



**Wireless N/A 5GHz 200mW Outdoor AP**

**Model: APO1200**

**Quick Installation Guide**

**V.1.0**

# 1. Before You Start



## Package Contents

|                                     |     |
|-------------------------------------|-----|
| • APO1200                           | x 1 |
| • Quick Installation Guide          | x 1 |
| • CD-ROM (with User Manual and QIG) | x 1 |
| • Power Adapter DC24V 0.5A          | x 1 |
| • PoE injector                      | x 1 |
| • Mounting Kit                      | x 2 |

## System Requirement

- ✓ Web Browser : Internet Explorer (7.0 or above), Firefox, Safari
- ✓ A Computer with a network adapter properly installed
- ✓ 2 x RJ-45 Ethernet cable

## Panel Function Description

Front Panel



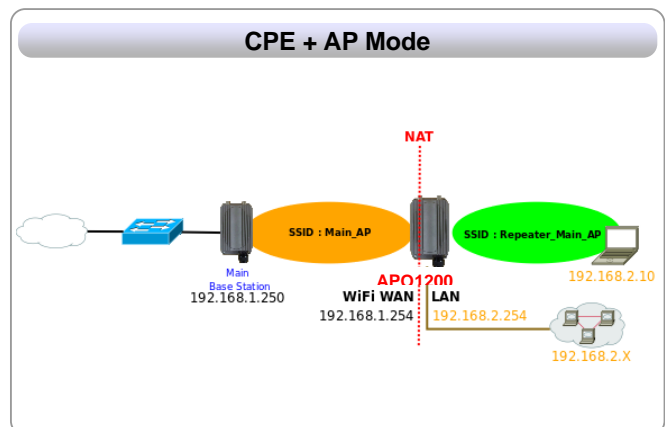
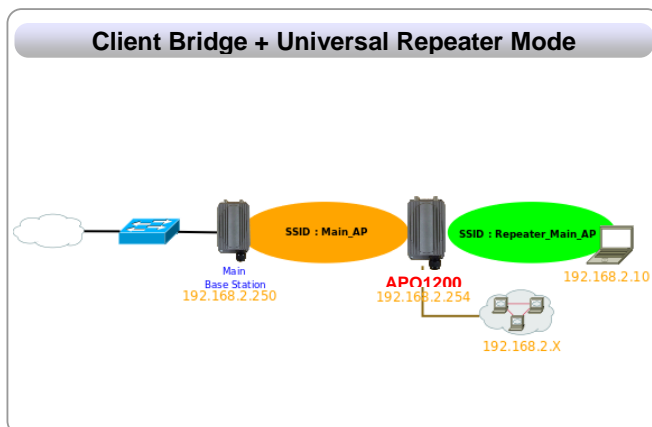
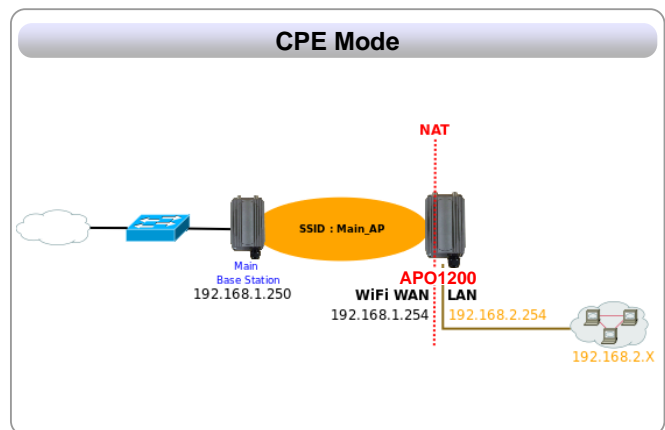
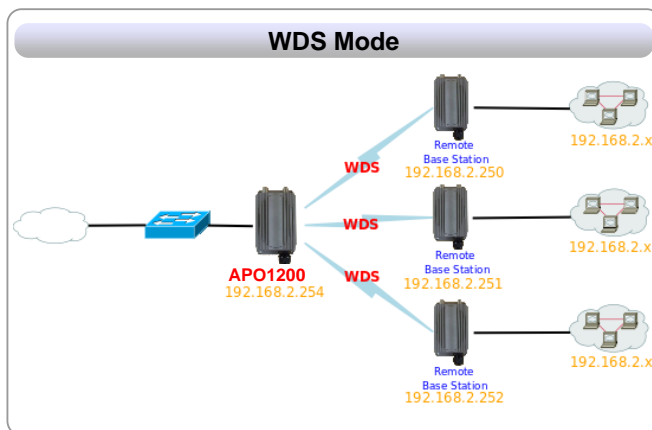
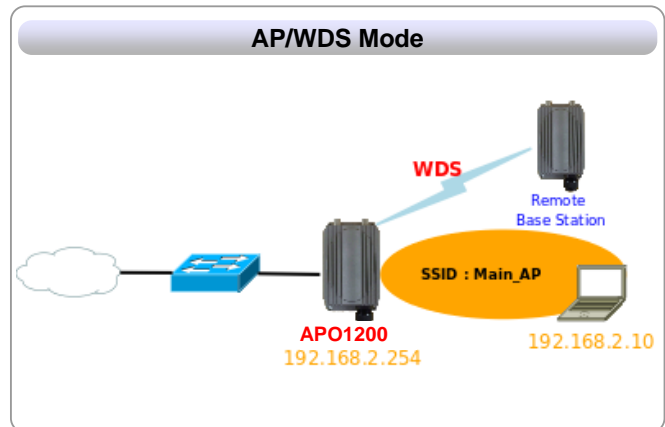
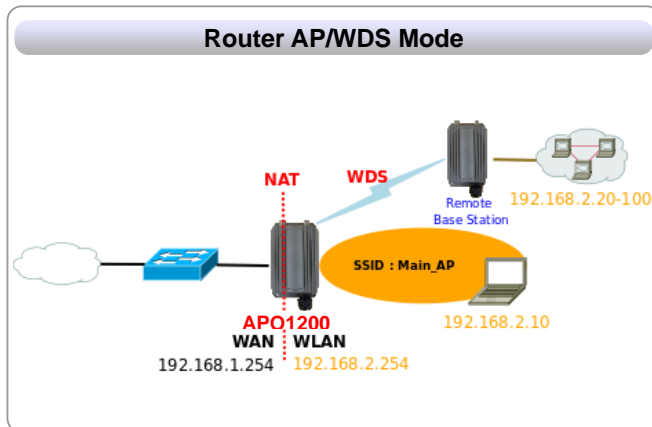
Rear Panel



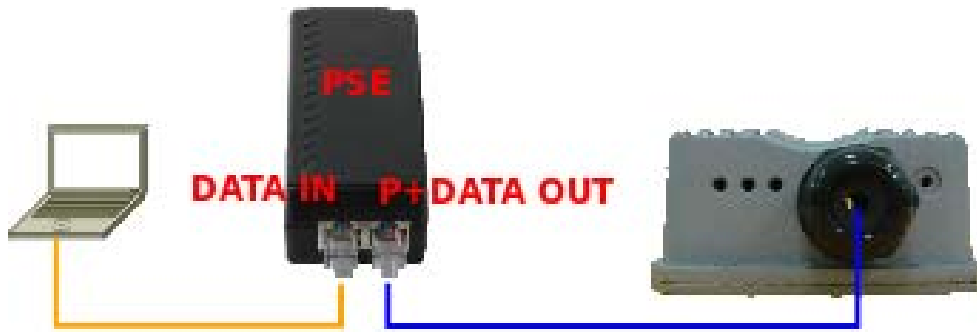
1. Reboot Button : Unscrew the screw and click Reset button to restart system or reset to default configurations.
  - ➔ Press and hold the Reset button for 2 seconds and release to restart system. The LED except Power indicator will be off before restarting.
  - ➔ Press and hold the Reset button for 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. LAN : Green LED ON indicates connection, OFF indicates no connection, FLASH indicates packets transmit.
5. PoE Connector : For connecting to PSE.
6. N-type Connector : For connecting to N-Type Antenna.

## Application in Wireless Network

APO1200 is a multiple mode system which can be configured either as a wireless gateway or an access point as desired. It also can be used as a WDS link for Ethernet network expansion. This section depicts different applications on **Router AP Mode**, **AP Mode**, **WDS Mode**, **CPE Mode**, **Client Bridge+Universal Repeater Mode** and **CPE+AP Mode**.



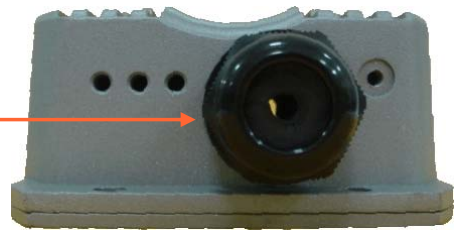
## 2. Hardware Installation



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



2. Connect one end of a RJ-45 cable into the AP's PoE connector



3. Connect the opposite end of the RJ-45 cable to the **P+DATA OUT** port on the Power over Ethernet Injector



4. Connect one end of another RJ-45 cable to the **DATA IN** port on the Power over Ethernet Injector



5. Connect the opposite end of the RJ-45 cable to a LAN port on your network or Computer



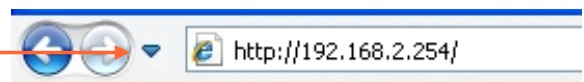
6. Connect the power cord into the Power over Ethernet Injector. Then connect the power cord to a power outlet.

# 3. Configuring the Access Point

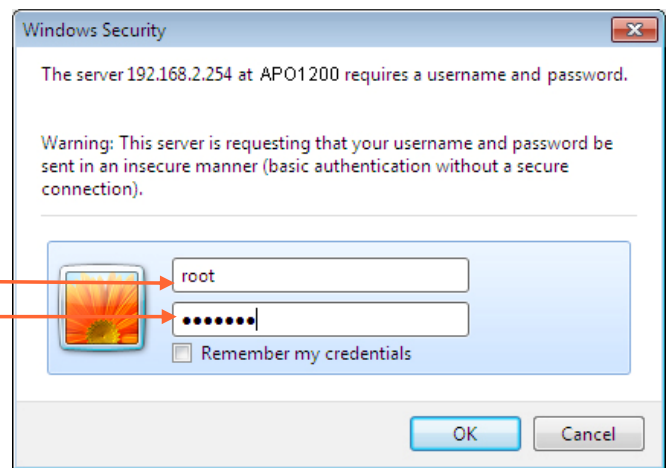
## Note :

1. It is recommended that you configure the Access Point from a wired computer. Before the Access Point can be configured, if you connect the AP to your computer directly, you must manually assign a static IP address to your computer's network adapter in the subnet of **192.168.2.x** (Refer to Section 7, **How to configure TCP/IP settings on your PC.**); if you connect the AP to your Router or Switch, since the AP's default IP address is **192.168.2.254**, make sure your Router's IP address is **192.168.2.x** and no other network devices are assigned an IP address of **192.168.2.254**.
2. Disable any anti-virus and firewall programs before configuring the access point.

1. Open the web browser (Internet Explorer or Mozilla Firefox). Enter the AP's default IP address "**http://192.168.2.254/**" and click "GO".

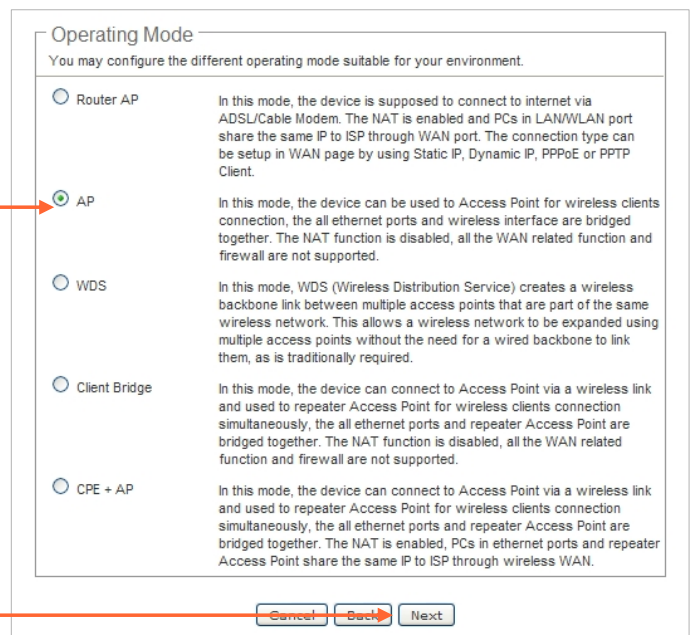


2. Enter "**root**" for user name and "**default**" for password.

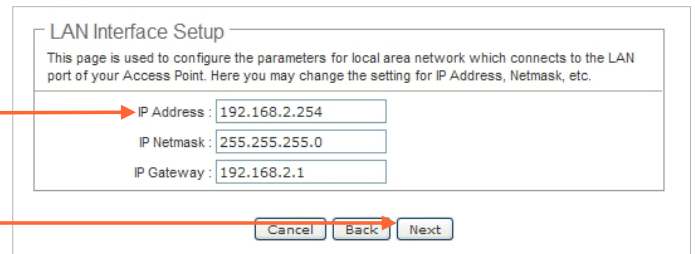


3. Click **Wizard**.

4. Select "**AP**" mode and click **Next** button.



5. Configure the **LAN** settings to match your network settings and then click **Next** button.

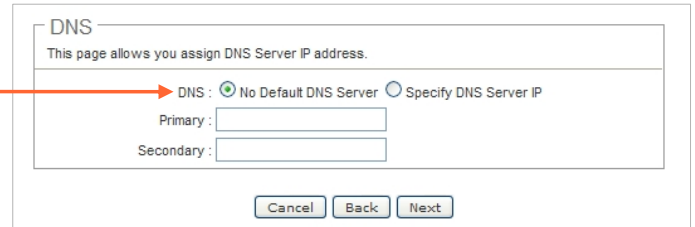


LAN Interface Setup  
This page is used to configure the parameters for local area network which connects to the LAN port of your Access Point. Here you may change the setting for IP Address, Netmask, etc.

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

Cancel Back Next

6. Configure the **DNS** settings to match your network settings and then click **Next** button.

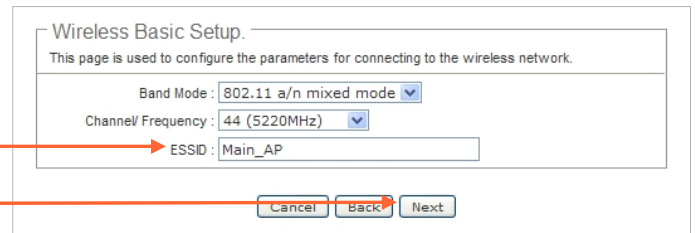


DNS  
This page allows you assign DNS Server IP address.

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

Cancel Back Next

7. Enter the desired **Channel/Frequency** and **ESSID**, then click **Next** button.



Wireless Basic Setup.  
This page is used to configure the parameters for connecting to the wireless network.

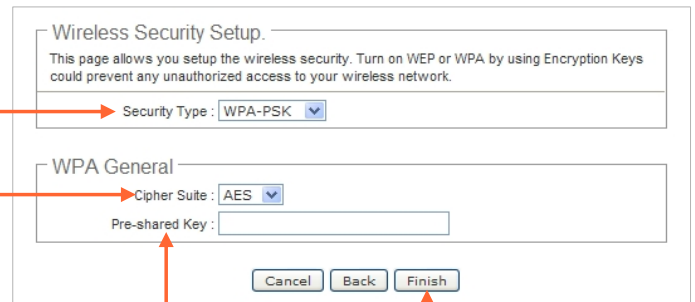
Band Mode : 802.11 a/n mixed mode  
Channel/ Frequency : 44 (5220MHz)  
ESSID : Main\_AP

Cancel Back Next

### Note :

1. To protect your network from any unauthorized access it is recommended to enable wireless encryption.
2. The examples below are for WPA2-PSK. If you select WPA-PSK or WPA2-PSK, make sure your wireless adapters support WPA or WPA2. If your wireless adapters do not support WPA or WPA2, then select WEP.

8. Select the desired **Security Type**.



Wireless Security Setup.  
This page allows you setup the wireless security. Turn on WEP or WPA by using Encryption Keys could prevent any unauthorized access to your wireless network.

Security Type : WPA-PSK

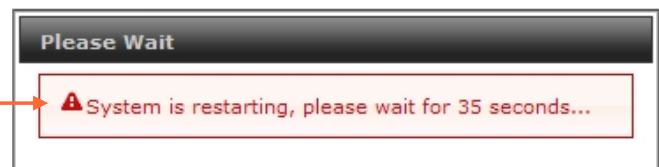
WPA General  
Cipher Suite : AES  
Pre-shared Key :

Cancel Back Finish

9. Select the Cipher Suite(Type). For WPA2-PSK

10. Enter a Pre-shared Key and then click **Finish** button. The key must be between **8** and **63 ASCII** or **64 HEX** characters. Make sure to copy down the encryption key.

11. Wait **35** seconds while the Access Point reboots.



Please Wait

⚠ System is restarting, please wait for 35 seconds...

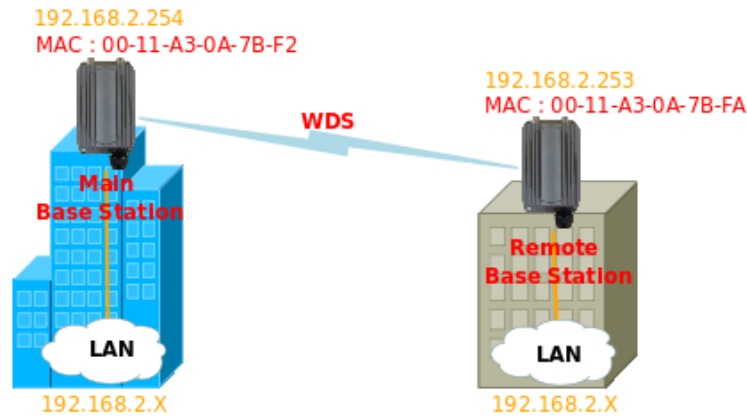
## Your Installation is complete

For detailed information regarding the APO1200's configuration and advanced settings, please refer to **User Manual**.

# 4. Configuring for WDS Link

## Note :

1. The system provide WDS function on **Router AP Mode, AP Mode and WDS Mode.**
2. WDS Link requires at least 2 APO1200. The Two wire networks(LAN) need the **same subnet.**
3. The WDS Link needs to be set at same **Channel** and with same **Security Type.**
4. Please install and test in a lab environment before mounting the APO1200.
5. After you set the APO1200 to **WDS Mode**, wireless clients will not be able to connect to the APO1200.
6. The examples below are for **WDS Mode.**



## Setting Up the Main APO1200 (Main Base Station)

1. Copy down the 12 digit MAC Address of the Remote APO1200 (**Remote Base Station**). The MAC Address is on the **Overview Page (Status->Overview)** and **Wireless General Setup Page (Wireless ->General Setup)**

### Wireless Information

MAC Address : 00:11:A3:0A:7B:FA  
Channel : 44  
Rate : 300 Mb/s  
Receive Bytes : 0  
Receive Packets : 0  
Transmit Bytes : 33683  
Transmit Packets : 346

### General Setup

MAC Address : 00:11:A3:0A:7B:FA  
Band Mode : 802.11 a/n mixed mode  
AP Isolation :  Enable  Disable  
Country : NONE  
Channel : 44  
Tx Power : 10 %

2. Follows steps 1-6 (Select **"WDS"** mode on step 4) in Section 3 **Configuring the Access Point.**

3. Enter the desired **Channel/Frequency** , then click **Next** button.

Wireless Basic Setup.

This page is used to configure the parameters for connecting to the wireless network.

Band Mode : 802.11 a/n mixed mode

Channel/ Frequency : 44 (5220MHz)

Cancel Back Next

4. Click **Enable** and enter the Remote APO1200's MAC Address.

WDS MAC Setup

This page allows you setup the WDS link. Enter the remote WDS peer's MAC address and select an appropriate security type for WDS link.

WDS Mode :  Enable  Disable

Peer's MAC Address : 00 : 11 : A3 : 0A : 7B : FA

Wireless Security Setting

Security Type : Disable

Cancel Back Finish

5. Select the desired **Security Type** between WDS link, then click **Finish** button.

6. Wait **35** seconds while the Access Point reboots.

Please Wait

⚠ System is restarting, please wait for 35 seconds...

## Setting Up the Remote APO1200 (Remote Base Station)

1. Copy down the 12 digit MAC Address of the Main APO1200 (**Main Base Station**). The MAC Address is on the device label or the **Overview** Page (**Status->Overview**) and **Wireless General Setup** Page(**Wireless ->General Setup**)

2. Repeat steps 2-6 in **Setting Up the Main APO1200** for the **Remote** APO1200. Make sure you change the IP Address of the **Remote** APO1200 to be different from the **Main** APO1200.

3. Click **Status -> WDS Status**.

4. Verify the Remote APO1200's **MAC Address** and **Signal Strength (RSSI)**

WDS Link Status

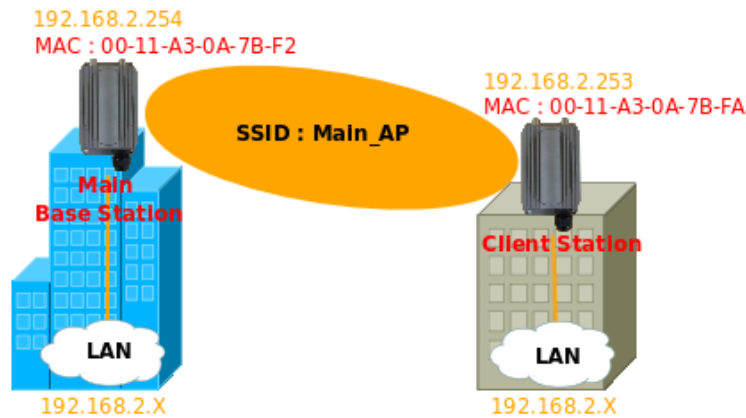
| MAC Address       | Signal Strength ANT0 | Signal Strength ANT1 | Phy Mode | BandWidth | MCS | S/GI |
|-------------------|----------------------|----------------------|----------|-----------|-----|------|
| 00:11:A3:0A:7B:FA | 100% (-41 dBm)       | 76% (-60 dBm)        | HTMIX    | 40M       | 15  | 1    |



# 5. Configuring for Client Bridge

## Note :

1. This section will walk you through the steps of sharing (bridging) an internet connection in one building, and extending that same internet to another building.
2. The "Main Base Station" provide Access Point with SSID "Main\_AP"
3. The Two wire networks(LAN) need the **same subnet**.
4. The examples below are for **Client Bridge**.



## Setting Up the Access Point (Main Base Station)

1. Follows steps in Section 3 **Configuring the Access Point**.

2. Make sure changed options as below :  
ESSID : Main\_AP  
Channel : 44  
Security : WPA2-PSK  
Cihper Type : AES  
Pre-shared Key :

Wireless Information

MAC Address : 00:11:A3:0A:7B:F2  
Channel : 44  
Rate : 300 Mb/s  
Receive Bytes : 1598647  
Receive Packets : 13938  
Transmit Bytes : 745872  
Transmit Packets : 1135

VAP Information

| VAP        | ESSID   | MAC Address       | State | Security Type | Clients |
|------------|---------|-------------------|-------|---------------|---------|
| Primary AP | Main_AP | 00:11:A3:0A:7B:F2 | On    | WPA2PSK       | 0       |
| VAP1       |         | 00:00:00:00:00:00 | Off   | Disable       | 0       |
| VAP2       |         | 00:00:00:00:00:00 | Off   | Disable       | 0       |
| VAP3       |         | 00:00:00:00:00:00 | Off   | Disable       | 0       |
| VAP4       |         | 00:00:00:00:00:00 | Off   | Disable       | 0       |
| VAP5       |         | 00:00:00:00:00:00 | Off   | Disable       | 0       |
| VAP6       |         | 00:00:00:00:00:00 | Off   | Disable       | 0       |

## Setting Up the Client Bridge (Client Station)

1. Follows steps 1-6 (Select **Client Bridge** mode on step 4) in Section 3 **Configuring the Access Point**. Make sure you change the IP address of the Client Station to be different.

Operating Mode

You may configure the different operating mode suitable for your environment.

Router AP In this mode, the device is supposed to connect to internet via ADSL/Cable Modem. The NAT is enabled and PCs in LAN/WLAN port share the same IP to ISP through WAN port. The connection type can be setup in WAN page by using Static IP, Dynamic IP, PPPoE or PPTP Client.

AP In this mode, the device can be used to Access Point for wireless clients connection, the all ethernet ports and wireless interface are bridged together. The NAT function is disabled, all the WAN related function and firewall are not supported.

WDS In this mode, WDS (Wireless Distribution Service) creates a wireless backbone link between multiple access points that are part of the same wireless network. This allows a wireless network to be expanded using multiple access points without the need for a wired backbone to link them, as is traditionally required.

Client Bridge In this mode, the device can connect to Access Point via a wireless link and used to repeater Access Point for wireless clients connection simultaneously, the all ethernet ports and repeater Access Point are bridged together. The NAT function is disabled, all the WAN related function and firewall are not supported.

CPE + AP In this mode, the device can connect to Access Point via a wireless link and used to repeater Access Point for wireless clients connection simultaneously, the all ethernet ports and repeater Access Point are bridged together. The NAT is enabled, PCs in ethernet ports and repeater Access Point share the same IP to ISP through wireless WAN.

Cancel Back Next

2. Configure the **DHCP Server** settings to match your demand and then click **Next** button.

DHCP Server

This page is used to configure the parameters for DHCP Server which LAN/WLAN clients can get IP address automatically. Here you may change the setting for release IP Address range.

DHCP:  Enable  Disable

Start IP:

End IP:

DNS IP:

Cancel Back Next

3. Click **Site Survey** button. The system will automatically scan and display the scan results of all AP existing near by the system

Wireless Station Setup.

This page is used to configure the parameters for connecting to the wireless network.

Band Mode:

Channel/ Frequency:

Station ESSID:

Site Survey

Cancel Back Next

Scan Result

| ESSID   | MAC Address       | Signal | Channel | Security    | Band | Network Type   | Select |
|---------|-------------------|--------|---------|-------------|------|----------------|--------|
| Main_AP | 00:11:a3:0a:7b:f2 | 100%   | 44      | WPA2PSK/AES | 11a  | Infrastructure | Select |

4. Use **Main\_AP** as an example here where the AP is encrypted via WPA2-PSK/ AES security type. Click **Select** button of the **Main\_AP**, and then click **Next** button.

5. Set Client Bridge associate to ESSID "Main\_AP" with current Pre-shared key. Then click **Next** button.



Station Security Setup

This page allows you setup the wireless security. Select an appropriate security type for association.

Security Type : WPA2-PSK

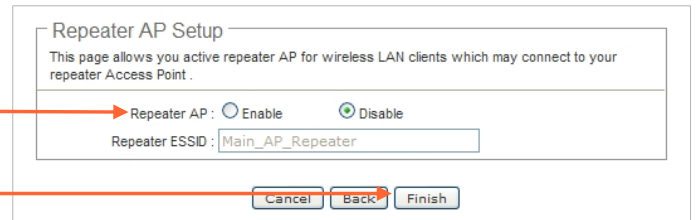
WPA

Cipher Suite : AES

Pre-shared Key :

Cancel Back Next

6. Select **Disable** to deactivate **Repeater AP**. Then click **Finish** button.



Repeater AP Setup

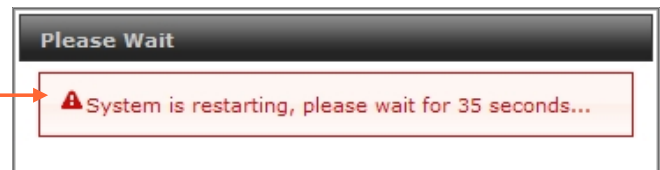
This page allows you active repeater AP for wireless LAN clients which may connect to your repeater Access Point .

Repeater AP :  Enable  Disable

Repeater ESSID : Main\_AP\_Repeater

Cancel Back Finish

7. Wait **35** seconds while the Access Point reboots.



Please Wait

System is restarting, please wait for 35 seconds...

8. Click **Status->Remote AP**, the **Connection Information** should be display.



Connection Information

| ESSID   | MAC Address       | Signal Strength ANT0 | Signal Strength ANT1 | BandWidth |
|---------|-------------------|----------------------|----------------------|-----------|
| Main_AP | 00:11:A3:0A:7B:F2 | 100%(-50dBm)         | 100%(-47dBm)         | 40MHz     |

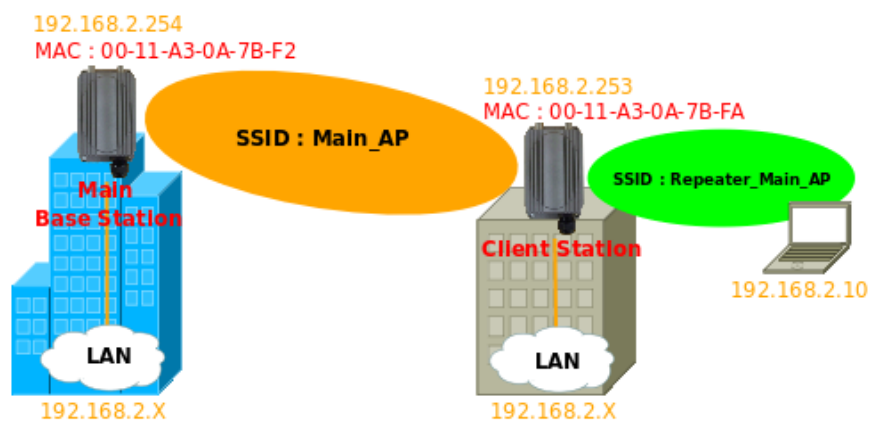
**Note :**

1. To verify wired network of Client Station can access Main Base Station, use ping command to "192.168.2.254"
2. If you can not access Main Base Station, verify the IP address of the wired client (PC or Laptop) is in the same subnet with Main Base Station.

# 6. Configuring for Universal Wireless Repeater

## Note :

1. This section will walk you through the steps of sharing (bridging) an internet connection in one building, and extending that same internet to another building with repeat Access Point.
2. A repeater is just a very normal client which, at the same time, can also be an access point, independent of the SSID and type of encryption used.
3. The "Main Base Station" provides Access Point with SSID "Main\_AP", and the "Client Station" provide repeat Access Point with SSID "Repeater\_Main\_AP".
4. The **Wireless clients** and "Main Base Station" need the **same subnet**.
5. The examples below are for **Universal Wireless Repeater**.



1. Follows steps in Section 5 **Configuring for Client Bridge**.

2. Select **Enable** to activate **Repeater AP** on step 7. Enter the desired **ESSID** and click **Next** button.

The screenshot shows the 'Repeater AP Setup' configuration page. The text reads: 'This page allows you active repeater AP for wireless LAN clients which may connect to your repeater Access Point.' Below this, there are two radio buttons: 'Repeater AP :  Enable  Disable'. Underneath, there is a text input field for 'Repeater ESSID' containing the value 'Main\_AP\_Repeater'. At the bottom of the page, there are three buttons: 'Cancel', 'Back', and 'Next'. An orange arrow from the text box above points to the 'Enable' radio button.

## Note :

1. To protect your network from any unauthorized access it is recommended to enable wireless encryption.
2. The examples below are for WEP. If you select WPA-PSK or WPA2-PSK, make sure your wireless adapters support WPA or WPA2. If your wireless adapters do not support WPA or WPA2, then select WEP.

3. Select the desired **Security Type**.

4. Select the **Authentication Type** for WEP.

5. Select WEP Key Index and Key, then click **Finish**. Make sure to copy down the encryption key.

Repeater AP Security Setup.

This page allows you setup the repeater AP security. Turn on WEP or WPA by using Encryption Keys could prevent any unauthorized access to your wireless network.

Security Type: WEP

WEP

Authentication Type:  OPEN  SHARED  WEPAUTO

Key Index: 1

WEP Key 1:

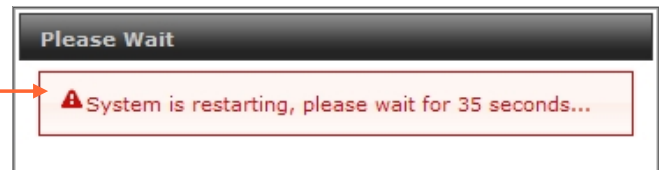
WEP Key 2:

WEP Key 3:

WEP Key 4:

Cancel Back Finish

6. Wait **35** seconds while the Access Point reboots.



7. Click **Status->Remote AP**, the **Connection Information** should be display.

| ESSID   | MAC Address       | Signal Strength ANT0 | Signal Strength ANT1 | BandWidth |
|---------|-------------------|----------------------|----------------------|-----------|
| Main_AP | 00:11:A3:0A:7B:F2 | 100%(-50dBm)         | 100%(-47dBm)         | 40MHz     |

8. Set Wireless client associate to ESSID **"Repeater\_Main\_AP"** with corrent WEP key.

9. Click **Status->Client**, the **Repeater AP Clients** should be display.

| MAC Address       | Signal Strength ANT0 | Signal Strength ANT1 | BandWidth | Idle Time | Connect Time | Disconnect |
|-------------------|----------------------|----------------------|-----------|-----------|--------------|------------|
| 00:90:CC:0F:51:38 | 100%(-41dBm)         | 100%(-41dBm)         | 20MHz     | 0         | 58           | Delete     |

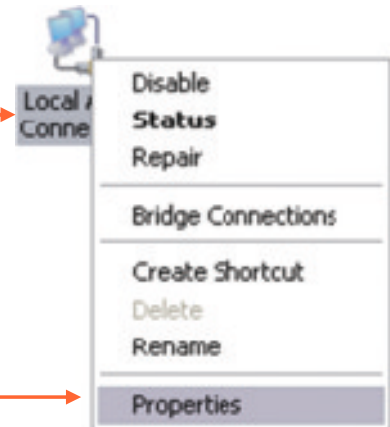
### Note :

1. The **Channel** of Repeat AP should be the same with Main Base Station.
2. To verify wireless clients can associate ESSID "Repeater\_Main\_AP" with WEP key.
3. To verify wireless clients can use ping command to "192.168.2.254".
4. If you can not access Main Base Station, verify the IP address of the wireless client (PC or Laptop) is in the same subnet with Main Base Station.

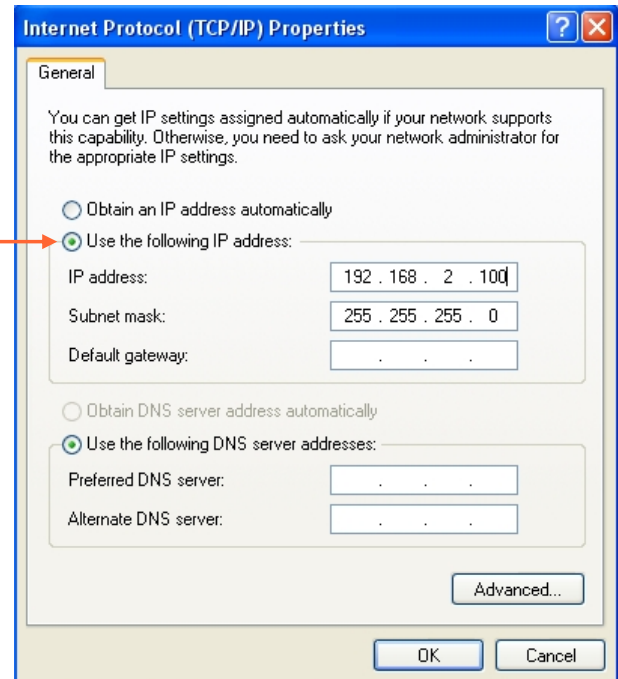
# 7. How to configure TCP/IP settings on your PC

Windows XP/2000

1. Go into the **Control Panel**, double-click the **Network Connections** icon and then right-click the **Local Area Connection** icon and then click Properties.



2. Click **Internet Protocol (TCP/IP)** and then click Properties. Then click on **Use the follow IP address**, and make sure you assign your network adapter an IP address in the subnet of **192.168.2.X**.



## Technical Support

E-mail: [support@airlink101.com](mailto:support@airlink101.com)

Toll Free: 1-888-746-3238

Web Site: [www.airlink101.com](http://www.airlink101.com)

\*Theoretical maximum wireless signal rate derived from IEEE standard 802.11 specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, mix of wireless products used, radio frequency interference (e.g., cordless telephones and microwaves) as well as network overhead lower actual data throughput rate. Specifications are subject to change without notice. Photo of product may not reflect actual content. All products and trademarks are the property of their respective owners. Copyright ©2010 Airlink101®

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