

# Introducing Speedway® xArray™ Reader System

Delivering wide-area monitoring, locationing and tag direction capabilities



Speedway xArray is a game-changing reader system—the first product designed to meet the requirements for wide-area monitoring applications while maintaining backwards compatibility with portal applications. It brings proven tag direction capability to the market in a package that is both low cost and easy to deploy.

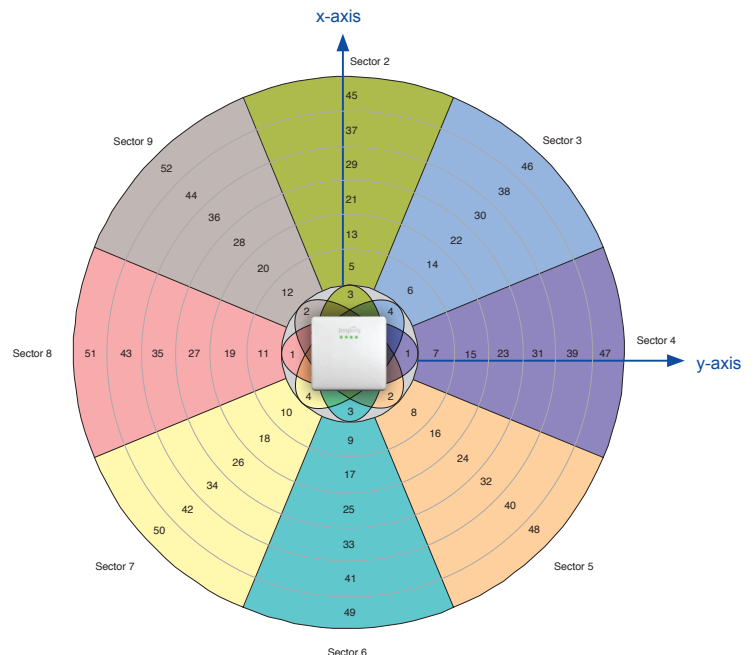
The Speedway xArray system provides wide area monitoring through its beam-forming antenna array, which delivers full power throughout a 40 foot diameter when ceiling-mounted at 15 feet high. The Speedway xArray can distinguish 52 different antenna beams providing for location assignment within the read zone, and the antennas radiate a linear pattern in both the horizontal and vertical paths in order to read tags in any orientation. The reader itself is optimized to read many thousands of tags very quickly, and to distinguish tags of interest from the rest of the field. The xArray can be configured to handle both wide area monitoring scenarios and portal applications. Moreover, Impinj has added robust tag direction capability that has been proven accurate even in difficult, real world environments.



Both cost-effective and easy to deploy, the Speedway xArray system's slim profile was designed to mount easily into a single tile of a standard drop ceiling, where it is unobtrusive and able to blend into any décor. The Speedway xArray includes a tilt sensor, hysteresis feedback, and programmable beacon to alert users when the system or environment may need attention. The xArray draws minimal power (which keeps costs low) and runs from standard PoE (IEEE 802.3af), so there is no need to hire an expensive electrician for installation. Furthermore, the Speedway xArray is programmed using industry-standard LLRP and Impinj extensions, for maximum re-use of code and minimum delays due to learning curve with new APIs.

## Features:

- > Beam-forming 2-D array radiates a linear beam pattern in vertical and horizontal paths to read tags in any orientation
- > 40 ft diameter read field coverage with full FCC power at 15 ft height
- > 52 antenna beams enable assignment of locations or zones
- > Robust tag direction capability which supports real world movement patterns
- > Low profile design measuring just 18 x 18 x 2.5 in., fits into standard ceiling tile grid and blends into any décor
- > Easy to use and maintain with IEEE 803.2af PoE, tilt sensor to detect when out of alignment, hysteresis feedback to alert when antenna may be blocked, and customizable beacon
- > Easy programming using LLRP and Impinj extensions



The Speedway xArray reader system can distinguish 52 different antenna beams providing location assignment and wide-area monitoring.

## Speedway xArray Reader System

Description	Measure
Air Interface Protocol	EPCglobal UHF Class 1 Gen 2 / ISO 18000-6C
Transmit Power	+10.0 to +31.5 dBm (PoE); +10.0 to +32.5 dBm (external universal power supply)
Max Receive Sensitivity	-82 dBm
Operating Frequency	902 to 928 MHz
Radiated Power	36 dBm
Maximum coverage (depends on mounted height)	40 ft diameter at 15 ft height; 33 ft diameter at 10 ft. height
Power Sources	Power over Ethernet (PoE) IEEE 802.3af +24 VDC @ 800mA via external universal power supply with locking connector—sold separately
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)
USB	USB 1.1 Device (Type B) and Host (Type A) ports USB Virtual COM Serial Port and USB drive support for embedded applications
Supported Regions or Geographies	US, Canada, and other regions following US FCC Part 15 regulations
Environmental Sealing	IEC IP52
Dimensions	18 x 18 x 2.5 in
Weight	15.5 lbs

### Key Applications:

- › Retail Physical Inventory Accuracy and Visibility
- › Retail Loss Prevention
- › Retail Automation (receiving, transition door, item location)
- › Asset Tracking and RTLS (e.g., healthcare & logistics)
- › Safety and Security (e.g., oil and gas, manufacturing, tools)
- › Personal Experience & Traffic Flow (e.g., hospital patient flow, resort hospitality, amusement parks, entertainment venues)

### Availability

During the second half of 2013, Speedway xArray pre-production builds will be made available to Authorized Impinj Partners through an Early Access Program. Full volume production is anticipated in 2014. Early Access Program participants have the opportunity to test, program, and demonstrate/pilot with customers in advance of volume production builds.

Learn more: [http://www.impinj.com/Speedway\\_xArray](http://www.impinj.com/Speedway_xArray)



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