WBSn Wi-Fi Base Station Family

WBSn is a family of advanced carrier-grade Wi-Fi base-stations enhanced with unique two-way Beamforming 802.11n, interference immunity suite and 3x3:3 MIMO.

With powerful 2.4 and 5 GHz radios, WBSn delivers up to gigabit capacity and robust connectivity in challenging conditions of interference, Non-Line-of-Sight (NLOS) and outdoor-to-indoor penetration.

WBSn Base Station Family

Omni
WBSn-2400-O
WBSn-2450-O

Sector
WBSn-2400-S
WBSn-2450-S

Indoor
WBSn-2450-I

Combined Sector-Omni
WBSn-2450-OS
WBSn-2450-SO

Overview

WBSn enables constructing scalable Wi-Fi networks with Quality of Service (QoS), security and high service reliability. WBSn are ready for advanced Passpoint™ capable hotspots and include a rich set of networking features for core integration with cellular and fixed-line operators.

WBSn solution ensures that carriers, service providers, governments and enterprises are able to deploy their wireless networks quickly and effectively with significantly fewer base stations, and at much lower costs.

Alvarion Technology Edge

Beamforming 802.11n, Interference Immunity

WBSn base stations combine two-way Beamforming 802.11n and interference immunity technologies together with 3x3:3 MIMO, delivering best capacity and coverage, with speeds of up to 450 Mbps per band.

Complete Solution

WBSn base stations are available in outdoor and indoor, Omni and Sector form factors, with simultaneous 2.4 and 5 GHz band support, integrated mesh backhauling, and a fully featured built-in Access Controller. WBSn is complemented by service provisioning, management tools, and a span of WCPEs, enabling numerous urban and rural applications at a lower cost per bit.

Carrier Grade

WBSn outdoor base stations are carrier grade IP-68 rated. The WBSn family of products is designed to provide the highest reliability, quality of service, security and manageability. WBSn base stations come with a complete set of FCAPS management tools.

Benefits

• Gigabit Wi-Fi

WBSn base stations support 802.11n with three spatial data streams, for transmitting and receiving at speeds of up to 450 Mbps per band, and maximum aggregated capacity of up to one Gbps.

• Extended Outdoor and Indoor Coverage

The true spatially adaptive Beamforming leverages a unique High Gain Diversely Polarized (HGDP) antenna array for maximum performance. Beamforming signals traveling in different propagation paths are coherently combined at the receiver's antenna. This increases coverage by up to 50%, enables NLOS connectivity and indoor signal penetration.

Indoor coverage is enhanced by the WBSn-2450-I base station providing Wi-Fi access in both 2.4 GHz and 5 GHz bands concurrently, as well as mesh support in 5 GHz band.

• Carrier-grade Wi-Fi

WBSn base stations are designed for high reliability and manageability, including security and QoS features, FCAPS management suite easy installation and a robust IP-68 outdoor units for harsh environments. WBSn base stations are equipped with rich set of networking features designed for core integration and homologation with cellular and fix-line operators.

• Fastest Return On Investment

With fewer sites required per covered area, high network reliability and enhanced service options, WBSn provides up to 50% savings of CAPEX and OPEX and a faster ROI.

• Interference Immunity Suite

Alvarion's Interference Immunity Suite combines the inherent Beamforming ability to suppress interference, the Dynamic Interference Handling (DIH) algorithm that continuously optimizes receiver's parameters according to noise level, the Automatic Channel Selection (ACS) algorithm for best operating channel online selection, the Wi-Fi Rate Adaptation (WARA) for optimal rate selection in environments with high interference, and the capabilities of both Down Tilted Antennas (DTA) and sector antennas to reject noise out of their field-of-view.

• Rich Embedded Networking

WBSn base stations include rich embedded networking capabilities, including Bridging, Routing and a fully integrated Access Controller, for flexible service planning and reduced costs.

• Environmentally Friendly

WBSn is designed to be environmentally-friendly with low power consumption, fewer sites to power, aesthetic smart design, and green standard compliance.

Applications

- Mobile Data Offloading and Hotspots
- Residential and Business Access
- Wi-Fi Wholesale
- Managed Wi-Fi Services
- Rural Broadband
- Campus Coverage
- Hotels and Resorts
- Malls and Large Retail Stores
- Hospitals
- Industrial Areas
- Smart Cities
- Smart Utilities

Configurations and Ordering Information

WBSn Base Station Types

Name	P/N	Configuration	Capacity	2.4 GHz Radio	5 GHz Radio
WBSn-2400-S-cc	1242050x	Sector	450 Mbps, 256 users	+	
WBSn-2400-O-cc	1242010x	Omni	450 Mbps, 256 users	+	
WBSn-2450-S-cc	1742050x	Sector	900 Mbps, 512 users	+	+
WBSn-2450-O-cc	1742030x	Omni	900 Mbps, 512 users	+	+
WBSn-2450-OS-cc	1742040x	Omni-Sector	900 Mbps, 512 users	+ Omni	+ Sector
WBSn-2450-SO-cc	1742060x	Sector-Omni	900 Mbps, 512 users	+ Sector	+ Omni
WBSn-2450-Idd-cc*	1745dd0x	Wall and ceiling	450 Mbps, 512 users	+	+

*GA H2 2012

- Country codes: please specify the destination region with name and P/N by indicating: cc = US/EU/UN/IL/JP/IN and correspondingly x = 1/2/3/4/5/6.
- AC POE for outdoor WBSn: P/N 27004003 or DC POE: P/N 27004103 ordered separately.
- Power cables for outdoor WBSn: P/N 27001003 for US connector, P/N 27001103 for EU connector, ordered separately.
- Power cable for Indoor WBSn are included within the product P/N: dd = 11/12 for US/EU cable connector.

Radio

	802.11 b/g/n Radio			802.11 a/n Radio		
Operating band*	2.400 – 2.483 GHz, 13 channels			**Outdoor WBSn:** 4.900 – 5.900 GHz, DFS support **Indoor WBSn:** 5.150 – 5.900 GHz, DFS support		
Modulations	802.11n: 3x3 MIMO with 3 spatial data streams 802.11g: OFDM 802.11b: DSSS			802.11n: 3x3 MIMO with 3 spatial data streams 802.11a: OFDM		
Data rates	802.11n: MCS0 – MCS23 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11b: 1, 2, 5.5, 11 Mbps			802.11n: MCS0 – MCS23 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps		
Bandwidth	20 / 40 MHz, 5 MHz steps			10 / 20 / 40 MHz, 5 MHz steps		
Outdoor WBSn	**Sector**	**Omni**	**Indoor**	**Sector**	**Omni**	**Indoor**
Max, transmit power* at antenna port	26 dBm, 1dB steps		24 dBm	25 dBm, 1dB steps		35 dBm
Max EIRP	48 dBm	43 dBm	37 dBm	49 dBm	43 dBm	35 dBm
Antenna	HGDP 12 dBi 120°H x 16°V	7.5 dBi 20°V	4 dBi	HGDP 14 dBi 120° H x 8°V	8.5 dBi 10°V	4 dBi

* Actual operating channels, transmission power and EIRP may be reduced for compliance with local regulations (FCC, ETSI, etc.)

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Hardware Specification

Ports	Ethernet: auto-sensing 10/100/1000 Base-T			
	Sector	**Omni**	**Sector-Omni / Omni-Sector**	**Indoor**
Power over Ethernet (PoE)	55VDC (only with Alvarion POE Injector) feed: 100-240 VAC at 47-63 Hz			standard 802.3at POE
Power Consumption (Nom./Max.)**	19/23W, single band 22/30W, dual band	19/23W, single band 22/30W, dual band	22/30W, dual band	15/20W
Dimensions (L x W x H)	38cm x 14cm x 39.5cm	38cm x 14cm x 9.5cm (excluding antennas)	38cm x 14cm x 43.5cm (excluding antennas)	21cm x 21cm x 6 cm
Weight	2.4 kg single band 3 kg dual band	1.4 kg singl band 2 kg dual band	3 kg	1 kg
Additional weight	Post clamp 0.4 kg	Antennas: 0.2 kg Post clamp: 0.4 kg	Antennas: 0.2 kg Post clamp: 0.4 kg	Wall and ceiling mounting options are included

** May be lower with different regulations such as ETSI.

Software Features

- **Virtual APs (VAPs) per band**
- **WDS**
- **QoS**
  WMM with four priority queues
  Prioritization: VLAN, DSCP and IP TOS
- **VLAN support: 4095**
  VLAN termination, VLAN trunk (multiple VLANs per VAP), QinQ, Dynamic VLAN assignment by RADIUS
- **Bridge and Router*** modes**
- **Built-in Access Controller***
  Portal redirection, walled garden, Accounting, SLA
- **Built-in accounting***

Security

- **Wireless Security:**
  Open, WEP, 802.11i (WPA, WPA2)
- **Authentication:**
  Pre-Shared-Key (PSK) and 802.1X-RADIUS (supporting EAP-TLS, EAP-TTLS, PEAP, EAP-AKA, EAP-SIM)Encryption: WEP, TKIP, AES
- **Network securities:**
  Broadcast/multicast limiters WiFi clients isolation, Access Control List (ACL)

*** These features require licenses

Management

- SNMPv2c
- HTTP/HTTPS

Environmental Specifications

- **Outdoor WBSn**
  - Operating temperature: -40° to 55°C
  - Storage temperature: -40° to 85°C
  - Humidity: 0 to 95 % non-condensing
  - Enclosure: IP-68, corrosion-resistant
  - Wind survivability: 165 Mph
  - Shock and vibration: ESTI 300-192-4, T41.E
  - Transportation: ISTA2A
- **Indoor WBSn**
  - Operating temperature: 0° to 45°C
  - Storage temperature: -30° to 70
  - Humidity: 0 to 95 % non-condensing

Approvals

- Radio: FCC 47 CFR part 15C, EN 302 502, EN 301 893, EN 300 328
- Safety: UL 60950-1:2007
- UL 60950-22:2007 CAN/CSA-C22.2 No. 60950-1-07 and CAN/CAS-C22.2.60950-22:2007
- EMC: EN 301 489
- Green: ROHS, WEEE

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About Alvarion
Alvarion Ltd. (NASDAQ:ALVR) provides optimized wireless broadband solutions addressing the connectivity, coverage and capacity challenges of telecom operators, smart cities, security, and enterprise customers. Our innovative solutions are based on multiple technologies across licensed and unlicensed spectrums. (www.alvarion.com)