

RFID Printer Family



Maximize Efficiency and Accuracy

Harness the Power of Cutting-Edge RFID Printers with Proven Reliability and Functionality

Over the years, RFID technology has been increasingly considered and even adopted to facilitate operations. Whether RFID is implemented due to market trends such as digital supply chain, intelligent automation, supplier mandates, or regulatory trends such as food traceability and healthcare visibility, RFID labeling has proven to bring significant benefits across industries and applications.



Why RFID Matters?

Adopting RFID technology in labeling allows for the identification of items without the need to locate and read each label on the item physically. Single or multiple items can be tracked within seconds without direct line-of-sight, providing a range of operational advantages. This technology facilitates efficient item management, ensuring high accuracy and saving a significant amount of time, resources, and costs associated with managing inventory or assets, especially when items are consistently transferred across the supply chain or on the move.

Why Print-On-Demand?

Printing and encoding labels in-house requires blank RFID labels and RFID-capable printers. While it may seem like a substantial upfront investment, this approach provides the flexibility to encode the labels with real-time data. Moreover, when labeling requirements involve numerous different items and/or low quantities, on-demand labeling is particularly advantageous for minimizing sourcing and inventory challenges.

Item No.: 012345678957
Size: 8
Stock: 100 pcs
Stock Location:
Warehouse A- 54 pcs
Store B- 46 pcs
Online Order: 10 pcs

Item No.: 234567890121
Size: 6.5
Stock: 120 pcs
Stock Location:
Warehouse B- 74 pcs
Store C- 46 pcs
Online Order: 15 pcs

Item No.: 456789870123
Size: 7
Stock: 150 pcs
Stock Location:
Warehouse A- 80 pcs
Warehouse C- 70 pcs
Online Order: 30 pcs

Points to Consider Before Getting RFID Printers

Opting for on-demand printing is particularly advantageous for high-mix, low-volume products. However, to achieve optimal results, users need to make informed choices regarding RFID labels, printers, and label software. It's crucial to ensure that the printed and encoded elements align with specific requirements. The selection of the right RFID printer, a qualified RFID printer manufacturer, and their offerings are essential. Here are some points to consider.

RFID **printer manufacturers** should:

- 1 Work closely with industry associations to ensure the product offering adheres to, leverages, and evolves with the associated standards.
- 2 Demonstrate expertise in the RFID domain to offer consultancy services when required.
- 3 Be committed to product availability and continuous development.
- 4 Offer a one-stop shop with a broad range of RFID printer selections, ensuring there's always a best fit even when requirements change.

RFID **printers** should:

- 1 Support advanced, complex encoding standards to ensure the RFID labels meet industry or regulatory requirements, saving time and resources associated with "workarounds."
- 2 Allow for easy, fast switching between different label constructions without complicated, time-consuming processes.
- 3 Be compatible with a wide range of RFID chips, tags, and label constructions, saving the need for multiple printers.
- 4 Be fast! Support RFID labeling requirements and existing business processes with industry-leading speed.



Why TSC Auto ID RFID Printers?

Meet Industry Standards



- TSC Auto ID collaborates extensively with multiple standards organizations, including GS1, ISO/IEC, AIM, and the RAIN Alliance. This ensures that our RFID printers correctly and sufficiently support various encoding standards, even as these standards evolve in response to the ever-changing market trends.



Technical Support



- Professional and immediate support: Post-purchase, if users encounter any issues with their RFID printers during setup, our team of professionals is readily available to resolve these matters efficiently. This ensures a timely and successful setup, enabling the printer to support business operations promptly.
- Guidance on numbering systems: Beyond just the ability to print RFID labels, we offer expertise in guiding users on RFID numbering systems. This ensures that the labels produced meet industry standards.

Flexibility for Numerous RFID Label Types



- TSC Auto ID's RFID printers offer the capability to switch between diverse label constructions seamlessly with ease and speed. This functionality not only saves valuable time and money – often only one printer type is needed to handle multiple different label constructions – but also reduces errors, ultimately leading to cost savings.

One-Stop Service



- We not only specialize in RFID printers but also sell RFID labels exclusively through channel partners. Our RFID labels are guaranteed to deliver optimal performance when used with our RFID printers. This one-stop service ensures that all your RFID labeling demands are effectively met when partnering with TSC Auto ID.



The Industry's Highest Price-Performance Ratio



- High-speed encoding: Optimized for standard label printing production speeds, TSC Auto ID's RFID printers use an Encode During Print feature, which avoids the back-up or advance to align the inlay with the printer antenna, which is common with other brands of RFID printers.
- Auto calibration: Easy set-up and quick RFID label calibration make sure your printer is ready for optimal encoding. Working alongside high-speed encoding, the printer is ready for maximum RFID label throughput, enhancing productivity.
- Supports a wide range of tag types: The printers support a wide range of tag types, including on-metal tags, to fulfill diverse requirements. Some models support both standard RFID labels and on-metal tags up to 2.2 mm thick, possessing the ability to change tag types due to changing requirements.
- Advanced RFID chip support: TSC Auto ID continues to enhance encoding commands based on the latest GS1/ISO standards while also adding support for specialty chips that have features such as advanced encryption, dual frequency HF/UHF, and sensor tags.

Product Reliability



- Durability: TSC Auto ID's RFID printers are not only physically robust and capable of handling demanding environments & workloads with an extended MBTF but also technologically advanced. This ensures reliable and proper encoding of RFID labels.
- In-house evaluation and testing: Our RFID Printer and Label Validation Lab continuously tests emerging RFID inlays, on-metal tags and other tag constructions to guarantee seamless operation in our RFID printers. We consistently expand our product range, ensuring that our printers meet the evolving demands of your labeling needs. Refer to our RFID Solutions webpage for the latest test results.
- Product quality:
 - TSC Auto ID's self-owned ISO-certified production site underscores our commitment to delivering printers of the highest quality.
 - For specific configurations, we offer certain customizations that are directly manufactured in our facility, ensuring timely availability of printers to meet your demands.



RFID Printer Family

RFID is increasingly recognized as a fast and cost-effective method for asset tracking, particularly beneficial for enterprises overseeing extensive product inventories and valuable assets. The application of RFID extends across diverse industries, including retail, healthcare, manufacturing, shipping, logistics, and more. Our RFID printer family comprises of high-performance enterprise designs, compact industrial models, desktop models suitable for varying volume needs, as well as mobile and print engine models. The high-speed and advanced RFID printer options empower users to tag their inventory and track equipment effortlessly in real-time.



Industrial Printer

T6000e RFID 4" & 6"



The T6000e RFID printer, for high-volume RFID label applications, is a versatile series available in 4-inch and 6-inch print widths with 203/300/600 dpi print resolution. It features both internal and external antennas, supporting various RFID applications, including on-metal and standard RFID labels.



Industrial Printer

MB241 Series RFID 4"



The MB241 provides RFID scalability, accommodating standard labels and tags, as well as on-metal tags. Its compact footprint, bifold media door and metal enclosure make it well-suited for constrained spaces while ensuring it meets the durability requirements of demanding operating environments.



Desktop Printer

TH240 Series RFID 4"



Tailored for lower-volume 4" applications, the TH240 Series features a built-in adjustable antenna or optional RFID cutter and tear-off upgrade kits for both standard and medical-grade versions, offering the utmost flexibility. They are compatible with standard and selected on-metal RFID labels.



Desktop Printer

DH220L Series RFID 2"



The DH220L Series are built for 2" HF RFID applications. They accommodate larger rolls of up to 6.5" OD with media widths from 10mm to 60mm. Available in standard and medical-grade versions, they are ideal for wristbands, blood bag labels, and other long, narrow label types.



Mobile Printer

Alpha 40L RFID 4"



The Alpha-40L brings mobility to RFID labeling applications. Designed for roaming, field use and exception tagging, it provides the convenience of printing and encoding at the point of need.



Print Engine

PEX-2000 RFID 4" & 6"



The PEX-2000 Print Engine seamlessly combines high-performance RFID encoding with exceptional reliability in a compact design for automating item-level RFID tagging. With a rich legacy, it effortlessly incorporates into any print and apply system, providing a comprehensive solution.

Product Selection

TSC Auto ID provides a comprehensive range of RFID-enabled printers for diverse applications and requirements. Use the table below to find the ideal model based on your needs, including print volume, label type, RFID label constructions, and mobility requirements.



Model		T6000e RFID 4"	T6000e RFID 6"	MB241 Series RFID 4"	TH240 Series RFID 4"
Type		Industrial	Industrial	Industrial	Desktop
RFID System	Encoding	RAIN (UHF Passive)	RAIN (UHF Passive)	RAIN (UHF Passive)	RAIN (UHF Passive)
	Standard	GS1 EPC Gen2 / ISO 18000-63	GS1 EPC Gen2 / ISO 18000-63	GS1 EPC Gen2 / ISO 18000-63	GS1 EPC Gen2 / ISO 18000-63
	Antenna	Internal, below media, adjustable External, above media, full-width	External, above media, full-width	External, above media, full-width	Internal, below media, adjustable External, above media, full-width (UHF RFID tear-off upgrade kit)
	Printer Languages	PGL, ZGL, STGL, MGL	PGL, ZGL, STGL, MGL	TSPL-EZD SBPL – available upon request	TSPL-EZD SBPL – available upon request
RFID Labels	Types	Standard / On-metal / Other	Standard / On-metal / Other	Standard / On-metal / Other	Standard / Selected On-metal / Other
	Max. Media Thickness	2.2mm (0.088")	2.2mm (0.088")	Cutter: 0.28mm (0.011") Tear: 1.65mm (0.065")	1.35mm (0.053")
	Label Pitch	Down to 15.9mm (0.625")	Down to 15.9mm (0.625")	Down to 15.9mm (0.625")	Down to 15.9mm (0.625")
	Calibration	Automatic	Automatic	Automatic	Automatic
Chip (IC) / Inlays		Chips: Support for all mainstream chips and many new advanced chips Inlays: Support for all common inlay designs Check our RFID Solution webpage for the latest list of validated chips and inlays	Chips: Support for all mainstream chips and many new advanced chips Inlays: Support for all common inlay designs Check our RFID Solution webpage for the latest list of validated chips and inlays	Chips: Support for all mainstream chips and many new advanced chips Inlays: Support for all common inlay designs Check our RFID Solution webpage for the latest list of validated chips and inlays	Chips: Support for all mainstream chips and many new advanced chips Inlays: Support for all common inlay designs Check our RFID Solution webpage for the latest list of validated chips and inlays
RFID Error Handling		Encoding Failures: Full / Partial Label Overstrike (Depends on label length) RFID Label Counter: Tracks good / bad labels	Encoding Failures: Full / Partial Label Overstrike (Depends on label length) RFID Label Counter: Tracks good / bad labels	Encoding Failures: Full / Partial Label Overstrike (Depends on label length) RFID Label Counter: Tracks good / bad labels	Encoding failures: Full / Partial Label Overstrike (Depends on label construction) RFID label counter: Tracks good / bad labels
Print Resolution		203dpi, 300dpi, 600dpi	203dpi, 300dpi	203dpi, 300dpi	203dpi, 300dpi
Max Print Speed		14 ips@203dpi 12 ips@300dpi 6 ips@600dpi	12 ips@203dpi 10 ips@300dpi	12 ips@203dpi 9 ips@300dpi	8 ips@203dpi 6 ips@300dpi
Max Print Width		104mm (4.1")	166mm (6.61")	107mm (4.21")	4.25" (108mm)@203dpi 4.16" (105.7mm)@300dpi
Media Handling		Tear, Cutter, Peel / Rewind*, Batch / Rewind*	Tear, Cutter	Tear, Cutter	Tear, Cutter
Quality Validation Support		RFID Tag Validation (RTV) Online Barcode Data Validation (ODV)	RFID Tag Validation (RTV) Online Barcode Data Validation (ODV)	RFID Tag Validation (RTV)	RFID Tag Validation (RTV)

* Four-Inch, internal antenna only.

** Performance may be limited depending on label construction.



		DH220L Series RFID 2"	Alpha-40L RFID 4"	PEX-2000 RFID 4"	PEX-2000 RFID 6"
Type		Desktop	Mobile	Print Engine	Print Engine
RFID System	Encoding	HF / NFC	RAIN (UHF Passive)	RAIN (UHF Passive)	RAIN (UHF Passive)
	Standard	ISO / IEC 15693 ISO / IEC 14443 Type A ISO / IEC 18092	GS1 EPC Gen2 / ISO 18000-63	GS1 EPC Gen2 / ISO 18000-63	GS1 EPC Gen2 / ISO 18000-63
	Antenna	External, under media, full-width	External, above media, full-width	Internal, below media, full-width	Internal, below media, full-width
	Printer Languages	TSPL-EZD, TSPL-EZS	TSPL-EZC	TSPL-EZD, TSPL-EZS	TSPL-EZD, TSPL-EZS
RFID Labels	Types	Standard	Standard (DT)	Standard / Other	Standard / Other
	Max. Media Thickness	0.19mm (0.007")	0.16mm (0.006")	1.2mm (0.047")	1.2mm (0.047")
	Label Pitch	-	Down to 15.9mm (0.625")	Down to 15.9mm (0.625")	Down to 15.9mm (0.625")
	Calibration	Automatic	Automatic	Automatic	Automatic
Chip (IC) / Inlays		-	Chips: Support for all mainstream chips and many new advanced chips Inlays: Support for all common inlay designs Check our RFID Solution webpage for the latest list of validated chips and inlays	Chips: Support for all mainstream chips and many new advanced chips Inlays: Support for all common inlay designs Check our RFID Solution webpage for the latest list of validated chips and inlays	Chips: Support for all mainstream chips and many new advanced chips Inlays: Support for all common inlay designs Check our RFID Solution webpage for the latest list of validated chips and inlays
RFID Error Handling		Encoding failures: Full / Partial Label Overstrike (Depends on label construction) RFID label counter: Tracks good/bad labels	Encoding failures: Full / Partial Label Overstrike (Depends on label length) RFID label counter: Tracks good / bad labels	Encoding failures: Full / Partial Label Overstrike (Depends on label length) RFID label counter: Tracks good / bad labels	Encoding failures: Full / Partial Label Overstrike (Depends on label length) RFID label counter: Tracks good / bad labels
Print Resolution		203dpi, 300dpi	203dpi	203dpi, 300dpi, 600dpi	203dpi, 300dpi
Max Print Speed		8 ips@203dpi 6 ips@300dpi	Up to 5 ips@203dpi	18 ips@203dpi 14 ips@300dpi 6 ips@600dpi	14 ips@203dpi 12 ips@300dpi
Max Print Width		54mm (2.13")@203dpi 56.9mm (2.24")@300dpi	104mm (4.1")	104mm (4.1")	168mm (6.61")
Media Handling		Tear, Cutter	Tear	Tear, Peel	Tear, Peel
Quality Validation Support		-	-	-	-

* Four-inch, internal antenna only.

** Performance may be limited depending on label construction.

Success Stories



Retail

Walmart Home Décor Supplier Easily Complies with RFID Requirement

Overview

Walmart expanded RFID tagging to include more product categories, requiring RFID-tagged items for many product categories from August 2022. A U.S. home décor supplier is handling printing, encoding, unique serialization and label management in-house at its three manufacturing sites, utilizing as few RFID printers as possible.

Solution

The T6000e enterprise-grade RFID printer successfully encoded, printed, and seamlessly switched between the five different label constructions utilizing the three chosen inlays by the supplier. This eliminated the need for multiple printers.

User Benefits

- Minimize the need to have a printer for every label type
- Supports different label configurations
- Easily switch back and forth between different label types

Retail

RFID Modernizes Inventory Management, Enabling Market Expansion

Overview

A major lifestyle product retailer found barcode-based inventory management too labor-intensive and costly for North American expansion due to higher wages.

Solution

The T66R4e RFID printer and proprietary PGL printer language ensured that hardware and software components aligned with existing workflows for high-throughput, accurate RFID label production.

User Benefits

- Encode During Print functionality allowed printers to meet a peak capacity of 300,000 labels per day.
- Quick-access Label Configurations reduced downtime by eliminating recalibration between loading different label types.
- PGL integration into WMS ensured seamless RFID printer-label compatibility, improving encoding reliability.





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