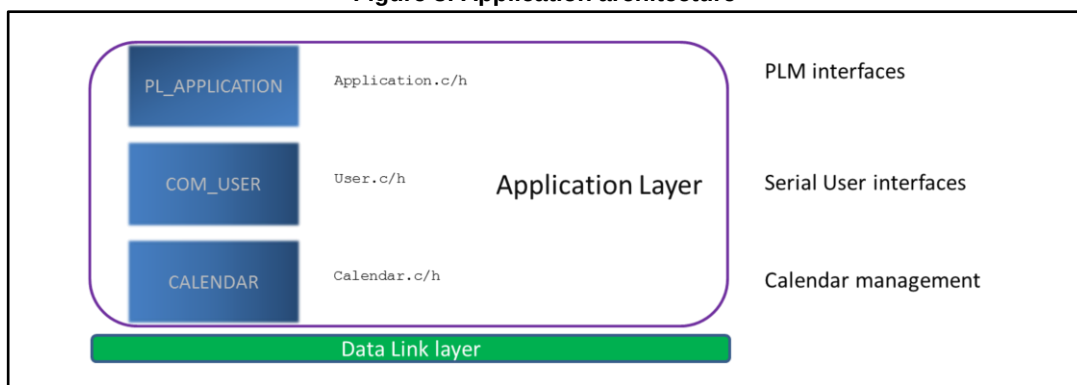


Figure 8: Application architecture



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 Figure 6: "Firmware architecture"

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