



## ALL-WAPC0465AC

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## Chapter 1 Product Overview

#### **Key Features**

- Deploy and manage with ease using C-Series Wireless Management Switches.
- IP55-rated waterproof housing
- Supports IEEE802.11ac/a/b/g/n wireless standards
- Built-in high gain antennas for low profile design
- Backwards compatible with IEEE802.11a/b/g/n wireless devices
- Integrated Power over Ethernet (IEEE802.3at) for lowering deployment costs. Can be powered using either the included power adapter or via PoE with PoE 802.3at capable Switches or Injectors
- Band Steering to load balance clients between 2.4 GHz and 5 GHz for better throughput performance<sup>1</sup>
- Secured Guest Network option available



#### System Requirements

The following are the Minimum System Requirements in order to configure the device:

- Computer with an Ethernet interface or wireless network capability
- Windows OS (XP, Vista, 7, 8), Mac OS, or Linux-based operating systems
- Web-Browsing Application (i.e. : Internet Explorer, Firefox, Chrome, Safari, or another similar browser application)

### **Package Contents**

The package contains the following items (all items must be in package to issue a refund):

- ALLNET Outdoor Access Point
- Power Adapter
- PoE Injector
- Pole Mounting Ring
- Mounting Screw Set
- Quick Installation Guide

#### **Applications**

Wireless LAN (WLAN) products are easy to install and highly efficient. The following list describes some of the many applications made possible through the power and flexibility of WLANs:

- Difficult-to-Wire Environments: There are many situations where wires cannot be installed, deployed easily, or cannot be hidden from view. Older buildings, sites with multiple buildings, and/or areas that make the installation of a Ethernet-based LAN impossible, impractical or expensive are sites where WLAN can be a network solution.
- Temporary Workgroups: Create temporary workgroups/networks in more open areas within a building; auditoriums, amphitheaters classrooms, ballrooms, arenas, exhibition centers, or temporary offices where one wants either a permanent or temporary Wireless LAN established.
- The Ability to Access Real-Time Information: Doctors/Nurses, Point-of-Sale Employees, and/or Warehouse Workers can access real-time information while dealing with patients, serving customers, and/or processing information.
- Frequently Changing Environments: Set up networks in environments that change frequently (i.e.: Show Rooms, Exhibits, etc.).
- Small Office and Home Office (SOHO) Networks: SOHO users require a cost-effective, easy, and quick installation of a small network.
- Training/Educational Facilities: Training sites at corporations or students at universities use wireless connectivity to exchange information between peers and easily access information for learning purposes.

### **Technical Specifications**

- Dual-Band 11ac Speeds to 867 Mbps on 5 GHz; to 300 Mbps on 2.4 GHz
- IP55-Rated Weatherproof Housing Withstands Harsh Environments
- Enhanced Coverage: Up to 27 dBm Transmit Power Extends Outdoor Connectivity
- PoE+ Primary Gig-Port & Secondary Pass-Through Gig-Port Provide Added Flexibility
- Supports Mesh Wireless for simplified setup, optimized signals & self-healing

### **Physical Interface**

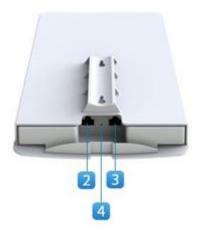
#### Dimensions and Weights

- Length: 304mm Width: 181mm
- Depth: 46mm
- Weight: 865g

#### Interface

- 1. LED Indicators
- 2. LAN2
- 3. LAN1 (PoE IN)
- 4. Reset Button





## Chapter 2 Before You Begin

## **Before You Begin**

This section will guide you through the installation process. Placement of the ALLNET WAPC AccessPoint is essential to maximize the Access Point's performance. Avoid placing the Access Point in an enclosed space such as a closet, cabinet, or stairwell.

#### **Considerations for Wireless Installation**

The operating distance of all wireless devices can often not be pre-determined due to a number of unknown obstacles in the environment in which the device is deployed. Obstacles such as the number, thickness, and location of walls, ceili ngs, or other objects that the Access Point's wireless signals must pass through can weaken the signal. Here are some key guidelines for allowing the Access Point to have an optimal wireless range during setup.

- Keep the number of walls and/or ceilings between the Access Point and other network devices to a minimum. Each wall and/or ceiling can reduce the signal strength, resulting in a lower overall signal strength.
- Building materials make a difference. A solid metal door and/or aluminum stubs may have a significant negative effect on the signal strength of the Access Point. Locate your wireless devices carefully so the signal can pass through drywall and/or open doorways. Materials such as glass, steel, metal, concrete, water (example: fish tanks), mirrors, file cabinets, and/or brick can also diminish wireless signal strength.
- Interference from your other electrical devices and/or appliances that generate RF noise can also diminish the Access Point's signal strength. The most common types of devices are microwaves or cordless phones.

#### **Computer Settings**

#### Windows XP/Windows 7

In order to use the Access Point, you must first configure the TCP/IPv4 connection of your Windows OS computer system.

1. Click the **Start** button and open the **Control Panel**.



Windows XP

Windows 7

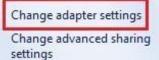
2a. In Windows XP, click on Network Connections.



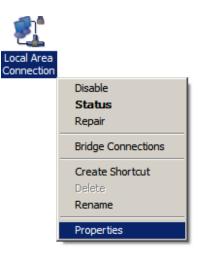
2b. In Windows 7, click View network status and tasks in the Network and Internet section, then select Change adapter settings.



Network and Internet View network status and tasks Choose homegroup and sharing options Control Panel Home



3. Right click on Local Area Connection and select Properties.



4. Select Internet Protocol Version 4 (TCP/IPv4) and then select Properties.

🛛 🚚 QoS Packet	Scheduler
🛛 县 File and Print	er Sharing for Microsoft Networks
🛛 📥 Internet Prot	ocol Version 6 (TCP/IPv6)
🖊 📥 Internet Prot	ocol Version 4 (TCP/IPv4)
	opology Discovery Mapper I/O Drive opology Discovery Responder

5. Select Use the following IP address and enter an IP address that is different from the

Access Point and Subnet mask, then click **OK**.

**Note**: Ensure that the IP address and Subnet mask are on the same subnet as the device.

For example: Access Point IP address: 192.168.1.1

PC IP address: 192.168.1.2 – 192.168.1.255 PC Subnet mask: 255.255.255.0

General							
You can get IP settings a this capability. Otherwise for the appropriate IP set	, you need to ttings.	o ask you					
() se the following IP	address:						
IP address:		192 .	168	. 1	. 10		
Subnet mask:		255 .	255	. 255	. 0		
Default gateway:			S 2		a.		
Obtain DNS server a	address autor	natically					
O Use the following DN	NS server add	lresses:					
Preferred DNS server:							
<u>Alternate DNS server:</u>			8		2	1	
🔲 Vaļidate settings up	oon exit			(	Adv	anceo	I ]
				2	/		

#### Apple Mac OS X

1. Go to **System Preferences** (it can be opened in the **Applications** folder or by selecting it in the Apple Menu).

2. Select Network in the Internet & Network section.



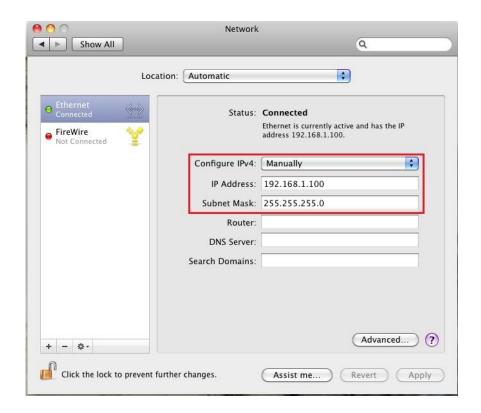
- 3. Highlight Ethernet.
- 4. In Configure IPv4, select Manually.
- 5. Enter an IP address that is different from the Access Point and Subnet mask, then click **OK**.

Note: Ensure that the IP address and Subnet mask are on the same subnet as the device.

For example: Access Point IP address: 192.168.1.1

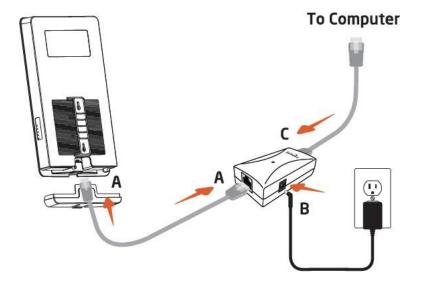
PC IP address: 192.168.1.2 – 192.168.1.255 PC Subnet mask: 255.255.255.0

6. Click **Apply** when finished.



#### Hardware Installation

- Connect one end of the Ethernet cable into the main LAN port (PoE) of the Access Point and the other end to the AP Ethernet port on the PoE injector.
- 2. Connect the **Power Adapter** to the **DC-IN** port of the PoE injector and plug the other end in to an electrical outlet.
- 3. Connect the second Ethernet cable into the **LAN port** of the PoE injector and the other end to the Ethernet port on the computer.
- 4. Once both connections are secure, verify the following:
  a) Ensure that the **POWER** light is on (it will begreen).
  b) Ensure that the 2.4 GHz/5 GHz WLAN light is on (it will be green for both 5 GHz and 2.4 GHz).
  - c) Ensure that the LAN (Computer/AP Connection) light is on (it will be green).



d) Once all three lights are on, proceed to set up the Access Point using the computer.

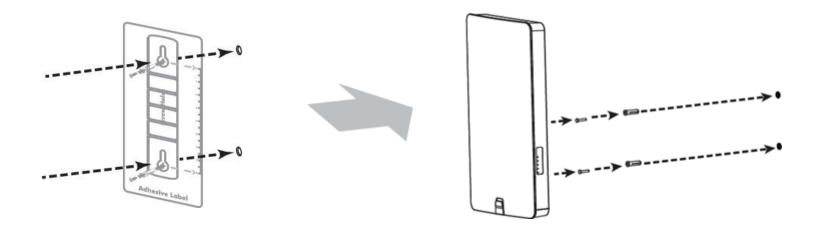
**Note**: The Access Point supports both IEEE 802.3at PoE (Power over Ethernet) or the included power injector. You may use either one as the power source. **Do NOT use both at the same time.** 

#### Mounting the Access Point

Using the provided accessory, the Access Point can be mounted on a wall or on a pole.

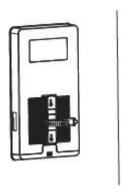
#### To attach the Access Point to a wall:

- 1. Attach the location sticker to the desired location on the wall and use a 6mm drill bit to drill the two marked holes.
- 2. Insert the screw anchors into the 6mm holes drilled then insert and the scrALLNET and tighten.
- 3. Align the access point over the keyhole mounting slots and insert both screw heads into each keyhole slot. Then slide the access point downward until it's firmly hooked in place.

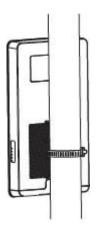


#### To attach the Access Point to a pole using the provided pole mounting kit:

1. Use a flathead screwdriver to unfasten the screw on the pole mounting ring and thread it through the middle tab on the rear of the access point.



2. Mount the access point onto the pole by wrapping the ring around the pole and fastening the screw.



# Chapter 3 Configuring Your Access Point

## **Configuring Your Access Point**

This section will show you how to configure the device using the web-based configuration interface.

### **Default Settings**

Please use your Ethernet port or wireless network adapter to connect the Access Point.

IP Address	192.168.1.1
Username/Password	admin/admin

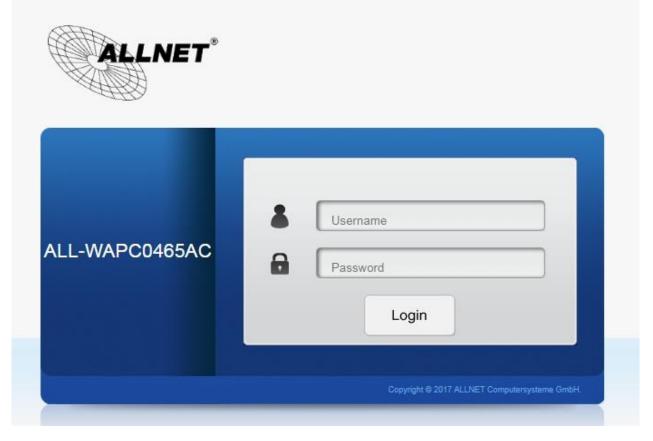
#### Web Configuration

1. Open a web browser (Internet Explorer/Firefox/Safari) and enter the IP Address <u>http://192.168.1.1</u>.



**Note**: If you have changed the default LAN IP Address of the Access Point, ensure you enter the correct IP Address.

**2.** The default username and password are: **admin**. Once you have entered the correct username and password, click the **Login** button to open the web-based configuration page.



3. If successful, you will be logged in and see the Access Point User Interface.

\*Model name varies depending on model.

ALLNET				Germa	n
WAPC0465AC	Dual Radio AP , 2T2R , 300Mbps + 867Mbp	s	Änderungen: 0	Reset	Auslogge
Übersicht	Geräteinformationen				
Gerätestatus	Gerätename	ALL-WAPC04	65AC		
Verbindungsstand Echtzeit	Seriennummer				
Netzwerk	MAC-Adresse				
Grundlegend	- LAN 1	88:DC:96:30	):97:73		
Wireless	- LAN 2	88:DC:96:30	):97:74		
Mesh	- WLAN - 2.4GHz	88:DC:96:30	):97:75		
	- WLAN - 5GHz	88:DC:96:30	):97:76		
Status	Land	Germany			
Einstellungen Werkzeuge	Lokale Zeit	Fri Oct 13 15	:04:18 2017		
_	Laufzeit	1d 6h 24m 2	3s		
Ansteuerung Erweiterte	Firmwareversion	3.0.0 + 1.8.6	50		
Zeitzone	Verwaltung VLAN ID	Nicht markie	rt		
WLAN-Planer	Registrierungsprüfcode	760d0b06			
Werkzeuge					
Systemmanager					
Konto	Speicherinformationen				
Firmware	-	79936 kB / 126484 kB	(620())		
Logbuch	Insgesamt verfügbar				
-	Frei	52776 kB / 126484 kB			
	Zwischengespeichert	19908 kB / 126484 kB			
	Gepuffert	7252 kB / 126484 kB	(5%)		

## Chapter 4 Overview

### **Overview**

The **Overview** section contains the following options:

- Device Status
- Connections

The following sections describe these options.

#### **Device Status**

Clicking the **Device Status** link under the **Overview** menu shows the status information about the current operating mode.

• The **Device Information** section shows general system information such as Device Name, MAC address, Current Time, Firmware Version, and Management VLAN ID

ALL-WAPC0465AC
88:DC:96:30:97:73
88:DC:96:30:97:74
88:DC:96:30:97:75
88:DC:96:30:97:76
Germany
Fri Oct 13 15:04:18 2017
1d 6h 24m 23s
3.0.0 + 1.8.60
Nicht markiert
760d0b06

#### Geräteinformationen

• The LAN Information section shows the Local Area Network settings such as the LAN IP Address, Subnet mask, Gateway, DNS Address, DHCP Client, and STP status.

LAN Information - IPv4
------------------------

IP Address	192.168.1.1	
Subnet Mask	255.255.255.0	
Gateway	192.168.1.1	
Primary DNS	0.0.0.0	
Secondary DNS	0.0.0.0	
DHCP Client	Disable	
Spanning Tree Protocol (STP)	Disable	

LAN Information - IPv6

IP Address	N/A	
Link-Local Address	fe80::202:6fff:fe04:401	
Gateway	N/A	
Primary DNS	N/A	
Secondary DNS	N/A	

• The **Wirelesss LAN Information 2.4 GHz/5GHz** section shows wireless information such as Operating Mode, Frequency, and Channel. Since the Access Point supports multiple-SSIDs, information about each SSID and security settings are displayed.

\*Wireless LAN Information - 5GHz only available for 5GHz capable models.

#### WLAN-Informationen - 2.4GHz

Betriebsmodus W-LAN Modus Kanal Bandbreite		Access Point	Access Point 802.11 B/G/N				
		802.11 B/G/I					
		20 MHz					
Kanäle	Canäle 2.432 GHz(Kanäle 5)						
Entfernu	ng	1000 M					
Profil	SSID		Sicherheits	VID	802.1Q		
#1	WAPC-Test		WPA2/PSK AES	1	Deaktivieren		
#2	SSID_2-2.4GHz		Keine	2	Deaktivieren		
#3	SSID_3-2.4GHz		Keine	3	Deaktivieren		
#4	SSID_4-2.4GHz		Keine	4	Deaktivieren		
#5	SSID_5-2.4GHz		Keine	5	Deaktivieren		
#6	SSID_6-2.4GHz		Keine	6	Deaktivieren		
#7	SSID_7-2.4GHz		Keine	7	Deaktivieren		
#8	SSID_8-2.4GHz		Keine	8	Deaktivieren		
#9	2.4GHz_GuestNetwork		Keine		Deaktivieren		

#### WLAN-Informationen - 5GHz

Betriebsmodus W-LAN Modus Kanal Bandbreite		Access Point				
Entfernu	ng	1000 M				
Profil	SSID		Sicherheits	VID	802.1Q	
#1	WAPC-Test		WPA2/PSK AES	51	Deaktivieren	
#2	SSID_2-5GHz		Keine	52	Deaktivieren	
#3	SSID_3-5GHz		Keine	53	Deaktivieren	
#4	SSID_4-5GHz		Keine	54	Deaktivieren	
#5	SSID_5-5GHz		Keine	55	Deaktivieren	
#6	SSID_6-5GHz		Keine	56	Deaktivieren	
#7	SSID_7-5GHz		Keine	57	Deaktivieren	
#8	SSID_8-5GHz		Keine	58	Deaktivieren	
#9	5GHz_GuestNetwork		Keine		Deaktivieren	

#### Connections

Clicking the **Connections** link under the **Device Status** menu displays the list of clients associated to the Access Point's 2.4GHz/5GHz, along with the MAC address, TX, RX and signal strength for each client. Clicking **Kick** in the Block column removes this client.

Click **Refresh** to refresh the Connection List page.

SSID	MAC-Adresse	TX (KB)	RX (KB)	RSSI (dBm)	Block
Verbindung	gsliste - 5GHz				

Erfrischen

# Chapter 5 Network

## Basic

This page allows you to modify the device's IP settings and the Spanning Tree settings. Enabling Spanning Tree protocol will prevent network loops in your LAN network.

#### **IPv4 Settings**

IPv4 Settings

IP Network Setting	O DHCP    Static IP		
IP Address	192.168.1.1		
Subnet Mask	255.255.255.0		
Gateway	192.168.1.1		
Primary DNS	0.0.0.0		
Secondary DNS	0.0.0.0		

**IP Network Setting**: Select whether the device IP address will use the static IP address specified in the IP Address field or be obtained automatically when the device connects to a DHCP server.

**IPAddress**: The IP Address of this device.

IP Subnet Mask: The IP Subnet mask of this device.

**Gateway**: The Default Gateway of this device. Leave it blank if you are unsure of this setting.

**Primary/Secondary DNS**: The primary/secondary DNS address for this device.

#### **IPv6** Settings

IPv6 Settings	☑ Link-local Address			
IP Address				
Subnet Prefix Length				
Gateway				
Primary DNS				
Secondary DNS				

Link-Local Address: Check this if you want to use Link-Local Address.

**IPAddress**: The IPv6 IP Address of this device.

**Subnet Prefix Length**: The IPv6 Subnet Prefix Length of this device.

**Gateway**: The IPv6 Default Gateway of this device. Leave it blank if you are unsure of this setting.

**Primary / Secondary DNS**: The primary / secondary DNS address for this device.

#### Spanning Tree Settings

Status	Enable O E	lisable
Hello Time	2	seconds (1-10)
Max Age	20	seconds (6-40)
Forward Delay	4	seconds (4-30)
Priority	32768	(0-65535)

Spanning Tree Protocol (STP) Settings



Save current setting(s)

**Status**: Enables or disables the Spanning Tree function.

**Hello Time**: Specify Bridge Hello Time, in seconds. This value determines how often the device sends handshake packets to communicate information about the topology throughout the entire Bridged Local Area Network.

**Max Age**: Specify Bridge Max Age, in seconds. If another bridge in the spanning tree does not send a hello packet for a long period of time, it is assumed to be inactive.

**Forward Delay**: Specifies Bridge Forward Delay, in seconds. Forwarding Delay Time is the time spent in each of the Listening and Learning states before the Forwarding state is entered. This delay is provided so that when a new bridge comes onto a busy network, it analyzes data traffic before participating.

**Priority**: Specify the Priority Number. A smaller number has greater priority.

Save: Click Save to confirm the changes.

# Chapter 6 2.4GHz & 5GHzWireless

### **Wireless Network**

This page displays the current status of the Wireless settings of the Access Point.

### Wireless Settings

WLAN-Einstellungen					
Gerätename	ALL-WAPC0465AC				
Land/Region	Germany •				
	Deaktivieren •				
Band-Steering	HINWEIS: Damit die Bandsteuerungsfunktion richtig arbeitet, müssen 2,4-GHz- und 5-GHz- SSID- und Sicherheitseinstellungen identisch sein.				

**Device Name:** Enter a name for the device. The name you type appears in SNMP management. This name is not the SSID and is not broadcast to other devices.

**Band Steering:** Enable Band Steering to sends 802.11n clients to the 5GHz band, where 802.11b/g clients cannot go, and leaves the 802.11b/g clients in 2.4GHz to operate at their slower rates. Band Steering works within the Access Point by directing 5GHz-capable clients to that band.

\*In order for the Band Steering function to work properly, both the 2.4GHz and the 5GHz SSID and security settings must be under the same selection settings.

	2.4GHz		5GHz	
Betriebsmodus	Access Point		Access Poin	t •
bothobolhoddo			Energiesparen 🥑	
W-LAN Modus	802.11 B/C	G/N ▼	802.11 AC/N	1 🔹
Kanal HT Modus	20MHz	•	80MHz(AC	Only) 🔻
Erweiterungskanal	Upper Cha	annel 🔻	Lower Chan	nel 🔻
Kanäle	Auto	*	Auto	•
Übertragungsleistung	Auto	•	Auto	•
Datenrate	Auto	•	Auto	Ψ.
RTS/CTS Threshold	2346		2346	
Client-Limits	Aktivier 127	en 🔍 Deaktivieren	Aktivierer 127	Deaktivieren
	<ul> <li>Aktivier</li> </ul>	en 🔍 Deaktivieren		
Aggregierung	32 F	elder		
. 1991 0 91 0 1 0 1 9 0	50000 Bytes (Maximum)			
Multicast-Unicast- Datenstromkonvertierung	Aktiviere	en 🧿 🔍 Deaktivierer	n 🕖	
AP Erkennung	Suche		Suche	
Entfernung(0-30km)	1 ((	0.6Meilen)	1 (0.6	6Meilen)

**Wireless Mode:** Supports 802.11b/g/n mixed mode in 2.4GHz and 802.11a/n mixed mode in 5GHz. Note that 5GHz settings are only available for dual radio models.

**Channel HT Mode:** The default channel bandwidth is 20/40MHz. The larger the channel bandwidth, the better the transmission quality and speed. This option is only available for 802.11n modes only.

**Extension Channel:** Use the drop-down menu to set the Extension Channel as Upper or Lower channel. An extension channel is a secondary channel used to bond with the primary channel to increase this range to 40MHz allowing for greater bandwidth. This option is only available when Wireless Mode is 802.11n and Channel HT Mode is 20/40 MHz or 40MHz.

**Channel:** Select the appropriate channel.

**Transmit Power:** Select the transmit power for the radio. Increasing the power improves performance, but if two or more access points are operating in the same area on the same channel, it may cause interference.

**Data Rate:** Use the drop-down list to set the available transmit data rates permitted for wireless clients. The data rate affects the throughput of the access point. The lower the data rate, the lower the throughput, but the longer transmission distance.

RTS/CTS Threshold: Specifies the threshold package size for RTC/CTS. A small number causes RTS/CTS packets to be sent more

often and consumes more bandwidth.

**Client Limits:** Limits the total number of clients.

Aggregation: Merges data packets into one packet. This option reduces the number of packets, but also increases packet sizes.

**AP Detection:** AP Detection can select the best channel to use by scanning nearby areas for Access Points.

**Distance:** Specifies the distance between the Access Points and clients. Note that longer distances may drop higher speed connections.

#### 2.4GHz/5GHz SSID Profile

Under Wireless Settings, you can edit the SSID profile to fit your needs. Click Edit under the SSID you would like to make changes

to.

Aktivieren	SSID	Bearbeiten	Sicherheits	Ausgeblendete SSID	Client- Isolierung	VLAN- Isolierung	L2- Isolation	V-LAN ID
•	WAPC-Test	Bearbeiten	WPA2/PSK AES					1
	SSID_2-2.4GHz	Bearbeiten	Keine					2
	SSID_3-2.4GHz	Bearbeiten	Keine					3
	SSID_4-2.4GHz	Bearbeiten	Keine					4
	SSID_5-2.4GHz	Bearbeiten	Keine					5
	SSID_6-2.4GHz	Bearbeiten	Keine					6
	SSID_7-2.4GHz	Bearbeiten	Keine					7
	SSID_8-2.4GHz	Bearbeiten	Keine					8

#### WLAN-Einstellungen - 2.4GHz

#### WLAN-Einstellungen - 5GHz

Aktivieren	SSID	Bearbeiten	Sicherheits	Ausgeblendete SSID	Client- Isolierung	VLAN- Isolierung	L2- Isolation	V-LAN ID
	WAPC-Test	Bearbeiten	WPA2/PSK AES					51
	SSID_2-5GHz	Bearbeiten	Keine					52
	SSID_3-5GHz	Bearbeiten	Keine					53
	SSID_4-5GHz	Bearbeiten	Keine					54
	SSID_5-5GHz	Bearbeiten	Keine					55
	SSID_6-5GHz	Bearbeiten	Keine					56
	SSID_7-5GHz	Bearbeiten	Keine					57
	SSID_8-5GHz	Bearbeiten	Keine					58

**Enable:** Check this option to enable this profile.

**SSID:** Specifies the SSID for the current profile.

**Security:** Displays the Security Mode the SSID uses. You can click **Edit** to change the security mode. For more details, see the next section.

**Hidden SSID:** Check this option to hide the SSID from clients. If checked, the SSID will not appear in the site survey.

**Client Isolation:** Check this option to prevent communication between client devices.

**VLAN Isolation:** Check this option to enable VLAN Isolation feature.

**VLAN ID:** Specifies the VLAN ID for the SSID profile.

# **Wireless Security**

The Wireless Security section lets you configure the Access Point's security modes: WEP, WPA-PSK, WPA2-PSK, WPA-PSK Mixed, WPA-Enterprise, WPA2-Enterprise and WPA Mixed Enterprise.

It is strongly recommended that you use **WPA2-PSK**. Click on the **Edit** button under Wireless Settings next to the SSID to change the security settings.

#### WEP

Security Mode	WEP 🗸
Auth Type	Open System 🗸
Input Type	Hex 🗸
Key Length	40/64-bit (10 hex digits or 5 ASCII char)
Default Key	
Key1	
Key2	
Key3	
Key4	

Auth Type: Select Open System or Shared Key.

Input Type: ASCII: Regular Text (Recommended) or HEX: Hexadecimal Numbers (For advanced users).

**Key Length:** Select the desired option and ensure the wireless clients use the same setting. Your choices are: 64, 128, and 152-bit password lengths.

**Default Key:** Select the key you wish to be default. Transmitted data is ALWAYS encrypted using the Default Key; the other Keys are for decryption only. You must enter a Key Value for the Default Key.

**Encryption Key:** Enter the Key Value or values you wish to use. The default is none.

#### WPA-PSK/WPA2-PSK (Pre-Shared Key)

Security Mode	WPA-PSK Mixed
Encryption	Both(TKIP+AES)
Passphrase	
Group Key Update Interval	3600

Encryption: Select the WPA/WPA2 encryption type you would like to use. Available options are Both, TKIP(Temporal Key Integrity Protocol) and AES(Advanced Encryption Standard). Please ensure that your wireless clients use the same settings.
Passphrase: Wireless clients must use the same Key to associate the device. If using ASCII format, the Key must be from 8 to 63 characters in length. If using HEX format, the Key must be 64 HEX characters in length.
Group Key Update Interval: Specify how often, in seconds, the Group Key changes.

#### WPA/WPA2-Enterprise

Security Mode	WPA Mixed-Enterprise 🗸		
Encryption	Both(TKIP+AES) ✓		
Group Key Update Interval	3600		
Radius Server			
Radius Port	1812		
Radius Secret			
Radius Accounting	Disable 🗸		
Radius Accounting Server			
Radius Accounting Port	1813		
Radius Accounting Secret			
Interim Accounting Interval	600		

Encryption: Select the WPA/WPA2 encryption type you would like to use. Available options are Both, TKIP(Temporal Key Integrity

Protocol) and AES(Advanced Encryption Standard). Please ensure that your wireless clients use the same settings. Group Key Update Interval: Specify how often, in seconds, the group key changes. Radius Server: Enter the IP address of the Radius server. Radius Port: Enter the port number used for connections to the Radius server. Radius Secret: Enter the secret required to connect to the Radius server. Radius Accounting: Enables or disables the accounting feature. Radius Accounting Server: Enter the IP address of the Radius accounting server. Radius Accounting Port: Enter the port number used for connections to the Radius accounting server. Radius Accounting Network: Enter the secret required to connect to the Radius accounting server. Radius Accounting Network: Enter the secret required to connect to the Radius accounting server. Radius Accounting Secret: Enter the secret required to connect to the Radius accounting server. Interim Accounting Interval: Specify how often, in seconds, the accounting data sends.

**Note:** 802.11n does not allow WEP/WPA-PSK TKIP/WPA2-PSK TKIP security mode. The connection mode will automatically change from 802.11n to 802.11g.

# Wireless MAC Filter

Wireless MAC Filter is used to allow or deny network access to wireless clients (computers, tablet PCs, NAS, smart phones, etc.) according to their MAC addresses. You can manually add a MAC address to restrict permission to access the Access Point. The default setting is: Disable Wireless MAC Filter.

Wireless MAC Filter

ACL Mode	Disabled	~						
			Add	:	:	:	:	:
No.	MAC Address							

**ACL (Access Control List) Mode:** Determines whether network access is granted or denied to clients whose MAC addresses appear in the MAC address table on this page. Choices given are: Disabled, Deny MAC in the list, or Allow MAC in the list.

MAC Address: Enter the MAC address of the wireless client. Add:

Click **Add** to add the MAC address to the MAC Address table.

**Delete:** Deletes the selected entries.

# **Traffic Shaping**

Traffic Shaping regulates the flow of packets leaving an interface to deliver improved Quality of Service.

#### Wireless Traffic Shaping

Enable Traffic Shaping	○ Enable		
Download Limit	100	Mbps (1-999)	
Upload Limit	100	Mbps (1-999)	



Enable Traffic Shaping: Select to Enable or Disable Wireless Traffic Shaping.Download Limit: Specifies the wireless transmission speed used for downloading.Upload Limit: Specifies the wireless transmission speed used for uploading.

Save: Click Save to apply the changes.

# **Guest Network**

The Guest Network function allows administrators to grant Internet connectivity to visitors or guests while keeping other networked devices (computers and hard drives) and sensitive personal or company information private and secure.

Gastnetzwer	keinstellungen🥑				
Aktivieren	SSID	Bearbeiten	Sicherheits	Ausgeblendete SSID	Client- Isolierung
	2.4GHz_GuestNetwork	Bearbeiten	Keine		
•	5GHz_GuestNetwork	Bearbeiten	Keine		

Enable SSID: Select to Enable or Disable SSID broadcasting.

**SSID:** Specify the SSID for the current profile. This is the name visible on the network to wireless clients.

**Security:** You can use None or WPA-PSK / WPA2-PSK security for this guest network.

**Hidden SSID:** Check this option to hide the SSID from broadcasting to discourage wireless users from connecting to a particular SSID.

**Client Isolation:** Check this option to prevent wireless clients associated with your access point to communicate with other wireless devices connected to the AP.

After enabling Guest Network in the SSID Config page, assign an IP Address, Subnet Mask and DHCP server IP address range for this Guest Network.

Manuelle IP-Einstellungen

- IP-Adresse	192.168.100.1
- Subnetzmaske	255.255.255.0
Automatische DHCP-Servereinstellungen	
- Start-IP-Adresse	192.168.100.100
- End-IP-Adresse	192.168.100.200
- WINS Server IP	0.0.0.0

#### Manual IP Settings

IP Address: Specify an IP Address for the Guest Network Subnet Mask: Specify the the Subnet Mask IP Address for the Guest Network

#### **Automatic DHCP Server Settings**

**Starting IP Address:** Specify the starting IP Address range for the Guest Network.

Ending IP Address: Specify the ending IP Address range for the Guest Network.

**WINS Server IP:** Specify the WINS Server IP Address for the Guest Network. WINS means Windows Internet Name Service. It is Microsoft's implementation of NetBIOS Name Service (NBNS), a name server and service for NetBIOS computer names.

# Fast Handover

With Fast Handover enabled, the AP will send a disassociation request to the wireless client and let it find another AP to handover and associate upon detecting the wireless client's RSSI value lower than specified. The RSSI value can be adjusted to allow more clients to stay associated to this AP. Note that setting the RSSI value too low may cause wireless clients to reconnect frequently.

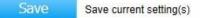
2.4GHz	5GHz
Aktivieren I Deaktivieren	Aktivieren I Deaktivieren
-85 dBm	-90 dBm
	ents getrennt, die unter den konfigurierten n Clients führen kann. Wir empfehlen, diese
	Aktivieren      Deaktivieren     -85     dBm SI-Schwellenwertes werden kabellose Clie äufigen Neuverbindungen von kabelloser

# Management VLAN Settings

This section allows you to assign a VLAN tag to the packets. A VLAN is a group of computers on a network whose software has been configured so that they behave as if they were on a separate Local Area Network (LAN). Computers on VLAN do not have to be physically located next to one another on the LAN.

#### Management VLAN Settings

Status O Enable O Disable 4096 Caution: If you encounter disconnection issue during the configuration process, verify that the switch and the DHCP server can support the new VLAN ID and then connect to the new IP address.



**Status:** If your network includes VLANs and if tagged packets need to pass through the Access Point, select **Enable** and enter the VLAN ID. Otherwise, click **Disable**.

Save: Click Save to apply the changes.

**Note:** If you reconfigure the Management VLAN ID, you may lose your connection to the Access Point. Verify that the DHCP server supports the reconfigured VLAN ID and then reconnect to the Access Point using the new IP address.

# Chapter 7 Management

# **SNMP** Settings

This page allows you to assign the Contact Details, Location, Community Name, and Trap Settings for Simple Network Management Protocol (SNMP). This is a networking management protocol used to monitor network attached devices. SNMP allows messages (called protocol data units) to be sent to various parts of the network. Upon receiving these messages, SNMP compatible devices (called agents) returns the data stored in their Management Information Bases. To configure SNMP Settings, click under the **Advanced** tab on the side bar under **Management**.

#### SNMP Settings

Status	Enable O Disabl	le
Contact		
Location		
Port	161	
Community Name (Read Only)	public	
Community Name (Read Write)	private	
Trap Destination		
- Port	162	
- IP Address		
- Community Name	public	
SNMPv3 Settings		
- Status	Enable O Disable	le
- Username	admin	(1-31 Characters)
- Authorized Protocol	MD5 🗸	
- Authorized Key	12345678	(8-32 Characters)
- Private Protocol	DES 🗸	
- Private Key	12345678	(8-32 Characters)
- Engine ID		

**Status:** Enables or Disables the SNMP feature.

**Contact:** Specifies the contact details of the device.

**Location:** Specifies the location of the device.

**Port:** Displays the port number.

**Community Name (Read Only):** Specifies the password for the SNMP community for read only access.

**Community Name (Read/Write):** Specifies the password for the SNMP community with read/write access.

**Trap Destination Address:** Specifies the port and IP address of the computer that will receive the SNMP traps.

Trap Destination Community Name: Specifies the password for the SNMP trap community.

**SNMPv3 Status:** Enables or Disables the SNMPv3 feature.

User Name: Specifies the username for the SNMPv3.feature

Auth Protocol: Select the Authentication Protocol type: MDS or SHA.

Auth Key: Specify the Authentication Key for authentication.

Priv Protocol: Select the Privacy Protocol type: DES.

**Priv Key:** Specifies the privacy key for privacy.

**Engine ID:** Specifies the Engine ID for SNMPv3.

# **CLI/SSH Settings**

Most users will configure the device through the graphical user interface (GUI). However, for those who prefer an alternative method there is the command line interface (CLI). The CLI can be access through a command console, modem or Telnet connection. For security's concern, you can enable SSH (Secure Shell) to establish a secure data communication.

Enable O Disable
O Enable      O Disable

**CLI Status:** Select **Enable** or **Disable** to enable or disable the ability to modify the Access Point via a command line interface (CLI). **SSH Status:** Select **Enable** or **Disable** to enable or disable the ability to modify the Access Point via a command line interface (CLI) with a secure channel.

# **HTTPS Settings**

Hypertext Transfer Protocol Secure (HTTPS) is a communications protocol for secure communication over a computer network, with especially wide deployment on the Internet. Technically, it is not a protocol in and of itself; rather, it is the result of simply layering the Hypertext Transfer Protocol (HTTP) on top of the SSL/TLS protocol, thus adding the security capabilities of SSL/TLS to standard HTTP communications.

#### HTTPS Settings

Status	Enable O Disable
HTTPS forward	<ul> <li>Enable          <ul> <li>Disable</li> </ul> </li> </ul>

**Status:** Select **Enable** or **Disable** to enable or disable the ability to modify the Access Point via a HTTPS. **HTTPS forward:** Enable this option; it will be forwarded to HTTPS if user uses HTTP to access the Access Point.

# **Email Alert**

The Access Point will send email alerts when configurations have been changed.

Email Alert			
Status	Enable		
- From			
- To			
- Subject	[Email-Alert][EWS660AP][0	0:02:6F:00:00:00] Conf	īgura
Email Account			
- Username			
- Password			
- SMTP Server		Port: 25	
- Security Mode	None		Send Test Mail

**Status:** Check **Enable** to enable Email Alert feature. **From:** Enter the address to show as the sender of the email. **To:** 

Enter the address to show as the receiver of the email. Subject:

Enter the subject to show as the subject of the email.

#### **Email Account**

**Username/Password:** Enter the username and password required to connect to the SMTP server.

**SMTP Server/Port:** Enter the IP address/domain name and port of the SMTP server. The default port of SMTP Server is port 25.

Security Mode: Select the mode of security for the Email alert. The options are None, SSL/TLS and STARTTLS.

Send Test Mail: Click Send Test Mail button to test the Email Alert setup.

Apply: Click Apply to save the changes.

# Date and Time Settings

This page allows you to set the internal clock of the Access Point. To access the Date and Time settings, click **Time Zone** under the **Management** tab on the side bar.

#### Date and Time Settings

O Manua	ally Set	Date	e and	Time	
Date:	2014		/ 01	/ 07	
Time:	11	ż	16	(24-Hour)	
Syn	chroniz	e wit	th PC		
<ul> <li>Autom</li> </ul>	natically	Get	t Date	and Time	
NTP S	Server:	209	.81.9.7		
Time Zo	2.50%	C+0(	):00 G	ambia, Liberia, Morocco	
Enabl	le Dayl	ght S	Saving		
Start:	Start: January 🗸 1st 🗸 Sun 🗸 12 am 🗸				
End :	Janua	iry	∨ 1	st 🗸 Mon 🗸 12 am 🗸	

Apply Apply saved settings to take effect

Manually Set Date and Time: Manually specify the date and time.

**Synchronize with PC:** Click to synchronize the Access Point's internal clock with the computer's time. **Automatically Get Date and Time:** Enter the IP address of an NTP server or use the default NTP server to have the internal clock set automatically.

**Time Zone:** Choose the time zone you would like to use from the drop-down list.

**Enable Daylight Savings:** Check the box to enable or disable daylight savings time for the Access Point. Next, enter the dates that correspond to the present year's daylight savings time.

Click **Apply** to save the changes.

# WiFi Scheduler

Use the schedule function to reboot the Access Point or control the wireless availability on a routine basis. The Schedule function relies on the GMT time setting acquired from a network time protocol (NTP) server. For details on how to connect the Access Point to an NTP server, see Date and Time Settings.

#### **Auto Reboot Settings**

You can specify how often you would like to reboot the Access Point.

#### Auto Reboot Settings

Status	○ Enable
Timer	Sunday Monday Tuesday Wednesday Friday Saturday
	0 : 0

**Status:** Enables or disables the Auto Reboot function.

**Timer:** Specifies the time and frequency in rebooting the Access Point by Min, Hour and Day.

#### WiFi Scheduler

#### Einstellung automatischer Neustart

Status	Aktivieren	۲	Deaktivieren
Timer	Sonntag		Montag 🗆 Dienstag 🗆 Mittwoch 🗆 Donnerstag 🗐 Freitag 🗐 Samstag
	0	:[	0

#### WLAN-Planer

Status	<ul> <li>Aktivieren          Deaktivieren         HINWEIS:Bitte stellen Sie sicher, dass die Zeitzoneneinstellungen mit der lokalen Zeit synchronisiert sind, wenn Sie den WLAN-Zeitplan aktivieren     </li> </ul>			
WLAN-Funk	2.4GHz •			
SSID-Auswahl	WAPC-Test •			
Zeitplanvorlagen	Eine Vorlage wählen •			
	Tag Verfügbare Dauer			

	Tag	Verfugbare		Dauer
	Sonntag	verfügbar	¥	00:00~24:00
	Montag	verfügbar	•	00:00~24:00
planen Tabelle	Dienstag	verfügbar	•	00:00~24:00
	Mittwoch	verfügbar	۳	00:00~24:00
	Donnerstag	verfügbar	۳	00:00~24:00
	Freitag	verfügbar	۳	00:00~24:00
	Samstag	verfügbar	۳	00:00~24:00

Speichern Allgemeine Einstellung(en) speichern

**Status:** Enables or disables the WiFi Scheduler function.

Wireless Radio: Select 2.4GHz or 5GHz\* to use WiFi Schedule.

**SSID Selection:** Select a SSID to use WiFi Schedule.

Schedule Templates: There are 3 templates available: Always available, Available 8-5 daily and Available 8-5 daily except

weekends. Select Custom schedule if you want to set the schedule manually.

Schedule Table: Set the schedule manually.

# Tools

This section allows you to analyze the connection quality of the Access Point and trace the routing table to a target in the network.

#### **Ping Test Parameters**

#### **Ping Test Parameters**

Target IP / Domain Name			
Ping Packet Size	64	Bytes	
Number of Pings	4		
Start			
	<	>	

Target IP/Domain Name: Enter the IP address or Domain name you would like to search.

Ping Packet Size: Enter the packet size of each ping.

Number of Pings: Enter the number of times you wish to ping.

Start: Click Start to begin pinging target device (via IP).

#### **Traceroute Parameters**

#### Traceroute Test Parameters

Target IP / Domain Name		
Start Stop		~
		$\sim$
	<	>

Target IP/Domain Name: Enter an IP address or domain name you wish to trace.

**Start:** Click **Start** to begin the trace route operation.

**Stop:** Halts the traceroute test.

### Speed Test Parameters

#### Speed Test Parameters

Target IP / Domain Name			
Time Period	20	sec	
Check Interval	5	sec	
Start	<		<b>`</b>
ID: 4 Dart			1
IPv4 Port	5001		
IPv6 Port	5002		

Target IP/Domain Name: Enter an IP address or domain name you wish to run a Speed Test for.

**Time Period**: Enter the time in seconds that you would like the test to run for and in how many intervals.

**Start**: Starts the Speed Test.

IPv4 / IPv6 Port: The Access Point uses IPv4 port 5001 and IPv6 port 5002 for the speed test.

# **Device Discovery**

Under Device Discovery, you can choose for the Access Point to automatically scan for local devices to connect to. Click **Scan** to begin the process.

#### Device Discovery

Device Name	Operation Mode	IP Address	System MAC Address	Firmware Version
Scan				

# Chapter 8 System Manager

# **Account Setting**

This page allows you to change the username and password of the device. By default, the username is **admin** and the password is **admin**. The password can contain from 0 to 12 alphanumeric characters and is case sensitive.

#### Account Settings

Administrator Username	admin	
Current Password		
New Password		
Verify Password		

Apply

Apply saved settings to take effect

Administrator Username: Enter a new username for logging in to the Administrator Username entry box.
Current Password: Enter the old password for logging in to the Current Password entry box.
New Password: Enter the new password for logging in to the New Password entry box.
Verify Password: Re-enter the new password in the Verify Password entry box for confirmation.
Apply: Click Apply to save the changes.

**Note:** it is highly recommended that you change your password to something more unique for greater security.

# Firmware Upgrade

This page allows you to upgrade the Firmware of the Access Point.

#### Firmware Upgrade

Current Firmware Version: 2.0.0	)
Select the new firmware from yo	our hard disk
	Browse
Upload	

To Perform the Firmware Upgrade:

1. Click the **Browse...** button and navigate the OS File System to the location of the Firmware upgrade file.

2. Select the upgrade file. The name of the file will appear in the Upgrade File field.

3. Click the **Upload** button to commence the Firmware upgrade.

**Note:** The device is unavailable during the upgrade process and must restart when the upgrade is completed. Any connections to or through the device will be lost.

# Backup/Restore

This page allows you to save the current device configurations. When you save the configurations, you can also reload the saved configurations into the device through the **Restore New Settings** from a file folder. If extreme problems occur, or if you have set the Access Point incorrectly, you can use the **Reset** button in the **Reset to Default** section to restore all the configurations of the Access Point to the original default settings. To Configure the Backup/Restore Settings, click **Firmware** under the **Systems Manager** tab.

#### Backup/Restore Settings

Factory Setting	
- Backup Setting	Export
- Restore New Setting	Browse Import
- Reset to Default	Reset
User Setting	
- Back Up Setting as Default	Backup
- Restore to User Default	Restore

#### **Factory Setting**

Backup Setting: Click Export to save the current device configurations to a file.

Restore New Setting: Choose the file you wish restore for settings and click Import.

Reset to Default: Click the Reset button to restore the Access Point to its factory default settings.

#### **User Setting**

**Back Up Setting as Default:** Click **Backup** to backup the user settings you would like to use as the default settings. **Restore to User Default:** Click **Restore** to restore the Access Point to user's default settings.

# System Log

#### System Log

Status	Aktivieren O Deaktivieren			
Protokolltyp	alle			
Erfrischen	Oct 13 15:10:01 ALL-WAPC0465AC cron.info crond[30749]: crond: USER root pid 7911 cmd sh /sbin/check( *			
Löschen	Oct 13 15:10:01 ALL-WAPC0465AC cron.info crond[30749]: crond: USER root pid 7910 cmd killall -SIGUSR Oct 13 15:09:01 ALL-WAPC0465AC cron.info crond[30749]: crond: USER root pid 6839 cmd /sbin/chkEth2C Oct 13 15:09:01 ALL-WAPC0465AC cron.info crond[30749]: crond: USER root pid 6837 cmd sh /sbin/check( Oct 13 15:09:01 ALL-WAPC0465AC cron.info crond[30749]: crond: USER root pid 6836 cmd killall -SIGUSR Oct 13 15:08:01 ALL-WAPC0465AC cron.info crond[30749]: crond: USER root pid 6836 cmd killall -SIGUSR Oct 13 15:08:01 ALL-WAPC0465AC cron.info crond[30749]: crond: USER root pid 6271 cmd sh /sbin/check( Oct 13 15:08:01 ALL-WAPC0465AC cron.info crond[30749]: crond: USER root pid 6270 cmd killall -SIGUSR Oct 13 15:07:01 ALL-WAPC0465AC cron.info crond[30749]: crond: USER root pid 5843 cmd sh /sbin/check( Oct 13 15:07:01 ALL-WAPC0465AC cron.info crond[30749]: crond: USER root pid 5842 cmd killall -SIGUSR			
	Oct 13 15:06:59 ALL-WAPC0465AC kern.warn kernel: [109624.160000] ol_regdmn_init_channels: lavail mo 🗸			

Externes Protokoll	Aktivieren I Deaktivieren
Log Server IP- Adresse	

Anwenden Gespeicherte Einstellungen zum Wirksamwerden übernehmen.

This page allows you to setup the System Log and local log functions of the Access Point. Click **Log** under the **Systems Manager** tab to open up the System Log page.

**Status:** Enables or disables the System Log function.

**Log Type:** Select the Log Type mode you would like to use.

**Remote Log:** Enables or disables the Remote Log feature. If enabled, enter the IP address of the Log you would like to remote to.

Log Server IP Address: Enter the IP address of the log server.

Apply: Click Apply to save the changes.

# Reset

In some circumstances, you may be required to force the device to reboot. Click on **Reset** and you will have the choice to reboot the device or reset the device.

German German					
ALL-WAPC0465AC	Dual Radio AP , 2T2R , 300Mbps + 867Mbps	Änderungen: 0	Reset	Ausloggen	
<ol> <li>Übersicht</li> </ol>	Gerät neu starten				
Gerätestatus					
Verbindungsstand	Achtung: Bei Betätigung startet das Gerät neu.				
Echtzeit	Gerät neu starten				
< Netzwerk					
Grundlegend					
Wireless					
♦ Mesh	Gerät auf Standardeinstellungen rücksetzen				
Status					
Einstellungen	Achtung: Sämtliche Einstellungen werden gelöscht und auf die	Werks- oder Nutze	rvorgaben rückgese	etzt.	
Werkzeuge	Werkseinstellungen wiederherstellen Au	if Benutzerstandard ri	ücksetzen		

# Logout

Click **Logout** and a warning window will appear. Click **OK** to logout.



lessage in	om webpage	
?	Are you sure you want	to logout?
	ОК	Cancel

Hiermit erklärt ALLNET GmbH Computersysteme, dass sich das Gerät **ALL-WAPC0465AC** in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EC oder 2014/53/EU befindet. Die Konformitätserklärung kann unter folgender Adresse gefunden werden: <u>www.allnet.de/downloads.html</u>

ALLNET GmbH Computersysteme declares that the device **ALL-WAPC0465AC** is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC or 2014/53/EU. The Declaration of conformity can be found under this link: <u>www.allnet.de/downloads.html</u>

EU contact:

ALLNET GmbH Computersysteme Maistrasse 2 82110 Germering

Tel. +49 (0)89 894 222 - 22 Fax +49 (0)89 894 222 - 33 Email: <u>info(at)allnet.de</u>



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CE Marking is the symbol as shown on the top of this page. The letters "CE" are the abbreviation of French phrase "Conformity European" which literally means "European Conformity". The term initially used was "EC Mark" and it was officially replaced by "CE Marking" in the Directive 93/68/EEC in 1993. "CE Marking" is now used in all EU official documents.



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This symbol is **new RED** aligns the previous directive with the New Legislative Framework for the marketing of products. The revision takes account of the need for improved market surveillance, in particular for the traceability obligations of manufacturers, importers and distributors. It provides improved instruments for market surveillance, such as the possibility to require prior registration of radio equipment, within those categories affected by low levels of compliance.

The Directive requires equipment to be constructed for efficient use of the radio spectrum, as well as electromagnetic compatibility, to avoid interference with terrestrial and orbital communications.

# 🗥 Safety Warnings

For your safety, be sure to read and follow all warning notices and instructions.

- Do not open the device. Opening or removing the device cover can expose you to dangerous high voltage points or other risks. Only qualified service personnel can service the device. Please contact your vendor for further information.
- Do not use your device during a thunderstorm. There may be a risk of electric shock brought about by lightning.
- Do not expose your device to dust or corrosive liquids.
- Do not use this product near water sources.
- Make sure to connect the cables to the correct ports.
- Do not obstruct the ventilation slots on the device.

The RoHS directive aims to restrict certain dangerous substances commonly used in electronic and electronic equipment. This RoHS compliant symbol indicate the component is tested for the presence of Lead (Pb), Cadmium (Cd), Mercury (Hg), Hexavalent chromium (Hex-Cr), Polybrominated biphenyls (PBB), and Polybrominated diphenyl ethers (PBDE). For Cadmium and Hexavalent chromium, there must be less than 0.01% of the substance by weight at raw homogeneous materials level. For Lead, PBB, and PBDE, there must be no more than 0.1% of the material, when calculated by weight at raw homogeneous materials. Any RoHS compliant component must have 100 ppm or less of mercury and the mercury must not have been intentionally added to the component.







RoHS COMPLIAN

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