As far As Wi-Fi can go

WBS-2400 Base Station

Wavion WBS-2400 base station is an advanced wireless broadband base station operating in the 2.4 GHz unlicensed band.

Based on an array of six antennas and six radios, the WBS-2400 leverages Wavion's Beamforming technology to provide extended range and superior connectivity under both Line-of-Sight (LOS) and Non-Line-of-Sight (NLOS) conditions.

Furthermore, Wavion's advanced SDMA technology increases the base station's downlink capacity. These unmatched characteristics enable service providers, municipalities, and governments to deliver high quality, Wi-Fi service with significantly fewer base stations at a much lower cost.

Beamforming technology

The WBS-2400 base station is the ideal solution for urban and rural Wi-Fi deployments.

Based on Wavion's unique and powerful spatially adaptive Beamforming technology, and operating with any off-the-shelf 802.11b/g/n standard based clients, the WBS-2400 provides significant performance gains in terms of range, throughput, indoor penetration and interference mitigation.

This enables service providers to offer highly cost effective Wi-Fi service without compromising quality.

Wavion Base Station 2400

WAVION
WIRELESS NETWORKS

Wavion Ltd., 5 Ha'mada Street, PO Box 580, Yoqne'am-Illit 20692, Israel
Phone:+972.4.909.7300 Fax:+972.4.909.7322, www.wavionnetworks.com

WBS-2400 Base Station

Benefits

- **Extended range**
  Triple the range in comparison with conventional access points.

- **Uniform coverage**
  Wavion Beamforming technology provides high quality NLOS coverage, thus enabling a larger addressable market per base station.

- **Better indoors penetration**
  The superior link gain enables better penetrations into buildings.

- **Increased throughput**
  The superior link gain provides higher throughput and enables larger network capacity. Furthermore, the SDMA technology doubles the downlink capacity per base station.

- **Superior interference mitigation**
  The inherent spatial filtering of the Beamforming technology and the unique dynamic interference handling capabilities ensure high-quality operation even in noisy environments.

- **Cost effective**
  The increased addressable market per base station, coupled with the ability to use standard off-the-shelf Wi-Fi CPEs enabling superior indoor penetration, and providing the lowest cost per line.

- **Carrier grade**
  Robust and weatherproof IP-67 platform, designed to withstand extreme weather conditions.

Technology

Wavion Beamforming technology focuses the energy to and from the client, on a per-packet basis. This focusing process significantly increases the link gain and the interference resiliency of the base station.

Moreover, while conventional Wi-Fi technology suffers from the destructive effect of multi-path propagation, Wavion's digital Beamforming technology exploits multi-path to its advantage by coherently combining the signals along the different propagation paths to the client.

Applications

The WBS-2400 base station has been optimized for a wide range of applications including:

- Business connectivity
- Municipal networks
- Metro zone networks for outdoor access and cellular data offload
- Public safety (video surveillance over wireless)
- VoIP / Rural connectivity
- Education campuses
- Residential access
- Building coverage
- Hospitality

Typical application

Wavion's WBS-2400 is ideal for urban and rural installations. When properly positioned, the WBS-2400 can provide wide coverage for indoor CPEs and mobile users.

The area can be further extended by using outdoor CPEs. In this manner, the same base station can provide access to both residential and business customers.

WBS-2400 rich management and security capabilities, such as seamless RADIUS authentication and accounting, makes WBS-2400 suitable for metro zone network applications such as outdoor wireless access and cellular data offloading through Wi-Fi.

In cases that wire-line backhaul is not available at every site, Wavion's powerful Beamforming technology may be used for both the access and self-backhaul. The self-aligning capability of the beamforming technology eliminates the need for mechanical alignments. This results in a quick and simple roll out.

WBS-2400 Omni - Typical Application

Specifications WBS-2400

Security
- Open, WEP (64 bit or 128 bit), WPA, WPA2, WAPI
- Encryption: TKIP, AES
- Authentication: Pre-Shared Key or 802.1x with RADIUS Server (EAP-TLS, PEAP, EAP-TTLS, EAP-SIM, EAP-AKA)
- MAC Authentication with RADIUS server for open sessions
- Time and throughput RADIUS Accounting
- VPN pass-through

Management
- Web-based configuration and management tool
- SNMPv2 with standard and Wavion MIB support
- Configuration save and restore
- Network and clients statistics
- HTTPS for Web-based management tools

Networking and QoS
- Multiple SSIDs / BSSIDs
- 802.1q VLAN support
- 802.1p, ToS or DSCP QoS support
- WMM support

Physical specifications
Network Interface:
- 1 Auto-sensing 10/100 Ethernet

Indicators
- One Ethernet port LINK/ACT LED indicator
- System Status LED indicator
- RF channel status indicator

Power input
- PoE: 55VDC, 35 W (only with Wavion PoE injector)

Environmental
- Operating temperature range:
  -40℃ to +55℃ (up to +60℃ with optional sunshield)
- Storage temperature range: -45℃ to +85℃
- Weather rating: IP67
- Wind survivability: 165 mph
- Shock and vibration: ESTI 300-192-4 spec T41.E
- Transportation: ISTA2A

Approvals
- RF: FCC 47 CFR part 15, Class C, EN 300328
- Safety: TUVus, UL 60950-1:2003, CAN/CSA-C22.2 No. 60950-1-03, EN 60950-1, IEC 60950-1
- EMC: 47 CFR Part 15, Subpart B, Class B (USA), EN 301489-1, EN 300328, TELEC, KC

Physical Dimensions (without mounting brackets)
- Height: 5.5 cm
- Length: 39 cm
- Width: 36 cm
- Weight: 4.2 Kg

Wireless
- IEEE 802.11b/g compliant
- Frequency band: 2.402–2.483 GHz

Modulation
- 802.11b: DSSS (DBPSK, DQPSK, CCK)
- 802.11g: OFDM (64QAM, 16QAM, QPSK, BPSK)

TX Power Maximum (802.11b/g)
- Max. power per antenna: 19dBm (FCC version)

Total EIRP
- 34.5dbm (from 6 antennas)
- Total Directed Power 42 dBm

Antenna Array
- Six 7.5 dBi omni-directional antennas
Note: Down-tilted antenna products for noisy environments are available

RX Sensitivity (typical)

Rate (802.11g)(Mbps)	Sensitivity (dBm)
6	-102.5
9	-100.5
12	-99.5
18	-98
24	-95
36	-92
48	-88
54	-86

Rate (802.11b) (Mbps)	Sensitivity (dBm)
1	-105.5
2	-103
5.5	-100.5
11	-96