

# WBSn

## High Density Wi-Fi Access Point

WBSn is a family of advanced carrier-grade Wi-Fi Access Points enhanced with unique two-way Beamforming 802.11n, interference immunity suite and 2x2:2 MIMO.

With Smart 2.4 and 5 GHz radios, WBSn-HD delivers the highest capacity and robust connectivity under challenging conditions of High Density events.



WBSn-2450-HD  
Access Point

# WBSn High Density Wi-Fi Access Point

## Applications



Stadiums



Smart Town / Cities



Events



Team App



Online betting



Seat Upgrade



Games statistics



Order food to your seat



Instant reply



Merchandize promotion



News stream

## Customer Benefits

- Generate new revenue streams such as: mobile advertisements and betting.
- Increase existing revenue streams such as: merchandize promotions, Order food and beverages to seat.
- Increase fan engagements by providing second screen experience and additional content.
- Provide added value to fans through new services to maintain satisfaction and prevent attrition.
- Attract Young fans by connecting the on-stadium experience to their always-on-line culture.

## Overview

WBSn High Density solution is designed to meet the unique needs of large crowds of passionate fans as well as handle all of the traditional back office and operational needs (ticketing, Point-of-Sale, Press Box, etc) unique to sports and entertainment environments. By enhancing the capacity of traditional WiFi technologies, it provides an optimal environment for fans to access an increased array of data applications with all types of mobile devices in the venue. Enabling Stadium Wi-Fi networks with Quality of Service (QoS), security and high service reliability. WBSn Access Points are HW ready for advanced Passpoint™ capable hotspots and include a rich set of networking features for core integration.

### Beamforming 802.11n, Interference Immunity

WBSn Access Points combine two-way Beamforming 802.11n and interference immunity technologies together with 2x2:2 MIMO, delivering best capacity and coverage, with speeds of up to 300 Mbps per band.

### Complete Solution

WBSn HD Access Points are Sector form factor with narrow beam and simultaneous 2.4 and 5 GHz band support, for concurrent access in 2.4 and 5 GHz. WBSn HD is complemented by service provisioning, management ARENA controller, enabling numerous concurrent users and applications at a lower cost per bit.

### Carrier-Grade

WBSn outdoor Access Points 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.

## Technical

- **Gigabit Wi-Fi.** WBSn Access Points support 802.11n with two spatial data streams, for transmitting and receiving at speeds of up to 300 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 Access Points 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 Access Points 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 Access Point field-of-view.
- **Rich Embedded Networking.** WBSn Access Points 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.

Technical Specifications

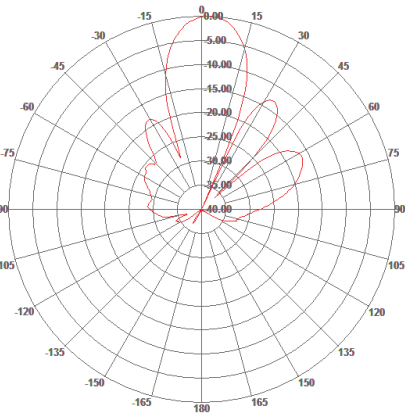
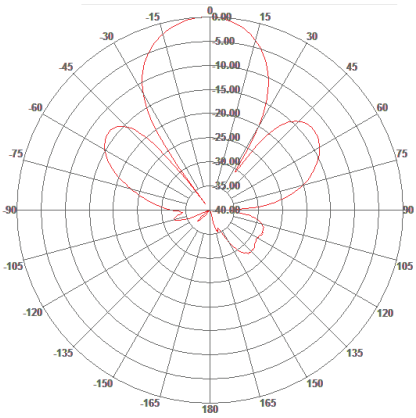
Radio

	802.11 b/g/n Radio	802.11 a/n Radio
Operational Bands	2.400 – 2.483 GHz, 13 channels	4.900 – 5.900 GHz
Modulations	802.11n: 2x2MIMO with 2 spatial data streams 802.11g: OFDM 802.11b: DSSS	802.11n: 2x2 MIMO with 2 spatial data streams 802.11a: OFDM
Data rates	802.11n: MCS0 – MCS15 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11b: 1, 2, 5.5, 11 Mbps	802.11n: MCS0 – MCS15 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
Bandwidth	20 / 40 MHz, 5 MHz steps	20 / 40 MHz, 5 MHz steps
Outdoor WBSn	Sector	Sector
Max, transmit power** at antenna port	25 dBm, 1dB steps	25 dBm, 1dB steps
Max EIRP	47 dBm	47 dBm
Antenna	HGDP 16 dBi 30°H x 30°V	HGDP 16 dBi 20°H x 20°V

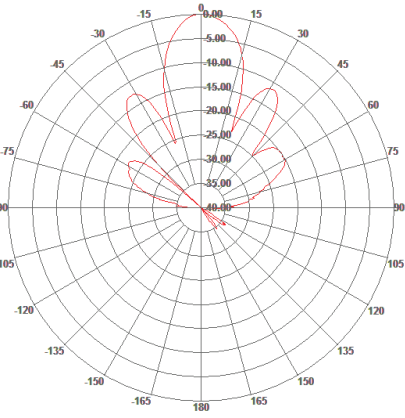
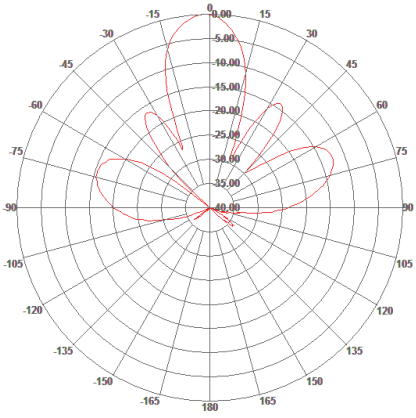
\*\* Actual operating channels, transmission power and EIRP may be reduced for compliance with local regulations (FCC, ETSI, etc.)

Antenna Pattern

2.4Ghz Band antenna



5Ghz Band antenna



## Hardware Specification

Ports	Ethernet: auto sensing 10/100/1000 Base-T
Power over Ethernet (PoE)	55VDC (only with Alvarion POE Injector) feed: 100-240 VAC at 47-63 Hz
Power Consumption** (Nom./Max.)	20/23W, dual band
Dimensions (L x W x H)	38cm x 14cm x 39.5cm
Weight	3 kg
Additional weight	Post clamp 0.4 kg

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

## Firmware and Other Prominent Features

### Firmware Information

- **Multiple SSID**  
Supports virtual access points (VAP) per radio, with unique BSSID; each VAP can configure its own security.
- **Operating Modes**
  - Bridge Access Point
  - Router Access Point
- **WAN Type**
  - Static IP
  - Dynamic IP
  - DHCP
- **Device Management**
  - HTTP / HTTPs Web Server
  - SNMP V2
- **Data Capture & Notification**
  - System Event Log
  - Syslog Client
- **Advanced Features**
  - Built-in DHCP Server
  - Transmission Power Control (one dB per step)
  - Closed System (Suppress SSID)
  - Transmission Rate Control

### Other Prominent Features

- **IEEE 802.11h (DFS & TPC)**  
Enables worldwide operation through support for standards-based Dynamic Frequency Selection (DFS) and Transmission Power Control (TPC).
- **SNMP**  
For multiple SSID, firmware upgrades. Easy for customers to integrate with SNMP-based controller.
- **VLAN Management**  
Can manage the AP through VLAN ID.
- **VLAN Ethernet Trunk**  
Map VLAN IDs to multiple SSID up to 4095 VLANs.
- **Hotspot with Integrated Controller for Full Users Management**



**Alvarion Technologies Global HQ**  
13-15 Ha'amal St.  
Park Afek, Rosh Ha'ayin 48091  
Israel  
Tel: +972-3-7674200

Contact us at:  
**[sales@alvarion.com](mailto:sales@alvarion.com)**

For local contact information  
in your area, please visit  
**[www.alvarion.com](http://www.alvarion.com)**

## About Alvarion Technologies

- Alvarion's mission is to provide state-of-the-art wireless solutions that bring individuals, groups, and communities closer together.
- Alvarion provides wireless-based end-to-end solutions including HW infrastructure and SW based applications. It has designed and manufactures a range of Wi-Fi solutions, wireless-based Point-to-Point and Point-to-Multipoint technologies.
- With over 25,000 sites in over 95 countries, Alvarion's wireless portfolio has a proven record of reliability and performance.
- Alvarion focuses on smart cities, high density events, cellular operators and ISPs worldwide as well as government agencies and enterprises.
- Alvarion's wide network of distributors and integrators enables market presence and brand recognition across the world.

