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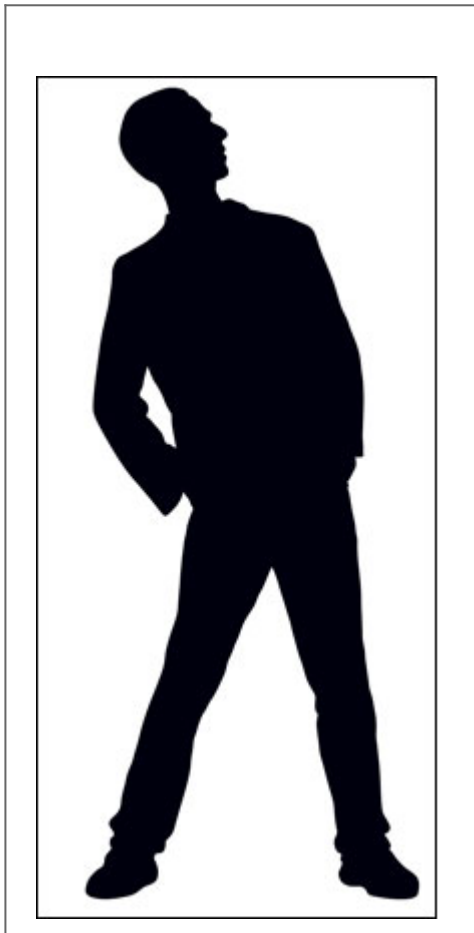
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RFID Designed for End Users

When the global recession hit, many RFID vendors cut their technology budgets, but others clearly kept their product development plans on track. In general, RFID providers introduced new products that offer improved performance, are easier and less expensive to deploy, or address specific end user needs. Here are some products that showcase 2009's RFID innovations.

Motorola's FX4700 fixed reader is smaller, more elegant, easier to deploy and less expensive than its predecessor, the XR450 reader. Motorola also introduced the MC3090-Z handheld reader. The device—weighing just 22.93 ounces (650 grams), including the battery—is significantly lighter than the company's other handhelds, and it features a new antenna design optimized to read RFID tags within a 3- to 9-foot area. Both readers are designed for nonindustrial uses, such as tracking products in retail shops, assets in IT or health-care centers, or documents within an office environment.



Impinj's UHF EPC Gen 2 interrogator, marketed as the Speedway Revolution, automatically configures itself to adjust to external conditions, such as changes in RFID tag density or the nearby presence of metallic objects. The company says the autopilot function allows Speedway users to install the reader more easily (since it doesn't require manual configuration) and operate the device without a fluctuation in effectiveness

caused by environmental factors that can negatively affect some readers. Impinj also introduced a new version of its reader chip, which it says improves performance for challenging applications, such as reading many tags in close proximity on apparel items.

ODIN Technologies' SMART Container system won *RFID Journal's* Best in Show Award for the best new product at RFID Journal LIVE! 2009. The system, which can be deployed in minutes, can read EPC Gen 2 tags as items are put into a shipping container—and then continuously track them and communicate the data via satellite, cellular and active RFID, providing organizations with end-to-end visibility of their shipments.

Alliance, the merchandising and displays division of Rock-Tenn Co., partnered with Seeonic and UPM Raflatac to introduce an RFID-enabled system that lets retailers and producers track not only new promotional displays but also the individual items featured on those displays. According to Seeonic, the system could also be used in conjunction with a theft-deterrence system.

M/A-COM Technology Solutions' RFID Forklift System includes laser and acoustic sensors designed to improve tag-read and accuracy rates. M/A-COM's initial estimates indicate that a company using its EPC Gen 2 RFID solution would likely increase the throughput of moving pallets in and out by 10 percent to 20 percent, with the extra benefit of increased accuracy. The system can be added to new forklifts or retrofitted to existing ones.

Alien Technology's new security application is designed to make RFID tags made with its Higgs 3 chip impossible to clone. The feature, known as dynamic authentication, relies on a challenge/response algorithm to verify that a tag is authentic. The Higgs 3 chip had the dynamic authentication capability embedded when it was introduced in 2008, but in 2009 the company made available the reader software needed to unlock the functionality, in response to requests for greater

security from end users.

Omni-ID's three passive UHF tags—the Ultra, Max HD and Max Pro—are designed to perform well when attached to metal surfaces. The new tags have read ranges of up to 115 feet (35 meters) and offer an alternative to industries that have historically opted for active RFID technology, including defense, manufacturing and transportation.



William Frick & Co. partnered with Technologies ROI to develop a passive EPC Gen 2 UHF inlay tag that can withstand temperatures as high as 2,000 degrees Fahrenheit (1,093 degrees Celsius). The companies developed a variety of housing options for the tag—known as the SM-HE16—to protect it from exposure to very high levels of heat. According to the company, the tag is now available with four distinct levels of heat resistance, ranging from exposure to 300 degrees Fahrenheit (149 degrees Celsius) to up to 650 degrees Fahrenheit (343 degrees Celsius) for as long as two hours.

Tego's passive RFID tag can store 32 kilobytes of memory—far more than current UHF EPC Gen 2 tags. The extra memory enables companies to encode large amounts of information to the tag, as well as access that data directly from the tag, without needing to access a back-end database. The tag should meet the

needs of Boeing, which has sought a high-memory tag to store parts data.

Several companies introduced hybrid tags to address specific end-user needs. AeroScout's Wi-Fi Ultrasound tag makes it easier for hospitals to locate an item, such as an infusion pump, in a specific room. Versus Technology introduced a similar system, called VISion Asset Management, which uses a combination of RFID and infrared technology to identify the room of a hospital patient.

The U.S. Department of Defense wants to know where tagged shipping containers are at all times, even when they're on ships at sea or trucks in the mountains of Afghanistan. Installing readers all over the planet isn't viable, so Numerex and Savi Technology created an intelligent hybrid tag that combines active RFID, satellite communications and Global Positioning System technologies. The tag is designed to track goods anywhere within a global supply chain, whether they're waiting in a warehouse, being loaded onto a ship or sitting in a desert at a bare-bones military outpost. The tag, known as the ST-694 GlobalTag, was created under a cooperative research and development contract for the U.S. Transportation Command, the DOD group responsible for creating and implementing global deployment and distribution solutions for the U.S. military and government.

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