

ion6bi

Wi-Fi 7

Tri Radio 2x2

Indoor Access Point



ion6bi is a Wi-Fi 7 Indoor Access Point designed to operate in 2.4GHz, 5GHz and 6GHz bands. Each radio supports the IEEE802.11be standard with 2x2 MIMO capability, to enable highly-efficient and scalable enterprise Wi-Fi connectivity. This Access Point is IoT-ready with a multi-protocol IoT module which supports BLE 6.0, ZigBee and Thread.

Key Specifications

- **Tri Radio Wi-Fi 7**
with 6 Spatial Streams
(2x2:2 at 2.4 GHz,
2x2:2 at 5 GHz,
2x2:2 at 6 GHz)
- **Max. Data Rate**
9.2 Gbps
- **Uplink Ports**
10 GbE with PoE IN
10G SFP+
- **IoT Module**
BLE 6.0, ZigBee, Thread,
IEEE 802.15.4, 6LoWPAN
- **Peak Transmit Power**
23 dBm at 2.4 GHz
23 dBm at 5 GHz
22 dBm at 6 GHz
- **Max. Clients**
128 per radio
- **Max. SSIDs¹**
16 per radio
- **Antenna**
Integrated,
Omni-directional

Applications

- **Offices**
- **Educational Institutions**
- **Hospitals, Clinics**
- **Hotels, Resorts**
- **Mass Transit**

Product Overview

Tri-band 2x2 Radios Offering Data Rate up to 9.2 Gbps

The Wi-Fi radios in ion6bi support 2x2 MIMO with 4K-QAM* and up to 40 MHz (2.4 GHz), 160 MHz (5 GHz) and 320 MHz (6 GHz) bandwidths, delivering aggregate peak data rate of 9.2 Gbps. It becomes the most preferred option when it comes to high-density, high throughput scenarios such as offices, educational institutions, indoor venues

Wi-Fi 7 Features

The AP supports advanced Wi-Fi 7 features, including Multi-link Operation, Preamble Puncturing and Multi-RU allocation.

Robust Security

The AP supports WPA3-Personal, WPA3-Enterprise and Enhanced Open (OWE), as per the Wi-Fi 7 specifications.

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 ion6bi comes with an integrated IoT module which supports BLE 6.0, ZigBee, Thread, IEEE 802.15.4, 6LoWPAN, 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 ion6bi supports the OpenWiFi software stack, enabling it to be managed via vendor-neutral OWF controller.

Centralized Control

ion6bi 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.

Note: *The 2.4 GHz radio supports upto 1K-QAM.



Wireless Capabilities

Wi-Fi Standards	IEEE 802.11be (backward compatible with 802.11abgn/ac/ax)
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 5.925 GHz to 6.425 GHz 6.425 GHz to 6.525 GHz 6.525 GHz to 6.875 GHz 6.875 GHz to 7.125 GHz
Peak Data Rate	9.2 Gbps (5765 Mbps for 5 GHz, 2882 Mbps for 5 GHz and 573 Mbps for 2.4 GHz)
MIMO Configuration	2.4 GHz: 2x2 MIMO 5 GHz: 2x2 MIMO 6 GHz: 2x2 MIMO
Channel Bandwidth	20/40 MHz (2.4 GHz) 20/40/80/160 MHz (5 GHz) 20/40/80/160/320 MHz (6 GHz)
Max. Concurrent Clients	128 per radio (384 combined)
Max. SSIDs ¹	16 per radio (48 combined)
Receiver Sensitivity	-94 dBm
Modulation Schemes	Up to 4096 QAM on 5 GHz and 6 GHz (1024 QAM on 2.4 GHz)
Advanced PHY Techniques	Spatial Multiplexing and MRC (Maximal Ratio Combining)
Advanced Wi-Fi 7 Features	- Multi-link Operation - Multi-link Single Radio (MLSR) - Enhanced Multi-link Single Radio (eMLSR) - Multi-link Multi Radio, Simultaneous Tx and Rx (MLMR-STR) - Preamble Puncturing - Multi-RU Allocation
Peak Transmit Power	23 dBm on 2.4 GHz at MCS 0 23 dBm on 5 GHz at MCS 0 22 dBm on 6 GHz at MCS 0
Antenna Type	Integrated, Omni-directional
Antenna Gain	4 dBi on 2.4 GHz 5 dBi on 5 GHz 5 dBi on 6 GHz
IoT Module	Bluetooth® 6.0 Low Energy, Thread, Zigbee®, IEEE 802.15.4

Note:
*Subject to country-specific restrictions.
¹For optimal performance in the field, it is recommended to deploy up to 12 SSIDs per radio.

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

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 - Dynamic Multi-PSK - Static Multi-PSK
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



Networking Capabilities

DHCP	- DHCP v4/v6 - Options 16 & 17 - Options 43 & 60 - Option 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

Advanced Features

Access Control	- Dynamic Multi-PSK, Static Multi-PSK - Local MAC ACL - RADIUS-based MAC ACL - Client Isolation
Firmware Integrity	Secure Boot
Time Synchronization	Real Time Clock (RTC)

Monitoring & Diagnostics

Device Monitoring	- SNMP v2c, v3 - Syslog - Alarms
Device Management	IO Canvas - AI-enabled Centralized Network Management Platform
Console Access	RS-232

Power Management

Power	DC Powered (via 12V 2.5A power adaptor) or PoE Power (via 48V active IEEE 802.3at PoE+ adaptor)*
Max. Power Consumption	25 W

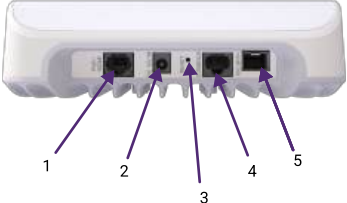
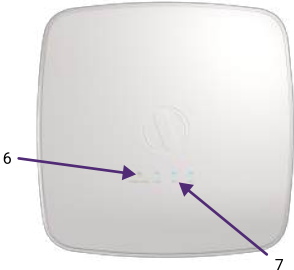
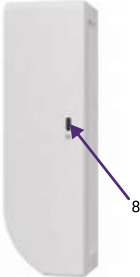
Physical Characteristics

Dimensions	200 x 200 x 55 mm or 7.87 x 7.87 x 2.17 in
Weight	1.5 kg
Mounting	Wall and Ceiling Mounting
Visual Indicators	Status LED: One dual-color LED that indicates WAN port power and network connectivity (green) and power status (blue). Radio LEDs: Three individual blue LEDs, one for each radio, indicating the operational status of the respective radio.
Operating Temperature	-5°C to 45°C
Humidity	95% RH non-condensing
Physical Security	Kensington® Lock Slot, Secure Bracket

Compliances

Regulatory	FCC Part 15 Subpart B (Class B), C & E, CE, ETA (WPC), MTCTE/TEC
Compliance & Environmental Standards	- RoHS 3.0 6 GHz band regulatory compliance as per EN 303 687 - IEC 62368-1 Safety Standard - IEC 61000-4-2 Electrostatic Discharge Immunity, Contact L2 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 - IEC 61000-4-6 Conducted Susceptibility, Level 2 - Radiated Emission as per EN 55032 (CISPR32) - Conducted Emission as per EN 55032 (CISPR32) - 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



Interfaces				
View	Port	Description	Connector Type	Speed/Protocol
Bottom View 	PoE+ 10GbE Port (1)	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
	DC 12V (2)	Provides an alternative power source for the access point	2 mm Center Pin	-
	Reset Button (3)	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	-
	Console Port (4)	RS-232 Single Port Serial Console	RJ-45	-
	10G SFP+ Port (5)	Optical port supporting speeds up to 10 Gbps	Optical SFP+ Cage	1/2.5/5/10 Gbps
Top View 	Power/WAN LED (6)	Single multi-color LED for WAN connectivity and power status	LED	-
	Status LEDs (7)	Individual blue color LEDs indicating the operational status of the 2.4 GHz, 5 GHz, and 6 GHz radios	LED	-
Side View 	Lock Slot (8)	Slot used to attach a Kensington cable lock to secure the device and prevent theft or unauthorized removal	Slot	-

Receiver Sensitivity			
Radio	Bandwidth (MHz)	MCS	Sensitivity (dBm)
2.4 GHz	20	0	-94
	20	11	-62
	40	0	-92
	40	11	-61
5 GHz	20	0	-94
	20	13	-56
	40	0	-89
	40	13	-54
	80	0	-85
	80	13	-52
	160	0	-84
	160	13	-51
6 GHz	20	0	-94
	20	13	-58
	40	0	-92
	40	13	-57
	80	0	-89
	80	13	-55
	160	0	-85
	160	13	-52
	320	0	-83
	320	13	-51

Ordering Information

Model No.	Description
ion6bi	IO Wi-Fi 7 Tri-band 2x2:2 Indoor Access Point with Integrated Antenna and IoT Module

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