

Alcatel-Lucent OmniAccess Stellar AP1220 Series

Indoor high performance 802.11ac Wave 2 wireless access points

Multifunctional [Alcatel-Lucent OmniAccess® Stellar AP1220](#) series access points are mid-end 802.11ac Wave 2 APs for medium density and large business deployments. The OmniAccess Stellar AP1220 series indoor Wi-Fi access point provides high throughput and a seamless user experience.



AP1221

AP1222

The high performance 802.11ac AP1220 series supports a maximum concurrent data rate of 2.1 Gb/s (1733 Mb/s in 5 GHz and 400 Mb/s in 2.4 GHz), 160 MHz channels (VHT160*), multi-user MIMO (MU-MIMO) and four spatial streams (4SS). They provide simultaneous multicast data transmission to multiple devices, maximizing data throughput and improving network efficiency.

Featuring enhanced WLAN technology with RF Radio Dynamic Adjustment, a distributed control Wi-Fi architecture, secure network admission control with unified access, built in application intelligence and analytics, making it ideal for enterprises of all sizes demanding a simple, secure and scalable wireless solution.

Deliver Enterprise Grade Security & Scale with Simplicity

OmniAccess Stellar enables a visionary distributed Wi-Fi architecture with centralized management and policy control, enforcing security at every step starting at the network edge, and allowing unparalleled scale in network capacity. This architecture is vital for enabling the next generation Digital Enterprise that demands business agility, seamless mobility and secure IoT enabled infrastructure empowering business transformation through continuous innovation.

OmniAccess Stellar provides enhanced security with WPA3, a new security standard for enterprise and public networks, improving Wi-Fi security by using advanced security algorithms and stronger ciphers in Enterprises including 192-bit security suite. Public spaces which provide open non-protected access, can now provide encryption and privacy using OmniAccess Stellar, which supports a new security standard Wi-Fi Enhanced Open based on opportunistic wireless encryption (OWE).

Cloud enabled with OmniVista Cirrus

The AP1220 series APs can be managed by Alcatel-Lucent OmniVista® Cirrus cloud platform. OmniVista® Cirrus powers a secure, resilient and scalable cloud-based network management platform. It offers hassle free network deployment and easy service rollout with advanced analytics for smarter decision making. Offers IT friendly Unified Access with secure authentication and policy enforcement for users and devices.

OmniVista 2500 managed deployment

The AP1220 series APs can be managed by Alcatel-Lucent OmniVista® 2500 on premise Network Management System. The access points are managed as one or more access point (AP) groups (a logical grouping of one or more access points). The OmniVista 2500 next generation management suite embeds a visionary controller-less architecture, providing user friendly workflows for unified access together with an integrated unified policy authentication manager (UPAM) which helps define authentication strategy and policy enforcement for employees, guest management and BYOD devices. The AP1220 series has built-in DPI technology providing real-time Application Monitoring and enforcement. The network administrator can obtain a comprehensive view of applications running in the network and apply adequate control to optimize the performance of the network for business critical applications. OmniVista 2500 provides advanced options for RF management, WIDS/WIPS for intrusion detection and prevention, and a heat map for WLAN site planning.

Plug and Play: Secure Web managed (HTTPS) cluster deployment

The AP1220 series by default operates in a cluster architecture to provide simplified plug-and-play deployment. The access point cluster is an autonomous system that consists of a group of OmniAccess Stellar APs and a virtual controller, which is a selected access point, for cluster management. One AP cluster supports up to 256 APs.

The access point cluster architecture ensures simplified and quick deployment. Once the first AP is configured using the configuration wizard, the remaining APs in the network will come up automatically with an updated configuration. This ensures the whole network is up and functional within a few minutes.

The AP1220 series also supports secure zero-touch provisioning with Alcatel-Lucent OXO Connect R2, a mechanism by which all access points in a cluster will obtain bootstrap data securely from an on-premise OXO Connect.

Integrated guest management

The AP1220 series supports role based management access to the AP cluster which includes Admin, Viewer and GuestOperator access. GuestOperator access simplifies guest account creation and management, and can be used by any non-IT person such as a front desk worker or receptionist. The AP1220 series access points also support a built-in customizable captive portal which enables customers to offer unique guest access.

Quality of service for unified communication apps

The OmniAccess Stellar AP1220 series access points support fine tuned, quality of service (QoS) parameters to differentiate and provide appropriate QoS for each application such as voice, video and desktop sharing. Application aware RF scanning avoids interruption of real-time applications.

RF management

Radio Dynamic Adjustment (RDA) technology automatically assigns channels and power settings, provides DFS/TPC, and ensures that access points stay clear of all radio frequency interference (RFI) sources to deliver reliable, high-performance wireless LANs. The OmniAccess Stellar AP1220 series APs can be configured to provide part-time or dedicated air monitoring for spectrum analysis and wireless intrusion protection.

Product specifications

Radio specification

- AP type: Indoor, dual radio, 5 GHz
802.11ac 4x4:4 MU-MIMO and 2.4 GHz
802.11n 2x2:2 MIMO
- 5 GHz: Four spatial stream single user (SU) MIMO for up to 1733 Mb/s wireless data rate to individual 4x4 VHT80 or 2x2 VHT160* client devices
- 5 GHz: Four spatial stream multi user (MU) MIMO for up to 1733 Mb/s wireless data rate to up to three MU-MIMO capable client devices simultaneously
- 2.4 GHz: Two spatial stream single user (SU) MIMO for up to 400 Mb/s wireless data rate to individual 2x2 VHT40 client devices (300 Mb/s for HT40 802.11n client devices)
- Supported frequency bands (country-specific restrictions apply):
 - 2.400 to 2.4835 GHz
 - 5.150 to 5.250 GHz
 - 5.250 to 5.350 GHz
 - 5.470 to 5.725 GHz
 - 5.725 to 5.850 GHz
- Frequencies fixed at factory for Middle East models OAW-AP1221-ME and OAW-AP1222-ME
 - 2400 - 2483.5 MHz
 - 5150 - 5350 MHz
- Available channels: Dependent on configured regulatory domain
- DFA (dynamic frequency adjustment) optimizes available channels and provides proper transmission power
- Short guard interval for 20 MHz, 40 MHz, 80 MHz and 160 MHz* channels
- Transmit beam forming (TxBF) for increased signal reliability and range
- 802.11n/ac packet aggregation: Aggregated Mac Protocol Data Unit (A-MPDU), Aggregated Mac Service Data Unit (A-MSDU)
- 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 600 (MCS0 to MCS31)
 - 802.11ac: 6.5 to 1,733 (MCS0 to MCS9, NSS = 1 to 4 for VHT20/40/80, NSS = 1 to 2 for VHT160)*
- Supported modulation types:
 - 802.11b: BPSK, QPSK, CCK
 - 802.11a/g/n/ac: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM

- 802.11n high-throughput (HT) support: HT 20/40
- 802.11ac very high throughput (VHT) support: VHT 20/40/80/160*
- Advanced Cellular Coexistence (ACC) Minimizes interference from 3G/4G cellular networks, distributed antenna systems, and commercial small cell/femtocell equipment

Interfaces

- 1x 10/100/1000Base-T autosensing (RJ-45) port, Power over Ethernet (PoE)
- 1x USB 2.0 (Type A connector)
- 1x management console port (RJ-45)
- Reset button: Factory reset
- Kensington security slot
- AP1222: 4x RP-SMA antenna connectors

Visual Indicators (Tri-color LEDs)

- For system and radio status
 - Red flashing: System abnormal, link down
 - Red light: System startup
 - Red and blue rotate flashing: System running, OS upgrading
 - Blue light: System running, dual bands working
 - Green flashing: System running, no SSID created
 - Green light: System running, single band working
 - Red, blue and green rotate flashing: System running, use for location of an AP

Antenna

- AP1221: Built-in 2x2:2 @ 2.4 GHz, 4x4:4 @ 5 GHz
 - Integrated dual-band down tilt omnidirectional antennas for 4x4 MIMO with maximum antenna gain of 3.61 dBi in 2.4 GHz and 4.45 dBi in 5 GHz. Built-in antennas are optimized for horizontal ceiling mounted orientation of the AP.
- AP1222 External 2x2:2 @ 2.4 GHz, 4x4:4 @ 5 GHz
 - Four RP-SMA connectors for external dual band antennas.
- Optional external antenna (sold separately)
 - Offer includes broad selection of antennas, delivering optimal coverage for a variety of deployment scenarios.

Receive sensitivity (per chain)

	2.4 GHz	5 GHz
1 Mb/s	-96	
11 Mb/s	-88	
6 Mb/s	-92	-91
54 Mb/s	-74	-74
HT20 (MSC 0/8)	-91	-91
HT20 (MSC 7/15)	-71	-70
HT40 (MSC 0/8)	-88	-88
HT40 (MSC 7/15)	-68	-68
VHT20 (MSC 0)	-91	-91
VHT20 (MSC 8)	-67	-67
VHT40 (MSC 0)	-88	-88
VHT40 (MSC 9)	-63	-63
VHT80 (MCS0)		-85
VHT80 (MCS9)		-58
VHT160* (MCS0)		-84
VHT160* (MCS9)		-58

Maximum transmit power (per chain)

	2.4 GHz	5 GHz
1 Mb/s	18 dBm	
11 Mb/s	18 dBm	
6 Mb/s	18 dBm	18 dBm
54 Mb/s	17 dBm	17 dBm
HT20 (MSC 0/8)	18 dBm	18 dBm
HT20 (MSC 7/15)	16 dBm	17 dBm
HT40 (MSC 0/8)	18 dBm	18 dBm
HT40 (MSC 7/15)	16 dBm	17 dBm
VHT20 (MSC 0)	18 dBm	18 dBm
VHT20 (MSC 8)	16 dBm	17 dBm
VHT40 (MSC 0)	18 dBm	18 dBm
VHT40 (MSC 9)	15 dBm	16 dBm
VHT80 (MCS0)		18 dBm
VHT80 (MCS9)		16 dBm
VHT160* (MCS0)		18 dBm
VHT160* (MCS9)		16 dBm

Chile: Regulatory compliance. Maximum transmit power of 150mW including antenna gain.

Note: Maximum capability of the hardware provided. Maximum transmit power is limited by local regulatory settings.

Power

- Supports direct DC power and Power over Ethernet (PoE)
- When both power sources are available, DC power takes priority over PoE
- Maximum (worst case) power consumption:
 - <15.6 W (802.3at PoE or DC)
 - Excludes power consumed by external USB device; USB with 500mA load can add up to 2.9 W
 - Maximum power consumption in idle mode: 7.5 W
- Direct DC source: 48 V DC nominal, ± 5%

- Power over Ethernet (PoE):
 - 48 V DC (nominal) 802.3af/802.3at compliant source
 - Unrestricted functionality with 802.3 at PoE
 - The USB port is disabled and the 5 GHz radio is restricted to 2*2:2 when the AP is powered by 802.3af PoE source

Mounting

- The AP ships with two (white) mounting clips to attach to a 9/16-inch or 15/16-inch flat T-bar drop-tile ceiling.
- Optional mount kits for Open Silhouette and Flanged Interlude.
- Optional mount kits for flat-surface (wall).

Environmental

- Operating:
 - Temperature: 0°C to 45°C (+32°F to +113°F)
 - Humidity: 10% to 90% non-condensing
- Storage and transportation:
 - Temperature: -40°C to +70°C (-40°F to +158°F)

Dimensions/Weight

- Single AP excluding packing box and accessories:
 - 180 mm (W) x 180 mm (D) x 36 mm (H) -7.08" (W) x 7.08" (D) x 1.41" (H)
 - 700 g/1.54 lb
- Single AP including packing box and accessories:
 - 228 mm (W) x 198 mm (D) x 66 mm (H) -8.97" (W) x 7.79" (D) x 2.59"(H)
 - 920 g/2.02 lb

Reliability

- MTBF: 916,666h (104.6 years) at +25°C operating temperature

Capacity

- Up to 8 SSID per radio (total 16 SSID)
- Support for up to 512 associated client devices per AP

Software features

- Up to 4K APs when managed by OV2500. There is no limit on the number of AP groups
- Up to 255 APs per web-managed (HTTP/HTTPS) cluster
- Auto channel selection
- Auto transmit power control
- Bandwidth control per SSID
- L2 roaming
- L3 roaming with OmniVista 2500
- Captive portal (Internal/ External)
- Guest self-registration (optional SMS notification) with OmniVista 2500
- Internal user database
- RADIUS client
- Guest social-login with OmniVista 2500
- RADIUS proxy authentication OmniVista 2500
- LDAP/AD proxy authentication OmniVista 2500
- Wireless QoS
- Band steering
- Client smart load balance
- Client sticky avoidance
- User behavior tracking
- White/black list
- Zero-touch provisioning (ZTP)
- NTP server client
- ACL
- DHCP/DNS/NAT
- Wireless MESH P2P/P2MP
- Wireless Bridge
- Rogue AP location and containment
- System log report
- Dedicated Scanning AP
- SNMPv2, SNMPv3
- SNMP Trap Notification with OmniVista 2500

- Wireless attack detection with OmniVista 2500
- Floor plan and heat map with OmniVista 2500
- Stanley Healthcare/Aer Scout RTLS support

Note: Some features are limited by local regulatory settings

Security

- 802.11i, WPA2, WPA3, WPA, AES 128-256 bits
- 802.1X
- WEP, Advanced Encryption Standard (AES), Temporal Key Integrity Protocol (TKIP)
- Firewall: ACL, wIPS/wIDS and DPI application policy enforcement with OmniVista™
- Portal page authentication
- Integrated Trusted Platform Module (TPM) for secure storage of credentials and keys

IEEE standard

- IEEE 802.11a/b/g/n/ac Wave 2
- IEEE 802.11e WMM
- IEEE 802.11h, 802.11i, 802.11e QoS
- IEEE 802.1Q (VLAN tagging)
- 802.11k Radio Resource Management
- 802.11v BSS Transition Management
- 802.11r Fast Roaming
- 802.11w Protected Management Frame

Regulatory & certification

- CB Scheme Safety, cTUVus
- Wi-Fi Alliance (WFA) certified 802.11 a/b/g/n/ac
- FCC
- CE marked
- RoHS, REACH, WEEE
- UL2043 plenum rating
- EMI and susceptibility (Class B)
- Wi-Fi CERTIFIED Wi-Fi 5, Enhanced Open™, Passpoint®
- VCCI-CISPR 32:2016, CLASS
- Common Criteria/EAL2

Ordering information

Item	Description
OAW-AP1221-RW	Indoor Mid-end Enterprise 802.11ac MU-MIMO AP, Dual-Radio, 11n 2x2:2 + 11ac 4x4:4, 1x GbE, 1x USB, 1x Console, and integrated antennas. Unrestricted Regulatory Domain. These products should be considered as Rest of World products and MUST NOT be used for deployments in the United States, Japan or Israel
OAW-AP1221-US	Indoor Mid-end Enterprise 802.11ac MU-MIMO AP, Dual-Radio, 11n 2x2:2 + 11ac 4x4:4, 1x GbE, 1x USB, 1x Console, and integrated antennas. Restricted regulatory domain: United States
OAW-AP1221-ME	Indoor Mid-end Enterprise 802.11ac MU-MIMO AP, Dual-Radio, 11n 2x2:2 + 11ac 4x4:4, 1x GbE, 1x USB, 1x Console, and integrated antennas. Restricted regulatory domain: Middle East (Israel, Egypt)
OAW-AP1222-RW	Indoor Mid-end Enterprise 802.11ac MU-MIMO AP, Dual-Radio, 11n 2x2:2 + 11ac 4x4:4, 1x GbE, 1x USB, 1x Console, and 4x antenna connectors. Unrestricted Regulatory Domain. These products should be considered as Rest of World products and MUST NOT be used for deployments in the United States, Japan or Israel
OAW-AP1222-US	Indoor Mid-end Enterprise 802.11ac MU-MIMO AP, Dual-Radio, 11n 2x2:2 + 11ac 4x4:4, 1x GbE, 1x USB, 1x Console, and 4x antenna connectors. Restricted regulatory domain: United States
OAW-AP1222-ME	Indoor Mid-end Enterprise 802.11ac MU-MIMO AP, Dual-Radio, 11n 2x2:2 + 11ac 4x4:4, 1x GbE, 1x USB, 1x Console, and 4x antenna connectors. Restricted regulatory domain: Middle East (Israel, Egypt)

Accessories	Description
OAW-AP-MNT-B	OmniAccess indoor mounting kit, for AP1101, AP122X, AP123X, Type B1(9/16") and B2(15/16") for T-shaped ceiling rail mounting. Standard configuration in the product packaging. Optional for customer ordering
OAW-AP-MNT-W	OmniAccess indoor mounting kit, for AP1101, AP122X, AP123X, Type W wall and ceiling mounting with screws. Optional for customer ordering
OAW-AP-MNT-C	OmniAccess indoor mounting kit, for AP1101, AP122X, AP123X, Type C1 (Open Silhouette) and C2 (Flanged Interlude), for other shaped ceiling rail mounting. Optional for customer ordering
PD-9001GR/AT/AC	1-Port IEEE 802.3at PoE Midspan. Port speed 10/100/1000M PoE power 30W. No power cord included. Please order PWR-CORD-XX for country specific power cord.
ADP-30HRBD	48V/30W AC-to-DC Power Adapter with Type A DC plug 2.1*5.5*9.5mm circular, straight. Please order PWR-CORD-XX for country specific power cord.
ANT-O-6	Dual band 2.4/5 GHz, 1-element direct mount , omni-directional antenna, 6dBi (box includes QTY 4)
ANT-O-M4-5	Dual band 2.4/5 GHz, 4-element, Ceiling-mount , Downtilt omni-directional antenna, MIMO 4*4, max gain 4.8dBi (1X); includes 4 element 30in RF cable
ANT-S-M4-60	Dual band 2.4/5 GHz, 4-element, Wall-mount, sector antenna , >5dBi, 60°Hx60°V (1x); includes 4 element 30in RF cable
ANT-S-M4-120	Dual band 2.4/5GHz, 4-element, Wall-mount, sector antenna, 5dBi, H-Plane 120°, E-Plane 70°, includes 4* 30-35in RF cable (SMA-J/RPSMA-J), includes mount.
ANT-S-M4-30	Single band 5GHz, 4-element, Wall-mount, sector antenna, 13dBi, H-Plane 37°, E-Plane 37°, includes 4* 30-35in RF cable (SMA-J/RPSMA-J), includes mount.

Warranty

OmniAccess Stellar Access Points come with Hardware Limited Lifetime Warranty (HLLW)

Services and support

OmniAccess Stellar Access Points include 1 year of complementary SUPPORT Software for partners. For more information about our Professional services, Support services, and Managed services, please go to

<http://enterprise.alcatel-lucent.com/?services=EnterpriseServices&page=directory>

Figure 1. OmniAccess Stellar AP1221 antenna pattern plots

