Data sheet



HPE Mist Networking AP45 Access Point



Product description

HPE Mist Networking AP45 Access Point is a flagship indoor Wi-Fi 6E access point that's ideal for the most demanding Wi-Fi applications, including high-density environments. It's a tri-band device with a dedicated fourth radio to allow more capacity, wider channels, and less interference to support growing mobility demands and digital transformation efforts.

AP45 brings enterprise-grade Wi-Fi and patented virtual Bluetooth® low energy technology together so businesses can increase the value of their wireless networks through personalized location services, including user engagement, asset visibility, and contact tracing. It provides the industry's most accurate and scalable location services with no need for battery-powered Bluetooth LE beacons or manual calibration.

While wired and wireless networks are business critical, without the right architecture they can be harder to operate given the sheer number of mobile and internet of things (IoT) devices—not to mention the extensive variety of hardware, operating systems, and applications currently in use. Traditional architectures—highly manual and network-centric—lack the scale, flexibility, and end-to-end visibility required to support modern mobility requirements and the IT departments that manage them.

Product overview
HPE Mist Networking AP45 Access Point brings the highest performance and virtual Bluetooth® low energy technology to the 6 GHz band for enterprises needing increased channel widths and capacity and advanced location based services.

HPE Mist benefits

— Ease of deployment and ongoing management

— Centralized control and visibility

— Quick access to new features and functionality with no disruption to services

— Agility to scale as network needs grow

HPE Self-Driving Network

HPE Mist brings true innovation to wireless networking with the world's first AI-native wireless LAN (WLAN). HPE Self-Driving Network makes Wi-Fi predictable, reliable, and measurable, offering unprecedented visibility into the user experience through the use of unique service-level expectation (SLE) metrics. Proactive, AI-native automation and a self-healing network replace time-consuming manual tasks, lowering Wi-Fi operational costs and saving substantial time and money. All operations are managed using the open and programmable microservices that are based on HPE Mist.

HPE Mist architecture

The HPE Mist cloud-native, AI-native microservices architecture delivers unparalleled agility, scale, and resiliency to your network. It lowers OpEx and delivers unprecedented insights into network performance, behaviors, traffic patterns, and potential trouble spots by using data science to analyze large amounts of rich metadata collected by HPE Mist Networking Access Points. HPE Networking AI solutions for Wi-Fi 6E optimize operator and user experiences with secure, client-to-cloud automation, insight, and AI-native actions.

Table 1 compares the supported major functions of the HPE Mist Networking Access Points for Wi-Fi 6E and Wi-Fi 6 to help in selecting the most appropriate model(s).

Table 1. HPE Mist Networking Access Points for WI-FI 6E and Wi-Fi 6

	HPE Mist Networking AP45 Access Point	HPE Mist Networking AP34 Access Point	HPE Mist Networking AP24 Access Point	HPE Mist Networking AP43 Access Point	HPE Mist Networking AP33 Access Point	HPE Mist Networking AP12 Access Point	HPE Mist Networking AP63 Access Point	HPE Mist Networking AP64 Access Point
Deployment	Indoor	Indoor	Indoor	Indoor	Indoor	Indoor wall plate/desk mount	Outdoor	Indoor/outdoor
Wi-Fi standard	Wi-Fi 6E 802.11ax (Wi-Fi 6E) 4x4:4	Wi-Fi 6E 802.11ax (Wi-Fi 6E) 2x2:2	Wi-Fi 6E 802.11ax (Wi-Fi 6E) 2x2:2 2.4/6 + 5 GHz	802.11ax (Wi-Fi 6) 4x4:4	802.11ax (Wi-Fi 6) 5 GHz: 4x4:4 2.4 GHz: 2x2:2	802.11ax (Wi-Fi 6) 2x2:2	802.11ax (Wi-Fi 6) 4x4:4	802.11ax (Wi-Fi 6E) 2x2:2
Wi-Fi radio	Dedicated fourth radio for scanning	Dedicated fourth radio for scanning	Dedicated third radio for scanning	Dedicated third radio for scanning	Dedicated third radio for scanning	Dedicated third radio for scanning	Dedicated third radio for scanning	Dedicated third radio for scanning
Antenna options	Internal/ external	Internal	Internal	Internal/ external	Internal	Internal	Internal/ external	Internal
Virtual Bluetooth® low energy	✓	—	—	✓	✓	—	✓	—
USB	✓	✓	✓	✓	✓	—	—	—
IoT sensors	Temperature, accelerometer	Temperature, accelerometer	Temperature, accelerometer	Humidity, pressure, temperature	Temperature, accelerometer	—	Humidity, pressure, temperature	Temperature, accelerometer
GPS/GNSS	—	—	—	—	—	—	—	✓
Warranty	Limited lifetime	Limited lifetime	Limited lifetime	Limited lifetime	Limited lifetime	Limited lifetime	One year	One year
Frequencies supported	2.4 GHz, 5 GHz, 6 GHz	2.4 GHz, 5 GHz, 6 GHz	2.4 GHz, 5 GHz, 6 GHz	2.4 GHz, 5 GHz	2.4 GHz, 5 GHz	2.4 GHz, 5 GHz	2.4 GHz, 5 GHz	2.4 GHz, 5 GHz, 6 GHz

Services available for HPE Mist Networking AP45 Access Point

Wi-Fi cloud services

HPE Mist Networking Wi-Fi assurance

For IT and NOC teams:

— Predictable and measurable Wi-Fi

— Service-level expectations (SLEs) support

— WxLAN policy fabric for role-based access

— Customizable guest Wi-Fi portal

— Radio resource management (RRM) driven by AI

HPE Marvis AI Assistant

For IT help desk teams:

— AI-powered virtual network assistant

— Natural language processing interface

— Anomaly detection

— Client SLE visibility and enforcement

— Data science-driven root-cause analysis

Bluetooth® cloud services

HPE Mist Networking 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™

HPE Mist Networking Asset Visibility
For process and resource improvement teams:

— Identification of assets by name and view location

— Zonal/room accuracy for third-party tags

— Historical analytics for asset tags

— Telemetry for asset tags (temperature, motion, and other data)

— APIs for viewing assets and analytics

Analytics cloud services

HPE Mist Networking Premium Analytics
For network teams:

— Baseline analytics features come included with HPE Mist Networking Wi-Fi Assurance, HPE Mist Networking Mobile Engagement, and HPE Mist Networking Asset Visibility

— End-to-end network visibility

— Orchestrated networking and application performance queries

— Simplified network transparency

For business teams:

— Baseline analytics features come included with HPE Mist Networking Wi-Fi Assurance, HPE Mist Networking Mobile Engagement, and HPE Mist Networking Asset Visibility

— Customer segmentation and reporting based on visitor telemetry

— Customized[1] dwell and third-party reporting for traffic and trend analysis

— Correlated customer-guest traffic and trend analysis

Access point features

High performance Wi-Fi
HPE Mist Networking AP45 Access Point is a four radio, four-spatial stream 802.11ax access point with maximum data rates of 4800 Mbps in the 6 GHz band, 2400 Mbps in the 5 GHz band, and 1148 Mbps in the 2.4 GHz band. The dedicated fourth radio functions as a network, location, and security sensor, as well as a synthetic test client radio and a spectrum monitor. With 802.11ax orthogonal frequency division multiple access (OFDMA), multi-user, multiple input, multiple output (MU-MIMO), and BSS coloring technologies, AP45 offers performance at unprecedented levels to support new bandwidth-hungry applications and soaring device densities.

AI for agent experience (AX)
With the features 802.11ax (Wi-Fi 6E) offers to boost performance and efficiency, configuring and operating an access point has grown far more complex. HPE Mist automates and optimizes these features with AI for AX capabilities to optimize BSS coloring, improve data transmission scheduling within OFDMA and MU-MIMO, and assign clients to the best radio to boost the overall performance of the network.

Greater spectral efficiency
OFDMA improves spectral efficiency so that an increasing density of devices can be supported on the network. Density has become an issue with the rapid growth of IoT devices, which often utilize smaller data packets than mobile devices and hence increase the burden and contention on the network. Additionally, BSS coloring improves the coexistence of overlapping BSSs and allows spatial reuse within a given channel by reducing packet collisions.

Automatic radio frequency (RF) optimization
With the increasing complexity that the addition of 6 GHz spectrum to the 2.4 GHz and 5 GHz spectrum brings, reliable RF optimization is even more critical than in the past. Radio resource management automates dynamic channel and power assignment, taking Wi-Fi and external sources of interference into account with a dedicated sensor radio. The AI engine continuously monitors coverage and capacity SLE metrics to learn and optimize the RF environment. A learning algorithm uses hysteresis on a 24-hour window to conduct a sitewide rebalancing for optimal channel and power assignment.

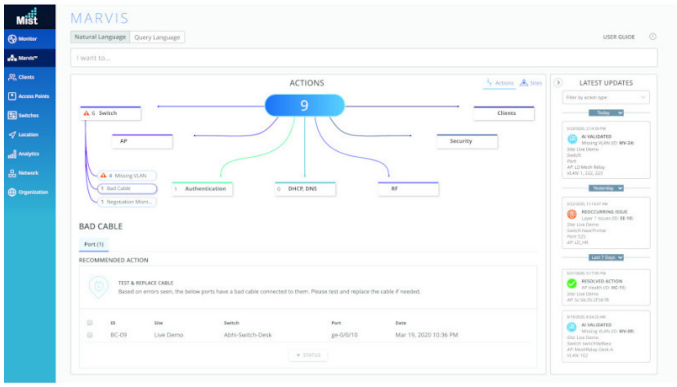
Proactive insight and action
A dedicated, tri-band fourth radio collects data for HPE's patent-pending proactive analytics and correlation engine, which uses machine learning to analyze user experiences, correlate problems, and automatically detect their root causes. These metrics are used to monitor SLEs and provide proactive recommendations to ensure problems don't occur (or are fixed as quickly as possible when they do). This radio also functions as a synthetic test client to proactively detect and mitigate network anomalies.

Improved IoT battery efficiency
By incorporating the 802.11ax target wake time (TWT) capability and Bluetooth® 5.1, HPE Mist Networking AP45 Access Points help extend the battery life of IoT devices, particularly as additional ones join the network.

Dynamic debugging
Constantly monitor services running on AP45 and send alerts whenever a service behaves abnormally. Dynamic debugging relieves IT of having to worry about an access point going offline or any services running on it becoming unavailable.

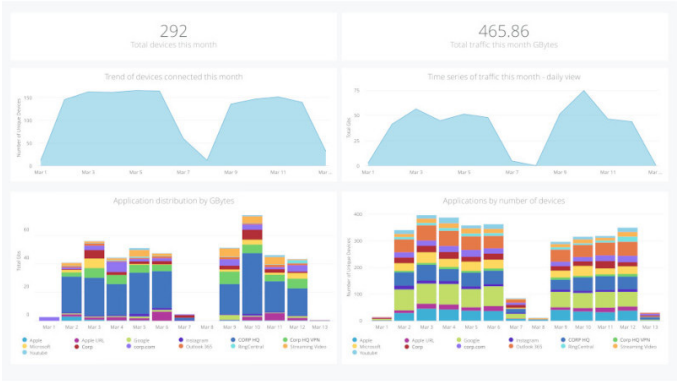
Dynamic packet capture
HPE Mist automatically captures packets and streams them to the cloud when major issues are detected. This saves IT time and effort and eliminates the need for truck rolls with sniffers to reproduce and capture data for troubleshooting.

HPE Marvis AI Assistant
HPE Marvis is a natural language processing (NLP)-based assistant with a conversational interface that helps the understanding of user intent and goals, simplifies troubleshooting, and collects network insights. It uses AI and data science to proactively identify issues, determine the root causes and scope of impact, and gain insights into your network and user experiences. It eliminates the need to manually hunt through endless dashboards and CLI commands.



Effortless, cloud-based setup and updates
AP45 automatically connects to HPE Mist, 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.

HPE Mist Networking Premium Analytics
HPE Mist Networking Wi-Fi Assurance, HPE Mist Networking User Engagement, and HPE Mist Networking Asset Visibility include a base analytics capability for analyzing up to 30 days of data, which enables you to simplify the process of extracting network insights across your enterprise. If you require dynamic insights like motion paths[1] and other third-party[1] data and would like the option of customized reports, HPE Mist Networking Premium Analytics is available as an additional subscription.



High-accuracy indoor location
AP45 has a 16-element virtual Bluetooth® low energy antenna array controlled from HPE Mist. 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 1-3 meter accuracy. With HPE Networking patented virtual Bluetooth® low energy technology, you can deploy an unlimited number of virtual beacons in your physical environment with no need to install battery-powered physical Bluetooth® low energy beacons. Support for Bluetooth® 5.1 boosts IoT device range and battery life.



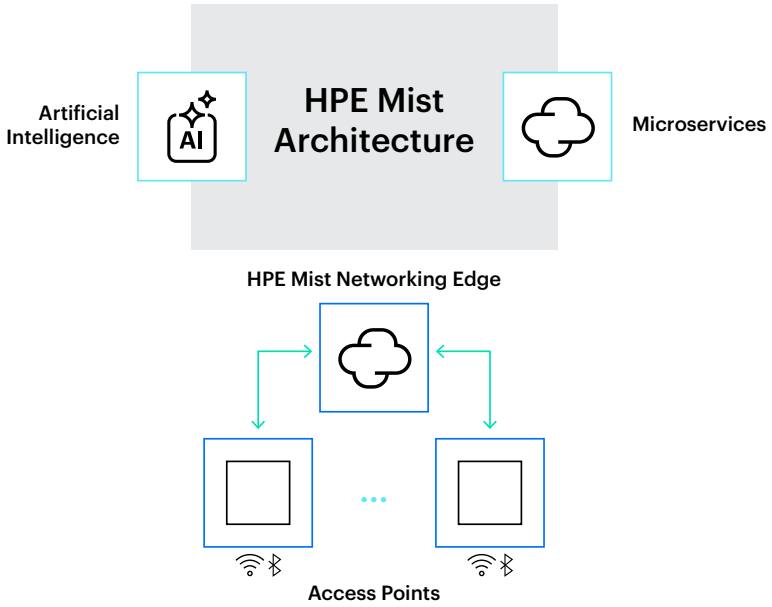
Patented virtual Bluetooth® low energy technology

In addition to the industry-leading Wi-Fi technology at the heart of AP45, our second-generation, patented, and dynamic, 16-element virtual Bluetooth® low energy antenna array combines with machine learning to eliminate the need for battery-powered beacons. This maximizes scalability and optimizes your deployment investment in location-based services.

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

[1] HPE Mist Networking Premium Analytics service subscription is needed





HPE Mist Networking Edge

HPE Mist Networking Access Points offer a flexible data plane. HPE Mist Networking Edge is an on-premises appliance that runs a tunnel termination service. Traffic can be broken out locally or tunneled to HPE Mist Networking.

Use cases include seamless mobility in large campus environments, tunneling of guest traffic to a DMZ, IoT segmentation, and teleworker services.



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	Tri-band: 8.3 Gbps Dual 5 GHz (internal antenna model): +6 GHz 9.6 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
6 GHz	4x4:4 802.11ax up to 4,800 Mbps data rate
MIMO operation	Four spatial stream SU-MIMO for up to 4,800 Mbps wireless data rate to individual 4x4 HE160 Four spatial stream MU-MIMO for up to 4,800 Mbps wireless data rate to up to four MU-MIMO capable client devices simultaneously
Dedicated fourth radio	2.4 GHz, 5 GHz, and 6 GHz tri-band WIDS/WIPS, spectrum analysis, synthetic client, and location analytics radio
Internal antennas (AP45)	Four 2.4 GHz omnidirectional antennas with 4 dBi peak gain Four 5 GHz omnidirectional antennas with 6 dBi peak gain Four 6 GHz omnidirectional antennas with 6 dBi peak gain
Bluetooth® 5.1	Virtual Bluetooth® low energy 16-element directional antenna array + omni Bluetooth® antenna
Beam forming	Transmit beamforming and maximal ratio combining
Power options	— 802.3af: Single radio 1x1 + Bluetooth® low energy and scan. Eth0 1 Gbps, Eth1 disabled, no USB. This mode is meant to connect to the cloud and tell you the access point needs more power — 802.3at: Any two radios 4x4 or with three data radios – 2x2 on 2.4 GHz, 4x4 on 5 GHz, and 2x2 on 6 GHz. Bluetooth® low energy and scan. No power supply equipment (PSE) out or USB — 802.3bt: Full function, tri radio 4x4, scan, Bluetooth® low energy, eth0, eth1 + PSE out, USB
Dimensions	230 mm x 230 mm x 50 mm
Shipping box	289 mm x 268 mm x 191 mm
Weight	AP45 is 2.01 kg, AP45E is 1.97 kg
Operating temperature	Internal antenna: 0° to 40° C. External antenna: -10° to 50° C
Operating humidity	10% to 90% maximum relative humidity, non-condensing
Operating altitude	3,048 m (10,000 ft)
Trusted platform module (TPM)	Includes a TPM for infrastructure security

I/O and indicators

IoT sensors	Temperature, accelerometer
USB	USB 2.0 support interface, 900 mA output
Eth0	100/1000/2500/5000Base-T (802.3bz); RJ45; PoE PD
Eth1	10/100/1000Base-T; RJ45; optional PoE 15.4W PSE mode (requires 802.3bt on Eth0)
External antennas (AP45E)	Two pluggable antenna connectors; 2.4/5 (4 pin), 6+Scan (6 pin)
Reset	Reset to the factory default settings
Indicators	One multicolor status LED
Traffic forwarding options	Eth0, Eth1, HPE Mist Networking Edge

Mounting brackets

APBR-U[2]	Universal bracket
APBR-ADP-M16	16mm threaded rod (M16-2)
APBR-ADP-T58	3⁄8" threaded rod
APBR-ADP-CR9	9⁄16" T-rail, channel rail
APBR-ADP-RT15	15⁄16" T-rail
APBR-ADP-WS15	1-1/2" T-rail
APBR-ADP-T12	1/2" threaded rod

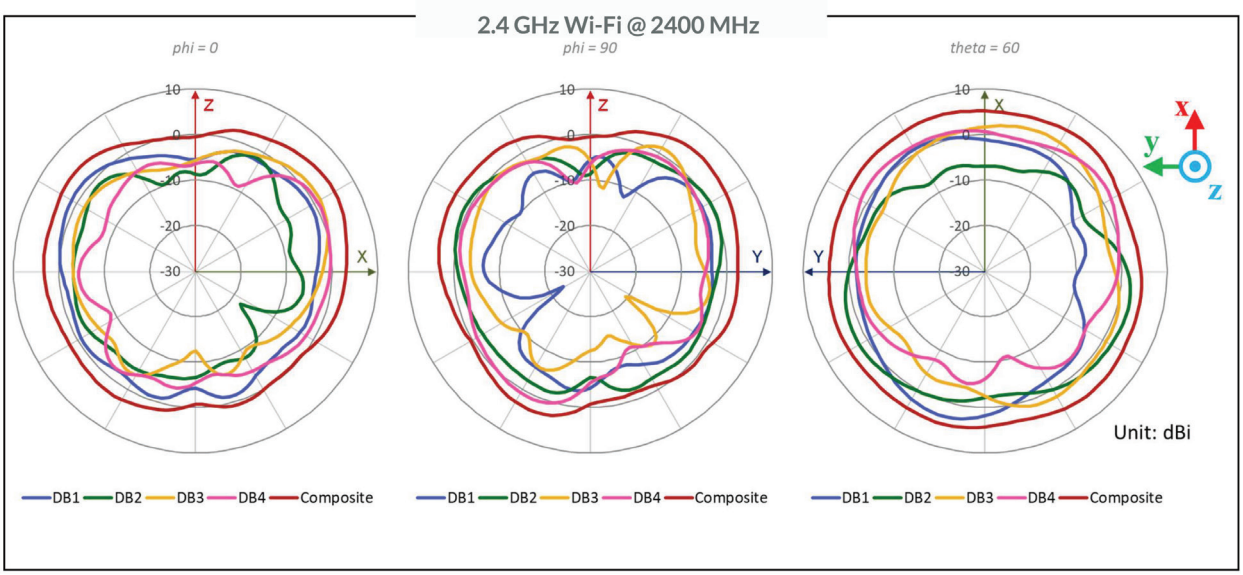
Ordering information

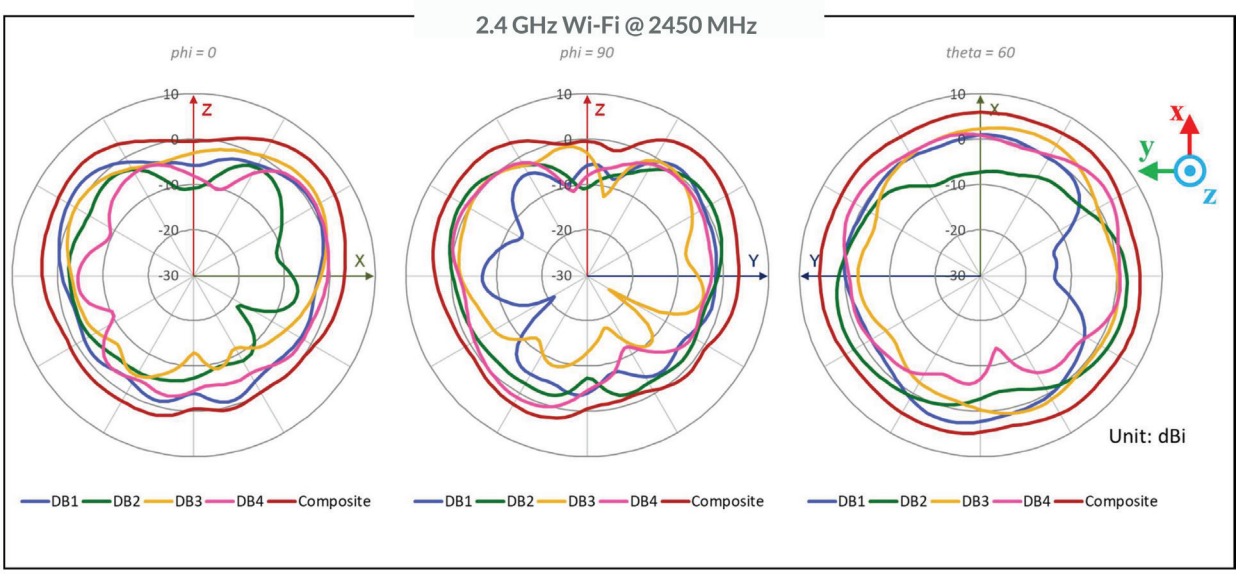
United States only	AP45-US (internal antenna) AP45E-US (external antenna)
Outside of United States	AP45-WW (internal antenna) AP45E-WW (external antenna)

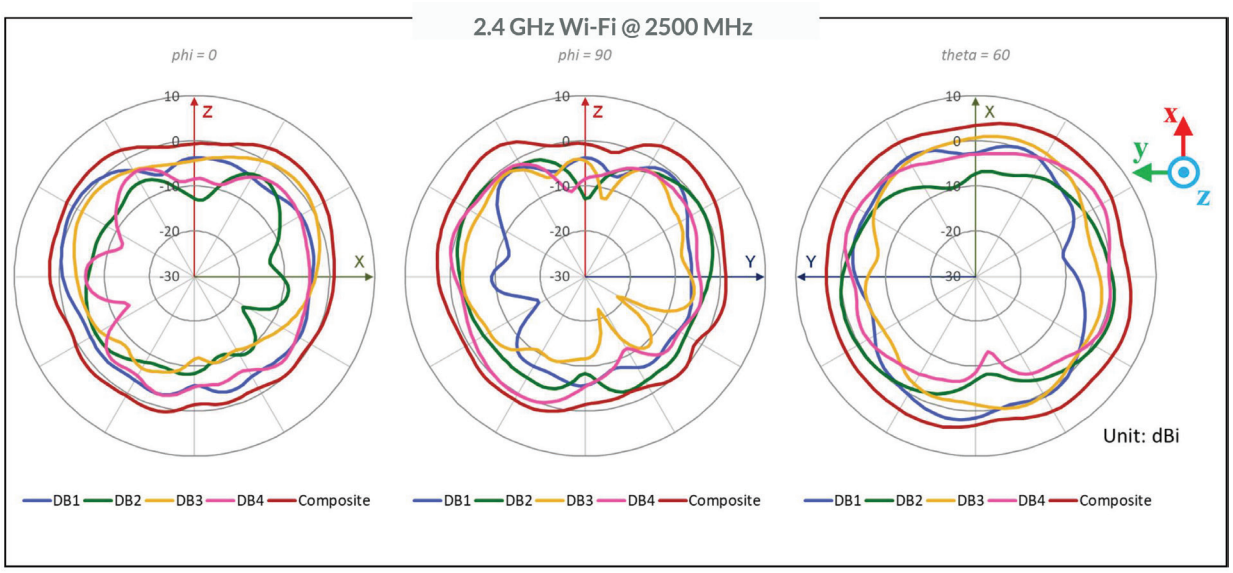
* HPE Networking products are manufactured in accordance with electrical and environmental regulations specific to certain regions and countries. Customers are responsible for ensuring that any regional or country-specific SKUs are only used in the specified authorized area. Failure to do so may void the warranty of the HPE Networking products.

[2] The HPE Mist Networking AP45 Access Point package includes one universal bracket. APBR-U is available separately as an accessory.

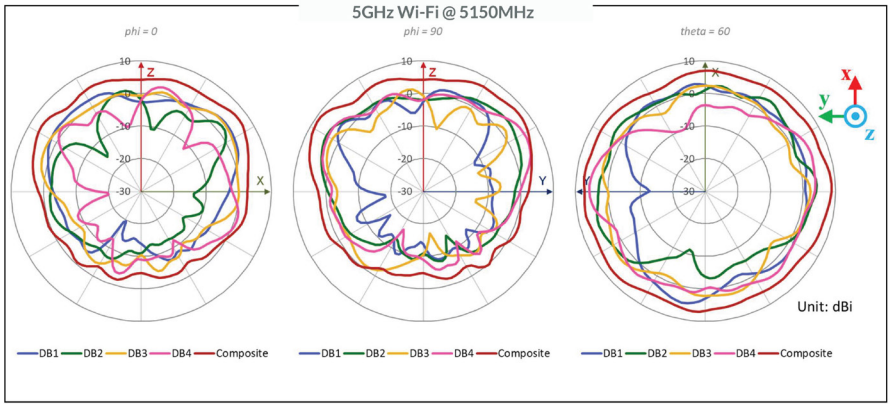
HPE Mist Networking AP45 Access Point dual band radio 2.4 GHz Wi-Fi antenna plots

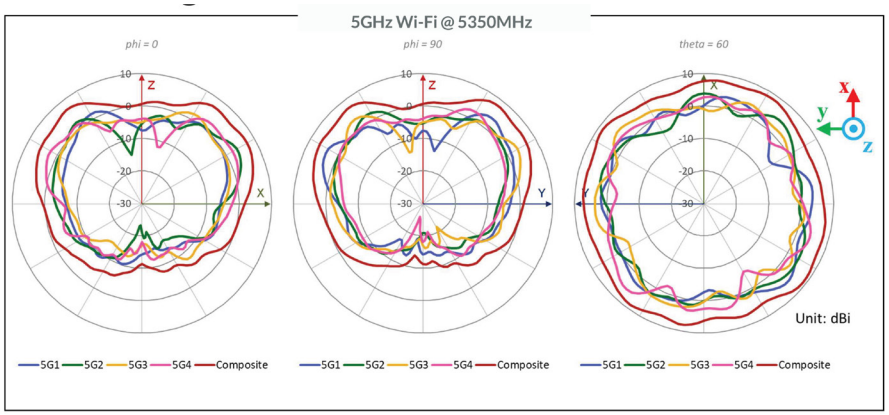


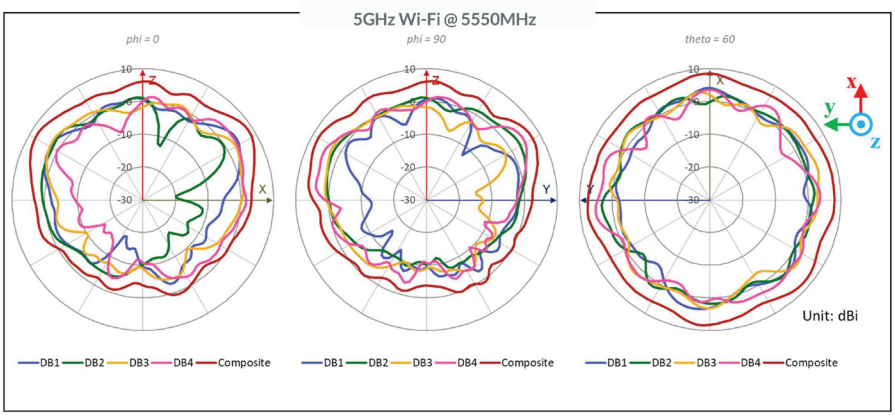


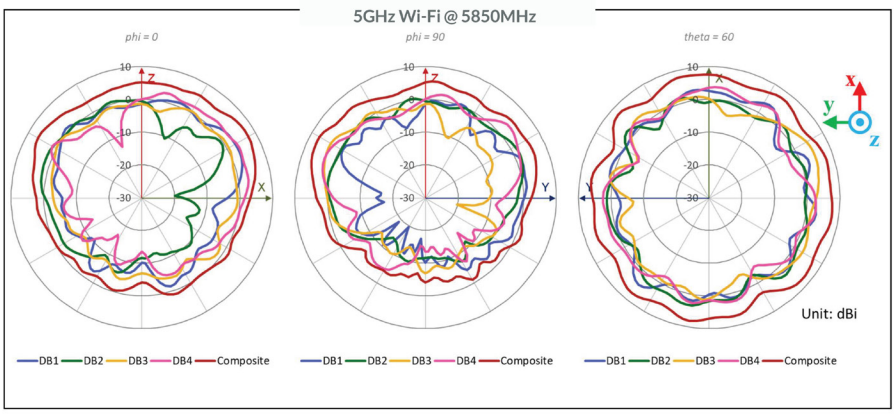


HPE Mist Networking AP45 Access Point dual band radio 5 GHz Wi-Fi antenna plots

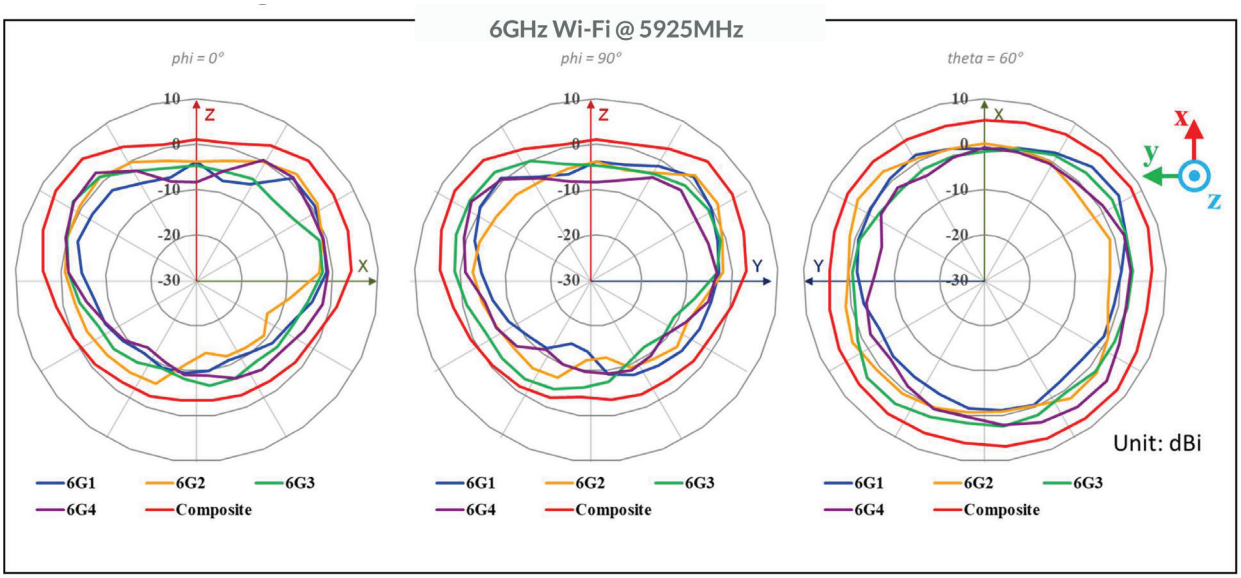


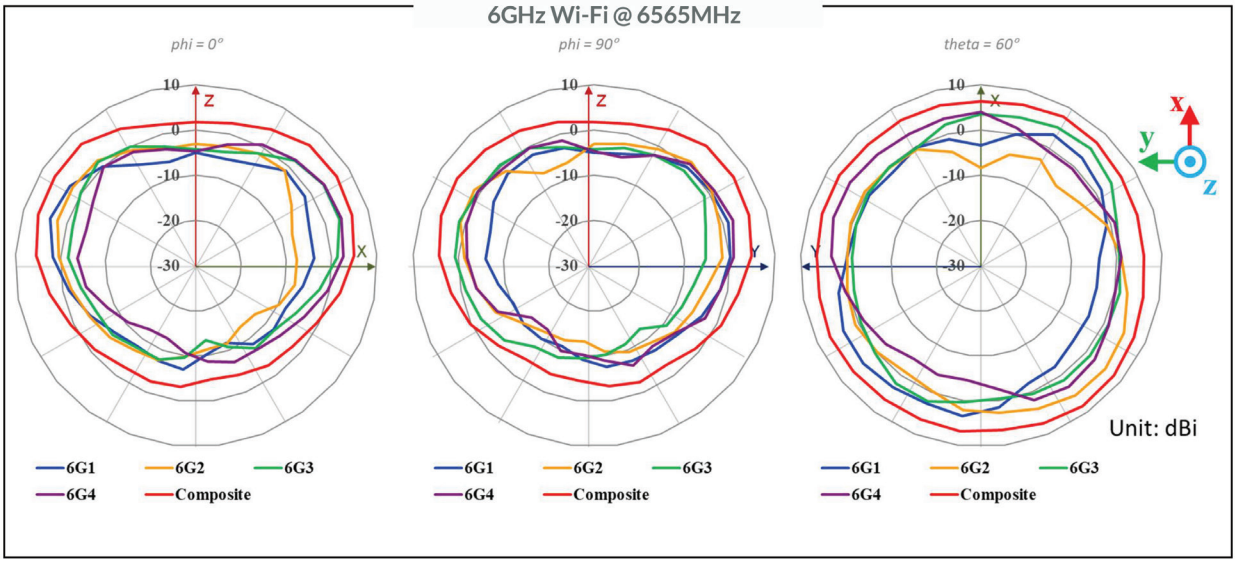


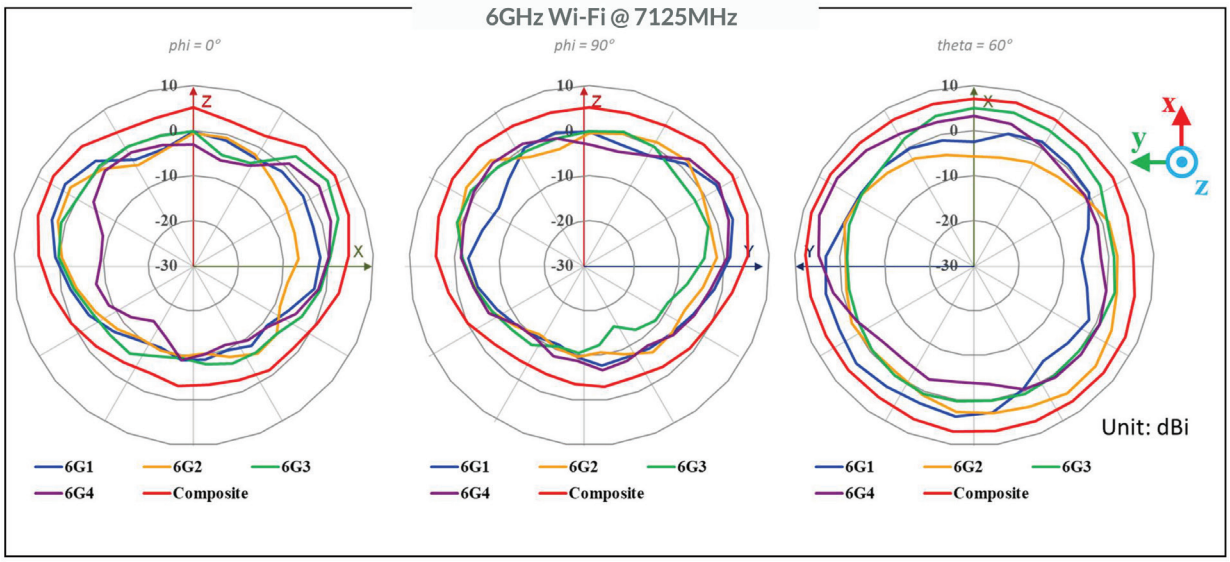




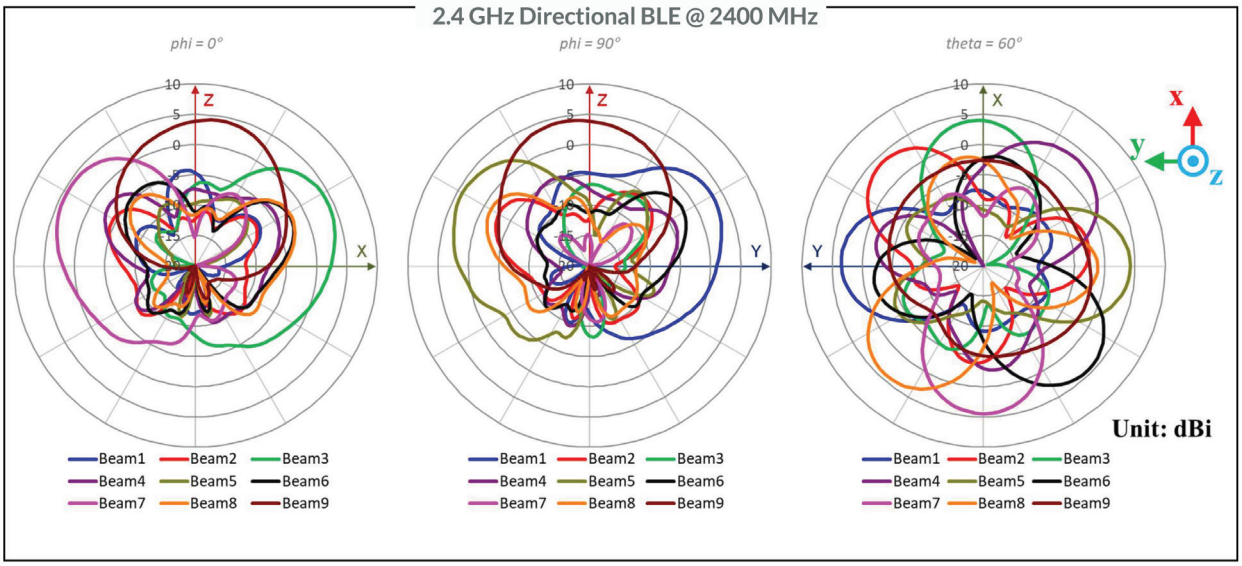
HPE Mist Networking AP45 Access Point 6 GHz Wi-Fi antenna plots

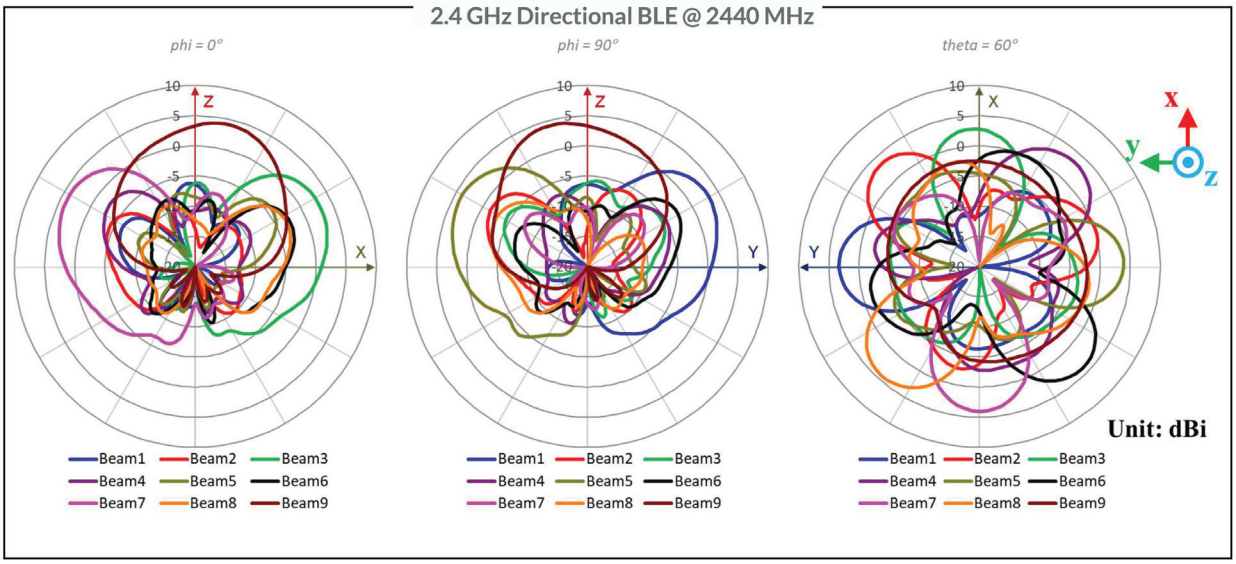


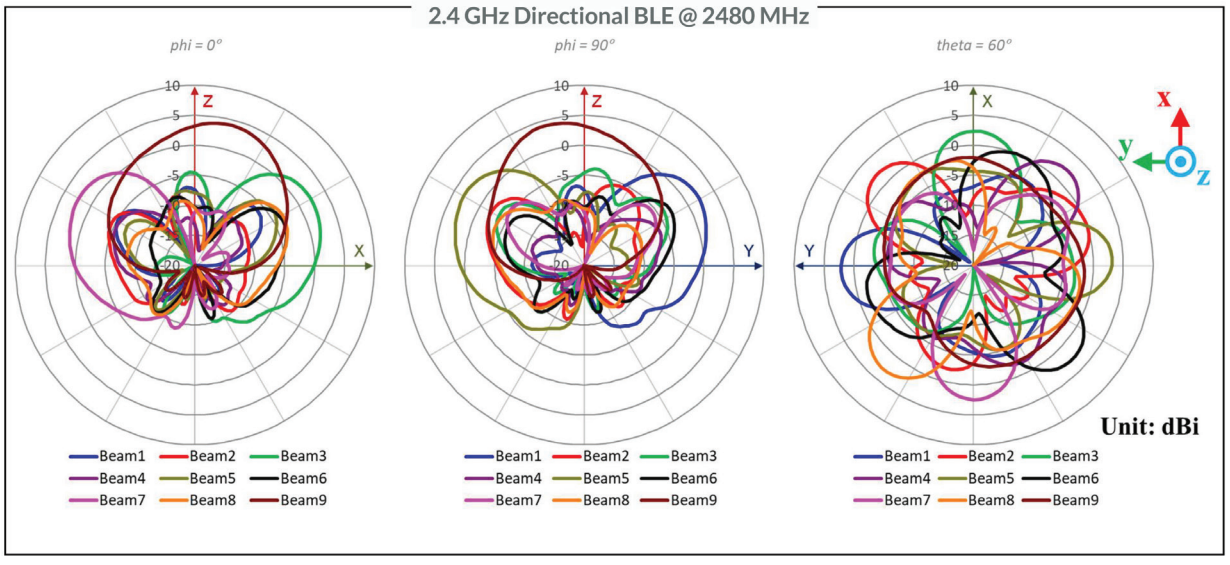




HPE Mist Networking AP45 Access Point 2.4 GHz directional Bluetooth® low energy antenna plots

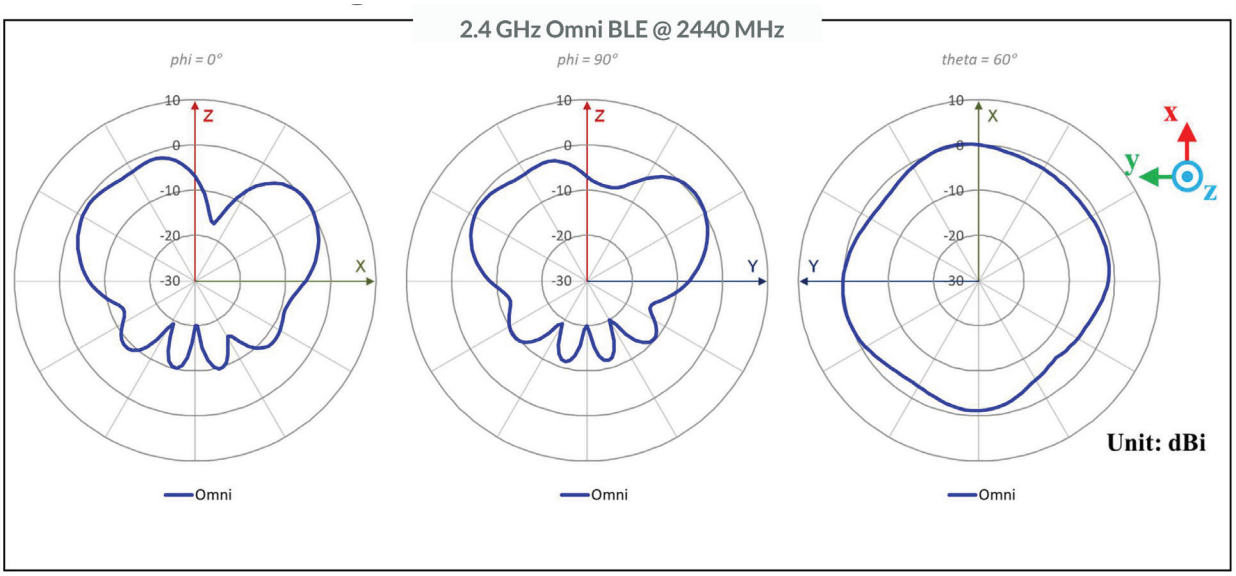






HPE Mist Networking AP45 Access Point 2.4 GHz omni Bluetooth® low energy antenna plots









About HPE

HPE is a leader in essential enterprise technology, bringing together the power of AI, cloud, and networking to help organizations achieve more. As pioneers of possibility, our innovation and expertise advance the way people live and work. We empower our customers across industries to optimize operational performance, transform data into foresight, and maximize their impact. Unlock your boldest ambitions, with HPE. Discover more at HPE.com.

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