AP12 ACCESS POINT

Wall Plate 802.11ax (Wi-Fi 6) AP Automates Network Operations

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.

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:

- AP12, AP32, AP33, AP43, 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.

AP12

The table below compares the major functions supported by the Juniper Wi-Fi 6 access points to help in selecting the most appropriate model(s).

	AP43	AP63	AP33	AP32	AP12
Deployment	Indoor	Outdoor	Indoor	Indoor	Indoor Wall Plate/ Desk Mount
Wi-Fi Standard	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 Tri-Radio	✓	✓	✓	✓	✓
Antenna Options	Internal/ External	Internal/ External	Internal	Internal/ External	Internal
Virtual BLE	✓	✓	✓	–	–
IoT Interface	✓	–	–	–	–
IoT Sensors	Humidity, Pressure, Temperature	–	–	–	–
Warranty	Limited Lifetime	One Year	Limited Lifetime	Limited Lifetime	Limited Lifetime

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
- 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 LE 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

*Juniper Mist Premium Analytics service subscription is needed

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 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

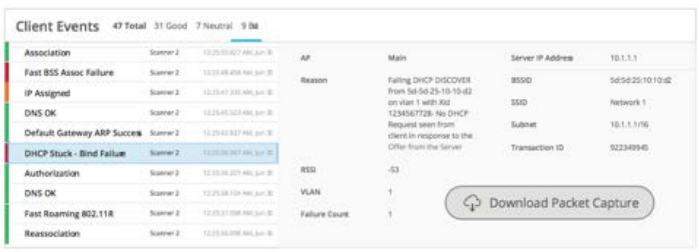
Juniper's radio resource management (RRM) automates dynamic channel and power assignment, taking Wi-Fi and external sources of interference into account with its dedicated sensor radio. The AI engine continuously monitors the SLE coverage and capacity metrics to learn and optimize the RF environment. 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.

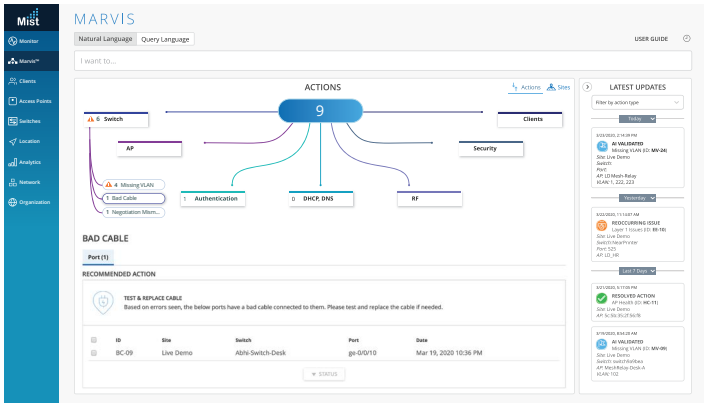
Dynamic Packet Capture

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 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.

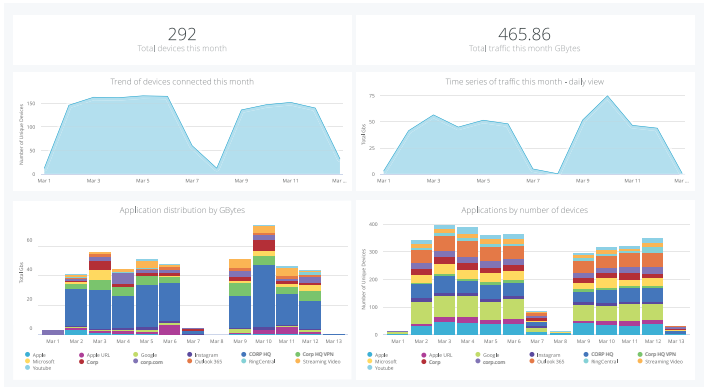


Effortless, Cloud-Based Setup and Updates

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 Premium Analytics service subscription is needed

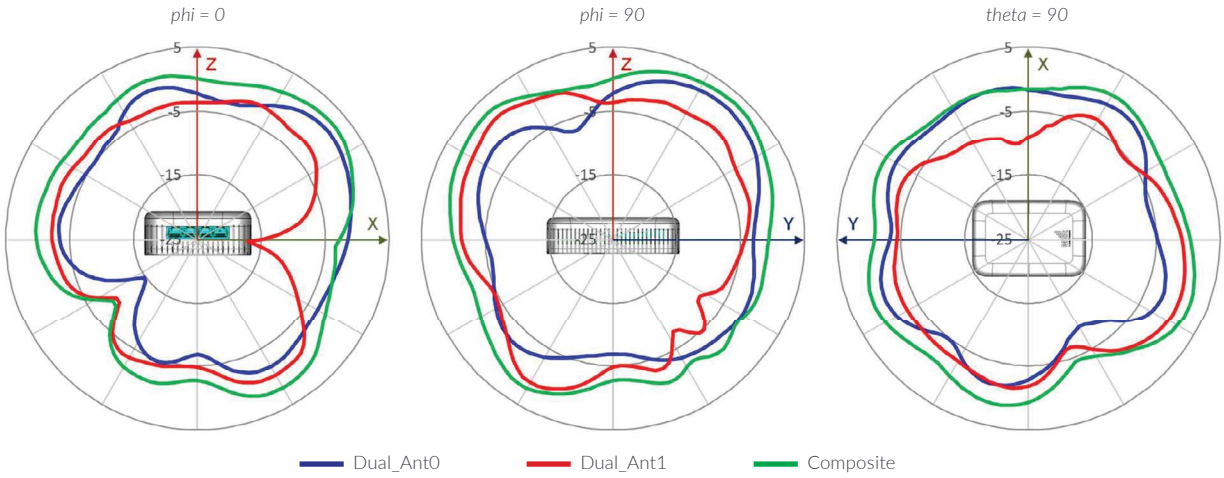
SPECIFICATIONS	
Wi-Fi Standard	802.11ax (Wi-Fi 6), including support for OFDMA, 1024-QAM, MU-MIMO, Target Wake Time (TWT), and Spatial Frequency Reuse (BSS Coloring). Backwards compatibility with 802.11a/b/g/n/ac
Combined Highest Supported Data Rates	1.8 Gbps
2.4 GHz	2x2 : 2 802.11b/g/n up to 400 Mbps 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 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	2.4GHz omnidirectional antennas with 3 dBi peak gain 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	802.3af/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, non-condensing
Operating Altitude	3,048 m (10,000 ft)

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

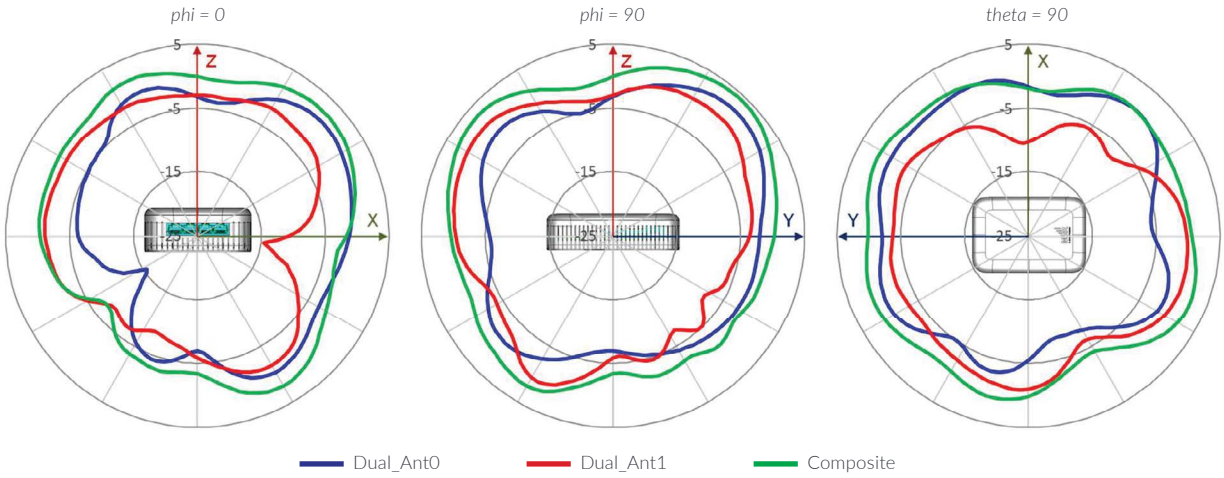
MOUNTING BRACKETS	
APBR-WP1	Wall plate bracket for AP12

AP12 2.4GHZ WI-FI ANTENNA PLOTS

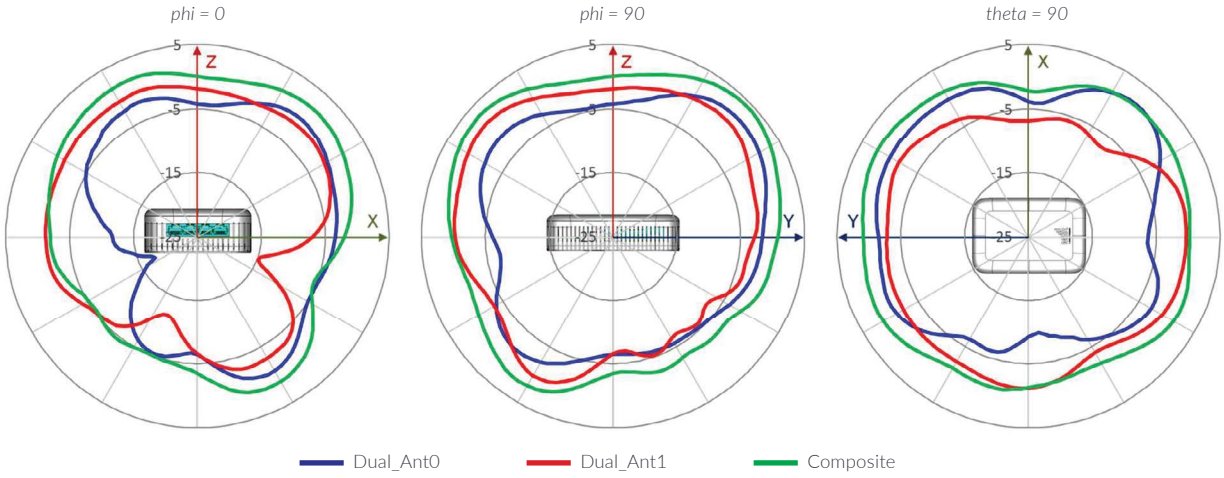
2.4 GHz Wi-Fi @ 2400MHz (R1)



2.4 GHz Wi-Fi @ 2450MHz (R1)

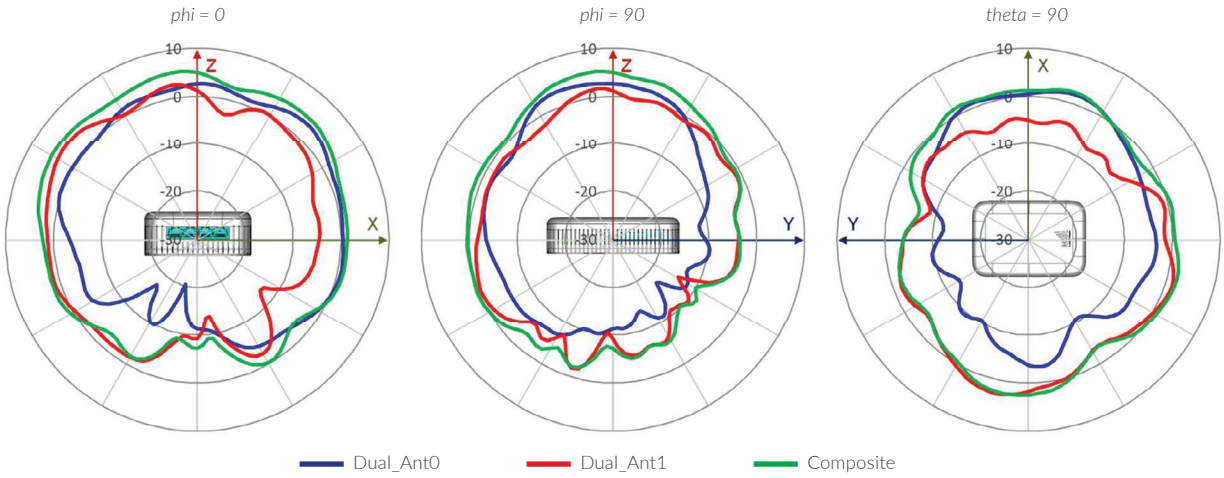


2.4 GHz Wi-Fi @ 2500MHz (R1)

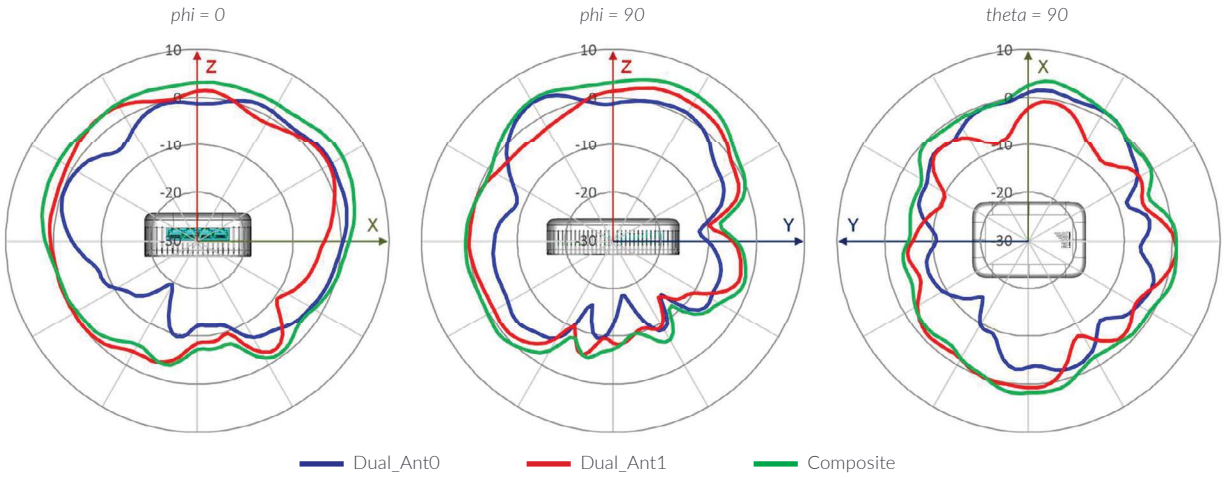


AP12 5GHZ WI-FI ANTENNA PLOTS

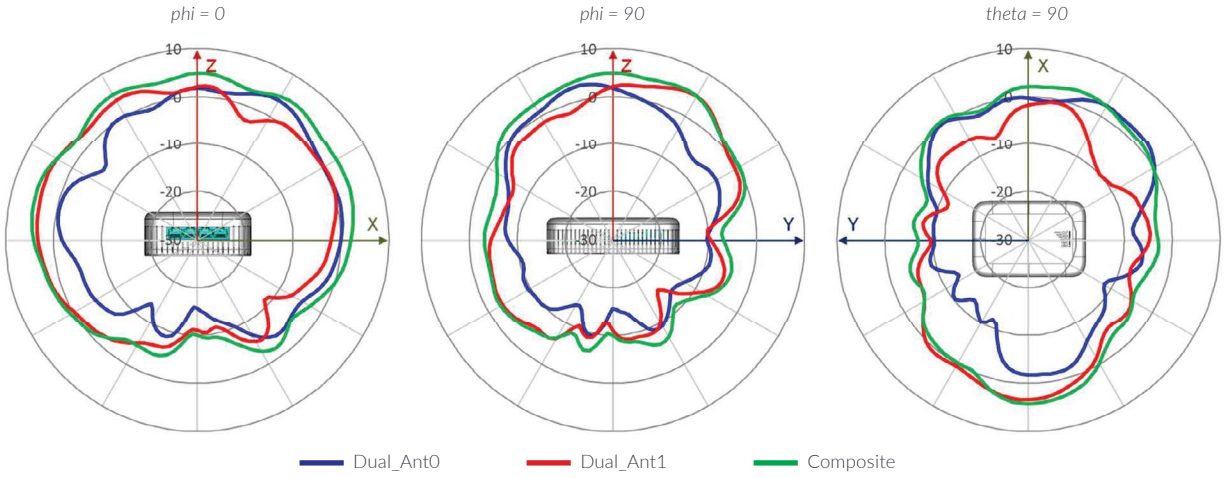
5 GHz Wi-Fi @ 5150MHz (R0)



5 GHz Wi-Fi @ 5550MHz (R0)

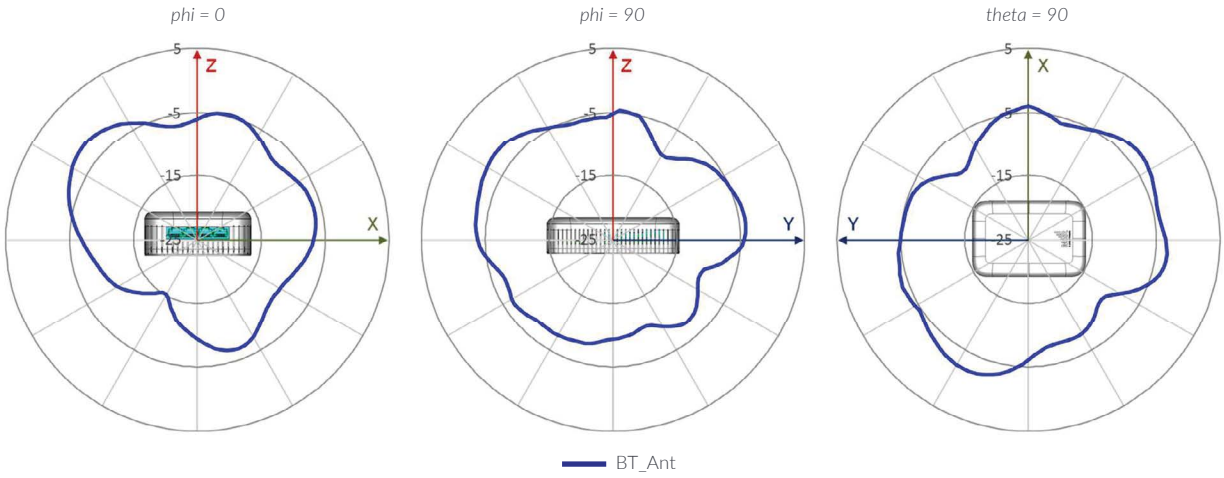


5 GHz Wi-Fi @ 5850MHz (R0)

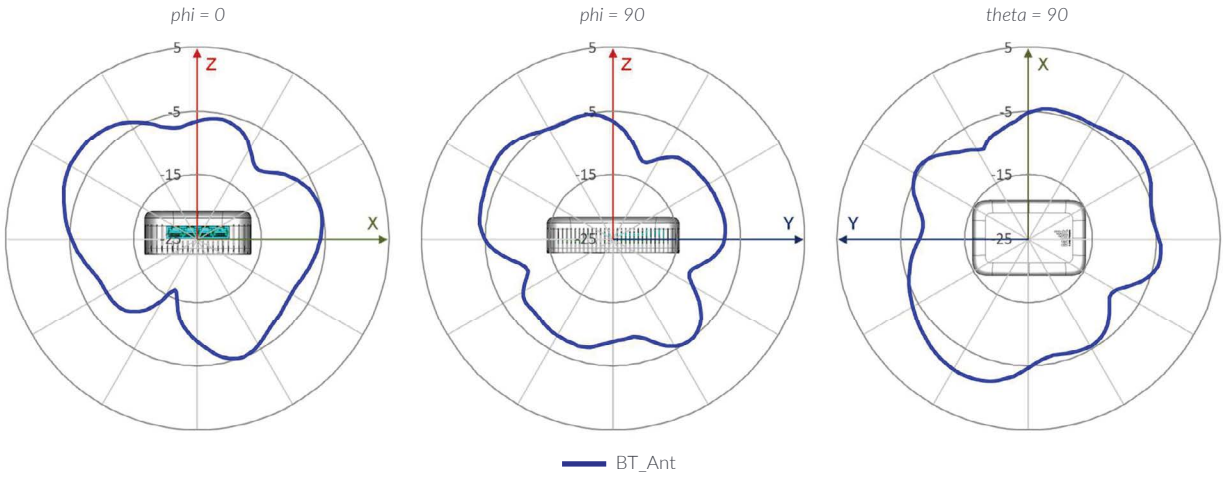


AP12 2.4GHZ OMNI BLE ANTENNA PLOTS

Omni BLE @ 2400MHz



Omni BLE @ 2440MHz



Omni BLE @ 2480MHz