

Choosing RFID

Radio Frequency Identification

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NILÖRN

RFID - retail and apparel

RFID is short for Radio Frequency Identification. Radio waves are used to identify and count RFID-tags attached to products/garments, either with RFID-handhelds or fixed RFID-readers. Each RFID-tag has a unique identity 'EPC' (Electronic Product Code) which, for retail and apparel, is encoded according to the global standard SGTIN-96.

As the name implies, the GTIN (Global Trade Item Number) – think EAN/UPC-barcode – is part of this unique code so the RFID-tags can be used both by the brand itself in stores, warehouses etc. but also by any partnership businesses that may also be using RFID in their logistics chain.

We offer RFID labels in the form of adhesive labels, hangtags and textile labels. These require a solution of software and hardware, which we deliver in collaboration with partners specialised in each area. Nilörn ensures that it is just as easy to order RFID labels as it is to order barcode labels.

<div>Create value with RFID</div>	<div>Supply Chain</div> <div><ul style="list-style-type: none">Efficient inbound and outbound processesIncrease stock accuracy</div> <div></div>	<div>Inventory</div> <div><ul style="list-style-type: none">Efficient stocktakingIncrease stock accuracyReduce out-of-stock</div> <div></div>
<div>Security</div> <div><ul style="list-style-type: none">EAS – Anti-theftReduce shrinkage</div> <div></div>	<div>Sustainability and Traceability</div> <div><ul style="list-style-type: none">Less overproduction and overstockTraceability across entire supply chain</div> <div></div>	<div>In-Store Experience</div> <div><ul style="list-style-type: none">Intelligent mirrorsSmart fitting roomsSelf-checkout</div> <div></div>



GLOSSARY

Simplified, for retail and apparel RFID-usage and applications.

GTIN – Global Trade Item Number
Think EAN/UPC-barcodes, the lowest level of information used on regular barcode labels.

SGTIN – Serialized GTIN
The lowest level used for RFID-labels where each has a unique ID based on the EAN/UPC and a serial number.

EPC – Electronic Product Code
The unique code stored in the EPC memory of the RFID-label, according to global standard SGTIN-96.

GS1 – Global Standard 1
A non-profit global organisation. They issue and control the EAN/UPC-barcode series to ensure they are unique worldwide.

UHF – Ultra High Frequency
Global range 860-960 MHz. Tags can be read from several meters. Not to be mixed up with NFC which can be read by modern mobile phones.

EAS – Electronic Article Surveillance
Security gates etc for anti-theft.

- AM: 58 KHz
- RF: 8.2 MHz
- RFID: 860-960 MHz

NFC – Near Field Communication
13.56 MHz. Only reads up to a few cm. Used for access control, contactless payments etc. Not for logistical purposes.

ECO RFID

As a sustainable choice, we offer labels using PET-free ECO RFID-tags.

- Traditional RFID structure has 6 layers + release liner.
- ECO RFID structure uses only 3 layers + release liner.



Some frequently asked questions

Q - Is colour, size etc. stored in the chip?

A - No, only a unique EPC (Electronic Product Code), including the GS1 EAN/UPC and a serial number, is encoded in the small memory of the chip. All product information is stored in systems, just like for EAN/UPC-barcodes.

Q - Can I read the RFID-label with my mobile phone?

A - RFID-labels for logistics purposes work within UHF (Ultra High Frequency) and cannot be read by a mobile phone, a separate UHF-reader is needed. Modern mobile phones support NFC (Near Field -Communication) within HF (High Frequency) with a reading range up to a few cm. Nilörn can supply NFC-labels as well, but it's not used for the same purpose as UHF RFID-labels.

Q - We plan to replace our existing barcode label with an RFID-label. What more information do we need to provide?

A - No more information is needed. We take care of the serialization of the GTIN (GS1 EAN/UPC) according to an agreed serialization plan where a unique EPC (Electronic Product Code) is encoded in each label following the global standard SGTIN-96.

Q - I heard the frequencies for RFID is not the same in all countries, what does this mean?

A - These regulations are for the RFID-readers and other hardware and can differ by region and country. However, the RFID-labels operate in the full global range, 860 to 960MHz, so can be used worldwide.

Q - What washing temperature can sew-in RFID-labels withstand?

A - Based on requirements, up to 90 degrees and hundreds of cycles.



Q - Will our existing security gates work with RFID-labels?

A - No, the security gates and EAS-system are based on AM (58KHz) or RF (8.2MHz) where UHF RFID operates in 860MHz-960MHz. Some gates and solutions can be upgraded, but some must be fully replaced.

Q - Is there a battery in the RFID-labels and if so, how long does it last?

A - There is no battery, its passive RFID-technology. The antenna in the label picks up energy from the RFID-reader, which the chip in the label uses to send back its data.