



AP41 ACCESS POINT SERIES

Highest Performance Wi-Fi, Bluetooth® LE and IoT

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 by leveraging its unique 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.

The Mist platform is 100% programmable, using open APIs, for full automation and seamless integration with complementary products across the LAN, WAN, security, engagement and asset location areas.

The Mist Cloud enables wireless and location services to be consumed in a scalable and cost effective manner.



MIST ACCESS POINT FAMILY

The AP41 Series consists of: AP41 with internal omnidirectional antennas and AP41E with external antenna connectors. The AP21, AP41, and AP61 are high performance, enterprise grade Access Points for 802.11ac Wave 2 Gigabit Wi-Fi and Bluetooth LE. The Mist BT11 is an enterprise-grade Access Point exclusively for Bluetooth LE. To view other datasheets, go to: www.mist.com/resources/datasheets

	AP61	AP41	AP21	BT11
Deployment	Outdoor	Indoor	Indoor	Indoor
Wi-Fi	802.11ac Wave 2 4x4 : 4SS	802.11ac Wave 2 4x4 : 4SS	802.11ac Wave 2 2x2: 2SS	-
Wi-Fi Tri Radio	✓	✓	-	-
IoT Interface	-	✓	-	-
Antenna Options	Internal/ External	Internal/ External	Internal	Internal
Virtual Bluetooth LE	✓	✓	✓	✓

SERVICES AVAILABLE FOR THE MIST AP41

WI-FI CLOUD SERVICES



WI-FI WITH ASSURANCE

Mist makes Wi-Fi predictable, reliable, and measurable. Automate operations, save time and money, and get unprecedented visibility into the Wi-Fi user experience.



MARVIS VIRTUAL ASSISTANT

Meet Marvis – the first AI-driven virtual network assistant. Now you can ask questions and get intuitive answers on par with a wireless expert.

BLUETOOTH LE CLOUD SERVICES



USER ENGAGEMENT

Add real-time wayfinding, proximity notifications and mobile app integration by enabling this service to boost experience and engagement with the virtualized Bluetooth LE within your Mist AP.



ASSET VISIBILITY

Leverages Mist's patented virtualized Bluetooth LE antenna array to easily locate and identify people and things. Brings visibility to BLE-enabled mobile/IoT devices and 3rd party asset tags.

High performance Wi-Fi

The AP41 Series is a tri-radio 4x4 Access Point with maximum data rates of 1,730 Mbps in the 5GHz band and 800 Mbps in the 2.4GHz band. The 3rd radio functions as a network, location, and security sensor as well as a spectrum monitor.

The AP41 Series is available with internal and external antenna models.

High accuracy indoor location

The AP41 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 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.



Unprecedented insight and action

A dedicated dual band 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).

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.

Client Events 47 Total 31 Good 7 Neutral 9 Bad				AP	Main	Server IP Address
Association	Scanner 2	12:25:50.827 AM, Jun 30				10.1.1
Fast BSS Assoc Failure	Scanner 2	12:25:48.458 AM, Jun 30	Reason	Falling DHCP DISCOVER from 5d:5d:25:10:10:42 on wlan1 with MAC 52:54:00728	BSSID	5d:5d:25:10:10:42
IP Assigned	Scanner 2	12:25:47.355 AM, Jun 30			SSID	Network 1
DNS OK	Scanner 2	12:25:45.029 AM, Jun 30			Subnet	10.1.1.1/16
Default Gateway ARP Success	Scanner 2	12:25:42.837 AM, Jun 30			Transaction ID	922349345
DHCP Stuck - Bind Failure	Scanner 2	12:25:39.907 AM, Jun 30				
Authorization	Scanner 2	12:25:39.207 AM, Jun 30	RSSI	-53		
DNS OK	Scanner 2	12:25:38.104 AM, Jun 30	VLAN	1		
Fast Roaming 802.11R	Scanner 2	12:25:37.058 AM, Jun 30	Failure Count	1		
Reassociation	Scanner 2	12:25:36.098 AM, Jun 30				

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 AP41 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.

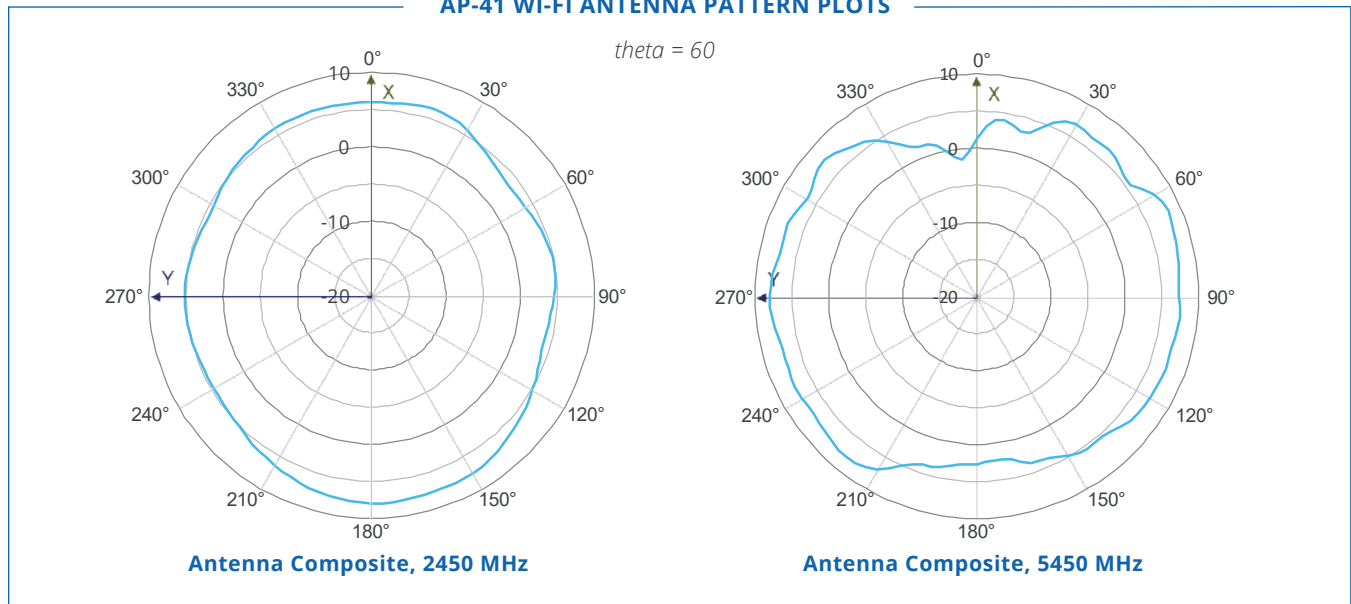
Dynamic debugging

Constantly monitor services running on the AP41 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.

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.

AP-41 WI-FI ANTENNA PATTERN PLOTS



Antenna Composite, 2450 MHz

Antenna Composite, 5450 MHz

SPECIFICATIONS	
Wi-Fi Standard	802.11ac Wave 2 (backwards compatibility with 802.11a/b/g/n)
Combined Highest Supported Data Rates	2.5 Gbps
2.4 Ghz	4x4:4 802.11b/g/n/ac up to 800 Mbps data rate 802.11ac for VHT capable clients
5 Ghz	4x4:4 802.11a/n/ac Wave 2 up to 1,700 Mbps data rate
MIMO Operation	Four spatial stream Single User (SU) MIMO for up to 1,733 Mbps wireless data rate to individual 4x4 VHT80 Four spatial stream Multi User (MU) MIMO for up to 1,733 Mbps wireless data rate to up to three MU-MIMO capable client devices simultaneously
Dedicated Third Radio	2.4 GHz & 5 GHz dual-band WIDS/WIPS, spectrum analysis & location analytics radio
Internal Antennas (AP41 only)	Four 2.4GHz omni-directional antennas with 4 dBi peak gain Four 5GHz omni-directional antennas with 6 dBi peak gain
Bluetooth	16 Directional Antennae + 1 Omni Antenna Bluetooth Array
Beam Forming	Transmit Beamforming and Maximal Ratio Combining
Power Options	802.3at PoE. 12V/3A DC power supply
Powering Adaptor	100-240VAC, 50-60 Hz, input. 12V/3A DC output.
Dimensions	215 x 215 x 52 mm (8.46 x 8.46 x 2.05 in)
Weight	1.6 kg (3.53 lbs) excluding mount and accessories
Shipping Box	Size (L x W x H): 285 x 268 x 86 mm (10.6 x 10.6 x 3.4 in) Weight: 2.18 kg (4.82 lbs) Boxes per carton: 8
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)
Electromagnetic Emissions	FCC Part 15 Class B
Reliability (MTBF)	AP41: 1,243,955 hours (142 yrs) @ 25C; 748,877 hours (85 yrs) @ 40C AP41E: 1,264,116 hours (144 yrs) @ 25C; 508,342 hours (58 yrs) @ 40C

I/O PORTS & ACCESSORIES	
Reset	Reset to the factory default settings
USB	USB2.0 support interface
12VDC	Input for optional DC power supply
IoT	8-pin interface for digital I/O and analog input (0 to +5V)
Module	10/100/1000 BaseT RJ45; optional PoE PSE mode
Eth1	10/100/1000 BaseT RJ45 interface
Eth0+PoE	10/100/1000 BaseT RJ45; supports 802.3at PoE PD
External Antennas (AP41E only)	Four RP-SMA Male connectors
Indicators	One multi-color status LED

COMPLIANCE STANDARDS	
CE Mark	
UL 60950-1	
CAN/CSAC22.2	
No. 609501	
UL 2043	
FCC Part 15.247, 15.407, 15.107, and 15.109	
RSS-247	
ICES-003	

MOUNTING BRACKETS	
AP41BR1	Ceiling T-bar
AP41BR2	Ceiling Drywall
AP41BR3	5/8" Threaded Rod
AP41BR4	2mm (1/16") Threaded Rod

ORDERING INFORMATION	
US/FCC Domain	AP41-US (Internal Antenna) AP41E-US (External Antenna)
Rest of the World	AP41-WW (Internal Antenna) AP41E-WW (External Antenna)

Mist Bluetooth Antenna Array

