BRADY

Robust. Reliable. Easy-to-use.

RFID Solution for Flyable Parts

Industry Challenges

The aerospace industry relies upon a complex and technologically advanced global supply chain. However, almost all parts are still tracked using handwritten paperwork and manual data entry. Seamlessly tracking all components from suppliers through assembly and to delivery can be a painful and error-prone process and one that lacks visibility.

Component traceability and visibility is critical for both aircraft operation and safety. To achieve this with maximum return on investment, a number of challenges need to be addressed.

Industry Challenges:

- Increase supply-chain visibility
- Achieve error-proof identification
- Optimise efficiency savings through automated lifecycle management

The Future

Smart RFID part marking is the answer to the growing need for efficient and error-proof identification and management of aircraft components.

The scope of efficiency savings generated by RFID part-marking is realised at all levels of aircraft manufacturing and assembly from part-creation to customer operations.

Benefits for Parts Suppliers and Assembly Manufacturing

- Automated data entry
- Real-time production and inventory visibility
- Reliable, single step in-line workflow
- Elimination of paperwork process time

Benefits for Airframe Manufacturers

- Total supply chain visibility
- Streamlined business processes
- Improved configuration management
- Brand Protection
- Paperless chain-of-command

Benefits for Airline Operations and Maintenance

- Higher maintenance efficiency
- Improved safety
- Optimised aircraft readiness
- Automated Lifecycle Monitoring

The lightest **heavy-duty** RFID solution

A mark of reliability in the aerospace industry.

The ultra light weight, flexible RFID integrated labels are designed to provide high performance on and off metal to satisfy the most challenging applications. They have been selected and approved by Airbus for flyable parts identification and will meet Boeing spec D6-84731.

The RFID label provides you with a robust, easy to use and reliable solution for durable data management and component history visibility. Combined with a high quality print-on-demand system, and ATA Spec 2000 compliant software options, it is the ultimate tool to simplify and automate your traceability process.

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Label text:

BRADY®

RFID

MFR: BRADY
DFM: 092014
SER: BRADYCORP123
A/C:
LEFT WING PART

An Ultra-Light Weight RFID Label

The ultra light weight and flexible B-1000 RFID integrated labels provide you with a robust, easy to use and reliable solution for **durable data management and component history visibility.**

Reliable

- Single step, in-line workflow allows for a simple, efficient and error-proof standard operating procedure
- Functions equally well on and off metal or composite surfaces, both in the interior and on the exterior of aircraft
- Stays attached on both curved and flat surfaces

Robust

- Extremely durable and engineered to support part integrity and to resist exposure to extreme environmental conditions
- Durable print without over laminate
- Rugged One Time Programmable (OTP) memory: the integrated RFID chip can provide more secure storage and retention of asset data

Easy to use

- Ultra-light weight construction: weighs less than 2g!
- Easy attachment through a pressure sensitive adhesive
- Read range: the patented design provides a strong read range both on and off metallic surfaces

RFID Integrated Label technical specifications on pg 10.

DO-160E Test results available!

Package 1
Pre-Printed Labels

- Printed & Programmed custom RFID Labels delivered by Brady
- Highly customisable
- Ready for implementation

A Reliable, Easy-to-use
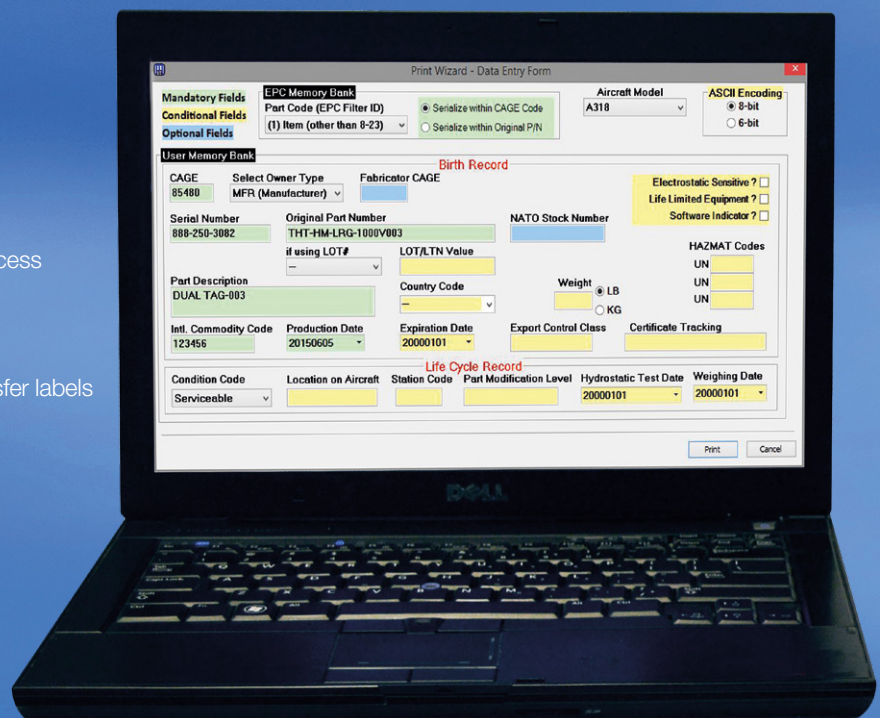
Design, Print & Program in 1 Go

The RFID software and printer enables you to **design and simultaneously print the label and program the RFID chip in <15 seconds.** The RFID software supports you to design the label and enter the data according to customer requirements compliant with ATA Spec 2000.

Intuitive Software

- Intuitive workflow for maximum ease of use
- Data entry options: manual, database driven, query driven or fully automated
- Provides reliable security features
- Compliant with ATA Spec 2000

Integrated Printing

- Integrated printing, encoding and validation process for accurate part marking
- Fast print speed, prints the label and programs the RFID chip in 1 go
- Robust industrial printer for roll fed thermal transfer labels
- Quality printing at 600 dpi

Package 2
Part Marking Starter Package

- Blank RFID Labels, software & printer delivered by Brady
- On-site setup, training, maintenance and global technical support included
- Design, Validate, Print & Program RFID Labels on-site & on demand

and Robust RFID Solution

Increased Control

The RFID Handheld Scanner provides increased control and inspection of data on RFID labels. The handheld scanner and its software enable **data readability and the addition of part history entries on the RFID chip.**

Rugged Scanner

- Line of sight not required
- Built in ERP interface
- High RF sensitivity for greater accuracy
- Rugged design with protected glare free screen

Tailored Software

- Aerospace tailored RFID asset tracking
- ATA Spec 2000 compliant
- Ability to add part history information
- Configurable for use with all label types

Package 3
Part Marking Upgrade Package

- Blank RFID labels, software, printer, handheld scanner and scanner software delivered by Brady
- Design, Validate, Print, Program, Read & Add data to RFID Labels on-site and on demand
- Includes on-site setup, training, maintenance and global technical support

Full System Integration

A fully automated RFID solution, including full systems integration, fixed RFID readers and scanners and an enterprise class software enables **enterprise level automation complete with analytics and potential process improvements.**

Full Systems Integration
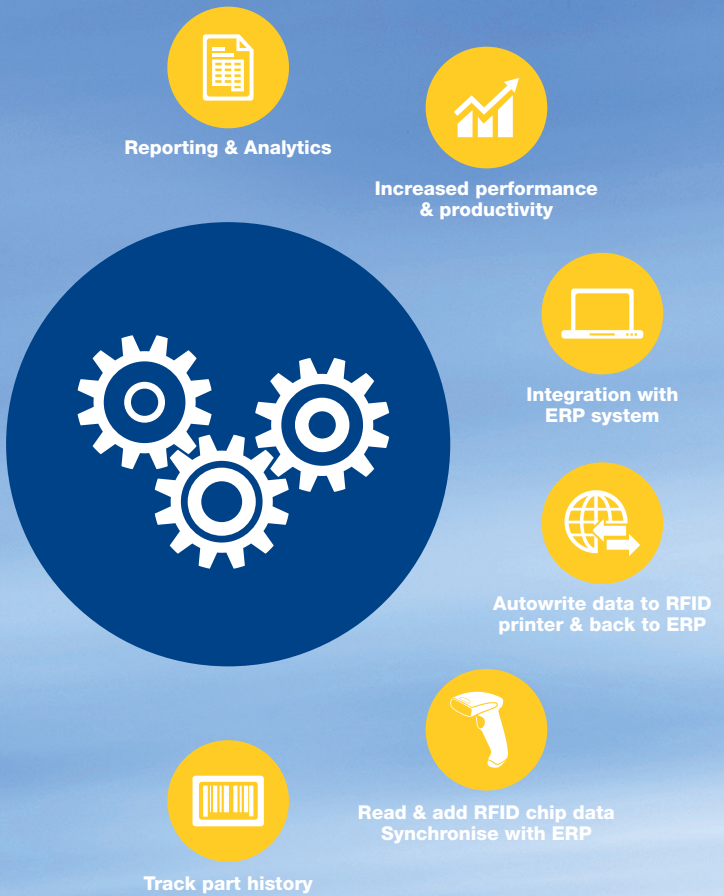
- Highly customised need analysis
- Integration with company ERP system
- Auto-writing data to RFID label printer
- Auto-writing back to ERP system

Fixed RFID Scanners

- High end mounted scanners in assembly line
- Auto-writing scan data to ERP system

Enterprise Class RFID Software

- Increased forecast accuracy and reduced safety stocks in the supply chain
- Streamlined shipping costs, increased order accuracy and customer satisfaction in logistics
- Improved product quality, fewer returns, reduced downtime and reduced scrap in manufacturing & assembly
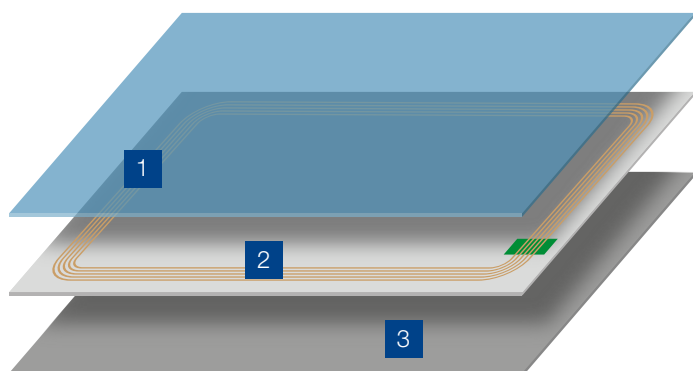- Time savings, reduced cost and fewer audits in maintenance and repair

Reporting & Analytics

Increased performance & productivity

Integration with ERP system

Autowrite data to RFID printer & back to ERP

Read & add RFID chip data Synchronise with ERP

Track part history

Package 4
Part Marking and Traceability Package

- Blank RFID labels, software, printer, handheld scanners, fixed scanners, scanner software, enterprise software and full systems integration delivered by Brady
- Enterprise level automation and analytic capabilities
- On-site setup, training, maintenance, process consulting and global technical support included

Technical Specifications

RFID Integrated Label

1 THT Printable Topcoat - Durable Print
- Robust: Durable Print - **no over laminate or top coat**
- Easy to Use: In-line high speed print-on-demand
- Reliable - Integrated printing, encoding and validation process ensures accuracy

2 High-Performance Construction
- Robust: **Ultra light-weight (< 2g)** proprietary construction
- Easy to use - material is flexible for effortless attachment to both flat and curved surfaces
- Reliable: Protected data storage and retention

3 Ultra-Durable Adhesive - Easy Attachment
- Robust: withstands the harsh environments found in aerospace applications
- Easy to use: simple attachment through pressure sensitive adhesive.
- Reliable: **works on both metal and composite materials**

Brady B-1000 Series supports the ATA dual-record or multi-record tag specifications for flyable parts.

Technical Specifications	Low Memory 2Kb - Dual-record	High Memory 64Kb - Multi-record
Reserved Bank	32-bit Kill Password and 32-bit Access Password	
EPC Bank	Up to 496-bit EPC identifier	
TID Bank	256 bits	
User Memory	2,000 bits total	64,000 bits total
Region 1	4,096 bits (512 bytes) Archival memory, auto locking on word (16-bit boundaries), no additional commands required.	65,536 bits (8,192 bytes) Archival memory, auto locking on word (16-bit boundaries), no additional commands required.
Region 2	3,328 bits (416 bytes) Rewritable Memory Space	5,152 bits (644 bytes) Rewritable Memory Space

Attribute	Brady B-1000 Series	
Dimensions	Large 70 mm x 32 mm, Medium 55 mm x 25 mm, Small 35 mm x 25 mm	
Read Range	Large – 2m* Medium – 1.9m* Small – 0.8m*	Large – 1.5m* Medium – 1.1m* –
Overall Thickness	< 2 mm	
Weight	< 2 g	
Operating Temperature	-67° F to 185° F / -55° C to 85° C	
Minimum Application Temperature	50° F / 10° C	
Installation Areas	Pressurised & Non-pressurised	
Air Interface	Fully passive; EPCglobal Class 1 Gen2: IS0 18000-6C	
Operating Frequency	840 to 960 MHz	
Memory Availability	Dual Memory and Multi-record Memory	
Certifications and Standards	ABS-1860, AS5678, DO-160, and ATA Spec 2000	

* Results dependent on conditions used for testing, actual performance will vary depending on environment and substrate composition. See Technical Data Sheet for additional information.

Catalog-Number	Description	Size
THT-HM-LRG-1000-PF	Large RFID High-Memory Label	70 mm x 32 mm
THT-LM-LRG-1000-PF	Large RFID Low-Memory Label	70 mm x 32 mm
THT-HM-MED-1000-PF	Medium RFID High-Memory Label	55 mm x 25 mm
THT-LM-MED-1000-PF	Medium RFID Low-Memory Label	55 mm x 25 mm
THT-LM-SML-1000	Small RFID Low-Memory Label	35 mm x 25 mm

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& Services Overview

RFID Label Printer

RFID Label Printer specifications	
Printer type	Direct thermal/thermal transfer
Print length range	0.25" - 99.99" (6mm - 2539.75mm); values vary with printer configuration
Operating temperature	32ºF to 100ºF (0ºC to 38ºC)
Storage temperature	0ºF to 140ºF (-17ºC to 60ºC)
Humidity	10% - 95% non-condensing
Power source	Auto-sensing 90 - 132 or 180 - 264 VAC @ 47 - 63Hz
On-board real time clock	
LCD backlit graphics display	
Construction	Metal cabinet, clearside window to easily monitor media supply levels
Resolution	600dpi
Max. Print Speed	152mm/s
Max. Print Width	105/7mm
Memory	16MB SDRAM/ 8MB Flash
Communication ports	Serial RS232, Parallel Bi-Directional, Ethernet-Wired LAN 10/100, USB 2.0 Compatible
RFID	UHF & HF

Handheld Scanner

Handheld Scanner specifications	
Operating System	Microsoft Windows Mobile 6.5
Memory (RAM/ROM)	256 MB/1 GB
Environmental Sealing	IP64 (electronic enclosure, display and keypad)
Tumble	2.000 one-meter tumbles at room temperature (4.000 hits)
WLAN	802.11 a/b/g
Bluetooth	Bluetooth Version 2.1 with EDR
RFID	Frequency Range: EU: 865-868MHz / output power 2 Watt ERP

RFID Services Overview

**Brady has technical support ready to support you from a nearby location.
Various tech support packages are available.**

Installation	Training	Assist Field on RFID printer	Extended warranty on RFID PDT
• Stress free installation of printer & software • By a specialist at your premises • Only recommended for additional installations	• Stress free installation of printer, software & scanner • By an RFID specialist at your premises • Half day (3h) training on the total solution • Recommended for initial installations	• Priority access to Brady Technical Services • All spare parts included • All working hours included • Specialist at your premises • Call out charges included • Solution < 2 days excluding transport	• Priority access to Brady Technical Services • All spare parts included • All working hours included • Return to base warranty • Free pick-up at your premises • Solution < 2 days excluding transport

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To help minimise our impact on the environment, Brady limits its number of reprints.

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15/08/2020

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