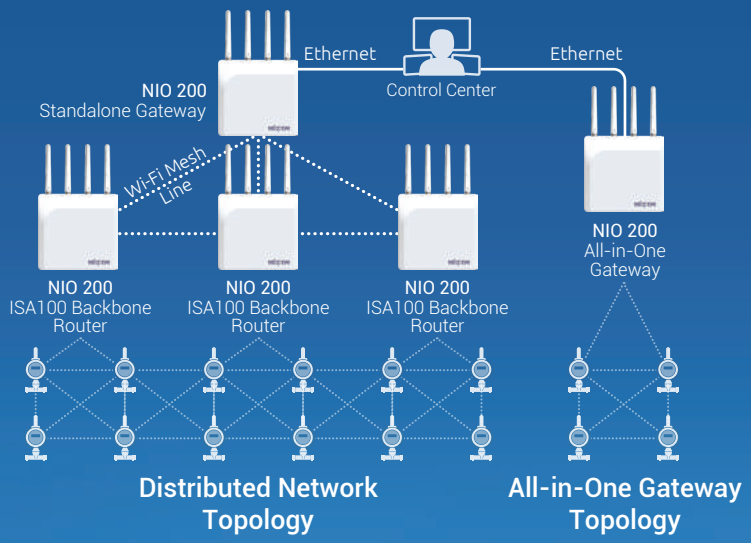
PRODUCT BRIEF

NEXCOM's ISA100.11a/ WirelessHART Gateway for Wireless Process Automation

The demand for maximized productivity has led to an increase in large-scale process automation deployments. With more field devices being deployed in increasingly larger plants, using wired connectivity solutions for such large-scale deployments is complex and costly compared to wireless connectivity solutions. Furthermore, process automation applications such as chemical, oil and gas processing require a reliable network with low latency, in which most common protocols such as ZigBee and LoRa lack to offer. As a result, ISA100.11a and WirelessHART are quickly becoming the mainstream wireless communication protocols for process automation.

In response to this demand, NEXCOM offers the NIO 200 series which features ISA100.11a (IEC 62734) or WirelessHART support and Wi-Fi mesh backbone technology, including a design that focuses on the communication and management requirements of Industry 4.0.

Figure 1. The NIO 200 series offers two types of deployment architectures: All-in-One Gateway and Distributed Network.



NEXCOM
The Intelligent Systems

NEXCOM Product Strengths

Manageable ISA100.11a & WirelessHART Compliant Gateway

The NIO 200 series is also supported by NEXCOM nCare manager for remote central management. Using nCare, administrators can easily monitor and manage device status and mesh network links through an intuitive, graphical user interface, simplifying the management of large-scale deployments.

Unique Wi-Fi Mesh Backbone Technology

In addition to ISA100.11a or WirelessHART support, the NIO 200 series also utilizes NEXCOM's EZ Mesh Wi-Fi backbone technology, which features proprietary self-forming and self-healing functions to help construct a reliable and robust wireless mesh backbone for connecting field devices with wiring constraints.

C1D2 and ATEX Certified for Anti-Explosion

Chemical plants, oil and gas refineries are often located in areas with tough environmental conditions and require ruggedized systems. To provide reliable operation, the NIO 200 series is C1D2 and ATEX certified for explosion proof, and complies with level 4 criteria of the IEC 61000 standard for electrostatic discharge, surge and electrical fast transients protection. For power input, all products in the NIO 200 lineup accept wide-range DC input of 12V to 48V and a secondary PoE power input for power redundancy.

High Wireless Radio Frequency (RF) Sensitivity

For wireless sensor/instrument communication, the NIO 200 series features a radio module with increased receiver sensitivity capable of providing more than twice the transmission distance over other similar devices using the same radio frequency (RF) power.

The Intelligent Systems

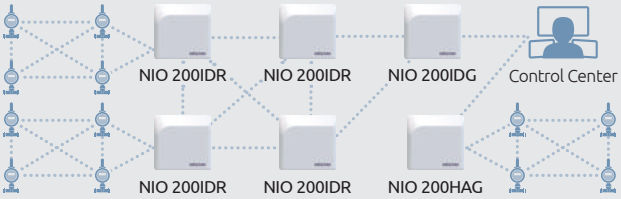
NIO 200 Series Supported Deployment Architectures

The NIO 200 series supports two types of deployment architectures: All-in-One Gateway and Distributed Network (Figure 1). Currently, All-in-One Gateway is the most widely adopted architecture in the industry. This architecture consists of a single gateway serving as the main communication device for multiple field devices. Although ideal for simple deployments, All-in-One Gateway lacks the flexibility to scale in size. Distributed Gateway, on the other hand, uses a Wi-Fi mesh backbone ideal for large-scale deployments in locations with wiring limitations and offers redundant communication paths to ensure high network uptime.

ISA100.11a/WirelessHART 101

Flexible Deployment for Critical Field Wireless Networks

- NIO 200 bridges communication between Wi-Fi Mesh backbone and ISA100.11a/WirelessHART field wireless networks.
- Flexible distributed topology with backbone router.
- Reliable wireless communication infrastructure ideal for oil, gas and chemical process automation.

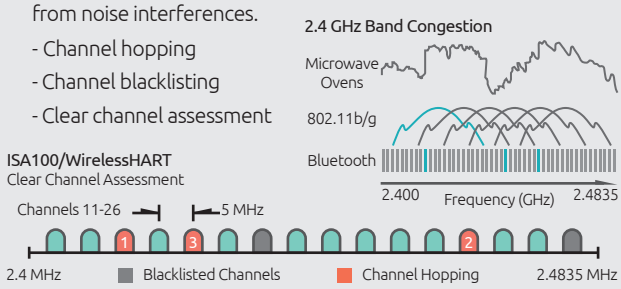


Support of Multiple Field Protocols over ISA100.11a

- Open, object-oriented wireless framework accommodates legacy field device/instruments regardless of communication protocols (such as HART and Modbus).
- Enable consolidation of a diverse range of field devices into one field wireless network.

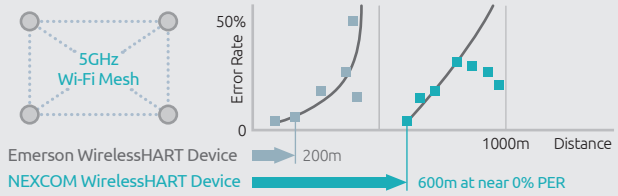
Robust Communication over ISA100.11a/WirelessHART Field Wireless Networks

- Spectrum management technology shields field radio signals from noise interferences.
  - Channel hopping
  - Channel blacklisting
  - Clear channel assessment



Designed for Mission-Critical Applications

- Redundant power with DC and PoE input.
- Dual high-power 5GHz Wi-Fi mesh ensures a double-link backbone.
- Rugged, level 4 ESD, EFT and surge protection.
- Anti-explosive protection (C1D2 and ATEX).
- High wireless radio sensitivity.



Product Selection Guide

Model Name	NIO 200IDR	NIO 200IDG	NIO 200IAG/NIO 200HAG
Photo			
WLAN Standard	802.11 a/n	802.11 a/n	802.11 a/n
Wireless Field Protocol	ISA100	ISA100	NIO 200 IAG:ISA100 NIO 200HAG: WirelessHART
Gateway Function	N/A	Standalone gateway	All-in-One gateway
Wi-Fi Mode	Mesh/AP	Mesh/AP	Mesh/AP
Ethernet Speed	10/100/1000	10/100/1000	10/100/1000
IP Rating	IP67	IP67	IP67
Temperature	-40°C to +75°C	-40°C to +75°C	-40°C to +75°C
PoE Type	IEEE802.3at	IEEE802.3at	IEEE802.3at
DC Input Range	12 ~ 48V	12 ~ 48V	12 ~ 48V
Network Management	SNMP V1/V2c/Web GUI/nCare	SNMP V1/V2c/Web GUI/nCare	SNMP V1/V2c/Web GUI/nCare
Certification	CE, FCC	CE, FCC	CE, FCC
Safety	UL 60950-1, UL 60950-22	UL 60950-1, UL 60950-22	UL 60950-1, UL 60950-22
Anti-Explosive	CID2/ATEX	CID2/ATEX	CID2/ATEX