RFID – Solutions for Storage

Tracking samples across the stock

Where are my samples gone?

A classic laboratory problem, especially for high-throughput facilities, is in identifying where samples and/or standards are and proving where they have been stored. It is easy to have records stating what temperature a specific fridge or freezer is, but being able to categorically state that a specific sample has been stored within a specific location has historically not been possible when using technology such as bar coding. Using RFID technology it is possible to be able to locate all samples / standards within your facility even down to what shelf with a fridge for example and to track their movements within a datafile that can be easily interpreted by your LIMS system or a customized software package.

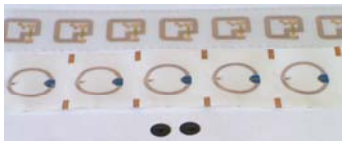
Together with the various types of standard RFID technologies which are widely used across the supply chain and already available by Intelli Labs (see separate flyer for an in-depth description and specifications), we have also licensed an enhanced transmission protocol for passive HF RFID item level identification. This unique technology enables tracking with a reliable high speed processing of items in fully dynamic situations like boxes containing multiple, even stacked items moving on high speed conveyor belts. Instead of using only one antenna as in the default approach, multiple antennas could be installed on a single reader here. They will cover a 3-D radio wave field, where the field dimension depends only from the antenna sizes. In real life applications for tracking sample through-out the facility, costumers can install those panel-sized antennas besides their stock doors and even inside storage-racks, fridges or incubators.

Providing an authentication record

The World Health Organization (WHO) estimates that nearly 10% of the drugs in the European Union and up to 50% worldwide are counterfeit. Electronic pedigree is an electronically signed document that certifies both the origin and the chain of custody of a drug. According to the Food and Drug Administration (FDA), Radio-frequency Identification (RFID) is one of the most reliable track-and-trace technologies for providing an accurate pedigree—or help secure record of origin—for chemicals and pharmaceuticals. The EPC code stored in the RFID tags acts as an electronic pedigree that ensures pharmaceuticals are manufactured and distributed under safe conditions, without tampering and without counterfeit drugs being introduced into the supply chain. With an electronic pedigree, our customers are able to provide a reliable and cost-effective record of authenticity to its distributors. Consumers can also access the product's pedigree to ensure their prescription drugs are legitimate and safe. Through the tagging and serialization of drugs, cases and pallets the complete solution manages all of the manufacturer, wholesaler and pharmacy's processes.

The Intelli Factor

Implementing the right solution for your lab



The integration of small RFID tags (such as our 20mm square 13.57 MHz inlays) onto drug boxes, cases and pallets together with the use of our special bulk-tag RFID terminals allow operators to detect and locate multiple boxes at a time. Through these tagging and serialization a complete solution could manages all of the manufacturer, wholesaler and pharmacy's processes.

Customizing the solution

Everyone's RFID requirements are specific to their needs and are generally unique in some way. Intelli Labs specializes in adapting the RFID technologies available and customizing the solution to you. We offer a complete set of solutions, from hardware to software, of course including our consultancy, analysis and implementation support to make sure the integration of automatic identification and data collection within your processes is done smoothly.

- ***RFID Evaluation***
  The first step is a study of the practical environment in which the project is planned. Together with the customer the specific workflow will be analyzed.
- ***RFID Scenarios***
  The results of the RFID evaluation are taken into account to build the business case.
- ***Feasibility Study***
  For the selected processes, a technical feasibility study is performed. Using real equipment and realistic scenarios, we test the chosen technology and solutions for the tag and antenna positioning. At the end of this phase, the whole technical concept, i.e. positioning of the readers, tags and antennas, is technically proven, and an RFID field trial can start.
- ***RFID Field Trial***
  The proven technology is put in place on a sufficient scale to simulate and measure the real processes.
- ***Roll Out project***
  Complete integration of the technology and processes.
- ***Maintenance***

Think big, but start small

One interesting point we observe often when customers get in contact with the RFID subject for the first time, are the overwhelming possibilities this technology could offer. But to start with a real application in the beginning, customers should analyze their workflows and should focus on processes which are easy to integrate and directly gain benefits for them. Ideal are workflows which could be separate in small pieces and act as closed loop processes like sample tracking in a fridge or incubator. If bar-coding is already involved, it could be easily replaced by RFID. Our RFID solutions are modular and flexible, so that they could be easily expanded step by step through-out the complete laboratory workflow. With this approach our customers get directly a better feeling for the RFID technology in a fast and cost effective way.