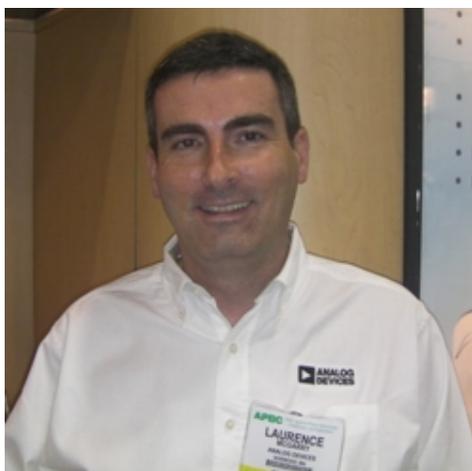


The Tinker's Toolbox - ADI's Digital PFC Chip with Power Metering

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Hosted by ECN's Editorial Director, Alix Paultre, the Tinker's Toolbox is ECN's web-based interview show where we talk about the latest technology, components, and design issues for the electronic design engineering community.



In this episode we talk to Lawrence McGarry of Analog Devices at the APEC conference about their latest digital PFC chip with power metering capability. The device is well suited for AC/DC power-factor correction and precision power metering applications that require high reliability and redundant power supplies, such as communications infrastructure and motor control.

[Right-click to download the podcast](#) [1]

Here's another link to the podcast: [ADI Interview](#) [1]

Here's the product press release:



[Analog Devices, Inc.](#) [2] (ADI), a

global leader in high-performance semiconductors for signal-processing applications, demonstrated the industry's first digital PFC (power factor correction) controller with highly accurate AC power meter capability and inrush control functionality at the [APEC 2011](#) [3] conference in Fort Worth, Texas, this week (Booth #621). ADI's new [ADP1047](#) [4] digital PFC controller is effective for AC/DC power-factor correction and precision power metering applications that require high reliability and redundant power supplies, such as communications infrastructure and motor control.

ADI's new ADP1047 digital PFC controller uses conventional, continuous-conduction mode PFC techniques; all signals are converted to the digital domain, allowing all parameters to be adjusted and reported over a PMBus™ compliant interface--including accurate RMS measurement of input voltage, current and power. This allows designers to optimize system harmonic performance, maximize efficiency across the load range and reduce time-to-market. The ADP1047 is programmed using an intuitive, easy-to-use GUI (graphical user interface).

"The ADP1047 digital PFC controller is extremely versatile and easy to use, which enables designers to optimize their systems without the complex code programming required by alternative DSP (digital signal processor)-based devices," said Laurence McGarry, marketing manager, Power Management Products Group, Analog Devices. "The ADP1047's combination of a flexible, digitally controlled PFC engine and accurate input power metering, simplifies and accelerates the adoption of intelligent power management systems."

Samples and evaluation boards will be available this April and full production is scheduled for July 2011. For more information and to download the data sheet visit: www.analog.com/ADP1047 [4].

The ADP1047 digital PFC controller provides typical power metering accuracy of ± 3 percent at full load current with further improvements to ± 1 percent with customer calibration. The new digital PFC controller also offers enhanced transient response through non-linear control algorithms, programmable inrush control to reduce start-up over-stress, real-time programming to maximize efficiency and extensive fault detection and reporting for improved reliability. The ADP1047 digital PFC controller can be frequency synchronized to eliminate 'beat' frequency noise or alternatively the switching frequency spread spectrum feature can be enabled to further improve EMI.

ADP1047 Digital PFC Controller Key Features and Benefits:

- A flexible, digital power factor correction control loop optimizes harmonic correction
- True RMS AC metering capability provides high accuracy power measurement
- GUI programmability promotes ease-of-use and reduces time-to-market
- PMBus™ compliance allows a standardized system software interface

The ADP1047 digital PFC controller is designed to complement the [ADP1043A](#) [5] digital power controller for isolated systems, high-speed [MOSFET drivers](#) [6] and [iCoupler® digital isolators](#) [7] also available from ADI. These devices facilitate easy implementation of intelligent power management for greater energy efficiency.

ADI's Digital Power Products are Flexible and Easy to Program

Analog Devices portfolio of digital power management products are specifically designed to meet the needs of the AC-DC and isolated DC-DC power supply OEMs. These devices are extremely flexible and use a I_C or a PMBus interface that allow "real-time" reporting of key parametric data from the power system. The digital power products are highly programmable using an easy-to-use GUI (graphical user interface) tool. Power design engineers with no prior programming experience can use the GUI to monitor and quickly adjust power functions such as frequency, timing, voltage settings, and protection limits. In end-system implementations, these products help system integrators optimize power supply energy efficiency, while reducing design cycle time and enabling intelligent power management systems. Learn more about ADI's digital power management solutions at www.analog.com/digitalpower [8].

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Links:

- [1] <http://www.ecnmag.com/sites/ecnmag.com/files/legacyfiles/ECN/Multimedia/Audio/2011/04/ADI-interview.mp3>
- [2] <http://www.analog.com/>
- [3] <http://www.apec-conf.org/>
- [4] <http://www.analog.com/ADP1047>
- [5] <http://www.analog.com/ADP1043A>
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