Frequently Asked Questions (FAQs) About RFID

Why is there so much public discussion about RFID?

Recently, a number of the world's largest retailers and supply chain organizations have publicly announced initiatives around the use of RFID. This includes such well-known companies as Albertson's, Best Buy, Metro, Tesco and Target, as well as the United States Department of Defense. These initiatives are all remarkably similar, because they are all focused on the use of one form of RFID - electronic product code (EPC). In addition, they all concentrate on tagging - by suppliers - at the case and pallet level to increase visibility as goods move throughout these large organizations. Eventually, it's expected that RFID will come to be used on individual items to also provide restocking efficiencies and enable additional services for customers.

Are there established standards for RFID?

RFID is actually a broad term which describes a number of different technologies that operate at different frequencies and use varying protocols, or languages, to communicate. The most public RFID standard is known as the electronic product code, or EPC. This technology was developed initially by an organization known as the Auto ID Center, a cooperative venture between global retailers, manufacturers, academics and technology companies, including Symbol. EPC consists of both a technical standard that defines how RFID chips and readers work and a data standard that defines what data is stored in the chip. Today, EPC is managed by an organization known as EPCglobal, a subsidiary jointly owned by the UCC and EAN, the organizations responsible for the world's best known retail bar code standard, UPC or the Universal Product Code.

How do RFID tags work?

RFID tags consist of a very small silicon chip attached to very thin, printed antenna. An RFID reader sends out radio waves and uses these to communicate with the RFID chip via the antenna and store and retrieve information. Commonly, the RFID tag draws all the power that it needs for these operations from the radio waves.

Because RFID tags use radio waves to communicate, there are a number of differences between how RFID tags operate and the way bar codes operate. Specifically, it's possible to read many RFID tags at once, and it's possible to read RFID tags that may not be visible as long as radio waves are able to reach the tag. RFID tags can also be writeable - the data can be changed whenever necessary.

Will RFID replace bar codes?

In a word -- No. At least, not in the next 10 to 20 years. Bar codes excel at providing basic identification capability at the lowest possible cost (the cost of ink). RFID offers more functionality, but at a greater cost. A more likely scenario is that bar codes and RFID will co-exist as key technologies. Symbol believes that a key success factor for both RFID and bar code based systems is the ability to seamlessly interoperate between the two, and we are making this a focus of both our bar code and RFID development efforts. In a broader view, RFID is just another - albeit important - enabler of enterprise mobility systems, along with other key advanced data capture technologies such as bar code systems, wireless data networking and mobile computing. Systems integrating all of these capabilities are expected to provide the maximum
business benefit.

Should I be concerned about the impact of RFID on my privacy?

Some organizations have raised concerns about the use of RFID tags on individual retail items. For the most part, these concerns are based on a belief that RFID might be used to track which items a person has purchased without their consent. Many of these concerns are greatly overblown and are not supported by the capabilities of the technology.

For example, the read range of RFID tags is limited to a maximum of 25 feet, assuming no obstructions such as walls are in the way. It's simply impossible to use RFID to observe items in a person's home from the street or via satellite, as some doomsayers have predicted. More importantly, the RFID industry in general has recognized the importance of privacy and is building an electronic "kill switch" into RFID tags that enables consumers to disable RFID tags at will. Consumers have the choice to disable the tags or not based on the benefits they receive - such as the ability to return items without a receipt.

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