



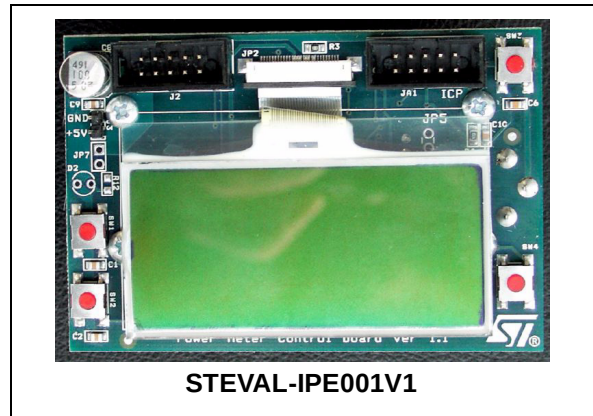
## STEVAL-IPE001V1

### Electricity Meter (mono phase) Control Board + STEVAL-IPE002V1

Data Brief

#### Features

- Single-phase, 0.5 class accuracy guaranteed
- $U_{NOM}(RMS) = 140$  to  $300V$ ,  
 $I_{NOM}/I_{MAX}(RMS) = 2/20A$ ,  $f_{LIN} = 45$  to  $65Hz$ ,  
 $T_{AMB} = -40$  to  $+85\text{ }^{\circ}C$
- Tamper detection for power line systems
- LED checking for:
  - Functioning
  - No Load Condition
  - Tamper Detection
  - Reverse Energy Direction
- Stepper Motor Display Connector
- Capacitive Power Supply
- SPI Interface Connector:
  - Active, Reactive Apparent Power consumption
  - $V_{RMS}$ ,  $I_{RMS}$  and Line Frequency
  - Status
  - Remote Reset Request
- Tampering detection feature:
  - Multiple anti-fraud for both line and case tamper
  - Remote Reading of Tamper Flag of STPM01
- In-Circuit Programming Capability
- Ultra Low current RTC and Sleep Mode
- Anti-Tamper and Time Stamp
- External EEPROM
- Dedicated LCD module for displaying:
  - Accumulated kWh, kVarh, kVAh, Vrms and Irms, Frequency
  - Date and Time
  - Tamper and Power-Down event
- Secure and Reprogrammable Flash Memory Enables Flexible Firmware Updates up to 100 cycles



- Multifunctional Pushbuttons, Tamper simulation and Reset

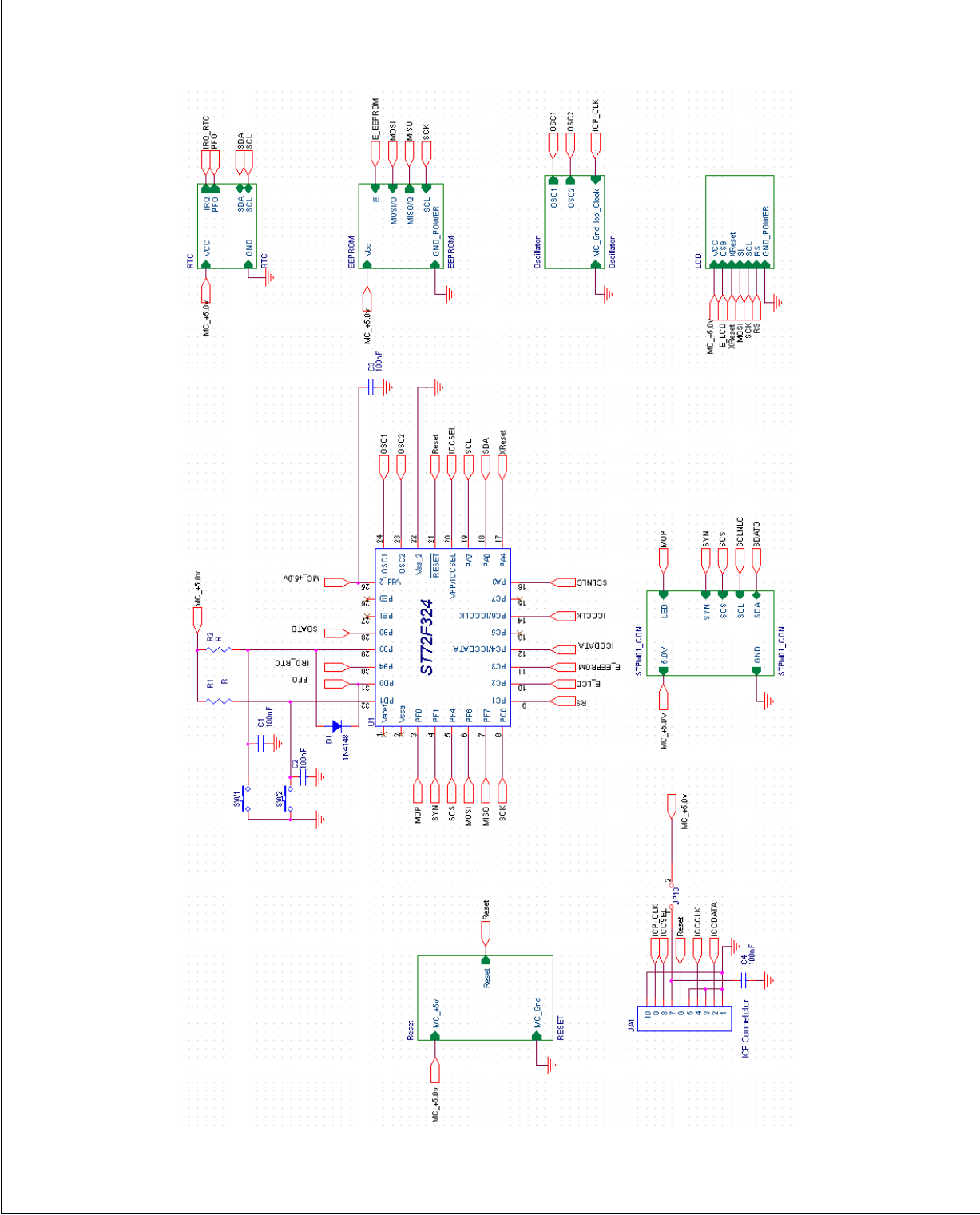
#### Applications

This metering module can be used to build a Class 0.5 Single-phase standalone or microprocessor based meter with or without Tamper detection for power line systems of  $U_{NOM} = 140$  to  $300VRMS$ ,  $I_{NOM}/I_{MAX} = 2/20A_{RMS}$ ,  $f_{LIN} = 45$  to  $65Hz$  and  $T_{AMB} = -40$  to  $+85\text{ }^{\circ}C$ . It is an integrated system designed to provide the user with a complete, ready-to-use energy meter application. The reference design is a medium/low-end solution for power metering, using the ST72F324 microcontroller, the M41ST87 Real Time Clock, the M95256 EEPROM and the STPM01 energy meter ASSP device. The 324PM Reference Design demonstrates how effectively the STPM01 can be used in real-world energy meter applications and helps the user develop own application. The Reference Design kit can be used in two ways:

- For demonstration purpose. Connecting the Reference Design to an AC power Source and changing all the settings parameters through the GUI interface and the parallel hardware programmer/reader.
- For user application evaluation and development.

# 1 Board Schematic

Figure 1. Scheme



## 2 Revision history

| Date        | Revision | Changes          |
|-------------|----------|------------------|
| 12-Jan-2006 | 1        | Initial release. |

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