AP43 ACCESS POINT SERIES

Highest Performance 802.11ax (Wi-Fi 6) Wi-Fi, Bluetooth® LE and IoT

Integrates AI for AX™ to Automate and Boost Performance

MIST LEARNING WLAN

Mist has brought true innovation to the wireless space with the world's first AI-driven Wireless LAN (WLAN).

The Mist Learning WLAN makes Wi-Fi predictable, reliable and measurable with unprecedented visibility into the user experience through customizable Service Level Expectation (SLE) metrics. Time consuming manual IT tasks are replaced with AI-driven proactive automation and self-healing, lowering Wi-Fi operational costs and saving substantial time and money.

Mist also brings enterprise-grade Wi-Fi, Bluetooth Low Energy (LE) and IoT together so businesses can increase the value of their wireless networks through personalized location services, such as wayfinding, proximity notifications, and asset location. With Mist's patented virtual BLE (vBLE) technology, no battery beacons or manual calibration are required.

All operations are managed via Mist's open and programmable microservices cloud architecture. This delivers maximum scalability and performance while also bringing DevOps agility to wireless networking and location services.

THE MIST CLOUD

The Mist Cloud leverages a microservices architecture in order to bring unparalleled agility, scale and resiliency to your network. It leverages an AI engine to lower OpEx and deliver unprecedented insight by using data science to analyze large amounts of rich metadata collected from Mist Access Points.

MIST ACCESS POINT FAMILY

The Mist enterprise-grade access point family consists of the: (a) AP43 Series that supports 802.11ax (Wi-Fi 6), Bluetooth LE and IoT; (b) the AP21, AP41 and AP61 Series that support 802.11ac Wave 2, Bluetooth LE and IoT; (c) the BT11 that supports Bluetooth LE. These access points are all built on a real-time microservices platform and are managed by the Mist Cloud.

MIST AP43 — **MIST AP43E (rear)**

The table below compares the supported major functions to help in selecting the most appropriate model(s).

	AP43	AP61	AP41	AP21
Deployment	Indoor	Outdoor	Indoor	Indoor
Wi-Fi Standard	802.11ax (Wi-Fi 6) 4x4 : 4	802.11ac Wave2 4x4 : 4	802.11ac Wave2 4x4 : 4	802.11ac Wave2 2x2 : 2
Wi-Fi Tri-Radio	✓	✓	✓	–
Antenna Options	Internal/ External	Internal/ External	Internal/ External	Internal
Virtual Bluetooth® LE	✓	✓	✓	✓
IoT Interface	✓	–	✓	–
IoT Sensors	Humidity, Pressure, Temperature	–	–	–
Warranty	Limited Lifetime	1 Year	Limited Lifetime	Limited Lifetime

SERVICES AVAILABLE FOR THE MIST AP43

WI-FI CLOUD SERVICES

Wi-Fi Assurance

For IT and NOC Teams

- Predictable and measurable Wi-Fi
- Service Level Expectations (SLE)
- WxLAN Policy Fabric for Role-Based Access
- Customizable Guest Wi-Fi Portal
- AI-Driven Radio Resource Management

Marvis Virtual Assistant

For IT Helpdesk Teams

- AI-Powered Virtual Network Assistant
- Natural Language Processing Interface
- Anomaly Detection
- Per-Client SLE Visibility and Enforcement
- Data Science Driven Root Cause Analysis

BLUETOOTH LE CLOUD SERVICES

Mobile Engagement

For Digital Experience Teams

- Accurate (1-3m) Turn-by-turn Navigation
- Sensor Fusion with Dead Reckoning
- Unsupervised Machine Learning
- Virtual Beacons with Custom Notifications
- Mobile SDK for iOS and Android

Asset Visibility

For Process & Resource Improvement Teams

- Identify Assets by Name and View Location
- Zonal/Room Accuracy for 3rd Party Tags
- Historical Analytics for Asset Tags
- Telemetry for Asset Tags (temp., motion, ...)
- APIs for Viewing Assets and Analytics

ACCESS POINT FEATURES

High Performance Wi-Fi

The AP43 Series is a tri-radio 4x4 802.11ax Access Point with maximum data rates of 2,400 Mbps in the 5GHz band and 1,184 Mbps in the 2.4GHz band. The 3rd radio functions as a network, location, and security sensor, a synthetic test client radio, as well as a spectrum monitor.

By adding 802.11ax Orthogonal Frequency Division Multiple Access (OFDMA), Multi-User Multiple Input Multiple Output (MU-MIMO) and BSS Coloring technologies into the AP43 Series, performance is boosted to unprecedented levels to support new bandwidth-hungry applications and soaring device densities.

AI for AX™

With the new features that 802.11ax (Wi-Fi 6) introduces to boost performance and efficiency, the complexity of configuring and operating an access point has soared. Mist is applying its industry-leading AI platform to automate and optimize these features with its AI for AX™ capabilities. We are leveraging AI in order to optimize BSS Coloring, to improve data transmission scheduling within OFDMA and MU-MIMO and to assign clients to the best radio to boost the overall performance of the network.

Boosts Spectral Efficiency

OFDMA improves spectral efficiency so that an increasing density of devices can be supported on the network, especially with IoT devices that often utilize smaller data packets than mobile devices and hence increase the burden and contention on the network. Additionally, BSS Coloring improves the co-existence of overlapping BSS' and allows spatial reuse within a given channel by reducing the packet collisions. This helps you improve spectral efficiency for dense networks where channel reuse is increasing.

Automatic RF optimization

Mist's Radio Resource Management (RRM) automates dynamic channel and power assignment, taking Wi-Fi and external sources of interference into account with its dedicated sensor radio. The Mist AI engine continuously monitors the coverage and capacity SLE metrics to learn and optimize the RF environment. The RRM learning algorithm uses hysteresis on a 24-hour window to conduct a site-wide rebalancing for optimal channel and power assignment.

Unprecedented Insight and Action

A dedicated dual band 3rd radio collects data for Mist's patent-pending Proactive Analytics and Correlation Engine (PACE), which leverages machine learning to analyze user experience, correlate problems and automatically detect the root cause of problems. These metrics are used to monitor service level expectations and provide proactive recommendations to ensure problems don't occur (or are fixed as quickly as possible when they do). This radio also is able to function as a synthetic test client to proactively detect and mitigate network anomalies.

Improves Battery Efficiency for IoT Devices

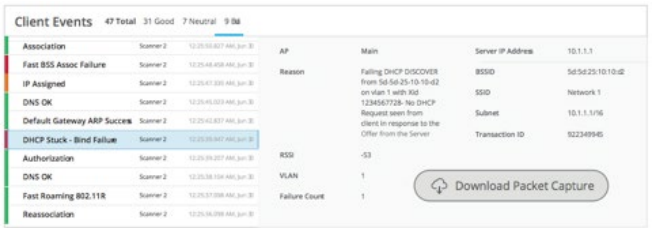
By incorporating the 802.11ax Target Wake Time (TWT) capability and Bluetooth 5.0, battery life for IoT devices can be extended as new IoT devices enter the network.

Dynamic Debugging

Constantly monitor services running on the AP43 Series and send alerts whenever a service behaves abnormally. Dynamic debugging relieves IT of having to worry about an AP going offline or any services running on becoming unavailable.

Dynamic Packet Capture

The Mist platform automatically captures packets and streams them to the cloud when major issues are detected. This saves IT time and effort and eliminates the need for truck rolls with sniffers to reproduce and capture data for troubleshooting.



Marvis Virtual Network Assistant

The NLP-based assistant, Marvis, simplifies troubleshooting and collection of insights for your network by leveraging AI and data science to proactively identify issues, determine the root causes and scope of impact and to gain insight into your network and users by eliminating the need to manually hunt through endless dashboards and CLI commands.

Effortless, Cloud-based Setup and Updates

The AP43 Series automatically connects to the Mist cloud, downloads its configuration, and joins the appropriate network. Firmware updates are retrieved and installed automatically, ensuring that the network is always up to date with new features, bug fixes, and security updates.

Integrated IoT Sensors and Interface Port

Mist has integrated pressure, temperature and humidity sensors into the access point to enable new applications and increase environmental context. This can be leveraged to get better visibility into your deployments and further improve location context.

Mist also continues its industry innovation with its unique IoT port that has analog and digital interfaces to directly connect IoT devices that lack network interfaces and thus allow customers to leverage our complete APIs to interact and integrate these things into their business applications and workflows.

High Accuracy Indoor Location

The AP43 has a 16-element Virtual Bluetooth LE (vBLE) antenna array controlled from the Mist Cloud. Passive antennas enhance the power of a single transmitter and produce directional beams (or can be combined to act as an omnidirectional radio) to accurately detect distance and location with 1 to 3 meter accuracy. With Mist's patented vBLE technology, you can deploy an unlimited amount of virtual beacons in your physical environment without requiring battery powered BLE beacons. With support for Bluetooth 5.0, range and battery life is boosted for IoT devices.

SPECIFICATIONS	
Wi-Fi Standard	802.11ax (Wi-Fi 6), including support for OFDMA, 1024-QAM, MU MIMO, Target Wake Time (TWT), Spatial Frequency Reuse (BSS Coloring). Backwards compatibility with 802.11a/b/g/n/ac.
Combined Highest Supported Data Rates	Dual-Band: 3.5 Gbps. Dual-5GHz: 4.8 Gbps.
2.4 GHz	4x4 : 4 802.11ax up to 1,148 Mbps data rate
5 GHz	4x4 : 4 802.11ax up to 2,400 Mbps data rate
MIMO Operation	Four spatial stream Single User (SU) MIMO for up to 2,400 Mbps wireless data rate to individual 4x4 HE80 Four spatial stream Multi User (MU) MIMO for up to 2,400 Mbps wireless data rate to up to four MU-MIMO capable client devices simultaneously
Dedicated Third Radio	2x2 : 2SS, Dual-band WIDS/WIPS, spectrum analysis, synthetic client and location analytics radio
Internal Antennas	Four 2.4GHz omni-directional antennas with 4 dBi peak gain Four 5GHz omni-directional antennas with 6 dBi peak gain
Bluetooth 5.0	16 Directional Antennae + Omni Antenna Bluetooth Array
Beam Forming	Transmit Beamforming and Maximal Ratio Combining
Power Options	802.3at PoE, 802.3bt PoE, 12V/3A DC power supply
Power Adaptor	100-240VAC, 50-60 Hz, input. 12V/3A DC output.
Dimensions	222 x 222 x 53 mm (8.74 x 8.74 x 2.09 in)
Weight	1.6 kg (3.53 lbs) excluding mount and accessories
Shipping Box	Size (L x W x H): 279 x 298 x 76 mm (11.0 x 11.8 x 3.0 in) Weight: 2.18 kg (4.2 lbs)
Operating Temperature	Internal antenna: 0° to 40° C External antenna: -20° to 50° C
Operating Humidity	10% to 90% maximum relative humidity, non-condensing
Operating Altitude	3,048m (10,000 ft)

I/O AND INDICATORS	
IoT Sensors	Humidity Pressure Temperature
IoT Port	8-pin interface for digital I/O and analog input (0 to +5V)
USB	USB2.0 support interface
12VDC	Input for optional DC power supply
Eth0	100/1000Base-T, 2.5GBase-T (802.3bz); RJ45; PoE PD
Eth1	10/100/1000Base-T; RJ45; optional PoE PSE mode (requires 802.3bt on Eth0)
External Antennas (AP43E only)	Six RP-SMA Male connectors
Reset	Reset to the factory default settings
Indicators	One multi-color status LED

MOUNTING BRACKETS	
APBR-U	Universal Bracket
APBR-T58	⅜" Threaded Rod
APBR-M16	16mm Threaded Rod (M16-2)

ORDERING INFORMATION	
US/FCC Domain	AP43-US (Internal Antenna) AP43E-US (External Antenna)
Rest of the World	AP43-WW (Internal Antenna) AP43E-WW (External Antenna)

MIST BLUETOOTH ANTENNA ARRAY

PATENTED vBLE TECHNOLOGY

In addition to the industry-leading Wi-Fi technology that is at the heart of the AP43 Series, it also incorporates our second generation patented dynamic 16-element Virtual Bluetooth LE (vBLE) antenna array, which combined with our machine learning, enables businesses to eliminate the need for battery-powered beacons. This maximizes the scalability and optimizes the investment cost of deploying location based services.

Virtual Bluetooth LE enables businesses to provide rich location-based experiences that are engaging, accurate, real-time and scalable.