Alcatel-Lucent OmniAccess Stellar AP1251

Outdoor 802.11ac Wave 2 wireless access point

The multifunctional Alcatel-Lucent OmniAccess® Stellar AP1251 is a high performance 802.11ac Wave 2 access point used in outdoor settings for enterprise deployments of all sizes. The OmniAccess Stellar AP1251 outdoor Wi-Fi access point provides high throughput and seamless user experience.

The high performance and rugged AP1251 supports the IP67 standard for harsh outdoor environments, such as exposure to high and low temperatures, persistent moisture and precipitation, and electrical interfaces include industrial strength surge protection. The AP1251 supports a maximum concurrent data rate of 1.267 Gb/s (867 Mb/s in 5 GHz and 400 Mb/s in 2.4 GHz), and dual Gigabit Ethernet links, integrated omni-directional antennas, the AP1251 is ideal for medium density outdoor environments.

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.

OmniVista 2500 managed deployment

The OmniAccess Stellar AP1251 can be managed from the Alcatel-Lucent OmniVista® 2500 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 integrated unified policy authentication manager (UPAM) which helps define authentication strategy and policy enforcement for employees, guest management and BYOD devices. The AP1251 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 heatmap for WLAN site planning.

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

The OmniAccess Stellar AP1251 by default operates in a cluster architecture to provide simplified plug-and-play deployments. 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 64 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 OmniAccess Stellar AP1251 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.

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Integrated guest management

The OmniAccess Stellar AP1251 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 OmniAccess Stellar AP1251 access point also supports a built-in customizable captive portal which enables customers to offer unique guest access.

Quality of service for unified communication apps

The OmniAccess Stellar AP1251 access point supports 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 AP1251 AP can be configured to provide part-time or dedicated air monitoring for spectrum analysis and wireless intrusion protection.

Product specifications

Radio specification

- AP type: Outdoor, dual radio, 5 GHz 802.11ac 2x2:2 MU-MIMO and 2.4 GHz 802.11n 2x2:2 MIMO
- 5 GHz: 2*2 MIMO with two spatial stream, up to 867 Mb/s wireless data rate
- 2.4 GHz: 2*2 MIMO with two spatial stream, 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
- 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, and 80 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 300 (MCS0 to MCS15)
  - ¬ 802.11ac: 6.5 to 867 (MCS0 to MCS9, NSS = 1 to 2)
- 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
- 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 auto-sensing (RJ-45) port, Power over Ethernet (PoE)
- 1x 10/100/1000Base-T auto-sensing (RJ-45) port
- 1x management console port (Micro-USB)
- Reset button: Factory reset

Visual Indicators (7 LEDs)

- For system and radio status
  - ¬ SYS ON: Power on and system running
  - ¬ SYS Flashing: Bootloader-OS loading or upgrading
  - ¬ 2.4G ON: 2.4GHz SSID created and running
  - ¬ 5G ON: 5GHz SSID created and running
  - ¬ ENET0 ON: Ethernet0 link UP
  - ¬ ENET1 ON: Ethernet1 link UP
  - ¬ RSRV0 Flashing: AP Location
  - ¬ RSRV1: Reserved

Antenna

- AP1251: Built-in 2×2:2 @ 2.4GHz, 2x2:2 @ 5GHz
- Integrated dual-band omni-directional antennas for 2x2 MIMO with maximum antenna gain of 8.46 dBi in 2.4 GHz and 6.62 dBi in 5 GHz.

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	-73
HT40 (MSC 0/8)	-88	-88
HT40 (MSC 7/15)	-68	-69
VHT20 (MSC 0)	-91	-91
VHT20 (MSC 8)	-67	-68
VHT40 (MSC 0)	-88	-88
VHT40 (MSC 9)	-63	-64
VHT80 (MCS0)		-85
VHT80 (MCS9)		-60

Maximum Transmit power (per chain)

	2.4 GHz	5 GHz
1 Mb/s	20 dBm	
11 Mb/s	20 dBm	
6 Mb/s	20 dBm	20 dBm
54 Mb/s	20 dBm	20 dBm
HT20 (MSC 0/8)	20 dBm	20 dBm
HT20 (MSC 7/15)	20 dBm	20 dBm
HT40 (MSC 0/8)	20 dBm	20 dBm
HT40 (MSC 7/15)	20 dBm	20 dBm
VHT20 (MSC 0)	20 dBm	20 dBm
VHT20 (MSC 8)	19 dBm	20 dBm
VHT40 (MSC 0)	20 dBm	20 dBm
VHT40 (MSC 9)	19 dBm	19 dBm
VHT80 (MCS0)		20 dBm
VHT80 (MCS9)		19 dBm

Note: Maximum transmit power is limited by local regulatory settings.

Power

- Maximum (worst case) power consumption:
  - ¬ <11.8W (802.3af PoE)
  - ¬ Maximum power consumption in idle mode: 5.3 W
- Power over Ethernet (PoE):
  - ¬ 48 V DC (nominal) 802.3af source

Mounting

- Pole/ wall mounting (mounting kit shipped by default with the AP)

Environmental

- Operating:
  - ¬ Temperature: -40°C to 65°C (-40°F to +149°F)
  - ¬ Humidity: 10% to 90% non-condensing
- Storage and transportation:
  - ¬ Temperature: -40°C to +85°C (-40°F to +185°F)
- Chassis rating: IP67
- Wind resistance:
  - ¬ Up to 100 MPH sustained winds
  - ¬ Up to 165 MPH wind gusts

Dimensions/weight

- Single AP excluding packing box and accessories:
  - ¬ 243 mm (W) x 243 mm (D) x 85 mm (H) -9.56" (W) x 9.56" (D) x 3.34" (H)
  - ¬ 2230 g / 4.91 lb
- Single AP including packing box and accessories:
  - ¬ 344 mm (W) x 341 mm (D) x 220 mm (H) 10.32" (W) x 10.23" (D) x 8.66" (H)
  - ¬ 4025 g/ 8.87lb

IEEE standard

- IEEE 802.11a/b/g/n/ac Wave 2
- IEEE 802.11e WMM
- IEEE 802.11h, 802.11i, 802.11e QoS, 802.11r fast roaming
- 802.11k Radio Resource Management
- 802.11v BSS Transition Management

Reliability

MTBF: 963,053h (109.93 years) at +25ºC operating temperature

Capacity

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

Software feature

- Up to 512 APs when managed by OV2500. No limit on number of AP groups

- Up to 64 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 user database
- Radius client
- Wireless QoS
- Band steering
- Client based smart load balance
- White/black list
- Zero-touch provisioning (ZTP)
- NTP server client
- ACL
- Rogue AP location and containment
- System log report
- SNMP Trap Notification with OmniVista 2500
- Wireless attack detection with OmniVista 2500
- Floor plan and heat map with OmniVista 2500™

  Note: some features are limited by local regulatory settings

Security

- 802.11i, Wi-Fi Protected Access 2 (WPA2), WPA
- 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
- 802.11k Radio Resource Management
- 802.11v BSS Transition Management
- 802.11r Fast Roaming

Regulatory & certification

- CB Scheme Safety, cTUVus
- Wi-Fi Alliance (WFA) certified 802.11a/b/g/n/ac
- FCC
- CE Marked
- RoHS, REACH, WEEE
- ASTM B117-07A, Salt spray testing per UL50 NEMA 4x
- EMI and susceptibility (Class B)

Ordering information

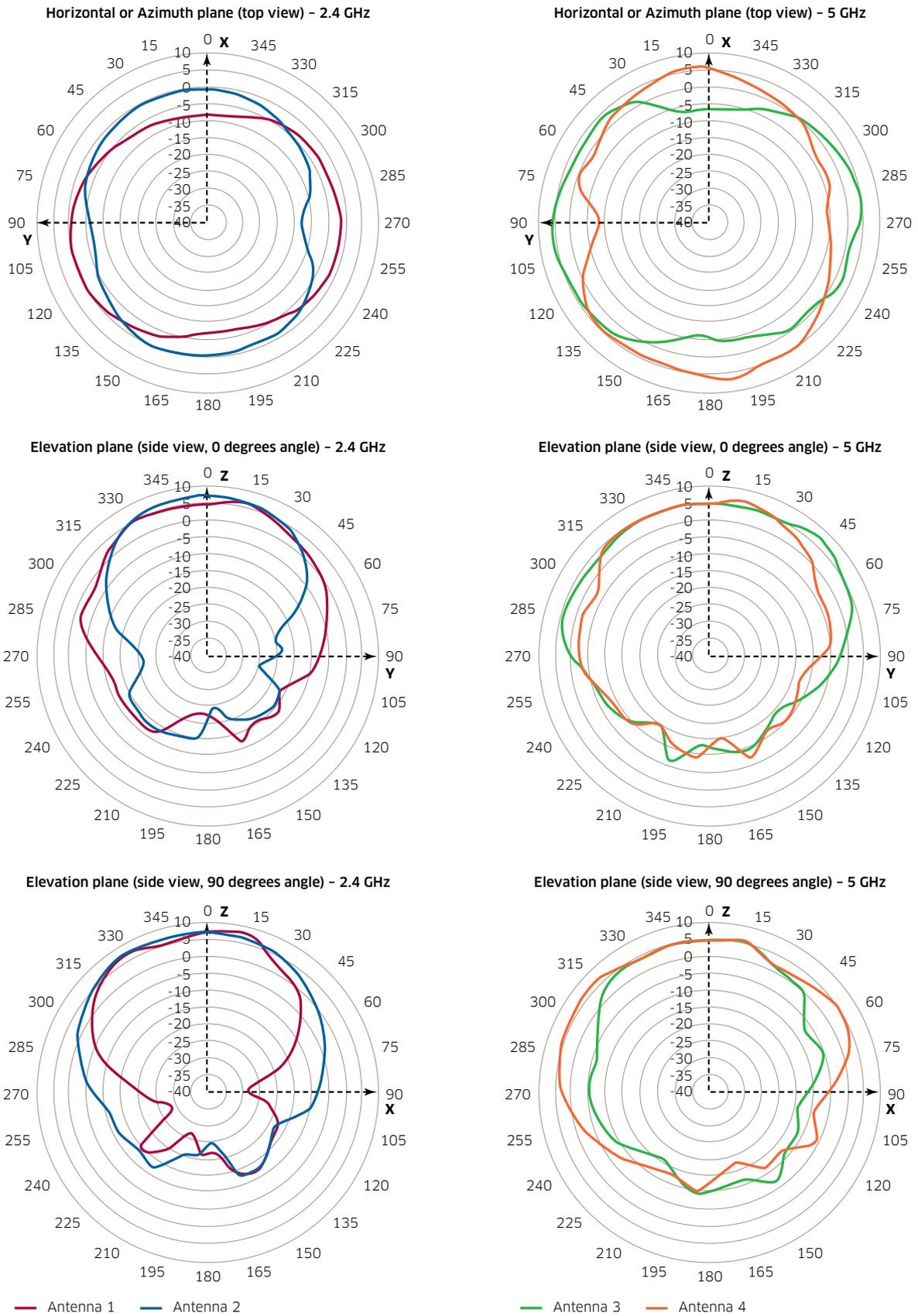| Item	Description
OAW-AP1251-RW	OmniAccess Stellar AP1251 outdoor mid-end 802.11ac Wave 2 MU-MIMO access point. Dual radio 802.11n 2x2:2 and 802.11ac 2x2:2 integrated antenna. 2x 10/100/1000Base-T (RJ-45) Ethernet Interface, 1 x micro USB console port. Includes outdoor mounting kit for pole/wall mounting. Restricted regulatory domain: Rest of world product, and MUST NOT be used for deployments in the United States, Japan or Israel.
OAW-AP1251-US	OmniAccess Stellar AP1251 outdoor mid-end 802.11ac Wave 2 MU-MIMO access point. Dual radio 802.11n 2x2:2 and 802.11ac 2x2:2 integrated antenna. 2x 10/100/1000Base-T (RJ-45) Ethernet Iinterface, 1 x micro USB console port. Includes outdoor mounting kit for pole/wall mounting. Restricted regulatory domain: United States
OAW-AP1251-ME	OmniAccess Stellar AP1251 outdoor mid-end 802.11ac Wave 2 MU-MIMO access point. Dual radio 802.11n 2x2:2 and 802.11ac 2x2:2 integrated antenna. 2x 10/100/1000Base-T (RJ-45) Ethernet interface, 1 x micro USB console port. Includes outdoor mounting kit for pole/wall mounting. Restricted regulatory domain: Middle East (Israel, Egypt)

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 AP1251 antenna pattern plots

Horizontal or Azimuth plane (top view) – 2.4 GHz

Horizontal or Azimuth plane (top view) – 5 GHz

Elevation plane (side view, 0 degrees angle) – 2.4 GHz

Elevation plane (side view, 0 degrees angle) – 5 GHz

Elevation plane (side view, 90 degrees angle) – 2.4 GHz

Elevation plane (side view, 90 degrees angle) – 5 GHz

—— Antenna 1   —— Antenna 2   —— Antenna 3   —— Antenna 4

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