



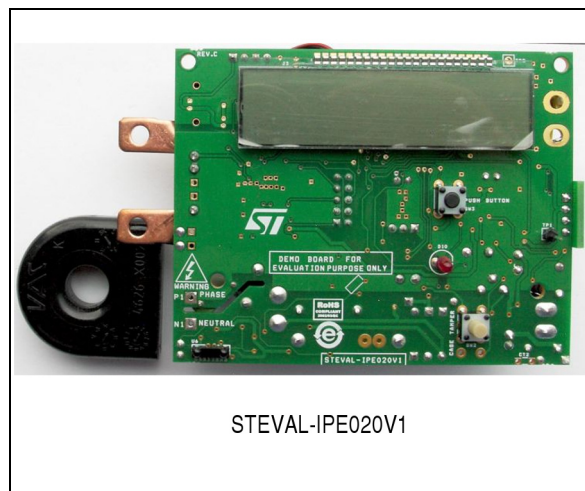
STEVAL-IPE020V1

Single phase electricity meter with dual EEPROM M24LR64 and STPM10 and STM8L152

Data brief – preliminary data

Features

- Accuracy: class 1 with dynamic range 200:1
- Nominal voltage: 240 V
- Nominal current: 10 A (I_{TYP})
- Maximum current: 80 A (I_{MAX})
- Operating range: 0.6 Vb to 1.2 Vb
- Meter constant: 3200 impulses/kWh
- Power frequency range: 45 Hz to 65 Hz
- Sensor: primary side CT and secondary side Shunt
- Communication interface: IrDA
- RoHS compliant



Description

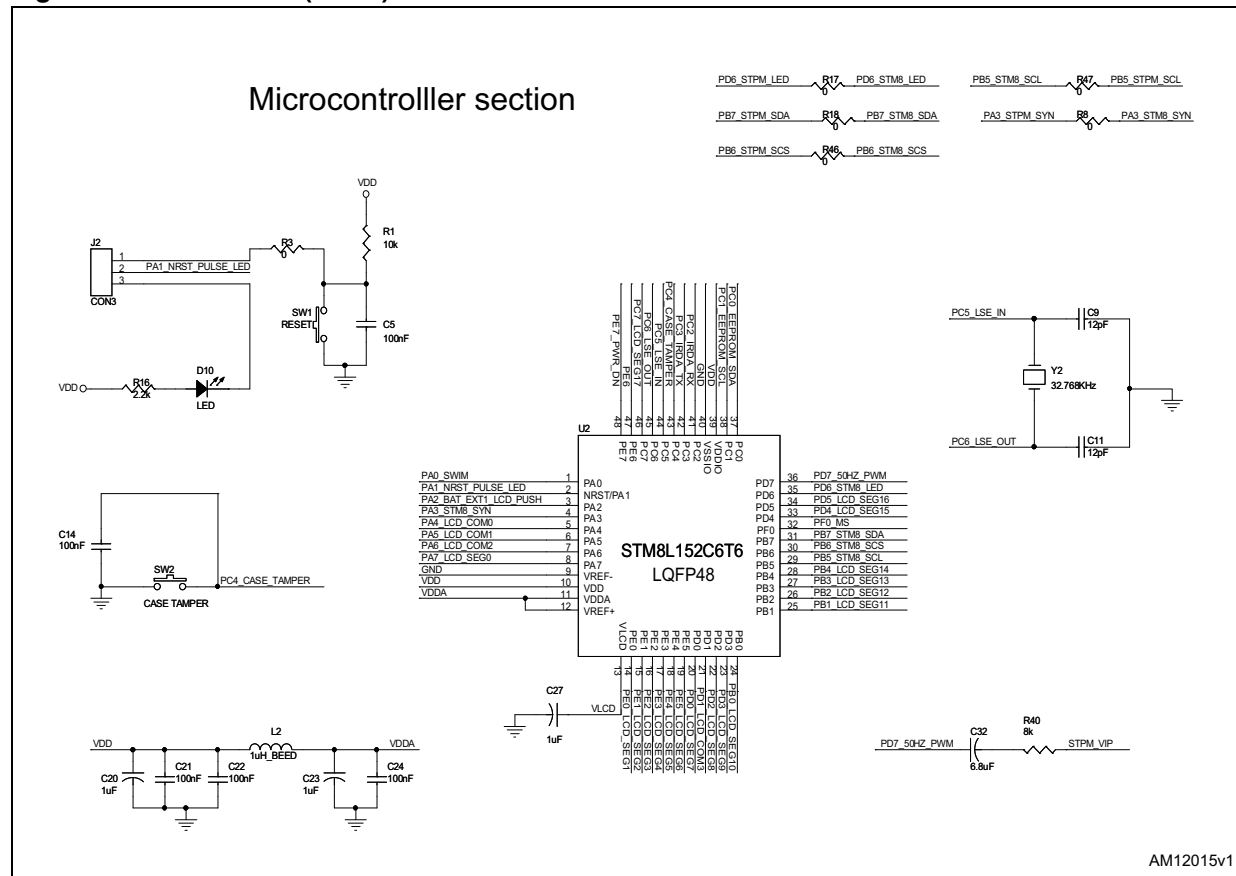
The STEVAL-IPE020V1 demonstration board implements a single-phase energy meter based on the STPM10 metering IC and STM8L152 microcontroller.

The demonstration board is a fully functional single-phase solution with parameter display, tamper management, maximum demand (MD) calculation, EEPROM data logging, and low power management.

The metering data stored in the dual EEPROM can be read using the RFID reader.

Figure 1. Schematic (1 of 4)

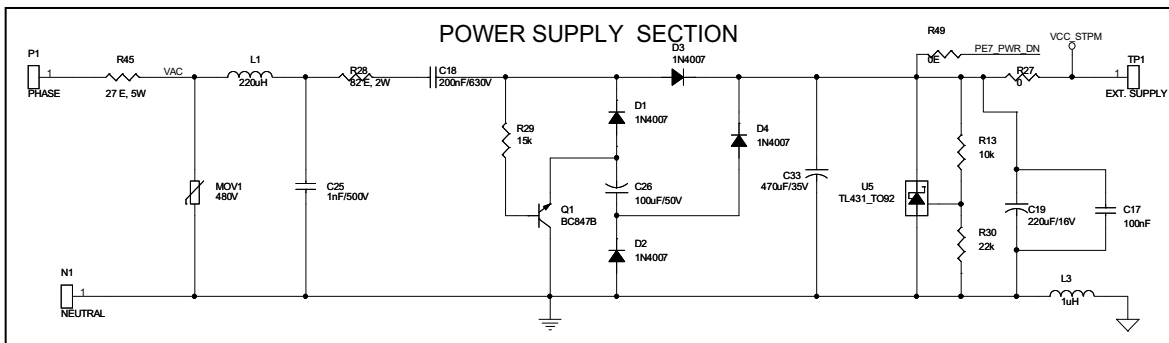
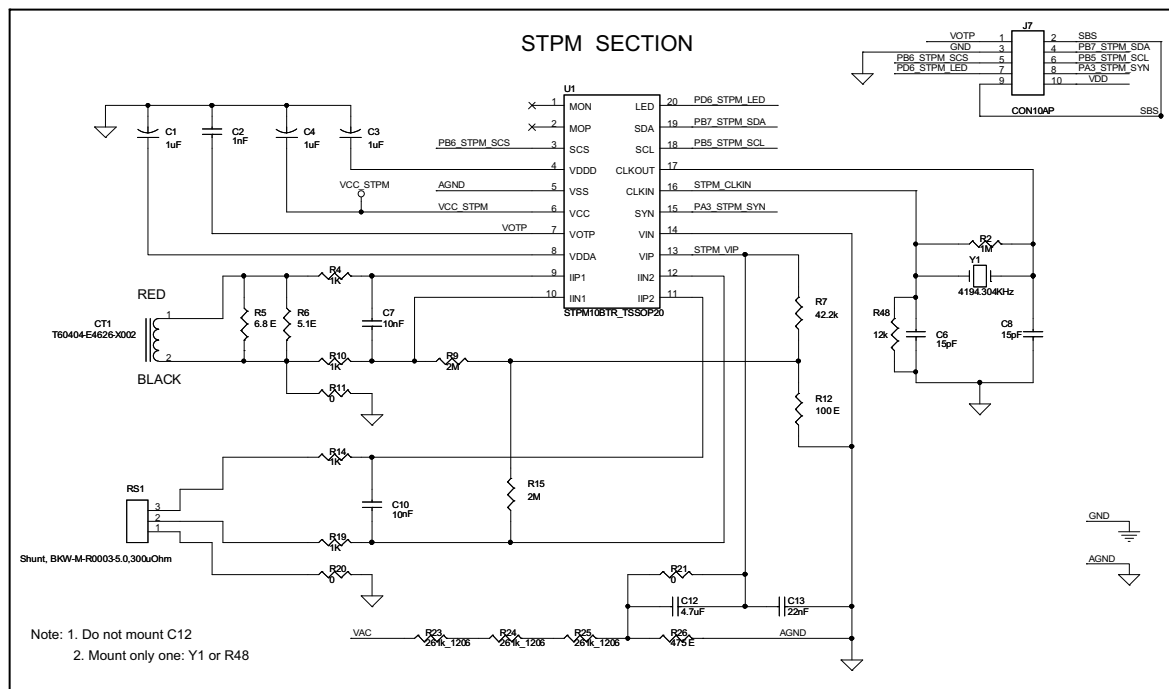
Figure 1. Schematic (1 of 4)



The schematic diagram illustrates the PCB layout for the AM12056v1, divided into four main functional sections:

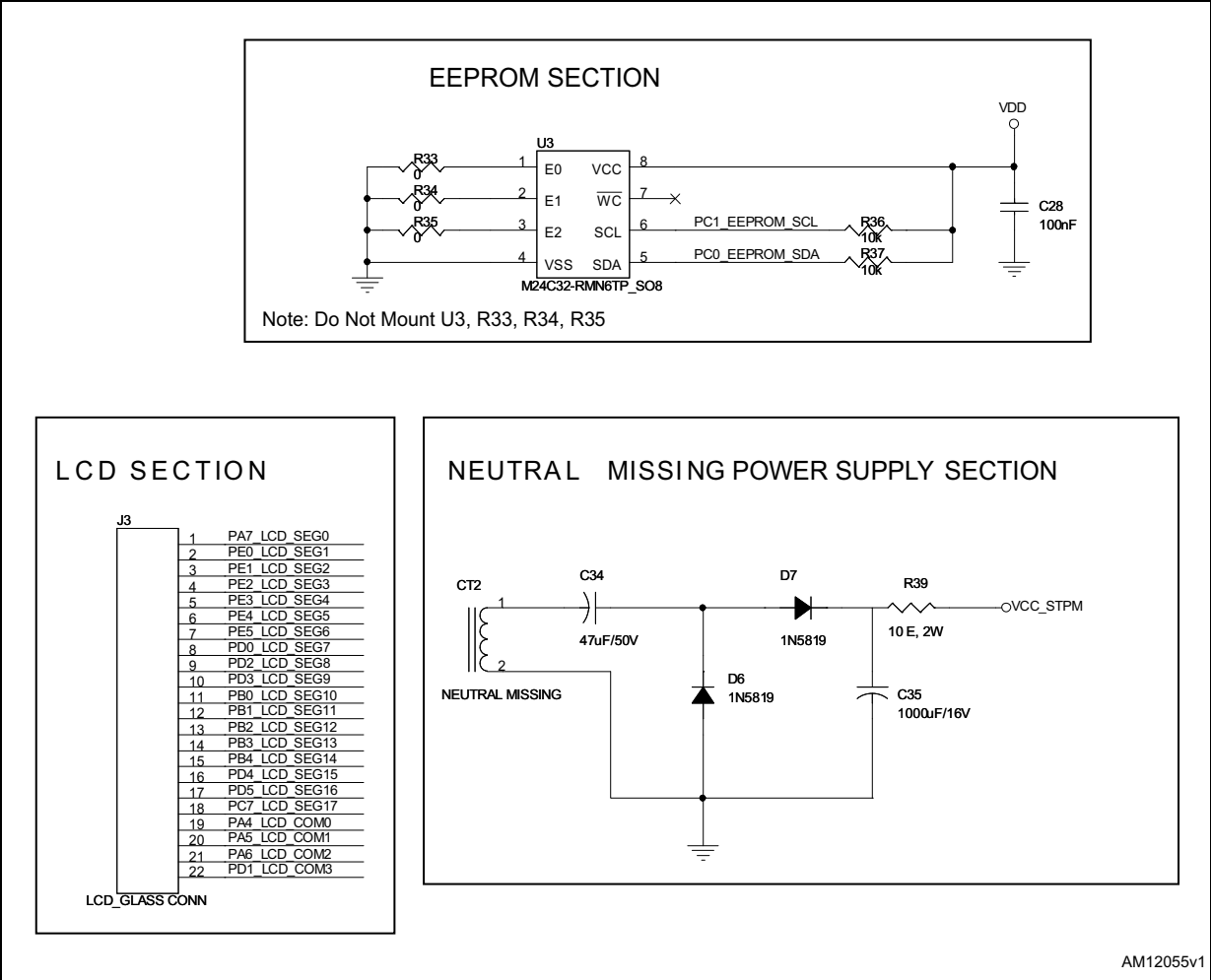
- MAGNETIC SENSOR:** Features the AH180_SC59-3L (U4) connected to VDD and GND. The output is connected to PF0_MS through a 100k resistor (R41).
- CONNECTOR SECTION:** Shows connections for J1 (SWIM CONN), J4 (ANT7-M24LR-A_CON), and J5 (CON4). It includes pins for VDD, PA0_SWIM, GND, PA1_NRST_PULSE_LED, PD6_STM8_LED1, TP2 (TEST POINT), PA0_SWIM, PE6, PE7_PWR_DN, VDD, PC1_EEPROM_SCL, PC0_EEPROM_SDA, and GND.
- BATTERY SECTION:** Details the power supply section including a 3V_VL-2330VCN battery (BT2), a 3V_CR2032F4N battery (BT1), and various diodes (D11, D12, D13, D14, D5) and resistors (R32, R22, C29) connected to VCC_STPM and VDD.
- IRDA MODULE:** Shows the connection of the IRDA module (U6, TFDU6300) to the PC3_IRDA_TX and PC2_IRDA_RX pins via J6 (CON2). It includes resistors (R42, R43, R31, R38, R44) and capacitors (C30, C31, C16, C15) for signal conditioning and timing.

Figure 3. Schematic (3 of 4)



AM12016v1

Figure 4. Schematic (4 of 4)



AM12055v1

2 Revision history

Table 1. Document revision history

Date	Revision	Changes
13-Mar-2012	1	Initial release.

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