



Quick Installation Guide

OWL400/410 v1.00

Long Range Outdoor AP/Bridge/CPE

Copyright Notice

This document is protected by USA copyright laws and other laws and 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.

Regulatory Information

Safety Information

All models of OWL400 and OWL410, have been evaluated to, and conforms to the product safety specifications of EN:60950-1:2006+A11:2009

Caution:

- This product was qualified under test conditions that included the use of the power supplying equipment. To ensure regulatory and safety compliance, use only the provided power supplying equipment and install them properly.
- To prevent electrical shock, this device may require a grounding conductor in the line cord. Connect the unit to a grounding type ac wall outlet using the power supplying equipment supplied with the unit.
- To avoid the risk of electric shock and for a safety outdoor installation, you may need other items, such as surge arrestors.
- To avoid the risk of electric shock from lightening, do not install or use this product during an electrical storm.
- Operate and install this product as described in this manual. This device must be installed and used in strict accordance with the manufacturer's instructions.
- Do not open the device casing. Do not perform any servicing other than that contained in the installation and troubleshooting instructions. Refer all servicing to qualified service personnel.



FCC Certification

OWL400 and OWL410 use the same circuitry and housing except the antenna type. They both are evaluated and certified according to FCC Rules Part 15 subpart C under one granted FCC-ID: SCD020063.

FCC Caution

This device 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:

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

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

FCC Class B Statement

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 in a residential installation. This equipment generates and uses radio frequency energy and, if not installed and used in accordance with the instructions, may cause interference to radio communications. However, there is no guarantee that interference will not occur in a particular

installation. If this equipment does cause 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 or cable input device.
- 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.



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

Models: OWL400, OWL410

The devices have 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.

ETSI EN 301 893 V1.4.1 (2007-07)
EN 62311: 2008
ETSI EN 301 489-17 V2.1.1 2009-05;
ETSI EN 301 489-1 V1.8.1 2008-04;
EN 55022: 2006+ A1: 2007, Class B
EN 61000-3-2: 2006, Class A
EN 61000-3-3: 1995 + A1: 2001 + A2: 2005
EN 61000-4-2: 1995 + A1: 1998 + A2: 2001
EN 61000-4-3: 2006
EN 61000-4-4: 2004
EN 61000-4-5: 2006
EN 61000-4-6: 2007
EN 61000-4-11: 2004

**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干擾。

Preface

The 802.11 n/a compliant **OWL400/410** is a Long Range Outdoor AP/ Bridge/ CPE device that can be used for dual purposes. First, it can be deployed as a traditional fixed wireless Access Point (AP). Secondly, it can be used as a Customer Premises Equipment (CPE) that connects to the outdoor wireless network of Wireless Internet Service Provider (WISP).

The metal sealed OWL400/410 is compact in size and weatherproof. Coming with a mounting kit, it can be mounted on a pole or wall. It is suitable for both indoor and outdoor usage with its 200mW output power, which is higher than a typical indoor AP (100mW).

This Quick Installation Guide (including FAQ Instruction Guide) provides instructions for getting started with OWL400/410.

Package Contents

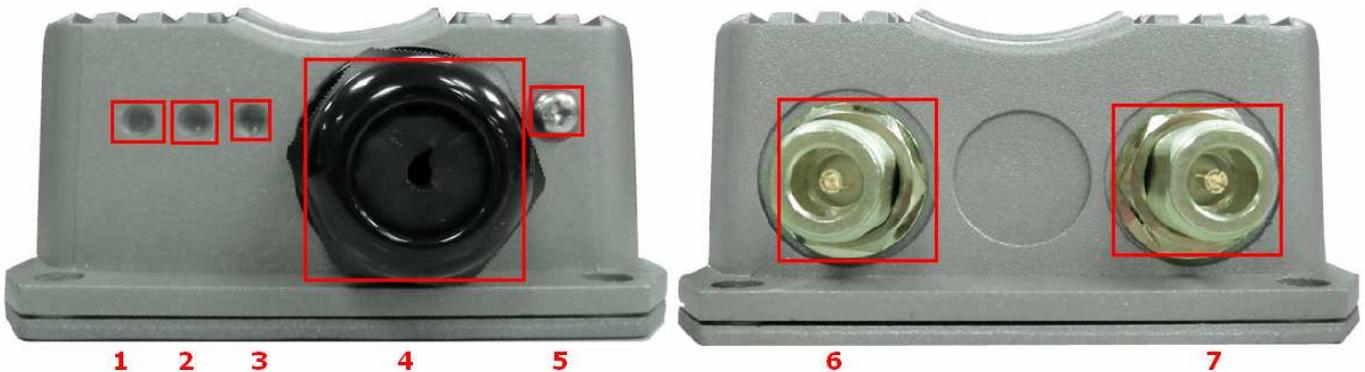
1. OWL400/410 x 1
2. Quick Installation Guide (QIG) x 1
3. CD-ROM (with User's Manual and QIG) x 1
4. Power Sourcing Equipment (PSE) x 1
5. Mounting Kit x 1



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

OWL400



1	Power	Green LED ON indicates power on, and OFF indicates power off
2	WLAN	Green LED ON indicates system ready
3	LAN	Green LED ON indicates connection; BLINKING indicates transmitting data; OFF indicates no connection
4	PoE Connector	For connecting to the Power Sourcing Equipment (PSE)
5	Reset	Press more than 5 seconds and release to reset the system to its default settings
6	Primary N-type Antenna Connector	For connecting to an antenna
7	N-type Connector	For connecting to an antenna

Reset Back to Factory Default:



►► **Note:**

Unscrew the screw beside the PoE hole. Press and hold the button for seconds. You can use a toothpick to help you reach the button.

The system is meant to be used in only one mode at a time. Before you start with any configuration, you should first decide which mode to use it in. Please prevent constant switching from one mode to another during usage as it is easy for users to misconfigure the settings.

OWL410

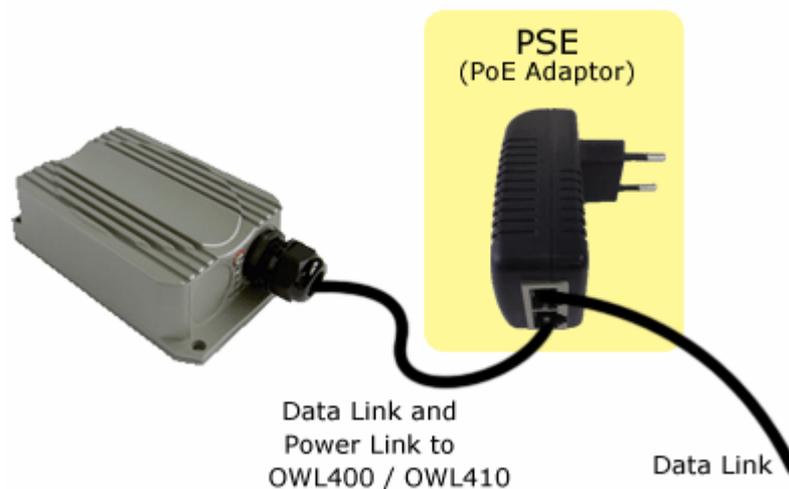
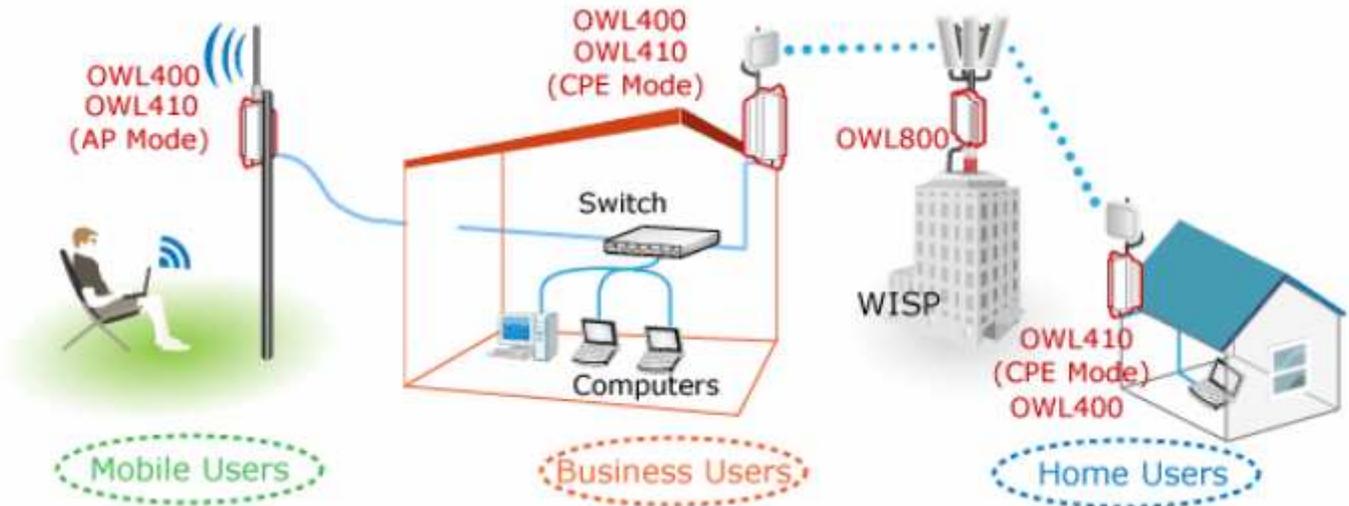


1	Power	Green LED ON indicates power on, and OFF indicates power off
2	WLAN	Green LED ON indicates system ready
3	LAN	Green LED ON indicates connection; BLINKING indicates transmitting data; OFF indicates no connection
4	PoE Connector	For connecting to the Power Sourcing Equipment (PSE)
5	Reset	Press more than 5 seconds and release to reset the system to its default settings
6	Built-in patch antenna	14 dBi (Horizontal: 25 degree; Vertical: 25 degree)

Hardware Installation

OWL400/410

The following diagram is a **basic network topology** which can be used for testing and configuring the OWL400/410.



Installation Steps:

- Step 1.** Connect the antennas to the connectors (applicable for OWL400 only).
- Step 2.** Connect the Ethernet Port of OWL400/410 to POWER & DATA OUT Port of the PSE.
- Step 3.** Connect one end of an Ethernet cable to the Data Port of PSE and the other end to the computer.
- Step 4.** Plug the PSE in order to supply power to the OWL400/410.

Getting Started

4ipnet OWL400/410 supports web-based configuration. OWL400/410 is a dual-mode system, **AP Mode** as the default mode for the first time entering the system, which also can be configured as either an access point (**AP Mode**) or a gateway (**CPE Mode**) based on your 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

- **Default User Name and Password:**

There is only one management account for AP mode, **root**. In addition, there are two system management accounts for CPE mode to maintain the system, **root** and **admin**, and each has different levels of management capabilities. The **root** account is empowered with full privileges while the **admin** account is with partial ones.

The default user name and password for both the **root** and **admin** account are as follows:

Mode	AP Mode	CPE Mode	
Management Account	Root Account	Root Account	Admin Account
User Name	root	root	admin
Password	admin	admin	admin

Step 1: IP Segment Setup for Administrator PC

Set a static IP address on the same subnet mask as OWL400/410 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 OWL400/410 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 OWL400/410. 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**.



Using an incorrect default IP address will result in no Login page shown in the web browser. Please make sure a correct IP address is used for the desired mode.

Step 3: System Login

The system manager Login Page will then appear.

Enter "**root**" 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 OWL400/410, 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 Overview

System

System Name	OWL400
Firmware Version	1.00.00
Build Number	1.8-1.2628
Location	CA, US
Site	EN-A
Device Time	1999/12/31 16:10:40
System Up Time	0 days, 0:10:40
Operating Mode	AP

Radio Status

MAC Address	00:1F:D4:00:31:40
Band	802.11a
Channel	149
TX Power	Highest

AP Status

Profile Name	BSSID	ESSID	Security Type	Online Clients
VAP-1	00:1F:D4:00:31:40	OWL400-1	None	0

LAN Interface

MAC Address	00:1F:D4:00:30:F9
IP Address	192.168.1.1
Subnet Mask	255.255.255.0
Gateway	192.168.1.254

►► **Note:**

By default, AP mode is enabled. Therefore, the administrator must access the system via the AP mode login page for the first time. The administrator is then able to switch between modes afterwards.

Common Settings

<AP Mode – Default Mode>

Step 1: Mode Confirmation

The screenshot shows the web interface with the following elements:

- Top navigation: System, Wireless, Utilities, **Status** (highlighted in red).
- Sub-navigation: **Overview** (highlighted in red), Clients, Repeater, Event Log.
- Breadcrumbs: Home > Status > System Overview
- Section: System Overview
- System Section:

System Name	OWL400
Firmware Version	1.00.00
Build Number	1.8-1.2628
Location	CA, US
Site	EN-A
Device Time	1999/12/31 16:10:40
System Up Time	0 days, 0:10:40
Operating Mode	AP
- Radio Status Section:

MAC Address	00:1F:D4:00:31:40
Band	802.11a
Channel	149
TX Power	Highest
- AP Status Section:

Profile Name	BSSID	ESSID	Security Type	Online Clients
VAP-1	00:1F:D4:00:31:40	OWL400-1	None	0
- LAN Interface Section:

MAC Address	00:1F:D4:00:30:F9
IP Address	192.168.1.1
Subnet Mask	255.255.255.0
Gateway	192.168.1.254

- 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

System Wireless **Utilities** Status

Change Password Network Utilities Config Save & Restore System Upgrade Reboot

Home > Utilities > Change Password

Change Password

Name : root

Old Password :

New Password : *up to 32 characters

Re-enter New Password :

- 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

System Information Operating Mode **Network** Management

Home > System > Network Interface

Network Settings

Mode : Static DHCP

IP Address : *

Netmask : *

Default Gateway : *

Primary DNS Server : *

Alternate DNS Server :

Layer2 STP : Disable Enable

【Settings here are for example only】

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

Step 4: SSID Settings

Home > Wireless > General

General Settings

Band : 802.11a

Short Preamble : Disable Enable

Channel : 149

Max Transmit Rate : Auto

Transmit Power : Auto

Beacon Interval : 100 *(100 - 500ms)

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

Home > Wireless > VAP Config

VAP Configuration

Profile Name : VAP-1

VAP : Disable Enable

Profile Name : VAP-1

ESSID : OWL400-1

VLAN ID : Disable Enable

VLAN ID : *(1 - 4094)

- Click on the **Wireless** button and then 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 OWL400/410.
- Click **SAVE** to save the settings.

Step 5: Security Settings

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

WEP Key Format : ASCII Hex

WEP Key Index : 4

WEP Keys :

1	1234
2	
3	
4	

- 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 above figure depicts an example of selecting VAP-1 and **WEP**.
- Enter the information required in the blank fields.

 You must use the same information provided here to configure the network devices that are to be associated with OWL400/410.

- Click **SAVE** to save all settings configured so far; all updated settings will take effect upon reboot.

Congratulations!

The AP mode is now successfully configured.

<CPE Mode>

Step 1: Mode Confirmation

Home > Status > System Overview

System Overview

System

System Name	OWL400
Firmware Version	1.00.00
Build Number	1.8-1.2628
Location	CA, US
Site	EN-A
Device Time	2000/01/01 13:29:24
System Up Time	0 days, 21:29:24
Operating Mode	CPE

Radio Status

Status	Disable
SSID	N/A
MAC Address	N/A
Channel	149
Signal Strength	12
Security	None

LAN Interface

MAC Address	00:1F:D4:00:30:F9
IP Address	192.168.1.1
Subnet Mask	255.255.255.0
DHCP Server	Enabled

WAN Interface

Mode	Static
MAC Address	00:1F:D4:00:31:40
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

Home > Utilities > Change Password

Change Password

Name :	root
Old Password :	<input type="password"/>
New Password :	<input type="password"/> *up to 32 characters
Re-enter New Password :	<input type="password"/>

Name :	admin
New Password :	<input type="password"/> *up to 32 characters
Re-enter New Password :	<input type="password"/>

- Click on the **Utilities** button and then select the **Password** tab.
- **Change Root Account Password**
 - Enter the old password in the *Old Password* field; default password is “**admin**”.
 - Enter a new password in the *New Password* field and retype it in the *Re-enter New Password* field.
- **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	Signal	Security	Setup / Connect
------	-------------	---------	--------	----------	-----------------

【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**.

Step 5: Security Settings

Home > Wireless > Site Survey

Scan Result

Scan Again!

SSID	MAC Address	Channel	Signal	Security	Setup / Connect
b0b24b	00:08:6B:DD:A7:EE	36	20	WEP	Setup
9595d5	00:08:6B:DD:27:A6	36	34	WEP	Setup
rh-OWL410-none	00:1F:D4:00:31:78	149	15	NONE	Connect
471f2a	00:08:6B:DD:27:89	157	10	WEP	Setup

- The above figure depicts an example of selecting one SSID (encrypted via one 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

Home > System > Network Interface

WAN Configuration

Mode : Static DHCP

IP Address : *

Netmask : *

Default Gateway : *

Primary DNS Server : *

Alternated 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.
- For WAN configuration, determine the way to obtain the IP address. For example, 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.
- Provide the information to the required field by entering IP address/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 OWL400/410'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: V10020110307