



## Industry Week's **RFID Strategy**

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A S S O C I A T E S



### **In Search of an RFID Testing Lab?**

*Selecting the right facility is critical to the success of your radio frequency identification efforts*

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As you head toward RFID deployment, one of the earliest steps you must take is product testing. This makes selecting the right RFID lab or evaluation center critical to your success. Typically, companies will start with a small subset of SKUs to test -- either high-value items or those dictated by a customer. Testing requirements vary based on the product and packaging materials, pallet configuration and supplier requirements.

If you are trying to comply with Wal-Mart's mandates and you think you can just apply some RFID tags to the cases as they are loaded on the truck, you are in trouble. Since Wal-Mart also has specified performance requirements for RFID tag readability, this means, at a minimum, you will need to test tag placement on the case and pallet, find the correct tag type, and possibly even determine the best pallet configuration. This is why it is so important to understand testing options and what to look for in an RFID testing facility.

As basic requirements, product testing should encompass low- and high-speed encoding, verification and label application for conveyable product, single and mixed SKU pallet shipping and receiving, customer RFID scan tunnel configuration, and conveyor speeds. Additionally, you will need to determine the RFID tag type, scanner type, position and signal strength. Product orientation on the conveyor, as well as label placement, is key. Testing in various environmental conditions also can play a factor, since humidity can affect signal transmission if the corrugated container has absorbed too much moisture. Product abuse can degrade tags during shipment, so testing needs to be done for pressure, abrasion, cuts, impact, etc. For each type of test, there may need to be different scan tunnel configurations to obtain the best read-rate. Label placement or substrate material may be important for success as well.

When you look at all of the various testing requirements, the time requirement and the number of tags add up very quickly. Assume that you test eight products and conduct 10 test iterations for each type of test scenario; this can easily top 30 or 40 scenarios and require thousands of tags to complete testing and determine the correct type of tag. Of course, this translates into a significant effort to log and report on each test scenario and the success or failure of that trial. If you were to log this information manually, it would take months of effort for a limited number of SKUs!

To ease the process, break your testing into two phases. In phase one, a requirements definition would be developed to determine exactly what will be tested and how the testing will be conducted. Phase two would encompass the actual testing, site survey and report development. When you begin the search for a testing facility, first look for one operated by

an experienced supply-chain systems integrator, since their personnel will have real-world experience with manufacturing plants and distribution centers. In fact, the lab itself should mimic a packaging line and automated distribution center. Don't look for a single solution; after all, there are many manufacturers of RFID equipment. The lab should be able to test most, if not all, of the encoders, tags (UHF and HF) and readers and make a recommendation that yields the best solution.

If you are considering a proprietary vendor solution for tags, encoder/printers, readers, and software, then you should use a third-party lab to conduct impartial testing. The configuration of the scan tunnel(s) in the testing facility should be simple and quick to facilitate prompt results. It should have the ability to vary conveyor speeds as needed for testing. And to minimize costs, the lab should have integrated RFID evaluation software that works in conjunction with bar-coded license plates, the conveyor controls, and the RFID edgware to automatically record test results as they take place. This type of integrated physical testing facility -- one that incorporates various manufacturers' technology and allows multiple configurations and automated capture of test results -- provides the most comprehensive test bed for RFID testing. Best of luck in your search for an RFID testing facility.

**\*Chris York's RFID column appears twice monthly in IndustryWeek's RFID Strategy newsletter and on IndustryWeek.com. Click [here](#) to register for the newsletter.**