

# IMPINJ<sup>®</sup> xSPAN<sup>®</sup> GATEWAY

OVERVIEW, APPLICATIONS, SPECIFICATIONS

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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 Key Features & Benefits

### **Continuous Rectangular Area Monitoring**

Installs overhead or on walls to automatically monitor items within a rectangular space for always-on connectivity

- A single xSpan gateway provides up to 1,000 feet<sup>2</sup> 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

### **Real-time Item Identification and Movement**

Monitor inventory and track item movement along a single axis. 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

- Track movement in one dimension. 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

### **Turnkey**

Low-profile and light-weight integrated system designed for easy installation on both ceiling and walls

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

# 2 SPECIFICATIONS

## 2.1 Operation

The xSpan Gateway is a high-performance RAIN RFID reader system with an integrated phased array antenna. The phase array antenna supports 13 beam angles each with horizontal and vertical polarization for a total of 26 selectable beams. 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.

## 2.2 UHF RFID Specifications

DESCRIPTION	MEASURE
Operating Frequencies *Refer to country-specific regulations for channel allocation within the band	FCC: 902-928 MHz EU1: 865-868 MHz EU2: 915-921 MHz GX1: 902-928 MHz GX2: 902-925 MHz GX3: 920-926 MHz JP2: 916-921 MHz
Radiated Power (max) *Refer to regulations for country-specific limitations"	FCC: 4W EIRP AC/PoE EU1: 2W ERP AC/PoE EU2: 4W ERP AC/PoE+ GX1: 4W EIRP AC/PoE GX2: 4W EIRP AC/PoE GX3: 4W EIRP AC/PoE JP2: 4W EIRP AC/PoE
Operating Roles	2 (inventory, direction)
Antenna Beams	13
Antenna Type	Phased array with dual linear polarized antenna elements
Maximum Read Rate	1100 tags/s
3dB beam width (sum of all beams)	116° major/75° minor axis: all models except EU1 model 120° major/83° minor axis: EU1 model
Coverage Area (typical)	1,000 ft <sup>2</sup> (93 m <sup>2</sup> ): all models except EU2 model 1,300 ft <sup>2</sup> (121 m <sup>2</sup> ): EU2 model
Dimensions (H x W x D)	18.8 x 8.7 x 3.5 in (48.0 x 22.0 x 9.0 cm)
Weight	7.6 lb (3.4 kg)
Regulatory Certifications	For a list of supported regions and geographies please go to: <a href="http://www.impinj.com/supported_regions">www.impinj.com/supported_regions</a>
Power Sources	AC-DC power supply: all models IEEE 802.3af PoE: all models except EU2 model IEEE 802.3at PoE+: EU2 model
Air Interface Protocol	RAIN RFID: EPCglobal UHF RFID Class 1 Gen2v2 / ISO 18000-63
Reduced Power Option (FCC region only)	YES
Receive Sensitivity (max)	-84 dBm



Network Connectivity	10/100BASE-T
USB Ports	1 device, 1 host
Management Console Port (RS-232)	RJ-45
GPIO Serial Port	NA
Factory Reset Button	YES
Operating Temperature	-4°F to 122°F (-20°C to 50°C)
Storage Temperature	-4°F to 122°F (-20°C to 50°C)
Humidity	95% non-condensing
Environmental Sealing (IEC)	IP50
Environmental Air Handling Space	NA
Shock and Vibration	NA
RoHS Compliant	YES
Reliability	Enterprise Grade
Network Protocols	SSH, HTTP, HTTPS, NTP, DHCP, SFTP, mDNS
Networking Stack	IPv4, IPv6
Management	SNMPv1, v2, v3
Security	802.1x (Port Security), TLS 1.2 for Secure LLRP
Host Interface	LLRP with Impinj Extensions
Custom Application Partition	YES
Development Libraries	Octane SDK (.NET and Java) LTK (C, C++, .NET, Java) ETK (C, C++)

## 2.3 Software Tools

DESCRIPTION	MEASURE
Application Development	<ul style="list-style-type: none"> <li>ItemSense</li> <li>Speedway Connect</li> </ul>

	<ul style="list-style-type: none"> <li>• Octane Software Development Kit (SDK)</li> <li>• Octane Embedded Tool Kit (ETK)</li> <li>• EPCglobal Low Level Reader Protocol (LLRP) Tool Kit (LTK)</li> </ul>
Gateway Management	<ul style="list-style-type: none"> <li>• Impinj Web Management UI</li> <li>• Impinj Rshell Management Console using serial management console port or SSH</li> <li>• SNMPv2 MIBII</li> <li>• EPCglobal Reader Management v1.0.1</li> <li>• Syslog</li> </ul>
Site Management	<ul style="list-style-type: none"> <li>• ItemSense</li> </ul>
Performance Optimization	<ul style="list-style-type: none"> <li>• ItemTest</li> </ul>

### 3 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](http://www.impinj.com/supported_regions).

### 4 MAINTENANCE AND SUPPORT

All readers and gateways are covered by a Limited Hardware Warranty.

Extended warranty adds 1, 2, or 3 years of warranty benefits to the initial limited hardware warranty for an Impinj reader or gateway. For example, if you purchase a 3-year extended warranty when purchasing a new Impinj reader or gateway, you receive 4 years of warranty benefits (1-year Initial Limited Hardware Warranty + 3-year extension). An extended warranty must be purchased at least 90-days prior to the expiration of an existing initial limited hardware or extended warranty. [Product warranty options](#)

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