Energy Metering ICs Deliver Highest Accuracy for Billing and Power Quality Monitoring Applications

Analog Devices, Inc. [1] (NYSE: ADI), a global leader in high-performance semiconductors for signal processing applications, today introduced four energy metering ICs [2] (integrated circuits) designed to improve the accuracy and performance of commercial, industrial, and residential smart meters [3]. A smart meter accurately measures how much electricity is consumed or generated, and communicates with the local utility for power monitoring, billing, and other purposes. ADI's new energy metering ICs enable smart electricity meters to deliver improved customer billing accuracy, advanced power quality monitoring, and reduced operating costs for utility companies.

"ADI is pleased to offer our customers the best in energy measurement technologies," said Ronn Kliger, Energy Group director, Analog Devices. "The devices introduced today are significant in that they are able to measure total active and reactive energy with accuracy and dynamic range exceeding Class 0.2 specifications for energy meters. The four new devices [4] are also the first in the industry to measure both reactive energy and active energy with 0.1 percent accuracy. In addition, one device [5] also offers capabilities to measure fundamental-only energies, which is critical for power quality measurements."

ADI recently formed a dedicated energy group, headed by Ronn Kliger, to address the growing technology needs for electric metering, substation automation, and emerging applications, such as solar/wind generation, energy storage, and others. "As a key supplier to power grid equipment manufacturers, ADI has developed a deep understanding of their needs," said Mr. Kliger. "We are supporting customers around the globe who are upgrading their offerings to accommodate emerging smart grid systems. ADI recognizes that smart energy grids are more than just smart meters, and we provide solutions across the entire energy generation, transmission, and distribution chain. Along with innovative energy metering ICs, Analog Devices offers radio frequency, power-line carrier communication, power management, and digital signal processing in support of smart grid applications."

Over the next five years, analysts report that up to 200 million smart meters will be installed worldwide fueled by the growing number of smart grid deployments. In China, a $596 billion stimulus program for smart grid expansion is currently underway with 170 million smart meters expected to be deployed within the next three to five years. Eighteen million homes—13 percent of all U.S. households—will get smart meters within three years as part of U.S. government grants to upgrade the country's electric grid. In Europe, Italy and Sweden have already completed Advanced Metering Infrastructure (AMI) deployments that converted all meters to smart meters. France, Spain, Germany, and the United Kingdom are expected to complete AMI roll-out within the next 10 years.

High-accuracy, Poly-phase Electrical Measurement ICs

ADI's new ADE7878 [6], ADE7868 [7], ADE7858 [8], and ADE7854 high-accuracy energy metering ICs [9] are designed for poly-phase configurations, including three and four wire, wye and delta services. The ICs feature 0.1 percent accuracy for both active and reactive energy measurements over a dynamic range of 1000:1—a first for the industry—and 0.2 percent accuracy for both active and reactive energy measurements over a dynamic range of 3000:1. The new products also deliver 0.1 percent accuracy over 1000:1 dynamic range for RMS (root-mean square) current and voltage measurements.

In addition to per-phase and neutral-energy measurements, the ADE7868 and ADE7878 are able to monitor energy quality parameters such as SAG, peak, period, angle measurements, and phase sequence. Another industry first is the ability of the ADE7868 and ADE7878 to detect various tamper conditions—while continuing to operate properly—reducing field calls and meter troubleshooting time.

The ADE7878, ADE7868, ADE7858, and ADE7854 energy metering ICs are sampling now and are housed in a 40-lead LFCSP (lead frame chip scale packaging).

Features and Pricing

Product	Active Power	Reactive Power	Tamper Detect & Low Power Modes	Fundamental-Only Energy	Price Each Per 1,000
ADE7878 [10]	X	X	X	X	$7.47
ADE7	X	X	X		$7.11

868 [11]			
ADE7858 [12]	X	X	$6.76
ADE7854 [13]	X		$5.34

For more information, visit http://www.analog.com/pr/Energy-Measurement [14].

Making a Difference for Energy Metering Customers

With more than 250 million energy meters using ADI's technology deployed worldwide, Analog Devices has delivered more energy measurement solutions than any other semiconductor company. Superior in quality, reliability, and performance, Analog Devices' energy-metering ICs combine ADCs [15] (analog-to-digital converters) with fixed-function DSPs [16] (digital signal processors) to perform critical measurements, while providing unparalleled functionality and ease-of-use. Analog Devices offers a broad range of semiconductor solutions that solve design challenges in every aspect of metering systems, including energy measurement; data and power management; user interface; and RF, GSM/GPRS, and power-line carrier communication solutions. For more information about ADI's energy measurement products, visit http://www.analog.com/pr/Energy-Measurement [17].

About Analog Devices

Innovation, performance, and excellence are the cultural pillars on which Analog Devices has built one of the longest-standing, highest-growth companies within the technology sector. Acknowledged industry-wide as the world leader in data-conversion and signal-conditioning technologies, Analog Devices serves over 60,000 customers, representing virtually all types of electronic equipment. Celebrating over 40 years as a leading global manufacturer of high-performance integrated circuits for analog- and digital-signal processing applications, Analog Devices is headquartered in Norwood, Massachusetts, with design and manufacturing facilities throughout the world. Analog Devices' common stock is listed on the New York

Stock Exchange under the ticker “ADI” and is included in the S&P 500 Index. http://www.analog.com [18]

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