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STEVAL-IPE008V1

Energy meter (3-phase) demonstration board based on the STPM01 and STR715FR0

Data Brief

Features

- 3-phase meters
- Multi-chip topology, in which each phase is monitored using a single-phase device
- Common clock network
- Power supply in fly-back topology using a VIPer12ADIP-E

STEVAL-IPE008v1

AM03203v1

Description

The STEVAL-IPE008V1 demonstration board shows how to design a 3-phase meter using STPM01 as measuring device and a VIPer12ADIP-E as SMPS (switch mode power supply). The STPM01 is a metering ASSP implemented in an advanced 0.35 µm BCD6 technology. It is designed for the effective measurement of active, reactive, apparent energies, V_{RMS}, I_{RMS}, instantaneous voltage and current, and frequency in power line systems that use the current transformer, Rogowski coil and/or shunt principle. This device can be used as a standalone on-board metering device in single-phase energy meter applications or as a peripheral in a microprocessor based single- or 3-phase meter. In a standalone configuration STPM01 outputs a pulse train signal having a frequency proportional to the active power used, while in peripheral mode STPM01 is used in a microprocessor based application. In this case, measured data are read at a fixed interval from the device internal registers by means of SPI interface processed by a microcontroller.

1 Circuit schematics

Figure 1. Top layer circuit schematic

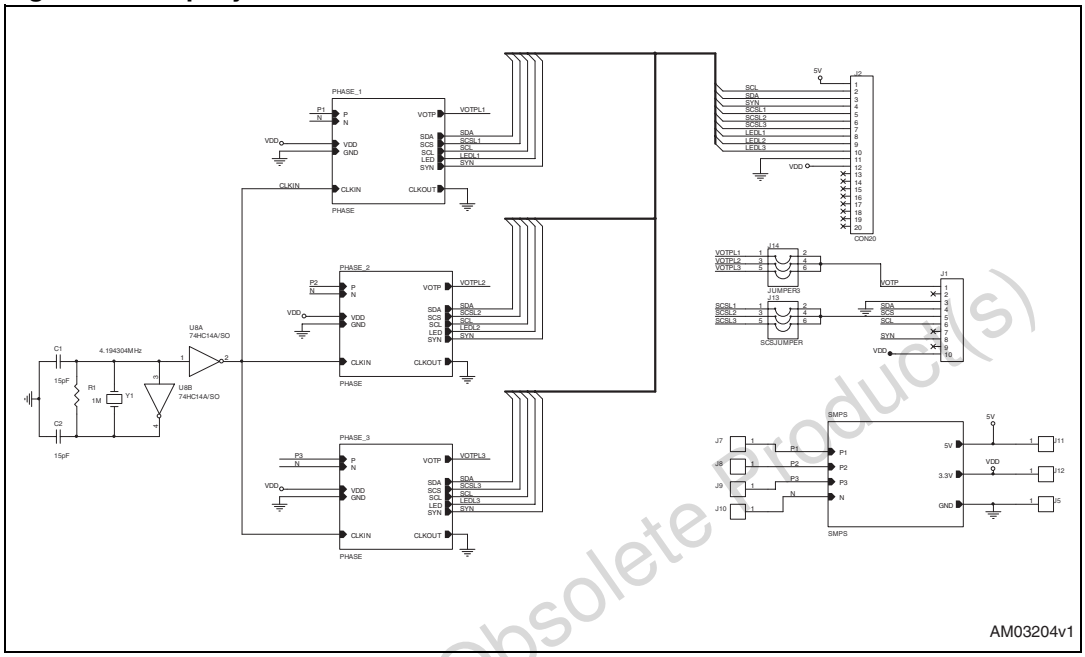


Figure 2. SMPS circuit schematic

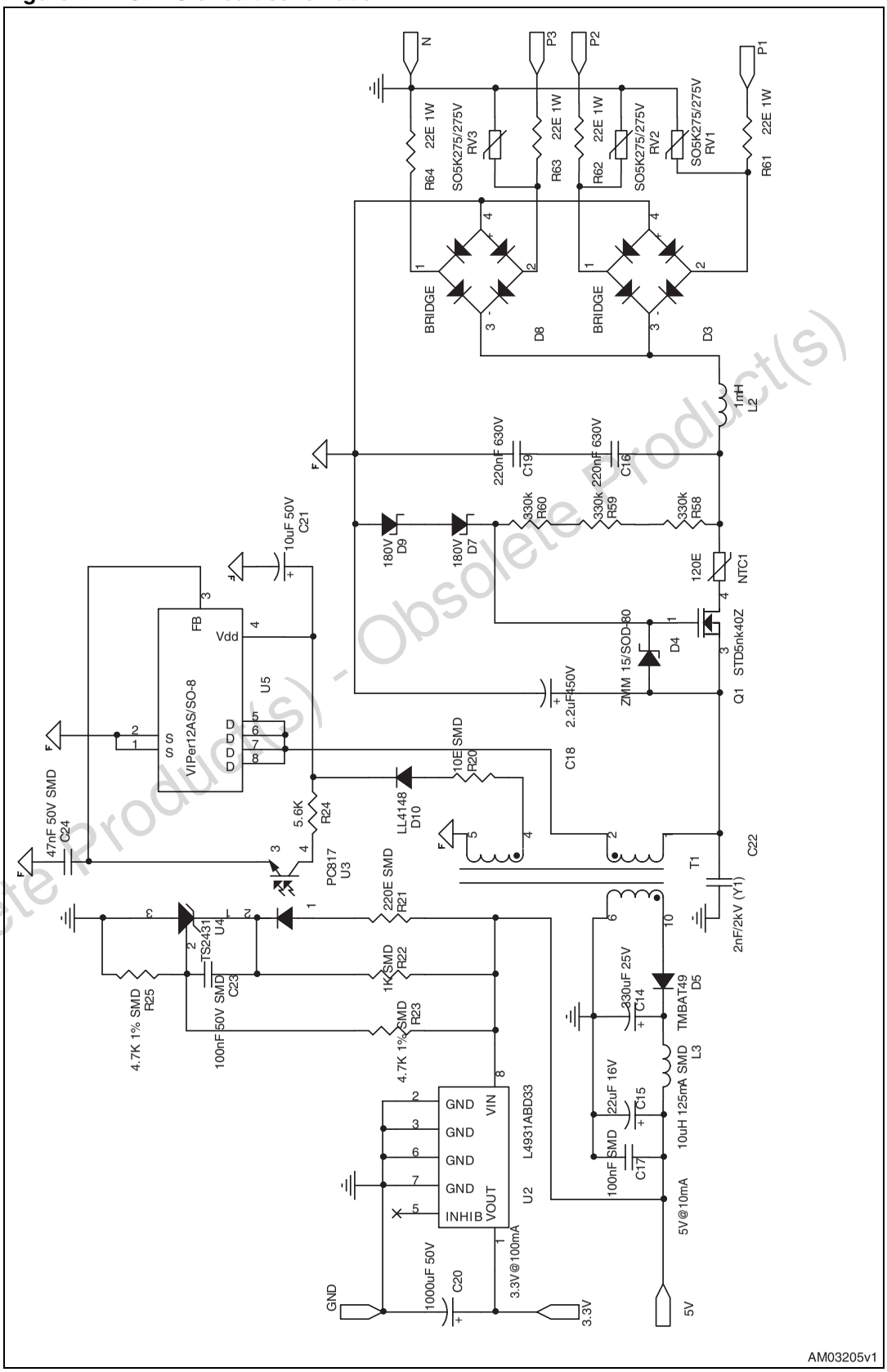


Figure 3. Phase circuit schematic

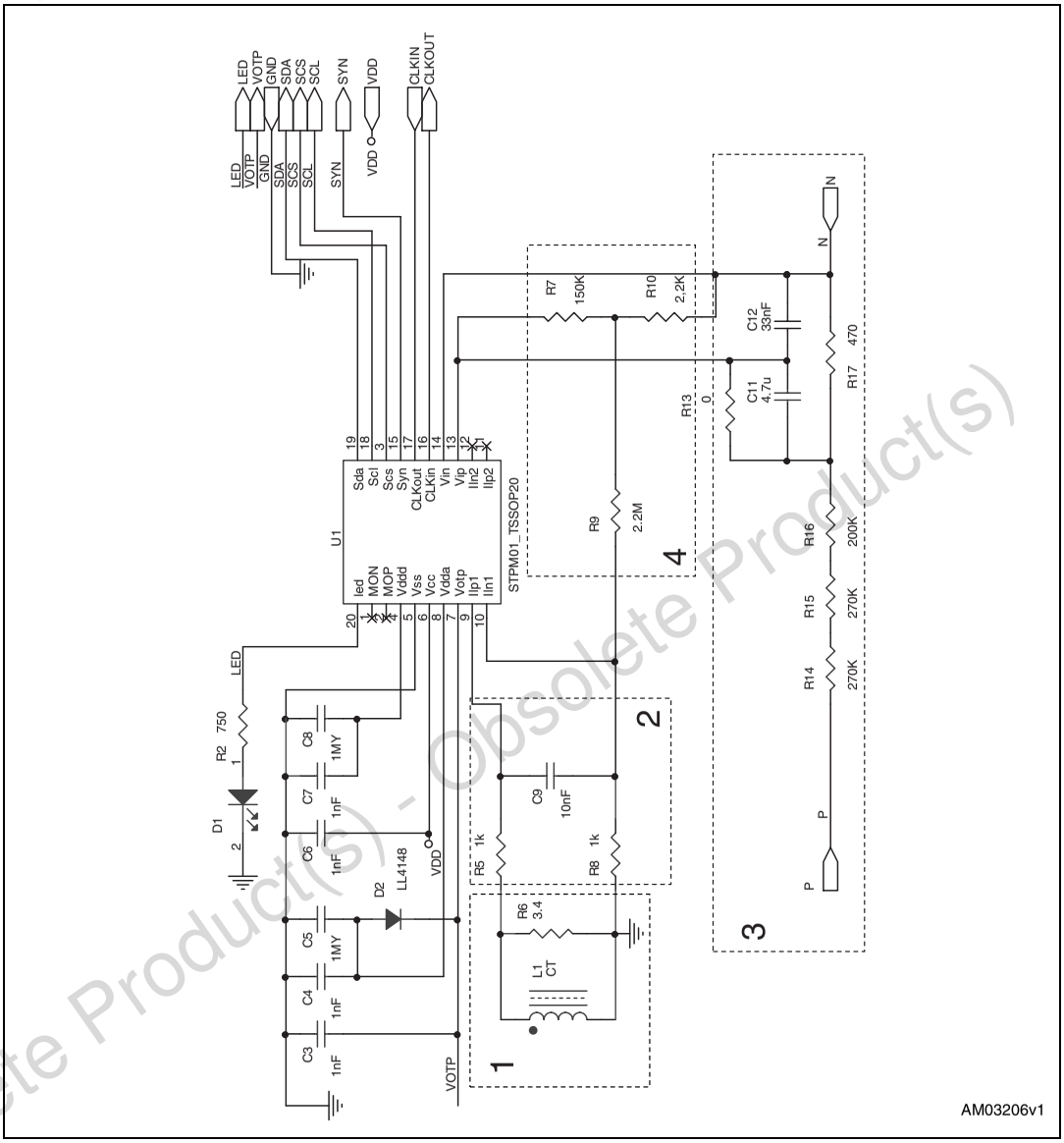


Figure 4. Clock management network schematic

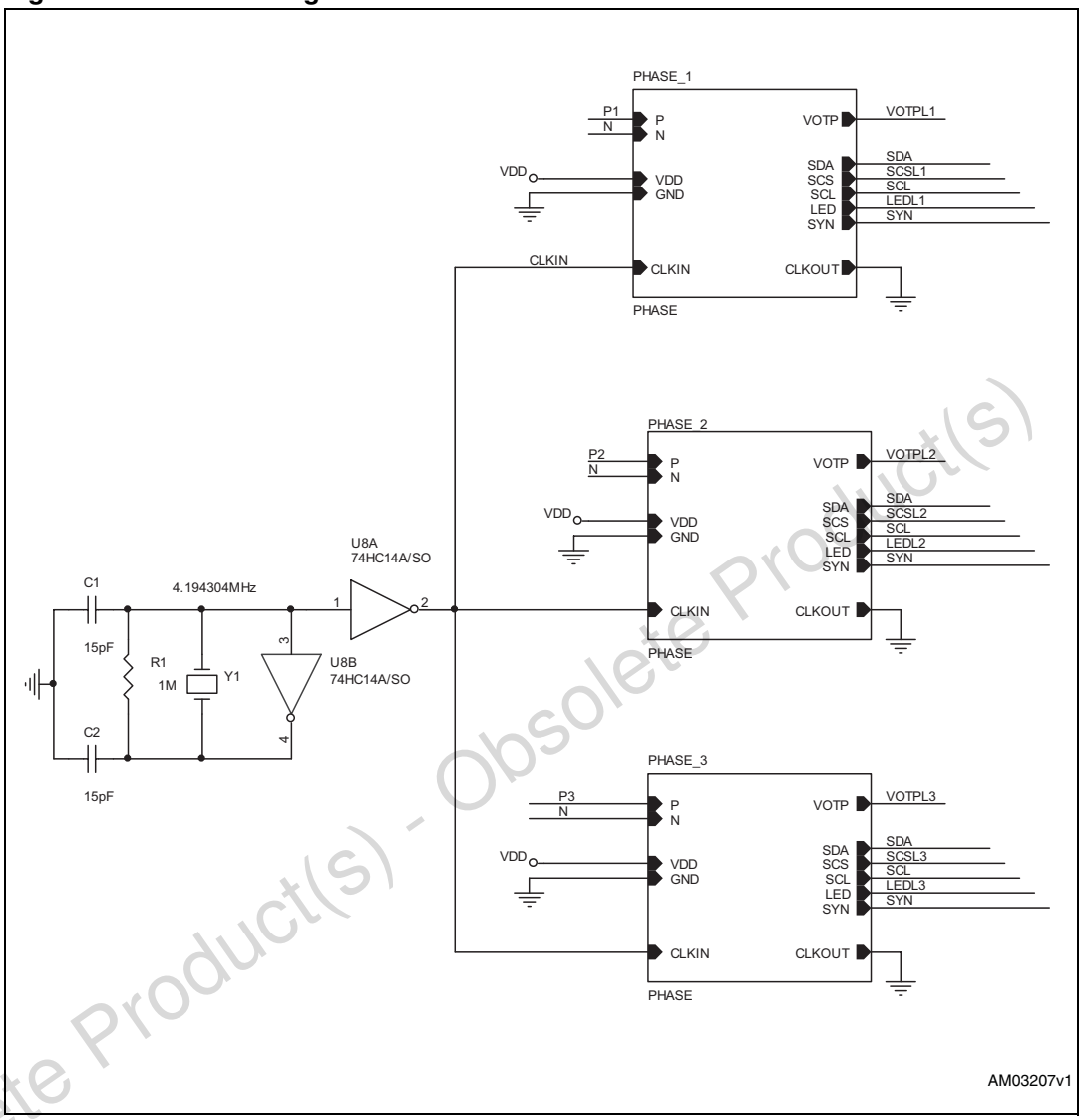
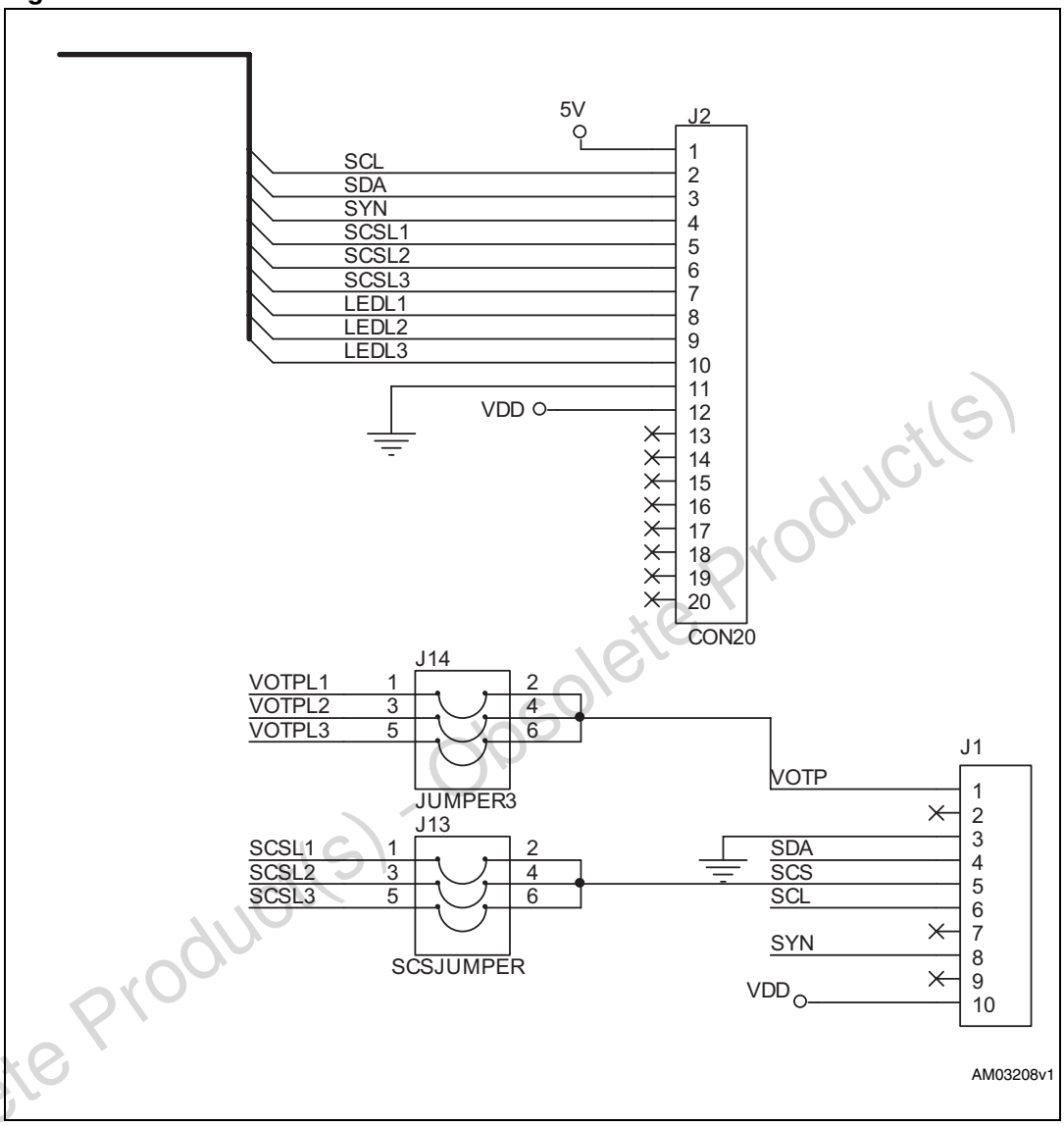


Figure 5. Connectors schematic



2 Revision history

Table 1. Document revision history

Date	Revision	Changes
25-Nov-2008	1	Initial release.

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