Texas Instruments Demonstrates Technical Leadership with Innovative System Solutions

Texas Instruments

Implement a complete smart grid from utility to home with the industry's broadest portfolio of complementary analog, embedded, connectivity and software solutions

AMSTERDAM (Oct. 14, 2013) – Building on its commitment to bring more intelligence to the smart grid, Texas Instruments (TI) announced new innovations at European Utility Week 2013 in Amsterdam. The new technologies allow smart grid developers to make the next generation of products for smart metering, grid infrastructure and communication systems, including smart homes and the Internet of Things (IoT).

Implementing an efficient smart grid consists of adding intelligence and communication to the utility distribution and transmission infrastructure, metrology devices and to connectable devices within a home or building. TI has developed industry-leading technology and tools with its complementary analog, embedded processing and connectivity portfolios that help developers create secure, economical and future-proof solutions for the smart grid and provide the flexibility to adapt a device for many countries, regions or standards.

New Metrology Solutions Provide More Performance, Memory and Cost Options

TI has increased the availability of its field-tested metrology evaluation kits and grown its portfolio of metrology ICs with more memory, security and accuracy. TI's new polyphase metering kit based on the MSP430F6679 SoC provides developers with best-in-class accuracy, more integrated memory and advanced anti-tampering protection. These SoCs can achieve electricity measurement accuracy that meets or exceeds global regulatory requirements for smart polyphase e-meters including IEC 62053-22 and ANSI C12.20 Class 0.2 standards. In addition, the large 512KB integrated Flash memory enables more sophisticated metering features like dynamic pricing tables, DLMS/COSEM or stacks for connectivity. The MSP430F6779 SoCs also include several advanced anti-tamper protection features that track meter tampering so utilities can easily reduce and prevent additional meter corruption. In addition, a 128-bit hardware-accelerated Advanced Encryption Standard (AES) module speeds encryption time compared to a traditional software implementation, improving meter security, performance and reducing energy consumption.

TI Gets European Flow Meters Connected with High-performance and Low-cost wM-Bus Platform

TI's growing portfolio of Sub-1 GHz wM-Bus solutions, such as the SimpleLink CC1120 RF transceiver, is perfectly suited to support the massive smart water and gas meter deployments in France, Italy and the U.K. With the best selectivity and blocking performance on the market today, TI has developed a reliable MCU and RF combo solution with a longer range and more robust communication for difficult environments across Europe and Asia. TI's wM-Bus technology allows flow meter and sub-meter manufacturers to meet standards requiring batteries to last more than 15 years in the field.

TI Announces New Ultrasonic Flow Meter with Ultimate Level of Flexibility and Accuracy

Featuring advanced software and robust hardware, TI's ultrasonic flow metering solution contains the industry's best combination of accuracy, intelligence and flexibility. The UFM-EVM solution is a complete ultrasonic flow meter reference design with advanced early leakage detection for gas, water and heat meters that balances the demands of power, accuracy and connectivity to provide an ideal starting point for developers in Europe and Asia. This new ultrasonic flow meter design includes complementary analog and embedded technology from TI, including a next-generation analog front end (AFE) that can measure both the low amplitude and high frequencies of ultrasounds required for flow meter applications, an advanced time-to-digital converter (TDC) that precisely measures tens of picoseconds to meet rigorous flow metering industry requirements (EN 1434, EN 14236, CJ 128, OIML R 49), and ultra-low power expertise featuring the TPS62730 DC/DC converter and MSP430 microcontroller to ensure the meter remains in the field for many years without needing a battery change. For more information about TI's new ultrasonic flow metering reference design (USD $199), please contact a TI sales support representative.

Expanding Industry's Broadest Portfolio of Wired and Wireless Connectivity Solutions

An effective smart grid requires utilities and smart grid vendors to provide a balance of wired and wireless connectivity options. TI offers the industry's broadest portfolio of Sub-1 GHz, 2.4 GHz, Wi-Fi, ZigBee, Near Field Communication (NFC) and power line communication (PLC) connectivity for the smart grid. In addition to being an active founding member of the major PLC alliances, TI has leveraged its extensive expertise and field trials to create the industry's first PLC device with PRIME, G3 and the drafted IEEE P1901.2 narrowband OFDM PLC support on the same chip. This device allows developers to easily create future-proof smart e-meters that can efficiently transmit data over existing power lines in any country. From a wireless perspective, the ubiquity of Wi-Fi has forced utilities to provide connected sub-metering devices to consumers that can track energy consumption in individual products in a smart home or building. TI is making sub-meters less complex by packaging its complementary metrology, connectivity and processors in an easy-to-use, low-power solution. As an example, TI's SimpleLink CC3000 Wi-Fi processor and MSP430 microcontroller enable a simple design for sub-metering applications. Contact a TI sales representative for sampling information.

Smart Data Concentrator Simplifies Data Collection and Transmission

The growth of smart grids has created a surplus of data that utilities need to efficiently collect, distribute and analyze. TI's recently announced Smart Data Concentrator provides the ultimate level of flexibility and scalability with numerous performance, cost and connectivity options so developers can design data concentrators that adapt to any worldwide smart grid standard. The Smart Data Concentrator enables robust automated meter reading (AMR), advanced metering infrastructure (AMI), and sensor network automation applications and allows utilities to simultaneously connect and manage more than 2,000 e-meters. The Smart Data Concentrator contains TI's highly scalable Sitara AM3359 processor with flexible peripherals that enable multiple wired and wireless connectivity options including Sub-1 GHz , 2.4 GHz ZigBee, Wi-Fi, NFC and multiple PLC standards (G3, PRIME and S-FSK support). The accompanying PLC system-on-module, paired with TI's PLC software stacks (PRIME, G3, IEEE P1901.2 or PLC-Lite™) allows smart grid developers to easily set up a data concentrator demo with PLC connectivity in 10 minutes.

For more information, visit www.ti.com [1].

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