AP32 ACCESS POINT DATASHEET

Product Overview

The AP32 series automates network operations and boosts Wi-Fi performance. It delivers an aggregate data rate of up to 3 Gbps concurrently on 2.4GHz and 5GHz radios. Managed by the Juniper Mist™ Cloud Architecture, the AP32 series delivers unprecedented user experiences at a lower cost for retail, warehouse, school, clinic, and home office environments.

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 Enterprise 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.

All operations are managed via our open and programmable microservices architecture, which delivers maximum scalability and performance while also bringing DevOps agility to wireless networking and location services.

The Juniper Mist Cloud Architecture

Mist AI leverages a cloud-native microservices architecture 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 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
Deployment	Indoor	Indoor	Indoor	Outdoor	Indoor	Indoor	Indoor Wall Plate/ Desk Mount
Wi-Fi Standard	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
Wi-Fi Radios	Dedicated fourth radio	Dedicated fourth radio	Dedicated third radio	Dedicated third radio	Dedicated third radio	Dedicated third radio	Dedicated third radio
Antenna Options	Internal/External	Internal	Internal/External	Internal/External	Internal	Internal/External	Internal
Virtual BLE	✓	—	✓	✓	✓	—	—
IoT Interface	—	—	✓	—	—	—	—
IoT Sensors	Temperature, Accelerometer	Temperature	Humidity, Pressure, Temperature	—	✓	—	—
Warranty	Limited Lifetime	Limited Lifetime	Limited Lifetime	One Year	Limited Lifetime	Limited Lifetime	Limited Lifetime
Frequencies Supported	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 AP32

Wi-Fi Cloud Services

Juniper Mist Wi-Fi Assurance

For IT and NOC Teams

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

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

- 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

Juniper Mist Premium Analytics

For Network Teams

- Baseline Analytics Features Come Included with Wi-Fi Assurance, Mobile Engagement, 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, Mobile Engagement, and Asset Visibility Subscriptions
- Customer Segmentation and Reporting Based on Visitor Telemetry
- Customized* Dwell and Third-Party Reporting for Traffic and Trend Analysis
- Correlated Customer-Guest Traffic and Trend Analysis

*Juniper Mist Premium Analytics service subscription is needed

Access Point Features

High Performance Wi-Fi

The AP32 series offers six-stream wireless access points. They support 4x4:4SS in the 5GHz band, delivering a maximum data rate of 2,400 Mbps for high-bandwidth applications. They also support 2x2:2SS in the 2.4 GHz band, delivering a maximum data rate of 575 Mbps. The integrated third radio functions as a network, location, and security sensor, a synthetic test client radio, as well as a spectrum monitor.

With 802.11ax Orthogonal Frequency Division Multiple Access (OFDMA), Multi-User Multiple Input Multiple Output (MU- MIMO), and BSS Coloring technologies supported, AP32 series performance reaches 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 our AI for AX capabilities, which 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 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

Radio Resource Management 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 coverage and capacity SLE metrics to learn and optimize the RF environment. The learning algorithm uses hysteresis on a 24-hour window to conduct a 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 uses machine learning to analyze user experience, correlate problems, and automatically detect their root cause.

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.

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 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.
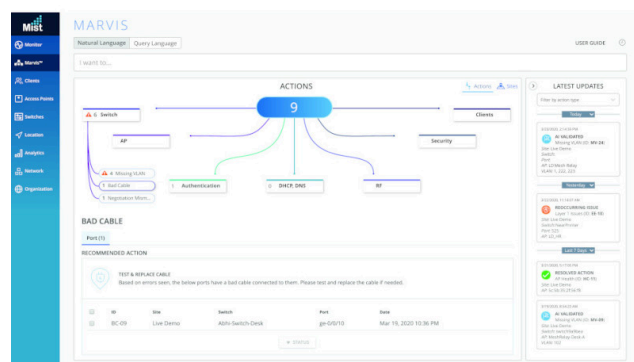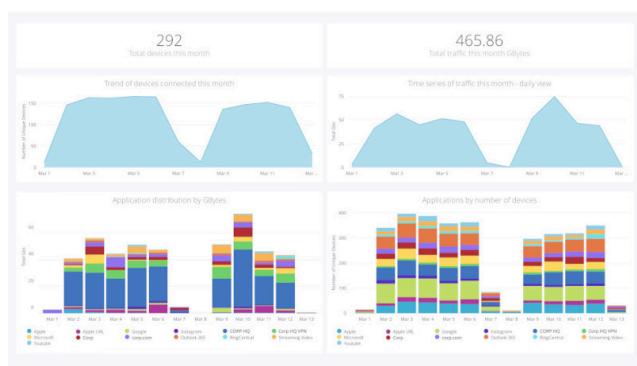
Effortless, Cloud-Based Setup and Updates

The AP32 series 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, User Engagement, and Asset Tracking 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* and other third- party* data and would like the option of customized reports, the Juniper Mist Premium Analytics service is available as an additional subscription.

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.
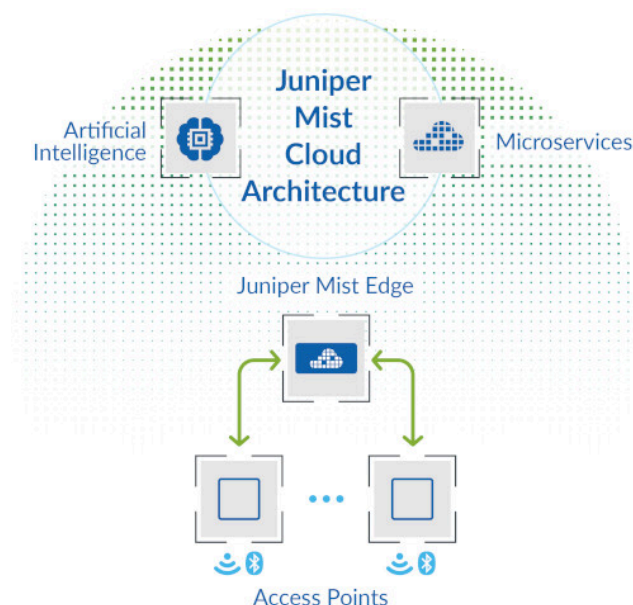
Improves Battery Efficiency for IoT Devices

By incorporating the 802.11ax target wake time (TWT) capability and Bluetooth 5.0, AP32 access points help extend the battery life of IoT devices, particularly as additional ones join the network.
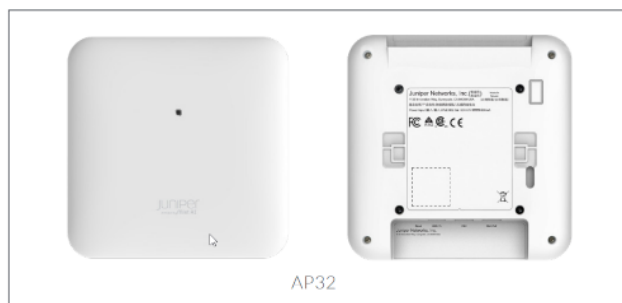
Dynamic Debugging

Constantly monitor services running on the AP32 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 it becoming unavailable.

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	3.0 Gbps
2.4 GHz	2x2 : 2 802.11b/g/n/ac up to 400 Mbps data rate; 2x2 : 2 802.11ax up to 575 Mbps data rate
5 GHz	4x4 : 4 802.11ax up to 2,400 Mbps data rate
MIMO Operation	Four spatial stream SU-MIMO for up to 2,400 Mbps wireless data rate to individual 4x4 HE80 Four spatial stream MU-MIMO for up to 2,400 Mbps wireless data rate to up to four MU-MIMO-capable client devices simultaneously
Dedicated Third Radio	2.4GHz and 5GHz dual-band WIDS/WIPS, spectrum analysis, synthetic client and location analytics radio
Internal Antennas	Two 2.4GHz omnidirectional antennas with 5 dBi peak gain Four 5GHz 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	802.3at PoE, 802.3bt PoE
Dimensions	202 x 202 x 44 mm (7.95 x 7.95 x 1.73 in)
Weight	0.83 kg (1.83 lbs) excluding mount and accessories AP32E: 0.81 kg (1.78 lbs) excluding mount and accessories
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	3,048 m (10,000 ft)
Mean Time Between Failures (MTBF)	Indoor MTBF in hours is 846,297*
Trusted Platform Module (TPM)	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.
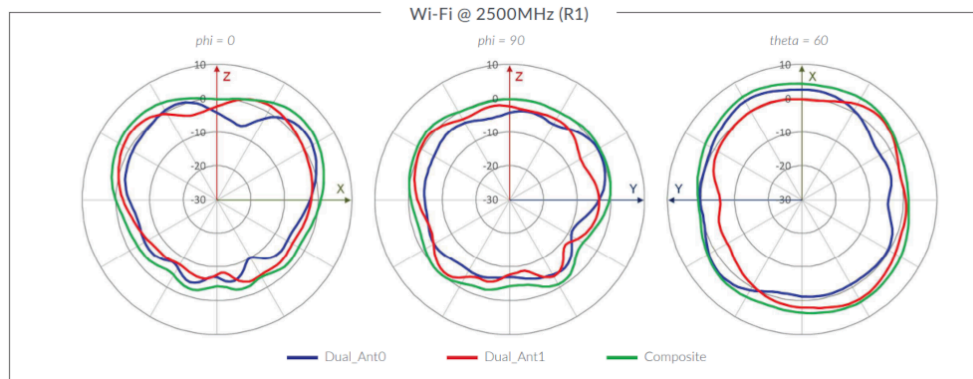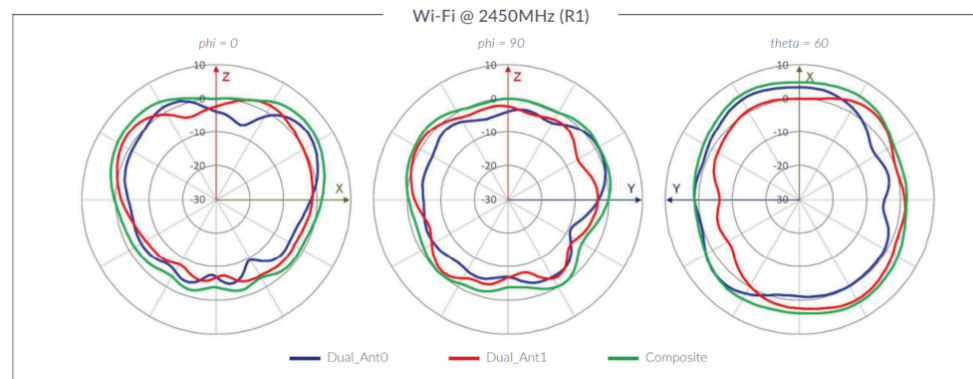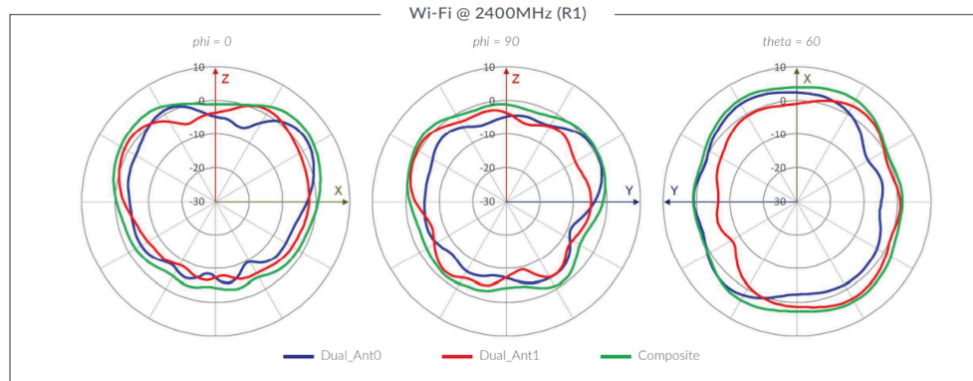
I/O and Indicators

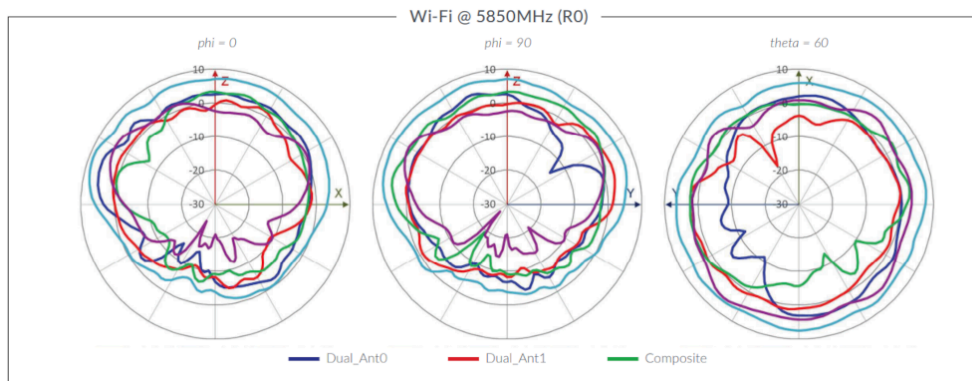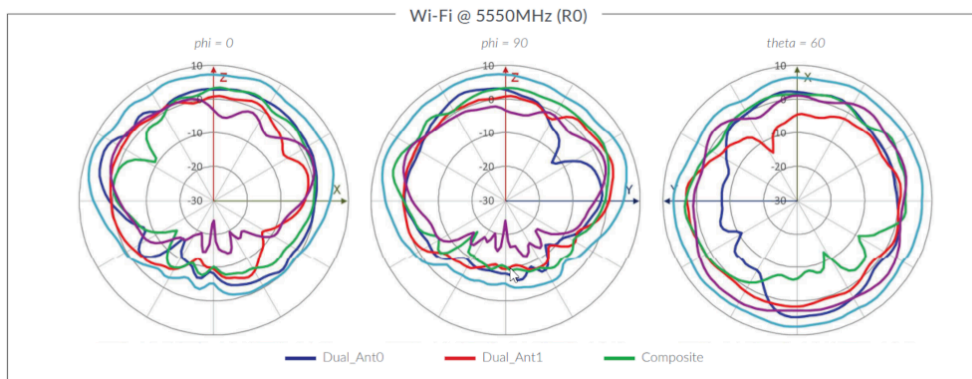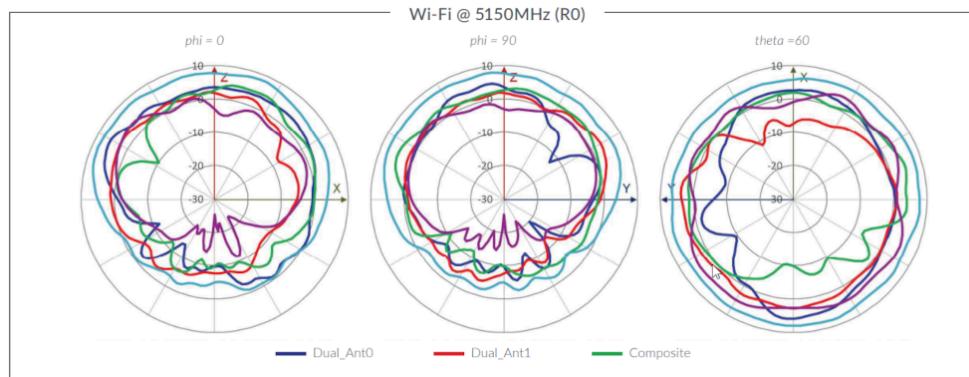|	
USB	USB 2.0 support interface
Eth0	100/1000Base-T, 2.5GBase-T (802.3bz); RJ45; PoE PD
Eth1	10/100/1000Base-T; RJ45
External Antennas (AP32E)	Five RP-SMA: four for Wi-Fi data; one for sensor. Male connectors
Reset	Reset to the factory default settings
Indicators	One multicolor status LED

Mounting Brackets

APBR-T58	3⁄8" threaded rod
APBR-M16	16mm threaded rod (M16-2)
APBR-ADP-CR9	9⁄16" T-Rail
APBR-ADP-RT15	15⁄16" T-Rail
APBR-ADP-WS15	1½" T-Rail
APBR-ADP-T12	½" threaded rod

*The AP package includes one Universal Bracket. APBR-U is available separately as an accessory.
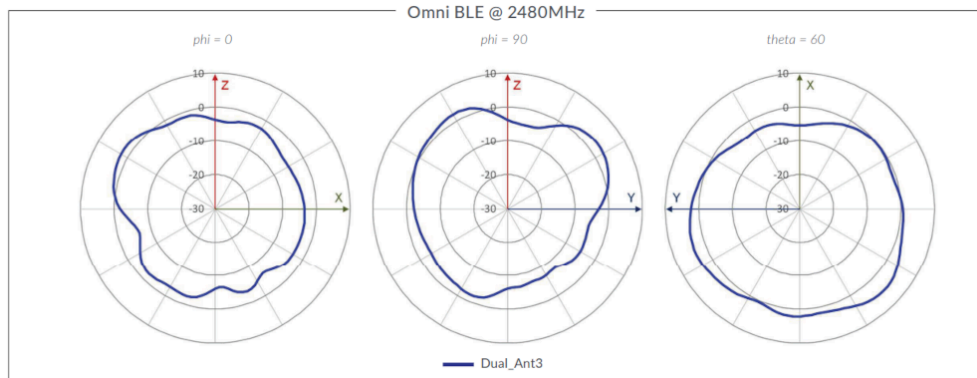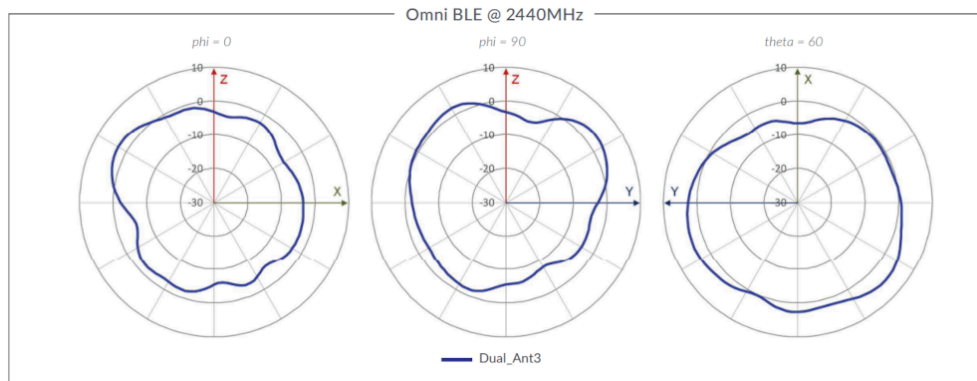
AP32 Wi-Fi Antenna Plots

Wi-Fi @ 2400MHz (R1)

phi = 0   *phi = 90*   *theta = 60*

— Dual_Ant0   — Dual_Ant1   — Composite

Wi-Fi @ 2450MHz (R1)

phi = 0   *phi = 90*   *theta = 60*

— Dual_Ant0   — Dual_Ant1   — Composite

Wi-Fi @ 2500MHz (R1)

phi = 0   *phi = 90*   *theta = 60*

— Dual_Ant0   — Dual_Ant1   — Composite

AP32 Wi-Fi Antenna Plots

Wi-Fi @ 5150MHz (R0)

Wi-Fi @ 5550MHz (R0)

Wi-Fi @ 5850MHz (R0)

AP32 Omni BLE Antenna Plots

Omni BLE @ 2400MHz

Omni BLE @ 2440MHz

Omni BLE @ 2480MHz
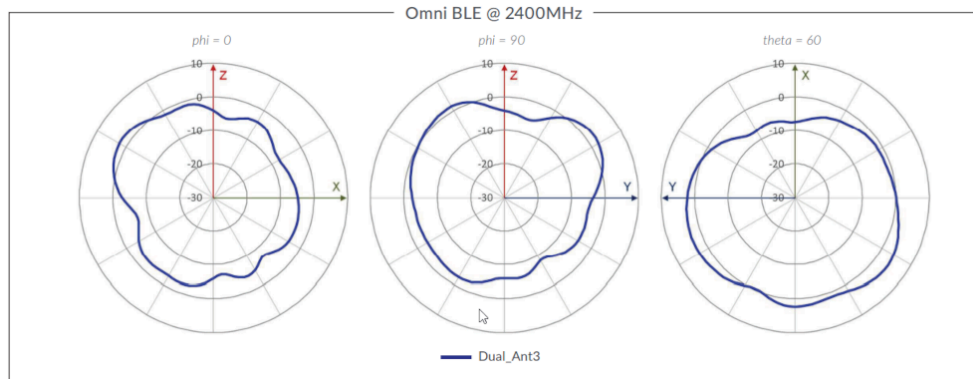
About Juniper Networks

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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