



802.11a/n High Power Wireless Outdoor Bridge / AP

WLO-15814N / WLO-15802N

*Quick Installation Guide
Ver 1.08*



Preface

PheeNet IEEE802.11a/n 5GHz 300Mbps MIMO Wireless Outdoor Bridge is a powerful solution. The Wireless Network Service Provider can use it to build up Wireless Backhaul Point to Point or Point to Multi-point connection, or deploying last mile services to business or residential broadband subscribers. Network administrators can create multiple subscriber service tier using per-subscriber rate limiting features, and manage centrally. PheeNet High Power Wireless Outdoor Bridge/AP utilizes a 200mW output Tx Power connect to the Wireless Mesh Network or WDS infrastructure and provides the subscriber with an Ethernet connection for a local access.

PheeNet High Power Wireless Outdoor Bridge/AP can be used for different purposes in different modes. In the AP mode, it can be deployed either as traditional fixed wireless Access Point (AP), or combination of AP and WDS (AP+WDS). In the WDS mode, it's only used to expand or bridge Ethernet networks and deployed as a main base, relay based or remote base station. In the CPE mode, it connects to Wireless Internet Service Provider's (WISP) outdoor network via wireless WAN gateway to access to Internet. In the Client Bridge + Universal Repeater mode, it connects to Wireless Internet Service Provider's (WISP) outdoor network via wireless or wired bridge to access to Internet

Package Contents

- WLO-15814N / WLO-15802N x 1
- CD-ROM (with User Manual and QIG) x 1
- PSE with AC Cable x 1
- Mounting Kit x 1



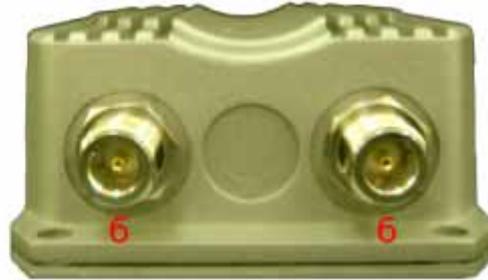
It is highly recommended to use all the supplies in the package instead of substituting any components by other suppliers to guarantee best performance.

System Overview

Front Panel



Rear Panel



1. Reboot Button : Unscrew the screw and click Reset button to restart system or reset to default configurations.
 - ➔ Press and hold the Reset button for 2 seconds and release to restart system. The LED except Power indicator will be off before restarting.
 - ➔ Press and hold the Reset button for more than 10 seconds to reset the system to default configurations.
2. Power : Green LED ON indicates power on, and OFF indicates power off.
3. WLAN : Green LED FLASH indicates Wireless Transmit.
4. Ethernet : Green LED ON indicates connection, OFF indicates no connection, FLASH indicates Packets transmit
5. PoE Connector : For connecting to PSE
6. Dual Ntype connector: to connect to antenna (WLO-15802N only)

Hardware Installation

Please follow the steps mentioned below to install the hardware of WLO-15802N :

➤ WLO-15802N



Front Panel



Rear Panel

Connect N-type antenna to the N-type connector on the rear panel.

Connect PSE to the PoE connector on the front panel.

Connect an Ethernet cable to the PSE and the other end to a computer.

Power on the PSE in order to supply power to WLO-15802N

Getting Started

WLO-15814N / WLO-15802N supports web-based configuration. Upon the completion of hardware installation, **WLO-15814N / WLO-15802N** can be configured through a PC/NB by using its web browser such as Internet Explorer version 6.0.

- **Default IP Address** : 192.168.2.254
- **Default IP Netmask** : 255.255.255.0
- **Default User Name and Password** :

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

Mode	CPE Mode		AP Mode	WDS Mode	Universal Repeater + Client Bridge Mode
Management Account	Root Account	Admin Account	Root Account	Root Account	Root Account
User Name	root	admin	root	root	root
Password	root	admin	root	root	root

Step

1. IP Segment Set-up for Administrator's PC/NB

Set the IP segment of the administrator's computer to be in the same range as **WLO-15814N / WLO-15802N** for accessing the system. Do not duplicate the IP Address used here with IP Address of **WLO-15814N / WLO-15802N** or any other device within the network

Example of Segment :

The value for underlined area can be changed as desired; the valid range is 1 ~ 254. However, 254 shall be avoided as it is already used by **WLO-15814N / WLO-15802N**; use 10 as an example here.

- IP Address : 192.168.2.10
- IP Netmask : 255.255.255.0

2. Launch Web Browser

Launch as web browser to access the web management interface of system by entering the default IP Address, <http://192.168.2.254>, in the URL field, and then press **Enter**.



3. System Login

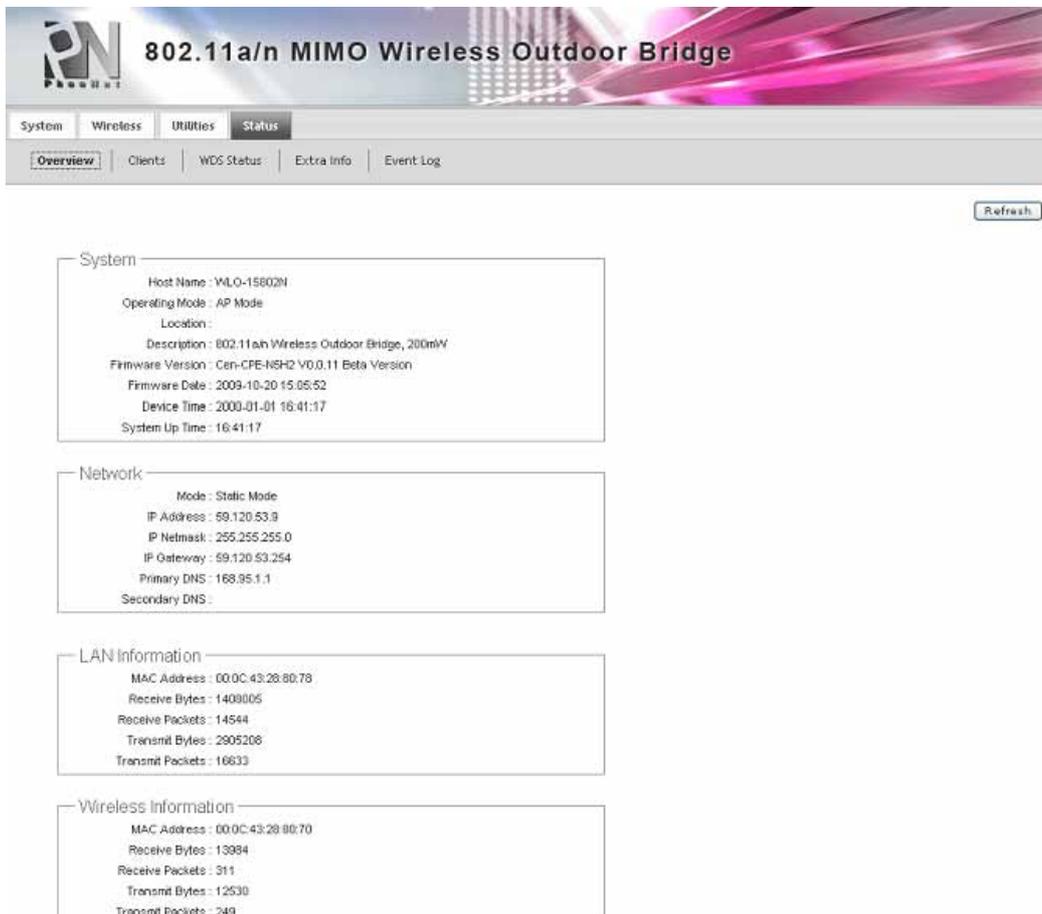
The system manager Login Page then appears.

Enter **“root”** as **User name** and **“default”** as **Password**, and then click OK to login to the system; the root manager account is used as an example here.



4. Login Success

System Overview page will appear after successful login.



Quick Setup

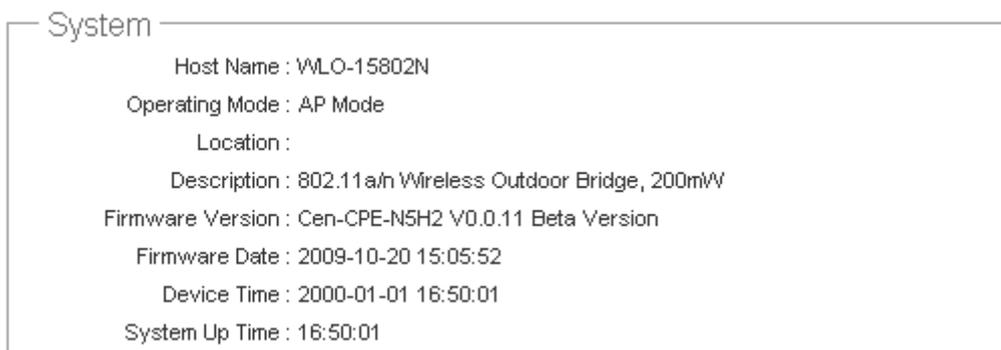
WLO-15814N / WLO-15802N is a multiple mode system which can be configured either as a gateway or an access point as desired. This section provides a step-by-step configuration procedure for basic installation for **AP Mode**, **WDS Mode**, **CPE Mode** and **Client Bridge + Universal Repeater**.



> Setup In AP Mode

Step 1 : Mode Confirmation

Ensure the Operating Mode is currently at AP mode; the web management UI can be viewed at the **Status** section under the **System Overview** page.



Step 2 : Change Password

Click **System -> Management** and then **Management Setup** page appears.

There can change root and admin manager account. Enter a new password, and verify it again in the **New Password** and **Check New Password** field respectively. Click **Save** button, and proceed with the following steps.

Management Setup

System Information

System Name : WLO-15802N

Description : 802.11a/n Wireless Outdoor Bridge, 2C

Location :

Root Password

New Root Password :

Check Root Password :

Admin Password

New Admin Password :

Check New Password :

Admin Login Methods

Enable HTTP : Port : 80

Enable HTTPS : Port : 443

Enable Telnet : Port : 23

Enable SSH : Port : 22

```
ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQwCF2V
```

Step 3 : LAN IP Settings

Click **System** -> **LAN**, and then **LAN Setup** page appears.

Enable "Static IP" and "DNS", and enter the related information in the field marked.

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

LAN Setup

Ethernet Connection Type

Mode : Static IP Dynamic IP

Static IP

IP Address : 192.168.2.254

IP Netmask : 255.255.255.0

IP Gateway : 192.168.2.1

DNS

DNS : No Default DNS Server Specify DNS Server IP

Primary :

Secondary :

802.1d Spanning Tree

STP : Enable Disable

Step 4 : Time Zone settings

Click **System** -> **Time Server**, and then **Time Server Setup** page appears.

Enable "NTP Client", and then enter the related information.

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

Time Server Setup

System Time
Local Time : 2000/01/01 Sat 00:05:44

NTP Client
Enable:

Default NTP Server: (optional)

Time Zone:

Daylight saving time:

Step 5 : SSID Settings

Click **Wireless -> Virtual AP Setup**, and then **Virtual AP Overview** page appears.

Virtual AP Overview

VAP List

VAP	ESSID	Status	Security Type	MAC Action	Edit
Primary AP	Main_AP	On	Disable	Disable	Edit
VAP1		Off	Disable	Disable	Edit
VAP2		Off	Disable	Disable	Edit
VAP3		Off	Disable	Disable	Edit
VAP4		Off	Disable	Disable	Edit
VAP5		Off	Disable	Disable	Edit
VAP6		Off	Disable	Disable	Edit

Click **"Edit"** on the Primary AP and then **Primary AP Setup** page appears. Setup the broadcast SSID for easy identification of the system when device is trying to associate the service. The default SSID is **"Main_AP"** Click **Save** button to save settings

Primary AP Setup

Security
ESSID:

Client Isolation: Enable Disable

Hidden SSID: Enable Disable

Maximum Clients:

VLAN Tag(D): Enable Disable (1-4094)

Security Type:

MAC Filter
Action:

Step 6 : Security Settings

In **Primary AP Setup** page, select WEP in "Security Type" drop-down list. The WEP setting field will show up immediately.

WEP

Authentication Type: OPEN SHARED WEPAUTO

Key Index:

WEP Key 1:

WEP Key 2:

WEP Key 3:

WEP Key 4:

Enter the WEP key information required in the WEP settings field, the same information will also be used to set up devices using **WLO-15814N / WLO-15802N**s services.

Click **Reboot** to activate all settings configured above.

Congratulation!

The AP mode is now successfully configured.

> Setup In WDS Mode

Step 1 : Mode Confirmation

Ensure the Operating Mode is currently at WDS mode; the web management UI can be viewed at the **Status** section under the **System Overview** page.

System

Host Name : WLO-15802N

Operating Mode : WDS Mode

Location :

Description : 802.11a/n Wireless Outdoor Bridge, 200mW

Firmware Version : Cen-CPE-N5H2 V0.0.11 Beta Version

Firmware Date : 2009-10-20 15:05:52

Device Time : 2000-01-01 00:00:40

System Up Time : 40

Step 2 : Change Password

Click **System -> Management** and then **Management Setup** page appears.

There can change root and admin manager account. Enter a new password, and verify it again in the **New Password** and **Check New Password** field respectively. Click **Save** button, and proceed with the following steps.

Management Setup

System Information

System Name :

Description :

Location :

Root Password

New Root Password :

Check Root Password :

Admin Password

New Admin Password :

Check New Password :

Admin Login Methods

Enable HTTP : Port :

Enable HTTPS : Port :

Enable Telnet : Port :

Enable SSH : Port :

Step 3 : LAN IP Settings

Click **System -> LAN**, and then **LAN Setup** page appears.

Enable "Static IP" and "DNS", and enter the related information in the field marked.

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

LAN Setup

Ethernet Connection Type
Mode: Static IP Dynamic IP

Static IP
IP Address: 192.168.2.254
IP Netmask: 255.255.255.0
IP Gateway: 192.168.2.1

DNS
DNS: No Default DNS Server Specify DNS Server IP
Primary:
Secondary:

802.1d Spanning Tree
STP: Enable Disable

Step 4 : Time Zone settings

Click **System -> Time Server**, and then **Time Server Setup** page appears.

Enable "NTP Client", and then enter the related information. Click **Save** button to save the settings.

Time Server Setup

System Time
Local Time: 2000/01/01 Sat 00:05:44

NTP Client
Enable:
Default NTP Server: time.apple.com.tw (optional)
Time Zone: [(GMT) Dublin, Edinburgh, Lisbon, London]
Daylight saving time: Disable

Step 5 : Enable WDS Peer's MAC Address

Click **Wireless -> WDS Setup**, and then **WDS Setup** page appears.

Enable "WDS Peer's MAC Address", and then enter the related information. Click **Save** button to save the settings.

WDS Setup

Security
Security Type: Disable

WDS MAC List

Enable	WDS Peer's MAC Address	Description
<input type="checkbox"/>	01. <input type="text"/>	<input type="text"/>
<input type="checkbox"/>	02. <input type="text"/>	<input type="text"/>
<input type="checkbox"/>	03. <input type="text"/>	<input type="text"/>
<input type="checkbox"/>	04. <input type="text"/>	<input type="text"/>



Setting WDS link, you need verify "Peer's MAC Address", "Channel" and "Security Type" first. The "Channel" and "Security Type" must be the same

Step 6 : Wireless General Settings

Click **Wireless -> General Setup**, and then **General Setup** page appears.

Select the “Transmit Rate Control” and “Channel” information required in the General Setup field. ***The information must be the same as other WDS devices.***



Wireless Setup

General Setup

MAC Address : 00:0c:45:28:60:34

Band Mode: 802.11 a

AP Isolation: Enable Disable

Transmit Rate Control: Auto

Country: NONE

Channel: Auto

Tx Power: 50 %

Save



Try to select fix “Transmit Rate Control” will be get better throughput. “Tx Power” also effect throughput. More advanced setting see User Manual

Click **Reboot** to activate all settings configured above.

Congratulation!

The WDS mode is now successfully configured.

> Setup In CPE Mode

Step 1 : Mode Confirmation

Ensure the Operating Mode is currently at CPE mode; the web management UI can be viewed at the **Status** section under the **System Overview** page.

System

Host Name : WLO-15802N

Operating Mode : CPE Mode

Location :

Description : 802.11a/n Wireless Outdoor Bridge, 200mW

Firmware Version : Cen-CPE-N5H2 V0.0.11 Beta Version

Firmware Date : 2009-10-20 15:05:52

Device Time : 2000-01-01 00:20:12

System Up Time : 20:12

Step 2 : Change Password

Click **System -> Management** and then **Management Setup** page appears.

There can change root and admin manager account. Enter a new password, and verify it again in the **New Password** and **Check New Password** field respectively. Click **Save** button, and proceed with the following steps.

Management Setup

System Information

System Name :

Description :

Location :

Root Password

New Root Password :

Check Root Password :

Admin Password

New Admin Password :

Check New Password :

Admin Login Methods

Enable HTTP : Port :

Enable HTTPS : Port :

Enable Telnet : Port :

Enable SSH : Port :

Step 3 : LAN IP Settings

Click **System -> LAN**, and then **LAN Setup** page appears. Enter the "IP Address" and "IP Netmask" of the LAN Setup.

LAN Setup

LAN IP

IP Address: 192.168.1.254

IP Netmask: 255.255.255.0

DHCP Server

DHCP: Enable Disable

802.1d Spanning Tree

STP: Enable Disable

Save

Step 4 : Time Zone settings

Click System -> Time Server, and then Time Server Setup page appears. Enable "NTP Client", and then enter the related information. Click Save button to save the settings.

Time Server Setup

System Time

Local Time: 2000/01/01 Sat 00:05:44

NTP Client

Enable:

Default NTP Server: time.ntpserver.gtcu.tw (optional)

Time Zone: (GMT) Dublin, Edinburgh, Lisbon, London

Daylight saving time: Disable (v)

Save

Step 5 : WAN IP Settings

Click **System -> WAN**, and then **WAN Setup** page appears.

Enable "Static IP", and then enter the related information (**Default WAN IP is 192.168.1.254**)

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

WAN Setup

Internet Connection Type

Mode: Static IP Dynamic IP PPPoE

Static IP

IP Address: 192.168.1.254

IP Netmask: 255.255.255.0

IP Gateway: 192.168.1.1

DNS

DNS: No Default DNS Server Specify DNS Server IP

Primary:

Secondary:

MAC Clone

Keep Default MAC Address

Clone MAC Address: 00:1A:92:9F:A4:9B

Manual MAC Address:

Save

Step 6 : Site Survey

Click **Wireless -> Site Survey**, and then **Station Site Survey** page appears. The system will automatically scan and display the scan results of all AP existing near by the system.

Below depicts an example for scanning result.

Station Site Survey							
Scan Result							
ESSID	MAC Address	Signal	Channel	Security	Band	Network Type	Select
211AP0	00:0c:43:28:60:23	100%	36	WPAPSK/AES	11a	Infrastructure	Select
211AP1	00:0c:43:28:60:24	100%	36	WEP	11a	Infrastructure	Select
211AP2	00:0c:43:28:60:25	100%	36	WEP	11a	Infrastructure	Select
211AP3	00:0c:43:28:60:26	100%	36	WPAPSK/AES	11a	Infrastructure	Select
211AP4	00:0c:43:28:60:27	100%	36	WEP	11a	Infrastructure	Select
211AP5	00:0c:43:28:60:28	100%	36	WPAPSK/AES	11a	Infrastructure	Select
Main_AP	00:0c:43:28:69:10	100%	44	NONE	11a	Infrastructure	Select

Step 7 : Select AP to be Associated

Search for the AP to be associated with from the Scan Result list provided in **Step 3**; use **211AP0** as an example here where the AP is encrypted via WEP security type.

Step 8 : Station Profile Settings

Click **Select** button of the **211AP0**, and related information will display in **Station Profile** page.

Enter the information required in the **Station Profile** page. Information to be entered shall be exactly the same as configured in the **211AP0**. Below depicts an example for profile "Profile-Test" setting.

Click **Add** button to add profile setting in the **Profile List**. Below depicts an example for Profile List. Select "Profile-Test" and click "Connect" button for connection

Station Profile

System Configuration

Profile Name :

ESSID :

Fragment Threshold : Used

RTS Threshold : Used

Short Preamble : Enable Disable Auto

Tx Burst : Enable Disable

WMM : Enable Disable

Security Policy

Security Type :

WPA

Cipher Suite :

Pre-shared Key :

Profile List

Active	#	Profile Name	ESSID	Security Type	Delete	Edit
<input checked="" type="radio"/>	1	Profile0	default	NONE	Delete	Edit

Profile List						
Active	#	Profile Name	ESSID	Security Type	Delete	Edit
<input type="radio"/>	1	Profile0	default	NONE	Delete	Edit
<input checked="" type="radio"/>	2	Profile-Test	211AP0	WPA-PSK	Delete	Edit

Click **Reboot** button to activate all settings configured above.

Congratulation!

The CPE mode is now successfully configured.

➤ Setup In Client Bridge + Universal Repeater Mode

Step 1 : Mode Confirmation

Ensure the Operating Mode is currently at Client Bridge + Universal Repeater mode; the web management UI can be viewed at the **Status** section under the **System Overview** page.

System

Host Name : WLO-15802N

Operating Mode : Client Bridge + Universal Repeater Mode

Location :

Description : 802.11a/n Wireless Outdoor Bridge, 200mW

Firmware Version : Cen-CPE-N5H2 V0.0.11 Beta Version

Firmware Date : 2009-10-20 15:05:52

Device Time : 2000-01-01 00:08:41

System Up Time : 08:41

Step 2 : Change Password

Click **System -> Management** and then **Management Setup** page appears.

There can change root and admin manager account. Enter a new password, and verify it again in the **New Password** and **Check New Password** field respectively. Click **Save** button, and proceed with the following steps.

Management Setup

System Information

System Name :

Description :

Location :

Root Password

New Root Password :

Check Root Password :

Admin Password

New Admin Password :

Check New Password :

Admin Login Methods

Enable HTTP : Port :

Enable HTTPS : Port :

Enable Telnet : Port :

Enable SSH : Port :

Step 3 : LAN IP Settings

Click **System -> LAN**, and then **LAN Setup** page appears. Enter the "IP Address" and "IP Netmask" of the LAN Setup.

Step 4 : Time Zone settings

Click **System -> Time Server**, and then **Time Server Setup** page appears. Enable "NTP Client", and then enter the related information. Click **Save** button to save the settings.

Step 5 : Site Survey

Click **Wireless -> Site Survey**, and then **Station Site Survey** page appears. The system will automatically scan and display the scan results of all AP existing near by the system.

Below depicts an example for scanning result.

ESSID	MAC Address	Signal	Channel	Security	Band	Network Type	Select
211AP0	00:0c:43:28:60:23	100%	36	WPAPSK/AES	11a	Infrastructure	Select
211AP1	00:0c:43:28:60:24	100%	36	WEP	11a	Infrastructure	Select
211AP2	00:0c:43:28:60:25	100%	36	WEP	11a	Infrastructure	Select
211AP3	00:0c:43:28:60:26	100%	36	WPAPSK/AES	11a	Infrastructure	Select
211AP4	00:0c:43:28:60:27	100%	36	WEP	11a	Infrastructure	Select
211AP5	00:0c:43:28:60:28	100%	36	WPAPSK/AES	11a	Infrastructure	Select
Main_AP	00:0c:43:28:69:10	100%	44	NONE	11a	Infrastructure	Select

Step 6 : Select AP to be Associated

Search for the AP to be associated with from the Scan Result list provided in **Step 3**; use **211AP0** as an example here where the AP is encrypted via WEP security type.

Step 7 : Station Profile Settings

Click **Select** button of the **211AP0**, and related information will display in **Station Profile** page.

Enter the information required in the **Station Profile** page. Information to be entered shall be exactly the same as configured in the **211AP0**. Below depicts an example for profile “Profile-Test” setting.

Station Profile

System Configuration

Profile Name:

ESSID:

Fragment Threshold: Used

RTS Threshold: Used

Short Preamble: Enable Disable Auto

Tx Burst: Enable Disable

WMM: Enable Disable

Profile List

Active	#	Profile Name	ESSID	Security Type	Delete	Edit
<input checked="" type="radio"/>	1	Profile0	default	NONE	Delete	Edit

Security Policy

Security Type:

WPA

Cipher Suite:

Pre-shared Key:

Click “**Add**” button to add profile setting in the **Profile List**. Below depicts an example for Profile List. Select “Profile-Test” and click “Connect” button for connection

Profile List

Active	#	Profile Name	ESSID	Security Type	Delete	Edit
<input type="radio"/>	1	Profile0	default	NONE	Delete	Edit
<input checked="" type="radio"/>	2	Profile-Test	211AP0	WPA-PSK	Delete	Edit

 Before you click “**Connect**” button for connection, Please double check the “**Channel**” setting of “Wireless General Setup” page on WCB1200H2PX as it must be the same with associated AP channel setting

Step 8 : Repeater AP's SSID & Security Settings

Click **Wireless -> AP Setup**, and then **Primary AP** page appears.

Setup the broadcast SSID for easy identification of the system when device is trying to associate the service. The default SSID is “**Main_AP**”.

Primary AP Setup

Security

ESSID:

Client Isolation: Enable Disable

Hidden SSID: Enable Disable

Maximum Clients:

Security Type:

MAC Filter

Action:

Select WEP in "Security Type" drop-down list. The WEP setting field will show up immediately. Enter the WEP key information required in the WEP settings field, the same information will also be used to set up devices using **WLO-15814N / WLO-15802N**'s services.

WEP

Authentication Type: OPEN SHARED WEPAUTO

Key Index:

WEP Key 1:

WEP Key 2:

WEP Key 3:

WEP Key 4:

Click **Reboot** to activate all settings configured above.

Congratulation!

The Client Bridge + Universal Repeater mode is now successfully configured.