Technical Article

Reach New Low-power Levels for Any Sensor Based Design with New MSP430FR2311 MCU

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Introducing industry's first microcontroller with a configurable low leakage transimpedance amplifier (TIA)

Society wants products smaller, weightless and faster electronics, causing developers to struggle with finding components that are a perfect fit without compromising performance. It's not an easy task, especially when it comes to narrowing down a microcontroller (MCU) that works for you and your device. Making a compromise to have an MCU fit your needs is not solution oriented.

But, if there was an MCU that reduced up to 75 percent of PCB space by minimizing component count in sensing and measurement applications, wouldn't that make compromising almost obsolete?

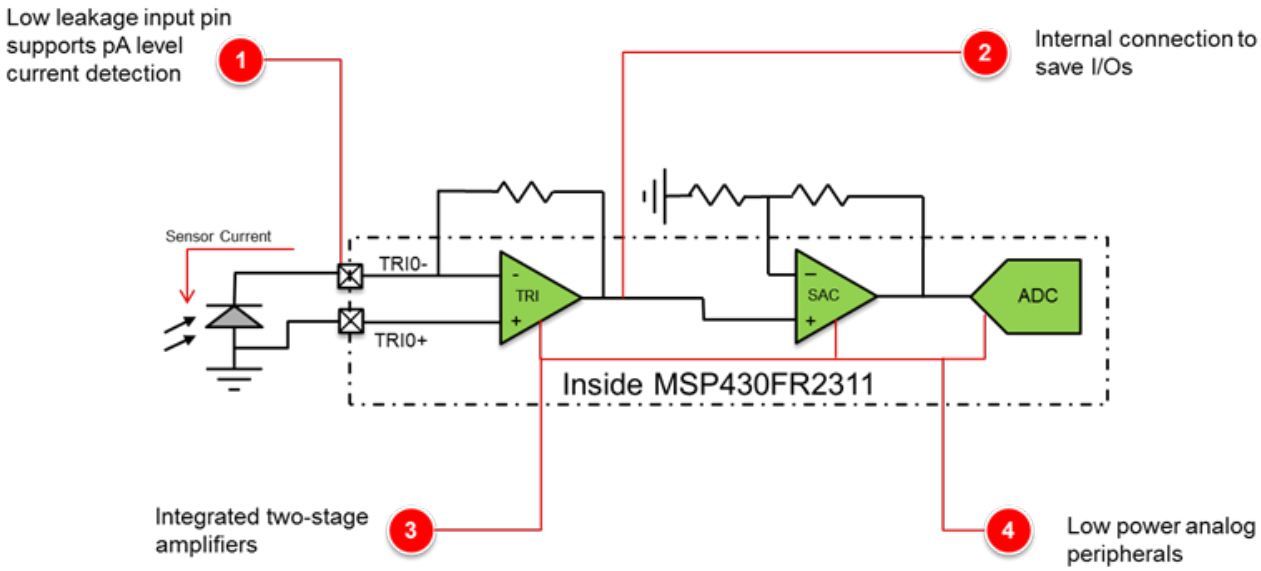
The MSP430FR2311 MCU was designed for sensing and measurement applications

Our new MSP430FR2311 MCU does just that. It is the only microcontroller that integrates a low-leakage transimpedance amplifier (TIA) with 50 pA current leakage. The new MCU provides 20x's lower leakage than alternative voltage and current sensing solutions. In so doing, it can sense the lowest possible current improving the sensitivity of the application and allowing developers to add more intelligence and enhanced features to the end product.

Secondly, with the configurable analog and memory on this device - including onboard op-amps, comparator and 10 bit ADC- it helps the customer save on IO pins with the integrated signal chain blocks and helps achieve more functionality with a small pin count device. Additionally, Flash to RAM boundary ratios are eliminated with the MSP430FR2311 MCU. Developers will now have the opportunity to choose the amplifier configuration (non-inverting, inverting or transimpedance) they need to scale their application and select the amount of memory needed for application code or data. Providing flexibility and easing compromises.

The MSP430FR2311 MCU is uniquely positioned for sensing and measurement applications including building automation, medical health and fitness, and personal and portable electronics. It comes in a small package size of 3.5 mm x 4 mm with analog, EEPROM and MCU functionality all integrated, allowing developers to meet the demands of consumers without compromising.

Learn more about the MSP430FR2311 MCU in the below image:



To get started developing and to learn more about this product:

- Learn more in the MSP430FR2311 MCU data sheet
- MSP430FR4xx/2xx family user guide
- MSP430F2xx/G2xx to MSP430FR4xx/2xx migration guide
- Read our newest white paper about enabling sensing applications with smart analog MCUs
- Need more information about the MSP430FR2311 MCU? Read our other blog posts:
  - IoT, wearables and other new applications create need for super-sensitive sensors
  - Air quality monitors and smoke detectors put on a new face
  - Smart buildings get smarter with ultra-low-power MCUs
  - When green meets the IoT
  - Health monitoring devices get a jolt from MCUs
  - Value line MCUs bring more analog to personal electronic products

Order the MSP-EXP430FR2311 MCU LaunchPad™ development kit to start developing now!

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