

Windbit WAP1241-IBE

Quad radio Wi-fi 7 indoor AP for high density scenarios

Introduction

Windbit WAP1241-IBE is a high-performance enterprise-grade Wi-Fi 7 indoor access point designed to deliver exceptional user experience in ultra-high-density environments. Built on an advanced quad-radio architecture, it is engineered to support a large number of simultaneous users while maintaining high throughput, low latency, and stable connectivity across demanding wireless scenarios. Designed for performance-critical deployments such as large offices, campuses, education, healthcare, and enterprise environments, Windbit WAP1241-IBE leverages next-generation Wi-Fi 7 technologies to maximize spectrum efficiency and network capacity. Its intelligent radio design and advanced wireless features ensure optimized coverage, reliable roaming, and consistent performance even under heavy load. With its focus on scalability, reliability, and superior multi-user performance, Windbit WAP1241-IBE is an ideal solution for organizations requiring future-ready wireless infrastructure capable of supporting mission-critical applications and dense client environments

Interfaces

LAN RJ45(PoE IN)	1x100/1000/2.5G/5G/10G RJ45 port, shared with SFP+
LAN SFP+	1 x 10GE SFP+ port, compatible with 1GE/2.5GE/10GE
LAN IoT	1 x 10/100/1000BASE-T port, PoE 802.3af out
Radio 1	2.4 GHz: 2x2 MIMO, 802.11n, ax, be
Radio 2	5 GHz: 4x4 MIMO, 802.11n, ac, ax, be
Radio 3	6 GHz: 4x4 MIMO, 802.11ax, be
Radio 4	AI Radio, 2.4 GHz/5 GHz, MIMO 2x2
Others	1x Console RJ45, 1x USB 2.0, 1x BT 5.3

Highlight

- Quad radio architecture supporting concurrent operation in the 2.4GHz, 5GHz, and 6GHz bands
- Wi-Fi7-class performance with support for advanced modulation, wide channel bandwidths, OFDMA, MLO
- Up to 12 spatial streams delivering an aggregate wireless throughput of up to 17.98Gbps
- Multi-gigabit uplink connectivity, including high-speed fiber/RJ45 interfaces up to 10GbE
- AI radio enables real-time full-band scanning, ensuring high security and superior user experience
- Advanced RF optimization, including dynamic channel selection, adaptive transmit power control
- Enterprise-grade security features, supporting robust authentication and encryption



Competitive Advantages

Ultra-high wireless capacity	Quad-radio MIMO 2x2/4x4 architecture and Wi-Fi 7 class features deliver high aggregate throughput, ensuring consistent performance in all scenarios.
Automatic Wi-Fi network optimization	The device dynamically adjusts channels and transmission power, optimizing the radio environment and improving wireless efficiency.
Simple and efficient administration	Flexible for all scenarios: Web configuration in standalone access point mode, or cloud management, or ready for a wireless LAN controller.
Captive portal, centralized management	The management platform incorporates a captive portal and integrated tools, avoiding external solutions and reducing operating costs.

Key Features

- **Advanced 4096-QAM technology** With 4096-QAM modulation and 802.11be, the maximum access speed can reach 17,89 Gbps. With all radios activated simultaneously, a high-speed and highly efficient Wi-Fi 7 experience is achieved.
- **High security and reliability** Encryption and authentication technologies including WPA3, 802.1X and PPSK, ensuring secure communications, advanced access control and comprehensive data protection in corporate environments.
- **Channel width up to 320MHz** The channels can be 20 MHz, 40 MHz, 80 MHz, 160MHz, and 320 MHz.
- **Wireless Intruder Detection System (WIDS)** And user isolation, detection and containment of unauthorized access points. CPU Protection Policy (CPP). Network Foundation Protection Policy (NFPP).
- **Orthogonal Frequency-Division Multiple Access (OFDMA)** OFDMA allows multiple users to simultaneously receive/send packets through the AP, minimizing user contention and data forwarding, thereby reducing latency and improving network efficiency.
- **Improved signal quality** It supports cyclic shift/delay diversity (CDD/CSD), maximum ratio combination (MRC), space-time block coding (STBC), and low-density parity checking (LDPC).
- **High number of BSSIDs** Network administrators can encrypt and isolate separate VLANs or subnets of the same SSID, with specific authentication methods for each SSID. Supports up to 48 (16 BSSIDs per radio).
- **IPv4/IPv6 Services** DHCPv4 server, NAT4, neighbor discovery (ND), ICMPv6, IPv6 DHCP client, static routing, PPPoE client, IPsec VPN.

HARDWARE TECHNICAL FEATURE

Interfaces and connectors

1 x 100/1000/2.5G/5G/10G BASE-T port, combo with SFP+. PoE IN
 1 x 10GE SFP+ port, compatibility with 1GE/2.5GE/10GE modules
 IoT port: 1 x 10/100/1000BASE-T port, supplying IEEE 802.3af power. 1 x RJ45 console port, 1 x USB 2.

Integrated internal omnidirectional Wi-Fi 7 antennas

2x antennas 2.4 GHz (3 dBi)
 4x antennas 5 GHz (3 dBi)
 4x antennas 6 GHz (3 dBi)

Environmental specifications

Operating temperature: -10 °C to +50 °C. Storage temperature: -40°C to +70°C

Storage: -40 °C to +70 °C. Storage humidity: 5% RH to 95% RH (non-condensing)

Operating humidity: 5%–95%. Operating altitude: -500 m to +5,000 m

Quad radio modules

2.4 GHz: 2x2 MIMO, 802.11n, ax, be
 5 GHz: 4x4 MIMO, 802.11n, ac, ax, be
 6 GHz: 4x4 MIMO, 802.11ax, be. AI Radio, 2.4 GHz/5 GHz, MIMO 2x2

Dimensions, weight and mounting kit

Dimensions: 220 mm × 220 mm × 42,7 mm
 Weight: Equipment: 1,2 kg / Mounting kit 0.05 kg
 Wall/ceiling kit included by default

Maximum power consumption

DC power: 55 W, Radio 1 2x2, Radio 2 4x4, Radio 3 4x4, Radio 4 (AI Radio) 2x2, LAN 1 for PoE. USB
 802.3bt: 55 W. Radio 1 2x2, Radio 2 4x4, Radio 3 4x4, Radio 4 (AI Radio) 2x2, LAN 1 for PoE. USB
 802.3at (PoE+): 25.5 W. Radio 1 2x2, Radio 2 2x2, Radio 3 2x2,

SOFTWARE TECHNICAL FEATURE

Wi-Fi interface

Maximum number of users per AP: 1280.
 Hide SSID, 5GHz priority (Band Steering)
 SSID: authentication modes, encryption mechanisms, and VLAN attributes

Filtering with ACLs

Standard IP ACL, MAC extended ACL, IP extended ACL, and expert-level ACL

IPv6 ACLs with time-based control and Layer 2 interface-based ACLs
 Layer 3 interface-based ACLs and Ingress ACLs associated with Wi-Fi interface

VLAN

Maximum number of SVIs (IPv4): 200
 Maximum number of SVIs (IPv6): 200
 Max. number of VLANs: 4,094, VLAN ID range: 1–4,094

IPv6 Services

IPv6 addressing, Neighbor Discovery (ND), ICMPv6, IPv6 ping, IPv6 tracer
 IPv6 DHCP client
 Maximum number of IPv6 addresses configured per L3 interface: 400

Multicast & VPN

Multicast-to-Unicast Conversion
 Client PPPoE
 VPN IPsec

Security methods

PSK, Web y 802.1X, WPA (TKIP), WPA2 (AES), WPA2-PSK, WPA3 y WEP

User isolation, Rogue APs and containment, dynamic ACLs
 Support for RADIUS, CPU Protection Policy (CPP), and Network Foundation Protection Policy (NFPP)

Control and limitations of connections

Connection limitations by SSID or radio interface
 Bandwidth limitation
 Rate Limiting based on STA/SSID/AP

IPv4 Services

Static addressing or DHCP Client
 Maximum number of IPv4 addresses configured per L3 interface: 200
 NAT, FTP ALG and DNS ALG

Routing IP

Static IPv4/IPv6 routes
 Maximum number of static IPv4 routes: 1,024
 Maximum number of static IPv6 routes: 1,000

Management and maintenance

Telnet, SSH, TFTP, Web, WLAN Controller, Cloud Controller
 SNMPV1,V2c,V3,
 Cloud management, Wireless Intelligent AI Optimization Service

ADDITIONAL TECHNICAL FEATURE

Certifications

EN 55032, EN 55035, EN 61000-3-3, EN IEC 61000-3-2, EN 301 489-1, EN 301 489-3,
 EN 301 489-17, EN 300 328, EN 301 893, EN 300 440, FCC Part 15, EN IEC 62311, IEC 62368-1, and EN 62368-1

Security lock option

Kensington lock
 Other buttons
 1x reset button

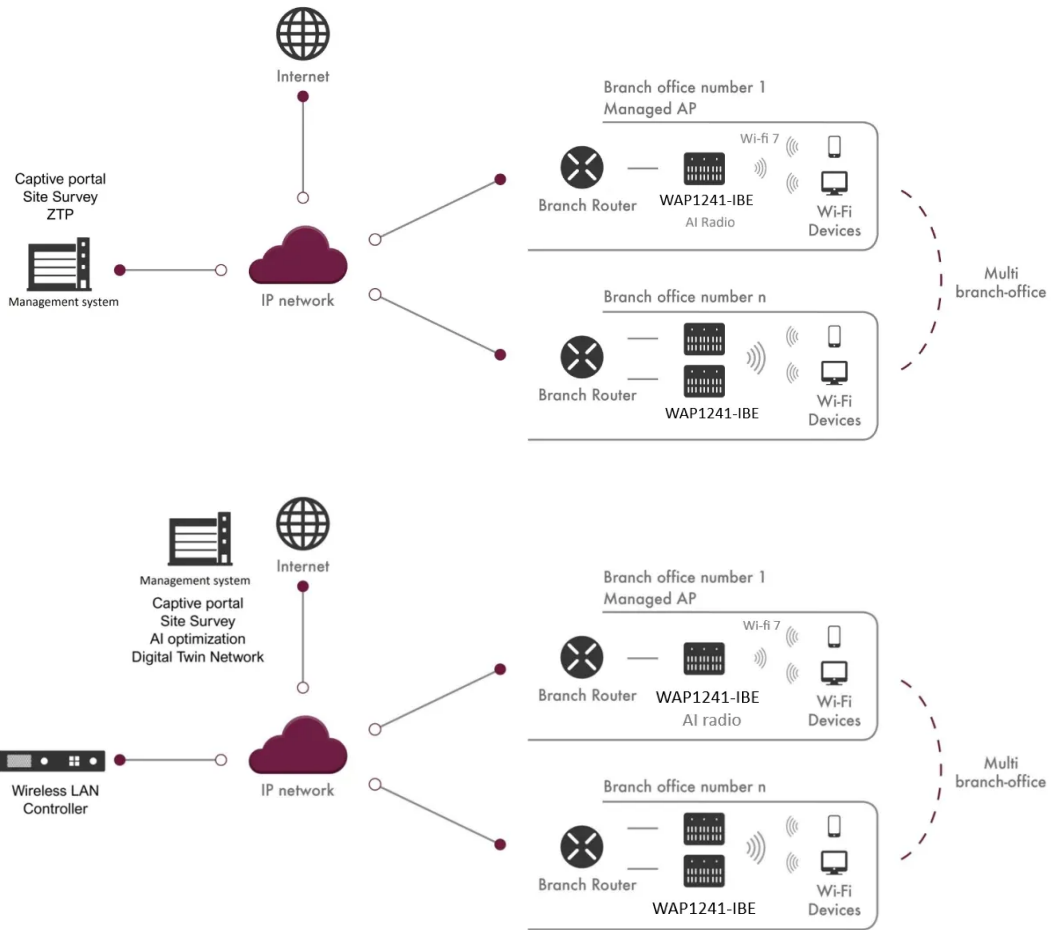
Device Memory

1024MB DRAM + 256 MB flash
 Mean Time Between Failure (MTBF)
 200,000 hours (22 years) at 25°C (77°F)

1x Multicolor LED for system status

AP status. SW update.
 CAPWAP management connection status.
 Wireless user online status

Scenarios



Teldat Group