TI Smart Meter Board

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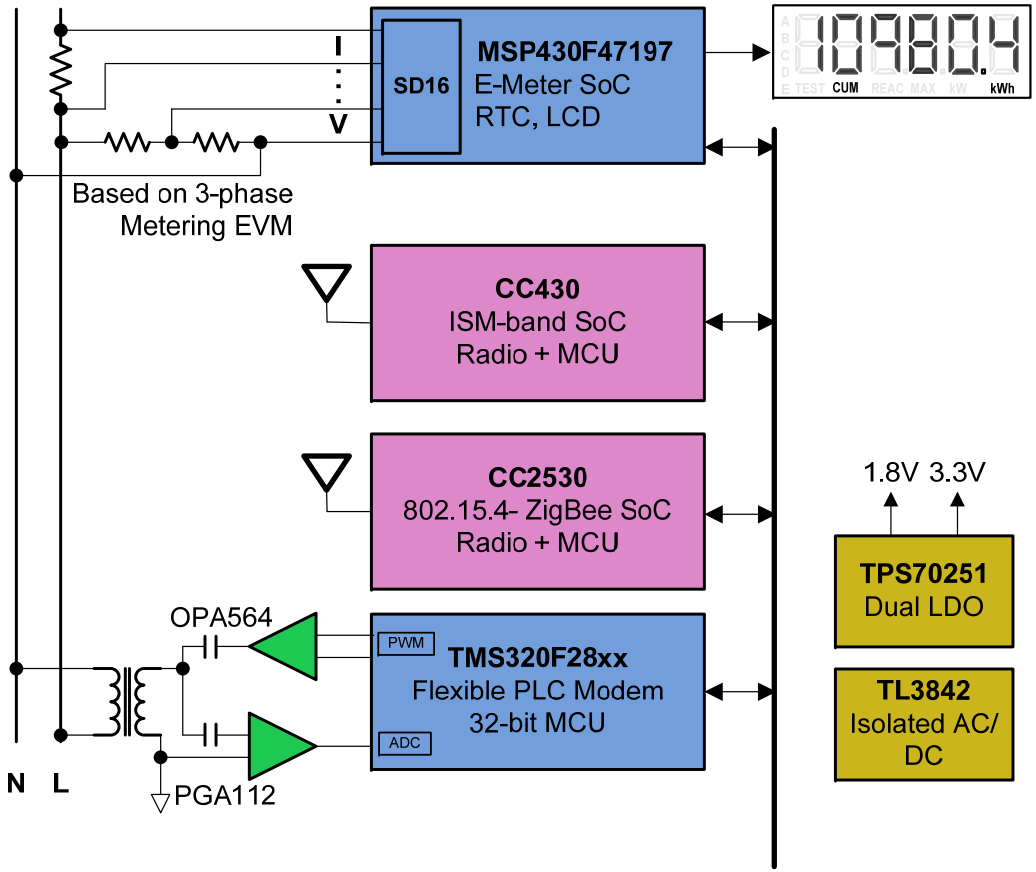
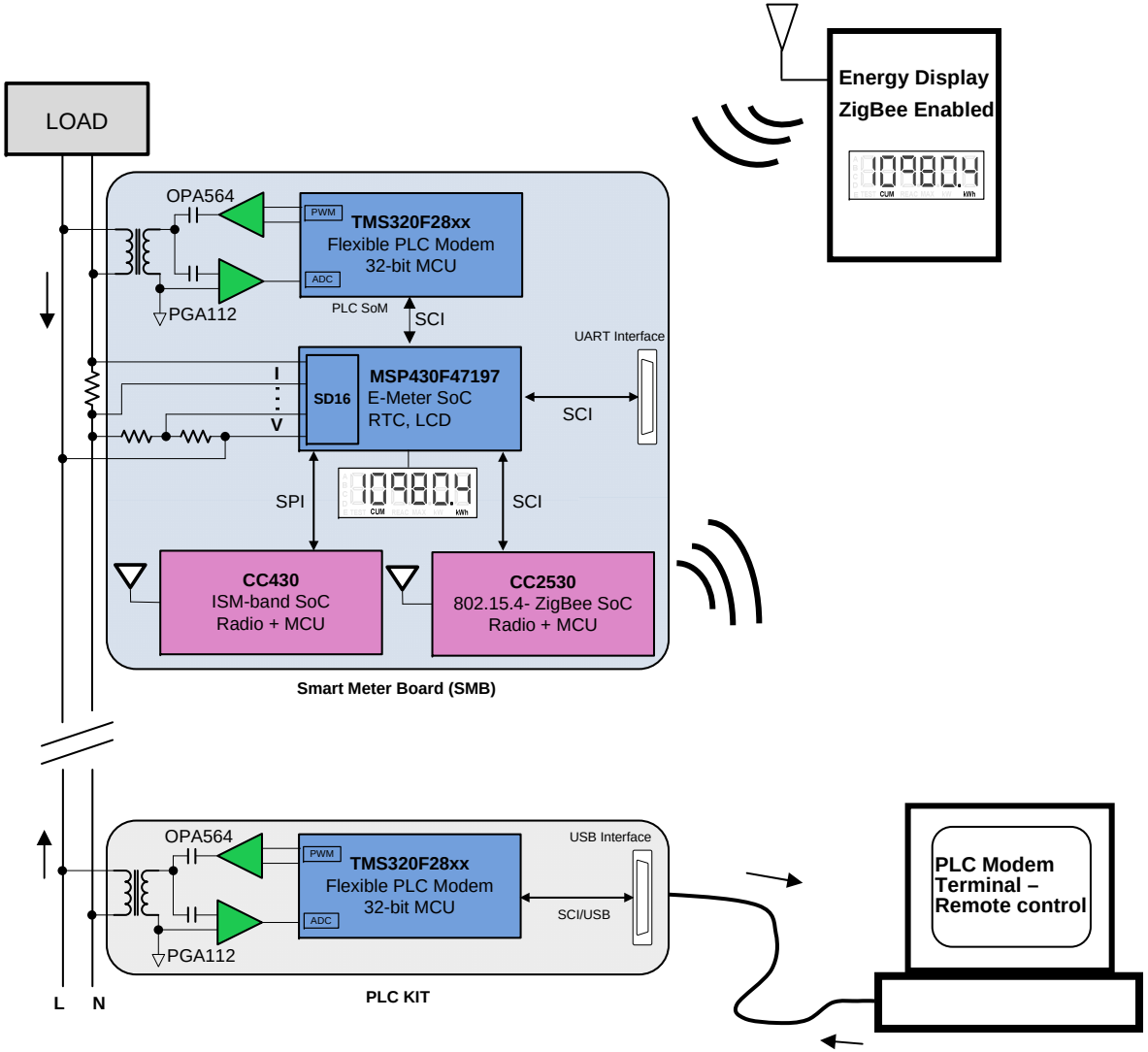
TI Smart Meter Board description

- **Demonstrate key TI components available today for a smart meter solution**
- **Metrology**
  - Based on the 3-phase **MSP430** Meter board
- **900MHz Wireless Solution**
  - Based on **CC430** 900MHz RF SoC
  - Wide Area Network support (WAN)
  - Wireless Mbus support
- **2.4GHz Wireless Solution**
  - Based on **CC2530** 2.4GHz ZigBee/IEEE 802.15.4 RF SoC
  - Home Area Network support (HAN)
- **Power Line Communication**
  - Based on **F28x** 32-bit MCU
  - S-FSK and OFDM
  - Solutions up to 128kb/s
  - WAN and HAN support



SMB Demo Setup: two-ways communication



From the meter to the outside world

- MSP430 measures energy
- Measurement information sent to wireless Display via the CC2530
- Measurement information sent to remote PLC modem terminal via Power Line with the 32-bit F28x MCU

From the outside world to the meter

- New configuration set-up sent to the meter via power-line (new tariff profile, parameter updates, etc.)
- Impact on measurement and visible change displayed on Energy Display

Future steps:

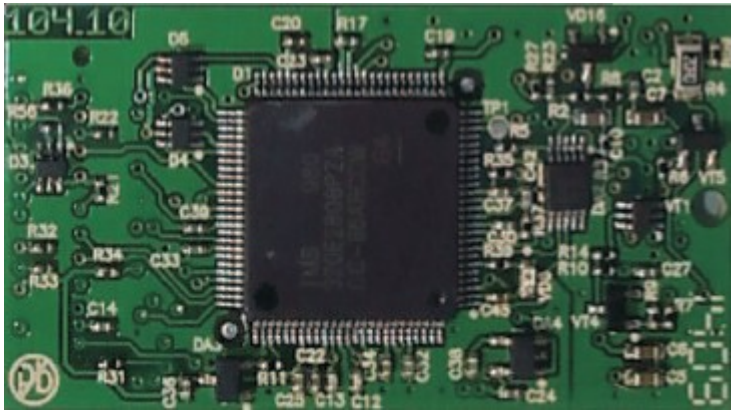
- Future communication upgrade with 900MHz CC430 options
- Load demand response

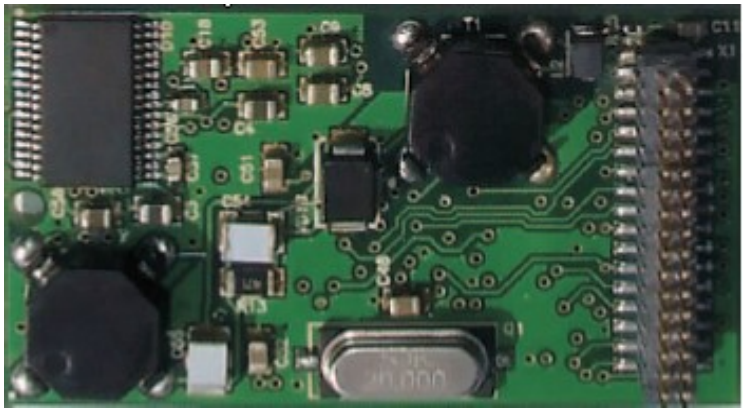
ZigBee IHD support

- All in home displays talk to the CC2530 using the ZSE 1.0 profile (CC2530 simulates an ESP) using the simple metering, price, and message clusters
- Support one, support them all! ZigBee profile interoperability makes it easy to support IHDs from multiple vendors
- Tested IHDs so far
  - InterCEL touch-screen IHD
  - Talon Communications eDot GFM-110 fridge magnet
  - LS Research Ratesaver IHD

PLC SoM module description

- PLC System-on-Module (SOM) implements S-FSK and OFDM modulation
- UART, SPI, or I2C host interface
- Features the TMS320F280x 32-bit microcontroller
- Compatible with EN 50065 (CENELEC), IEC 61000-3





Smart Meter Board outline