# Overview

## Aruba 210 Series Access Points

Affordable, high-performance 802.11ac




## Product overview

Multifunctional and affordable Aruba 210 series wireless access points (APs) maximize mobile device performance in medium-density, high- performance Wi-Fi environments.

These compact and cost-effective dual-radio APs deliver wireless data rates of up to 1.3 Gbps to 5-GHz devices with 802.11ac technology. They also support 3x3 MIMO with three spatial streams as well as 2.4-GHz 802.11n clients at data rates up to 450 Mbps.

The AP-215 and IAP-215 models have three integrated omni- directional downtilt antennas per radio, while the AP-214 and IAP-214 support external, detachable dual-band antennas using three RP-SMA connectors.

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## Features and Benefits

### Unique Benefits

- Wi-Fi client optimization
  - The 210 series features patented ClientMatch technology to eliminate sticky client behavior while users roam. ClientMatch continuously gathers session performance metrics from mobile devices.
  - If a mobile device moves away from an AP or if RF interference impedes performance, ClientMatch automatically steers the device to a better AP.

- Advanced Cellular Coexistence (ACC)
  - ACC lets WLANs to perform at peak efficiency by minimizing interference from 3G/4G LTE networks, distributed antenna systems and commercial small cell/femtocell equipment.

- Quality of service for unified communication apps
  - The 210 series supports priority handling and policy enforcement for unified communication apps, including Microsoft Lync with encrypted videoconferencing, voice, chat and desktop sharing.

**Choose your Operating Mode**

The 210 series supports your choice of operating modes to meet unique management and deployment requirements

- Controller-managed AP or Remote AP (RAP) running ArubaOS.
  When managed by Aruba Mobility Controllers, 210 series APs offer centralized configuration, data encryption, policy enforcement and network services as well as distributed and centralized traffic forwarding. Please refer to the **Aruba Mobility Controller** data sheets for more details.

- Aruba Instant AP running InstantOS.
  In Aruba Instant mode, a single AP automatically distributes the network configuration to other Instant APs in the WLAN. Simply power-up on Instant AP, configure it over the air, and plug in the other APs - the entire process takes about five minutes.

For large installations across multiple sites, the Aruba Activate service significantly reduces deployment time by automating device provisioning, firmware upgrades, and inventory management. With Aruba Activate, Instant APs are factory- shipped to any site and configure themselves when powered up.

**AP 210 Series Specifications**

- AP-215 and IAP-215
  - 2.4-GHz (450 Mbps max rate) and 5-GHz (1.3 Gbps max rate) radios, each with 3x3 MIMO and three integrated omni-directional downtilt antennas..

- AP-214 and IAP-214
  - 2.4-GHz (450 Mbps max rate) and 5-GHz (1.3 Gbps max rate) radios, each with 3x3 MIMO and three combined, diplexed (dual-band) external RP-SMA antenna connectors.

**Advanced Features**

- RF management
  - Adaptive Radio Management (ARM) technology automatically assigns channel and power settings, provides airtime fairness and ensures that APs stay clear of all sources of RF interference to deliver reliable, high-performance WLANs.
  - 210 series APs can be configured to provide part-time or dedicated air monitoring for spectrum analysis and wireless intrusion protection, VPN tunnels to extend corporate resources to remote locations, and wireless mesh connections where Ethernet drops are not available.

- Spectrum analysis
  - Capable of part-time or dedicated air monitoring, the spectrum analyzer remotely scans the 2.4-GHz and 5-GHz radio bands to identify sources of RF interference.

- Security
  - Integrated wireless intrusion protection offers thread protection and mitigation, and eliminates the need for separate RF sensors and security appliances.
  - IP reputation and security services identify, classify, and block malicious files, URL and IPs, providing comprehensive protection against advanced online threats.
  - Integrated Trusted Platform Module (TPM) for secure storage of credentials and keys.
  - SecureJack-capable for secure tunneling of wired Ethernet traffic

**Operating Modes**

- Aruba Instant AP
- Mobility Controller-managed AP
- Remote AP (RAP) for branch deployments
- Air monitor (AM) for wireless IDS, rogue detection and containment
- Spectrum analyzer, dedicated or hybrid
- Secure enterprise mesh

**Wireless Radio Specifications**

- AP type: Indoor, dual radio, 5 GHz 802.11ac and 2.4 GHz 802.11n 3x3:3
- Software-configurable dual radio supports 5 GHz (Radio 0) and 2.4 GHz (Radio 1)
- 3x3 MIMO with three spatial streams and up to 1.3 Gbps wireless data rate
- Support for up to 255 associated client devices per radio, and up to 16 BSSIDs per radio
- Supported frequency bands (country-specific restrictions apply):
  - 2.4000 GHz to 2.4835 GHz
  - 5.150 GHz to 5.250 GHz
  - 5.250 GHz to 5.350GHz
  - 5.470 GHz to 5.725GHz
  - 5.725 GHz to 5.850GHz

- Available channels: Dependent on configured regulatory domain
- Dynamic frequency selection (DFS) optimizes the use of available RF spectrum
- Supported radio technologies:
  - 802.11b:  Direct-sequence  spread-spectrum (DSSS)
  - 802.11a/g/n/ac: Orthogonal frequency-division multiplexing (OFDM)

- Supported modulation types:
  - 802.11b: BPSK, QPSK, CCK
  - 802.11a/g/n/ac: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM

- Transmit power: Configurable in increments of 0.5 dBm
- Maximum (aggregate, conducted total) transmit power (limited by local regulatory requirements):
  - 2.4-GHz band: +23 dBm (18 dBm per chain)
  - 5-GHz band: +23 dBm (18 dBm per chain)
  - **NOTE:** conducted transmit power levels exclude antenna gain. For total (EIRP) transmit power, add antenna gain

- Advanced Cellular Coexistence (ACC) minimizes interference from cellular networks
- Maximum ratio combining (MRC) for improved receiver performance
- Cyclic delay/shift diversity (CDD/CSD) for improved downlink RF performance
- Short guard interval for 20-MHz, 40-MHz and 80-MHz channels
- Space-time block coding (STBC) for increased range and improved reception
- Low-density parity check (LDPC) for high-efficiency error correction and increased throughput
- Transmit beamforming (TxBF) for increased signal reliability and range
- Supported data rates (Mbps):
  - 802.11b: 1, 2, 5.5, 11
  - 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54
  - 802.11n: 6.5 to 450 (MCS0 to MCS23)
  - 802.11ac: 6.5 to 1,300 (MCS0 to MCS9, NSS = 1 to 3)

- 802.11n high-throughput (HT) support: HT 20/40
- 802.11ac very high throughput (VHT) support: VHT 20/40/80
- 802.11n/ac packet aggregation: A-MPDU, A-MSDU

**Antennas**

- AP-214/IAP-214: Three RP-SMA connectors for external dual-band antennas. Internal loss between radio interface and external antenna connectors (due to diplexing circuitry): 1.0 dB in 2.4 GHz and 2.0 dB in 5 GHz.
- AP-215/IAP-215: Three integrated downtilt omni- directional antennas per radio for 3x3 MIMO with maximum antenna gain of 5.0 dBi in 2.4 GHz and 5.0 dBi in 5 GHz. Built-in antennas are optimized for horizontal ceiling mounted orientation of the AP. The downtilt angle for maximum gain is roughly 30 degrees.

**Other Interfaces**

- One 10/100/1000BASE-T Ethernet network interface (RJ-45)
  - Auto-sensing link speed and MDI/MDX
  - 802.3az Energy Efficient Ethernet (EEE)
  - PoE-PD: 48 Vdc (nominal) 802.3af or 802.3at PoE

- DC power interface, accepts 1.7/4.0-mm center-positive circular plug with 9.5-mm length
- USB 2.0 host interface (Type A connector)
- Visual indicators (LEDs):
  - Power/system status
  - Ethernet link status (ENET)
  - Radio status (two; RAD0, RAD1)

- Reset button: factory reset (during device power-up)
- Serial console interface (RJ-45)
- Kensington security slot

**Power**

- Maximum (worst-case) power consumption: 14.9 watts (PoE) or 13.6 watts (DC)
  - Excludes power consumed by external USB device (and internal overhead); this could add up to 6 watts (PoE) or 5.5 watts (DC) for 5W/1A USB device

- Maximum (worst-case) power consumption in idle mode: 8.2 watts (PoE) or 7.4 watts (DC)
- Direct DC source: 12 Vdc nominal, +/- 5%
- Power over Ethernet: 48 Vdc (nominal) 802.3af/802.3at compliant source
  - USB port is disabled when using an 802.3af PoE power source; for unrestricted operation with PoE power, use an 802.3at compliant source

- Power sources sold separately
- When both power sources are available, DC power takes priority

**Mounting**

- Included with AP:
  - Mounting brackets (2) for attaching to 9/16-inch or 15/16-inch T-bar drop-tile ceiling

- Spare mounting kit:
  - AP-220-MNT-C1: Aruba AP mount kit contains two ceiling-grid rail adapters for flat rails

- Optional mounting kits:
  - AP-220-MNT-C2: Aruba AP mount kit contains two ceiling-grid rail adapters for Interlude and Silhouette style rails
  - AP-220-MNT-W1: Aruba AP mount kit contains one basic flat-surface wall/ceiling mount bracket
  - AP-200-MNT-W3: Aruba AP mount kit contains one secure flat-surface wall/ceiling mount cradle

**Mechanical**

- Dimensions/weight (unit, excluding mount accessories):
  - 180 mm x 180 mm x 45 mm (W x D x H)
  - 610 g

- Dimensions/weight (shipping):
  - 220 mm x 225 mm x 55 mm (W x D x H)
  - 860 g

**Environmental**

- Operating:
  - Temperature: 0° C to +50° C (+32° F to +122° F)
  - Humidity: 5% to 95% non-condensing

- Storage and transportation:
  - Temperature: -40° C to +70° C (-40° F to +158° F)

**Regulatory**

- FCC/Industry of Canada
- CE Marked
- R&TTE Directive 1999/5/EC
- Low Voltage Directive 2006/95/EC
- EN 300 328
- EN 301 489
- EN 301 893
- UL/IEC/EN 60950
- EN 60601-1-1, EN60601-1-2

For more country-specific regulatory information and approvals, please see your Aruba representative

**Reliability**

MTBF: 538,975 hours (61.5 years) at +25° C operating temperature

**Regulatory Model Numbers**

- AP-214 and IAP-214: APIN0214
- AP-215 and IAP-215: APIN0215

**Certifications**

- CB Scheme Safety, cTUVus
- UL2043 plenum rating
- Wi-Fi Alliance (WFA) certified 802.11a/b/g/n/ac

**Warranty**

- **Aruba Limited lifetime warranty**

**Minimum software Versions**

- ArubaOS 6.4.2.0
- Aruba InstantOS 4.1.1.0

## Configuration

# Ordering Guide

## Step 1: Select AP Model

| Description | Part Number | Configuration Impact |
|---|---|---|
| **Controller-based Access Points** | | |
| Aruba AP-214 802.11n/ac Dual 3x3:3 Radio Antenna Connectors AP | JW168A | Add PoE injector or AC adapter, antennas |
| Aruba AP-215 802.11n/ac Dual 3x3:3 Radio Integrated Antenna AP | JW170A | Add PoE injector or AC adapter |
| Aruba AP-214 FIPS/TAA-compliant 802.11n/ac Dual 3x3:3 Radio Antenna Connectors AP | JW169A | Add PoE injector or AC adapter, antennas |
| Aruba AP-215 FIPS/TAA-compliant 802.11n/ac Dual 3x3:3 Radio Integrated Antenna AP | JW171A | Add PoE injector or AC adapter |
| **Instant Access Points** | | |
| Aruba Instant IAP-214 (RW) 802.11n/ac Dual 3x3:3 Radio Antenna Connectors AP | JW222A | Add PoE injector or AC adapter, antennas |
| Aruba Instant IAP-214 (US) 802.11n/ac Dual 3x3:3 Radio Antenna Connectors AP | JW223A | Add PoE injector or AC adapter, antennas |
| Aruba Instant IAP-214 (JP) 802.11n/ac Dual 3x3:3 Radio Antenna Connectors AP | JW221A | Add PoE injector or AC adapter, antennas |
| Aruba Instant IAP-214 (IL) 802.11n/ac Dual 3x3:3 Radio Antenna Connectors AP | JW220A | Add PoE injector or AC adapter, antennas |
| Aruba Instant IAP-215 (RW) 802.11n/ac Dual 3x3:3 Radio Integrated Antenna AP | JW228A | Add PoE injector or AC adapter |
| Aruba Instant IAP-215 (US) 802.11n/ac Dual 3x3:3 Radio Integrated Antenna AP | JW229A | Add PoE injector or AC adapter |
| Aruba Instant IAP-215 (JP) 802.11n/ac Dual 3x3:3 Radio Integrated Antenna AP | JW227A | Add PoE injector or AC adapter |
| Aruba Instant IAP-214 (JP) FIPS/TAA 802.11n/ac Dual 3x3:3 Radio Ant Connectors AP | JY737A | Add PoE injector or AC adapter, antennas |
| Aruba Instant IAP-215 (JP) FIPS/TAA 802.11n/ac Dual 3x3:3 Radio Integrated Ant AP | JY738A | Add PoE injector or AC adapter |
| Aruba Instant IAP-215 (IL) 802.11n/ac Dual 3x3:3 Radio Integrated Antenna AP | JW226A | Add PoE injector or AC adaptor |

**NOTE:** All models ship with ceiling rail adapters (for flat rails) in the box.

## Step 2: Add Powering Accessories (Optional)

| Description | Part Number | Configuration Impact |
|---|---|---|
| PD-3510G-AC 15.4W 802.3af PoE 10/100/1000Base-T Ethernet Midspan Injector | JW627A | Add AC power cable |
| PD-9001GR-AC 30W 802.3at PoE+ 10/100/1000 Ethernet Indoor Rated Midspan Injector | JW629A | Add AC power cable |
| AP-AC-12V30A 12V/30W AC/DC Desktop Style 1.7/4.0/9.5mm Circular 90 Deg Plug DoE Level VI Adapter | JX989A | Add AC power cable |
| AP-DC-CAR 12V/18W Indoor AP Car Power US Only Adapter Kit | JW631A | For US and Japan only |
| **Select three-prong AC power cord for injector or AC adapter (no power cable needed for universal adapter):** | | |
| PC-AC-ARG Argentina 220V AC 10A 2-meter AC Power Cord | JW113A | |
| PC-AC-AUS Australian AC Power Cord | JW114A | |
| PC-AC-BR Brazil AC Power Cord | JW115A | |
| PC-AC-CHN China AC Power Cord | JW116A | |

| | |
|---|---|
| PC-AC-DEN Denmark 220V AC 10A 2-meter AC Power Cord | JW117A |
| PC-AC-EC Continental European/Schuko AC Power Cord | JW118A |
| PC-AC-IN India AC Power Cord | JW119A |
| PC-AC-IL Israel 250V AC 10A 2-meter AC Power Cord | JW120A |
| PC-AC-IT Italian AC Power Cord | JW121A |
| PC-AC-JP Japanese AC Power Cord | JW122A |
| PC-AC-KOR Korea AC Power Cord | JW123A |
| PC-AC-NA North America AC Power Cord | JW124A |
| PC-AC-SWI Switzerland 220V AC 10A 2-meter AC Power Cord | JW125A |
| PC-AC-TW Taiwan AC Power Cord | JW126A |
| PC-AC-UK UK AC Power Cord | JW127A |
| PC-AC-ZA South Africa 250V AC 10A 2-meter AC Power Cord | JW128A |

## Step 3: Add Mount Accessories (Optional)

| Description | Part Number |
|---|---|
| AP-220-MNT-C2 2x Ceiling Grid Rail Adapter for Interlude and Silhouette Mt Kit | JW045A |
| AP-MNT-CM1 Industrial Grade Indoor Access Point Metal Suspended Ceiling Rail Mount Kit | JX961A |
| AP-220-MNT-W1 Flat Surface Wall/Ceiling Black AP Basic Flat Surface Mount Kit | JW046A |
| AP-220-MNT-W1W Flat Surface Wall/Ceiling White AP Basic Flat Surface Mount Kit | JW047A |
| AP-220-MNT-W3 White Low Profile Box Style Secure Large AP Flat Surface Mount Kit | JY706A |

## Step 4: Select Antennas (AP-214 Only)

| Description | Part Number | Qty | Interface(s) | Target Environment | Mounting |
|---|---|---|---|---|---|
| **AP-214 antenna interface: 3x RP-SMA female, concurrent dual-band.** | | | | | |
| AP-ANT-1W 2.4-2.5GHz (4dBi)/4.9-5.875GHz (6dBi) Hi Gain Dual-band Omni-Dir Indoor Antenna | JW009A | 3 | 1x RP-SMA male connector | Indoor | Direct-mount |
| AP-ANT-13B 2.4-2.5GHz (4.4dBi)/4.9-5.9GHz (3.3dBi) Downtilt Smallest Omni-Dir Single Antnna | JW001A | 3 | 1x RP-SMA male pigtail | Indoor | Direct, using pigtails |
| AP-ANT-16 2.4-2.5Ghz (3.9dBi)/4.9-5.9GHz (4.7dBi) 3 Elmt MIMO Ant w/Downtilt Omni-Dir Antenna | JW003A | 1 | 3x RP-SMA male pigtail | Indoor | Direct, using pigtails |
| AP-ANT-19 2.4/5G Dual Band Omni-Dir 3dBi/6dBi Indr/Otdr RPSMA Cnctr Ant w/36in Intgrtd Cable | JW004A | 3 | 1x RP-SMA male pigtail | Indoor/outdoor | Direct, using pigtails |
| AP-ANT-20W 2.4-2.5GHz (2dBi)/4.9-5.875GHz (2dBi) Compact Omni-Dir DMt Indr White Antenna | JW011A | 3 | 1x RP-SMA male connector | Indoor | Direct-mount |
| AP-ANT-35A Dual Band 90x90deg 5dBi +/-45 and V Pol 3 Element MIMO 3xRPSMA Pigtail Antenna | JW015A | 1 | 3x RP-SMA male pigtail | Indoor/outdoor | Direct, using pigtails |
| AP-ANT-38 Dual Band 60x60deg 8dBi +/-45 and V Pol 3 Element MIMO 3xRPSMA Pigtail Antenna | JW016A | 1 | 3x RP-SMA male pigtail | Indoor/outdoor | Direct, using pigtails |

## Step 5: Add Antenna Mount Kit (Optional)

| Description | Part Number | Comments |
|---|---|---|
| AP-ANT-MNT-3 AP-ANT-25A/28/35A/38 Azimuth and Elevation Adjustable Mount Kit | JW020A | Compatible with AP-ANT-25A, AP-ANT-28, AP-ANT-35A and AP-ANT-38 |

## Step 6: Add Cosmetic Snap-on Cover (AP-215 Only, Optional)

| Description | Part Number | Comments |
|---|---|---|
| 215-CVR-20 20-pk for AP-215 with Holes for LED Indicators White Non-glossy Snap-on Covers | JW074A | 1 kit per 20 access points |

## Technical Specifications

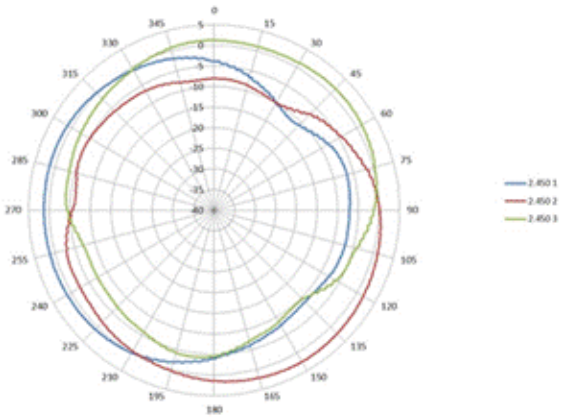
### RF Performance Table

| | Maximum transmit power (dBm) per transmit chain | Receiver sensitivity (dBm) per receive chain |
|---|---|---|
| **802.11b 2.4 GHz** | | |
| 1 Mbps | 18.0 | -97.0 |
| 11 Mbps | 18.0 | -89.0 |
| **802.11g 2.4 GHz** | | |
| 6 Mbps | 18.0 | -93.0 |
| 54 Mbps | 18.0 | -75.0 |
| **802.11n HT20 2.4 GHz** | | |
| MCS0/8/16 | 18.0 | -92.0 |
| MCS7/15/23 | 18.0 | -72.0 |
| **802.11n HT40 2.4 GHz** | | |
| MCS0/8/16 | 18.0 | -89.0 |
| MCS7/15/23 | 16.0 | -69.0 |
| **802.11a 5 GHz** | | |
| 6 Mbps | 18.0 | -93.0 |
| 54 Mbps | 16.5 | -75.0 |
| **802.11n HT20 5 GHz** | | |
| MCS0/8/16 | 18.0 | -92.0 |
| MCS7/15/23 | 16.0 | -72.0 |
| **802.11n HT40 5 GHz** | | |
| MCS0/8/16 | 18.0 | -89.0 |
| MCS7/15/23 | 16.0 | -69.0 |
| **802.11ac VHT20 5 GHz** | | |

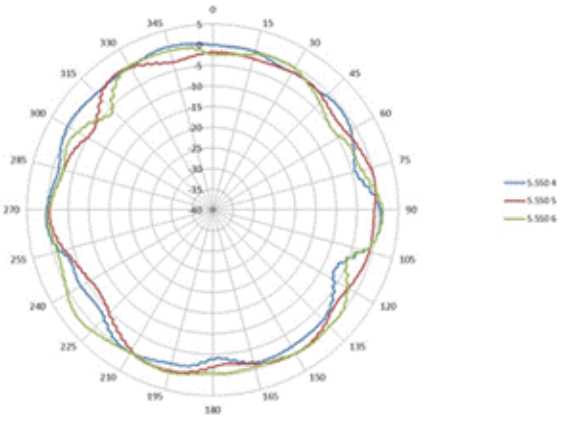
| | | |
|---|---|---|
| MCS0 | 18.0 | -92.0 |
| MCS9 | 14.0 | -64.0 |
| **802.11ac VHT40 5 GHz** | | |
| MCS0 | 18.0 | -89.0 |
| MCS9 | 14.0 | -61.0 |
| **802.11ac VHT80 5 GHz** | | |
| MCS0 | 18.0 | -86.0 |
| MCS9 | 14.0 | -58.0 |

Maximum capability of the hardware provided (excluding antenna gain). Maximum transmit power is limited by local regulatory settings.

**Horizontal or azimuth plane (top view, 0 degrees downtilt)**

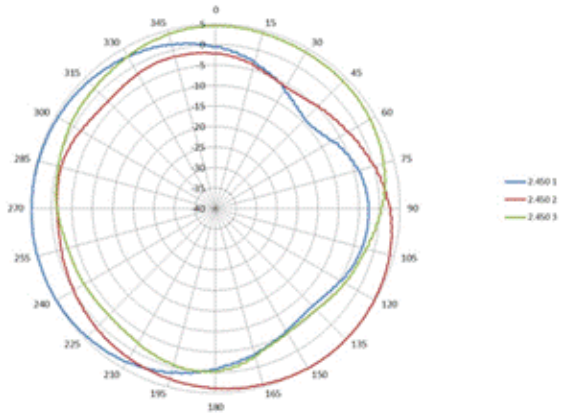


2.450 GHz

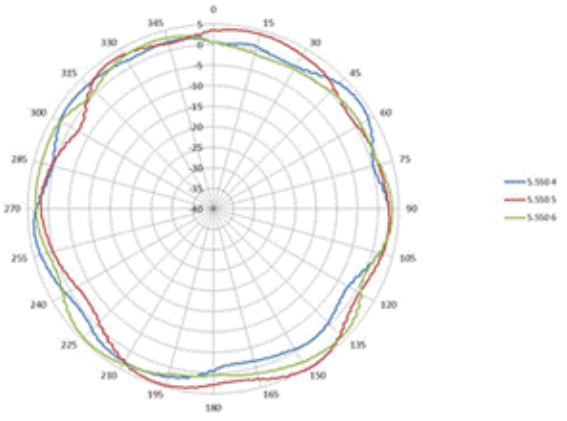


5.550 GHz

**Horizontal or azimuth plane (top view, 30 degrees downtilt)**

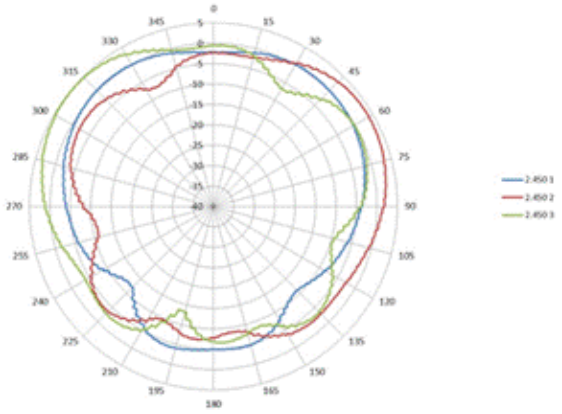


2.450 GHz

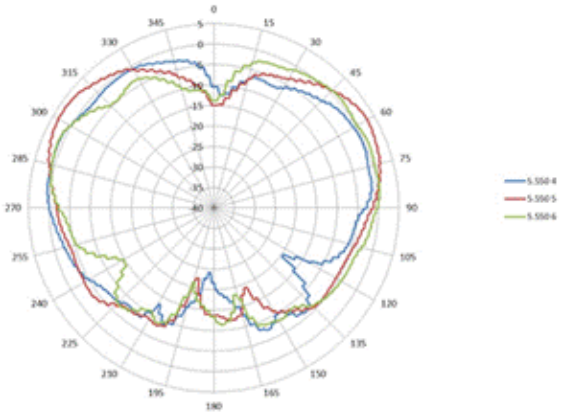


5.550 GHz

**Elevation plane (side view, 0 degrees angle)**

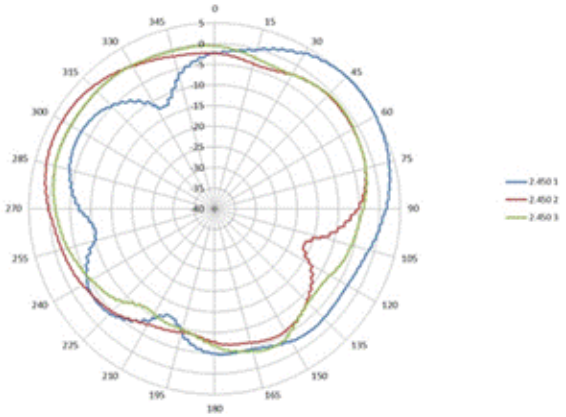


2.450 GHz

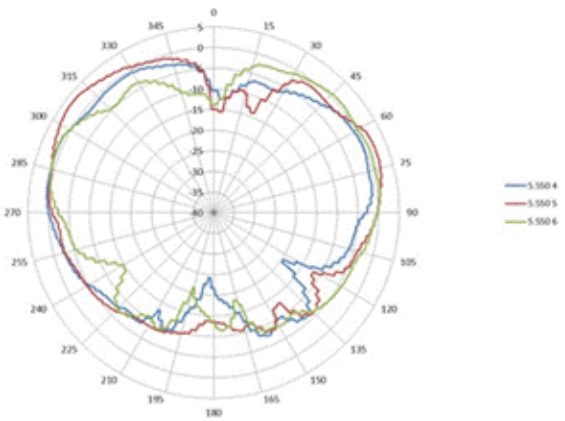


5.550 GHz

**Elevation plane (side view, 90 degrees angle)**



2.450 GHz



5.550 GHz

## Summary of Changes

| Date | Version History | Action | Description of Change |
|---|---|---|---|
| 06-Mar-2017 | From Version 2 to 3 | Changed | Updates made on Overview and Configuration sections |
| 07-Nov-2016 | From Version 1 to 2 | Added | Models added: JY737A; JY738A |
| 01-Nov-2016 | Version 1 | Created | Document creation. |

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