AP12 ACCESS POINT DATASHEET

Product Overview

The wall plate AP12 access point driven by Mist AI automates network operations and boosts Wi-Fi performance. It's optimized for environments that require easy, flexible deployment, and the simultaneous support of multiple devices. It supports an aggregate data rate up to 1.8 Gbps concurrently on both 2.4 GHz and 5 GHz radios. Managed by Juniper Mist Cloud Architecture, the AP12 access point delivers unprecedented user experiences at a lower cost for branch office, remote worker, school dormitory, and hotel room environments.

Product Description

The Juniper® AP12 is a wall plate Wi-Fi 6 access point optimized for environments that require easy, flexible deployment, and the simultaneous support of multiple devices. It supports an aggregate data rate up to 1.8 Gbps concurrently on both 2.4 GHz and 5 GHz radios and provides a cost-effective investment choice for branch offices, remote workers, school dormitory, and hotel room environments.

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 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.

Juniper AI-Driven Network

Juniper Mist™ brings true innovation to wireless networking with the world's first AI-driven wireless LAN (WLAN). The Juniper AI-Driven Enterprise 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-driven automation and a self-healing network replace time-consuming manual tasks, lowering Wi-Fi operational costs and saving substantial time and money.

The Juniper Mist Cloud Architecture

Juniper's Mist AI leverages a cloud-native microservices architecture that delivers unparalleled agility, scale, and resiliency to your network. An AI engine lowers OpEx and delivers insights by using data science to analyze large amounts of rich metadata collected by the Juniper Access Points.

Juniper Access Point Family

The Juniper enterprise-grade access point family consists of:

- AP45 Series, AP34, and AP24, which support Wi-Fi 6E, 802.11ax (Wi-Fi 6), and Bluetooth LE
- AP43 Series, AP33, AP32, AP12, and AP63 Series, which support 802.11ax (Wi-Fi 6) and Bluetooth LE

The real-time microservices in Juniper Mist cloud manage all these access points.

Table 1 compares the supported major functions of the Juniper Wi-Fi 6E and Wi-Fi 6 access points to help in selecting the most appropriate model(s).

Table 1: Juniper AP Comparison Chart

	AP45	AP34	AP24	AP43	AP33	AP12	AP63
Deployment	Indoor	Indoor	Indoor	Indoor	Indoor	Indoor Wall Plate/ Desk Mount	Outdoor
Wi-Fi Standard	Wi-Fi 6E 802.11ax (Wi-Fi 6) 4x4:4 SS	Wi-Fi 6E 802.11ax (Wi-Fi 6) 2x2:2 SS	Wi-Fi 6E 802.11ax (Wi-Fi 6) 2x2:2 SS 2.4/6 + 5 GHz	802.11ax (Wi-Fi 6) 4x4:4 SS	802.11ax (Wi-Fi 6) 5 GHz: 4x4:4 SS 2.4 GHz: 2x2:2 SS	802.11ax (Wi-Fi 6) 2x2:2 SS	802.11ax (Wi-Fi 6) 4x4:4 SS
Wi-Fi Radios	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
Antenna Options	Internal/External	Internal	Internal	Internal/External	Internal	Internal	Internal/External
Virtual BLE	✓	–	–	✓	✓	–	✓
USB	✓	✓	✓	✓	✓	–	–
IoT Sensors	Temperature, Accelerometer	Temperature, Accelerometer	Temperature, Accelerometer	Humidity, Pressure, Temperature	Temperature, Accelerometer	–	Humidity, Pressure, Temperature
Warranty	Limited Lifetime	Limited Lifetime	Limited Lifetime	Limited Lifetime	Limited Lifetime	Limited Lifetime	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

Services Available for the Juniper AP12

Wi-Fi Cloud Services

Marvis™ Virtual Network Assistant

For IT Helpdesk Teams

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

Bluetooth Cloud Services

Juniper Mist Asset Visibility

For Process and Resource Improvement Teams

- Identify Assets by Name and View Location
- Zonal/Room Accuracy for Third-Party Tags
- Historical Analytics for Asset Tags
- Telemetry for Asset Tags (such as temperature and motion data)
- APIs for Viewing Assets and Analytics

Analytics Cloud Services

Juniper Mist Premium Analytics

For Network Teams

- Baseline Analytics Features Come Included with Wi- Fi Assurance and Asset Visibility Subscriptions
- End-to-end Network Visibility
- Orchestrated Networking and Application Performance Queries
- Simplified Network Transparency

For Business Teams

- Baseline analytics features come included with Wi-Fi Assurance and Asset Visibility subscriptions
- Customer Segmentation and Reporting Based on Visitor Telemetry
- Customized[1] Dwell and Third-Party Reporting for Traffic and Trend Analysis
- Correlate Customer-Guest Traffic and Trend Analysis

Access Point Features

High-Performance Wi-Fi

The AP12 access point is a tri-radio 2x2:2 SS 802.11ax access point with maximum data rates of 1,200 Mbps in the 5 GHz band and 575 Mbps in the 2.4 GHz band. The integrated third 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, 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, configuring and operating an access point has grown far more complex. Juniper automates and optimizes these features with AI for AX capabilities, which 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 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 (RRM) automates dynamic channel and power assignment, taking Wi-Fi and external sources of interference into account with its dedicated sensor radio. The AI engine continuously monitors the SLE coverage and capacity metrics to learn and optimize the RF environment. A learning algorithm uses hysteresis on a 24-hour window to conduct sitewide rebalancing for optimal channel and power assignment.

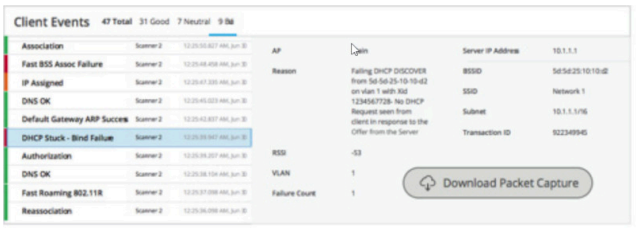
Proactive Insight and Action

A dedicated dual-band third radio collects data for Juniper's patent-pending Proactive Analytics and Correlation Engine (PACE), which leverages machine learning to analyze user experience, correlate problems, and automatically detect 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 is able to function as a synthetic test client to proactively detect and mitigate network anomalies.

[1]Juniper Mist Premium Analytics service subscription is needed

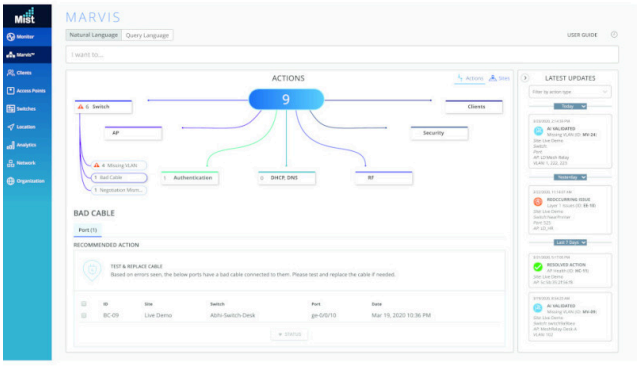
Dynamic Packet Capture

The Juniper 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

Marvis is a natural language processing (NLP)-based assistant with a conversational interface that help 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.

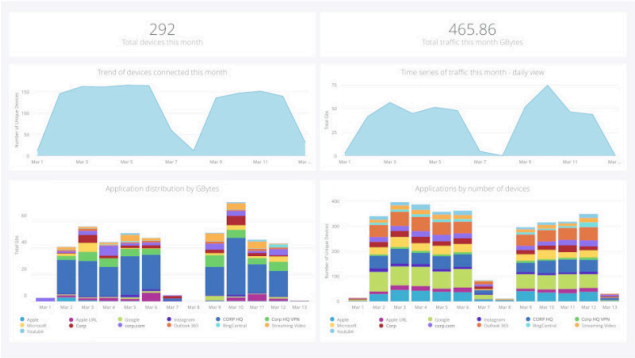


Effortless, Cloud-Based Setup and Updates

The AP12 access point automatically connects to the Juniper 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.

Premium Analytics

Juniper Mist Wireless Assurance, User Engagement, and Asset Visibility services 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, the Juniper Mist Premium Analytics service is available as an additional subscription.

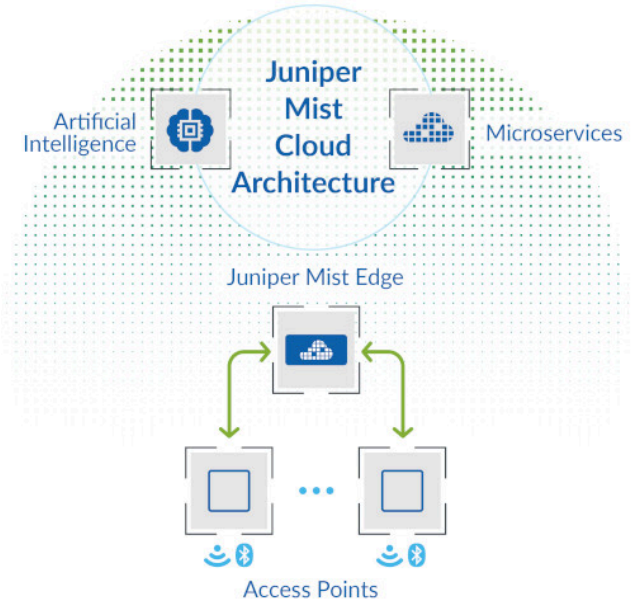


Improves Battery Efficiency for IoT Devices

The AP incorporates the 802.11ax target wake time (TWT) capability and Bluetooth 5.0, which together extend IoT devices' battery life as new IoT devices join the network.

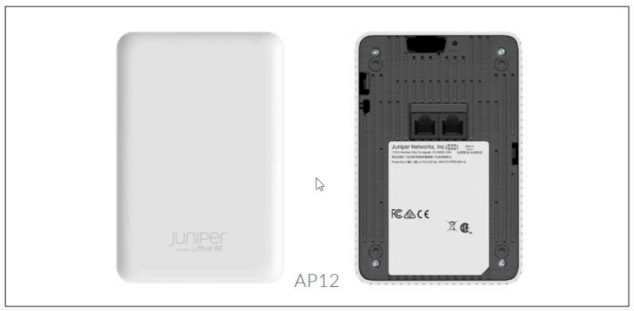
Dynamic Debugging

Constantly monitor services running on the AP12 model 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 it becoming unavailable.



Juniper Mist Edge

Juniper APs offer a flexible data plane. Juniper Mist Edge is an on-premises appliance that runs a tunnel termination service. Traffic can be broken out locally or tunneled to Juniper Mist Edge. Juniper Mist Edge 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), and Spatial Frequency Reuse (BSS Coloring). Backwards compatibility with 802.11a/b/g/n/ac
Combined Highest Supported Data Rates	1.8 Gbps
2.4 GHz	2x2:2 802.11b/g/n up to 400 Mbps data rate; 2x2 : 2 802.11ax up to 575 Mbps data rate
5 GHz	2x2:2 802.11ax up to 1,200 Mbps data rate
MIMO Operation	Two spatial stream Single User (SU) MIMO for up to 1,200 Mbps wireless data rate to individual 2x2 HE80 Two spatial stream Multi User (MU) MIMO for up to 1,200 Mbps wireless data rate to up to four MUMIMO-capable client devices simultaneously
Dedicated Third Radio	2.4 GHz and 5 GHz dual-band WIDS/WIPS, spectrum analysis, synthetic client and location analytics radio
Internal Antennas	2.4 GHz omnidirectional antennas with 3 dBi peak gain 5 GHz omnidirectional antennas with 6 dBi peak gain
Bluetooth 5.0	Omnidirectional Bluetooth antenna Supports superbeacon mode with iBeacon and Eddystone
Beam Forming	Transmit Beamforming and Maximal Ratio Combining
Power Options	802.3af/at PoE
Dimensions	150 x 100 x 40 mm (5.9 x 3.9 x 1 in)
Weight	0.6 kg (1.3 lbs) excluding mount and accessories
Operating Temperature	Internal antenna: 0° to 40° C
Operating Humidity	10% to 90% maximum relative humidity, noncondensing
Operating Altitude	3,048 m (10,000 ft)
Mean Time Between Failures (MTBF)	Indoor MTBF in hours is 804,0432
Trusted Platform Module (TPM)	Includes a TPM for infrastructure security

[2]Based on Telcordia SR-332 issue 3, Method I, Case 3 and measured at temperature of 25°C (77°F) for indoor access points, and 65°C (149°F) for outdoor access points.

Ordering Information

United States only	AP12-US (Internal Antenna) AP12E-US (External Antenna)
Outside of United States	AP12-WW (Internal Antenna) AP12E-WW (External Antenna)

* Juniper 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 Juniper products.

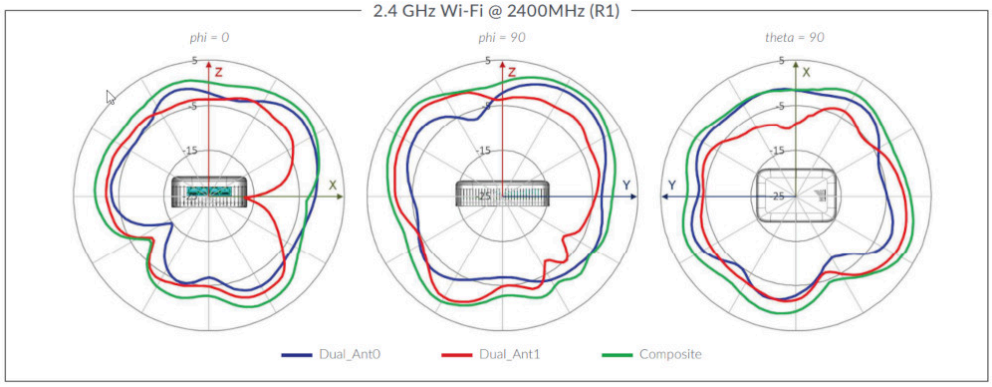
I/O and Indicators

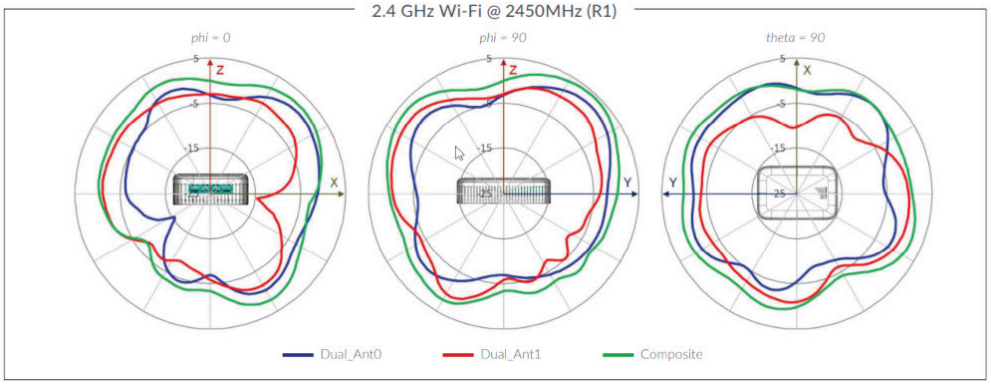
Eth0	10/100/1000Base-T, RJ45; PoE PD
Eth1	10/100/1000Base-T; RJ45 PoE Out class 2 (requires . 3at power)
Eth2-3	10/100/1000BaseT, RJ45
Passthru	Passthru
Reset	Reset to the factory default settings
Indicators	One multi-color status LED

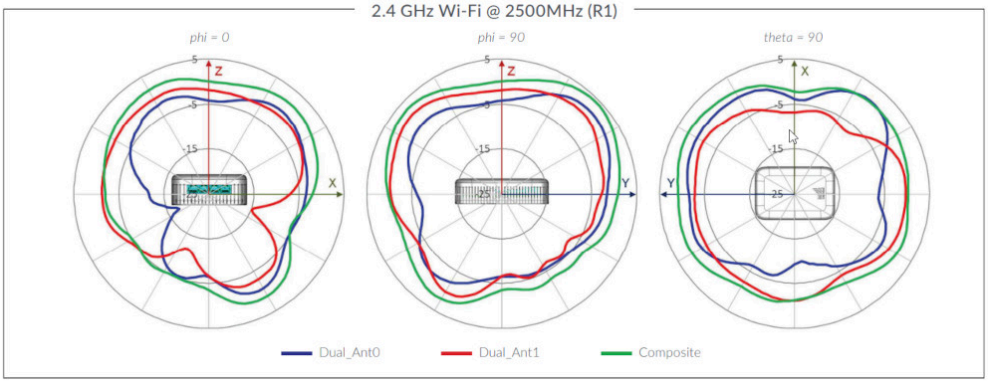
Mounting Brackets

APBR-WP1	Wall plate bracket for AP12
APBR-DS1	Desktop Stand for small form factor AP
APWP-KIT	Wallplate DeskStand (APBR-DS1) with wall pluggable 802.3af POE injector

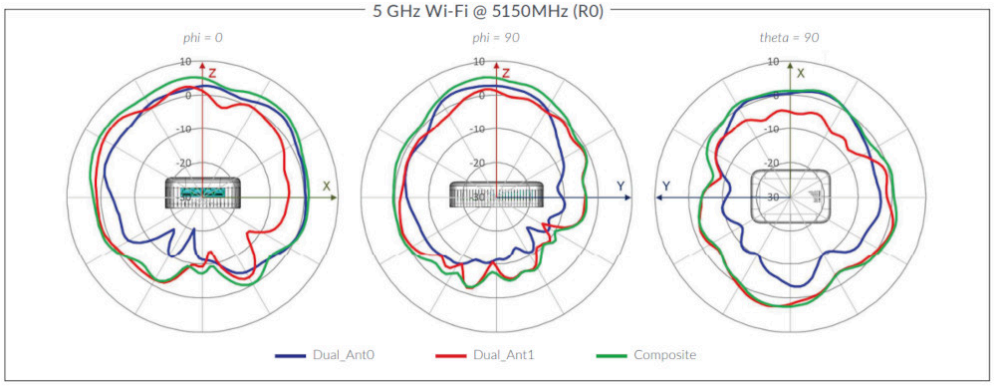
AP12 2.4 GHz Wi-Fi Antenna Plots

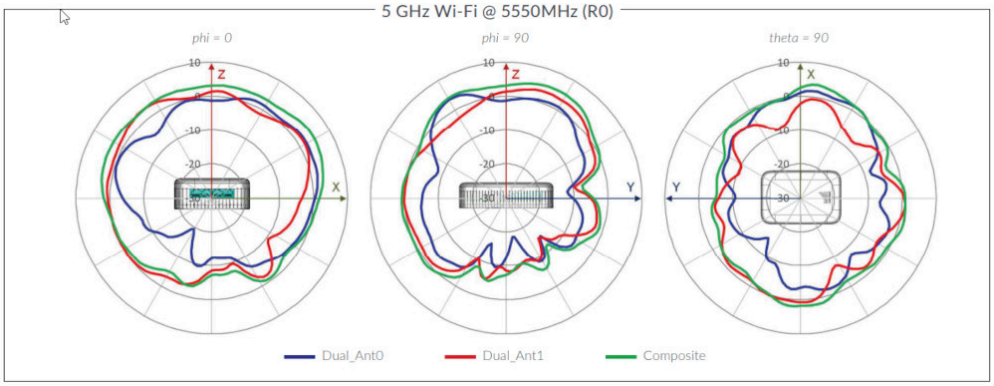


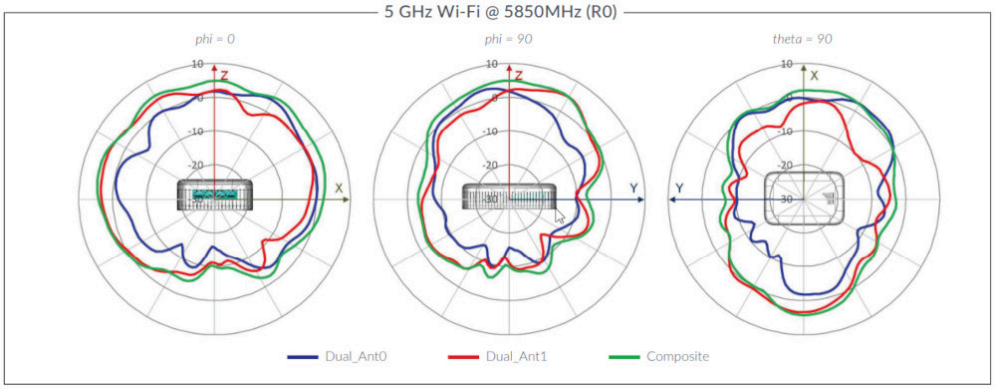




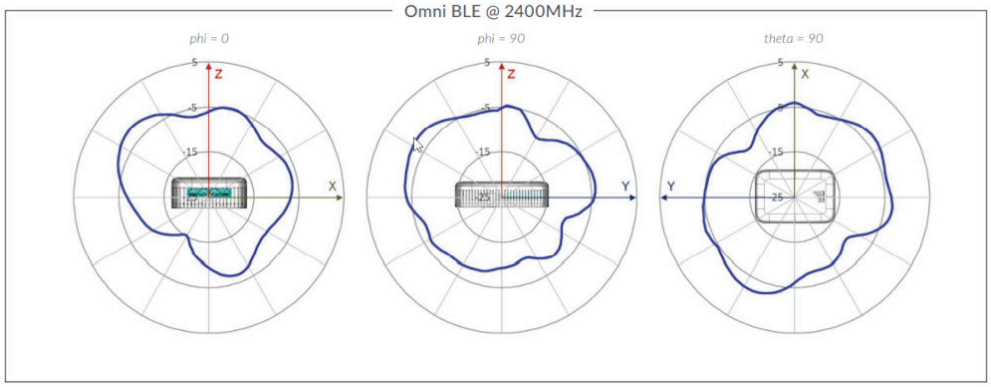
AP12 5 GHz Wi-Fi Antenna Plots

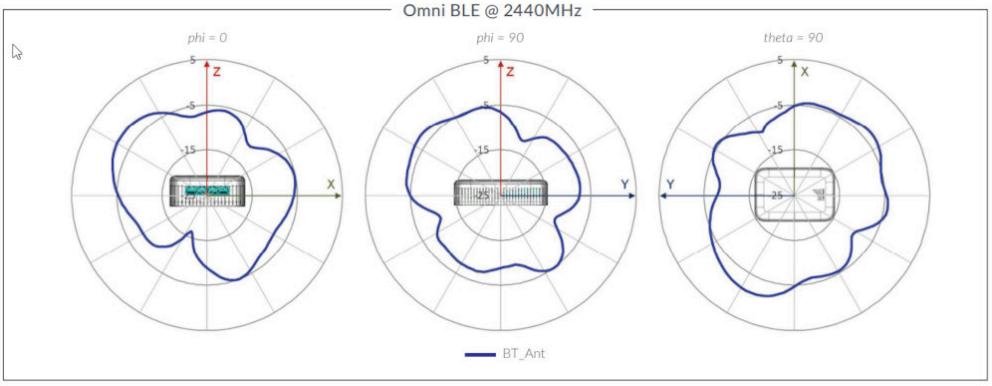


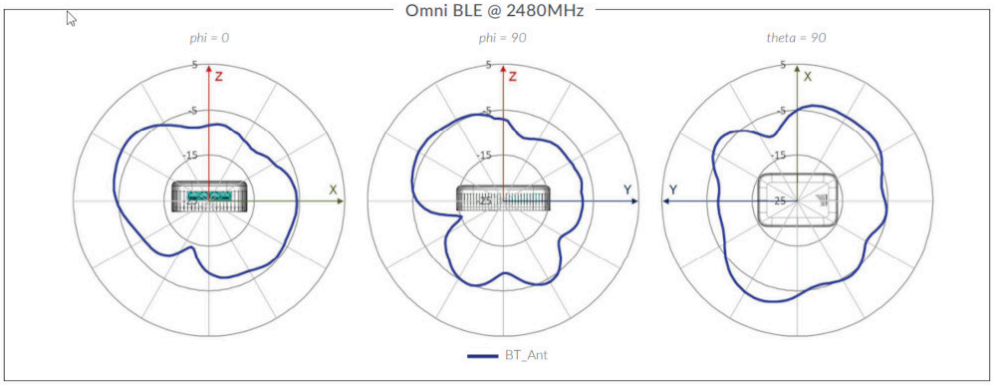




AP12 2.4 GHz Omni BLE Antenna Plots







About Juniper Networks

At Juniper Networks, we are dedicated to dramatically simplifying network operations and driving superior experiences for end users. Our solutions deliver industry-leading insight, automation, security and AI to drive real business results. We believe that powering connections will bring us closer together while empowering us all to solve the world's greatest challenges of well-being, sustainability and equality.

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