

# 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 under challenging conditions of interference, Non-Line-of-Sight (NLOS) and outdoor-to-indoor penetration.

## WBSn Base Station Family



## Overview

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

The 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, Omni and Sector form factors, with simultaneous 2.4 and 5 GHz band support, for concurrent access in 2.4 and 5 GHz. 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, and come with a complete set of FCAPS management tools. The WBSn family of products is designed to provide the highest reliability, quality of service, security and manageability.

### 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.

#### • 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 capability of the sector antenna to reject noise out of the base station field-of-view.

#### • Rich Embedded Networking

WBSn base stations incorporate 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



Hotels and Resorts



Residential and Business Access



Malls and Large Retail Stores



Wi-Fi Wholesale



Hospitals



Managed Wi-Fi Services



Industrial Areas



Rural Broadband



Smart Cities



Campus Coverage



Smart Utilities

## Radio

	802.11 b/g/n Radio		802.11 a/n Radio	
<b>Operating band</b>	2.400 – 2.483 GHz, 13 channels		4.900 – 5.900 GHz	
<b>Modulations</b>	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	
<b>Data rates</b>	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	
<b>Bandwidth</b>	20 / 40 MHz, 5 MHz steps		20 / 40 MHz, 5 MHz steps	
<b>Outdoor WBSn</b>	<b>Sector</b>	<b>Omni</b>	<b>Sector</b>	<b>Omni</b>
<b>Max, transmit power** at antenna port</b>	26 dBm, 1dB steps		26 dBm, 1dB steps	
<b>Max EIRP</b>	48 dBm	43 dBm	49 dBm	43 dBm
<b>Antenna</b>	HGDP 12 dBi 120°H x 16°V	7.5 dBi 360°H x 20°V	HGDP 14 dBi 120°H x 8°V	8.5 dBi 360°H x 10°V

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

## Hardware Specification

<b>Ports</b>	Ethernet: auto-sensing 10/100/1000 Base-T		
	Sector	Omni	Sector-Omni / Omni-Sector
<b>Power over Ethernet (PoE)</b>	55VDC (only with Alvarion POE Injector) feed: 100-240 VAC at 47-63 Hz		
<b>Power Consumption** (Nom./Max.)</b>	19/23W, single band 22/30W, dual band	19/23W, single band 22/30W, dual band	22/30W, dual band
<b>Dimensions (L x W x H)</b>	38cm x 14cm x 39.5cm	38cm x 14cm x 9.5cm (excluding antennas)	38cm x 14cm x 43.5cm (excluding antennas)
<b>Weight</b>	2.4 kg single band 3 kg dual band	1.4 kg single band 2 kg dual band	3 kg
<b>Additional weight</b>	Post clamp 0.4 kg	Antennas: 0.2 kg Post clamp: 0.4 kg	Antennas: 0.2 kg Post clamp: 0.4 kg

\*\* May be lower under different regulations such as ETSI.

## WBSn Base Station Specifications

### International Corporate HQ

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### Software Features

- **Virtual APs (VAPs) per band**
- **WDS**
- **QoS**  
WMM with four priority queues  
Prioritization: VLAN, DSCP
- **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, Service Level Agreement (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:**  
WiFi client isolation, Access Control List (ACL)

\*\*\* These features require licenses

### Management

- SNMP
- 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

### 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
- EMC: EN 301 489
- Transportation: ETSI EN 300 019-2-2, ETSI EN 300 019-2-4 V2.1.2
- IEC 60068-2-64, 29
- MIL-STD-810
- IP68 - IEC 60529
- Green: ROHS, WEEE

## Configurations and Ordering Information

### WBSn Base Station Types

Name	P/N	Configuration	Data Rates	Users	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

- 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.
- PoE for outdoor WBSn: AC POE 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.



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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](http://www.alvarion.com))