
General purpose xPSK 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
- xPSK modulation with bitrate up to 28.8 kbps
- RoHS compliant

Description

The STEVAL-IPP003V1 evaluation board is a PLM communication module that can be used for a large set of applications, including metering, building automation and street lighting. The module is optimized to operate in CENELEC bands, but can also work in FCC and ARIP bands up to 250 kHz with a few modifications.

The module is based on the STM32F103RFT6 ARM Cortex-M3 microcontroller and the ST7580 xPSK narrow band power line modem with up to 28.8 kbps data rate. The MCU mounted on the board can be easily replaced with an equivalent 64-pin MCU from the STM32F2 or STM32F4 family by a few modification in the assembly. 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

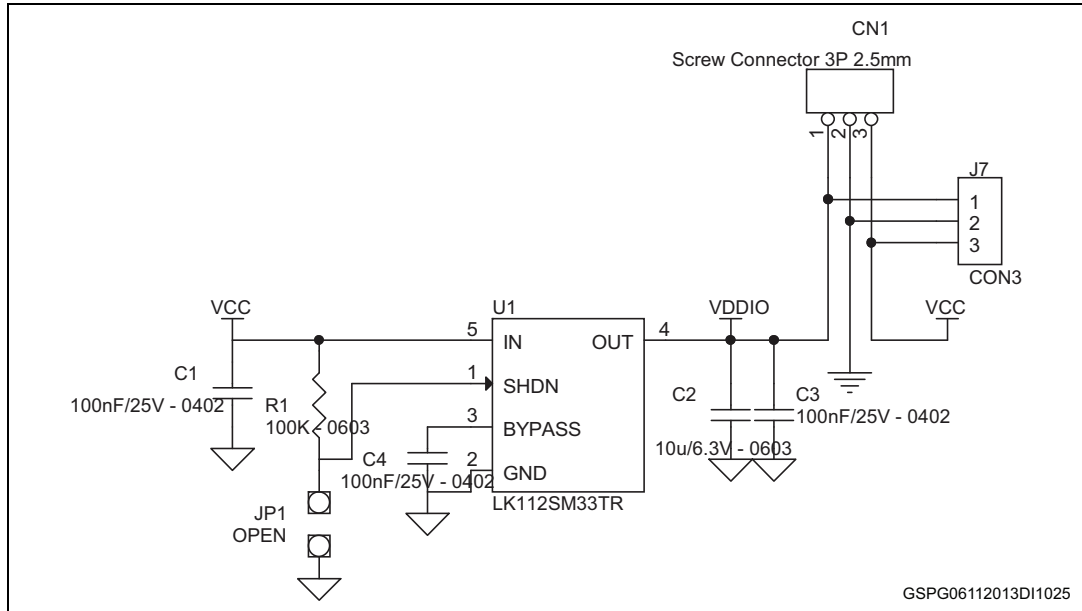


Figure 2. ST7580 reset button (micro-switch)

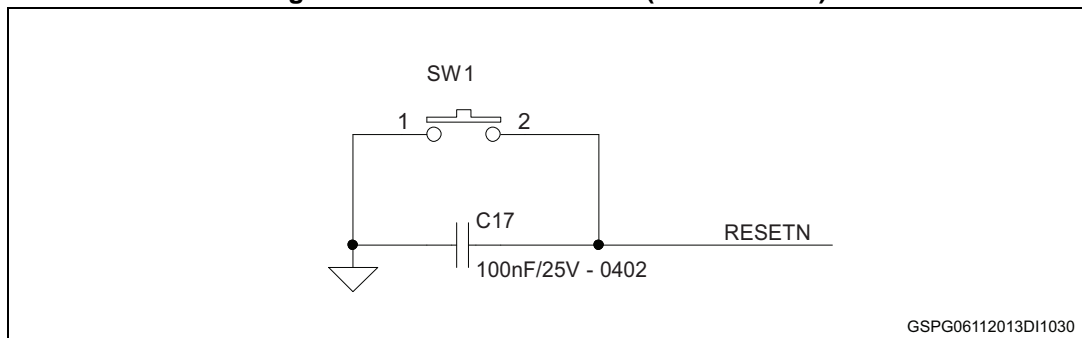


Figure 3. ST7580 UART interface

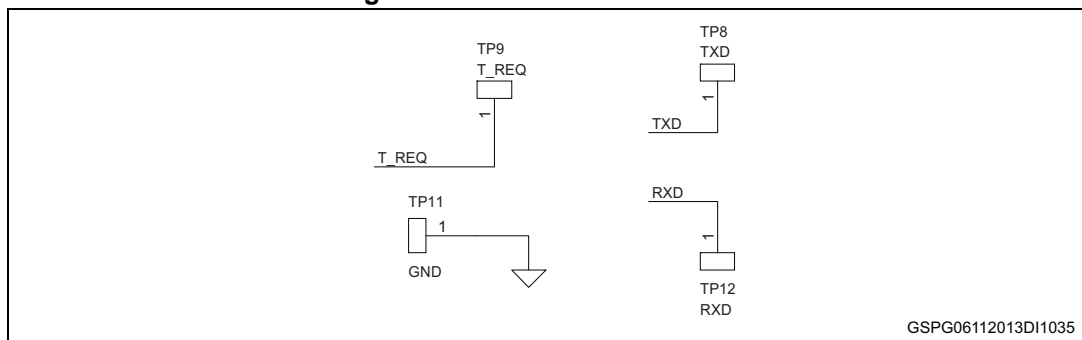


Figure 4. DC BUS / AC BUS

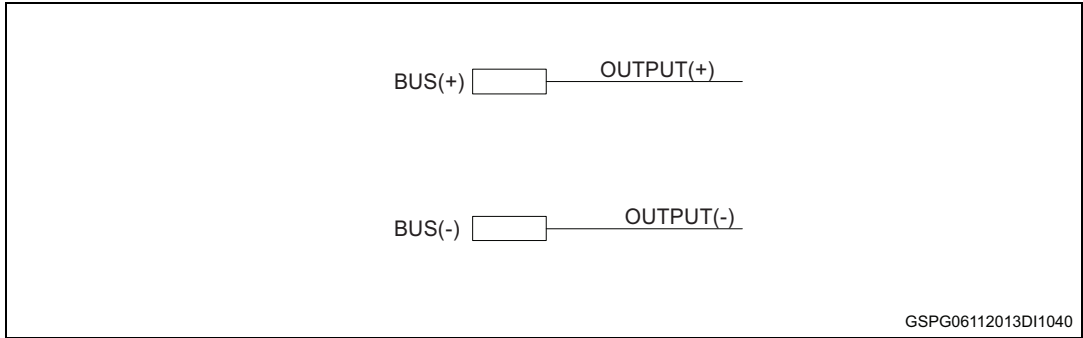


Figure 5. Current limit setting

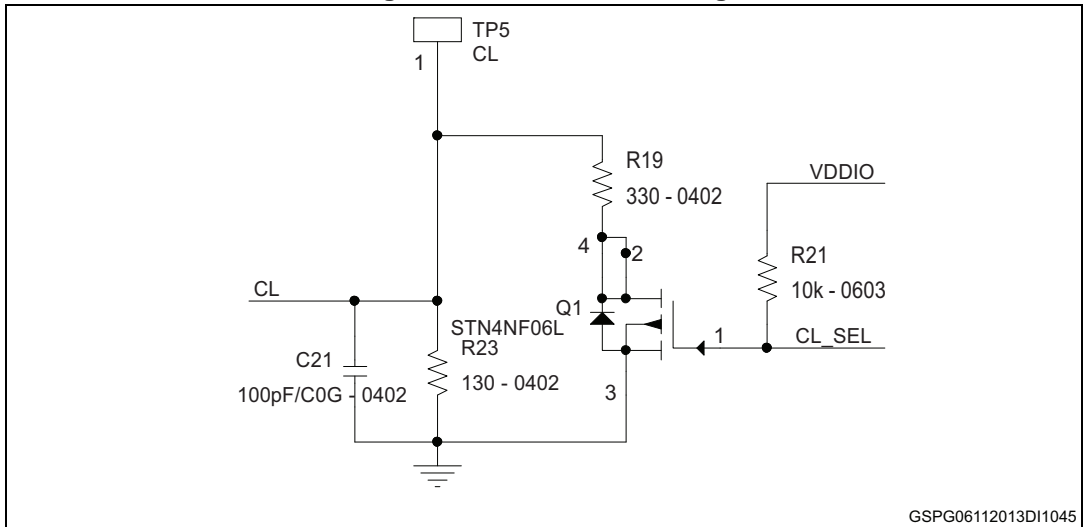


Figure 6. Microcontroller connection

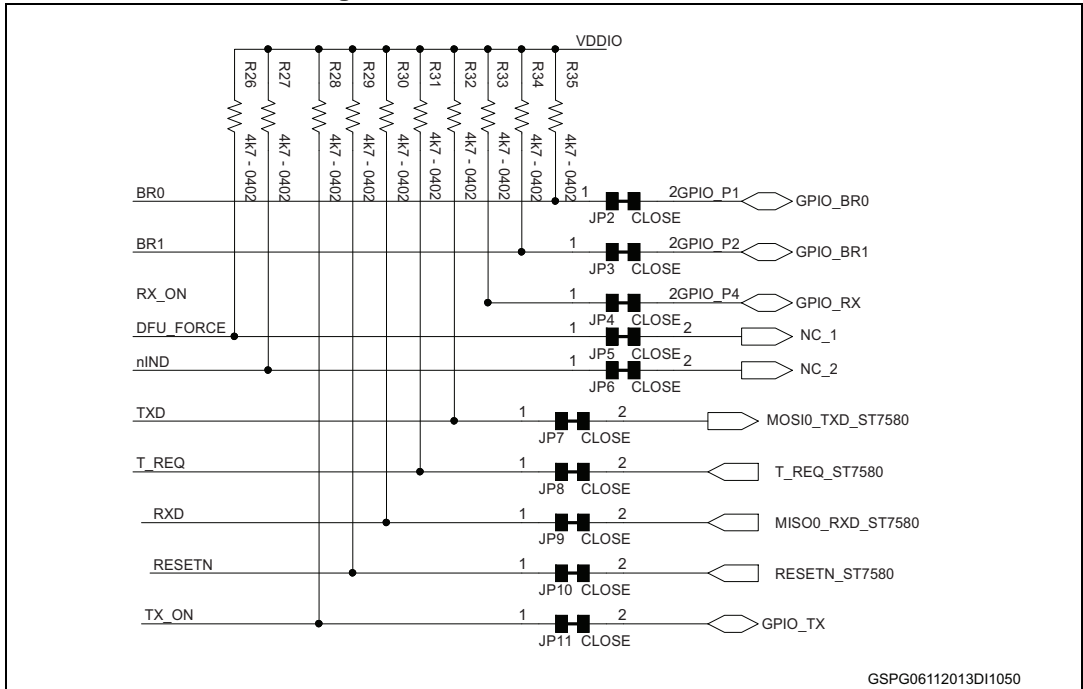


Figure 7. ST7580 module - PLM

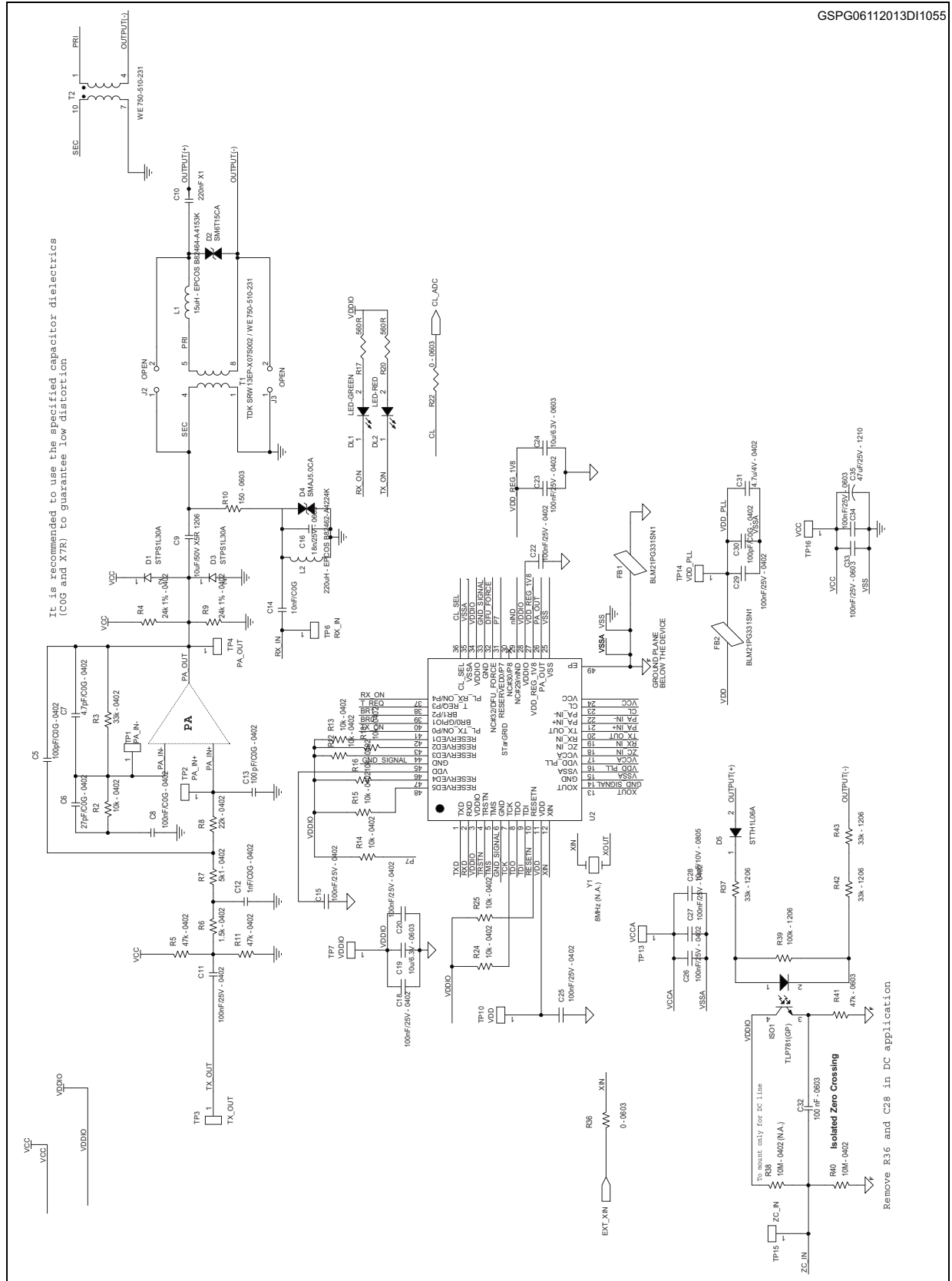
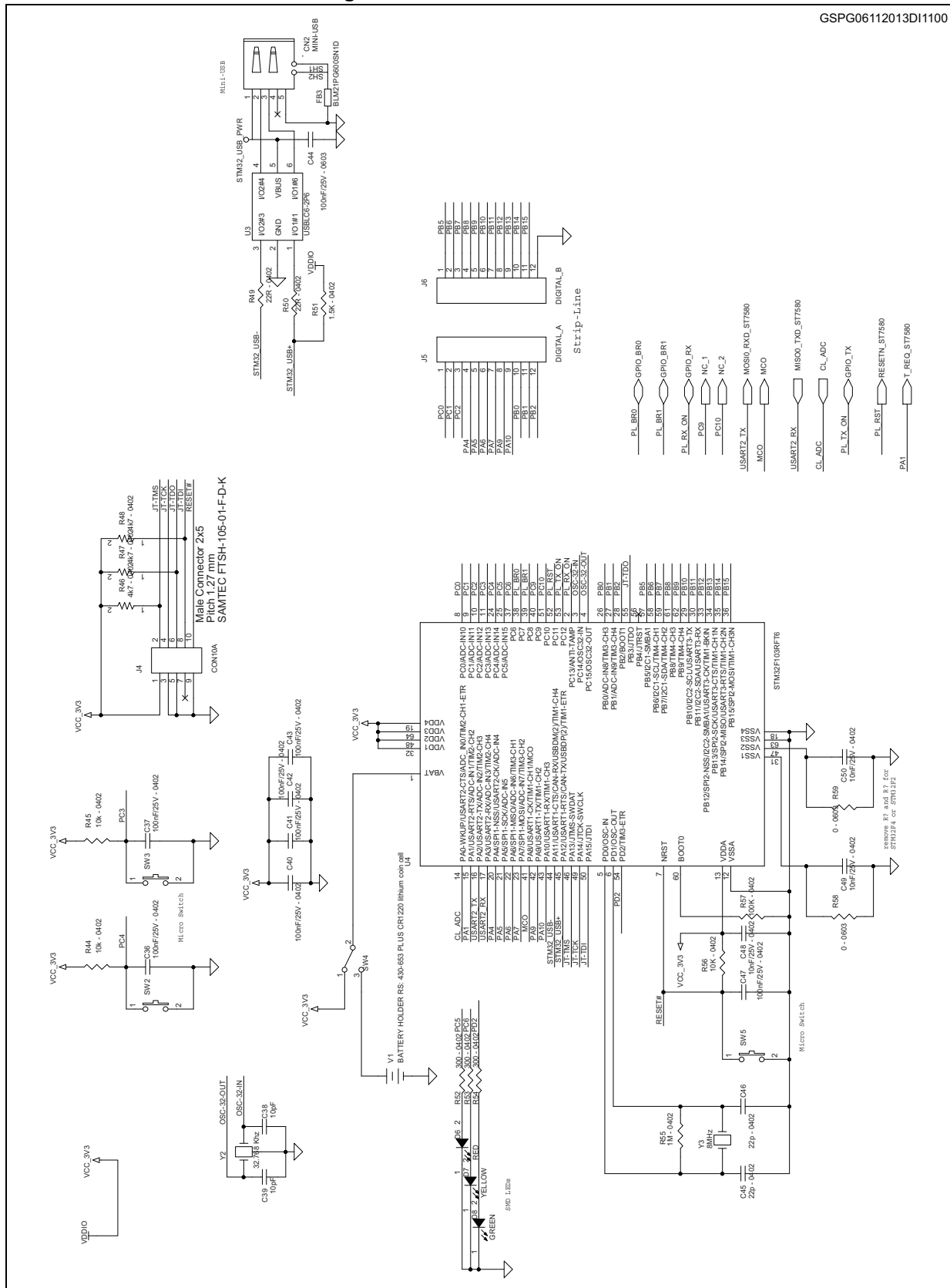


Figure 8. ST7580 module - MCU

GSPG06112013D11100



2 Revision history

Table 1. Document revision history

Date	Revision	Changes
13-Dec-2013	1	Initial release.