



The RFID Basics

RFID systems consist of four main components:

- An antenna or a coil
- A transceiver (the “reader” which receives and decodes)
- A transponder, the RFID tag which is electronically programmed with unique information
- Information Management Software

The transceiver (transmitter/receiver) emits a radio wave. As the wave passes through the electromagnetic zone, it activates the transponder (tag) to send the data written on the tag’s integrated circuit. The transceiver reads and decodes this data passes it on to the host computer for processing.

Conceptually, barcode and RFID systems are quite similar:

- Both are intended to provide reliable item identification and tracking capabilities.
- Bar coding scans a printed label with optical laser or imaging technology, while RFID scans a tag using radio frequency signals.

Key differentiators:

- Unlike barcode systems, **RFID does not require a line-of-sight reader**. RFID tags attached to merchandise are electronically scanned when they pass within the reader’s proximity. This reader can detect and record numerous items simultaneously. The need to handle each item or to remove it from a secure location during the inventory process is eliminated.
- When used in conjunction with an electronic access card or other ID, the RFID system can identify an employee accessing a secure location, what is removed, and whether an item was returned.
- The RFID system can be used in conjunction with a portal alarm to help prevent unauthorized removal of items from a store or other controlled facility. Particularly with high-value items subject to employee theft, **RFID can be a valuable tool in controlling shrinkage**.

For more information, contact:

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