Instructions for the deployment and installation of your Alcatel OmniAccess OAW-AP41 802.11a/b/g wireless access point.

About the Alcatel OmniAccess OAW-AP41

The OmniAccess OAW-AP41 is part of a comprehensive wireless network solution. The device works only in conjunction with an Alcatel OmniAccess WLAN Switch, and provides the following capabilities:

• Wireless transceiver
• Protocol-independent networking functionality
• IEEE 802.11a or IEEE 802.11b/g operation as a wireless Access Point
• IEEE 802.11a and IEEE 802.11b/g operation as a wireless Air Monitor
• Compatible with IEEE 802.3af Power Over Ethernet
• Can be centrally managed, configured, and upgraded through an OmniAccess WLAN Switch

PACKAGE CONTENTS

• 1 x Alcatel OmniAccess OAW-AP41 Wireless Access Point (AP)
• 1 x Quick Installation Guide (this document)

Inform your supplier if there are any incorrect, missing or damaged parts. If possible, retain the carton, including the original packing materials. Use them to repack the product in case there is a need to return it.

BEFORE GETTING STARTED

Before installing your Alcatel OmniAccess OAW-AP41 Wireless Access Point, please ensure you have the following:

• 1 x Fast Ethernet cable of required length

• 1 x 802.3af compliant Power over Ethernet source (PSE) - Omni-Access WLAN Switch or Midspan device

• 1 x WLAN Switch provisioned on the network:
  - with Layer 2/3 network connectivity to your Alcatel Omni Access OAW-AP41
  - One of the following network services:
    - Alcatel Discovery Protocol (ADP)
    - DNS server with an "A" record (see Provisioning the Alcatel OmniAccess OAW-AP41)
    - DHCP Server with vendor specific options (see Provisioning the Alcatel OmniAccess OAW-AP41)

Optional:
• Mounting screws (not supplied)

The Alcatel AP Setup Process

Setting up an Alcatel AP typically consists of a planning stage and three AP installation stages:

WLAN Planning — Determine how many Alcatel APs are needed for your wireless network deployment and where they will be installed. This can be easily accomplished using Alcatel's automated RF Plan site-survey software (available separately). This stage should have been completed during the master OmniAccess WLAN Switch installation and configuration. In typical Alcatel installations, the WLAN Switchs are configured and installed before APs.

1 AP Provisioning — Provides each Alcatel AP with the initial setting required to locate the host OmniAccess WLAN Switch.

Once the Alcatel AP is associated to its host OmniAccess WLAN Switch, device specific configuration may be applied as required (such as location code).

2 AP Installation — Once provisioned, the AP can be physically installed at its intended place of operation.

3 AP Configuration — The administrator defines the operational behavior for each Alcatel AP such as RF characteristics and security features. For specific AP configuration information, refer to the Alcatel AOS-W User Guide.

1 Provisioning the OmniAccess OAW-AP41

Alcatel Internetworking Inc., in compliance with governmental requirements, has designed the Alcatel OmniAccess OAW-AP41 such that only authorized network administrators can change these settings. For more information on AP configuration, refer to the Alcatel AOS-W User Guide.

CAUTION: ⚠

Access Points are radio transmission devices and as such are subject to governmental regulation. Network administrators responsible for the configuration and operation of Access Points must comply with local broadcast regulations. Specifically, Access Points must use channel assignments appropriate to the location in which the Access Point will be used.

Goal of AP Provisioning

Provisioning provides the Alcatel OmniAccess AP with basic network settings that allow it to locate the host Alcatel OmniAccess WLAN Switch. Initial provisioning may be achieved through a number of methods, including:

- Alcatel Discovery Protocol (ADP)
- DNS
- DHCP with Vendor Specific Options

Alcatel Discovery Protocol (ADP)

This is the simplest method for AP provisioning. ADP allows Alcatel OmniAccess APs to be connected to the network (or directly to an Alcatel OmniAccess WLAN Switch) and brought into operation automatically.

ADP performs one key task:

Obtain the IP address of the host Alcatel OmniAccess WLAN Switch from which the Alcatel OmniAccess AP will acquire its initial software configuration.

NOTE: Additionally, the AP software can also be uploaded via a standard TFTP server.

ADP with Directly / Layer 2 Connected APs
If your Alcatel OmniAccess AP is directly connected to an active Ethernet interface on an Alcatel OmniAccess WLAN Switch, then no configuration is required. You may proceed to the next step.

ADP with Layer 3 Connected APs
If your Alcatel OmniAccess AP is NOT directly / Layer 2 connected to an Alcatel OmniAccess WLAN Switch, and IP multicast routing is enabled on the host network, then ADP multicasts packets to locate a host Alcatel OmniAccess WLAN Switch's IP address.

To ensure ADP is enabled, issue the following commands on the Master Alcatel OmniAccess WLAN Switch:

(OAW-6000) (config) #adp discovery enable
(OAW-6000) (config) #adp igmp-join enable

An IP helper address on the subnet's default gateway, mapped to the host Alcatel OmniAccess WLAN Switch's IP address can be also used to facilitate the multicast / broadcast based aspect of this process.

Provisioning using DNS

If Alcatel OmniAccess OAW-AP41 is Layer 3 network connected, the Alcatel OmniAccess OAW-AP41 can use network based DNS to resolve a factory configured default host name "aruba-master" to derive the host Mobility Controller IP address. To enable this, a record for "aruba-master" must be created on the network DNS server.

Provisioning using DHCP with Vendor Specific Options

A standards compliant DHCP server can be configured to return the host Alcatel OmniAccess WLAN Switch's IP address through Vendor Specific Options (option 43) in the DHCP reply. If the host WLAN Switch's IP address is obtained via DHCP, it will be used for uploading the Alcatel OmniAccess AP's software image and configuration.

NOTE: If you have location-specific configurations for your APs, you need to apply this configuration information using AP Reprovisioning.

AP Reprovisioning

Once an AP is associated to an Alcatel OmniAccess WLAN Switch, it is capable of being reprovisioned if necessary. AP reprovisioning is the process by which APs are assigned unique configuration characteristics, for example, location codes. Location codes are important for recalibration and triangulation. For details on AP reprovisioning, see the Alcatel AOS-W User Guide.

AP provisioning is recommended only in instances where APs need to be pre-staged or provisioned in advance of shipment and final network installation (such as as Remote AP (RAP) deployments). In AP programming mode, AP configuration parameters are defined on the Alcatel OmniAccess WLAN Switch via command line interface or web interface, and then uploaded to individual APs as required.

2 Installing the OmniAccess OAW-AP41

Select a location as close as possible to the center of the intended coverage area. The service location should be free from obstructions or obvious sources of interference. Normally, the higher you place an AP or AM, the better its performance.

The Alcatel OmniAccess OAW-AP41 can be mounted on a wall using the mounting slots on the bottom of the unit.

NOTE: For dimensions, see "Product Specifications". Allow 5 cm (2") additional space on the right-hand side for cables and ensure enough space for antenna articulation.

Using the Built-In Mounting Slots

The keyhole-shaped slots on the back of the Alcatel OmniAccess OAW-AP41 can be used to attach the device upright to an indoor wall or shelf.

⚠ CAUTION: Do not use the mounting slots to hang the Alcatel OmniAccess OAW-AP41 from the ceiling, sideways, or in any place where it could fall on people or equipment. For more secure installation, use one of the optional mounting kits.

To hang the Alcatel OmniAccess OAW-AP41 upright using the mounting slots, perform the following steps:

1 Install two screws in the wall or shelf. If attaching the device to drywall, we recommend using appropriate wall anchors (not included).

2 Align the Alcatel OmniAccess OAW-AP41 mounting slots to capture the surface screws.

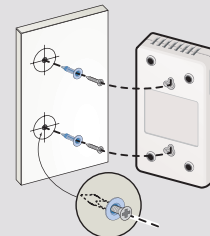3 Orient the antenna. For best performance, swivel the antenna so that it is oriented vertically.

Figure 1: Alcatel OmniAccess OAW-AP 41

Connecting Required Cables

NOTE: Alcatel OmniAccess OAW-AP41 APs are intended only for installation in Environment A as defined in IEEE 802.3.af, Power over Ethernet. All interconnected equipment must be contained within the same building, including the interconnected equipment's associated LAN connections.

The 10/100 Mbps Fast Ethernet (FE) port is used to connect the AP to a 10Base-T/100Base-TX (twisted-pair) Ethernet LAN segment. Use a 4- or 8-conductor, Category 5 UTP, straight-through FE cable.The port automatically adjusts for straight-through or crossover cables. The maximum length for FE cables is 100 meters (325 feet). Install cables in accordance with all applicable local and national regulations and practices.

Connecting Cables & Power

1 Connect one end of the FE cable directly to the Alcatel OmniAccess OAW-AP41 FE port.

2 Connect the other end of the FE cable to one of the following:
  - To a network port on the Alcatel OmniAccess WLAN Switch, or
  - To a network mid-span device that supports 802.3af compliant ports

FE Port Specifications

The 10/100 Mbps Ethernet (FE) port is located on the right-hand side of the Alcatel OmniAccess OAW-AP41 and has an RJ-45 female connector. The port pin-outs are shown in Figure 2:
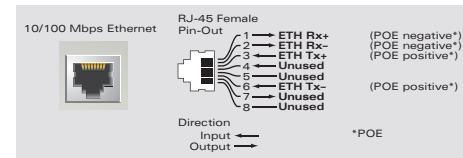
10/100 Mbps Ethernet   RJ-45 Female Pin-Out

Pin	Signal	
1	ETH Rx+	(POE negative*)
2	ETH Rx-	(POE negative*)
3	ETH Tx+	(POE positive*)
4	Unused	
5	Unused	
6	ETH Tx-	(POE positive*)
7	Unused	
8	Unused	

Direction
Input
Output
*POE

Figure 2: Alcatel OmniAccess OAW-AP41 FE Port

Verifying Successful Installation

The integrated LEDs on the AP 41 may be used at this point verify the AP is receiving power and initializing successfully.

LED behavior indicated status as follows:

LED	Color(S)	Activity	Action
Power/Test	Green	On	Power On, Device Ready
		Flashing	System Initializing
LAN (10/100 Mbps)	Green/Amber	Off	No Link
		Green On	100Mbps Link Negotiated
		Green Flashing	100Mbps Data Activity
		Amber On	10Mbps Link Negotiated
		Amber Flashing	10Mbps Data Activity
WLAN	Green/Amber	Off	Wireless Radio Disabled
		Green On	Wireless Radio Enabled
		Green Flashing	Wireless Data Activity

3 CONFIGURING THE OMNI-ACCESS OAW-AP41

Once the Alcatel OmniAccess OAW-AP41 has been provisioned and installed, it will be capable of discovery and association to an Alcatel OmniAccess WLAN Switch where the wireless and security parameters can be set. For AP configuration information, refer to the Alcatel AOS-W User Guide

SPECIFICATIONS

Mechanical:

Dimensions (antenna stowed) (HxWxD) :
- 107mm x 184mm x 32mm
- 4.21" x 7.24" x 1.26"

Weight - 0.45Kgs / 0.99Lbs

Temperature:
- Operating: 0°C to 50°C (32°F to 122°F)
- Storage: -10°C to 70°C (14°F to 158°F)

Relative Humidity - 5% to 90% non-condensing
Altitude - 8,000ft @ 28°C (82.4°F)

Mounting:
- Wall, cube or ceiling mountable
- Enclosure supports integrated wall point / screw head mounting lugs (screw head 7mm diameter maximum)

Antenna - Integrated, non-detachable articulating dual-band

Visual Status Indicators (LEDs):
- PWR   - Power / Status
- ENET   - Ethernet link status / Activity
- WLAN G - WLAN 2.4GHz status / Activity
- WLAN A - WLAN 5GHz status / Activity

Electrical
Ethernet:
- 1 x 10/100 Base-T auto-sensing Ethernet RJ-45 Interface, MDI/MDX
- IEEE 802.3af compliant Power Over Ethernet
- IEEE 802.3, IEEE 802.3u
- Power Over Ethernet (IEEE 802.3af compliant), 48V DC / 200mA (see Ethernet pin-out diagram for pin configuration)
- Reset button

Wireless LAN
Network Standards - IEEE 802.11b, IEEE 802.11g and IEEE 802.11a

Antenna Type - Integral, 802.11a/b/g omni-directional high-gain antenna

Antenna Gain:
- 2.4 ~ 2.5GHz / 2.11dBi
- 4.900 ~ 5.850 GHz / 2.07dBi

Radio Technology:
- Orthogonal Frequency Division Multiplexing (OFDM)
- Direct Sequence Spread Spectrum (DSSS)

Radio Modulation Type:
- 802.11b - CCK, BPSK, QPSK
- 802.11g - CCK, BPSK, QPSK,16-QAM, 64-QAM
- 802.11a - BPSK, QPSK,16-QAM, 64-QAM

Media Access Control - CSMA/CA with ACK

Supported Frequency Bands 2.4GHz:
- 2.400 ~ 2.4835GHz (Global), channels country specific

Supported Frequency Bands 5GHz:
- 5.150 ~ 5.250GHz (low band), country specific
- 5.250 ~ 5.350GHz (mid band), country specific
- 5.470 ~ 5.725GHz (Europe), country specific
- 5.725 ~ 5.825GHz GHz (high band), country specific

Operating Channels:

802.11b	802.11g	802.11a
• US, Canada 11 • ETSI 13 • Japan 14 • Taiwan 11	• US, Canada 11 • ETSI 13 • Japan 13 • Taiwan 11	• US, Canada 12 • ETSI (up to 19) • Japan 4 • Taiwan 7

Complete country list available at http://www.alcatel.com

Data Rates:
- 802.11b - 1, 2, 5.5, 11 Mbps per channel
- 802.11g - 6, 9, 12, 18, 24, 36, 48 and 54 Mbps per channel
- 802.11a - 6, 9, 12, 18, 24, 36, 48 and 54 Mbps per channel

Output Transmit Power - 100 mW maximum (or lower as configured on the OmniAccess WLAN Switch to comply with local regulatory requirements). In Taiwan, 802.11 a/b/g 2.4/5GHz limited to 17dBm.

Miscellaneous Functionality
Maximum Clients - 255

Radio Band Selection - via Mobility Controller in software

Manageability:
- Management of all 802.11 parameters
- Network Wide AP Management via CLI, WEB GUI and SNMPv3
- Access Point Profiles, managed by Geographical Location, BSSID and Radio Type

Encryption (AP and Mobility Controller) - 40bit / 64bit / 128bit / 152bit WEP, TKIP, AES

COMPLIANCE
FCC
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-orient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This product complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

CAUTION STATEMENT: FCC RF Radiation Exposure Statement
This equipment complies with FCC RF radiation exposure limits set forth for indoor use only. This equipment should be installed and operated with a minimum distance of 20 centimeters (7.87 inches) between the radiator and your body for 2.4 GHz and 5 GHz operations. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

This device is restricted to indoor use due to its operation in the 5.15 to 5.25 GHz frequency range. The FCC requires this product to be used indoors to reduce the potential for harmful interference to co-channel Mobile Satellite systems. High power radars are allocated as primary users of the 5.25 to 5.35 GHz and 5.65 to 5.85 GHz bands. These radar stations can cause interference with and/or damage this device.

Canada
This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the interference-causing equipment standard entitled "Digital Apparatus," ICES-003 of the Department of Communications.

Cet appareil numérique respecte les limites de bruits radioélectriques applicables aux appareils numériques de Classe B prescrites dans la norme sur le matériel brouilleur: "Appareils Numériques," NMB-003 édictée par le ministère des Communications.

Japan
この製品は法律により、5GHz帯での屋外使用を禁じられています。

VCCI - Class B

この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＢ情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると受信障害を引き起こすことがあります。
取り扱い説明書に従って正しい取り扱いをして下さい。

Europe
Warning—This is a Class B product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

This product complies with 1999/5/EC, EN5022 Class B, and EN5024 standards.

CE - Class B
Warning—This is a Class B product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

EU - Class B
This product complies with EN5022 Class B and EN5024 standards.

Korea

이 기기는 가정용으로 전자파적합등록을 한 기기로서
주거지역에서는 물론 모든 지역에서 사용할 수 있습니다.

"Class B" Equipment (Household purpose info/telecommunication equipment) As this equipment has undergone EMC registration for household purpose, this product can be used in any area including residential area.

Taiwan

" 經型式認證合格之低功率射頻電機, 非經許可, 公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。
低功率射頻電機之使用不得影響飛航安全及干擾合法通信;經發現有干擾現象時, 應立即停用, 並改善至無干擾時方得繼續使用。前項合法通信, 指依電信法規定作業之無線電通信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾"

CERTIFICATIONS

Electromagnetic Compatibility
FCC Part 15 subpart C (15.247/15.407
RSS 210 (CAN)
TELEC ARIB STD-T66
EN 61000-4-2, EN 61000-4-3, EN 61000-4-4,
EN 61000-4-5, EN 61000-4-6, EN 61000-4-11
EN 60601-1-2: 2001
73/23/ECC
AS/NZS 4268 Class B

The CE approval mark on back of the product indicates that it meets R&TTE Directive - EN 300 328, EN 301 489, EN 301 893

Safety
UL Listed (UL60950)
UL Listed (Canadian Electrical Code/CSA 22.2 No. 60950)
EN60950 / IEC60950

Disposal of the OmniAccess OAW-41
This product at end of life is subject to separate collection and treatment in the EU Member states, Norway, and Switzerland and therefore is marked with the symbol shown at the left. Treatment applied at end of life of these products in these countries shall comply with the applicable national laws implementing Directive 2002/96EC on Waste of Electrical and Electronic Equipment (WEEE).

The WEEE Directive 2002/96/EC and RoHS (Restriction of Hazardous Substances) Directive 2002/95/EC sets collection, recycling and recovery targets for various categories of electrical products and their waste.

The Restriction on Hazardous Substances Directive (RoHS) (2002/95/EC), which accompanies the WEEE Directive, bans the use of heavy metals and brominated flame-retardants in the manufacture of electrical and electronic equipment. Specifically, restricted materials under the RoHS Directive are Lead (Including Solder used in PCB's), Cadmium, Mercury, Hexavalent Chromium, and Bromine.

Alcatel declares compliance with the European Union (EU) WEEE Directive (2002/96/EC). For more information on WEEE, refer to: http://www.dti.gov.uk/sustainability/weee

Warranty
Standard warranty - 1 year return to manufacturer

CUSTOMER SUPPORT

Main Site: www.alcatel.com/enterprise
Support: http://eservice.ind.alcatel.com

E-mail
Support: support@ind.alcatel.com

Telephone Numbers
Main US/Canada   800-995-2612
Main Outside US   818-880-3500

ALCATEL

26801 West Agoura Road, Calabasas, CA 91301
www.alcatel.com/enterprise