

ion4x is a centrally managed 2x2 MU-MIMO Wi-Fi 6 certified Access Point. With the combination of high performance hardware and advanced software features, ion4x ensures high throughput, supports high density and provides excellent coverage.



Key Specifications

- **Dual Radio Wi-Fi 6**
with 4 Spatial Streams
(2x2:2 at 2.4 GHz,
2x2:2 at 5 GHz)
- **Max. Data Rate**
1.78 Gbps
- **Uplink Ports**
1 GbE with PoE IN
2.5G SFP+
- **Peak Transmit Power**
30 dBm at 2.4 GHz
30 dBm at 5 GHz
- **Max. Clients**
512 per radio
- **Max. SSIDs¹**
16 per radio
- **Antenna**
Integrated,
Directional

Applications

- Warehouses
- Metro Stations
- Car Parking Zones
- Open Stadiums

Product Overview

Dual-band 2x2 Radios offering Data Rate up to 1.78 Gbps

ion4x is a centrally managed 2x2 MU-MIMO Wi-Fi 6 certified Access Point. With the combination of high performance hardware and advanced software features, ion4x ensures high throughput, supports high density and provides excellent coverage.

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 1G Ethernet and 2.5G SFP+ ports. These can be used standalone or in failover/aggregation modes.

OWF Compatible

The ion4x 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

ion4x 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	1.78 Gbps (1202 Mbps for 5 GHz and 574 Mbps for 2.4 GHz)
MIMO Configuration	2.4 GHz: 2x2:2 MU-MIMO 5 GHz: 2x2:2 MU-MIMO
Channel Bandwidth	20/40/80 MHz
Max. Concurrent Clients	512 per radio (1024 combined)
Max. SSIDs ¹	16 per radio (32 combined)
Receiver Sensitivity	-97 dBm
Modulation Schemes	Upto 1024 QAM
Advanced PHY Techniques	Spatial Multiplexing and MRC (Maximal Ratio Combining)
Peak Transmit Power*	30 dBm on 2.4 GHz at MCS 0 30 dBm on 5 GHz at MCS 0
Antenna Type	Integrated, Directional with 70° ± 5°H & 70° ± 5°V beamwidth for ion4x/ion4x_ext 60° ± 2°H & 15° ± 1°V beamwidth for ion4x_2/ion4x_2_ext 45° ± 2°H & 27° ± 2°V beamwidth for ion4x_3/ion4x_3_ext
Antenna Gain	8 dBi on 2.4 GHz, 8 dBi on 5 GHz for ion4x/ion4x_ext 14 dBi on 2.4 GHz, 14 dBi on 5 GHz for ion4x_2/ion4x_2_ext 13 dBi on 2.4 GHz, 13 dBi on 5 GHz for ion4x_3/ion4x_3_ext

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

Note:

*Subject to country-specific restrictions.

¹For optimal performance in the field, it is recommended to deploy up to 8 SSIDs per radio.

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 43 & 82
Tunneling	Layer 2 Tunneling: EoGRE
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 • 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

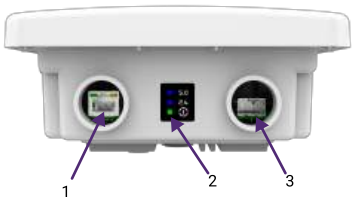
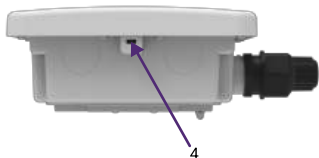
Power Management

Power	PoE Power (via IEEE 802.3at PoE/PoE+ adaptor)
Max. Power Consumption	17 W

Physical Characteristics

Dimensions	• 182 x 182 x 89 mm or 7.17 x 7.17 x 3.50 in for ion4x/ion4x_ext • 375 X 215 X 89 mm or 14.76 x 8.46 x 3.50 in for ion4x_2/ion4x_2_ext • 310 x 310 x 85 mm or 12.20 x 12.20 x 3.35 in for ion4x_3/ion4x_3_ext
Weight	• 1.12 kg for ion4x/ion4x_ext • 1.66 kg for ion4x_2/ion4x_2_ext • 1.66 kg for ion4x_3/ion4x_3_ext
Mounting	Wall and Pole Mounting
Visual Indicators	LEDs for RF and Power
Operating Temperature	• 15°C to 60°C for ion4x/ion4x_2/ion4x_3 • -40°C to 60°C for ion4x_ext/ion4x_2_ext/ion4x_3_ext
Humidity	5 to 95% (non-condensing)
Wind Sustainability	150 km/hour
Outdoor Ingress Protection Rating	IP-67
Physical Security	Kensington® Lock Slot, Secure Bracket

Interfaces

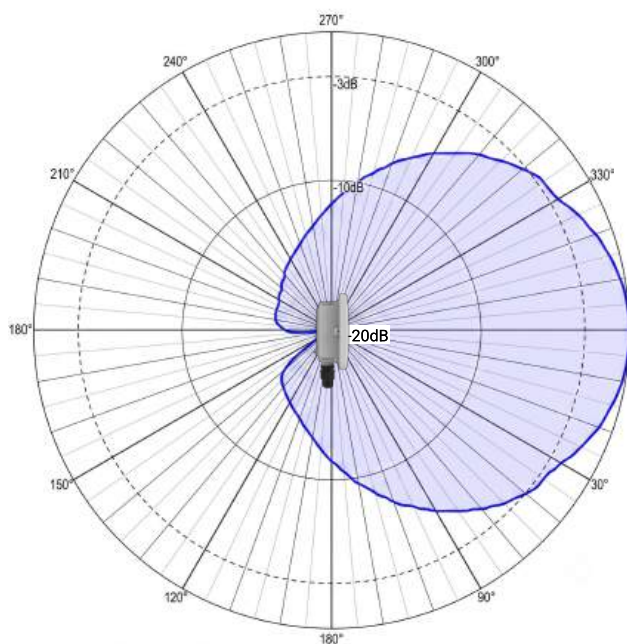
View	Port	Description	Connector Type	Speed/Protocol
Bottom View 	PoE Port (1)	Provides the network uplink and supplies power to the device through Power over Ethernet (PoE): 802.3at PoE/ PoE+	RJ-45	10/100/1000 Mbps Base-T Ethernet
	LEDs (2)	LEDs for power and radios	LED	-
	SFP+ Port (3)	Forwards the network connection to another device, allowing extension of the Ethernet connection	Optical SFP+ Cage	2.5 Gbps
Left Side View 	Lock Slot (4)	Slot used to attach a Kensington cable lock to secure the device and prevent theft or unauthorized removal	Slot	-

Antenna Radiation Pattern

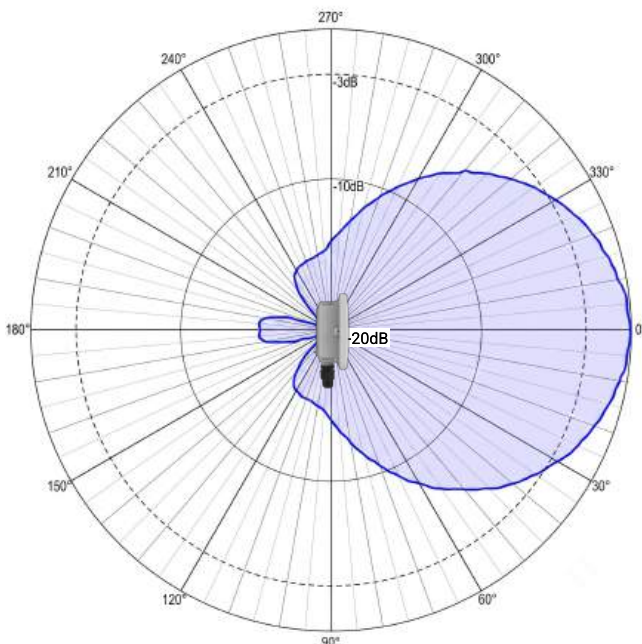
ion4x

- 2.4 GHz Antenna Radiation Pattern

Radiation Pattern (Horizontal)

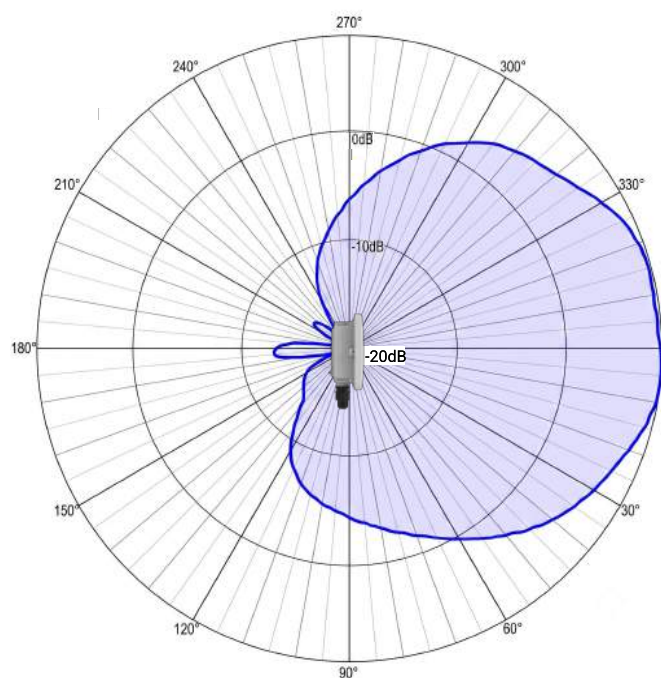


Radiation Pattern (Vertical)

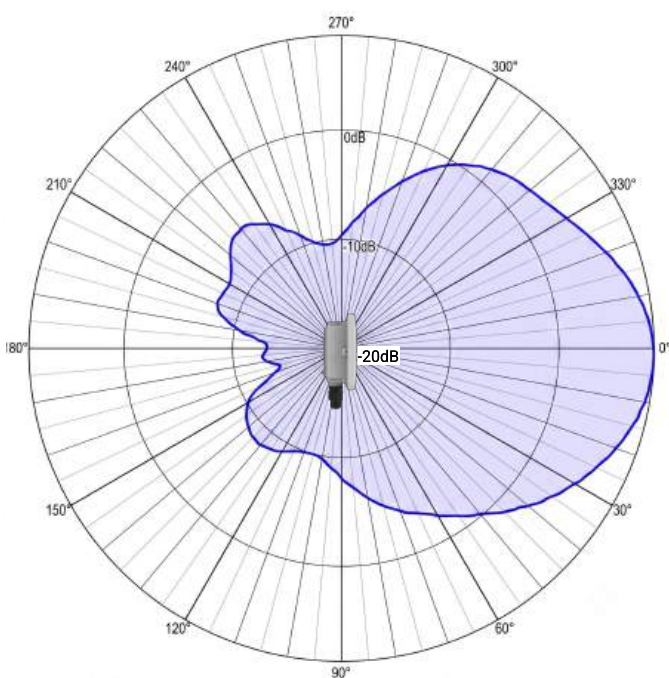


- 5 GHz Antenna Radiation Pattern

Radiation Pattern (Horizontal)



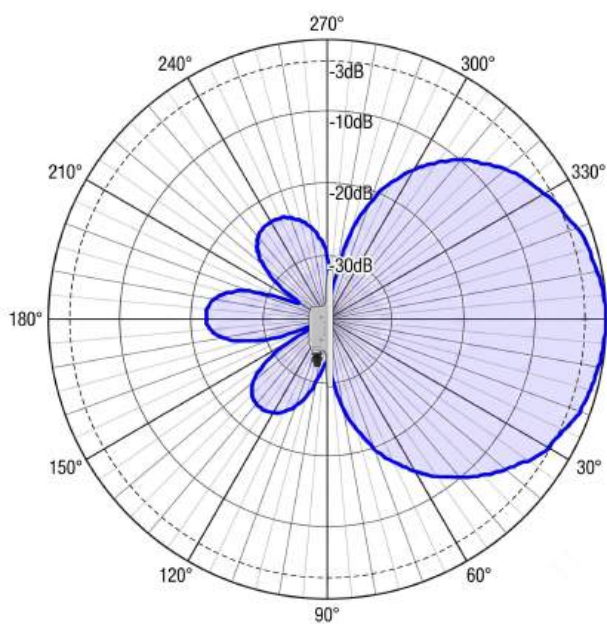
Radiation Pattern (Vertical)



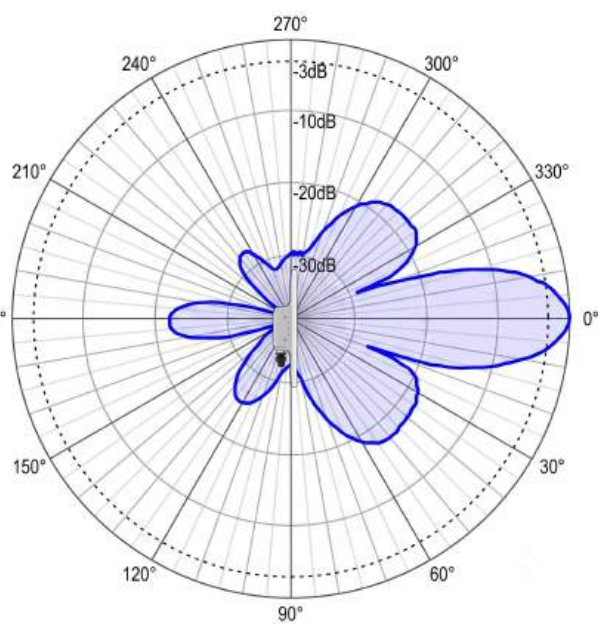
ion4x_2

- 2.4 GHz Antenna Radiation Pattern

Radiation Pattern (Horizontal)

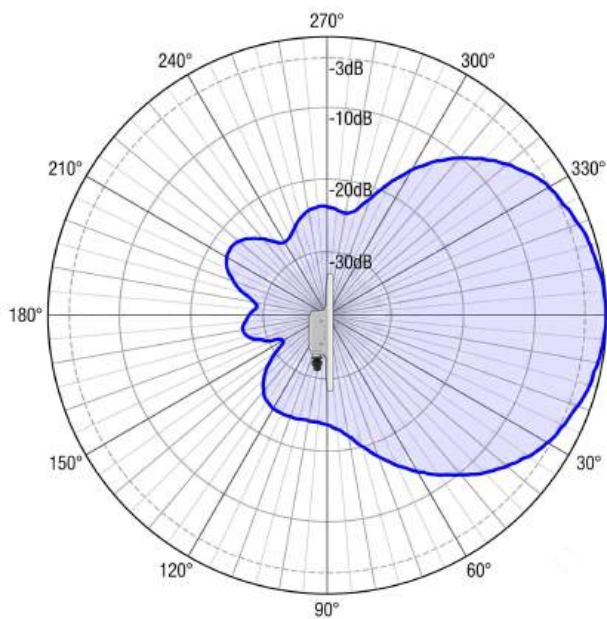


Radiation Pattern (Vertical)

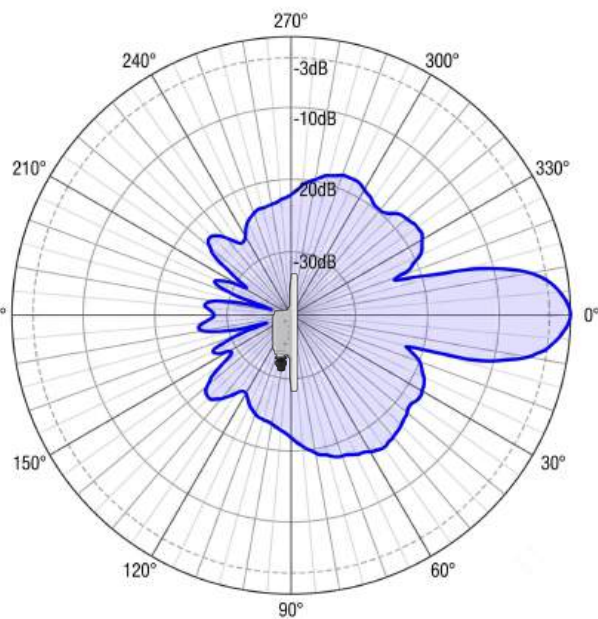


- 5 GHz Antenna Radiation Pattern

Radiation Pattern (Horizontal)



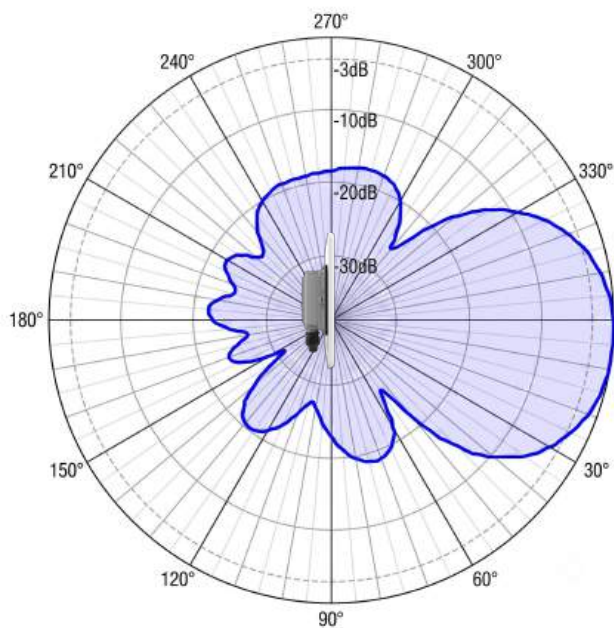
Radiation Pattern (Vertical)



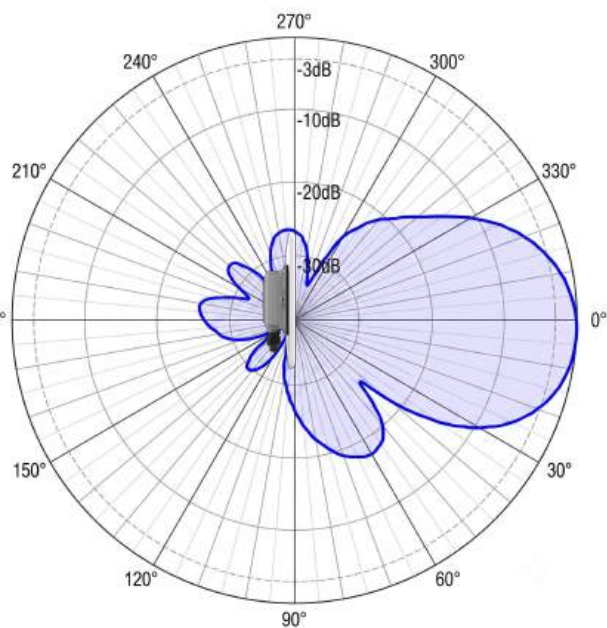
ion4x_3

- 2.4 GHz Antenna Radiation Pattern

Radiation Pattern (Horizontal)

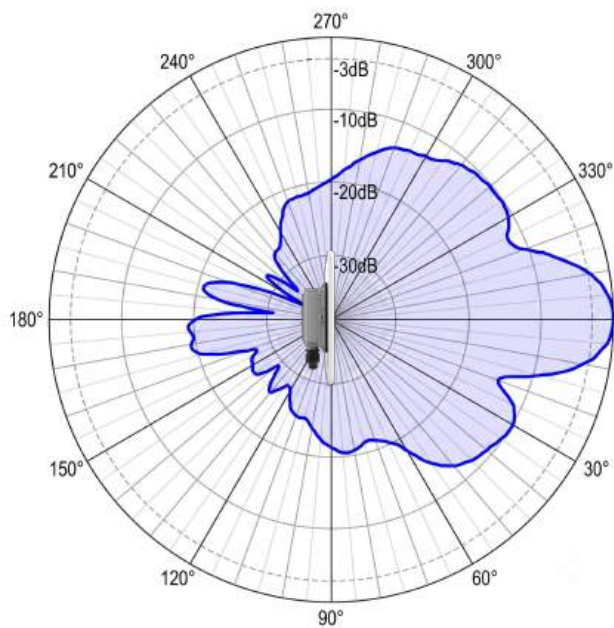


Radiation Pattern (Vertical)

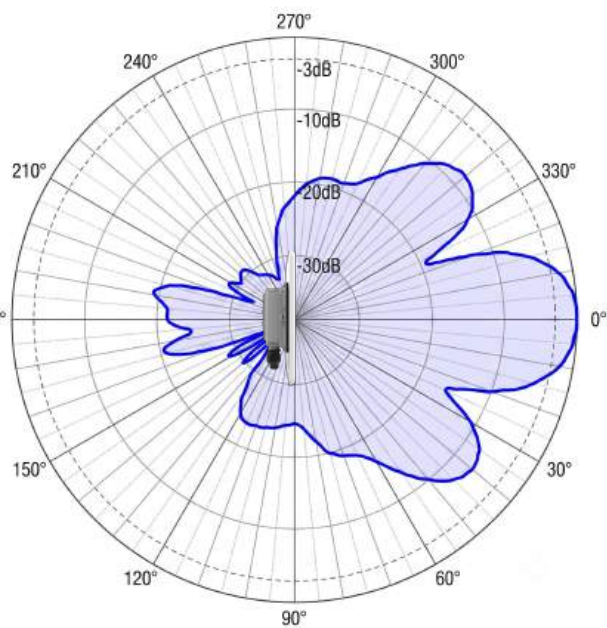


- 5 GHz Antenna Radiation Pattern

Radiation Pattern (Horizontal)



Radiation Pattern (Vertical)



Certifications & Compliances

Certifications

Wi-Fi Alliance	• Wi-Fi Certified 6 • Wi-Fi Certified WPA3™ • Wi-Fi Certified Passpoint® 3.0 • Wi-Fi Certified EasyMesh R1
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Compliances

Regulatory	FCC Part 15 Subpart B (Class A), C & E, CE, ETA (WPC), MTC/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

Variants

ion4x / ion4x_ext 	ion4x_2 / ion4x_2_ext 	ion4x_3 / ion4x_3_ext 
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Ordering Information

Model No.	Description
ion4x	IO Wi-Fi 6 Dual Band 2x2:2 Outdoor Access Point with Integrated Antenna (8 dBi)
ion4x_2	IO Wi-Fi 6 Dual Band 2x2:2 Outdoor Access Point with Integrated Antenna (14 dBi)
ion4x_3	IO Wi-Fi 6 Dual Band 2x2:2 Outdoor Access Point with Integrated Antenna (13 dBi)
ion4x_ext	IO Wi-Fi 6 Dual Band 2x2:2 Outdoor Access Point with Integrated Antenna (8 dBi) [extended temperature]
ion4x_2_ext	IO Wi-Fi 6 Dual Band 2x2:2 Outdoor Access Point with Integrated Antenna (14 dBi) [extended temperature]
ion4x_3_ext	IO Wi-Fi 6 Dual Band 2x2:2 Outdoor Access Point with Integrated Antenna (13 dBi) [extended temperature]

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