

RFID Returnable Transport Item (RTI) Label

Long-lasting printable labels with advanced RFID AD Dogbone™ M830 Inlay to track and trace plastic RTIs

The RFID Returnable Transport Item (RTI) Label provides a robust and high-performance solution to encode RFID labels on demand, which gives RTIs a unique digital voice: a voice which is captured by fixed and handheld readers to gain a real-time view over the location of containers, and their contents, as they move across the supply chain. The labels' integrated AD Dogbone™ M830 Inlay is designed to withstand the detuning effects associated with high dielectric materials. And with its long read-range and high data throughput, it significantly enhances data capture performance in challenging environments and on materials that are typically hard to tag.



High-performance RFID Inlay

The AD Dogbone™ M830 Inlay features the advanced Impinj M830 IC, with Gen2X capabilities which improve reliability and efficiency in complex deployments. The Dogbone™ shape is engineered to maximize the performance of the RFID antenna. It ensures that tags can be read accurately over longer distances and in the challenging radio frequency environments typically found in warehouses and distribution centers. The geometric configuration of the Dogbone™ shape enhances the antenna's sensitivity, making it more responsive to RFID readers.

Assured Performance

Zebra employs ISO 9001 quality processes to reduce instances of unsuccessful encoding. We pre-test labels with Zebra readers and printers to ensure industry-leading performance. And we offer the latest generation of chips and consistent label materials from order to order to deliver always reliable, high-quality RFID labels and tags every time.

Durable Design

The label is designed for plastic containers. It comprises a thermal transfer synthetic facestock, together with a permanent adhesive which is designed for, and adheres well to, reusable/returnable plastic containers. Using the durable 5095 resin ribbon is recommended to create a high-quality long-lasting image.

Enhanced Operations for Frontline Teams

Streamline repetitive workflows, such as dock door scanning and capturing data at goods-in, to free your frontline teams to focus on other tasks. The labels can also be used to track the contents of containers across journeys, adding to the benefits. The inlay can compensate for the detuning effects of materials like cardboard, metal, and plastic, to enable seamless data capture, and will also read individual labels even when containers are tightly stacked or placed inside one another. Your frontline teams can easily find containers and capture their data by waving handheld RFID readers within a range of up to 21m.

PRODUCT SPEC SHEET

RFID RETURNABLE TRANSPORT ITEM (RTI) LABEL WITH DOGBONE™ M830 RFID INLAY

The durable RFID Label for Returnable Transport Item (RTI) helps them get more done in less time. By integrating real-time RTI data from your RFID labels with your supply chain and workforce applications, you present your frontline teams with actionable intelligence which guides them on their next-best moves.

Reduced Costs

The permanent adhesive of the RFID Returnable Transport Item (RTI) Labels permanent adhesive will last for the lifecycle of RTIs, which can be up to five years. And, with the label, and its printed image, withstanding exposures to ultraviolet light, seawater, and a range of chemicals, the data will remain clearly legible. The lifecycle extends return on investment, which adds to the cost saving of having a real-time view over the location of your RTIs and ensuring they are accurately accounted for.

PRODUCT SPEC SHEET

RFID RETURNABLE TRANSPORT ITEM (RTI) LABEL WITH DOGBONE™ M830 RFID INLAY

Specifications

Label Product Name	RFID Returnable Transport Item (RTI) Label
Label RM Number	10040773RM
Label Material Construction	
Facestock	Topcoated polyester – 1.7mil (43 microns)
Adhesive	Permanent acrylic adhesive 0.8mil (20 microns)
Liner	Paper – 2.4 mil (61 microns)
Total Thickness (+/-10%)	4.9mil (124 microns)
Environment	Indoor/Outdoor use
Temperature Performance	
Minimum application temperature¹	0°F / -18°C
Service temperature range²	-30°F to 185°F / -34°C to 85°C
Recommended Printers	
Printers	Thermal transfer printer (ribbon required); use Zebra desktop, mid-range and high-performance thermal printers for optimal performance
Ribbons	Compatible with resin ribbons; use Zebra 5095 ribbon for optimal performance.
Adhesive Strength	
Polypropylene	5 minute dwell time: 20 oz/in (6 N/25mm) 24 hour dwell time: 48 oz/in (13 N/25mm)
High-density Polyethylene	5 minute dwell time: 23 oz/in (6 N/25mm) 24 hour dwell time: 23 oz/in (6 N/25mm)
Chemical resistance	
Weak Chemicals	
Blood	5095 Recommended
Body Fluid	5095 Recommended
Salt Water	5095 Recommended
Water	5095 Recommended
Window Cleaner	5095 Recommended
Moderate Chemicals	
Alcohol	5095 Recommended
Ammonia	5095 Recommended
Bleach	5095 Recommended
IPA	5095 Recommended

Harsh Chemicals	
Gasoline	Test in your application
Grease	5095 Recommended
Extreme Chemicals	
Acetone	Not recommended
IR Reflow	Not recommended
MEK	Not recommended
TCE	Not recommended
Xylene	Not recommended
Product Performance and Suitability	
Recommended Storage Conditions: 68°F to 77°F / 20°C to 25°C at 40 to 50% RH	
Expected Lifespan in Application	
Exterior use – 3+ years	
Regulatory and Compliance	
Meets FDA 175.105 for indirect food requirements	
Material Testing in End Application	
The information contained in this document is to be used for guidance only and is not intended for use in setting specifications. All purchasers of Zebra products shall be solely responsible for independently determining if the product conforms to all requirements of their unique application.	
Footnotes	
1. When the label is applied, the environment and surface should be above this temperature.	
2. Following correct application and appropriate dwell time (usually 24hrs), the media will withstand this temperature range.	
* Specifications are subject to change without notice.	

Markets and Applications

- Healthcare**
 - Asset tracking, reusable plastic containers
- Transport and Logistics**
 - Asset tracking, reusable plastic containers
- Manufacturing**
 - Asset tracking, reusable plastic containers
- Warehousing**
 - Asset tracking, reusable plastic containers
- Retail**
 - Asset tracking, reusable plastic containers

PRODUCT SPEC SHEET

RFID RETURNABLE TRANSPORT ITEM (RTI) LABEL WITH DOGBONE™ M830 RFID INLAY

RFID Product Name	AD Dogbone™ M830 Inlay
RFID Technical Information	
Chip	Impinj M830 with Gen2X features
EPC Memory	128 bit
User Memory	N/A
TID	96 bit factory locked (48 bit unique)
Read Sensitivity	-25.5dBm
Write Sensitivity	-20dBm
RFID Standards	EPC Gen2v2
Read Range	Up to 22m (frequency and substrate dependent)
Inlay Size	97x27mm

Theoretical Read Range: ETSI (865-868 MHz)*	
Air	19m
Cardboard	20m
Fiberglass	19m
Glass	17m
PTFE	22m
Polyacetyl	20m
PVC	21m
Rubber	17m

Theoretical Read Range: FCC (902-928 MHz)*	
Air	21m
Cardboard	19m
Fiberglass	17m
Glass	19m
PTFE	22m
Polyacetyl	18m
PVC	19m
Rubber	19m

Product Performance and Sustainability	
Operating Temperature	-40°C / +85°C (-40°F / +185°F)
Storage Temperature	68°F to 77°F / 20°C to 25°C at 40 to 50% RH

Testing and Compliance

All inlays certified by Zebra have been pre-tested with Zebra printers and readers.

Material Testing in End Application

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Warranty

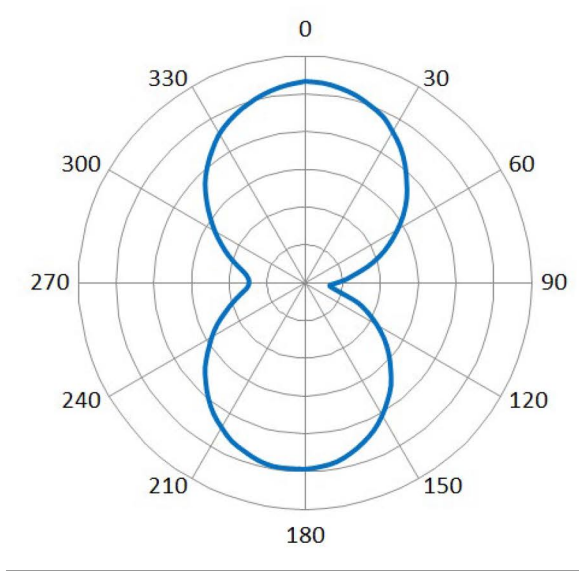
Supplies are warranted against defects in workmanship and materials for a period of 1 (one) year from the date of shipment. For the complete warranty statement, please visit www.zebra.com/warranty

Footnotes

* Theoretical read range data is meant to be directional. Actual performance

Radiation Pattern

To learn more about Radiation Pattern, visit www.zebra.com/rfidlabels



Markets and Applications

Healthcare

- Asset tracking, reusable plastic containers

Transport and Logistics

- Asset tracking, reusable plastic containers

Manufacturing

- Asset tracking, reusable plastic containers

Warehousing

- Asset tracking, reusable plastic containers

Retail

- Asset tracking, reusable plastic containers



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