



WBS-700 Base Station and WCPE-700 CPEs

Wavion's WBS-700 base station and WCPE-700 CPEs are an advanced wireless broadband solution operating in the 700 MHz frequency licensed band. Based on an array of six antennas and six high performance radios with transmit power of up to 48dBm EIRP and sensitivity as low as -108dBm, WBS-700 leverages Wavion's exclusive Beamforming technology to provide extended range and superior indoor penetration in both Line-of-Sight (LOS) and Non-Line-of-Sight (NLOS) conditions.

WBS-700 base station and WCPE-700 CPEs support the entire 700 MHz frequency band, with selectable channel bandwidths of 5, 10 and 20 MHz.

These unmatched characteristics enable service providers, municipalities, security agencies and utilities to construct high quality broadband wireless networks in the 700 MHz frequency band with significantly fewer base stations and at a much lower cost than traditional wireless broadband solutions.

Beamforming technology

WBS-700 base station and compatible CPEs are the ideal solution for rural broadband wireless deployments.

Based on Wavion's unique spatially adaptive Beamforming and Dynamic Interface Handling (DIH) technologies, WBS-700 provides significant performance gain in range, throughput, indoor penetration and interference mitigation in countries and regions where 700 MHz is an unlicensed band.



Wavion WBS-700 Base Station

WBS-700 Base Station and WCPE-700 CPEs

Benefits

- **Extended range**
Triple the range in comparison to any alternative solution in this band.
- **Uniform coverage**
Wavion's Beamforming technology provides high quality NLOS coverage, thus enabling a larger addressable area per base station.
- **Better indoors penetration**
Better signal propagation in 700 MHz band coupled with Wavion's exclusive radio technology facilitate superior building penetration.
- **Increased throughput**
20 MHz channel width and the high gain links enable high throughput rates and better user experience.
- **Superior interference mitigation**
The inherent spatial filtering of the Beamforming technology and Wavion's unique Dynamic Interference Handling (DIH) technology ensure smooth operation in countries and regions in which 700MHz is an unlicensed band.
- **Cost effective**
The increased coverage per base station enables constructing a cost effective wireless broadband solution optimized for rural and suburban areas.
- **Carrier grade**
Robust and weatherproof IP-67 platform, designed to withstand extreme weather conditions.

Technology

Wavion Beamforming technology focuses the energy to and from clients, on a per-packet basis, on both downlink and uplink directions. This increases significantly the link gain and the interference resiliency of the base station.

Moreover, while conventional broadband wireless technology suffers from the destructive effect of multipath propagation, Wavion's digital Beamforming technology exploits multipath to its advantage by coherently combining the signals along the different propagation paths to a client.

Applications

The WBS-700 base station is optimized for a wide range of applications in rural and suburban areas including:

- Wide rural coverage
- Public safety and video surveillance
- Wireless VoIP for rural connectivity
- Internet to schools
- Residential access
- Building coverage
- Hospitality

Typical application

Wavion's WBS-700 and compatible WCPE-700 CPEs is ideal solution for sub-urban and rural installations. When properly positioned, the WBS-700 can provide wide coverage for CPEs that can be used as indoor repeaters, having 700MHz backhaul to WBS-700 while providing 2.4GHz WiFi access to indoor users.



Internet to remote education and other public facilities



Forest and natural reserve protection



Broadband to remote communities



Public safety

Specifications of WBS-700 Base Station

Security

WEP (64 bit or 128 bit)

WPA, WPA2:

- Encryption: TKIP, AES
- Authentication: Pre-Shared Key or 802.1x with RADIUS Server (EAP-TLS, PEAP, EAP-TTLS)
- 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, 43 W (only with Wavion PoE injector)
- AC option: 110 – 220VAC, 43W, using WPI-AC-OTD ordered separately

Environmental

- Operating temperature range:
 - -40°C to +55°C
- Storage temperature range: -45°C to +85°C
- Weather rating: IP67
- Wind survivability: 165 mph
- Shock & Vibration: ESTI 300-192-4 spec T41.E
- Transportation: ISTA2A

Approvals

- Safety:
 - TUVus
 - EN 60950-1:2001+A11:2004
 - IEC 60950-1:2001
 - Second Edition
 - Information Technology equipment – Safety – Part 1

EMC:

- 47 CFR Part 15, Sub part B, Class B (USA)

Radio:

- FCC CFR 47 part 27

Physical Dimensions (without mounting brackets)

- Height: 5.5 cm
- Length: 60 cm
- Width: 60 cm
- Weight: 9.8 Kg
- Antenna height: 1.2 meters

Wireless

- IEEE 802.11a compliant
- Multiple Bandwidth: 5/10/20 MHz
- Frequency band:
 - WBS-700L: 698MHz to 746MHz
 - WBS-700U: 746MHz to 806MHz

Modulation

- 802.11a-based: OFDM (64QAM, 16QAM, QPSK, BPSK)
 - Physical layer rates (Mbps)
 - 20MHz Signal Rates: 54, 48, 36, 24, 18, 12, 9, 6
 - 10MHz Signal Rates: 27, 24, 18, 12, 9, 6, 4.5, 3
 - 5MHz Signal Rates: 13.5, 12, 9, 6, 4.5, 3, 2.25, 1.5

TX Power Maximum (802.11a)

- FCC Mode
 - Max transmit power per antenna: 22 dBm
 - Total EIRP: 44 dBm
- Universal Mode
 - Max transmit power per antenna: 26 dBm
 - Total EIRP: 48 dBm

Antenna Array

- Six 6.5 dBi omni-directional antennas
- Array diameter: 60 cm

RX Sensitivity (typical for 5MHz signal bandwidth)

Rate (Mbps)	Sensitivity (dBm)
1.5	-108
2.25	-106
3	-104
4.5	-103.5
6	-100.5
9	-97.5
12	-93.5
13.5	-91.5