IMPINJ

IMPINJ®
xSPAN®

OVERVIEW, APPLICATIONS, SPECIFICATIONS, AND ORDERING INFORMATION

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1   OVERVIEW

Improve item visibility throughout your facility or across your global supply chain with the Impinj xSpan Gateway. The xSpan Gateway is a fixed infrastructure RAIN RFID reader system that provides always-on monitoring and movement detection of tagged items. Within the RFID ecosystem, readers and gateways perform the essential role of connecting tagged items to software-based business solutions.

1.1   Features & Benefits

- Continuous Rectangular Area Monitoring
  - Always-on asset tracking provides accurate, real-time inventory intelligence
  - A single xSpan gateway provides up to 1,000 feet^2 coverage within a rectangular area – ideally suited for spaces such as hospital and conference rooms, mid-size retail spaces, hallways and portals
  - Expand coverage area with additional xSpan or xArray Gateways
- Exit Detection
  - Movement tracking and item identification empowers loss prevention systems, entry and exit event detection, and other portal and tag direction applications that require bi-directional movement monitoring
  - System steers the antenna beam along a single axis to monitor items and determine bi-directional movement as tags move through sectors
  - Integrated phase array antenna supports 13 dual-polarized beams and 3 sectors
- Easy to Use
  - Low-profile and light-weight for easy installation on both ceiling and walls
  - Peak performance ensured at all times with patented Autopilot functionality which automatically optimizes settings for its environment

- ○ Power and control through a single power over Ethernet (PoE) connection
- ○ Software options simplify configuration, application development, deployment and management

1.2 Key Features

- Always-on monitoring maximizes inventory accuracy and reduces business operational costs by providing constant visibility of tagged items within a rectangular area.
- Movement detection minimizes time spent locating and tracking items – improving supply chain efficiency and reducing material loss.
- Ease of use accelerates solution implementation, minimizes time-to-value for RAIN deployments, simplifies RFID infrastructure management, and lowers total cost of infrastructure ownership.

2 APPLICATIONS

Engineered for large-scale item-level applications in retail, healthcare and manufacturing, the xSpan Gateway provides real-time Item Intelligence events including each item's identity and authenticity. When combined with the Impinj platform, the xSpan Gateway provides businesses with exceptional inventory visibility, allowing them to improve their operational efficiency and provides better service to their customers.

2.1 Markets and Applications

- For retailers xSpan increases on-shelf availability and conversion while reducing labor costs and inefficiencies due to manual cycle counts. xSpan enhances front store/back store inventory management and reduces losses and shrinkage by facilitating exit detection and powering EAS solutions.
- For healthcare providers xSpan reduces inventory costs and supply waste, saves time locating supplies, ensures authenticity, and improves billing accuracy. xSpan minimizes time locating equipment while ensuring that the right equipment is in the right place at the right time, and reduces equipment rental costs and loss of equipment.
- For manufacturers the xSpan increases production speed and reduces time spent managing returnable containers and identifying parts. xSpan improves efficiency by ensuring accurate material flows from receiving, through the production process and out dock doors.
- For RAIN RFID system integrators xSpan features built-in automation and a suite of configuration and development tools to ensure peak performance and accelerate business application development. xSpan lowers the cost of deployment and total cost of infrastructure ownership and management.

3   SPECIFICATIONS

3.1   Operation

The xSpan Gateway is a high performance RAIN RFID reader system with an integrated phased array antenna. The phase array antenna supports thirteen beams organized into three sectors. Each beam can be either horizontally or vertically polarized. An on-board processor controls the beam direction, orientation and polarization. The system has the capability to steer its antenna beam along a single axis to read RFID tags over a rectangular area and detect item movement. The gateway can be mounted on a ceiling or a wall with power and control through a Power over Ethernet (PoE) connection.

3.2   UHF RFID Specifications

DESCRIPTION	MEASURE
Air Interface Protocol	GS1 EPCglobal EPC Radio-Frequency Identity Protocols Generation-2 UHF RFID Version 2.0.1
Max Receive Sensitivity	-84 dBm
Coverage Area	1,000 ft^2 (93m^2) per xSpan unit with Monza R6 based tags (varies with mounting location, tag type and environmental/use case factors)
Beams	13 dual-polarized beams
Sectors	3
Antenna 3dB beamwidth	FCC: 116° major axis, 75° minor axis EU: 120° major axis, 83° minor axis
Operating Modes	• Inventory: the mode in which the gateway detects tags similar to a Speedway reader • Direction: the mode in which the gateway actively reports item direction as a tag item passes through the field of view along a single axis
Power Consumption	• 7 W idle • 13.8 W typical

3.3   Ports

DESCRIPTION	MEASURE
Ethernet	• 10/100BASE-T RJ45 with activity and speed indicator • Includes PoE 802.3af-2003 Class 3 supply capability
USB	• USB 1.1 Device (Type B) • USB 1.1 Host (Type A)
Power	+24V DC locking power connector for use with optional AC power supply
Console	Serial RJ-45 for console RS-232
Factory Default Reset	Momentary push-button switch

3.4   Environmental Specifications

DESCRIPTION	MEASURE
Operating Temperature	-20 to 50 C (-4 to 122 F)
Operating Humidity	5-95% non-condensing
Storage Temperature	-20 to 50 C (-4 to 122 F)
Sealing	IEC IP50
RoHS	RoHS 2011/65/EU compliant

3.5   Physical Specifications

DESCRIPTION	MEASURE
Dimensions	18.75 x 8.66 x 3.45 inch (476 x 220 x 88 mm)
Weight	• 5.97 pounds (2.70 kg) without mounting plate • 7.56 pounds (3.43 kg) with mounting plate
Mounting	Vesa 75, Vesa 200 x 100, or direct attach via 200 mm x 100 mm bolt pattern

3.6   Software

DESCRIPTION	MEASURE
Application Development	• ItemSense • Octane Software Development Kit (SDK) • Octane Embedded Tool Kit (ETK) • EPCglobal Low Level Reader Protocol (LLRP) Tool Kit (LTK)
Gateway Management	• Impinj Web Management UI • Impinj Rshell Management Console using serial management console port or SSH • SNMPv2 MIBII • EPCglobal Reader Management v1.0.1 • Syslog
Site Management	• ItemSense
Performance Optimization	• ItemTest

4   REGULATORY INFORMATION

The xSpan Gateway uses a common hardware and radio design but is configured at time of manufacture for specific regulatory regions. For a list of the regions and geographies that the xSpan supports, go to www.impinj.com/supported_regions.

5   MAINTENANCE AND SUPPORT

All readers and gateways are covered by a Limited Hardware Warranty. An extension is available that extends the hardware warranty an additional 2 years. Both the initial and extended hardware warranties entitle the xSpan owner to minor firmware updates.

Enhanced Maintenance is a support package that goes beyond the hardware warranties to provide the highest-level of hardware and firmware support. Enhanced maintenance benefits include 3 years of priority return support to accelerate service response and hardware replacement (if necessary) to minimize operational interruptions. It includes all minor and major firmware updates to ensure that the xSpan provides the latest features and best Item Intelligence information. Enhanced maintenance also includes Round Rock IP licenses (where applicable) to ensure compliance.

6   ORDERING INFO

ITEM DESCRIPTION	SKU	LIST PRICE
xSpan Gateway FCC	IPJ-REV-R660-USA	$2,500
xSpan Gateway ETSI	IPJ-REV-R660-EU1	$2,500
xSpan Gateway GX1	IPJ-REV-R660-GX1	$2,500
xSpan Gateway GX2	IPJ-REV-R660-GX2	$2,500
xSpan Gateway GX3	IPJ-REV-R660-GX3	$2,500
xSpan Gateway JP2	IPJ-REV-R660-JP2	$2,500
xSpan Enhanced Maintenance 3-Years	IPJ-C2660	$700
xSpan Extended Warranty 2-Years	IPJ-C2005	$325

7   NOTICES

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