

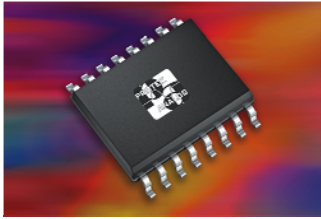
PRESS RELEASE

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ProTek Analog Introduces "Sentinel" Mixed-signal CMOS Monolithic Device The first low-power, multipurpose, programmable analog front-end.



TEMPE, Ariz., June 28, 2005 — ProTek Analog today announced the introduction of the "Sentinel," a mixed-signal CMOS monolithic device that integrates analog-to-digital (A/D) conversion operations on a single chip. Flexible, programmable and host-independent, the Sentinel acts as a low-frequency analog front-end for applications involving lighting, sensor interfaces, feedback controls, instrumentation, medical electronics, and computer peripherals and data acquisition systems.

The Sentinel requires a digital controller to operate, but may or may not need additional memory depending on the application. Unlike competing devices, the Sentinel is not limited to a particular type of controller. The digital controller can be a microprocessor, microcontroller, CPLD, FPGA, discrete logic, or personal computer (PC).

According to ProTek Analog's chief technology officer, M.A. Rehman, the Sentinel provides a robust, cost-effective solution for low power A/D conversion applications. "The Sentinel is the first host-independent analog front-end designed to multiplex multiple sensors and/or sources," said Rehman. "The device measures both current and voltage outputs, and provides a built-in multiplexer to interface to up to six different sensors at the same time. This capability eliminates the need for external multiplexers, as well as signal conversion functions that add cost and complexity to the user's system."

Rehman continued, "The Sentinel is not encumbered by onboard microprocessors or microcontrollers. It is ideal for open loop situations where you simply pass signals from input to output, or for closed-loop feedback control systems. With the Sentinel as a part of your overall system design, you can continue using your existing controller. All the device needs is two signal lines—one for the clock and another for data—to perform a wide range of tasks remotely, locally or over wireless."

The Sentinel features low operating voltage and frequency ($f_{osc}=2$ MHz, 4.5~5.5 V), dual 50 mA current source, on-chip voltage regulator, up to six current outputs (D/A channel), and low power consumption. The device provides dual 8-bit programmable current sources, as well as a clock oscillator for timing purposes, voltage reference, preconditioning amplifier, sample and hold, and 10-bit A/D converter. A register file containing six real registers is used for programming the current sources. Two additional registers enable trimming of the clock oscillator and the on-time of current sources.

The Sentinel's communications consist of programming channel identification, sensor drive current and settling time delay. A serial communications interface using a two-wire channel allows communication with the device. Control logic for the various operations resides on the chip. External components include sensors and miscellaneous resistors and capacitors for timing.

Available in a SOIC 16-pin package, QFN, or as a die for direct chip-on-board mounting, the Sentinel and its complete system (digital controller and memory) can also be delivered as a "Multichip System in a Package" (MSP™) if required.

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