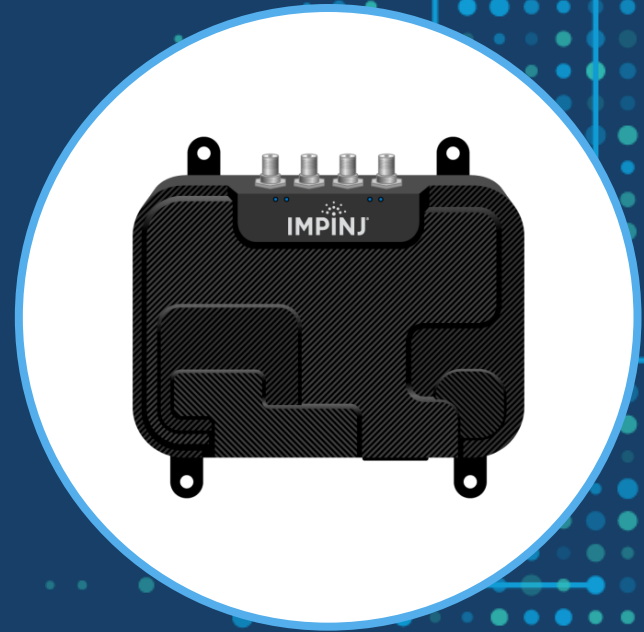


Impinj R700 Series RAIN RFID Readers

Industry-leading performance designed to meet the increasing demands of autonomous enterprise IoT solutions

April 2026




IMPINJ®

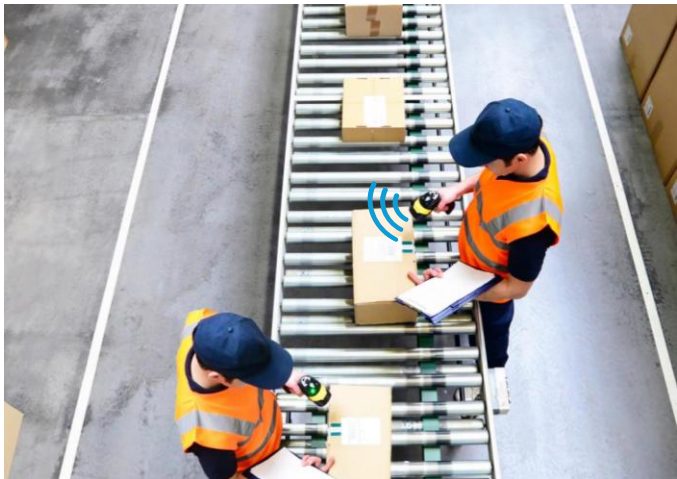
GEN2X™

Rise of Autonomous Reading Solutions

Manual reading



Autonomous reading



Reduces inefficient and error-prone manual tasks through automation

Provides accurate, item-level data in real-time*

Minimizes impact to existing employee and consumer workflows

* Item-level data is continuously being collected and made available with minimal latency

The Solutions: Key RAIN RFID Use Cases



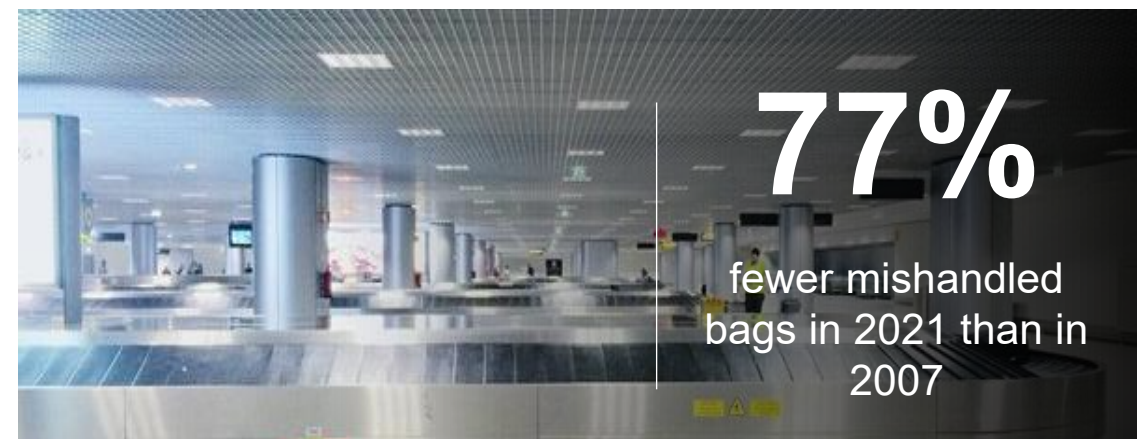
Inventory visibility and omnichannel fulfillment



Supply-chain automation



Retail self-checkout & loss prevention



Asset management & tracking

<https://www.ihlservices.com/product/inventorydistortion>, UPS earnings report, 2022 baggage IT insights report, SITA

Increasing Complexity for Autonomous Solutions



**Smaller tags =
weaker replies**



**On hard-to-
read items**



**Densely-
packed items**



In motion



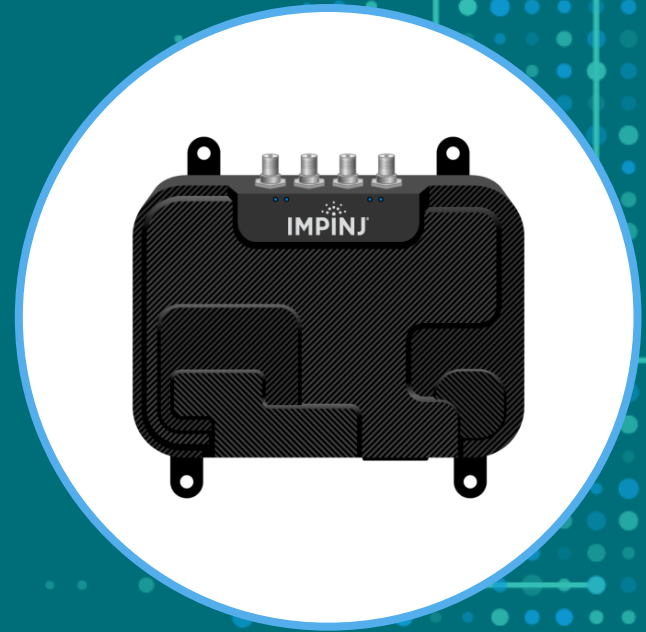
**With stray
tag reads**



**And real-world
conditions**

Goal: Provide accurate shipment and item-level inventory and location data while simplifying installation, maintenance and upgradability

Reader Performance and Reliability Matters




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Impinj R700 Series RAIN RFID Readers

Designed to meet the increasing demands of autonomous reading solutions



Industry-leading RAIN RFID performance delivers accurate, real-time* item data

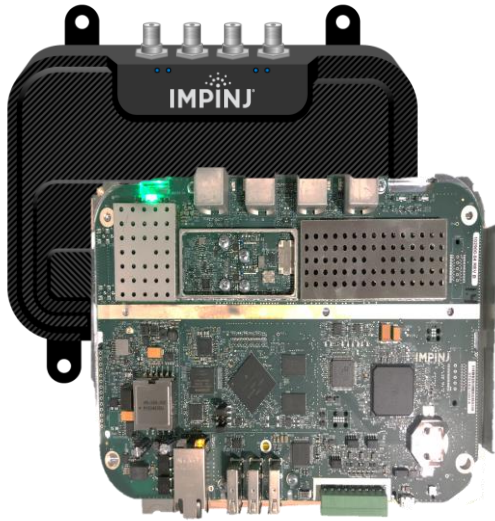
Powerful edge processing transforms item data into business intelligence

IoT developer-friendly tools simplify and accelerate solution deployment

Enterprise-grade reliability and security built on 15+ years of excellence

* Item-level data is continuously being collected and made available with minimal latency

Impinj R700 Market-Leading Specifications



Supports
GEN2X™



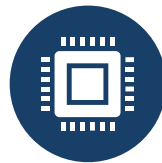
Industry-leading reader sensitivity

Improves read range, tag readability, readzone control, inventory speed, and interference mitigation



Up to 1,300+ tag/s read rates

Delivers accurate, real-time item data of large tag populations, on densely packed items, that are in motion



Powerful 64-bit edge processing

Enables intelligent on-reader apps that transform RAIN data into actionable, cloud-connected business intelligence



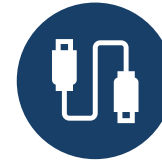
Supports Gen2X Performance

Further improves reader sensitivity, increases tag read range, speeds inventory, and reduces stray tag reads



Simple IoT device interface

Allows IoT apps to easily configure and control readers, and consume item data with native MQTT support



Rich peripheral support

Provides solution design versatility with support for USB flash drives, Wi-Fi adapters, and up to 32 antennas



Enterprise-grade security

Secure, upgradable Linux OS, ruggedized enclosure, and proven track-record of lifetime reliability

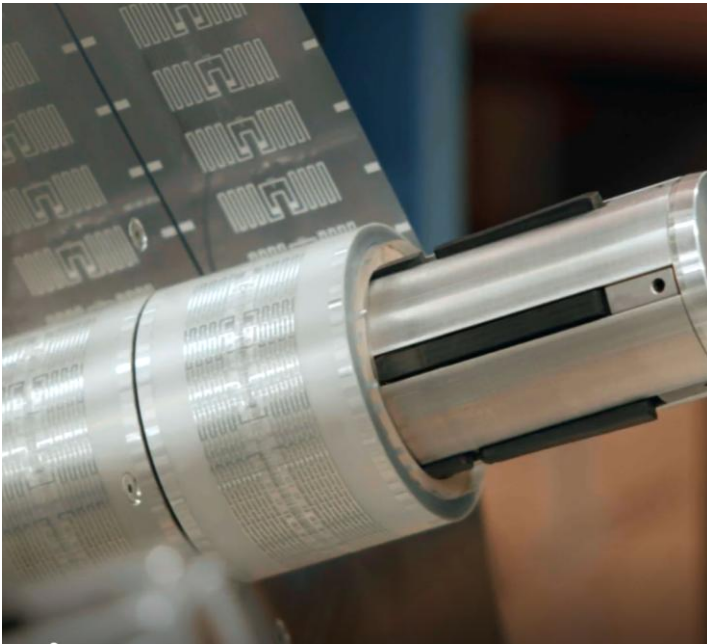


Supports Gen2X Protection

Verifies tag ICs as genuine to inhibit fraud, prevents item tracking to protect consumers, and protects tag data

Performance Matters: Improved Reader Sensitivity

Industry trends are driving the need for improved reader sensitivity



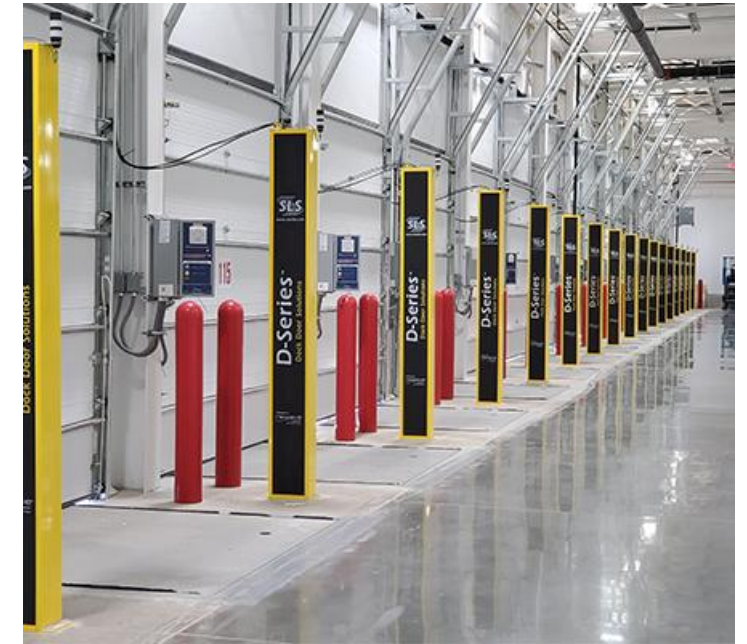
Newer and smaller Tags

Both produce weaker tag reply signals, requiring better reader sensitivity to reliably read tags



Use of faster reader modes

Real-time autonomous reading use cases require faster read rates with robust performance

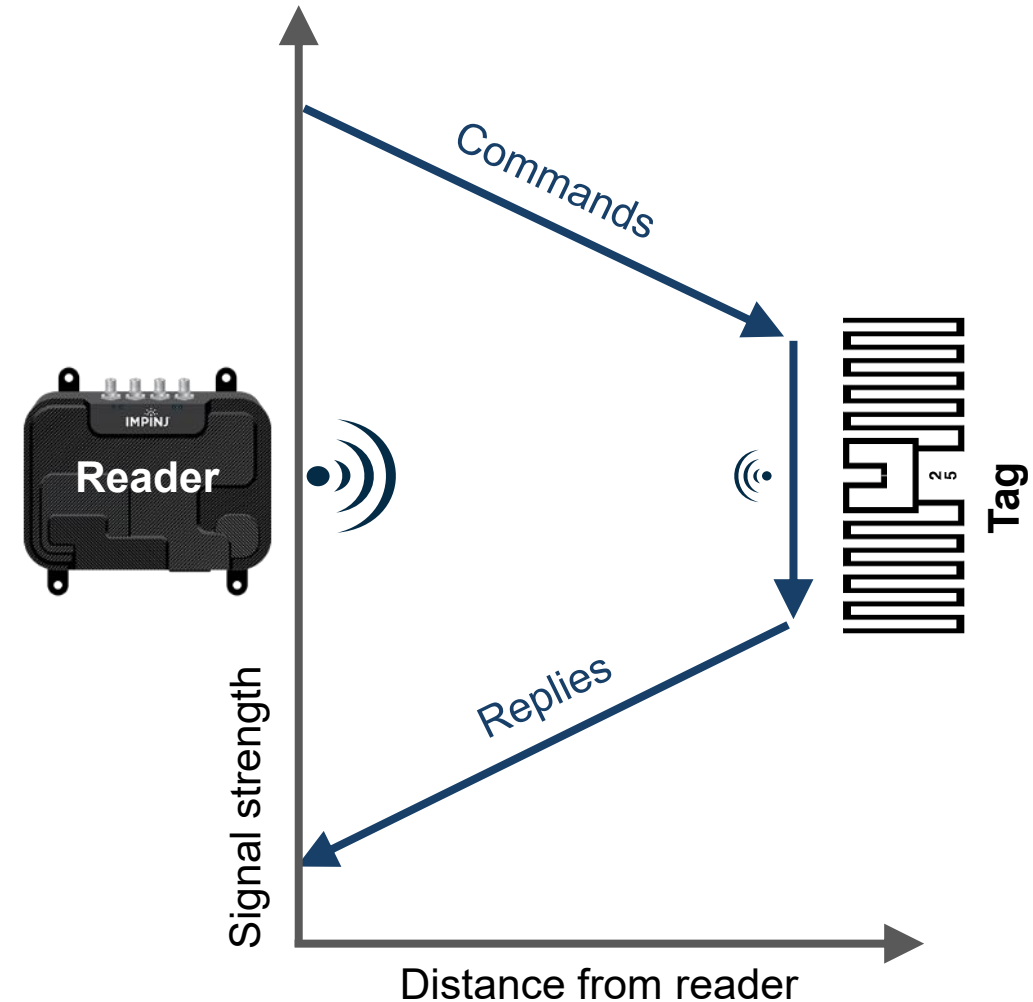


Multi-reader environments

Advanced deployments rely on multiple readers, resulting in reader-on-reader interference

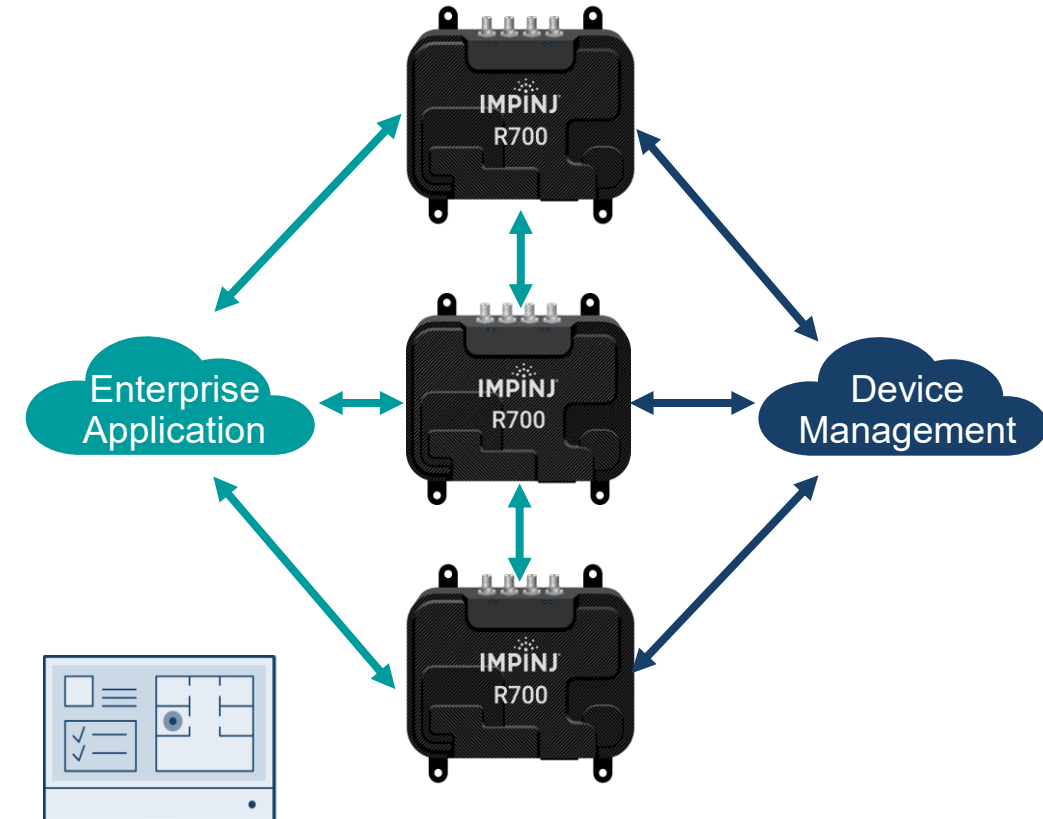
Impinj R700 Improves Tag Readability

- **Newer, smaller tags have weaker replies**
 - Newer tags have better sensitivity, increasing range but with a corresponding weaker reply
 - Smaller tags lower cost and connect smaller items but with disproportionately weaker reply, especially tags <40mm length
- **Impinj R700 reader sensitivity is industry-leading**
 - Enables readers to hear tags at longer range
 - Enables reliable use of faster reader modes
 - Improves tag readability in multi-reader (interfering) environments
- **Gen2X further helps R700 hear weaker tags**
 - Improved tag reply formatting further improves reader sensitivity and tag acquisition



Real-Time, Cloud-Connected, Autonomous Solutions

- **Require intelligent edge decision-making**
 - Deliver real-time, business-critical decisions on tag data
 - Algorithmically control read zones to avoid stray reads
 - Fuse multiple IoT sensors with RAIN tag data
- **Require seamless data flow and integration**
 - Share data directly with IoT apps in cloud in real-time
 - Share tag and sensor data with other readers
 - Integrate with centralized, cloud device management to simplify configuration, updates, and maintenance
- **Must deliver enterprise-grade reliability & security**
 - Stay up-to-date with latest security requirements
 - Protect data during network and power disruptions



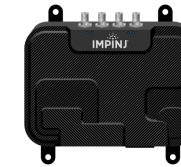
Readers need to deliver much more than just RAIN RFID reading...

Enterprise solutions require smart IoT edge devices with integrated, high-performance RAIN RFID

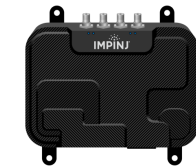
Performance Matters: Powerful 64-bit Edge Processing

- **Upgraded R700 processor sub-system**
 - 2x processor performance*
 - 3x on-reader application memory size*
 - Upgraded, faster RAM memory system
 - Upgraded, secure 64-bit Linux 6.6 OS
- **Enables intelligent on-reader apps**
 - Transform RAIN tag data into actionable, cloud-connected business intelligence
- **Seamless migration from R700 rev 1**
 - Form, fit, and function compatible
 - Same part-number, pricing, and SKUs
 - Common firmware image with Octane v10.3
 - CAPs need to be recompiled with ETK v10.x
 - Migration application note now available

* Comparing R700 Revision 2 to R700 Revision 1



Revision 1
2020 to 2026



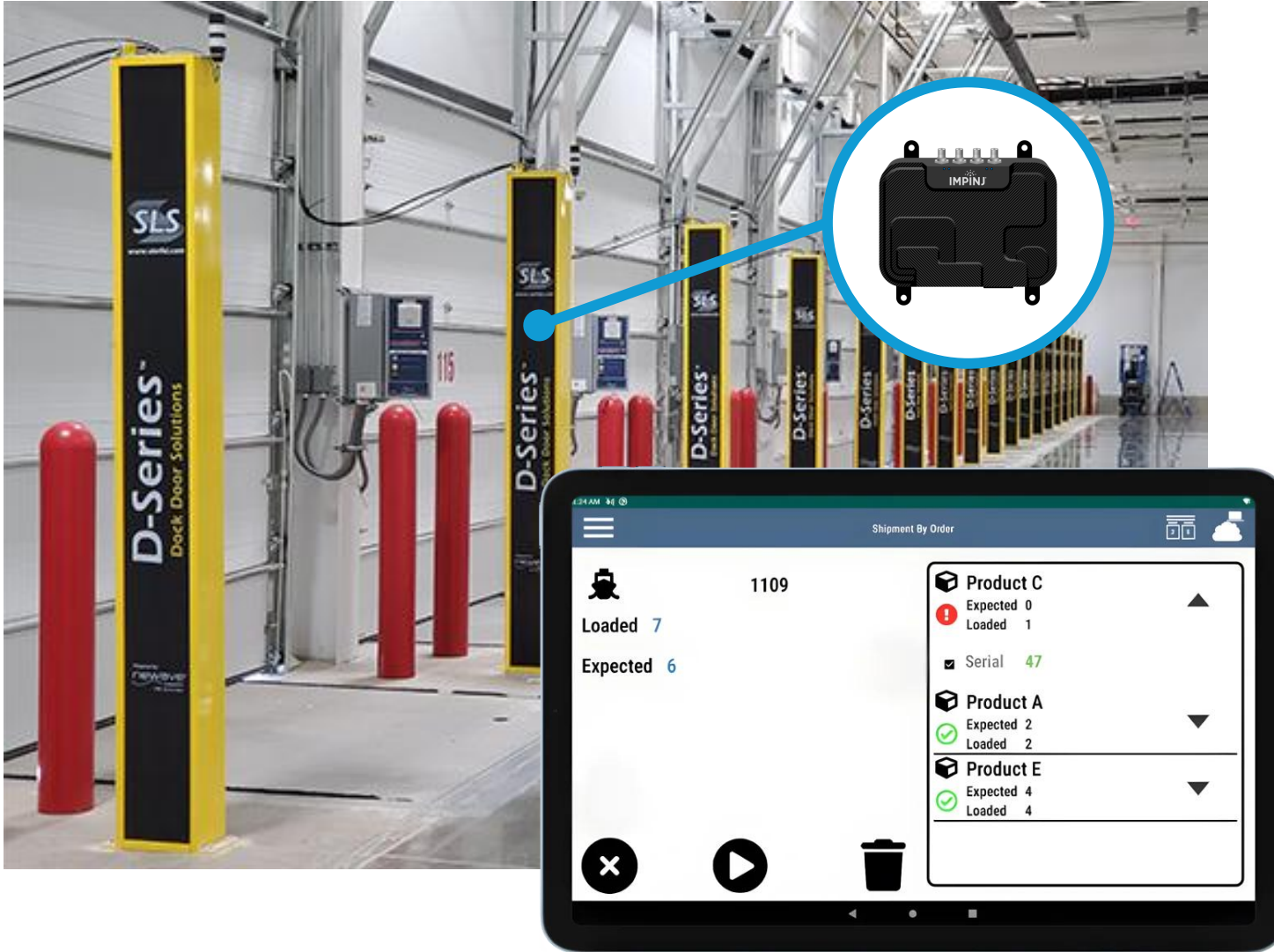
Revision 2
2026+

Processor	1 GHz Dual-Core 32-bit A7	1 GHz Dual-Core 64-bit A53
RAM	1 GB DDR3L 800 MHz	1 GB LPDDR4 1.6 GHZ
Dhrystone Performance	2.47 DMIPS	4.95 DMIPS
Linux OS	6.6 32-bit	6.6 64-bit
CAP Space	256 MB	768 MB
Power	PoE (10-30 dBm) PoE+ (10-33 dBm)	PoE+ (10-33 dBm)

All R700 Rev 2 SKUs are now in production

Full production switchover in 1H 2026

R700 Edge Processing For Real-Time Insights



“The Impinj R700v2 RAIN RFID reader offers us increased computational power to meet the demands of today’s challenging autonomous applications. These enhancements enable SLS to improve read-zone control and enable real-time item-level insights.”

- Matt Smith, SLS
Senior Director of Engineering

Enterprise-Grade Reliability & Security Matters

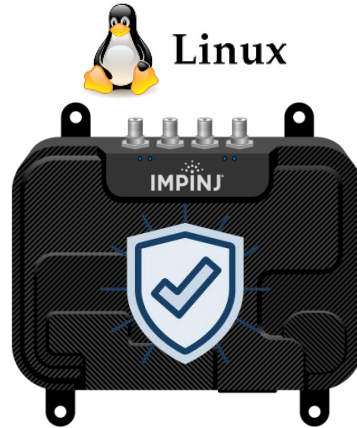


<0.20% RMA rate¹

>500 years MTBF²

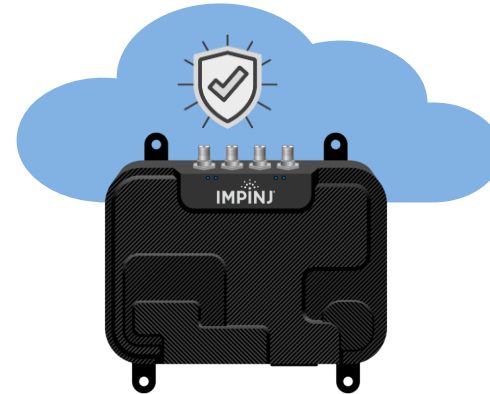
Industry-proven reliability

Backed by two decades of Impinj excellence in engineering, manufacturing, and applications support



Secure Linux OS

Upgradable Linux operating system with encrypted software image and secure boot with chain-of-trust



Secure device interface

Secure certificate management, encrypted data transfers, network auto-recovery, and tag data protection



Industrial-grade

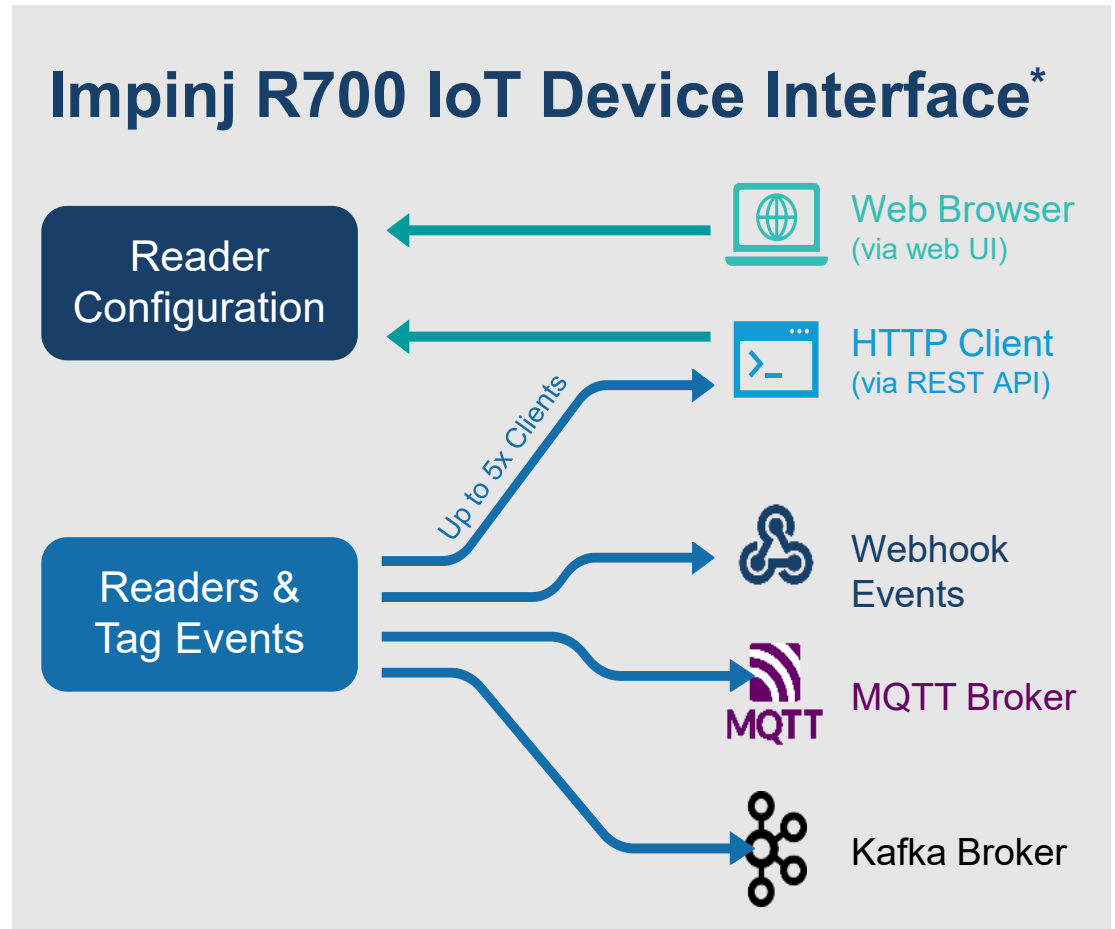
Ruggedized cast aluminum enclosure³ ensures protection in harsh environments

The trusted and proven reading engine for enterprise-grade solutions

¹ Return Merchandize Authorization of Speedway and R700 readers over last 5 years; ² Lab testing of Mean Time Between Failures on Speedway readers; ³ Meets MIL-STD-810

Simplifying Solution Deployments: Software Integration

- **Easily configure and control readers**
 - Modern reader configuration via REST API
 - Intuitive web UI allows local or remote reader configuration, updates, and diagnostics
 - Improved pre-set configuration
- **Easily integrate with cloud-based IoT applications running on hosted services**
 - OpenAPI compatible IoT developer tools
 - Support for 80+ IoT application languages
 - Native support for standard IoT data protocols, such as MQTT and Apache Kafka
 - Simultaneous streaming to up to 5 clients



* Impinj R700 continues to support LLRP tools and libraries for RAIN RFID experts, with support for .NET, Java, C++, and C versions; includes Impinj R700 ETK and Octane SDK tools to develop on- and off-reader applications

Simplifying Solution Deployments: Web UI

- **Configure and manage R700 readers locally or remotely via an Ethernet connection**
 - Configure reader RF, network interface, input triggers, and antenna connection settings
 - Stream tag data and events for simple testing
 - Retrieve system information and diagnostics
 - Update firmware and load embedded apps
 - Protect security with password-protected UI access

The screenshot shows the 'Tag Streaming' page of the IMPINJ web UI. The top navigation bar includes 'Home', 'Profile Presets', 'Event Reporting', 'Tag Streaming', 'Network', and 'Help'. The main content area is divided into three sections: 'Preset Control' with an 'Inventory Preset' dropdown set to 'default' and a 'Stop' button; 'Stream Control' with 'Disconnect Stream' and 'Clear Reports' buttons; and 'Tag Report Summary' showing 2 unique EPCs, 231 reads per second, and a viewing time of 00:12:14. Below these is a 'Reported EPCs' section with a 'Download CSV' link and a table of data.

EPC ▲	Reads	First Seen	Last Seen	Age	Last RSSI	Avg RSSI	Max RSSI	Min RSSI	Antenna Port	Power
E2801190A5031FA007C1F090	72788	14	735	0	-7900	-7877	-7200	-8050	1	3300
E2801190A5031FA007C20F0C	75271	14	735	0	-4850	-4862	-4800	-4900	1	3300

The screenshot shows the 'Impinj R700 Reader' configuration page. The top navigation bar includes 'Home', 'Profile Presets', 'Event Reporting', 'Network', and 'Help'. The main content area is divided into several sections: 'Impinj R700 Reader' with buttons for 'Change Region', 'Change Interface', 'Change Password', and 'Reboot'; 'Firmware and CAP' showing 'Firmware Version 8.1.0.240' and a 'Change CAP Authentication' button; 'GPO' with three pins (Pin 1, Pin 2, Pin 3) all set to 'Low'; 'Antenna Hub' with a 'Disabled' toggle; and 'Power Source' showing 'Source Auto' and a 'Change Power Source' button.

Simplifying Solution Deployments: Hardware Integration

- **Easy connection to external peripherals**
 - Connect IoT sensors/actuators with flexible GPIO block
 - Extend capabilities with support for 3 USB peripherals
 - Expand to 32 read zones with 1-wire¹ antenna hubs
- **Versatile powering and mounting options**
 - Compact, lightweight industrial design
 - Simplified VESA-standard mounts
 - Mounting brackets compatible with Speedway
 - POE+ (Power over Ethernet Plus) eases installation
- **Flexible worldwide operation with three Impinj R700 SKUs certified to operate in 60+ countries/regions**

¹ RF cable also used for controlling hub switching, eliminates need for external controller and control cables

² support.impinj.com/article/360011619000; EU certification includes 30+ countries



Building R700-Powered Autonomous Reading Solutions with the Impinj Platform



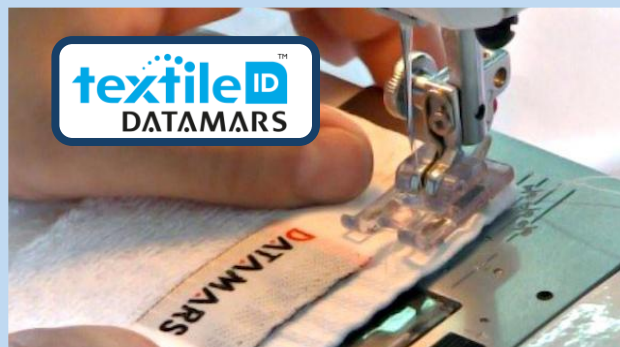

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Examples of R700-Based Enterprise Solutions

www.impinj.com/library/partner-solutions



Dock Door Shipment Verification



Real-Time Laundry Tracking



Tunnel Shipment Verification



Intelligent Logistics Solutions



Intelligent Inventory Management



Retail Loss Prevention



Intelligent Logistics Solutions



Track Controlled Medicines



Food Track-and-Trace



Medical Smart Cabinet



Medical Equipment Tracking



Tunnel Item Verification

Backed By 20+ Years of Impinj Solutions Expertise

Impinj Solutions R&D Lab in Seattle



Full-scale lab prototypes simulate real-world conditions

150+
BILLION
ITEMS CONNECTED


20+ YEARS
IN BUSINESS


294
PATENTS
ISSUED & ALLOWED

Impinj Platform Advantage: Better Together



Supports
GEN2X™

- Industry-leading reader sensitivity
- Enterprise-grade security and reliability
- Simplified solution developments



**Impinj M800 Series
Endpoint ICs**

Supports
GEN2X™

- Exceptional tag readability
- Optimized tuning with Impinj Autotune v3
- Enhanced manufacturability with Impinj Enduro

Delivers solution performance and advanced capabilities that cannot be achieved with mix-and-match systems

Gen2X Solution Innovation Toolbox



Gen2X is a standards-compatible* enhancement to the RAIN RFID radio standard that adds key innovations Impinj has developed working with Fortune 500 enterprises

Gen2X Performance



Gen2X **improves tag readability**, especially for small tags



Gen2X **improves read-zone confinement** and **identifying tags-of-interest** in cluttered environments



Gen2X **lowers solution cost** to achieve faster ROI

Gen2X Protection

Gen2X **inhibits fraudulent items** to protect brands and consumers by authenticating the IC and item



Gen2X **protects consumer privacy** by preventing bad actors from tracking items

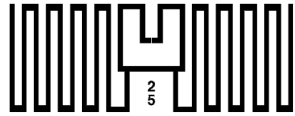


Gen2X **protects tag data** by correcting tag and bit link errors



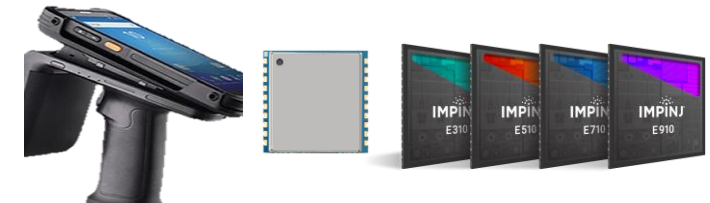
* Impinj M800 series endpoint ICs are certified Gen2V2 compliant by GS1 and fully support Gen2X

Gen2X is Widely Available Across the Industry



100+ production M800 series-based partner inlays and tags support Gen2X
M770 and M780 series add Gen2X support, target industrial applications

50+ production E Family-based readers and modules support Gen2X
New E Family reader IC firmware delivers new Gen2X innovations



“Gen2X integration into our product lines will further improve performance on proven use cases while opening the door to new industries.”

Pierre Muller, RFID BU leader at
EM Microelectronic



“Zebra, as a Gen2X licensee, plans to leverage Gen2X in our products and solutions.”

Brent Brown, VP of ALT
at Zebra Technologies



“The Qualcomm Dragonwing Q-6690 processor is Gen2X-capable”

Vivek Mehta, Director of Product
Management at Qualcomm Technologies





Join Us On Our Journey

Expanding the
Internet's reach to

Trillions

of everyday items

Thank You

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