

Features

- Active, reactive, apparent, fundamental active energy, V_{RMS} , I_{RMS} and frequency measurements
- Anti-tampering on neutral wire
- Tamper detection on meter box, time stamp even during power-down
- PFI/PFO: power management, data backup
- LCD display
- Power line communication
- Automatic meter reading demonstration
- SMPS power supply
- RS232 IAP
- PC interface control
- Class 1



STEVAL-IPE006V2

Applications

The STEVAL-IPE006V2 is a first modular metering solution integrating all features for single multifunction energy meter. The measured values can be observed on the board's LCD or through the serial interface on a PC screen. All the parameter settings are changeable using a user friendly GUI. For safety reasons, the power supply and metering parts are galvanically isolated from the rest of the board. Application engineers can use this board to evaluate the components or quickly start with their own power meter product development project. All software and firmware source codes, as well as Gerber files and the bill of material are provided to help you get started easily and allow you to focus on the specific requirements of your application.

1 Board schematic

Figure 1. Energy meter section schematic

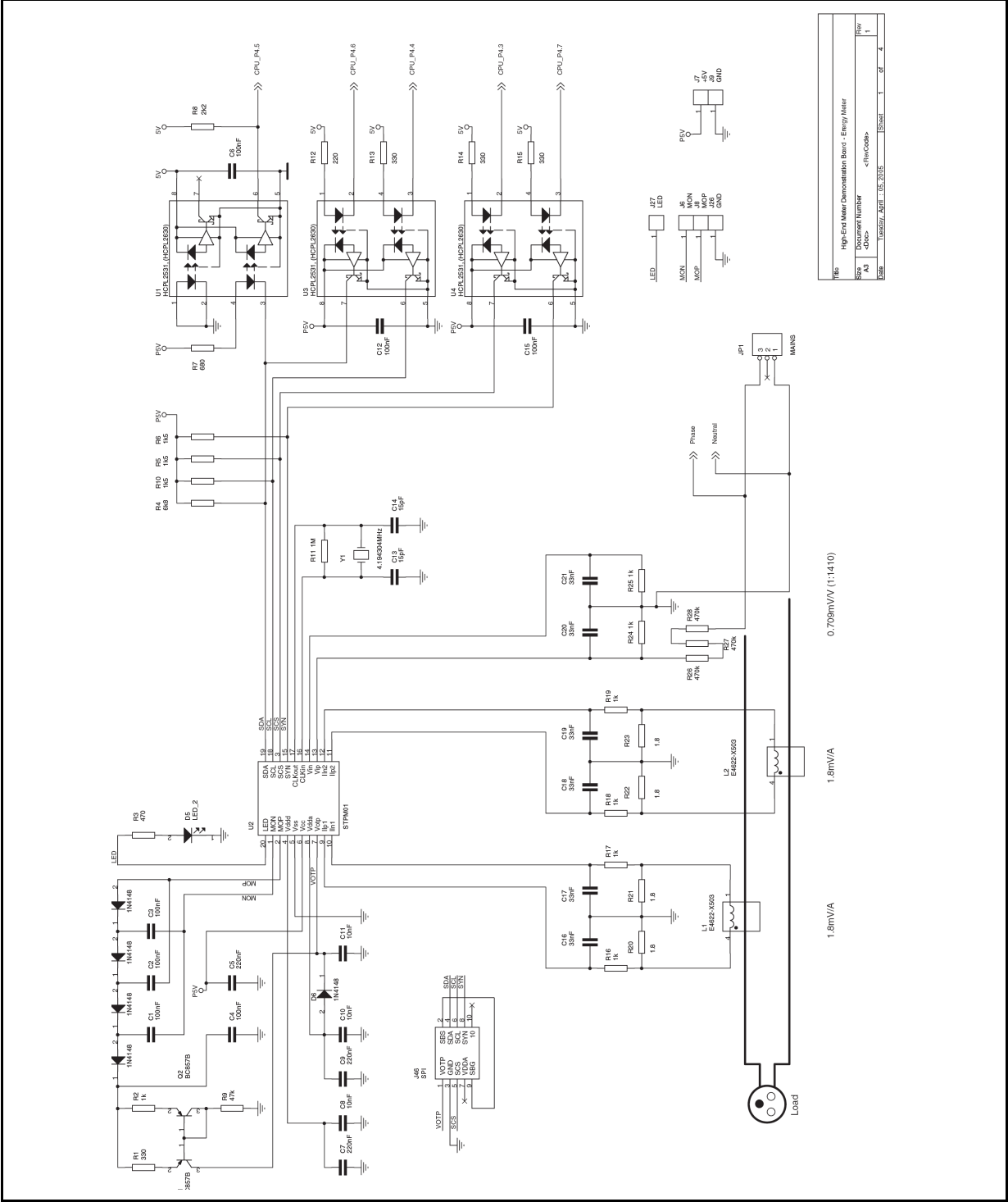
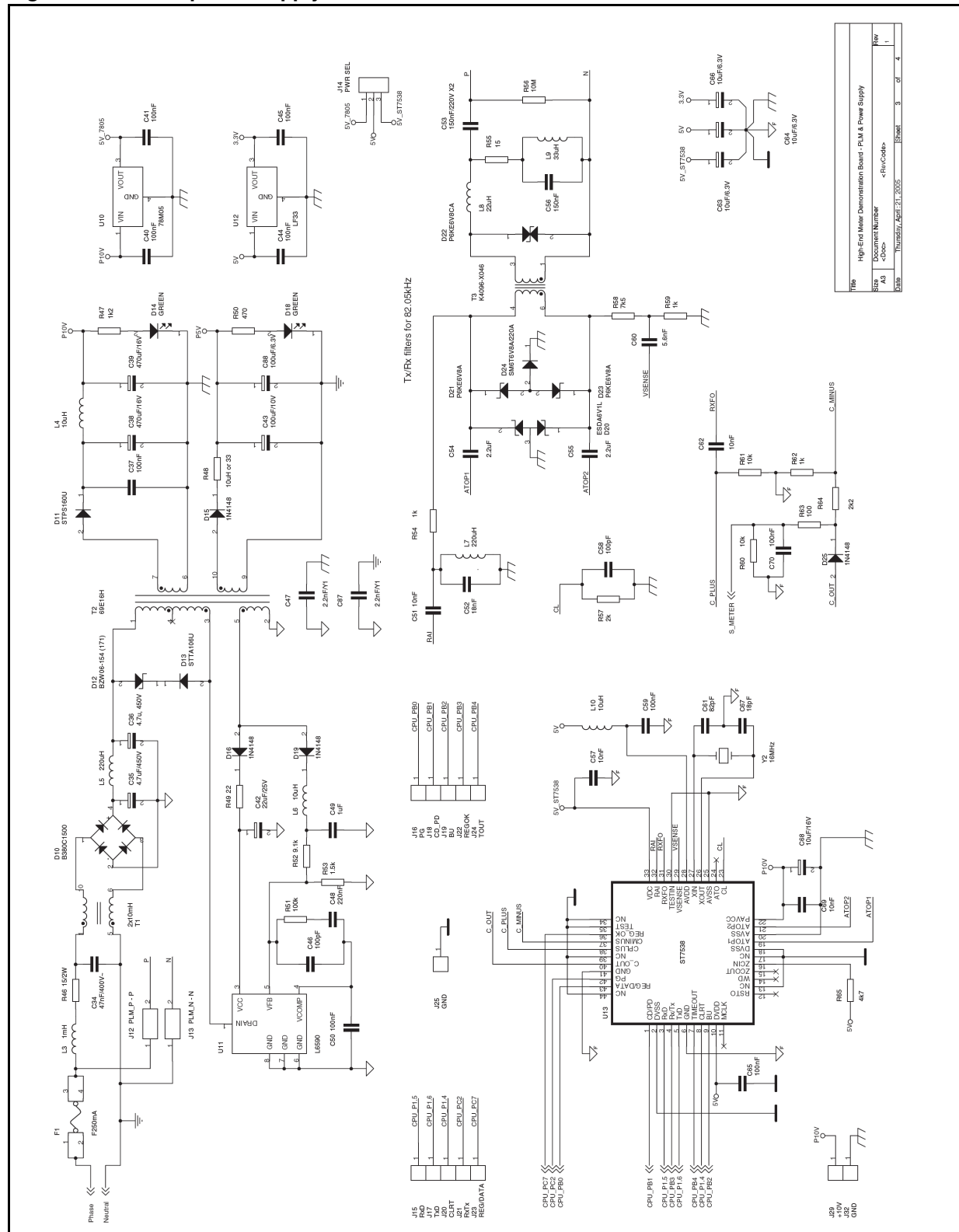


Figure 2. PLM & power supply section schematic



The schematic diagram illustrates the electrical connections for the High-End Meter Demonstration Board - uPSD. Key components and their connections include:

- Resistors:** R68-R74 (10k, 10k, 10k, 10k, 10k, 10k, 10k), R80-R87 (470, 470, 470, 470, 470, 470, 470), R88-R94 (10k, 10k, 10k, 10k, 10k, 10k, 10k).
- Capacitors:** C71 (22pF), C72 (22pF), C73 (10nF), C74 (10nF), C75 (10nF), C76 (10nF), C77 (10nF).
- Integrated Circuits:** U14 (SG-4002CA), U15 (uPSD), U16 (uPSD), U17 (uPSD), U18 (uPSD), U19 (uPSD), U20 (uPSD), U21 (uPSD), U22 (uPSD), U23 (uPSD), U24 (uPSD), U25 (uPSD), U26 (uPSD), U27 (uPSD), U28 (uPSD), U29 (uPSD), U30 (uPSD), U31 (uPSD), U32 (uPSD), U33 (uPSD), U34 (uPSD), U35 (uPSD), U36 (uPSD), U37 (uPSD), U38 (uPSD), U39 (uPSD), U40 (uPSD), U41 (uPSD), U42 (uPSD), U43 (uPSD), U44 (uPSD), U45 (uPSD), U46 (uPSD), U47 (uPSD), U48 (uPSD), U49 (uPSD), U50 (uPSD), U51 (uPSD), U52 (uPSD), U53 (uPSD), U54 (uPSD), U55 (uPSD), U56 (uPSD), U57 (uPSD), U58 (uPSD), U59 (uPSD), U60 (uPSD), U61 (uPSD), U62 (uPSD), U63 (uPSD), U64 (uPSD), U65 (uPSD), U66 (uPSD), U67 (uPSD), U68 (uPSD), U69 (uPSD), U70 (uPSD), U71 (uPSD), U72 (uPSD), U73 (uPSD), U74 (uPSD), U75 (uPSD), U76 (uPSD), U77 (uPSD), U78 (uPSD), U79 (uPSD), U80 (uPSD), U81 (uPSD), U82 (uPSD), U83 (uPSD), U84 (uPSD), U85 (uPSD), U86 (uPSD), U87 (uPSD), U88 (uPSD), U89 (uPSD), U90 (uPSD), U91 (uPSD), U92 (uPSD), U93 (uPSD), U94 (uPSD), U95 (uPSD), U96 (uPSD), U97 (uPSD), U98 (uPSD), U99 (uPSD), U100 (uPSD).
- Other Components:** J33 (CLK BEL), J43 (CPU CTRL), J44 (RST BEL), J45 (FLASH LINK), J46 (DEBAG), J47 (JEN), J48 (JEN), J49 (JEN), J50 (JEN), J51 (JEN), J52 (JEN), J53 (JEN), J54 (JEN), J55 (JEN), J56 (JEN), J57 (JEN), J58 (JEN), J59 (JEN), J60 (JEN), J61 (JEN), J62 (JEN), J63 (JEN), J64 (JEN), J65 (JEN), J66 (JEN), J67 (JEN), J68 (JEN), J69 (JEN), J70 (JEN), J71 (JEN), J72 (JEN), J73 (JEN), J74 (JEN), J75 (JEN), J76 (JEN), J77 (JEN), J78 (JEN), J79 (JEN), J80 (JEN), J81 (JEN), J82 (JEN), J83 (JEN), J84 (JEN), J85 (JEN), J86 (JEN), J87 (JEN), J88 (JEN), J89 (JEN), J90 (JEN), J91 (JEN), J92 (JEN), J93 (JEN), J94 (JEN), J95 (JEN), J96 (JEN), J97 (JEN), J98 (JEN), J99 (JEN), J100 (JEN).

The diagram also includes a table of components and their values, and a table of revision history.

Rev	Document Number	uPSD	Sheet	of
1	1	1	4	4

2 Revision history

Table 1. Revision history

Date	Revision	Changes
13-Jul-2006	1	Initial release.

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