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8051 MCU takes center stage in 'universal' signal conditioner

By Stephan Ohr, Courtesy of EE Times
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San Francisco — Sensor Platforms Inc. (Santa Rosa, Calif.) will use the Sensors Expo & Conference in Chicago this week to introduce what it calls a universal sensor signal-conditioning platform.

Many sensor signal conditioners can handle resistive bridges with multiple impedances, acknowledged George Hsu, president and CEO. But they have trouble with capacitive and inductive loads. Sensor Platforms' SSP1492 sensor signal processor provides the signal conditioning for a range of sensor types including pulse, voltage, current, inductive, capacitive and resistive sensors, he said.

Based on the popular 8-bit 5051 microcontroller, the SSP1492 can serve as a standalone sensor system controller or as the development platform for a wide variety of sensing and control applications. "Applications support is the hot button in the sensor world," Hsu said. "The automotive-system designers get good support, but not the smaller companies — certainly not the garage shops, which are doing some of the most innovative work."

In addition to a positive response from sensor makers, Hsu said the platform is generating interest among manufacturers of cell phone, PDA and gaming platforms interested in using capacitive sensors in place of mechanical thumbwheels.

The SSP1492 is built around a pipelined 8051 processor running at 14 Mips. It integrates math engines and a frequency-mode data converter that has scalable dynamic range, accuracy and speed. The system is said to be capable of taking 32-bit sensor measurements — effectively reading 1 part in 4,294,967,296.