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Analog Devices' Meter-on-a-chip Enables Broad Range of Portable Health Applications

ADI's meter-on-a-chip offers passive and active sensor fusion functionality for next-generation point-of-care diagnostics, home/self-test health products, and vital signs monitoring.

NORWOOD, Mass.--(BUSINESS WIRE)-- [Analog Devices, Inc.](http://www.analog.com) (NASDAQ: ADI) unveiled today a high-precision, low-power meter-on-a-chip for a range of portable health applications such as point-of-care diagnostics, home/self-test health devices, and wearable vital signs monitors, including those for sports and fitness. The ADuCM350 single-chip, scalable platform combines a 16-bit accurate analog front-end (AFE), which includes a configurable multi-sensor switch matrix, hardware waveform generator and discrete Fourier transform (DFT) engine, with a processing subsystem and an industry-standard software development environment to support a complete product development roadmap. The [ADuCM350 meter-on-a-chip](http://www.analog.com/ADuCM350) offers easy connectivity to passive and active sensors and supports sensor fusion functionality that enables exceptionally accurate measurements of human physiological data even in the presence of interferers.



- Download a short-form datasheet: <http://www.analog.com/ADuCM350-ds>
- Learn more about ADI's healthcare technology:

The ADuCM350 is a complete meter-on-a-chip optimized for portable health applications such as point-of-care diagnostics, remote health/vital signs monitoring and home/self-test health meters. (Photo: Business Wire)

<http://healthcare.analog.com/en/segment/health.html>

"The ADuCM350 meter-on-a-chip supports a wide range of portable healthcare applications ranging from wearable health monitoring devices, such as smart watches and sophisticated pedometers, to point-of-care diagnostics that shorten hospital stays and make possible high quality monitoring in the home," said Patrick O'Doherty, vice president, Healthcare Group, Analog Devices. "The ADuCM350 offers exceptional accuracy and integration on-chip making it ideally suited for designing portable products that monitor health and wellness."

ADuCM350 Meter-on-a-chip Optimized for System-level Performance

The ADuCM350 is optimized for system-level performance and signal measurement accuracy, including those monitoring devices powered by a single coin-cell battery, and features a precision AFE with a 16-bit accurate, 160-kSPS A/D converter, +/- 0.2% accurate voltage reference, and a 12-bit D/A converter.

Passive complex impedance sensing on the ADuCM350 enables baseline detection and detailed information of physiological, biological and electrochemical reactions, at levels previously unattainable. The fusion of passive and active sensors provides an additional level of signal measurement accuracy, and environmentally robust capacitance-to-digital technology on-chip supports new use cases such as skin electrode detection and next-generation electrochemical test strip technologies. The precision AFE performs auto-calibration ensuring accurate, repeatable measurements in the field for the life of the product.

Scalable Development Platform Supports Rapid Feature Expansion

The ADuCM350 healthcare meter-on-a-chip is a flexible platform that supports full product development roadmaps from entry-level to feature-rich devices. Sensor fusion functionality allows designers to expand product measurement capabilities. For example, the ADuCM350 platform can support calorie burn applications by combining galvanic skin response for heart rate and respiration, with an ultra-low-power 3-axis MEMS accelerometer for altitude and motion detection. An extensive peripheral set of communication I/O including USB, audio, display, serial and touch supports differentiation and rapid feature expansion. The ADuCM350 AFE sequencer enables designers to develop the software for a measurement procedure only once and then reliably port it across an entire product family.

ADuCM350 Healthcare Meter-on-a-Chip Key Features

- 16-bit accurate 160 kSPS A/D converter
- 0.2% precision voltage reference
- 12-bit no missing code D/A converter
- Hardware accelerators for waveform generation and filtering
- 16-MHz ARM® Cortex™ M3 processor
- 384-kB flash memory, 16-kB EEPROM and 32-kB SRAM
- Sensor fusion support
- Configurable switch matrix (amperometric, photometric, impedance, potentiometric)
- Complex impedance measurement (waveform generation and filtering)
- Robust capacitance-to-digital conversion technology
- Communication I/O support: USB, audio, display, beeper, and serial
- Extensive power management capabilities
- Operation: Coin cell battery compatible

Pricing and Availability

Product	Sample Availability	Full Production	Price each per 1k units	Packaging
ADuCM350	Now	April 2014	\$7.50	8-mm x 8-mm 120-pin CSP_BGA

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 technology, 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 used in analog and digital signal processing applications, Analog Devices is headquartered in Norwood, Massachusetts, with design and manufacturing facilities throughout the world. Analog Devices is included in the S&P 500 Index.

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