



## 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 2.4GHz and 5GHz 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.

# AP12 ACCESS POINT DATASHEET

## Juniper AI-Driven Network

Juniper brings true innovation to the wireless space with the world's first AI-driven wireless LAN (WLAN).

The Juniper AI-Driven Network 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 networks, lowering Wi-Fi operational costs and saving substantial time and money.

All operations are managed via open and programmable microservices with Juniper Mist Cloud Architecture. This delivers maximum scalability and performance while also bringing [DevOps](#) agility to [wireless networking](#) and [location services](#).

## 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 from [Juniper Access Points](#).

## Juniper Access Point Family

The Juniper enterprise-grade access point family consists of:

- [AP45](#) and [AP34](#) Series which support [Wi-Fi 6E](#), 802.11ax (Wi-Fi 6), and Bluetooth LE
- [AP43](#), [AP12](#), [AP32](#), [AP33](#), and [AP63](#) Series, which support 802.11ax (Wi-Fi 6), Bluetooth LE, and IoT
- [AP21](#), [AP41](#) and [AP61](#) Series, which support 802.11ac Wave 2, Bluetooth LE, and IoT
- BT11, which supports Bluetooth LE

These access points are all built on a real-time microservices platform and are managed by the [Juniper Mist cloud](#).

The table below 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).

	AP45	AP34	AP43	AP63	AP33	AP32	AP12
<b>Deployment</b>	Indoor	Indoor	Indoor	Outdoor	Indoor	Indoor	Indoor Wall Plate/Desktop Mount
<b>Wi-Fi Standard</b>	802.11ax (Wi-Fi 6) 4x4 : 4SS	802.11ax (Wi-Fi 6) 2x2 : 2SS	802.11ax (Wi-Fi 6) 4x4 : 4SS	802.11ax (Wi-Fi 6) 4x4 : 4SS	802.11ax (Wi-Fi 6) 5GHz: 4x4 : 4SS 2.4GHz: 2x2 : 2SS	802.11ax (Wi-Fi 6) 5GHz: 4x4 : 4SS 2.4GHz: 2x2 : 2SS	802.11ax (Wi-Fi 6) 2x2 : 2SS
<b>Wi-Fi Radios</b>	Dedicated fourth radio	Dedicated fourth radio	Dedicated third radio	Dedicated third radio	Dedicated third radio	Dedicated third radio	Dedicated third radio
<b>Antenna Options</b>	Internal/External	Internal	Internal/External	Internal/External	Internal	Internal/External	Internal
<b>Virtual BLE</b>	✓	—	✓	✓	✓	—	—
<b>IoT Interface</b>	—	—	✓	—	—	—	—
<b>IoT Sensors</b>	Temperature, Accelerometer	Temperature	Humidity, Pressure, Temperature	—	—	—	—
<b>Warranty</b>	Limited Lifetime	Limited Lifetime	Limited Lifetime	One Year	Limited Lifetime	Limited Lifetime	Limited Lifetime
<b>Frequencies Supported</b>	2.4GHz 5GHz 6GHz	2.4GHz 5GHz 6GHz	2.4GHz 5GHz	2.4GHz 5GHz	2.4GHz 5GHz	2.4GHz 5GHz	2.4GHz 5GHz

## Services Available for the Juniper AP12

### Wi-Fi Cloud Services

#### Juniper Mist Wi-Fi Assurance

For IT and NOC Teams

- Predictable and Measurable Wi-Fi
- Service-Level Expectations (SLE) Support
- WxLAN Policy Fabric for Role-Based Access
- Customizable Guest Wi-Fi Portal

#### Marvis Virtual 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 3rd 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\* Dwell and 3rd 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 2x2:2SS 802.11ax access point with maximum data rates of 1,200 Mbps in the 5GHz band and 575 Mbps in the 2.4GHz band. The integrated 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, 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 more complex. Juniper is applying its industry-leading Mist AI for AX technology to automate these features, optimize BSS Coloring, improve data transmission scheduling within OFDMA and MU-MIMO, and assign clients to the best radio to boost overall network performance.

### Spectral Efficiency

OFDMA improves spectral efficiency so that an increasing density of devices can be supported on the network. This is especially helpful as IoT devices join the network; they use smaller data packets than mobile devices, which increases network load and contention. Additionally, BSS Coloring improves the coexistence of overlapping BSSs and allows spatial reuse within channels by reducing packet collisions. This helps you improve spectral efficiency for dense networks in which channel reuse is increasing.

### Automatic RF Optimization

Juniper'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 AI engine continuously monitors the SLE coverage and capacity metrics to learn and optimize the RF environment. The RRM learning algorithm uses hysteresis on a 24-hour window to conduct sitewide rebalancing for optimal channel and power assignment.

## Unprecedented 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.

\*Juniper Mist Premium Analytics service subscription is needed

## Dynamic Packet Capture

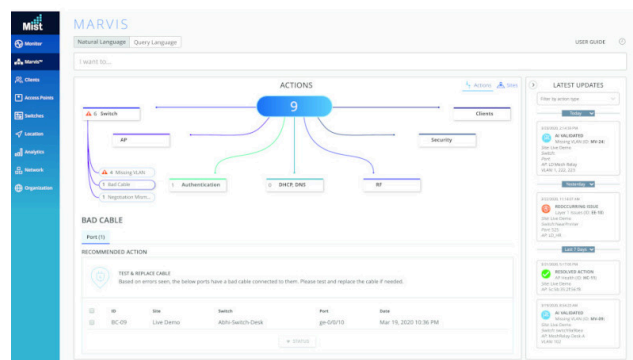
The Juniper Mist platform automatically captures packets and streams them to the cloud when major issues are detected. This saves IT time and effort and eliminates the need for truck rolls with sniffers to reproduce and capture data for troubleshooting.

Client Events 47 Total 31 Good 7 Neutral 9 Bad				
Association	Scanner 2	12/25/2020 07:00:00 (Jan 30)	AP	Client
Fast BSS Assoc Failure	Scanner 2	12/25/2020 07:00:00 (Jan 30)	Reason	Falling DHCP DISCOVER from 5d:5d:25:10:10:42 on vlan 1 with SSID 123456789 - No DHCP Request seen from client in response to the Offer from the Server
IP Assigned	Scanner 2	12/25/2020 07:00:00 (Jan 30)	Server IP Address	10.1.1.1
DNS OK	Scanner 2	12/25/2020 07:00:00 (Jan 30)	BSSID	5d:5d:25:10:10:42
Default Gateway ARP Success	Scanner 2	12/25/2020 07:00:00 (Jan 30)	SSID	Network 1
DHCP Stuck - Bind Failure	Scanner 2	12/25/2020 07:00:00 (Jan 30)	Subnet	10.1.1.1/16
Authentication	Scanner 2	12/25/2020 07:00:00 (Jan 30)	Transaction ID	52234945
DNS OK	Scanner 2	12/25/2020 07:00:00 (Jan 30)	Reason	-53
Fast Roaming 802.11R	Scanner 2	12/25/2020 07:00:00 (Jan 30)	VLAN	1
Reassociation	Scanner 2	12/25/2020 07:00:00 (Jan 30)	Failure Count	1

Download Packet Capture

## Marvis Virtual Conversational Assistant

[Marvis](#) is a natural language processing (NLP)-based assistant with a Conversational Interface to understand user intent and goals, simplifying troubleshooting and the collection of 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.

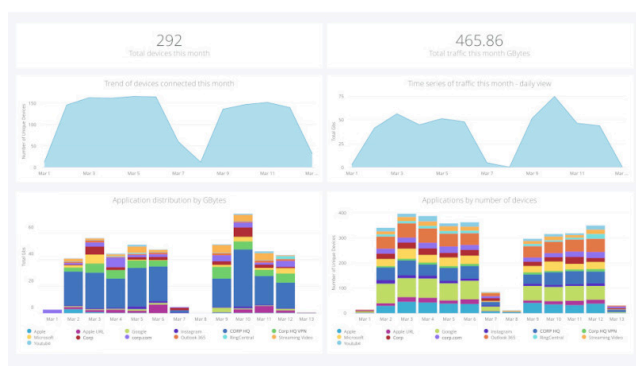


## Effortless, Cloud-Based Setup and Updates

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 [Wi-Fi Assurance](#), [Engagement](#) and [Asset Tracking](#) services include a base analytics capability for analyzing up to 30 days of data, from which you can extract network insights across your enterprise. To extend these capabilities for more dynamic insights like motion paths\* and other third-party\* data, along with the option to generate customized reports, the [Juniper Mist Premium Analytics](#) service is available as an additional subscription.

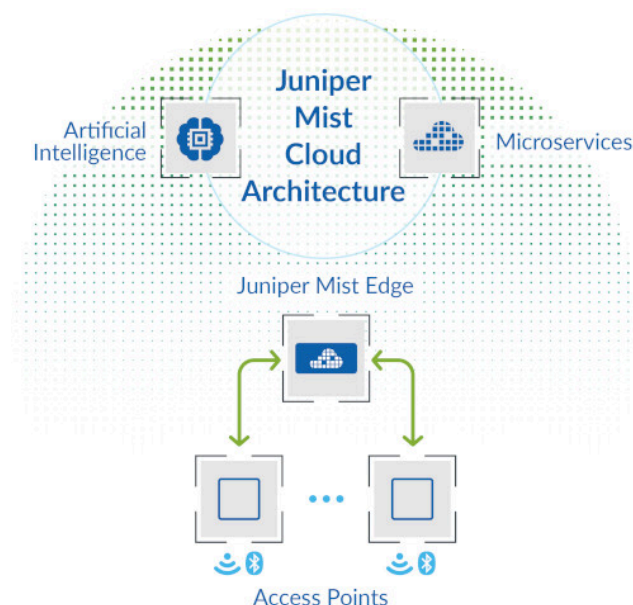


## Improves Battery Efficiency for IoT Devices

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

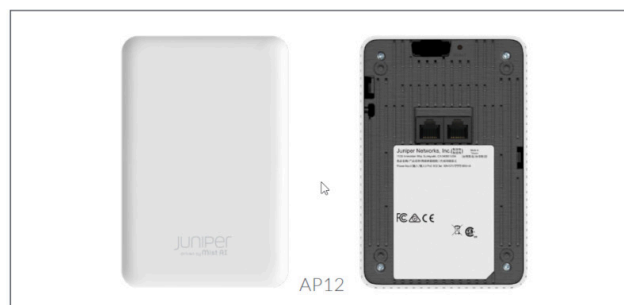
Constantly monitor services running on the AP12 model and send alerts whenever a service behaves abnormally. Dynamic debugging relieves IT of having to worry about an AP going offline or any services running on it becoming unavailable.



## Juniper Mist Edge

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

There are many use cases the Juniper Mist Edge solves, including seamless mobility in large campus environments, tunneling of guest traffic to a DMZ, IoT segmentation, and teleworker. Learn more about Juniper Mist Edge.



## Specifications

<b>Wi-Fi Standard</b>	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
<b>Combined Highest Supported Data Rates</b>	1.8 Gbps
<b>2.4 GHz</b>	2x2 : 2 802.11b/g/n up to 400 Mbps data rate; 2x2 : 2 802.11ax up to 575 Mbps data rate
<b>5 GHz</b>	2x2 : 2 802.11ax up to 1,200 Mbps data rate
<b>MIMO Operation</b>	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
<b>Dedicated Third Radio</b>	2.4GHz and 5GHz dual-band WIDS/WIPS, spectrum analysis, synthetic client and location analytics radio
<b>Internal Antennas</b>	2.4GHz omnidirectional antennas with 3 dBi peak gain 5GHz omnidirectional antennas with 6 dBi peak gain
<b>Bluetooth 5.0</b>	Omnidirectional Bluetooth antenna Supports superbeacon mode with iBeacon and Eddystone
<b>Beam Forming</b>	Transmit Beamforming and Maximal Ratio Combining
<b>Power Options</b>	802.3af/at PoE
<b>Dimensions</b>	150 x 100 x 40 mm (5.9 x 3.9 x 1 in)
<b>Weight</b>	0.6 kg (1.3 lbs) excluding mount and accessories
<b>Operating Temperature</b>	Internal antenna: 0° to 40° C
<b>Operating Humidity</b>	10% to 90% maximum relative humidity, noncondensing
<b>Operating Altitude</b>	3,048 m (10,000 ft)
<b>Mean Time Between Failures (MTBF)</b>	Indoor MTBF in hours is 804,043*
<b>Trusted Platform Module (TPM)</b>	Includes a TPM for infrastructure security

\*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.

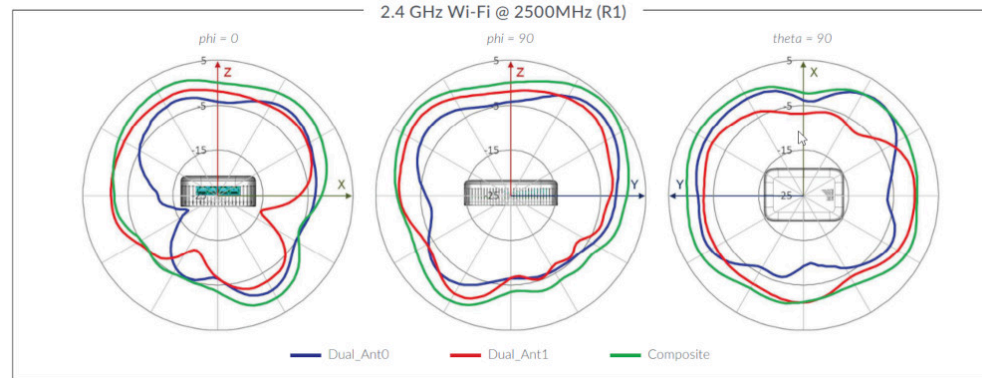
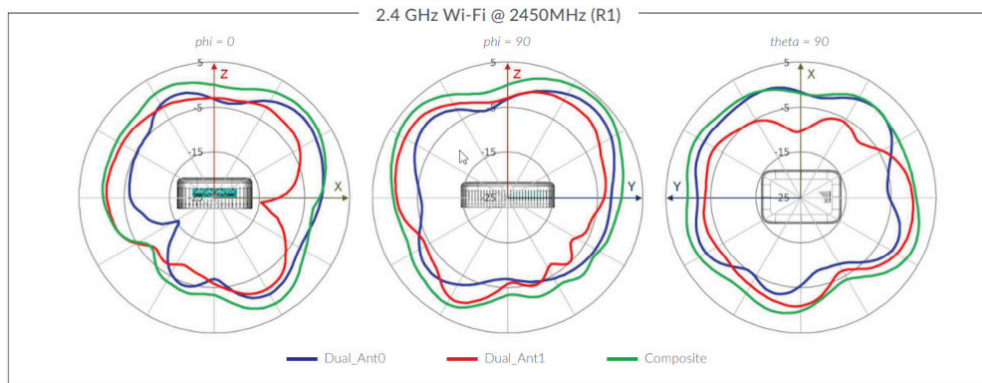
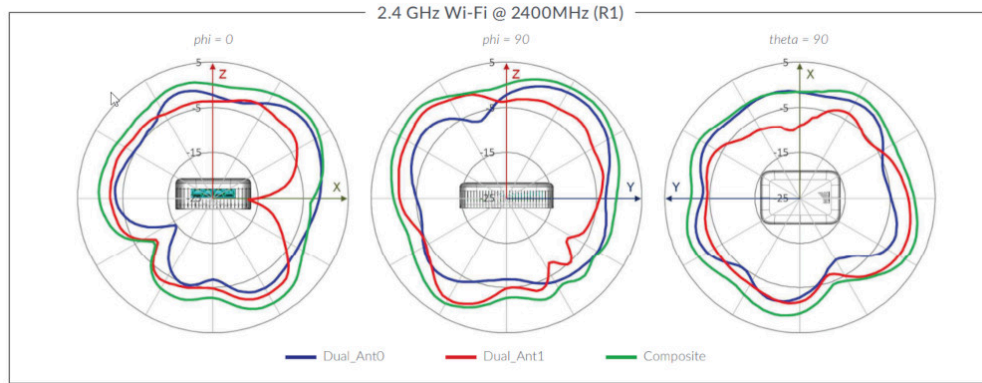
## I/O and Indicators

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

## Mounting Brackets

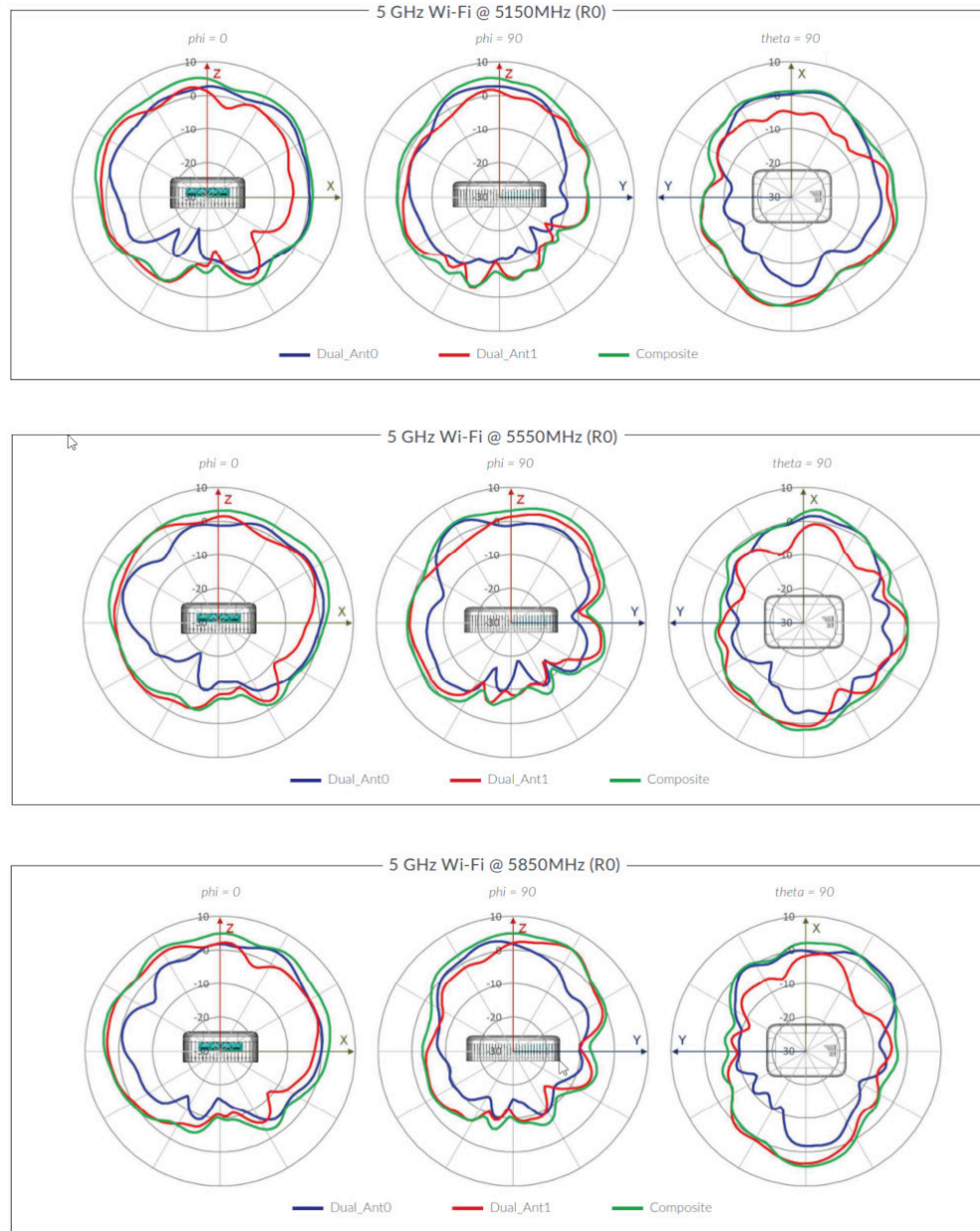
APBR-WP1	Wall plate bracket for AP12
APBR-DS1	Desktop Stand for small form factor AP
APWP-KIT	Wallplate DeskStand (APBR-DS1) with wall pluggable 802.3af PoE injector

## AP12 2.4Ghz Wi-Fi Antenna Plots

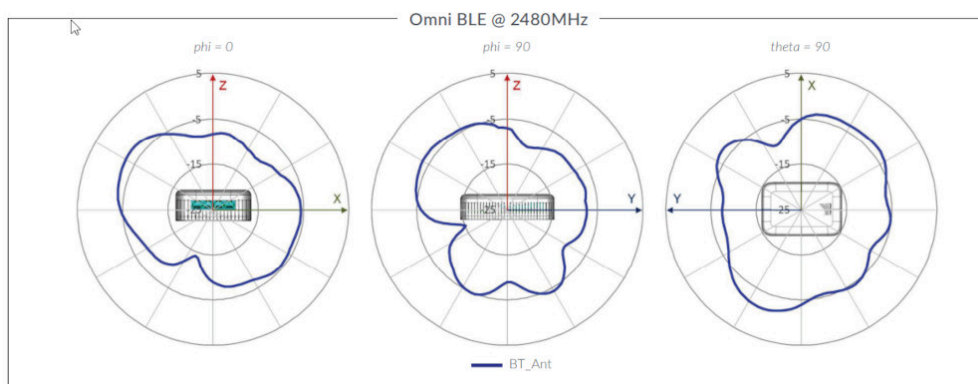
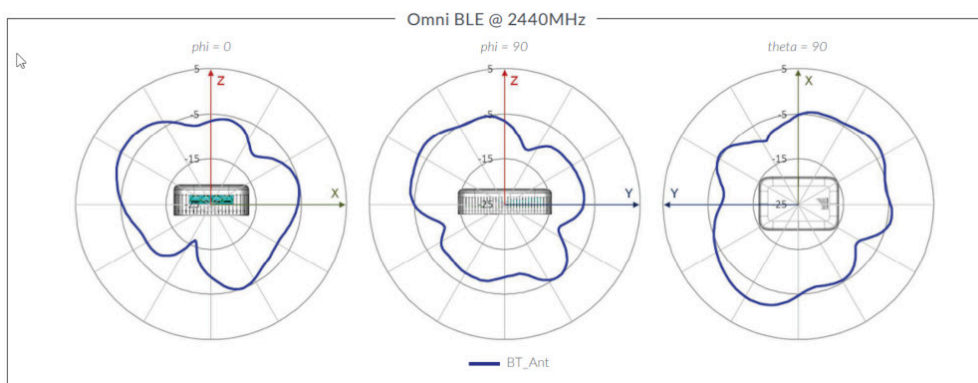
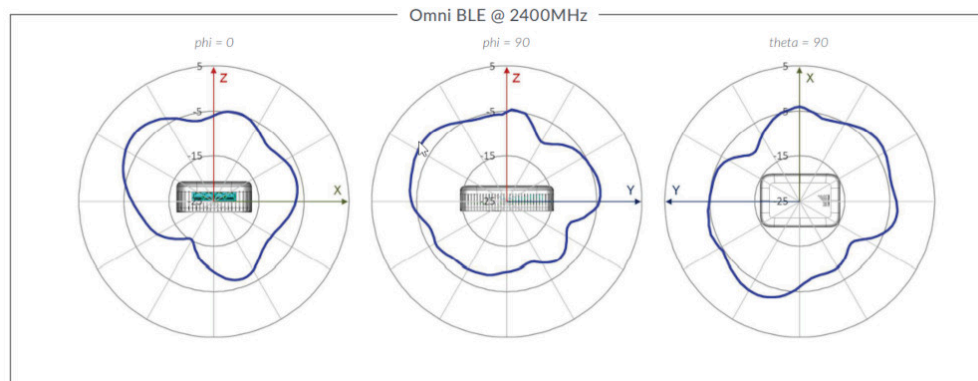




## AP12 5GHz Wi-Fi Antenna Plots



## AP12 2.4Ghz 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.

### Corporate and Sales Headquarters

Juniper Networks, Inc.  
1133 Innovation Way  
Sunnyvale, CA 94089 USA

**Phone: 888.JUNIPER (888.586.4737)**

**or +1.408.745.2000**

**[www.juniper.net](http://www.juniper.net)**

### APAC and EMEA Headquarters

Juniper Networks International B.V.  
Boeing Avenue 240 1119 PZ Schiphol-Rijk  
Amsterdam, The Netherlands

**Phone: +31.207.125.700**

