

# ODIN Releases First Benchmark of European RFID Readers

The systems integrator tested seven ETSI-compliant RFID interrogators in both lab and real-world tests.

July 29, 2007—Dulles, Va.-based RFID systems integrator [ODIN Technologies](#) has completed a benchmark report based on the results of tests it performed on seven EPC Gen 2 UHF RFID interrogators. The readers were certified by the [European Telecommunications Standards Institute \(ETSI\)](#) to operate under current RF regulations in the European Union.

For the ninth installment of its benchmarking test series, designed to provide unbiased performance evaluation of RFID hardware, ODIN put each interrogator through a battery of tests. Six were performed in a controlled environment, while three were conducted inside a warehouse, with RF noise to determine the readers' performance in a real-world environment.

The readers tested were [Alien's](#) ALR8800, [Caen's](#) A968EU, [Feig's](#) ID ISC.LRU2000, [Impinj's](#) URP1000-ETSI, [Intermec's](#) IF61, [Motorola's](#) XR480EU and [Sirit's](#) IN510. "No one reader was superior in every test," says Bret Kinsella, ODIN's chief operating officer. "In fact, no one reader was superior in more than three tests."

According to ODIN, [Siemens](#), maker of the Simatic RS600R, was the only major manufacturer that refused to have its equipment tested for the report.

The controlled-environment tests measured each interrogator's power output, sensitivity to received signals, ability to reject interfering signals, read rate and read distance. ODIN confirms that each of the seven readers performed within the proposed ETSI EN 302-208 specification, which removes the present requirement that each RFID reader listen to every channel within allowed UHF frequencies before transmitting over the channel. The listen-before-talk protocol is designed to prevent RF interference, while also limiting the ability of end users to operate numerous readers in close proximity to one another, such as at adjacent dock doors.

The three use-case tests performed involved an RFID reader mounted over a conveyor moving EPC Gen 2 tagged goods, another affixed to a stretch-wrap machine used to interrogate tags attached to cases piled on a pallet being wrapped, and an adjacent dock-doors scenario in which tagged cases are pulled through reader-mounted dock doors. ODIN performed the dock-door test with each reader set to comply with the present listen-before-talk protocol, and again using the proposed protocol. Under the latter, readers need not comply with listen-before-talk, as the protocol is designed to enable the use of multiple readers in close proximity.

"There is no certainty around when, or if, the ETSI standards will change," Kinsella says, "but we decided it would be important for people to know how listen-before-talk readers work, because it's what they must use now. But we also took the time to test [readers using the] proposed protocol, so that people could get a feel for how they'll perform."

RELATED\_ARTICLES Interrogators optimized for use under the present and proposed European guidelines, Kinsella explains, do not perform as well as those made for use under FCC requirements. "Many reader manufacturers who have been selling and installing RFID gear in the United States," he says, "have benefited from this experience, because their readers are more mature." The European market is markedly less mature in its use of passive UHF tags and readers for supply-chain applications, Kinsella notes, adding "We would have liked to do this report a year ago, but there weren't enough ETSI-compliant Gen 2 readers on the market."

The goal of the European RFID Reader Benchmark report, according to ODIN, is to help end users reduce the amount of risk when selecting RFID hardware. The report details the performance of each reader in a variety of use cases, and should provide insight as to which interrogator is best for a specific company's applications. The report can be purchased from the ODIN Technologies Store at a cost of \$1,500 for an enterprise-use business license, or \$750 for a single-user academic license.

Copyright ©2005 RFID Journal, Inc. All Rights Reserved