



NXP ICODE® ILT

High-speed item level tagging with ICODE ILT

This smart label IC, the first to comply with ISO 18000-3M3/EPC Class-1 HF, leverages high anti-collision speed, excellent reliability, and best-in-class cost/performance ratio to enable next-generation item level tagging solutions.

Key features

- ▶ Fully compliant with ISO 18000-3M3/EPC Class-1 HF standard
- ▶ Multi-label operation up to 700 tags/sec
- ▶ Fast data rate
 - Forward link: 26.7 to 100 kbits/s
 - Return link: 53 to 848 kbits/s
- ▶ Up to 240 bits UUI/EPC
- ▶ 96-bit Unique Tag Identifier (NXP factory-programmed)
- ▶ User memory: 0- or 512-bit
- ▶ EAS functionality
- ▶ Internal resonance capacitor: 0 pF, 23.5 pF or 97.0 pF

Key benefits

- ▶ High degree of tracking automation
- ▶ Support for high-speed conveyor belts
- ▶ Hassle-free global use
- ▶ Precise and predictable read area
- ▶ Password-protected recommissioning (consumer privacy)
- ▶ Supported by ISO 15693/18000-3M1 infrastructure
- ▶ Unique and locked NXP-programmed TID
- ▶ Growing ecosystem for tags/labels & readers
- ▶ Various tag/label shapes in a range of sizes

Applications

- ▶ Healthcare (e.g. surgery sponge detection, smart cabinets)
- ▶ Pharmaceutical supply chain
- ▶ Medical lab automation (e.g. identification of vials)
- ▶ Document tracking
- ▶ Casino chips
- ▶ Laundry automation

NXP ICODE ILT enables fast, reliable item identification, even in dense tag populations and at fast conveyor-belt speeds. Supporting up to 700 tags/s, it enables a high degree of tracking automation, especially in applications that require the identification of closely coupled items.

Worldwide harmonized regulations for the ISM band (13.56 MHz) enable hassle-free global use. The well-defined reading area delivers precise location detection, and a password-protected privacy mode ensures consumer privacy. Each tag can be identified by its unique, NXP-programmed TID.



ICODE ILT runs on the same hardware infrastructure as ISO 15693/18000-3M1, which can be upgraded via firmware to support the ISO 18000-3M3/EPC Class-1 HF protocol. Being able to use the existing ISO 15693 reader infrastructure keeps ICODE ILT system cost at competitive levels.

Application examples

In the healthcare sector, and especially in hospital environments, the increased communication speed of ICODE ILT improves applications such as the detection of surgery sponges and drug management using smart cabinets. In the pharmaceutical market, drugs can be identified at high speeds, and can be tracked and traced through the entire supply chain. The unique item identifier ensures authenticity and increases patient safety.

In document tracking applications, ICODE ILT can identify files and folders that are very close to each other, regardless of their thickness. The ability to detect items in close-coupling areas, and within precisely predictable reading areas, improves inventory control and can be used to locate documents on smart shelves.

Casinos can use ICODE ILT to count chips in a quick, reliable way, and laundry services can use ICODE ILT to identify bulks of textiles and manage items during the cleaning process without reducing throughput capacity.

Product Features	ICODE ILT	ICODE ILT-M
Standard	ISO 18000-3M3/EPC Class-1 HF	
User Memory (bit)	0	512
UID/EPC Size (bit) ¹	up to 240	
TID size (bit)	96	
Data Retention [Years]	50	
Anticollision Speed	up to 700 units/sec	
Security Functions		
EAS		•
EAS Password Protection		•
User memory write Lock	-	•
Password-protected recommissioning feature (consumer privacy)		•
Capacitance Versions		
Capacitance 0 pF		•
Capacitance 23 pF		•
Capacitance 97 pF		•
Packages		
Wafer FFC		•

¹ Unique item identifier according ISO 15962 or EPCglobal Tag Data Standards