ALCATEL-LUCENT OMNIACCESS 110 SERIES ACCESS POINTS
OPTIMIZE CLIENT PERFORMANCE IN HIGH-DENSITY WI-FI ENVIRONMENTS

The multifunctional and affordable Alcatel-Lucent OmniAccess™ 110 series wireless access points (APs) maximize mobile device performance in high-density Wi-Fi® environments while minimizing interference from Long Term Evolution (LTE) cellular networks.

These high-performance 802.11n APs deliver wireless data rates up to 450 Mb/s per radio and employ three spatial streams to support 50 percent more throughput and mobile devices than previous generation APs.

The AP115 and IAP115 APs feature a 2.4-GHz and a 5-GHz radio, each with 3x3:3 multiple-input multiple-output (MIMO), and three integrated omnidirectional down-tilt antennas. The AP114 and IAP114 models feature the same radios with three combined and diplexed external antenna connectors.

FEATURES

Advanced Cellular Coexistence (ACC)
The 110 series ACC feature minimizes interference from 3G/4G LTE networks, distributed antenna systems and commercial small cell/femto cell equipment.

ClientMatch
While users roam, ClientMatch™ eliminates the sticky client behavior by continuously gathering the session performance metrics from mobile devices. If a mobile device moves out of range of an AP, or if radio frequency (RF) interference impedes performance, ClientMatch automatically steers the device to a better AP.

Adaptive Radio Management (ARM)
ARM manages the 2.4-GHz and 5-GHz radio bands to optimize Wi-Fi client performance and to ensure that APs stay clear of RF interference. ARM also provides the best-in-class RF management, which is essential to creating the most reliable, high-performance wireless LANs (WLANs).

BENEFITS

- The 110 series ACC feature enables Alcatel-Lucent WLANs to perform at peak efficiency by minimizing interference with 3G/4G networks.
- Wi-Fi client performance and the WLAN network performance are optimized by eliminating sticky client behavior.

The 110 series can be configured to provide part-time or dedicated air monitoring for spectrum analysis and wireless intrusion protection, virtual private network (VPN) tunnels to extend remote locations to corporate resources, and wireless mesh connections where Ethernet drops are not available.

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Operating modes

The 110 series of APs offer a choice of operating modes to meet unique management and deployment requirements.

- Controller-managed mode. When managed by OmniAccess controllers, 110 series APs offer centralized configuration, data encryption, policy enforcement and network services, as well as distributed and centralized traffic forwarding.
- Alcatel-Lucent Instant™ mode. In Instant mode, a single AP automatically distributes the network configuration to other Instant APs in the WLAN. Simply power up one Instant AP, configure it over the air, and plug in the other APs – the entire process takes about five minutes.

If WLAN and network requirements change, a built-in migration path allows 110 series Instant APs to become part of a WLAN that is centrally managed by a mobility controller.

- 802.11a/b/g/n controllerless Instant AP
- 802.11a/b/g/n mobility controller managed AP
- Remote AP (RAP)
- Spectrum analysis identifies sources of RF interference
- Air monitor provides wireless intrusion protection
- Hybrid AP serves Wi-Fi clients and provides wireless intrusion protection and spectrum analysis
- Secure enterprise mesh

Security

- With an OpenDNS service subscription OmniAccess Instant RAPs deliver integrated web filtering, malware and botnet protection to every device connected to the WLAN.
- Integrated Trusted Platform Module (TPM) for secure storage of credentials and keys
- SecureJack-capable for secure tunneling of wired Ethernet traffic

Wireless radio specifications

- AP type: Indoor, dual radio, 5 GHz 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 450 Mb/s wireless data rate
- 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 5.350 GHz
  - ¬ 5.470 GHz to 5.725 GHz
  - ¬ 5.725 GHz to 5.850 GHz
- 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: Orthogonal frequency division multiplexing (OFDM)
- 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 (aggregate, conducted total) transmit power (limited by local regulatory requirements):
  - ¬ 2.4 GHz band: +28 dBm (23 dBm per chain)
  - ¬ 5 GHz band: +25 dBm (20 dBm per chain)
- ACC minimizes interference from LTE 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 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: 6.5 to 450 (MCS0 to MCS23)
- 802.11n high-throughput (HT) support: HT 20/40
- 802.11n packet aggregation: A-MPDU, A-MSDU

Power

- Maximum power consumption: 13 W, plus up to 2.5 W for attached USB device
- Power sources sold separately
- Direct DC source: 12 V DC nominal, +/-5%
- Power over Ethernet (PoE): 48 V DC (nominal) 802.3af or 802.3at-compliant source
  - ¬ USB host port is disabled when using an 802.3af PoE power source. For unrestricted operation with PoE power, use an 802.3at-compliant source.

Antennas

- OAW-AP114: Three RP-SMA connectors for external dual-band antennas. Internal loss between radio interface and external antenna connectors (due to diplexing circuitry): 1.5 dB in 2.4 GHz and 2.5 dB in 5 GHz
- OAW-AP115: Six integrated omnidirectional down-tilt antennas for 3x3 MIMO with maximum antenna gain of 4.5 dBi in 2.4 GHz and 5.5 dBi in 5 GHz. Built-in antennas are optimized for horizontal ceiling mounted orientation of AP115.

Other interfaces

- 10/100/1000Base-T Ethernet network interface (RJ-45)
  - ¬ Auto-sensing link speed and medium dependent interface/medium dependent interface crossover (MDI/MDIX)
  - ¬ 802.3az Energy Efficient Ethernet (EEE)
  - ¬ PoE-PD: 48 V DC 802.3af PoE 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)
- Serial console interface (RJ-45, TTL levels)
- Visual indicators (LEDs):
  - ¬ Power/system status
  - ¬ Ethernet link status (ENET)
  - ¬ Radio status (2x; RAD0, RAD1)
- Kensington security slot
- Reset button

Mounting

- Included with AP:
  - ¬ Mounting brackets (2) for attaching to 9/16 in. or 15/16 in. T-bar drop-tile ceiling
- Optional mounting kits:
  - ¬ **OAW-AP220-MNTC2:** OmniAccess™ AP220 Series Access Point Mount Kit (ceiling grid) contains 2x ceiling grid rail adapters (for Interlude and Silhouette style rails).
  - ¬ **OAW-AP220-MNTW1:** OmniAccess AP220 Series Access Point Mount Kit (basic, flat surface) contains 1x flat surface wall/ceiling mount bracket.
  - ¬ **OAW-AP220-MNTW2:** OmniAccess AP220 Series Access Point Mount Kit (box style, secure, flat surface) contains 1x flat surface wall/ceiling secure mount cradle.

Mechanical

- Dimensions/weight (unit, excluding mount accessories):
  - ¬ W x D x H: 180 mm x 180 mm x 45 mm (7.09 in. x 7.09 in. x 1.77 in.)
  - ¬ 650 g (1.43 lb)
- Dimensions/weight (shipping):
  - ¬ W x D x H: 220 mm x 225 mm x 55 mm (8.66 in. x 8.86 in. x 2.17 in.)
  - ¬ 880 g (1.94 lb)

Environmental

- Operating:
  - ¬ Temperature: 0°C to +50°C (32°F to +122°F)
  - ¬ Humidity: 5% to 95% non-condensing
- Storage and transportation temperature range:
  - ¬ -40°C to +70°C (-40°F to +158°F)

Regulatory

- FCC/Industry of Canada
- CE Mark
- 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 see your Alcatel-Lucent representative.

Regulator model numbers

- OAW-AP114 and OAW-IAP114: APIN0114
- OAW-AP115 and OAW-IAP115: APIN0115

Certifications

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

Warranty

- Limited lifetime warranty

Minimum software versions
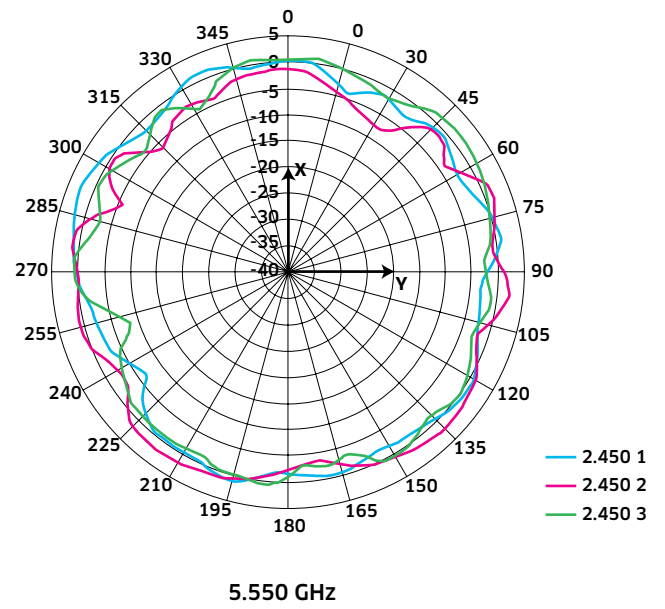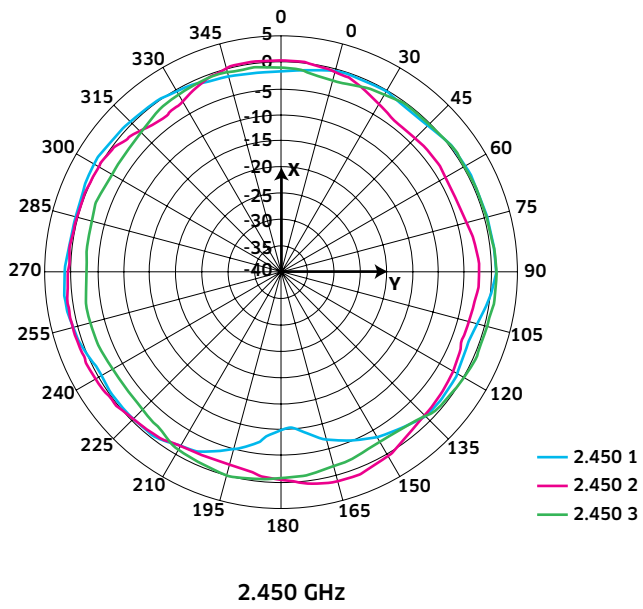
- AOS-W 6.3.1.0
- InstantOS™ 4.0.0.0

Table 1. RF performance

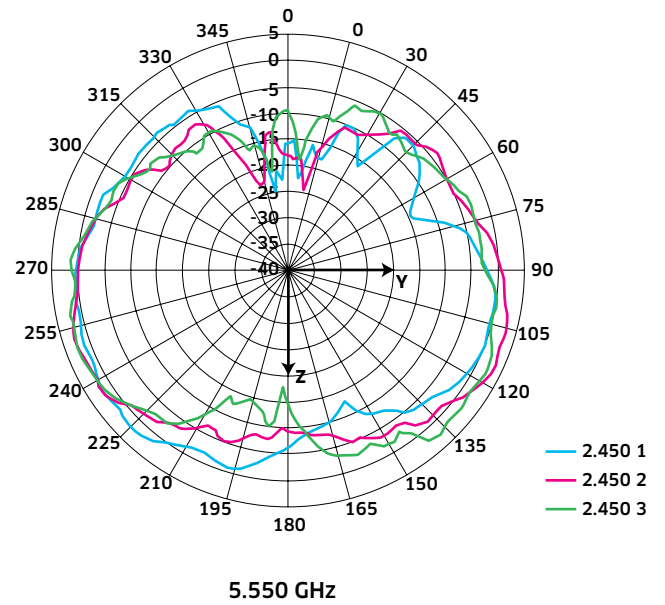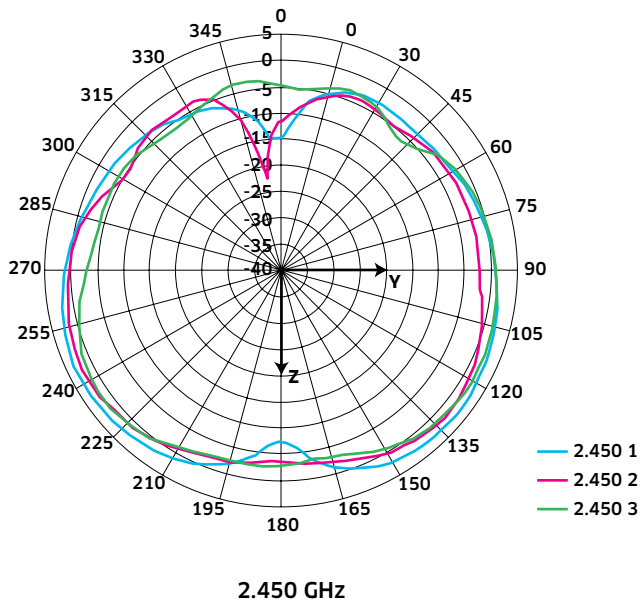|	MAX. TRANSMIT POWER PER TRANSMIT CHAIN (DBM)	RECEIVE SENSITIVITY PER TRANSMIT CHAIN (DBM)	MAX. TRANSMIT POWER PER TRANSMIT CHAIN (DBM)	RECEIVE SENSITIVITY PER TRANSMIT CHAIN (DBM)
	2.4 GHZ		**5 GHZ**	
802.11B				
1 Mb/s	23	-97	–	–
11 Mb/s	23	-88	–	–
802.11A/G				
6 Mb/s	21	-93	20	-92
54 Mb/s	18	-76	16	-74
802.11N HT20				
MCS0/8/16	20	-93	19	-92
MCS7/15/23	16	-73	14	-71
802.11N HT40				
MCS0/8/16	20	-90	19	-88
MCS7/15/23	16	-69	14	-67

Maximum capability of the hardware provided. Maximum transmit power is limited by local regulatory settings. RF performance numbers for the AP114 are slightly lower due to additional internal RF circuitry.

Figure 1. AP115 antenna pattern plots

a. Horizontal or azimuth plane (top view)

2.450 GHz

5.550 GHz

b. Elevation plane (side view)

2.450 GHz

5.550 GHz

ORDERING INFORMATION

PART NUMBER	DESCRIPTION
110 SERIES APS	
OAW-AP114	OmniAccess AP114 wireless access point. Dual radio 3x3:3 IEEE 802.11a/b/g/n wireless access point with support for 802.11'B/G/N' and 802.11'A/N' operation, RP-SMA external antenna connectivity, 1 x 10/100/1000Base-T (RJ-45) Ethernet interface (supports 802.3af PoE or 802.3at PoE+), 1 x 12 V DC power interface, security slot
OAW-IAP114	OmniAccess Instant AP114 wireless access point. Dual radio 3x3:3 IEEE 802.11a/b/g/n wireless access point with support for 802.11'B/G/N' and 802.11'A/N' operation, RP-SMA external antenna connectivity, 1 x 10/100/1000Base-T (RJ-45) Ethernet interface (supports 802.3af PoE or 802.3at PoE+), 1 x 12 V DC power interface, security slot. Rest of the world (not to be used in the United States, Japan, or Israel)
OAW-IAP114-US	OmniAccess Instant AP114 wireless access point. Dual radio 3x3:3 IEEE 802.11a/b/g/n wireless access point with support for 802.11'B/G/N' and 802.11'A/N' operation, RP-SMA external antenna connectivity, 1 x 10/100/1000Base-T (RJ-45) Ethernet interface (supports 802.3af PoE or 802.3at PoE+), 1 x 12 V DC power interface, security slot. Restricted regulatory domain: United States
OAW-IAP114-IS	OmniAccess Instant AP114 wireless access point. Dual radio 3x3:3 IEEE 802.11a/b/g/n wireless access point with support for 802.11'B/G/N' and 802.11'A/N' operation, RP-SMA external antenna connectivity, 1 x 10/100/1000Base-T (RJ-45) Ethernet Interface (Supports 802.3af POE or 802.3at POE+), 1 x 12V DC power interface, Security slot. Restricted regulatory domain: Israel.
OAW-IAP114-JP	OmniAccess Instant AP114 wireless access point. Dual radio 3x3:3 IEEE 802.11a/b/g/n wireless access point with support for 802.11'B/G/N' and 802.11'A/N' operation, RP-SMA external antenna connectivity, 1 x 10/100/1000Base-T (RJ-45) Ethernet Interface (Supports 802.3af POE or 802.3at POE+), 1 x 12V DC power interface, Security slot. Restricted regulatory domain: Japan.
OAW-AP115	OmniAccess AP115 wireless access point. Dual radio 3x3:3 IEEE 802.11a/b/g/n wireless access point with support for 802.11'B/G/N' and 802.11'A/N' operation, dual-band integral antenna, 1 x 10/100/1000Base-T (RJ-45) Ethernet interface (supports 802.3af PoE or 802.3at PoE+), 1 x 12 V DC power interface, security slot
OAW-IAP115	OmniAccess Instant AP115 wireless access point. Dual radio 3x3:3 IEEE 802.11a/b/g/n wireless access point with support for 802.11'B/G/N' and 802.11'A/N' operation, dual-band integral antenna, 1 x 10/100/1000Base-T (RJ-45) Ethernet interface (supports 802.3af PoE or 802.3at PoE+), 1 x 12 V DC power interface, security slot. Rest of the world (not to be used in the United States, Japan, or Israel)
OAW-IAP115-US	OmniAccess Instant AP115 wireless access point. Dual radio 3x3:3 IEEE 802.11a/b/g/n wireless access point with support for 802.11'B/G/N' and 802.11'A/N' operation, dual-band integral antenna, 1 x 10/100/1000Base-T (RJ-45) Ethernet interface (supports 802.3af PoE or 802.3at PoE+), 1 x 12 V DC power interface, security slot. Restricted regulatory domain: United States
OAW-IAP115-IS	OmniAccess Instant AP115 wireless access point. Dual radio 3x3:3 IEEE 802.11a/b/g/n wireless access point with support for 802.11'B/G/N' and 802.11'A/N' operation, dual-band integral antenna, 1 x 10/100/1000Base-T (RJ-45) Ethernet Interface (Supports 802.3af POE or 802.3at POE+), 1 x 12V DC power interface, Security slot. Restricted regulatory domain: Israel.
OAW-IAP115-JP	OmniAccess Instant AP115 wireless access point. Dual radio 3x3:3 IEEE 802.11a/b/g/n wireless access point with support for 802.11'B/G/N' and 802.11'A/N' operation, dual-band integral antenna, 1 x 10/100/1000Base-T (RJ-45) Ethernet Interface (Supports 802.3af POE or 802.3at POE+), 1 x 12V DC power interface, Security slot. Restricted regulatory domain: Japan.
MOUNTING ACCESSORIES	
OAW-AP220-MNTC2	OmniAccess AP220 Series Access Point Mount Kit (ceiling grid). Contains 2x ceiling grid rail adapters (for Interlude and Silhouette style rails)
OAW-AP220-MNTW1	OmniAccess AP220 Series Access Point Mount Kit (basic, flat surface). Contains 1x flat surface wall/ceiling mount bracket
OAW-AP220-MNTW2	OmniAccess AP220 Series Access Point Mount Kit (box style, secure, flat surface). Contains 1x flat surface wall/ceiling secure mount cradle
GENERIC INDOOR AP ACCESSORIES	
OAW-AP-AC-UN	Universal AC Power Adapter Kit for OmniAccess APs and IAPs For North America, Japan, United Kingdom, Italy, EC (Shuko), Australia, China, India, and Korea
OAW-AP-AC-12V18	OmniAccess 12 V DC/18 W AC power adapter for compatible indoor AP models. Does not include country-specific power cord
OAW-MS-3501G	1-port 802.3af PoE Midspan 10/100/1000 15.4 W. No power cord included
PD-9001GR-AC	OAW WLAN 1-port 802.3at PoE Midspan 10/100/1000 30 W. U.S. power cord included. Rest of the world – all power cords must be ordered separately.
Antennas	Go to the Alcatel-Lucent website for information on antenna part numbers.

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