UHF GEN 2 RFID

Impinj®

INTRODUCING

Speedway® Revolution

with AUTOPILOT

Superior Performance Made Easy

Technology leader Impinj envisioned the RFID system of tomorrow—and it has a mind of its own. The new Speedway Revolution reader automatically delivers peak performance—all day, every day.

Ensuring RFID Success—*Automatically*

Application environments are dynamic. Does your reader keep up?

Did you define your RFID deployment carefully? Did you think of every scenario, anticipate all the ways the system could break and what to do when that happened? And it worked beautifully in the lab, but then the real world threw you some curve balls?

Perhaps you designed your system for cases and pallets. But now you want to track items too?

Maybe you desire expert RFID performance but don't have an RFID expert?

Do you want a system that will continue to function well, even as your business grows and changes?

Stumped?

Impinj's latest fixed reader, the Speedway® Revolution, solves these situations and more. It builds upon the industry-leading reputation of the original Speedway with new innovations to raise the performance bar even higher. Best of all, the Autopilot features ease deployment and maintenance.

Autopilot

Senses, Configures, Adapts—24/7

RF interference, tag quantity, ambient RF noise, and even building materials near an RFID installation all affect system performance. Most users configure their readers for worst case scenarios, often compromising best performance in the process. With the Speedway Revolution's Autopilot, innovative firmware features work together, automatically optimizing reader operation to its environment—delivering peak performance at all times.

- ***Autoset*** continuously optimizes the reader's configuration for the best, most reliable performance. The Speedway Revolution senses levels of RF noise and interference, automatically selecting the appropriate settings.
- ***Low duty cycle*** reduces RF interference, power consumption, and energy costs. The Speedway Revolution only transmits when tags are in the field, helping to clear the air of unnecessary RF noise.
- ***Dynamic antenna switching*** improves throughput and helps the reader work more efficiently. Speedway Revolution senses where tags are in the field and automatically focuses more time on the antennas with the largest tag populations in view. For example, if a low-height pallet follows taller pallets through a portal, the Speedway Revolution reduces time spent on antennas in the upper positions.

And the Speedway Revolution improves upon the advanced hardware capabilities which made the original Speedway the reader of choice for many demanding customers—capabilities such as best *receive sensitivity, interference rejection*, and item-level *carrier cancellation*.

PoE—Expanding Options, Reducing Costs

The Speedway Revolution delivers increased application flexibility via new features such as support for Power over Ethernet (PoE), which simplifies deployment and dramatically reduces cost by eliminating the need for AC outlet installation at read points.

Its low power consumption reduces your operating costs as well as your green house gas (GHG) emissions, but Speedway Revolution still doesn't compromise—delivering the full 30 dBm transmit power and the highest read performance available—even with PoE operation.

With a more compact form factor, the Speedway Revolution enables a wider range of installation options. And choice of two- or four-monostatic antenna port configurations provides added flexibility.

- 2 and 4 antenna port configurations
- Power over Ethernet
- Autopilot (automatically senses environment and configures settings for best performance)
- Enterprise-class management and monitoring
- Support from industry-leading software vendors such as Microsoft and IBM
- Industry standard application interface with support for EPCglobal Low Level Reader Protocol (LLRP)
- Industry's best sensitivity
- Innovative features to enable read zone containment and eliminate stray reads
- High transmit power capable to overcome cable losses
- EPCglobal-compliant design
- Quality design resulting in industry's highest reliability
- Global partner and support network

Whether you're initiating a pilot program, transitioning your pilot to full deployment, or expanding your RFID capability, Impinj's Speedway Revolution reader will ensure a rewarding deployment experience.

Impinj—defining the future of RFID—
where superior performance comes easy.

Available in 2- and 4-port versions.

Speedway® Revolution Readers At A Glance

PRODUCT DETAILS	SPEEDWAY R420	SPEEDWAY R220
Air Interface Protocol	EPCglobal UHF Class 1 Gen 2 / ISO 18000-6C	
Typical Throughput in Challenging Environment (Autoset Dense Reader Mode for FCC)	~430 tags/second	~300 tags/second
Supported Regions	• US, Canada, and other regions following US FCC Part 15 regulations • Europe and other regions following ETSI EN 302 208 v1.2.1 without LBT regulations • Brazil	
Antennas	4 high performance, monostatic antenna ports optimized for Impinj reader antennas (RP TNC)	2 high performance, monostatic antenna ports optimized for Impinj reader antennas (RP TNC)
Transmit Power	• +10.0 to +30.0 dBm (PoE) • +10.0 to +32.5 dBm (external universal power supply)	
Max Receive Sensitivity	-82 dBm	
Max Return Loss	10 dB	
Application Interface	EPCglobal Low Level Reader Protocol (LLRP) v1.0.1	
Network Connectivity	10/100BASE-T auto-negotiate (full/half) with auto-sensing MDI/MDX for auto-crossover (RJ-45)	
IP Address Configuration	• DHCP • Static • Link Local Addressing (LLA) with Multicast DNS (mDNS)	
Time Synchronization	Network Time Protocol (NTP)	
Management Interfaces	• Impinj RShell Management Console using serial management console port, telnet or SSH • SNMPv2 MIBII • EPCglobal Reader Management v1.0.1 • Syslog	
Reliable Firmware Upgrade	• Dual image partitions enable smooth transition to new firmware while the reader is still operating • Scalable upgrade mechanism enables simultaneous scheduled upgrades of multiple readers	
Management Console	• RS-232 using a standard Cisco-style management Cable (DB-9 to RJ-45) • Baud rate: 115200, Data: 8 bit, Parity: none, Stop: 1 bit, Flow control: none	
USB	USB 1.1 Device (Type B) and Host (Type A) ports	
GPIO	• 4 inputs, optically isolated 3-30V; 4 outputs, optically isolated, 0-30V, non-isolated 5V, 100mA supply (DB-15)	
Power Sources	• Power over Ethernet (PoE) IEEE 802.3af • +24 VDC @ 800mA via external universal power supply with locking connector—sold separately	
Power Consumption	Idle / Typical / LDC PoE at +30 dBm: 3W / 11.5W / 6W Power Supply at +30 dBm: 3W / 13.5W / 6W Power Supply at +32.5* dBm: 3W / 15W / 6W (*maximum is 31.5 dBm for ETSI region readers)	
Environmental Sealing	IEC IP52	
Operating Temperature	-20 ºC to +50 ºC	
Humidity	5% to 95%, non-condensing	
Dimensions (H x W x D)	7.5 x 6.9 x 1.2 in (19 x 17.5 x 3 cm)	
Weight	1.5lbs (24.5 oz)	
RoHS	Compliant to European Union directive 2002/95/EC	

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