DATASHEET

UniFi®

WiFi BaseStationXG

Quad-Radio 802.11ac Wave 2 Access Point with Dedicated Security and Beamforming Antenna

Models: UWB-XG, UWB-XG-BK

Simultaneous 5 GHz Tri-Band 4x4 Multi-User MIMO

Dedicated Security Radio with Persistent Threat Management

Software-Controlled Coverage Pattern for Cell-Size Optimization

UBIQUITI® NETWORKS

Scalable Enterprise Wi-Fi Management

The UniFi® Ecosystem enables the system integrator to effectively and efficiently create wireless network designs of any size, from small to large, with the potential for unlimited scalability.

The built-in, dedicated security and monitoring radio of the UniFi WiFi BaseStation XG provides visibility into site performance, channel planning, and local interferers, allowing the integrator to properly evaluate performance and quickly respond to changing interference and security threat landscapes.

Easily accessible through any standard web browser and the UniFi app (iOS or Android™), the UniFi Controller software is a powerful software engine ideal for high-density client deployments requiring low latency and high uptime performance.

Features

Powerful Hardware The UniFi WiFi BaseStation XG features the latest in Wi-Fi 802.11ac Wave 2 MU-MIMO technology combined with dedicated security and Bluetooth radios.

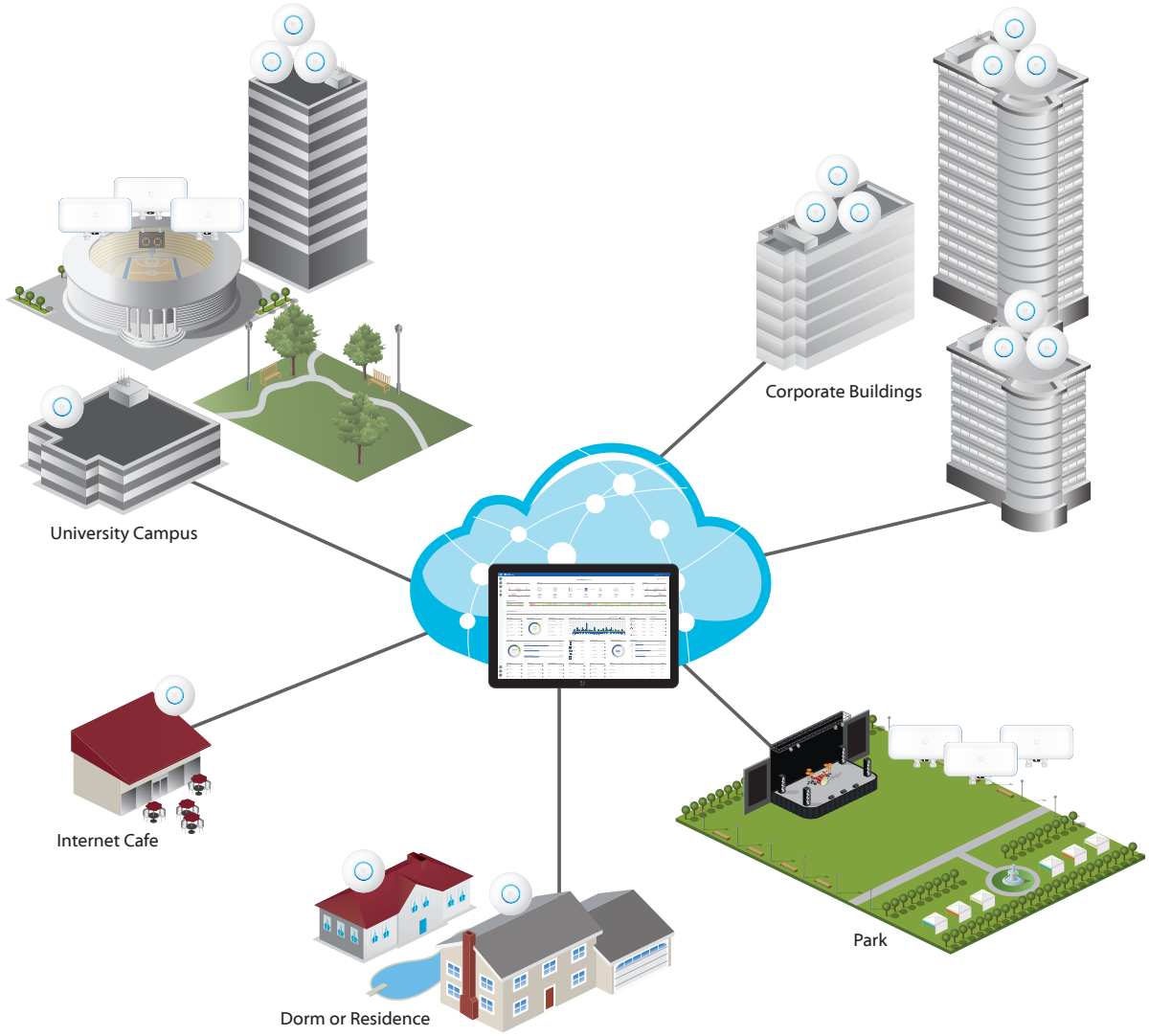
Intuitive UniFi Controller Software The system integrator can leverage the controller to easily configure and administer an enterprise Wi-Fi network.

Expandable The system integrator can start with one and expand to thousands while maintaining a single unified management system.

Save Money and Save Time UniFi comes bundled with a software controller that can be deployed on an on-site PC, Mac, or Linux machine; in a private cloud; or using a public cloud service. For more information about UniFi Cloud or UniFi Elite service, visit: **unifi.ubnt.com**

Extend Your Coverage

With the UniFi Controller software running in a NOC or in the cloud, administrators can manage multiple sites: multiple, distributed deployments and multi-tenancy for managed service providers. Below are some deployment examples.



UniFi Controller

Packed with Features

The UniFi Controller can provision thousands of UniFi APs, map out networks, quickly manage system traffic, and add more UniFi APs.

View Your RF Environment

Use the RF environment functionality of the UniFi WiFi BaseStation XG to detect and troubleshoot nearby interference, analyze radio frequencies, choose optimal AP placement, and configure settings.

Powerful RF Performance Features

Advanced RF performance and configuration features include spectral analysis, airtime fairness, and band steering.

Detailed Analytics

The UniFi Controller provides configurable reporting and analytics to manage large user populations and expedite troubleshooting.

WLAN Groups

Manage flexible configurations of large deployments. Create multiple WLAN groups and assign them to an AP's radio. Each WLAN can be VLAN tagged. Dynamic VLAN tagging per Wi-Fi station (or RADIUS VLAN) is also supported.

Wireless Uplink

Wireless Uplink functionality enables wireless connectivity between APs for extended range. One wired UniFi AP uplink supports up to four wireless downlinks on a single operating band, allowing wireless adoption of devices in their default state and real-time changes to network topology.

Multi-Site Management

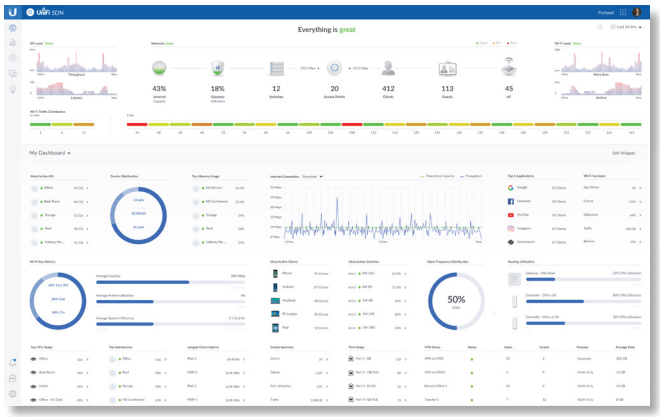
A single UniFi Controller running in the cloud can manage multiple sites: multiple, distributed deployments and multi-tenancy for managed service providers. Each site is logically separated and has its own configuration, maps, statistics, guest portal, and administrator accounts.

Guest Portal/Hotspot Support

Easy customization and options for Guest Portals include authentication, Hotspot setup, and the ability to use your own external portal server. Use UniFi's rate limiting for your Guest Portal/Hotspot package offerings. Apply different bandwidth rates (download/upload), limit total data usage, and limit duration of use.

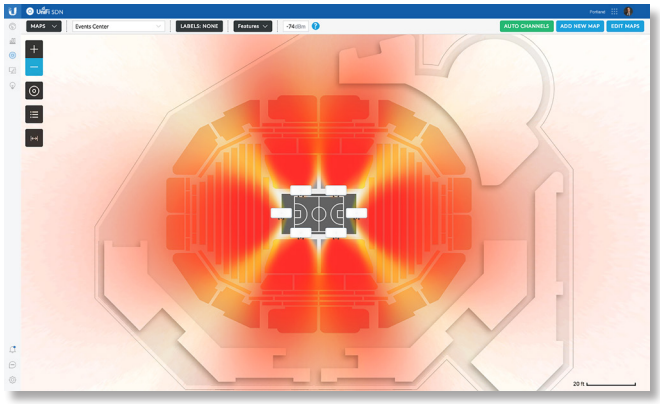
All UniFi APs include Hotspot functionality:

- Built-in support for billing integration using major credit cards.
- Built-in support for voucher-based authentication.
- Built-in Hotspot Manager for voucher creation, guest management, and payment refunds.
- Full customization and branding of Hotspot portal pages.



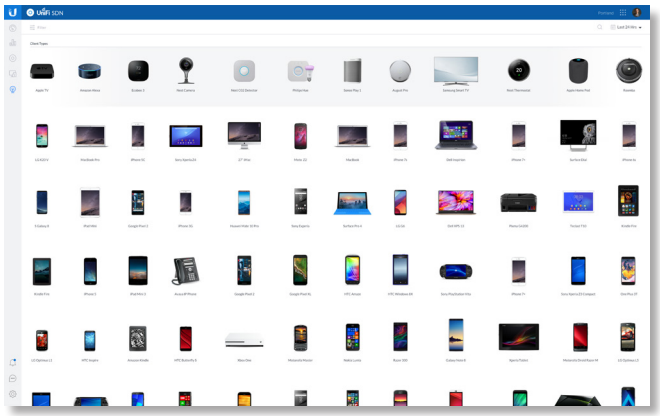
Dashboard

UniFi provides visual representation and status information about different aspects of your network.



RF Map

Monitor UniFi APs and analyze the surrounding RF environment.



Insights

UniFi displays the client types for a specific time period.

UniFi App

Manage your UniFi devices from your smartphone or tablet.

802.11ac Technology

Initial 802.11ac Wave 1 SU-MIMO (Single-User, Multiple Input, Multiple Output) technology allows an earlier-generation AP, such as the UniFi AC Pro AP, to communicate with only one client at a time.

802.11ac Wave 2 MU-MIMO (Multi-User, Multiple Input, Multiple Output) technology allows a Wave 2 AP, such as the UniFi WiFi BaseStation XG, to communicate with multiple clients at the same time – significantly increasing multi-user throughput and overall user experience.

MU-MIMO Assuming the same conditions, a Wave 2 radio provides up to 75% improvement[1] beyond a Wave 1 radio. This improvement increases wireless performance and/or serves more clients at the same performance level.

4x4 Spatial Streams At any single time, a Wave 2 radio can communicate with the following MU-MIMO clients:

- four 1x1 clients
- two 2x2 clients
- one 2x2 client and two 1x1 clients
- one 3x3 client and one 1x1 client

Real-World Performance Combining three times the number of 5 GHz radios and four times the associations per radio, the UniFi WiFi BaseStation XG delivers an order of magnitude more performance[1] than a typical 802.11ac Wave 1 AP.

Client Compatibility For optimal performance, use MU-MIMO clients. SU-MIMO clients will also benefit and gain up to 10-20% greater performance when used with the UniFi WiFi BaseStation XG.

[1] Actual performance values may vary depending on environmental and installation conditions.

[2] Actual numbers may vary depending on environmental and installation conditions.

Application Scenarios

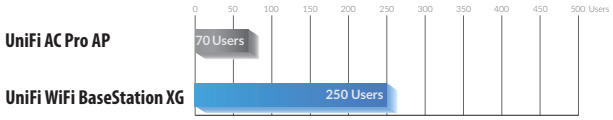
For ultra high density environments, such as an outdoor music festival, where there are numerous clients in a relatively small space, we recommend the UniFi WiFi BaseStation XG.

Wave 1 and Wave 2 APs offer 28 independent (non-overlapping) channels: three for the 2.4 GHz band and twenty-five for 5 GHz, including DFS channels.

When you use the 2.4 GHz band in a high-density location, you encounter self-interference and channel saturation. When you use the 5 GHz band, you can deploy smaller cells (coverage areas), so you can support more clients in any cell that deploys more than one AP.

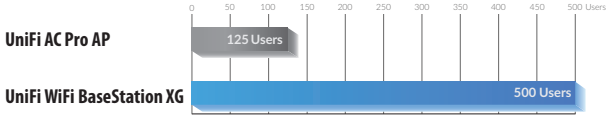
With the advantages of MU-MIMO technology and 4x4 spatial streams, the UniFi WiFi BaseStation XG can support more than triple the number of users[2] per radio than a typical Wave 1 AP.

Recommended Maximum Number Per Radio



The UniFi WiFi BaseStation XG has three client radios, so it can support up to 750 users as its recommended maximum.

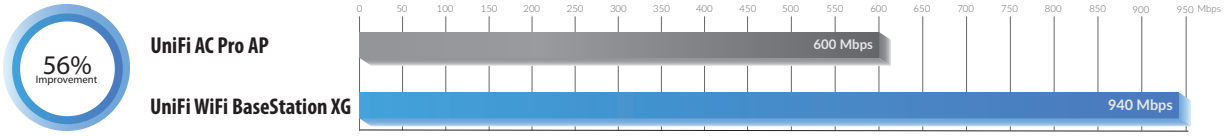
Theoretical Maximum Number Per Radio



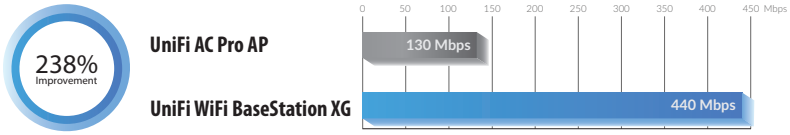
The UniFi WiFi BaseStation XG has three client radios, so it can support up to 1500 users as its theoretical maximum.

For more information, go to:
ubnt.link/UniFi-UAPs-High-Density

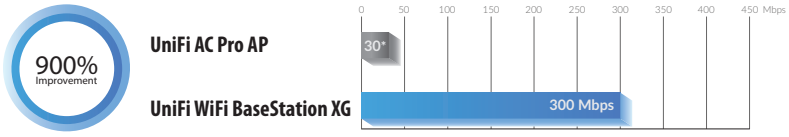
Single-Client Aggregate Throughput



10-Client Aggregate Throughput



100-Client Aggregate Throughput



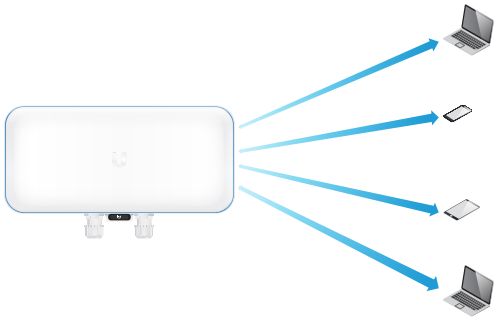
* Mbps

Client Support

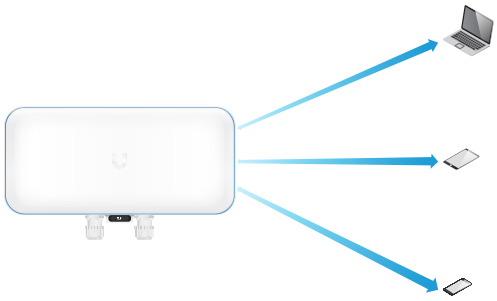
802.11ac Wave 1 SU-MIMO

SU-MIMO: A Wave 1 AP communicates with one client at a time.

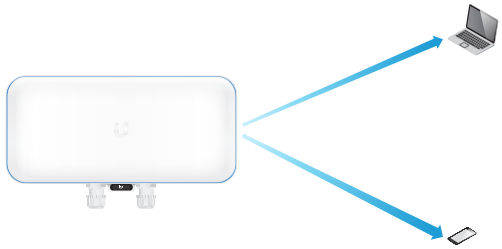
802.11ac Wave 2 MU-MIMO



MU-MIMO with 1x1 clients: Each client radio of the UniFi WiFi BaseStation XG communicates with four 1x1 clients at a time.



MU-MIMO with 2x2 and 1x1 clients: Each client radio of the UniFi WiFi BaseStation XG communicates with one 2x2 client and two 1x1 clients at a time.



MU-MIMO with 3x3 and 1x1 clients: Each client radio of the UniFi WiFi BaseStation XG communicates with one 3x3 client and one 1x1 client at a time.

Security Overview

The UniFi WiFi BaseStation XG delivers unprecedented wireless awareness and security, including tools for real-time spectrum monitoring, airtime utilization analytics, and intrusion detection/prevention.

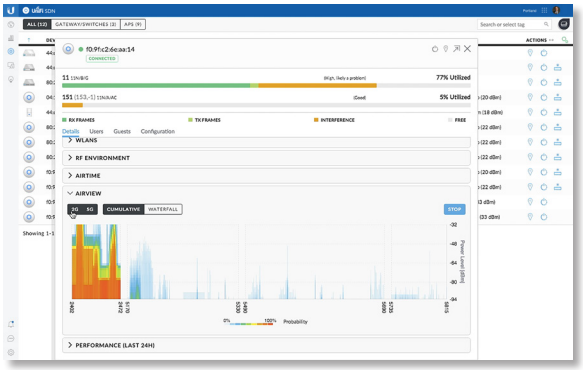
Dedicated Spectral Security Radio Using a persistent spectral scan, the UniFi WiFi BaseStation XG constantly monitors the RF environment to check for both potential malicious activity and the best channel for network performance.

The dedicated security radio allows the UniFi WiFi BaseStation XG to scan for security threats, such as malicious frames and rogue access points, while maintaining throughput for client devices. At the same time, UniFi, in conjunction with the UniFi WiFi BaseStation XG, analyzes and displays the wireless spectrum and airtime utilization to allow the network admin to have unprecedented real-time visibility into the spectral and protocol usage in the network.

Threat Management The UniFi WiFi BaseStation XG's dedicated security radio provides persistent threat management to act as a Wireless Intrusion Prevention System (WIPS) and Wireless Intrusion Detection System (WIDS). Such a dedicated radio affords frequency agility – meaning all available Wi-Fi channels are monitored constantly for threats – not just the channels the AP is using.

Spectrum and Wi-Fi Packet Analysis The airView® tool offers real-time visibility into your RF spectrum. Because it uses the dedicated security radio, it analyzes all of your available RF channels without affecting performance or disrupting client activity. The airTime™ tool visualizes and analyzes how the APs use channels in real time. The breakdown is by frame type, clients, neighboring APs, protocols, and interference.

Spectrum view and Wi-Fi packet analysis can be done simultaneously, without affecting stations, for a total view of the RF environment and channel utilization.



Powerful Connectivity

Featuring maximum wireless performance combined with wireless security, the UniFi WiFi BaseStation XG is ideal for ultra high density environments such as event venues, festivals, and medium- or large-sized stadiums.

Quad-Radio Capabilities Three client radios deliver unparalleled Wi-Fi performance while a dedicated security radio provides persistent threat management.

Superior Capacity for Large Crowds Featuring low-latency QoS (Quality of Service), the UniFi Stadium XG AP supports up to 1500 clients with 12 MU-MIMO chains (500 clients with 4 MU-MIMO chains per client radio).

Enhanced Processing Power The UniFi WiFi BaseStation XG is capable of complex operations (guest control, filtering, and other resource-intensive tasks) that may slow down a lesser-equipped AP.

10G and 1G Ethernet Connectivity Designed to be a 10G Ethernet backhaul, the primary port carries both data and PoE, while the secondary Gigabit Ethernet port is for bridging and also supports PoE input.

Power over Ethernet (PoE) Standard The UniFi WiFi BaseStation XG can be powered by an 802.3bt PoE compliant switch.

RF Energy Steering True cellular Wi-Fi using multiple APs – its selectable directional beamforming antenna allows for cell size optimization to maximize coverage.

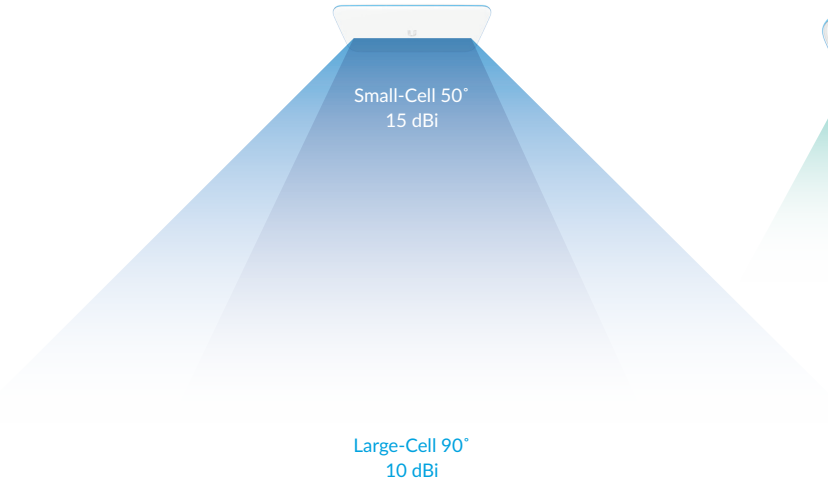
	Small Cell	Large Cell
Gain	15 dBi	10 dBi
Beamwidth	50°	90°

Model Summary

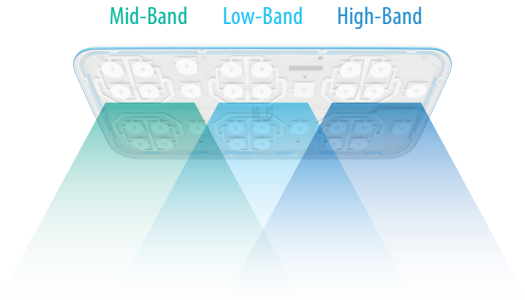
	UWB-XG UWB-XG-BK
Environment	Indoor or Outdoor*
5 GHz Tri-Band	✓
5 GHz Radio Rate	(3) 1733 Mbps
5 GHz MIMO	(3) 4x4
Dedicated Security Radio	✓
Secondary Ethernet Port	✓
PoE Mode	802.3bt PoE
Pole Mount	✓
Wall Mount	✓
Wireless Uplink	✓
airTime	✓
airView	✓
WIPS	✓

* The black version must only be installed indoors due to potential overheating if installed outdoors.

Bandwidth



Tri-Band Radios



Industrial Design

Available in white or black, the sleek UniFi WiFi BaseStation XG is a versatile access point with multiple mounting options to suit your application.

Streamlined Industrial Design The UniFi WiFi BaseStation XG offers discreet integration into any multi-user environment.

Customizable Appearance Optional panel skins can be used to meet the requirements of your deployment.

Visual Indicators The LCD screen and controllable RGB LED ring offer status updates in a single glance.

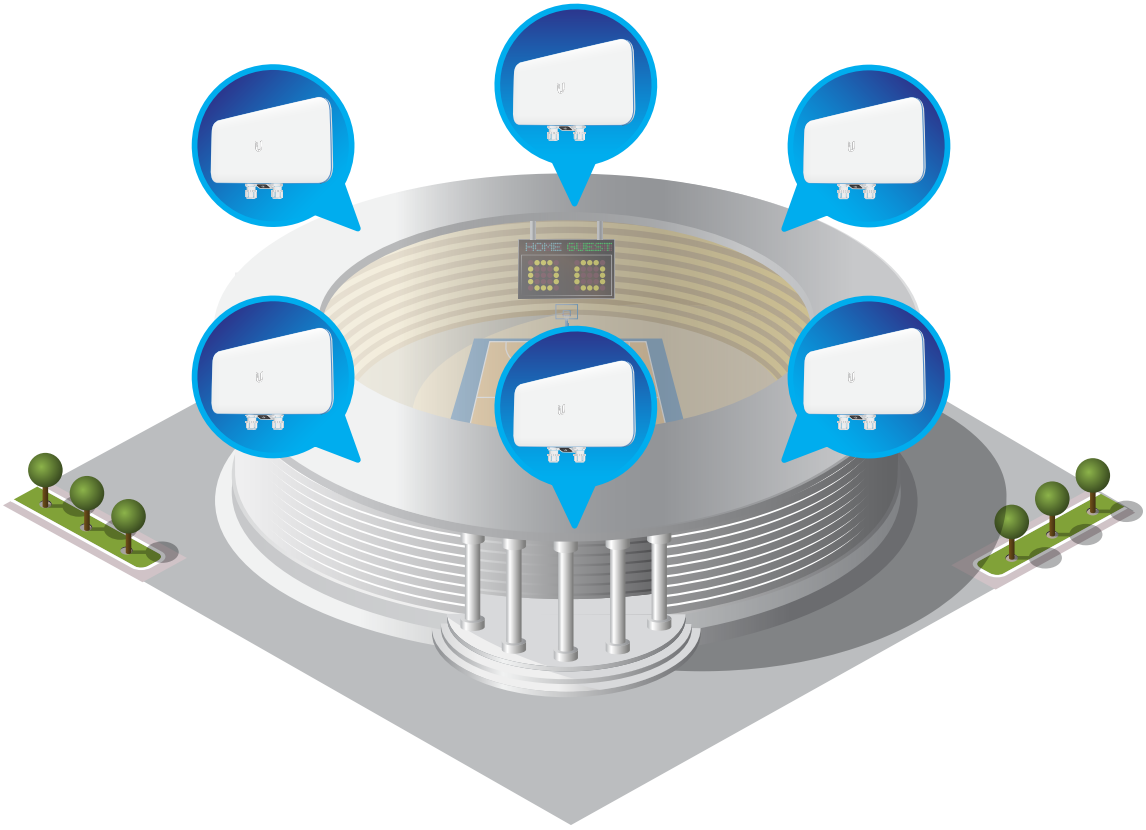
Mounting Versatility The UniFi WiFi BaseStation XG can be easily mounted on a pole or wall with the included brackets.

VESA Mounting Its VESA mount compatibility allows easy integration with the VESA MIS-D standard and can be used with mounts that comply with this standard.

Weather-Resistant Form Factor The IP67-certified enclosure of the UniFi WiFi BaseStation XG is designed to withstand the elements, making it ideal for outdoor deployment*.

* The black version must only be installed indoors due to potential overheating if installed outdoors.

Stadium Application Example



Specifications

UWB-XG, UWB-XG-BK	
Dimensions (Without Mount)	471.1 x 257.5 x 94.3 mm (18.55 x 10.14 x 3.713")
Weight (Without Mount)	3.2 kg (7.055 lb)
Networking Interface	(1) 10/100/1000 RJ45 Ethernet Port (1) 1/10 Gbps ICM Ethernet Port
Button	Reset
LED	RGB, Software-Controllable
Power Method	802.3bt PoE
Power Supply	50VDC, 1.2A Gigabit PoE
Power Save	Supported
Beamforming	Supported
Max. Power Consumption	31W
Supported Voltage Range	44-57VDC
Max. TX Power	25 dBm
MIMO	(3) 4 x 4
Operating Frequency	5 GHz
Antenna	Integrated Dual-Mode Antenna Array
Antenna Gain Small Cell Large Cell	 15 dBi 10 dBi
Antenna Beamwidth Small Cell Large Cell	 50° 90°
Wi-Fi Standards	802.11 a/n/r/k/v/ac/ac-wave2
Wireless Security	WEP, WPA-PSK, WPA-Enterprise (WPA/WPA2, TKIP/AES), 802.11w/PMF
Mounting	VESA-Compatible Mount, Pole/Wall (Brackets Included)
Operating Temperature	-10 to 70° C (14 to 158° F)
Operating Humidity	5 to 95% Noncondensing
Dust and Water Resistance	IP67
Certifications	CE, FCC, IC

Advanced Traffic Management	
VLAN	802.1Q
Advanced QoS	Per-User Rate Limiting
Guest Traffic Isolation	Supported
WMM	Voice, Video, Best Effort, and Background
Concurrent Clients	1500

Supported Data Rates (Mbps)	
Standard	Data Rates
802.11ac	6.5 Mbps to 1.7 Gbps (MCS0 - MCS9 NSS1/2/3/4, VHT 20/40/80) 58 Mbps to 1.7 Gbps (MCS0 - MCS9 NSS1/2, VHT 160)
802.11n	6.5 Mbps to 450 Mbps (MCS0 - MCS23, HT 20/40)
802.11a	6, 9, 12, 18, 24, 36, 48, 54 Mbps

Specifications are subject to change. Ubiquiti products are sold with a limited warranty described at: www.ubnt.com/support/warranty
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