
General purpose PRIME power line communication module

Data brief

**Features**

- Insulation from the high voltage mains
- Interfaces included:
 - USB interface
 - Dual DC power supply
 - Digital interface
 - DC or AC insulated bus interface
- OFDM PRIME compliant with 128 kbps bitrate
- RoHS compliant

Description

The STEVAL-IPP004V1 evaluation board is a PLM communication module that is especially suited for metering since it is designed to work in the CENELEC A band.

The module is based on the STM32F103RFT6 ARM Cortex-M3 microcontroller and an ST7590 PRIME narrow band power line modem with up to 128 kbps data rate. The assembled MCU can be easily replaced with an equivalent 64-pin MCU from the STM32F2 or STM32F4 families, with just a few assembly modifications. The module can be coupled to both AC and DC power line buses and also includes a USB interface for optional PC connection.

1 Schematic diagram

Figure 1. Power supply connector and power indication

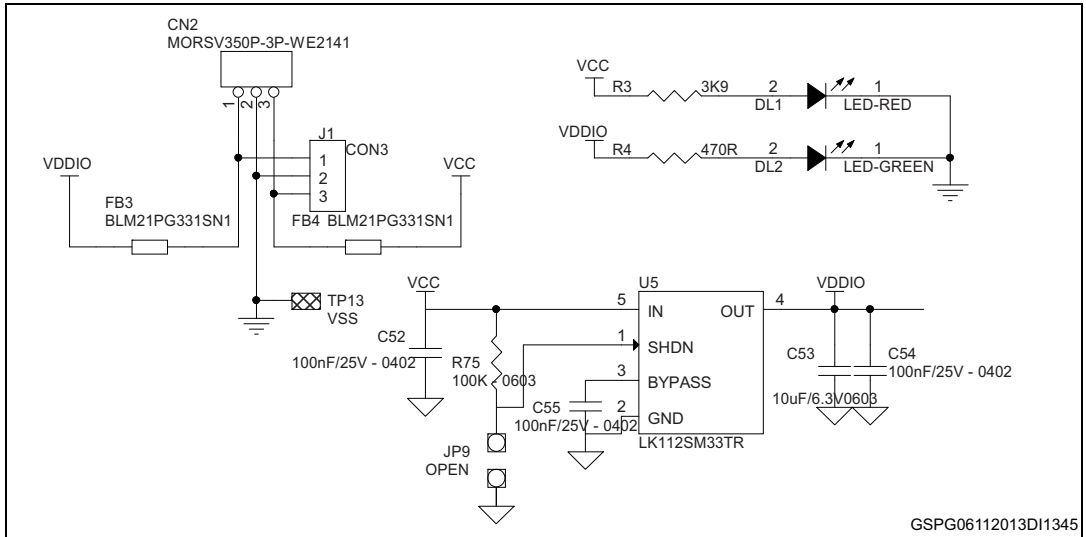


Figure 2. ST7590 control connections

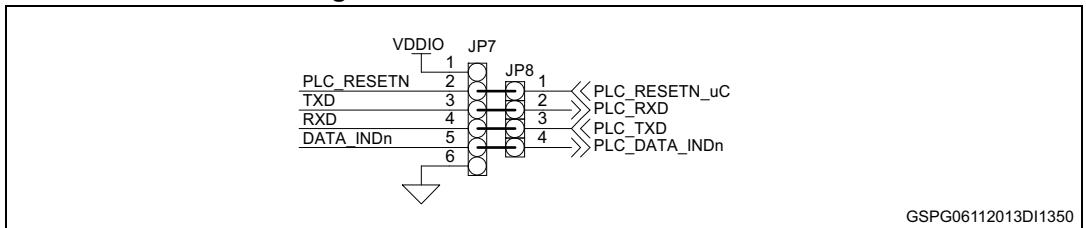
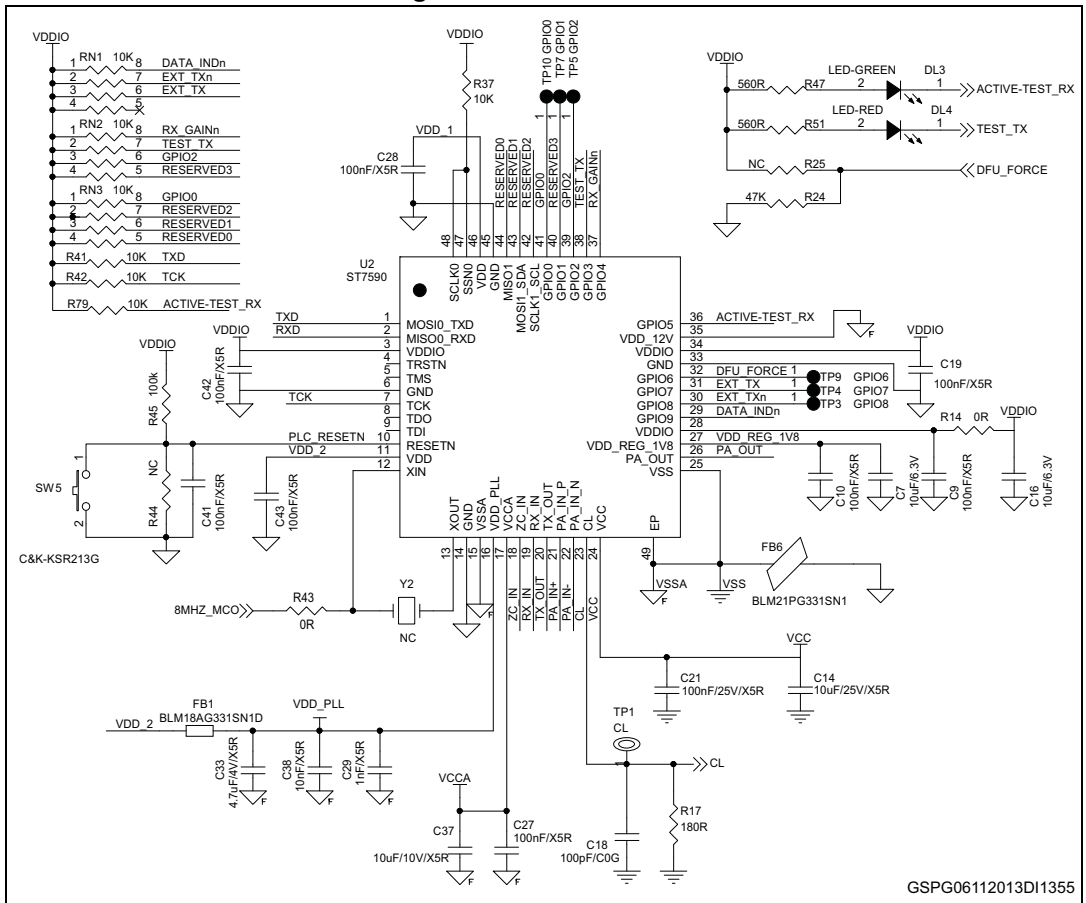
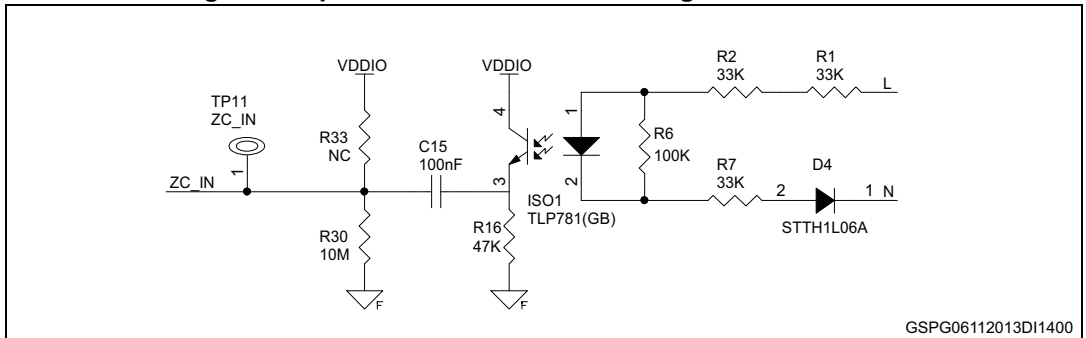


Figure 3. ST7590 section



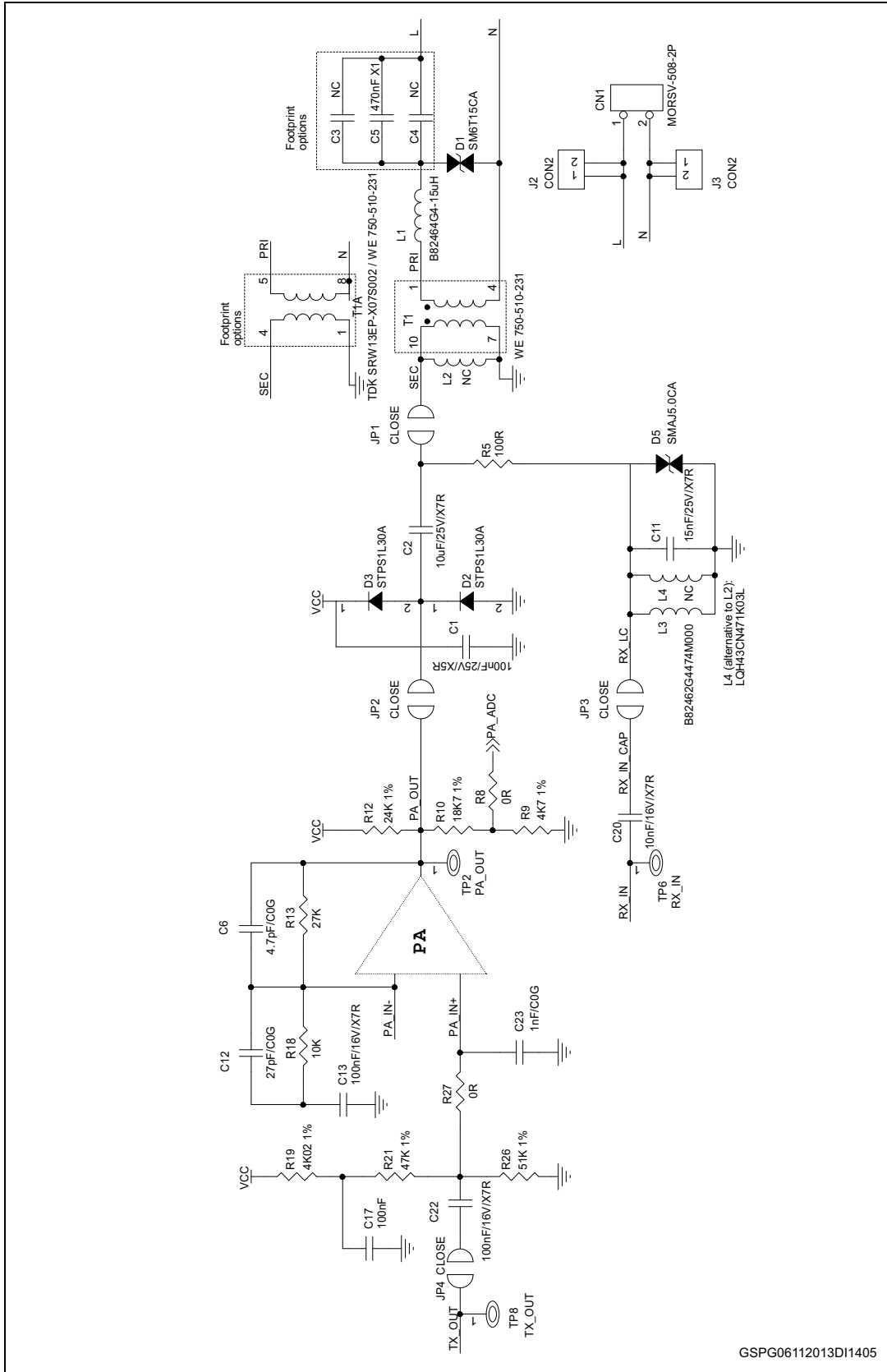
GSPG06112013DI1355

Figure 4. Optional isolated zero crossing detection circuit



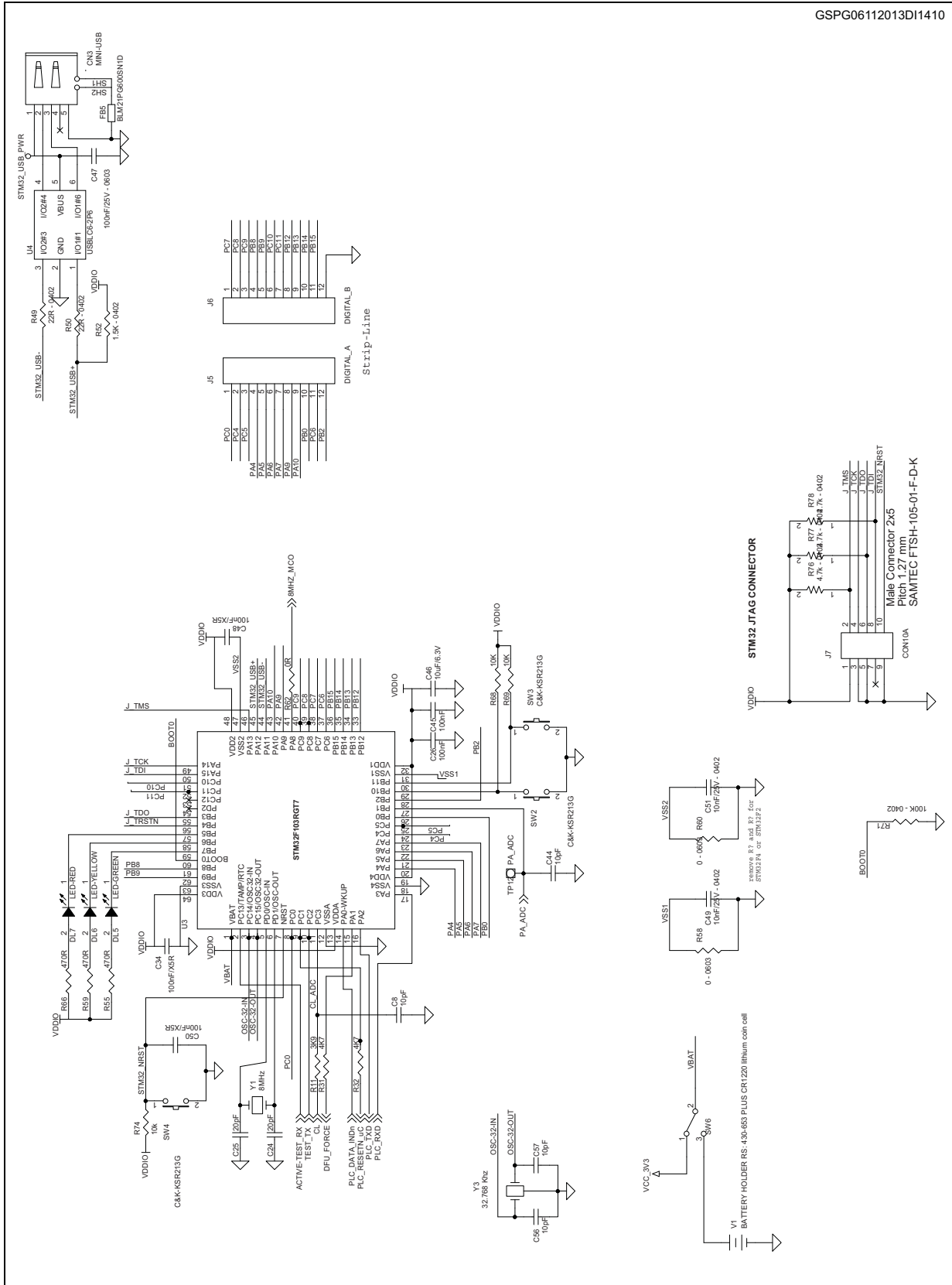
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Figure 5. Power line coupling section



GSPG06112013D11405

Figure 6. STM32 section



GSPG06112013D1H1410



2 Revision history

Table 1. Document revision history

Date	Revision	Changes
30-May-2014	1	Initial release.

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