

Wi-Fi 7 Tri Radio 4x4:4 Outdoor Access Point ion12x/ion12x_2/ion12x_w/ion12xe/ion12xe_T



Experience lightning-fast speeds, high spectral efficiency, and reduced latency

With access to two simultaneous 160 MHz channels in the 5GHz Band, our 4x4 Tri Radio Outdoor Access Points can cater to 1536 concurrent clients and provide a peak data rate of up to 10.75 Gbps. It is the most preferred option for ultra-low latency and highest-density outdoor applications.

Overview

<ul style="list-style-type: none"> World's First OpenWiFi compliant Wi-Fi 7 Access Point Portfolio 	<ul style="list-style-type: none"> 802.11 a/b/g/n/ac/ac Wave2/ax/be 10.75 Gbps aggregate data rate 4X4:4 MU-MIMO 	Certifications <ul style="list-style-type: none"> EasyMesh Passpoint 3.0 RoHS 3.0
<ul style="list-style-type: none"> Additional BLE Radio for advanced location services Up to 29 dBm transmit power 	Deployment Flexibility for Maximum coverage & range <ul style="list-style-type: none"> 9 dBi integrated omnidirectional antenna 8/14 dBi integrated sector antenna Option for external antennas using N-connectors 	<ul style="list-style-type: none"> 1536 concurrent client support Access to two 160 MHz channel in the 5GHz band Configurable in standalone mode or via cloud controller

Applications

- High-density outdoor environments requiring low latency
- Autonomous & connected cars
- XR/ MR applications
- Large Enterprises

Unmatched Performance



Tri-radio offering peak data rate of up to 10.75 Gbps

ion12xn is concurrent Tri-radio to offer a combined peak data rate of 10.75 Gbps. Technologies such as Multi-Link operation, Coordinated MU-MIMO, transmit beamforming, and enhanced receiver sensitivity enable ion12xn to support a higher client density environment of up to 1536 simultaneous clients, delivering unparalleled performance with an enhanced user experience.



Coordinated Bi-Directional Multi User Multiple Input Multiple Output (MU-MIMO)

Powered by Coordinated MU-MIMO and OFDMA, ion12xn ensures more efficient transmission to multiple clients. The Coordinated scheduling in Wi-Fi 7 can optimize channel selection and adjust loads between multiple Access Points simultaneously to achieve efficient utilization and balanced allocation of radio resources. It is appropriate for environments with various devices, each supporting the latest or legacy Wi-Fi standards.



EasyMesh Networking

Access Points can automatically form a wireless mesh, without any need of expensive cabling and provide connectivity in every possible corner. In case of a mesh node failure, self-healing, and self-optimization functionality, it reconnects and resumes service with the surrounding nodes automatically, without facing downtime. EasyMesh enables ion12xn to be inter-operable with third-party Access Points and/or Routers and can quickly be deployed as standalone or converged with the existing network. This eliminates the need for vendor lock-in, reducing the network's total cost of ownership.



Traffic Shaping & Application Aware

The ion12xn includes an integrated layer 7-packet inspection, classification, and control engine, enabling the configuration of QoS policies based on traffic type, helping to prioritize mission-critical applications while setting limits on recreational traffic like peer-to-peer, gaming, and video streaming. Policies can be implemented per network, SSID, user group, or individual user for maximum flexibility and control.



Enhanced Security

The ion12xn comes with WPA3 - the latest Wi-Fi security standards, offering more security from hacker attacks. Advanced security features such as AES hardware-based encryption and Enterprise authentication with 802.1X and Active Directory integration provide wired-like security while still being easy to configure. One-click guest isolation provides secure, Internet-only access for visitors.



Multi-Link Operation (MLO)

Multi-Link Operation (MLO) technology allows the ion12xn to simultaneously send and receive data over multiple radio bands to create a single aggregated connection. This will provide faster throughput performance and help reduce latency, allow data to flow unimpeded by network traffic or interference, and improve reliability for emerging applications like VR/AR, online gaming, remote offices, and cloud computing.



Preamble Puncturing and Multiple Resource Unit (Multi-RU) Operation

Preamble Puncturing improves spectral efficiency by allowing Access Points to transmit a "punctured" portion of the spectrum channel if some of the channels are being used by legacy users. Wi-Fi 7 lets multiple RUs assigned to a single user and combines RUs for increased transmission and spectral efficiency. This makes it a preferred choice for enterprises to embrace digital transformation, integrating emerging technologies such as AR/VR, IoT, and IIoT applications in their workflows.



Centralized Control

Supports centralized management of the entire network on our highly intuitive, flexible, and scalable cloud network manager. With network distribution flexibility, it allocates varying bandwidths, manages, tracks, troubleshoots, configures, communicates, and enforces policies on all Access Points in the network. The controller has in-built analytics and reporting capabilities to gain insight into usage patterns.

Technical Specifications

Wireless

Wi-Fi Standards	802.11a/b/g/n/ac/ac Wave 2/ax/be
Radio Mode	4×4 MU-MIMO with 4 spatial streams on both 2.4 and 5 GHz bands
Radio Frequency Band	Supports frequency bands with DFS optimization (country-specific restrictions apply): <ul style="list-style-type: none">• 2.4000 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	Up to 10.75 Gbps (4800 Mbps for 5 GHz and 1150 Mbps for 2.4 GHz)
Max Transmit Power	29 dBm for 2.4 GHz , 29 dBm for 5 GHz (depends on country-specific guidelines)
Receiver Sensitivity	-97 dBm (for MCS 0)
Channel Size	20/40/80/160 MHz
Modulation Schemes	Supports up to 1024 QAM
User Support	1024 clients per Access Point (512 clients per radio)
Power	IEEE 802.3bt PoE++
Max Power Consumption	< 35 W
Interface	1 X 100/1000/2500 Base-T Ethernet (WAN) 1 X 10G Base X Optical Ethernet SFP (WAN) 2 × 10/100/1000 Base-T Ethernet (LAN)
Antenna	<ul style="list-style-type: none">• 9 dBi integrated omnidirectional antenna• 8/14 dBi integrated sector antenna• Option for external antenna using N-connectors

Certifications

Certifications	RoHS 3.0 FCC Class B, CE, IC Wi-Fi Certified Passpoint 3.0 Wi-Fi Certified 7 Wi-Fi Certified EasyMesh Wi-Fi Certified WPA3 Wi-Fi Certified Agile Multiband UL 2043 Plenum
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Security

- 802.11i, 802.1x / EAP, Hidden SSID
- EAP Type (EAP-TLS, EAP-TTLS/MSCHAPv2, PEAPv0/EAP- MSCHAPv2, EAP-SIM)
- Protected Management Frames (PMF)
- WPA (Personal, Enterprise)
- WPA2 (Personal, Enterprise)
- WPA3 (Personal, SAE, OWE, Enterprise and SuiteB; including 192-bit security and R2 for Fast roaming)
- VPN pass-through
- IP Security (IPSec), PPTP, IP-Filtering
- Layer 2 Tunneling Protocol (L2TP/LWAP/CAPWAP/ GRE)
- Flexible guest access with device isolation
- Captive portal and guest accounts
- Rogue access point detection and prevention (WIDS & WIPS)
- Hidden SSID in beacons
- MAC address authentication
- X.509 digital certificates
- Support for locally-significant certificates using Public Key Infrastructure (PKI)

Environmental

Outdoor Ingress Protection Rating

IP67

Humidity

5 to 95% (non-condensing)

Operating Temperature

-5°C to 55° C

Wind Sustainability

165 MPH (wind gusts)

Physical

Enclosure	Two-piece enclosure with ABS top and bottom cover
Dimensions	350 X 250 X 76 mm or 9.88 X 7.06 X 2.14 inches
Weight	2.7 kg
Mounting	Wall and Pole mounting
Visual Indicators	Multicolor status LED and Power LED

Safety & Other Compliances

- Safety Protection as per IEC/EN 62368 / 60950 & IEC 60215
- Electrostatic Discharge Immunity as per IEC 61000-4-2, Contact L2 and Air Discharge, L3 Level
- DC Surge Immunity as per IEC 61000-4-5, Level 2 (power port + signal port)
- Electrical Fast Transient/Burst Immunity as per IEC 61000-4-4, Level 2
- Radiated susceptibility as per IEC 61000-4-3 Level 2
- Conducted Susceptibility as per IEC 61000-4-6, Level 2
- Bump and vibration as per QM333
- Radiated Emission as per CISPR 32 Class A
- Conducted Emission as per CISPR 32 Class A (power port + signal port)
- **Voltage variation and Dips:** AC - as per IEC 61000-4-11 and DC - as per IEC 61000-4-29DC - as per IEC 61000-4-29

High Level Features

- WAN Protocols: Static IPv4/v6, DHCP client v4/v6
- Band Steering / Load Balancing / EasyMesh support
- Auto Channel Selection
- Intelligent RF control plane for self-healing and self-optimization
- Ability to simultaneously serve clients and monitor RF environment
- Radio Resource Management for power & channel
- **Management:** Standalone (via GUI) or cloud-based or via on-premise controller
- 16 SSIDs per radio; 32 per AP
- QOS 802.11e WMM
- 802.11r- fast roaming and fast handover Bandwidth Shaping per SSID
- Maximal ratio combining (MRC) & beamforming support
- 802.11w- Protected Management Frames (PMF) support
- Non-Wi-Fi interference detection and avoidance
- Layer 4 to Layer 7 application identification and policy enforcement (DPI)
- Support for ATPC and coverage hole detection and correction
- Advance Power Save (U-APSD)
- VoIP support
- Support for Multi-Link Operation (MLO)
- Support for Preamble Puncturing and Multiple Resource Unit

Ordering Information

Model Number	Product Description
ion12x	IO Wi-Fi 6 Tri Radio 4x4:4 Outdoor Access Point with Integrated Antenna (8 dBi)
ion12x_2	IO Wi-Fi 6 Tri Radio 4x4:4 Outdoor Access Point with Integrated Antenna (14 dBi)
ion12x_w	IO Wi-Fi 6 Tri Radio 4x4:4 Outdoor Access Point with Integrated Antenna (9 dBi)
ion12xe	IO Wi-Fi 6 Tri Radio 4x4:4 Outdoor Access Point with External Antenna (N connectors on side)
ion12xe_T	IO Wi-Fi 6 Tri Radio 4x4:4 Outdoor Access Point with External Antenna (N connectors on top)



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