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Analog Devices Introduces Industry's First Analog 3-axis, High-g MEMS Accelerometer

ADI's ADXL377 MEMS accelerometer accurately measures concussive forces in contact sports and high impact events in industrial equipment.

NORWOOD, Mass.--(BUSINESS WIRE)-- [Analog Devices, Inc.](http://www.analog.com) (ADI), a global leader in high-performance semiconductors for signal processing applications, introduced today the industry's first commercially available analog, 3-axis, high-g MEMS accelerometer. The ADXL377 measures acceleration of high-impact events resulting from shock and vibration, within the full-scale range of ± 200 g with no signal saturation. This measurement range, combined with an analog output that continuously captures impact data, make the ADXL377 an ideal sensor for contact sports where the detection of concussive forces can reveal indicators of Traumatic Brain Injury (TBI). With a bandwidth of 1600Hz, the ADXL377 is also ideal for use in industrial equipment where shock levels must be closely monitored. ADI's new 3-axis accelerometer also eliminates the need for alignment and the placement of orthogonal sensors, which significantly simplifies design. The board space requirement is reduced by up to five times that of typical solutions requiring multiple, single-axis accelerometers.

- View the ADXL377 product page, download the data sheet or order samples: <http://www.analog.com/ADXL377>
- Connect with engineers and ADI product experts on EngineerZone™, an online technical support community: <http://ez.analog.com/community/mems>

Among other applications, the ADXL377 3-axis, high-g MEMS accelerometer is being designed into the IZOD 2012 INDYCAR Series driver impact safety system. INDYCAR worked in close collaboration with Analog Devices at the ADXL377 product definition phase. The resulting device allowed INDYCAR to upgrade the sensors located in their communications earpieces, which are used to measure driver impacts triggered by collisions during practice, time trials and during races, according to Jeff Horton, director of engineering for INDYCAR.

"The new Analog Devices ADXL377 3-axis accelerometer is going to be a great addition to our ear sensor program," said Horton. "Not only will the smaller size greatly reduce the manufacturing time needed to place the components into the custom ear molds that we make for each of the drivers, it also will allow us to place the accelerometer closer to the ear canal opening which should help with the coupling of the accelerometer to the driver's head for a more accurate reading. In the past we had to use three separate ICs in each ear to obtain the same amount of data."

"With TBI now a serious medical concern in many facets of life — from athletes and workers to military personnel — ADI is helping customers design smaller, more accurate and simpler impact systems," said Mark Martin, vice president and general manager, MEMS/Sensors group, Analog Devices. "Because so many of these applications require extreme mobility, the ability to eliminate orthogonal sensors while simultaneously lowering energy consumption means that these battery-operated devices can run longer between charges."

ADXL377 MEMS Accelerometer Features

- 3-axis sensing
- Range (g): ± 200
- Power consumption: 300 μ A (typical)
- Single-supply operation: 1.8 V to 3.6 V
- 10,000 g shock survival
- Small and thin package
- Bandwidth: 1600 Hz is suited for industrial impact detection applications

Availability and Pricing

Product	Sample Availability and Volume	Full Production	Price Each Per 1,000	Packaging
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Shipping

ADXL377	Now	September	\$4.79	3 mm × 3 mm × 1.45 mm 16-lead LFCSP
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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. 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.

About INDYCAR

INDYCAR was formed in 1994 to preserve the heritage and excitement of the Indianapolis 500 in U.S. open-wheel racing. INDYCAR is the governing body of the IZOD IndyCar Series, the premier open-wheel racing series in North America; Firestone Indy Lights, which serves as an essential stepping stone for drivers and teams striving to reach the IZOD IndyCar Series; and the Star Mazda Championship presented by Goodyear, which serves as the middle rung on the Mazda Road to Indy development program. INDYCAR events are available to a worldwide audience through a variety of multimedia platforms, highlighted by long-term and broad-reaching partnerships with ABC and the NBC Sports Network. INDYCAR is continually at the forefront of motorsports innovation with drivers, teams and tracks benefiting from safety and technological improvements such as the SAFER Barrier, SWEMS wheel tethers, chassis enhancements, high-definition in-car cameras and ethanol fuel.

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