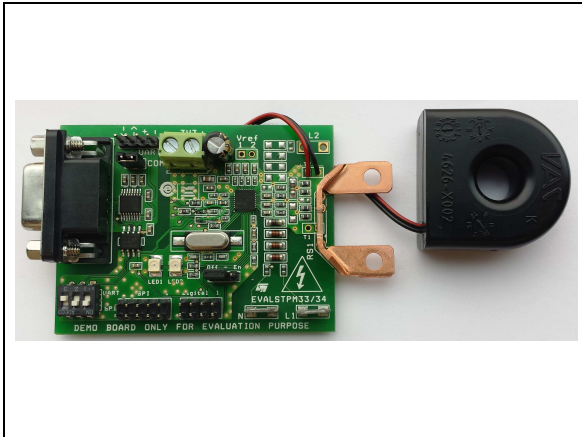


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## Single-phase energy metering evaluation board with tamper monitoring, CT and shunt current sensor based on the STPM33

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Data brief



### Features

- 0.2% accuracy single-phase meter with tamper monitoring
- $V_{nom(RMS)} = 140$  to  $300$  V,  $I_{nom}/I_{max(RMS)} = 5/100$  A,  $f_{lin} = 50/60$  Hz  $\pm 10\%$
- Tamper detection through neutral current monitoring
- Connector for USB isolated hardware programmer tool STEVAL-IPE023V1 and PC GUI
- RS232 and UART isolated connectors to PC GUI
- SPI/UART switch for device peripheral selection
- 2 programmable LEDs on board
- Digital expansion to external system-on-chip or MCU
- 3.3 V power supply: external or through STEVAL-IPE023V1 isolated USB board
- IEC61000 standard compliant
- RoHS compliant

### Description

The STPM33 energy metering evaluation board is a class 0.2, single-phase meter which includes tamper monitoring, CT and shunt current sensors for power line systems with  $V_{nom} = 140$  to  $300$  V<sub>(RMS)</sub>,  $I_{nom} / I_{max} = 5/100$  A<sub>(RMS)</sub>,  $f_{lin} = 50/60$  Hz  $\pm 10\%$  and  $T_{amb} = -40$  to  $+85$  °C.

Measured active/reactive power can be output from two programmable LEDs on the board.

The board can be interfaced with a PC running evaluation software through an isolated RS232 port, or through the STEVAL-IPE023V1 USB isolated interface tool for configuration and data reading.

The board also has SPI/UART pins available to interface a microcontroller for application development.

# 1 Schematic diagrams

Figure 1. RS232/UART circuit schematic

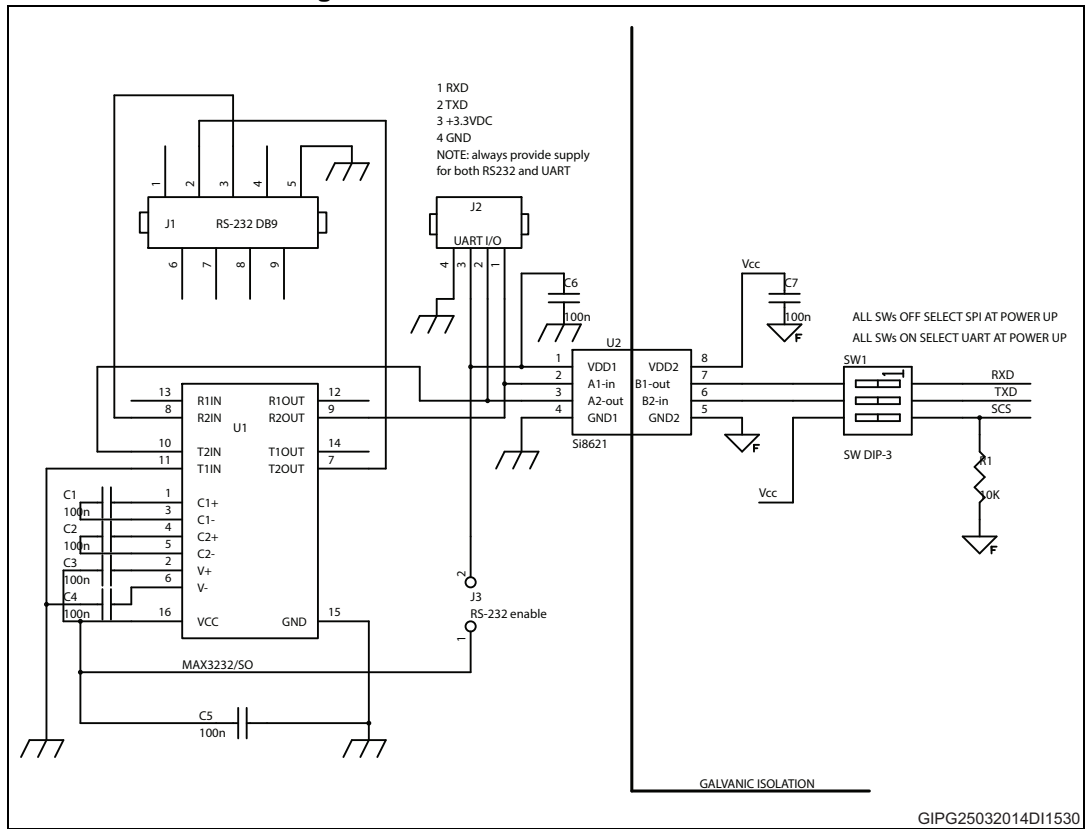
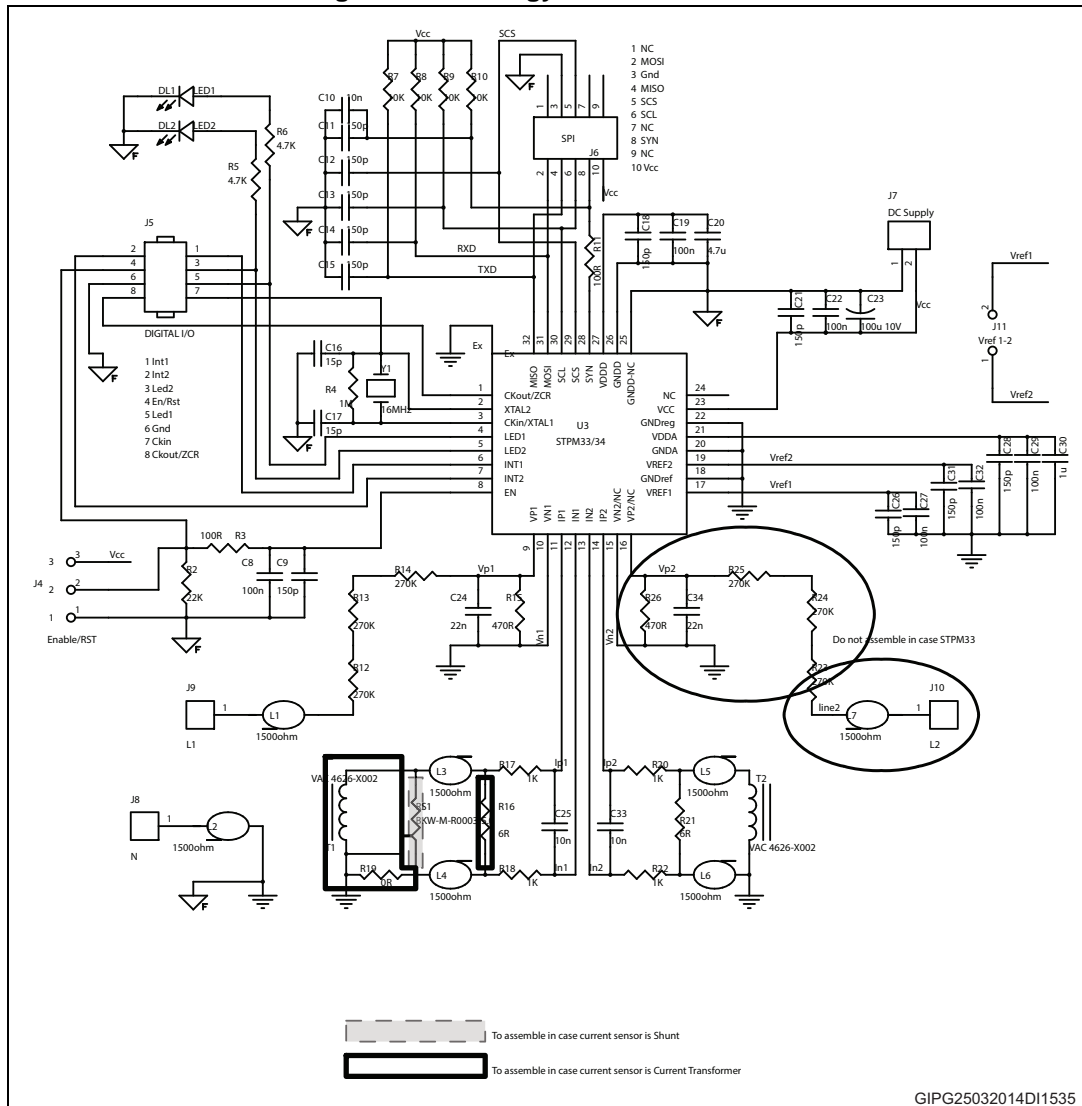


Figure 2. Metrology circuit schematic



## 2 Revision history

Table 1. Document revision history

Date	Revision	Changes
31-Mar-2014	1	Initial release.