Philips, TI Testing Gen 2 Products

The two firms say they are building on a history of cooperation to ensure conformance and interoperability of Gen 2 products.

By Mary Catherine O'Connor

June 16, 2005—RFID manufacturers Philips Electronics and Texas Instruments have announced plans to conduct testing of RFID tags made with TI and Philips Gen 2 chips to determine conformance to the Gen 2 standard. The two companies will also perform interoperability testing between their Gen 2 tags and a number of RFID Gen 2 smart labels and Gen 2-upgraded readers from various manufacturers.

TI and Philips are initiating the tests in the belief that by demonstrating conformance of their Gen 2 products to the Gen 2 standard and the products' interoperability with other Gen 2 products, the companies can accelerate the certification and acceptance of these Gen 2 products into the market. The tests are scheduled to begin by the end of this month and finish by October.

Tony Sabetti, UHF/retail supply chain director for Dallas-based Texas Instruments Radio Frequency Identification Systems, explains that Philips and TI are collaborating on the tests because they recognize the need to ensure that Gen 2-based products are interoperable and function in accordance to the standard. Philips and TI are building on a history of working together on conformance testing that extends back to the 1999 passage of the ISO 15693 standard, a 13.56 MHz-based protocol often used for building access cards. "We worked together on all aspects of ISO 15693, from concept to specification to testing, and even beyond that, we're still working together on things like data structures, application field identifiers, etc.," says Sabetti.

"Our goal is to expand knowledge in the industry on the proper way to test interoperability. We know the steps you have to go through, from conceptualizing how the standard will work to writing the specification that documents how the product will work, to then writing the specifications to document how to test conformance to that specification," he says.

According to Sabetti, Philips and TI will share the results of their Gen 2 tests with MET Laboratories, which is creating hardware tests to certify whether RFID hardware complies with the Gen 2 standard, in an attempt to help accelerate and support the lab's development of Gen 2 testing standards. EPCglobal selected MET Labs in October as its Gen 2 hardware certification partner (see MET Labs to Test Gen 2 Hardware).

Sue Hutchinson, director of product management for EPCglobal US, however, says MET Labs is currently using a set of conformance guidelines, written by EPCglobal concurrent with the creation of the Gen 2 standard, as its source for developing test plans. "A group within the EPCglobal hardware action group has been working with MET to vet those test plans and make sure they're workable for real hardware," she says, adding that this process is coming along well and that the Gen 2 hardware certification testing is scheduled to begin this summer. This is when many RFID manufacturers say they expect their Gen 2 products to enter the market.

Hutchinson says she's excited to see a number of RFID vendors presently doing independent hardware testing.

Because those manufacturers' products will have already gone through conformance and/or interoperability tests and will have been optimized to conform with the standard and interoperate with other Gen 2 products, she says, they are likely to pass the EPCglobal testing process during initial testing, which could accelerate the certification process for those products. RFID printing systems developer Printronix and RFID semiconductor manufacturer Impinj recently demonstrated the interoperability of their Gen 2 products (see RFID News Roundup), as did Philips and RFID hardware manufacturer Symbol Technologies, whose tests also showed Gen 1 and Gen 2 interoperability (see Symbol, Philips Demo Gen 1 and 2).

However, says Hutchinson, the end user community has made it clear to EPCglobal that it wants third-party, objective testing and certification of Gen 2 hardware.

Michael Cernusca, manager of Philips Semiconductors' RFID product team, says the testing process will be done in three steps. The first step will verify that the Gen 2 protocol has been implemented the same way on both companies' chips. The second will involve testing of the RF signals generated from Philips and TI tags, in order to measure and compare such characteristics as the shape, timing and command sequence of the signals. The final step will be interoperability testing. "We'll use hardware from different vendors to make sure the technology is interoperable," says Cernusca.

Smart labels from Rafsec, Checkpoint, Omron, ASK and RR Donnelley, Cernusca explains, as well as tags from Philips and TI, will be used in the interoperability tests with readers from Intermec, Feig Electronic, Deister Electronic, ThingMagic and SAMSys.

Since January, TI and Impinj have also been working together to ensure that Gen 2 RFID tags and chips made by TI and Impinj interoperate (see TI, Impinj Seek Gen 2 Interoperability). Impinj's CEO, Bill Colleran, reports that these tests are progressing well. "The Gen 2 standard is a 200-page document," he says, so it is possible tags made from different manufacturers' chips might not function in the exact same manner. Thus far, however, the companies have not found any discrepancies between their products, he says.

Sabetti reports that the testing TI is planning with Philips is significantly more extensive than what TI and Impinj are doing because the latter does not include interoperability with products from other vendors. Neither Impinj nor Philips will comment on whether the two companies are planning to collaborate on any conformance or interoperability testing with their products.