



Quick Installation Guide

OWL530 v1.00

Outdoor Access Point/Bridge/CPE

Copyright Notice

This document is protected by USA copyright laws and other laws. Besides, the document is the property of 4IPNET, INC. You may not copy, reproduce, distribute, publish, display, perform, or modify any part of this publication in any form or by any means without prior written permission from 4IPNET, INC. You may not alter or remove any copyright or other notice from copies of the content. All other brand and product names are claimed or registered marks of their respective companies or organizations.

All rights reserved.

To download up-to-date version, please visit www.4ipnet.com.

FCC CAUTION

This equipment has been tested and proven 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 in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, 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:

- Reorient 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.**

The device contains a low power transmitter which will send out Radio Frequency (RF) signal when transmitting. This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

CE CAUTION

Declaration of Conformity with Regard to the 1999/5/EC (R&TTE Directive) for European Community, Switzerland, Norway, Iceland, and Liechtenstein

Model: OWL530

For 2.4 GHz radios, the device has been tested and passed the requirements of the following standards, and hence fulfills the EMC and safety requirements of R&TTE Directive within the CE marking requirement.

- Radio: EN 300.328:
- Radio: EN 50392
- EMC: EN 301.489-1, EN 301.489-17,
- EMC: EN 55022 Class B, EN 55024:+ A1 + A2 including the followings:
 - EN 61000-3-2, EN 61000-3-3.
 - EN 61000-4-2, EN 61000-4-3, EN 61000-4-4,
 - EN 61000-4-5, EN 61000-4-6, EN 61000-4-11
- Safety: EN 60950-1 + A11,

Caution:

- This declaration is only valid for configurations (combinations of software, firmware, and hardware) provided and supported by 4ipnet Inc. The use of software or firmware not provided and supported by 4ipnet Inc. may result in the equipment no longer being compliant with the regulatory requirements.

European standards dictate maximum radiated transmit power of 100mW EIRP and frequency range 2.400-2.4835 GHz. This equipment is intended to be used in all EU and EFTA countries. Outdoor use may be restricted to certain frequencies and/or may require a license for operation. Contact your local regulatory authority for compliance.

Taiwan NCC Statement

根據 NCC 低功率電波輻射性電機管理辦法 規定:

第十二條 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。

第十四條 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擾。

在 5.25 ~ 5.35 兆赫頻帶內操作之無線資訊傳輸設備，限於室內使用。

Preface

The 802.11 n/a/b/g compliant **OWL530** is an Outdoor AP/Bridge/CPE device that can be used for multiple purposes. It can be deployed as a traditional fixed wireless Access Point (AP) or it can be used as a Customer Premises Equipment (CPE) that connects to the outdoor wireless network of Wireless Internet Service Provider (WISP).

Capsulated in weather-proof IP68 metal chassis and powered by 802.3af/at PoE, OWL530 comes in a small footprint for pole-/wall-mount unit that meets most rough outdoor environment for continuously providing outdoor clients' accesses or wireless bridge to a peer node or surveillance device via 11n wireless connection.

When OWL530 operates in CPE mode, it acts as a wireless modem, connecting wirelessly to the Internet upstream while serving broadband connection to client devices downstream. This mode is ideal in many WISP solutions, where last-mile connectivity often involves serving high-speed Internet to locations where physical cabling is impossible.

This Quick Installation Guide (including FAQ Instruction Guide) provides instructions for getting started with OWL530.

Package Contents

1. 4ipnet OWL530 x 1
2. Ground Cable x 1
3. Quick Installation Guide (QIG) x 1
4. Power Sourcing Equipment (PSE) with AC cable x 1 (Optional)
5. Mounting Kit x 1



It is recommended to keep the original packing material for possible future shipment when repair or maintenance is required. Any returned product should be packed in its original packaging to prevent damage during delivery.

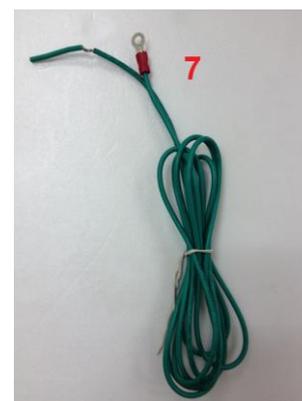
System Overview

OWL530



1	Ventilation Valve	Due to extreme weather conditions, water vapor in the OWL530 may condense. The valve allows ventilation to prevent moisture buildup within the OWL530.
2	Ground Connector	For connecting the ground wire.
3	PoE Connector	For connecting to the Power Sourcing Equipment (PSE).
4	N-type Connector x 2	For connecting to an antenna 4 (1) is the primary antenna connector and 4 (2) is the secondary. Utilize both connectors for 802.11n MIMO optimized performance.

Parts

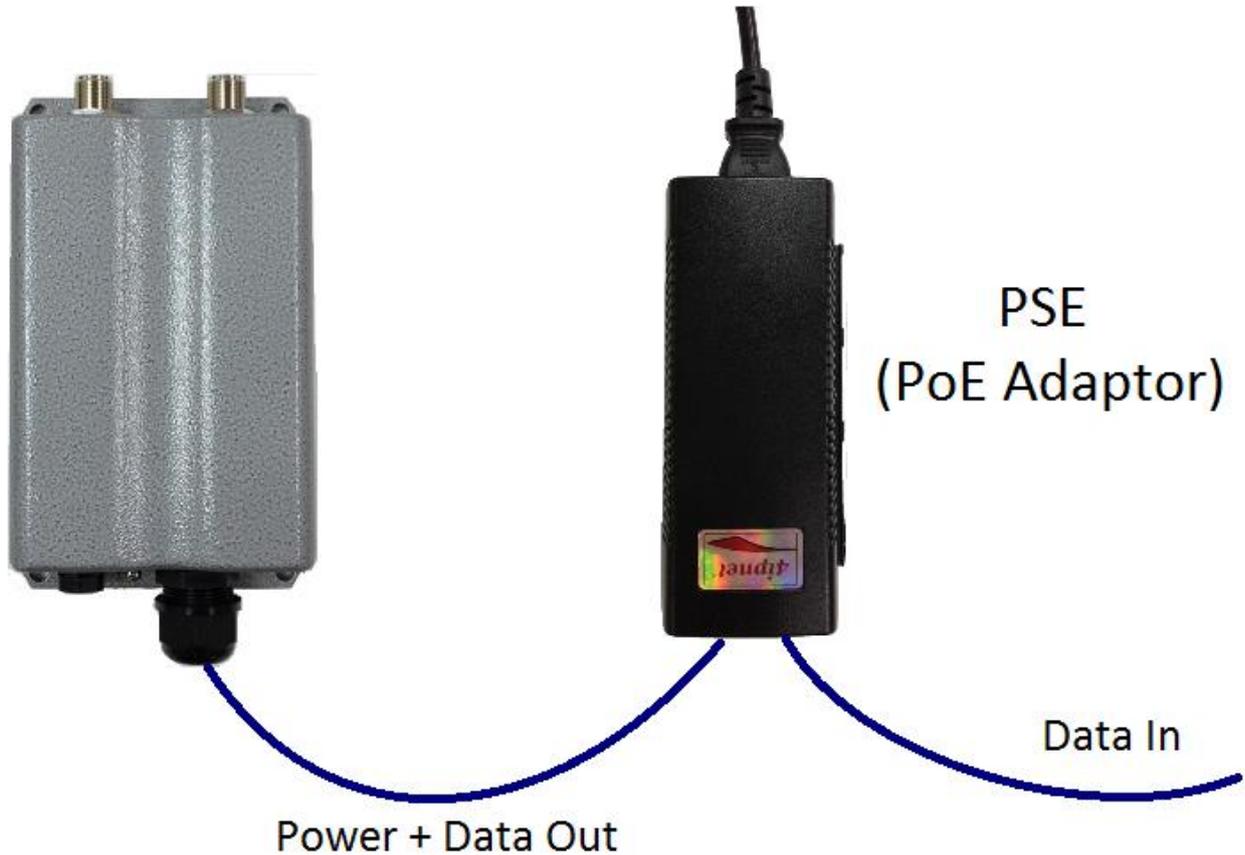


5	Detachment Tool	For detaching the RJ45 connector from the PoE Port
6	Pole Mount Kit	Includes two U-shaped bolts, 8 hex nuts and 8 split washers
7	Ground Wire	For ground connection as mentioned in 2

Hardware Installation

OWL530

The following diagram is a **basic network topology** which can be used for testing and configuring the OWL530.



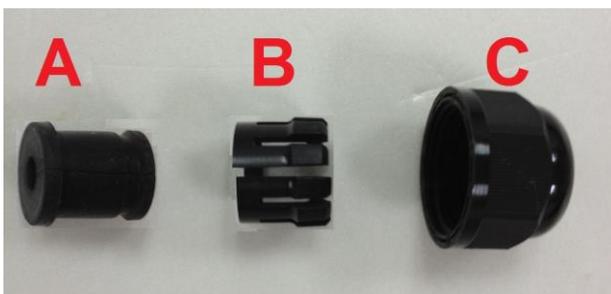
Installation Steps:

Step 1. Connect two N-type antennas to the N-type connectors

Step 2. Connect one end of an Ethernet cable to the PSE (POWER & DATA OUT) to the PSE and one end to the OWL530.

Inserting the RJ45 connector to the OWL530

- Unscrew the cap on the PoE Port (C)



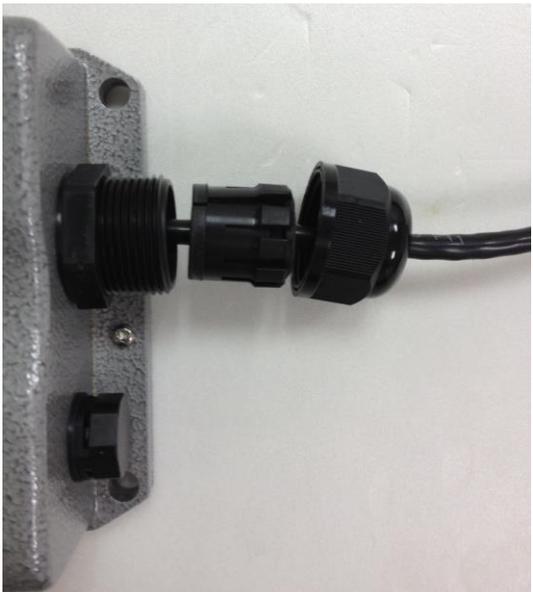
- Insert the RJ45 cable through the outer opening of cap (C)



- Insert the RJ45 connector and wrap (A) around the Ethernet cable through the slit between the connector and cap (C)



- Wrap (B) around (A) through the slit on (B)



- Insert Parts (A) and (B) together into the PoE Port



- Screw cap (C) onto the PoE Port

Step 3. Connect one end of another Ethernet cable to the PSE (Data Link) and the other end to a computer.

Step 4. Connect the power cord to the PSE.

Step 5. Power on the PSE in order to supply power to the OWL530.

►► **Note:**

Please do NOT remove or tamper with the ventilation valve as it has been pre-installed and secured.

Mounting the OWL530

The diameter of poles mountable by the OWL530 mounting kit is from 40mm ~ 60mm

Step 1. Screw nuts onto the U-shaped bolts and insert bolts through the split washers.



Step 2. Align the front of OWL530 with the pole and insert the U-shaped bolts into the 4 holes on the corners of the OWL530.



Step 3. Secure the OWL530 by screwing on the nuts after the inserting the washers for all four corners.



Getting Started

4ipnet OWL530 supports web-based configuration. OWL530 is a dual-mode system where **AP Mode** is the default mode, can be configured as either an access point (**AP Mode**) or a gateway (**CPE Mode**) based on your deployment needs. It is required to follow the respective installation procedures provided to properly set up the desired mode for this system.

- **Default IP Address of Web Management Interface:**

The default IP address and Subnet Mask for the AP mode and CPE mode are as follows:

Mode	AP Mode	CPE Mode
IP Address	192.168.1.1	192.168.1.1
Subnet Mask	255.255.255.0	255.255.255.0

Step 1: IP Segment Setup for Administrator PC

Set a static IP address on the same subnet mask as OWL530 in TCP/IP of the administrator PC, such as the following example. Do not duplicate the IP address used here with the IP address of OWL530 or any other devices within the same network.

>> Example of IP Segment:

The valid range of IP address is 1 ~ 254. However, **1** must be avoided as it is already used by OWL530. Below depicts an example of using **100** (the underlined value can be changed as desired).

IP Address: 192.168.1.100

Subnet Mask: 255.255.255.0

Step 2: Launch Web Browser

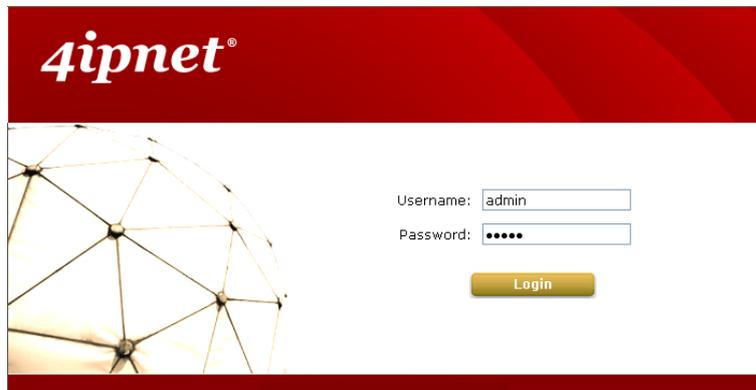
Launch a web browser to access the web management interface of AP mode by entering the default IP address, **http://192.168.1.1/**, in the URL field, and then press **Enter**.



Step 3: System Login

The system manager Login Page will then appear.

Enter “**admin**” in the *User name* field and “**admin**” in the *Password* field, and then click **Login** to log in.



Step 4: Login Success

After a successful login to OWL530, a **System Overview** page of web management interface will appear, To logout, simply click on the **Logout** button at the upper right hand corner of the interface.

System

Wireless

Firewall

Utilities

Status

Overview
Associated Clients
Repeater Status
Event Log

[Home](#) > [Status](#) > System Overview

System Overview

System

System Name	Enterprise Access Point
Firmware Version	1.00.00
Build Number	1.3-1.6337
Location	
Site	EN-A
Device Time	1970/01/02 10:35:01
System Up Time	1 days, 2:35:01
Operating Mode	AP

Radio Status

MAC Address	00:1F:D4:86:12:24
Band	802.11g+n
Channel	6
TX Power	21 dBm

LAN Interface

MAC Address	00:1F:D4:86:12:23
IP Address	192.168.1.1
Subnet Mask	255.255.255.0
Gateway	192.168.1.254

AP Status

Profile Name	BSSID	ESSID	Security Type	Online Clients	Tun
VAP-1	00:1F:D4:86:12:24	4ipnetAP-A1	None	0	

CAPWAP

Status Disabled

IPv6

Status Disabled

▶▶ Note:

AP mode is the default mode. The administrator must access the system via the AP mode login page first before switching modes.

Common Settings

<AP Mode – Default Mode>

Step 1: Mode Confirmation

The screenshot shows the 4ipnet web interface. At the top, there are navigation buttons for System, Wireless, Firewall, Utilities, and Status. The Status button is highlighted with a red box. Below the navigation bar, there are tabs for Overview, Associated Clients, Repeater Status, and Event Log. The Overview tab is selected and highlighted with a red box. The main content area shows the breadcrumb 'Home > Status > System Overview' and the title 'System Overview'. There are six main sections:

- System:** A table with the following data:

System Name	Enterprise Access Point
Firmware Version	1.00.00
Build Number	1.3-1.6337
Location	
Site	EN-A
Device Time	1970/01/02 10:35:01
System Up Time	1 days, 2:35:01
Operating Mode	AP
- Radio Status:** A table with the following data:

MAC Address	00:1F:D4:86:12:24
Band	802.11g+n
Channel	6
TX Power	21 dBm
- LAN Interface:** A table with the following data:

MAC Address	00:1F:D4:86:12:23
IP Address	192.168.1.1
Subnet Mask	255.255.255.0
Gateway	192.168.1.254
- AP Status:** A table with the following data:

Profile Name	BSSID	ESSID	Security Type	Online Clients	Tun
VAP-1	00:1F:D4:86:12:24	4ipnetAP-A1	None	0	
- CAPWAP:** Status: Disabled
- IPv6:** Status: Disabled

- Ensure the *Operating Mode* is currently in **AP** mode.
- Click on the **Status** button and then select the **System Overview** tab. The *Operating Mode* is at the **System** section on the **System Overview** page.

Step 2: Change Password

Change Password

Home > Utilities > Change Password

Change Password

Name : admin

Old Password :

New Password : *up to 32 characters

Re-enter New Password :

SAVE **CLEAR**

- Click on the **Utilities** button and then select the **Password** tab.
- Enter a new password in the *New Password* field and retype it in the *Re-enter New Password* field.
- Click **SAVE** to save the changes.

Step 3: Network Settings

The screenshot shows the 4IPNET web interface. At the top, there are five main menu buttons: System, Wireless, Firewall, Utilities, and Status. Below these are sub-menu tabs: System Information, Operating Mode, Network Interface, Management, CAPWAP, and IPv6. The breadcrumb trail reads: Home > System > Network Interface. The main content area is titled "Network Settings". Under "Mode", the "Static" radio button is selected, and there is a "Renew" button. The "DHCP" radio button is unselected. Below the mode selection are five input fields, each with a red asterisk indicating a required field: "IP Address" (192.168.1.1), "Netmask" (255.255.255.0), "Default Gateway" (192.168.1.254), "Primary DNS Server" (192.168.1.254), and "Alternate DNS Server" (empty). At the bottom, the "Layer2 STP" section has "Disable" selected and "Enable" unselected.

【Example Settings】

- Click on the **System** button and then select the **Network Interface** tab.
- Click the *Static* radio button and enter the related information in the fields marked with red asterisks.
- Click **SAVE** to save the settings.

Step 4: SSID Settings

System Wireless Firewall Utilities Status

VAP Overview General VAP Config Security Repeater Advanced Access Control Site Survey

Home > Wireless > General

General Settings

Band : 802.11g+802.11n Pure 11n

Short Preamble : Disable Enable

Short Guard Interval : Disable Enable

Channel Width : 20 MHz

Channel : 6

Max Transmit Rate : Auto

Transmit Power : Highest

ACK Timeout : 0 *(0 - 255, 0:Auto, Unit:4 micro seconds)

Beacon Interval : 100 *(100 - 500ms)

Airtime Fairness :

Packet Delay Threshold: 0 millisecond(s) *(100 - 5000ms, 0:Disable)

- Click on the **Wireless** button and select the **General** tab.
- **Band:** Select an appropriate band from the drop-down list box.

System Wireless Firewall Utilities Status

VAP Overview General VAP Config Security Repeater Advanced Access Control Site Survey

Home > Wireless > VAP Config

VAP Configuration

Profile Name : VAP-1

VAP : Disable Enable

Profile Name : VAP-1

ESSID : 4ipnetAP-A1

VLAN ID : Disable Enable

VLAN ID : *(1 - 4094)

CAPWAP Tunnel Interface :

- Click on the **Wireless** button and select the **VAP Config** tab.
- **ESSID:** Enter respective ESSID for each VAP in the *ESSID* field or use the default. **ESSID (Extended Service Set Identifier)** is a unique identifier used for networking devices to get associated with OWL530.
- Click **SAVE** to save the settings.

Step 5: Security Settings

System

Wireless

Firewall

Utilities

Status

VAP Overview

General

VAP Config

Security

Repeater

Advanced

Access Control

Site Survey

[Home](#) > [Wireless](#) > Security

Security Settings

Profile Name : VAP-1

Security Type : WEP

Note! The WEP keys are global setting for all virtual APs. The key value will apply to all VAPs.

802.11 Authentication: Open System Shared Key Auto

WEP Key Length : 64 bits 128 bits 152 bits

WEP Key Format : ASCII Hex

WEP Key Index : 1

WEP Keys :

1	<input style="width: 100%;" type="text"/>
2	<input style="width: 100%;" type="text"/>
3	<input style="width: 100%;" type="text"/>
4	<input style="width: 100%;" type="text"/>

- Click on the **Wireless** button and then select the **Security** tab.
- Select the desired *VAP Profile and Security Type* from the drop-down list boxes. The system supports various WiFi standard security such as WEP, WPA Personal, WPA Enterprise, and 802.1X. The above figure depicts an example of selecting VAP-1 and **WEP**.
- Enter the information required in the blank fields.
- Click **SAVE** to save all settings configured so far; all updated settings will take effect upon reboot.

Congratulations!

AP mode is now successfully configured.

<CPE Mode>

Step 1: Mode Confirmation

Home > Status > System Overview

System Overview

System

System Name	Enterprise Access Point
Firmware Version	1.00.00
Build Number	1.3-1.6337
Location	
Site	EN-A
Device Time	1970/01/01 08:37:23
System Up Time	0 days, 0:37:23
Operating Mode	CPE

Radio Status

Status	Connected
SSID	cip-ap-5g
MAC Address	02:1F:D4:34:86:36
Channel	149
Signal Strength	82
Security	None

LAN Interface

MAC Address	00:1F:D4:86:12:23
IP Address	192.168.1.1
Subnet Mask	255.255.255.0
DHCP Server	Enabled

WAN Interface

Mode	Static
MAC Address	00:1F:D4:86:12:24
IP Address	192.168.10.1
Subnet Mask	255.255.255.0
Gateway	192.168.10.254
Bandwidth	Down: Unlimited / UP: Unlimited

- Ensure the *Operating Mode* is currently in **CPE** mode.
- Click on the **Status** button and then select the **System Overview** tab. The *Operating Mode* is at the **System** section on the **System Overview** page.

Step 2: Change Password

Change Password

Home > Utilities > Change Password

Change Password

Name : admin

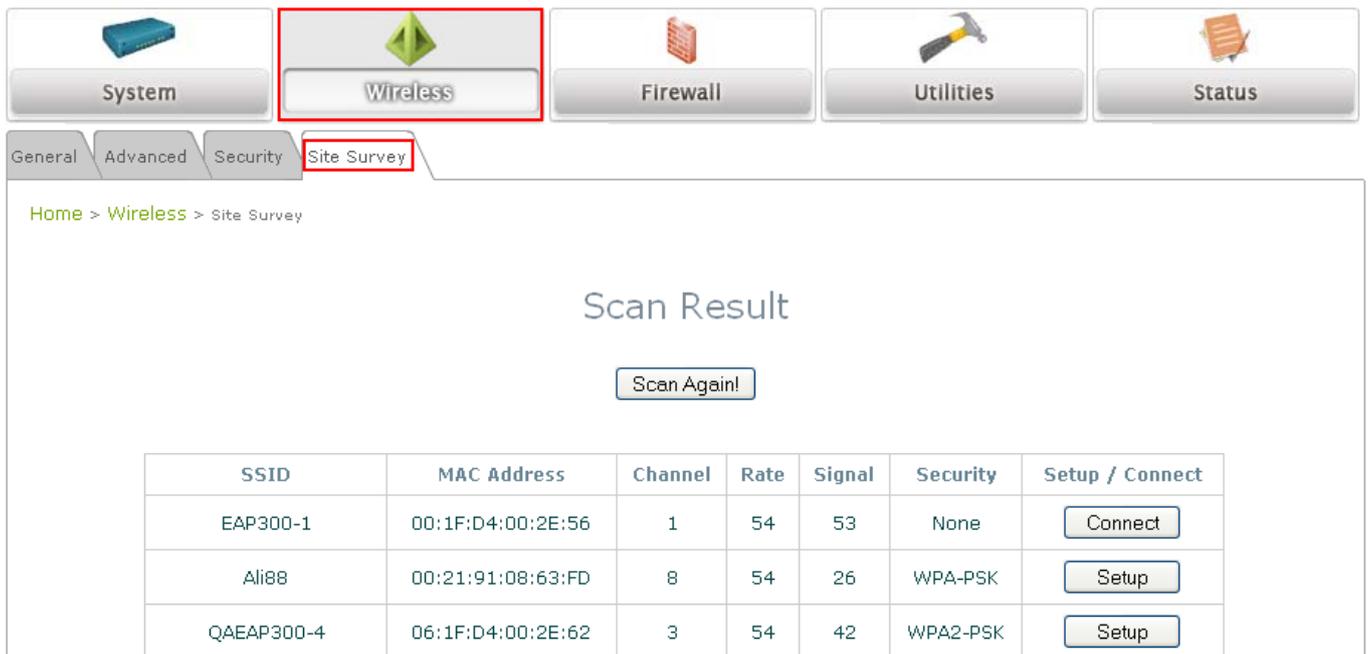
Old Password :

New Password : *up to 32 characters

Re-enter New Password :

SAVE **CLEAR**

- Click on the **Utilities** button and then select the **Password** tab.
- **Change Admin Account Password**
 - Enter a new password in the *New Password* field and retype it in the *Re-enter New Password* field.
- Click **SAVE** to save the changes.

Step 3: Site Survey


Home > Wireless > Site Survey

Scan Result

[Scan Again!](#)

SSID	MAC Address	Channel	Rate	Signal	Security	Setup / Connect
EAP300-1	00:1F:D4:00:2E:56	1	54	53	None	Connect
Ali88	00:21:91:08:63:FD	8	54	26	WPA-PSK	Setup
QAEAP300-4	06:1F:D4:00:2E:62	3	54	42	WPA2-PSK	Setup

【 The scan result displayed here is an example only. 】

- Click on the **Wireless** button and then select the **Site Survey** tab.
- The system will automatically scan and display all APs in its coverage area.
- Click **Scan Again** if the APs to be associated with are not listed on the **Scan Result** list.

Step 4: Select AP to be Associated

- Select an AP to be associated with from the **Scan Result** list provided in **Step 3**.
- Click **Connect** to connect to an SSID without Security Settings.

Step 5: Security Settings

General
Advanced
Security
Site Survey

Home > Wireless > Site Survey

Scan Result

[Scan Again!](#)

SSID	MAC Address	Channel	Rate	Signal	Security	Setup / Connect
EAP700-1-Dex		1	54	33	None	Connect
Cip-AP		6	54	33	None	Connect
Cip-Cherry		6	54	34	WPA-PSK	Setup
Cip-AP		11	54	34	None	Connected

Pre-shared Cipher : TKIP

Pre-shared Key Type :
 PSK(Hex) *(64 chars)
 Passphrase *(8 - 63 chars)

Pre-shared Key :

[Connect](#)

- The above figure depicts an example of selecting **Cip-Cherry** (encrypted via WPA-PSK security type).
- Click **Setup**, and then a related encryption configuration box will appear.
- Enter the information required in the configuration box. Information to be entered must be exactly the same as configured in this selected AP.
- Click **Connect** to start the connection.

Step 6: Network Interface Configuration

System

Wireless

Firewall

Utilities

Status

System Information

Operating Mode

Network

Management

Home > System > Network Interface

WAN Configuration

Mode : Static DHCP

IP Address : *

Netmask : *

Default Gateway : *

Primary DNS Server : *

Alternate DNS Server :

Bandwidth Limit : Download : Upload :

Dynamic DNS (DDNS)

DDNS : Disable Enable

Provider :

Host Name :

User Name / E-mail :

Password / Key :

LAN Configuration

IP Address : *

Netmask : *

DHCP Server : Disable Enable

Start IP : *

End IP : *

Preferred DNS Server : *

Alternated DNS Server :

WINS Server IP :

Domain Name :

Lease Time :

【Settings here are for example only】

- Click on the **System** button and then select **Network** tab.
- Enable *Static*, and then enter the related information in the fields marked with red asterisks.

- Click **Save** to save the settings.

Step 7: LAN Configuration

- Click on the **System** button and then select the **Network** tab.
- The **LAN Configuration** section is on the same page as the **WAN Configuration** section.
- Enter the *IP Address* and *Netmask* of the LAN port.
- Click **SAVE** to save all settings configured so far; all updated settings will take effect upon reboot.

Congratulations!

The CPE mode is now successfully configured.



After OWL530's network configuration completes, please remember to change the IP Address of your PC Connection Properties back to its original settings in order to ensure that your PC functions properly in its real network environments.

- ***It is strongly recommended to make a backup copy of configuration settings.***
- ***For further configuration and backup information, please refer to the User's Manual.***

P/N: V10020140918