

# ALCATEL-LUCENT OMNIACCESS RAP155 SERIES ACCESS POINTS

Wireless and wired networking for SMB and branch offices



The multifunctional Alcatel-Lucent OmniAccess™ RAP155 Series Access Points (APs) deliver secure 802.11n wireless and wired networking to small and medium-sized businesses (SMB) and provide access to corporate resources from branch offices. OmniAccess RAP155 Series APs are ideal for ultra-high-density Wi-Fi environments that require fast encrypted throughput.

With unmatched deployment flexibility, the OmniAccess RAP155 Series APs can operate in Alcatel-Lucent Instant™ mode controlled by the OmniVista™ 3600 Air Manager management platform or in controller-managed mode where all network services are centralized by OmniAccess WLAN Controllers.

In Instant mode, traffic is locally bridged but it still provides the flexibility of establishing secure IPsec VPN tunnels back to WLAN controllers.

The OmniAccess RAP155 Series APs offer a wide range of enterprise-class features, including role-based network access and policy-based forwarding. Integrated ClientMatch™ technology ensures consistently high performance across the WLAN infrastructure.

At locations that require greater coverage, a RAP155 can join an Alcatel-Lucent Instant WLAN cluster. Simply install additional RAP155s or any Alcatel-Lucent Instant AP and the entire cluster is managed as one. If one Alcatel-Lucent Instant AP fails, another AP automatically takes over with no disruption.

With a wireless data rate of up to 450 Mb/s, the dual-radio RAP155 has five Ethernet ports (one uplink and four local) and a USB port to connect to 3G and 4G networks. Optionally, the RAP155 can provide power over Ethernet (PoE) on its two local ports for IP phones and other devices.

## FEATURES

- ClientMatch technology eliminates sticky clients by continuously gathering session performance metrics to steer mobile devices to the best AP and radio, for improved performance
- Integrated Adaptive Radio Management™ (ARM) technology provides airtime fairness, auto-corrects Wi-Fi coverage holes and ensures that APs stay clear of RF interference
- Zero-touch provisioning

## BENEFITS

- Delivers best-in-class RF management
- Improved wireless performance
- Provides enhanced security through secure connection of remote users to corporate network resources

## OPERATING MODES

### Wireless

- OmniAccess Instant AP
- Mobility Controller-managed WLAN AP or RAP
- Air monitor
- Hybrid WLAN AP and air monitor
- Secure enterprise mesh

## Wired

- 10/100/1000BASE-T Ethernet uplink port, four
- 10/100/1000BASE-T Ethernet local ports
  - Two local Ethernet ports are PoE capable (product option)
- User authentication: 802.1X, captive portal, MAC authentication or open access
- Policy-based forwarding for local resource access

## TECHNICAL SPECIFICATIONS

### Wireless radio specifications

- AP type: Dual radio, dual-band 802.11n indoor
- Software-configurable dual radio supports 2.4 GHz and 5 GHz
- 2x2 MIMO with two spatial streams and up to 300 Mb/s wireless data rate in 2.4 GHz
- 3x3 MIMO with three spatial streams and up to 450 Mb/s wireless data rate in 5 GHz
- Supported frequency bands (country-specific restrictions apply):
  - 2.400 GHz to 2.4835 GHz
  - 5.150 GHz to 5.250 GHz
  - 5.250 GHz to 5.350 GHz
  - 5.470 GHz to 5.725 GHz
  - 5.725 GHz to 5.850 GHz
- Available channels: Dependent upon 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: Orthogonal frequency-division multiplexing (OFDM)
  - 802.11n (2.4 GHz): OFDM, 2x2 MIMO with two spatial streams
  - 802.11n (5 GHz): OFDM, 3x3 MIMO with three spatial streams
- Supported modulation types:
  - 802.11b: BPSK, QPSK, CCK
  - 802.11a/g/n: BPSK, QPSK, 16-QAM, 64-QAM
- Transmit power: Configurable in increments of 0.5 dBm
- Maximum (conducted) transmit power (per radio transmit chain):
  - 2.4-GHz band: +18 dBm
  - 5-GHz bands: +18 dBm
- Transmit power will be limited as needed to comply with local regulatory requirements
- Advanced Cellular Coexistence (ACC) feature to effectively deal with interference from cellular systems

- Maximum ratio combining (MRC) for improved receiver performance
- Cyclic delay diversity (CDD) for improved downlink RF performance
- Short guard interval (SGI) for 20-MHz and 40-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
- Supported data rates (Mb/s):
  - 802.11b: 1, 2, 5.5, 11
  - 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54
  - 802.11n (2.4 GHz): 6.5 to 300 (MCS0 to MCS15)
  - 802.11n (5 GHz): 6.5 to 450 (MCS0 to MCS23)
- 802.11n high-throughput (HT) support: HT20/40
- 11n packet aggregation: A-MPDU, A-MSDU

### Other interfaces

#### Network

- ENET0 (uplink): One 10/100/1000BASE-T Ethernet (RJ-45), auto-sensing link speed and MDI/MDX
- ENET1-4 (local): Four 10/100/1000BASE-T Ethernet (RJ-45), auto-sensing link speed and MDI/MDX
- ENET1 and ENET2 capable of sourcing PoE power (RAP155P only)

#### DC power interface

- OAW-RAP155
  - 12 V DC +/- 5%
  - Connector: Circular plug, 1.7/4.0 mm center-positive, with 9.5 mm (0.37 in.) cord
- OAW-RAP155P
  - 54 V DC +/- 5%
  - Connector: Circular plug, 1.35/3.8 mm center-positive, 11.0 mm length
- One USB 2.0 port (Type A connector)
- Serial console interface (custom header, TTL signal levels)

#### Visual indicators (LEDs)

- Power/system status
- Ethernet link status (2x)
- WLAN radio status (2x)
- PoE status (2x)
- Kensington security slot
- Reset button

#### Encrypted VPN throughput

- Up to 100 Mb/s

## Power supply

### DC power source (adapter ships with unit; AC power cord ordered separately)

- OAW-RAP155: 12 V DC from external AC-to-DC power adapter
- OAW-RAP155P: 54 V DC from external AC-to-DC power adapter

### Maximum consumption

- Without USB device connected: 15.5 W
- With USB device: 18 W
- When sourcing PoE power (OAW-RAP155P only), total power consumption may increase by up to 34 W

### PoE power sourcing capabilities (OAW-RAP155P only)

- 802.3af or 802.3at power sourcing support (PSE) provided on two local Ethernet ports (ENET1, ENET 2)
- Device capable of supplying 1x full 802.3at power or 2x full 802.3af power

## Antennas

- 2.4 GHz: Two internal omni-directional antennas for 2x2 MIMO with maximum antenna gain of 3.0 dBi
- 5 GHz: Three internal omni-directional antennas for 3x3 MIMO with maximum antenna gain of 3.0 dBi
- Antennas are optimized for vertical orientation of the device

## Mounting

- Desktop: Using stand supplied with product
- Wall: Using built-in wall mount features

## Dimensions

### Unit (including desk mount)

- Height: 245 mm (9.65 in.)
- Width: 185 mm (7.28 in.)
- Depth: 65 mm (2.56 in.)
- Depth excluding desk mount: 35 mm (1.38 in.)
- Weight: 700 g (1.54 lbs)

### Shipping

- Height: 100 mm (3.94 in.)
- Width: 340 mm (13.39 in.)
- Depth: 280 mm (11.02 in.)
- Weight: 1,300 g (2.87 lb)

## Environmental

- Operating:
  - Temperature: 0° C to +40° C (+32° F to +104° F)
  - Humidity: 5% to 95% non-condensing
- Storage and transportation:
  - Temperature: -40° C to +70° C (-40° F to +158° F)

### Regulatory compliance\*

- FCC/Industry of Canada
- CE Marking
- R&TTE Directive 1995/5/EC
- Low Voltage Directive 72/23/EEC
- 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 contact your Alcatel-Lucent representative.

### Regulatory model numbers

- OAW-RAP155: APINR155
- OAW-RAP155P: APINR15P

### Certifications

- CB Scheme Safety, cTUVus
- Wi-Fi Alliance-certified 802.11b/g/n

### Warranty

- Limited lifetime warranty

### Minimum operating system software versions

- AOS-W Release 6.3.0.0
- Instant AP Release 3.3.0.1

**Table 1. RF performance**

	MAXIMUM TRANSMIT POWER** (DBM)	RECEIVER SENSITIVITY (DBM)
<b>802.11B 2.4 GHZ</b>		
1 Mb/s	18.0	-92.0
2 Mb/s	18.0	-92.0
5.5 Mb/s	18.0	-90.0
11 Mb/s	18.0	-88.0
<b>802.11G 2.4 GHZ AND 802.11A 5 GHZ</b>		
6 Mb/s	18.0	-88.0
54 Mb/s	16.0	-75.0
<b>802.11N HT20 2.4 GHZ AND 5 GHZ</b>		
MCS0/8/16	18.0	-88.0
MCS7/15/23	14.0	-71.0
<b>802.11N HT40 2.4 GHZ AND 5 GHZ</b>		
MCS0/8/16	18.0	-85.0
MCS7/15/23	14.0	-68.0

\*\* Maximum capability of the hardware. Maximum transmit power may be reduced to comply with local regulatory requirements.

## ANTENNA PATTERNS

**Figure 1. 2.450 GHz (antenna elements 1 and 2))**

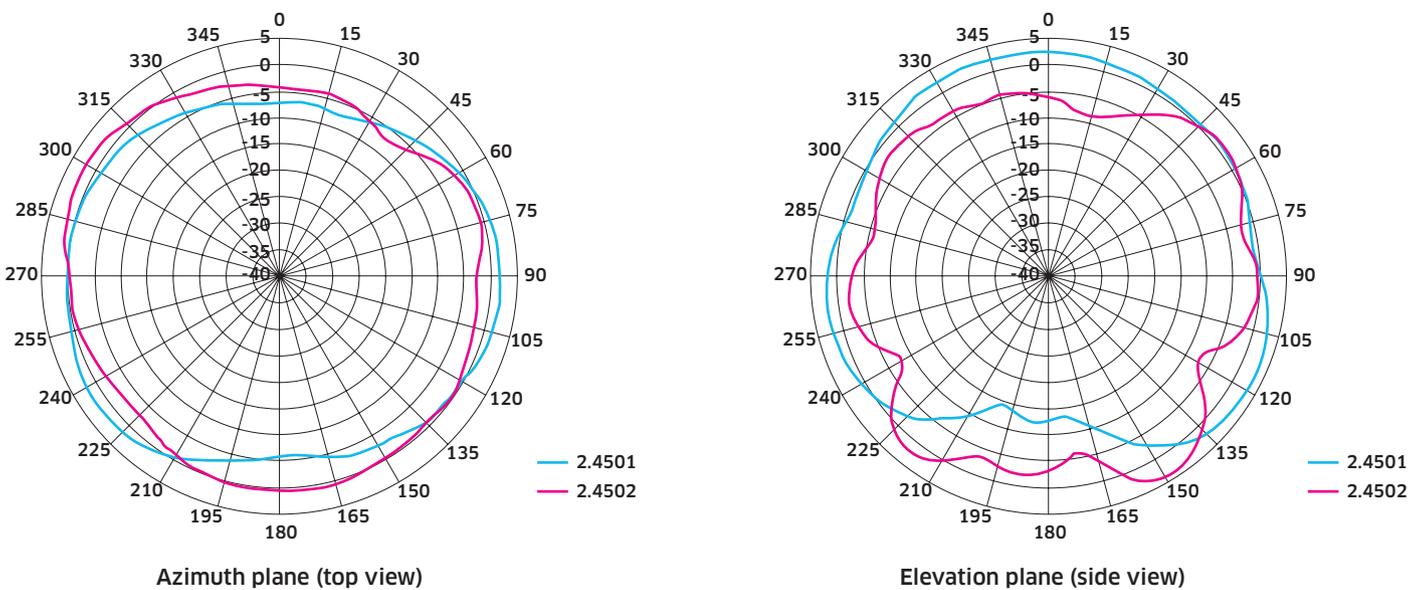


Figure 2. 5.150 GHz (antenna elements 3, 4 and 5)

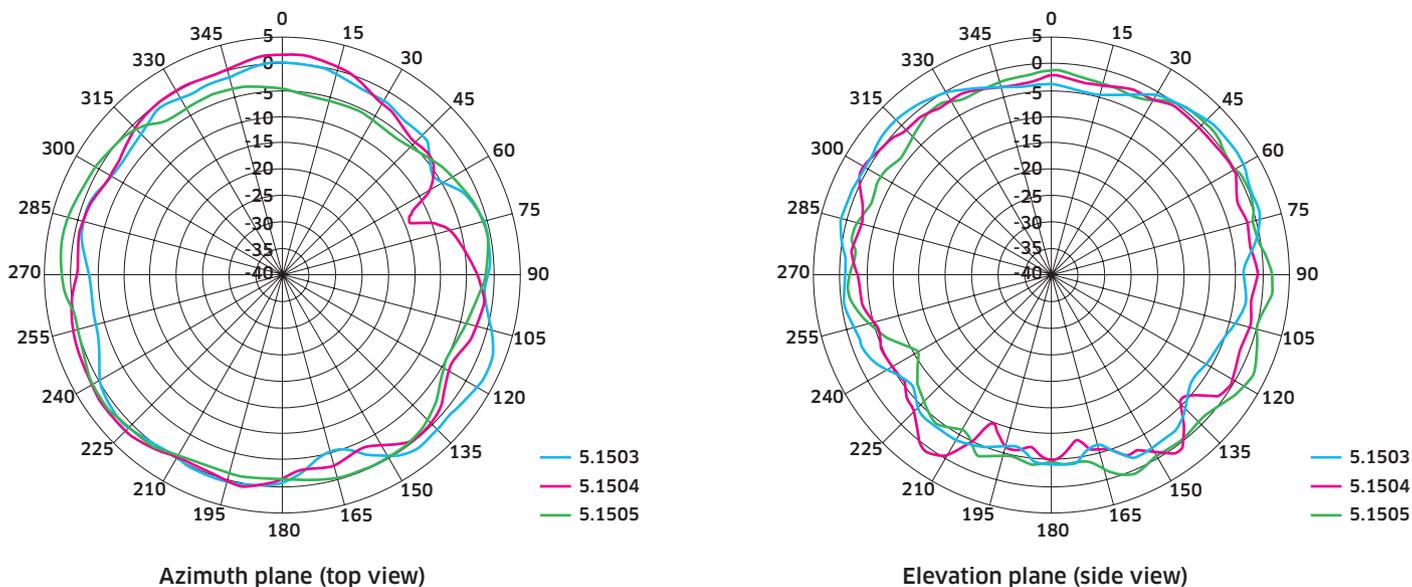


Figure 3. 5.500 GHz (antenna elements 3, 4 and 5)

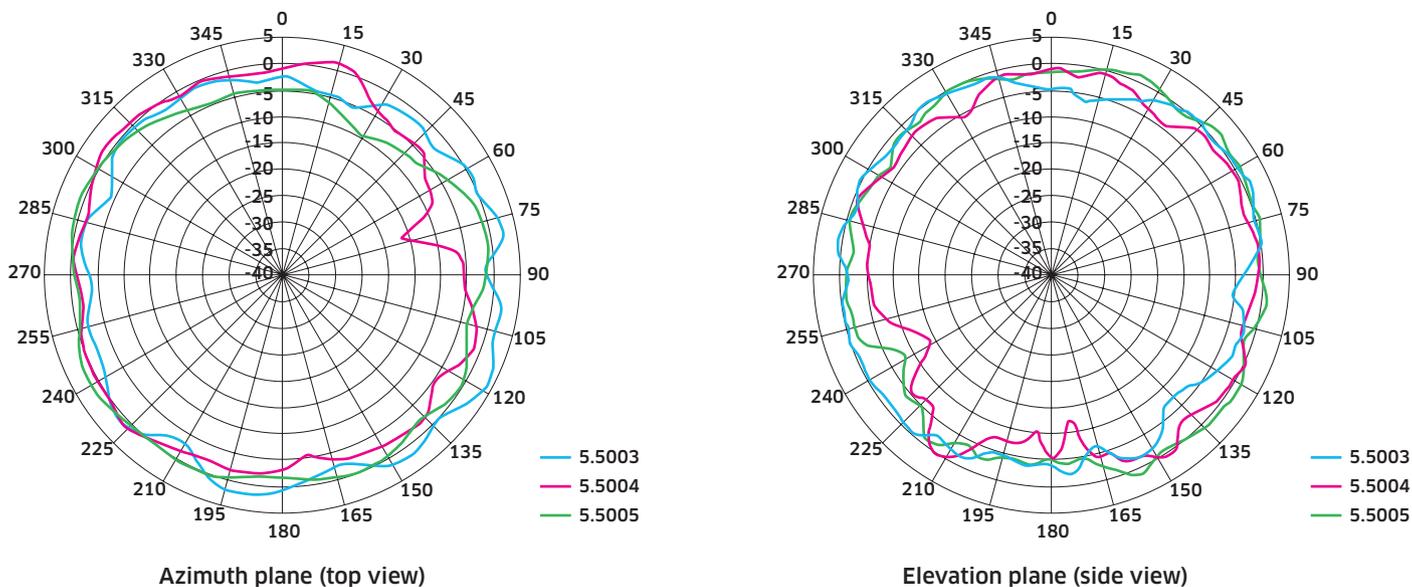
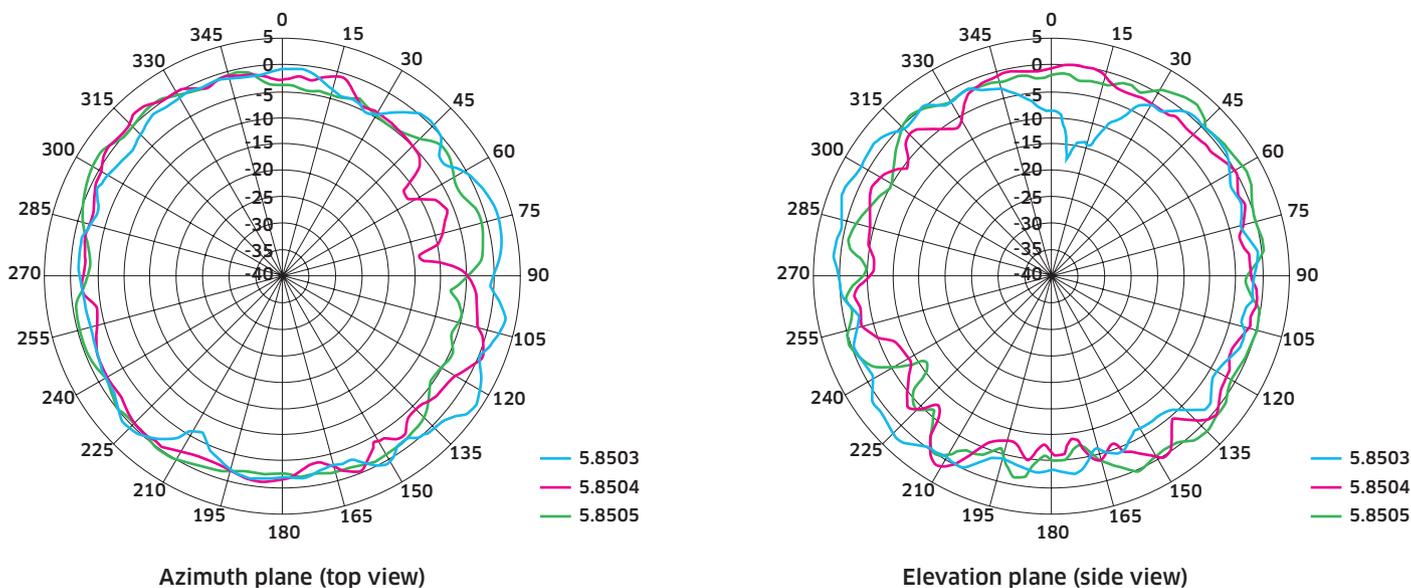


Figure 4. 5.850 GHz (antenna elements 3, 4 and 5)



## ORDERING INFORMATION

### 155 SERIES APS

OAW-RAP155	OmniAccess RAP155 Remote Access Point: 3x3, dual radio, wireless, 5x10/100/1000Base-T, USB, security slot
OAW-RAP155-US	OmniAccess RAP155 Remote Access Point: 3x3, dual radio, wireless, 5x10/100/1000Base-T, USB, security slot, restricted regulatory domain: United States
OAW-RAP155P	OmniAccess RAP155P Remote Access Point: 3x3, dual radio, wireless, 5x10/100/1000Base-T, USB, PoE out, security slot Note: Ships without country-specific AC power cord (order separately)
OAW-RAP155P-US	OmniAccess RAP155P Remote Access Point: 3x3, dual radio, wireless, 5x10/100/1000Base-T, USB, PoE out, security slot, restricted regulatory domain: United States Note: Ships without country-specific AC power cord (order separately)

### ACCESSORIES

OAW-APAC-12V12U	12 V DC/24 W AC power adapter (wall-mount style) for compatible indoor AP models
OAW-AP-AC-54V54	54 V DC/54 W AC power adapter (desktop, in-line style) for compatible indoor AP models Note: Ships without country-specific AC power cord (order separately)
OAW-AP-ANT-1W	RAP serial adapter cable (proprietary to DB9 female)