Dual-phase energy metering evaluation board with 2 current transformers based on the STPM34

Features

- 0.2% accuracy dual or split-phase meter
- \( V_{\text{nom}}(\text{RMS}) = 140 \text{ to } 300 \text{ V}, I_{\text{nom}}/I_{\text{max}}(\text{RMS}) = 5/100 \text{ A}, f_{\text{lin}} = 50/60 \text{ Hz} \pm 10\% \)
- 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 STPM34 evaluation board is a class 0.2, dual-phase meter with 2 CTs for power line systems with \( V_{\text{nom}} = 140 \text{ to } 300 \text{ V}_{\text{RMS}} \), \( I_{\text{nom}}/I_{\text{max}} = 5/100 \text{ A}_{\text{RMS}} \), \( f_{\text{lin}} = 50/60 \text{ Hz} \pm 10\% \) and \( T_{\text{amb}} = -40 \text{ to } +85 ^\circ \text{C} \).

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

GIPG25032014DI1530
Figure 2. Metrology circuit schematic
2 Revision history

Table 1. Document revision history

<table>
<thead>
<tr>
<th>Date</th>
<th>Revision</th>
<th>Changes</th>
</tr>
</thead>
</table>
| 31-Mar-2014| 1        | Initial release.