

ion12xi_h2 is a centrally-managed Wi-Fi 6 certified Access Point that caters to the highest demands for super-fast speed and enhanced Wi-Fi capabilities thereby raising the bar for wireless efficiency to a whole new level. The Access Point maximizes coverage and optimizes per user throughput to the maximum extent using integrated high gain omni-directional antennas.



Key Specifications

- **Dual Radio Wi-Fi 6**
with 12 Spatial Streams
(4x4:4 at 2.4 GHz,
8x8:8 at 5 GHz)
- **Max. Data Rate**
5.95 Gbps
- **Uplink Ports**
10 GbE with PoE IN
10G SFP+
- **IoT Module**
BLE/ZigBee/Thread
- **Peak Transmit Power:**
25 dBm at 2.4 GHz
28 dBm at 5 GHz
- **Max. Clients**
512 per radio
- **Max. SSIDs**
16 per radio
- **Antenna**
Integrated,
Omni-directional

Applications

- Auditoriums
- Classrooms
- Indoor Arenas
- Banquets
- Mass Transit

Product Overview

Dual-band 4x4/8x8 Radios Offering Data Rate up to 5.95 Gbps

The concurrent dual radios in ion12xi_h2 support a combined peak data rate of 5.95 Gbps. It becomes the most preferred option when it comes to high-density, high throughput scenarios such as stadiums and mass transit facilities.

Wi-Fi 6 Features

The AP supports all advanced Wi-Fi 6 features, including DL/UL OFDMA, DL/UL MU-MIMO, BSS Coloring, and TWT.

Dual Uplink

The AP supports dual uplink options, in the form of 10G Ethernet and 10G SFP+ ports. These can be used standalone or in failover/aggregation modes.

Built-in IoT Module

The ion12xi_h2 comes with an integrated IoT module which supports Bluetooth® 5.2 Low Energy, Thread, Zigbee®, IEEE 802.15.4, enabling location-based services, asset tracking, and other IoT applications. This feature enhances user experiences in smart environments by enabling proximity-based interactions and automation.

OWF Compatible

The ion12xi_h2 supports the OpenWiFi software stack, enabling it to be managed via vendor-neutral OWF controller.

AI Analytics

The AP software includes an AI agent for 24x7 monitoring of client connections, network services, device health and stability. In conjunction with io Canvas, this enables a powerful AI Analytics feature for anomaly detection and root cause analysis.

Centralized Control

ion12xi_h2 is configured, managed and monitored with io Canvas, an AI-enabled centralized network management platform. io Canvas is available in the public cloud as a managed service. It can also be deployed on-premise.

Technical Specifications

Wireless Capabilities	
Wi-Fi Standards	IEEE 802.11ax (backward compatible with 802.11abgn/ac)
Supported Radio Bands*	• 2.40 GHz to 2.4835 GHz • 5.150 GHz to 5.250 GHz • 5.250 GHz to 5.350 GHz • 5.470 GHz to 5.725 GHz • 5.725 GHz to 5.875 GHz
Peak Data Rate	5.95 Gbps (4800 Mbps for 5 GHz and 1150 Mbps for 2.4 GHz)
MIMO Configuration	• 2.4 GHz: 4x4 MIMO • 5 GHz: 8x8 MIMO
Channel Bandwidth	• 20/40 MHz (2.4 GHz) • 20/40/80/160 MHz (5 GHz)
Max. Concurrent Clients	512 per radio (1024 combined)
Max. SSIDs	16 per radio (32 combined)
Receiver Sensitivity	-96 dBm
Modulation Schemes	Up to 1024 QAM on both 2.4 GHz and 5 GHz
Advanced PHY Techniques	Spatial Multiplexing and MRC (Maximal Ratio Combining)
Peak Transmit Power	• 25 dBm on 2.4 GHz at MCS 0 • 28 dBm on 5 GHz at MCS 0
Antenna Type	Integrated, Omni-directional
IoT Module	Bluetooth® 5.2 Low Energy, Thread, Zigbee®, IEEE 802.15.4

Radio Resource Management	
RF Optimizations	• Automatic Transmit Power Control (ATPC) • Auto Channel Selection (ACS) • Coverage Hole Detection and Correction
Radio Resource Control	• Airtime Fairness (ATF) • Max. client limit per radio and SSID • Unicast and Multicast Rate Control • Legacy Protocol Disabling
Connection Management	• Band Steering • Load Balancing • Association Control
QoS	• 802.11e WMM • Per-user and Per-SSID Rate Limit
Roaming	• Fast Roaming (802.11k/v/r) • Hotspot 2.0 • OpenRoaming

Wireless Security & Authentication

Wireless Encryption	- WPA3-Enterprise - WPA3-Enterprise Transition Mode - WPA3-Enterprise SuiteB (192-bit) - WPA3 Personal - WPA3-Personal Transition Mode - Enhanced Open (OWE)	- WPA2-Enterprise - WPA2-Personal (PSK) - WPA2-Personal Mixed Mode - WPA-Personal (PSK) - WEP
Wireless Authentication	802.1X Authentication - EAP - TLS (RFC 5216) - TTLS/MSCHAPv2 (RFC 5281) - Protected EAP (PEAP) - PEAPv1 - PEAPv0/MSCHAPv2 - SIM (RFC 4186) - AKA (RFC 4187) - PSK (RFC 4764) - IKEv2 (RFC 5106) - EKE (RFC 6124)	- MAC Address Authentication - Captive Portal and AAA Server Integration - Third Party NAC Integration
Policy Control	- Posture Assessment - Role-based Access Control - Dynamic VLAN	

Networking Capabilities

DHCP	- DHCP v4/v6 - Options 16 & 17	- Options 43 & 60 - Option 82
Tunneling	- Layer 2 Tunneling: EoGRE - Layer 3 Tunneling: IPSec	
L3 Network Services	- Link Aggregation (LACP) - SNMP v2c/v3 - Topology Discovery (LLDP)	
WAN Protocols	Static IPv4/v6, DHCP Client v4/v6	
Mesh	Wi-Fi Alliance EasyMesh™ Compliant	

Advanced Features

WIDS	- Authentication - Deauthentication - Disassociation - Probe Request Flood - Beacon Flood	- Session Hijack - MAC Spoofing - Evil Twin Attack - Password Guessing
WIPS	- MAC Spoofing - Evil Twin Attack	Password Guessing
Access Control	- Dynamic Multi-PSK, Static Multi-PSK - Local MAC ACL - RADIUS-based MAC ACL	- L7 Application Control - Client Isolation

Monitoring & Diagnostics

Device Monitoring	- SNMP v2c, v3 - Syslog - Alarms
Device Management	IO Canvas - AI-enabled Centralized Network Management Platform
Network Assurance	Advanced AI-based Analytics for Anomaly Detection and RCA

Power Management

Power	DC Powered (via 12V 4A power adaptor) or PoE Power (via 48V active PoE++ adaptor)*
Max. Power Consumption	35 W

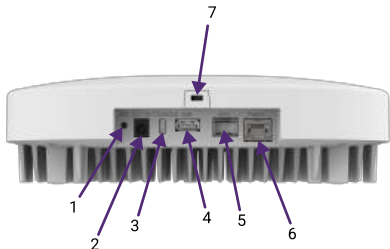
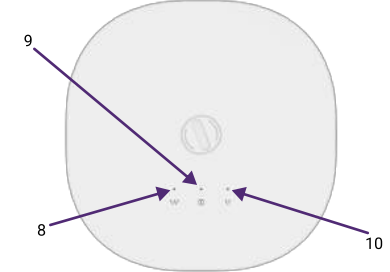
Power

Power Source	2.4 GHz Radio Configuration			5 GHz Radio Configuration			BLE Support	USB Support
	MIMO Mode	Channel Bandwidth	Transmit Power	MIMO Mode	Channel Bandwidth	Transmit Power		
802.3af (<15W)	2x2	20 MHz	3 dBm	2x2	20 MHz	3 dBm	No	No
802.3at (<25W)	4x4	40 MHz	24 dBm	4x4	80 MHz	24 dBm	Yes	No
802.3at (<25W)	4x4	40 MHz	24 dBm	8x8	80 MHz	24 dBm	No	No
802.3bt (<35W)	4x4	40 MHz	24 dBm	8x8/4x4	80/160 MHz	24 dBm	Yes	Yes
DC Power (<35W)	4x4	40 MHz	24 dBm	8x8/4x4	80/160 MHz	24 dBm	Yes	Yes

Physical Characteristics

Dimensions	260 x 260 x 72 mm or 10.24 x 10.24 x 2.83 in
Weight	2.6 kg
Mounting	Wall and Ceiling Mounting
Visual Indicators	3 Blue Color Status LEDs for Power, 2.4 GHz and 5 GHz Radios
Operating Temperature	0° C to 45° C
Physical Security	Kensington® Lock Slot, Secure Bracket

Interfaces

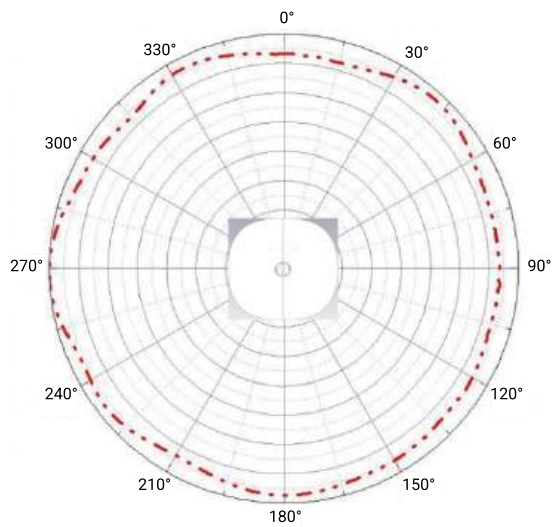
View	Port	Description	Connector Type	Speed/Protocol
Bottom View 	Reset Button (1)	Press and hold for 5 second to reboot/ Press and hold for 10 seconds to reset the device to factory settings	Pin Hole Push Button	-
	DC 12V (2)*	Provides an alternative power source for the access point	2 mm Center Pin	-
	Console Port (3)	Serial interface used for local management, troubleshooting, and initial configuration	Type-C USB	-
	USB Port (4)	A host port for connecting compatible external USB devices and peripherals	Type-A USB 3.0	-
	SFP+ Port (5)	SFP+ optical port supports both 1G and 10G optical connectivity	Optical SFP+ Cage	1/10 Gbps
	PoE++ Port (6)	Provides the network uplink and supplies power to the device through Power over Ethernet (PoE)	RJ-45	1/2.5/5/10 Gbps Base-T Ethernet
	Lock Slot (7)	Slot used to attach a Kensington cable lock to secure the device and prevent theft or unauthorized removal	Slot	-
Front View 	LED (8)	Blue LED for 5 GHz radio status indication	LED	-
	Power LED (9)	Blue LED for power status	LED	-
	LED (10)	Blue LED for 2.4 GHz radio status indication	LED	-

Note: *If both PoE and DC power are connected, PoE is used as the primary power source.

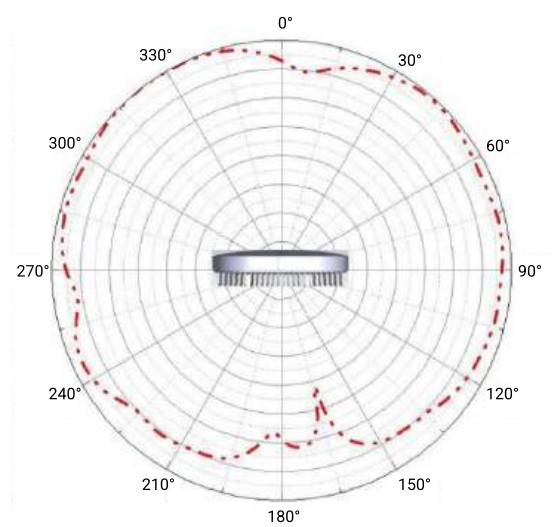
Antenna Radiation Pattern

- 2.4 GHz Antenna Radiation Pattern

Radiation Pattern (Horizontal)

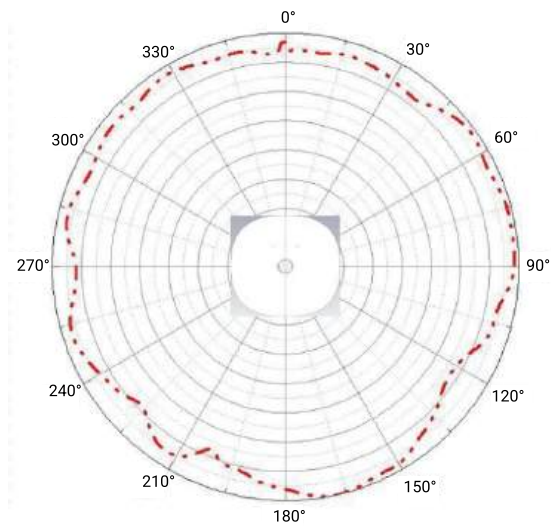


Radiation Pattern (Vertical)

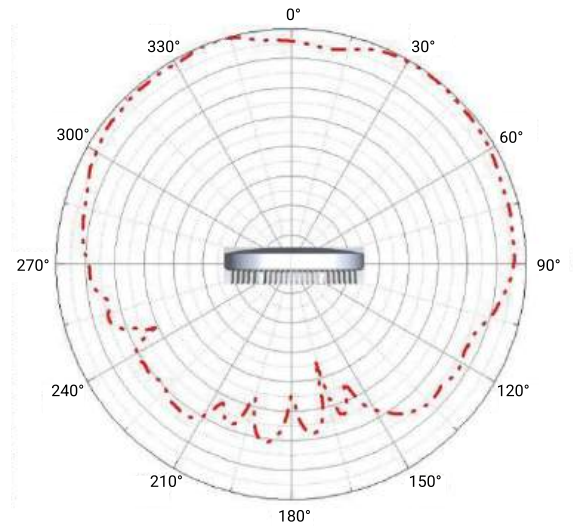


- 5 GHz Antenna Radiation Pattern

Radiation Pattern (Horizontal)



Radiation Pattern (Vertical)



Certifications & Compliances

Certifications	
Wi-Fi Alliance	• Wi-Fi Certified 6 • Wi-Fi Certified Passpoint® 3.0 • Wi-Fi Certified WPA3™ • Wi-Fi Agile Multiband™
Compliances	
Regulatory	FCC Part 15 Subpart B (Class B), C & E, CE, ETA (WPC), MTCTE/TEC
Compliance & Environmental Standards	• RoHS 3.0 • IEC/EN 62368/IEC60950 & IEC 60215 Safety Standard • IEC 61000-4-2 Electrostatic Discharge Immunity Contact Level 2 and Air Discharge, L3 Level • IEC 61000-4-5 DC Surge Immunity, Level 2 (power port + signal port) • IEC 61000-4-4 Electrical Fast Transient/Burst Immunity, Level 2 • IEC 61000-4-3 Radiated Susceptibility, Level 2 (CISPR 24) • IEC 61000-4-6 Conducted Susceptibility, Level 2 (CISPR 24) • CISPR 32 Class B Radiated Emission • CISPR 32 Class B Conducted Emission (power port + signal port) • QM333 Bump and Vibration • Health Test as per IEC62311 • Voltage Variations: • IEC 61000-4-11 AC • IEC 61000-4-29 DC • UL-2043 (Plenum) Compliant

Ordering Information	
HARDWARE	
Model No.	Description
ion12xi_h2	IO Wi-Fi 6 Dual Band 8x8:8 Indoor Access Point with Integrated Antenna (6 dBi) [DC & PoE powered]
ion12xi_h	IO Wi-Fi 6 Dual Band 8x8:8 Indoor Access Point with Integrated Antenna (6 dBi) [DC Powered]
SOFTWARE LICENSES	
License Type	License Description
Base License	Activate 2x2, 40 MHz in 2.4 GHz and 4x4, 80 MHz in 5 GHz (default loaded in above Hardware)
12xi_h_2.4_4to8	License to Upgrade 2.4 GHz from 2x2, 40 MHz to 4x4, 40 MHz
12xi_h_5.0_8to16	License to Upgrade 5 GHz from 4x4, 80 MHz to 8x8, 80 MHz / 4x4, 160 MHz

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