NETWORKING PEOPLE TOGETHER

CAP300

User Manual

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CONTENTS

AP Mode

Edimax Pro NMS

OVERVIEW

Your access point can function in three different modes.

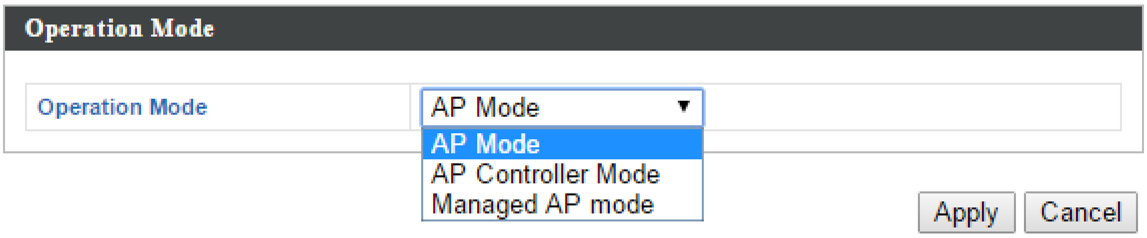
The default mode for your access point is **AP mode**.

AP mode is a regular access point for use in your wireless network.

AP Controller mode acts as the designated master of an AP array (group of linked access points).

Managed AP mode acts as a "slave" AP within the AP array (controlled by the AP Controller "master").

In **AP Controller** mode the user interface will switch to **Edimax Pro NMS**.


Operation Mode

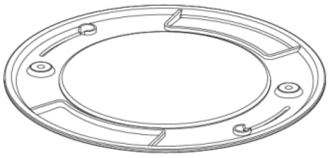
Operation Mode: AP Mode

This user manual is split into two parts: **AP mode** (blue) and **Edimax Pro NMS** (grey).

I. Product Information

I-1. Package Contents

1



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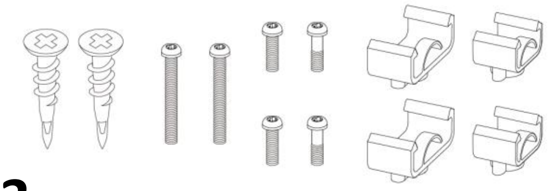

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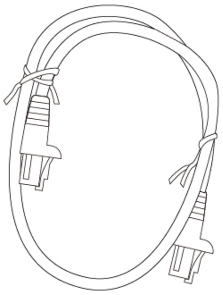

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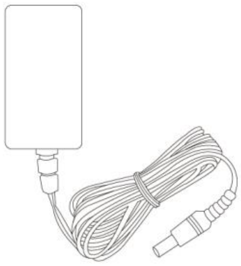

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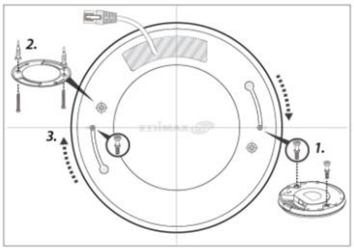

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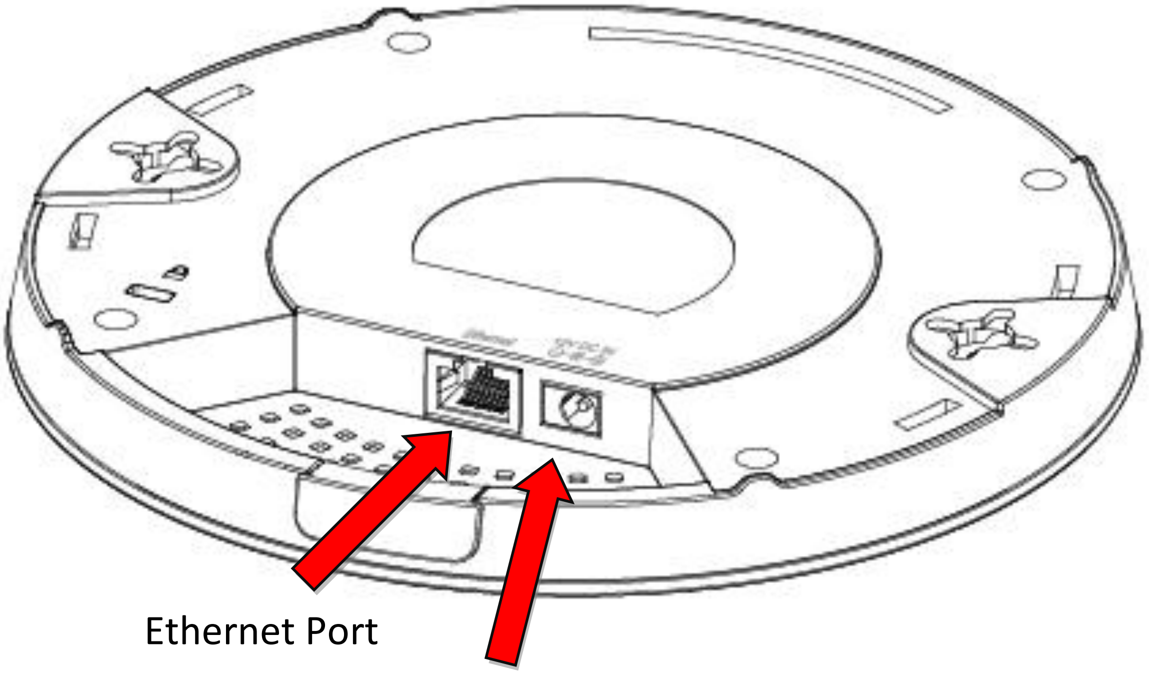
1. CAP300 Access Point
2. Ceiling Mount Bracket
3. T-Rail Mounting Kit & Screws
4. CD
5. Quick Installation Guide
6. Ethernet Cable
7. Power Adapter
8. Ceiling Mount Screw Template

I-2. System Requirements

- Existing cable/DSL modem & router
- Computer with web browser for access point configuration

I-3. Hardware Overview



Ethernet Port

Power Port

I-4. LED Status

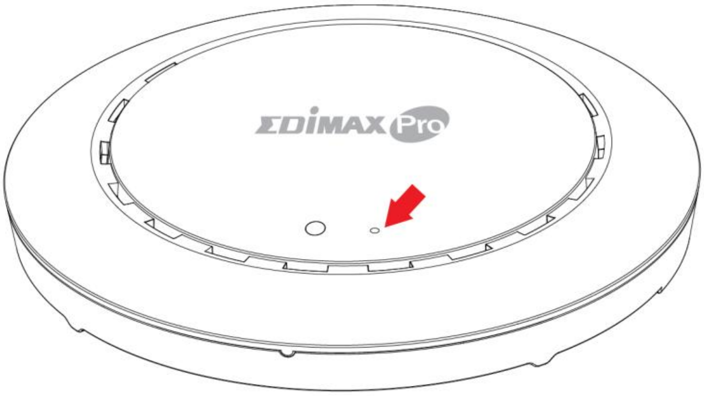
LED Color	LED Status	Description
Blue	**On**	The access point is on.
	Long Flashing	Upgrading firmware.
	Short Flashing	Resetting to factory defaults.
Amber	**On**	Starting up.
	Flashing	Error.
Off	**Off**	The access point is off.

I-5. Reset

If you experience problems with your access point, you can reset the device back to its factory settings. This resets **all** settings back to default.

1. Press and hold the reset button on the access point for at least 10 seconds.

⚠ ***You may need to use a pin or similar sharp object to push the reset button.***



2. Wait for the access point to restart. The access point is ready for setup when the LED is **blue**.

I-6. Safety Information

In order to ensure the safe operation of the device and its users, please read and act in accordance with the following safety instructions.

1. The access point is designed for indoor use only; do not place the access point outdoors.

2. Do not place the access point in or near hot/humid places, such as a kitchen or bathroom.

3. Do not pull any connected cable with force; carefully disconnect it from the access point.

4. Handle the access point with care. Accidental damage will void the warranty of the access point.

5. The device contains small parts which are a danger to small children under 3 years old. Please keep the access point out of reach of children.

6. Do not place the access point on paper, cloth, or other flammable materials. The access point may become hot during use.

7. There are no user-serviceable parts inside the access point. If you experience problems with the access point, please contact your dealer of purchase and ask for help.

8. The access point is an electrical device and as such, if it becomes wet for any reason, do not attempt to touch it without switching the power supply off. Contact an experienced electrical technician for further help.

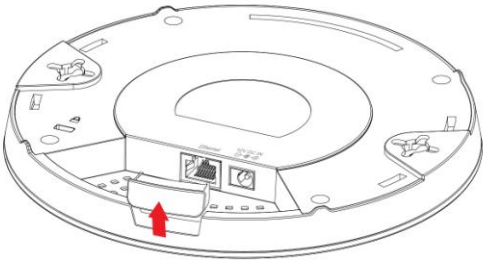
9. If you smell burning or see smoke coming from the access point or power adapter, then disconnect the access point and power adapter immediately, as far as it is safely possible to do so. Call your dealer of purchase for help.

II. Hardware Installation

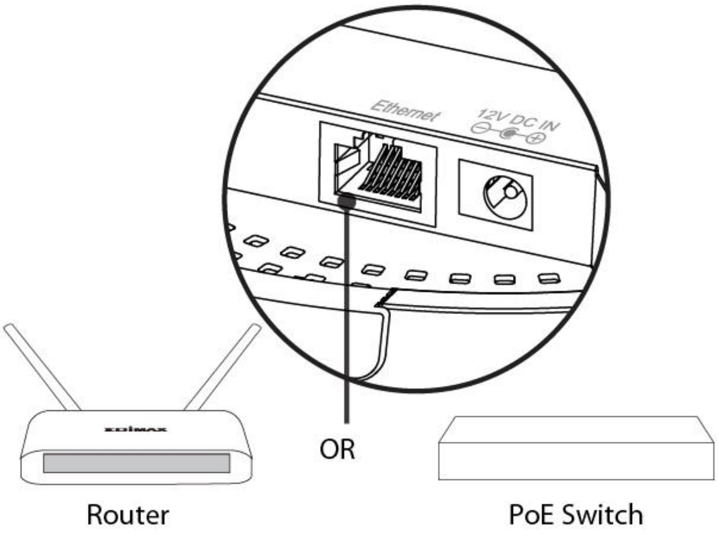
When using the access point in AP mode it is recommended to configure some basic settings as shown in** III. Quick Setup **before hardware installation.

II-1. Connecting the access point to a router or PoE switch

1. If you need to, remove the cap from the underside of the access point. This creates extra space for your cables to pass through.

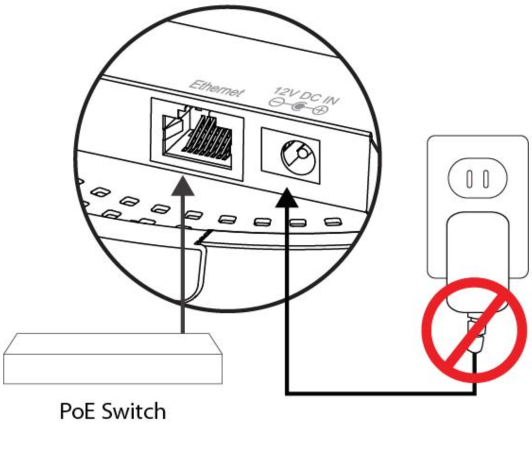


2. Connect a router or PoE switch to the access point's **LAN** port using an Ethernet cable.



3. If you are using a router, then connect the power adapter to the access point's 12V DC port and plug the power adapter into a power supply.

Do not use the power adapter if you are using a PoE switch.



II-2. Mounting the access point to a ceiling

To mount the access point to a ceiling, please follow the instructions below and refer to diagram **A** & **B**.

For Wooden Ceilings (refer to diagram A):

1. Place the ceiling mount bracket to a ceiling in your desired location and insert screw **iii** through hole **i** (x 2)and tighten to fix the bracket in place.

2. When the ceiling bracket is in place, inset screw **iv** into hole **v** (x 2) on the access point.

3. Fix the access point to the ceiling bracket by inserting the attached screws **iv** into hole **vi** and twisting the access point.

4. Lock the access point firmly into place when by twisting it to align screws **iv** with the grooves in the ceiling mount.

For Other Ceilings (refer to diagram B):

1. Place the ceiling mount bracket to a ceiling in your desired location and Insert screw **ii** through hole **i** (x 2) and tighten to fix the bracket in place, as shown in **A**.

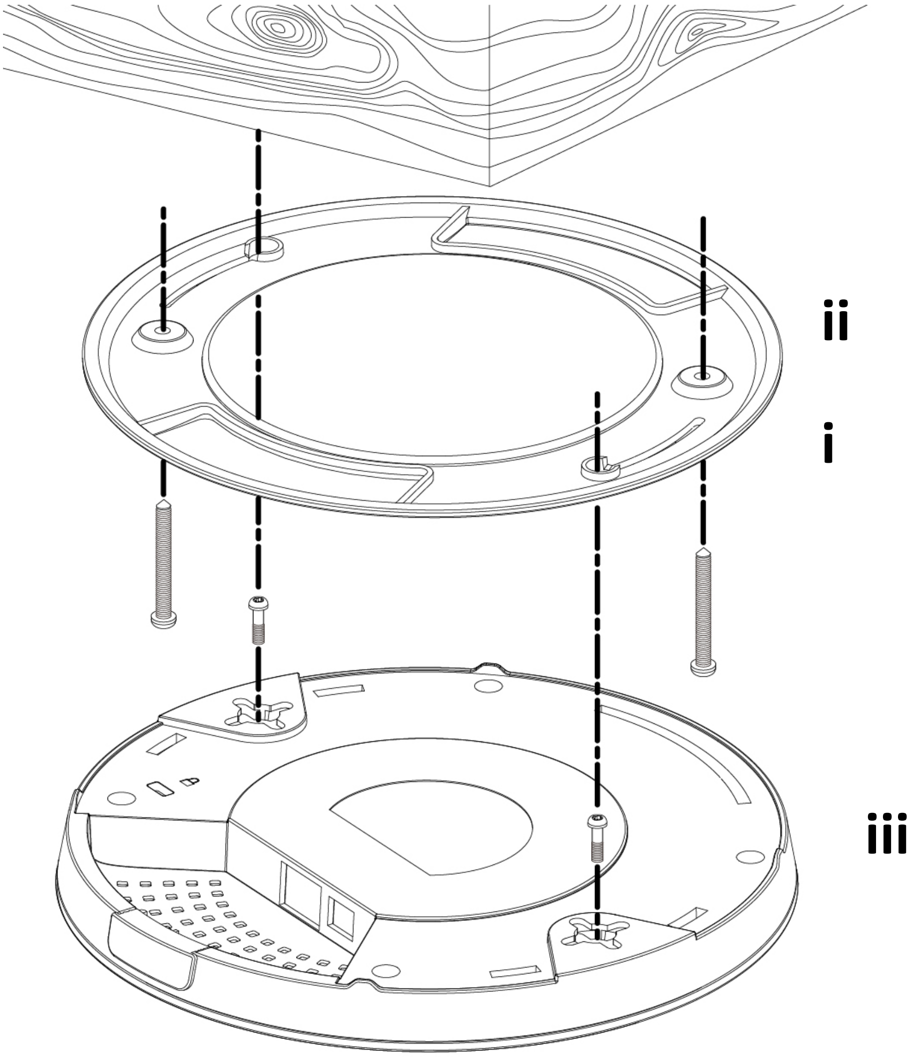
2. Insert screw **iii** through hole **i** and into the rear of screw ii and tighten to provide additional strength.

3. When the ceiling bracket is in place, insert screw **iv** into hole **v** (x 2) on the access point.

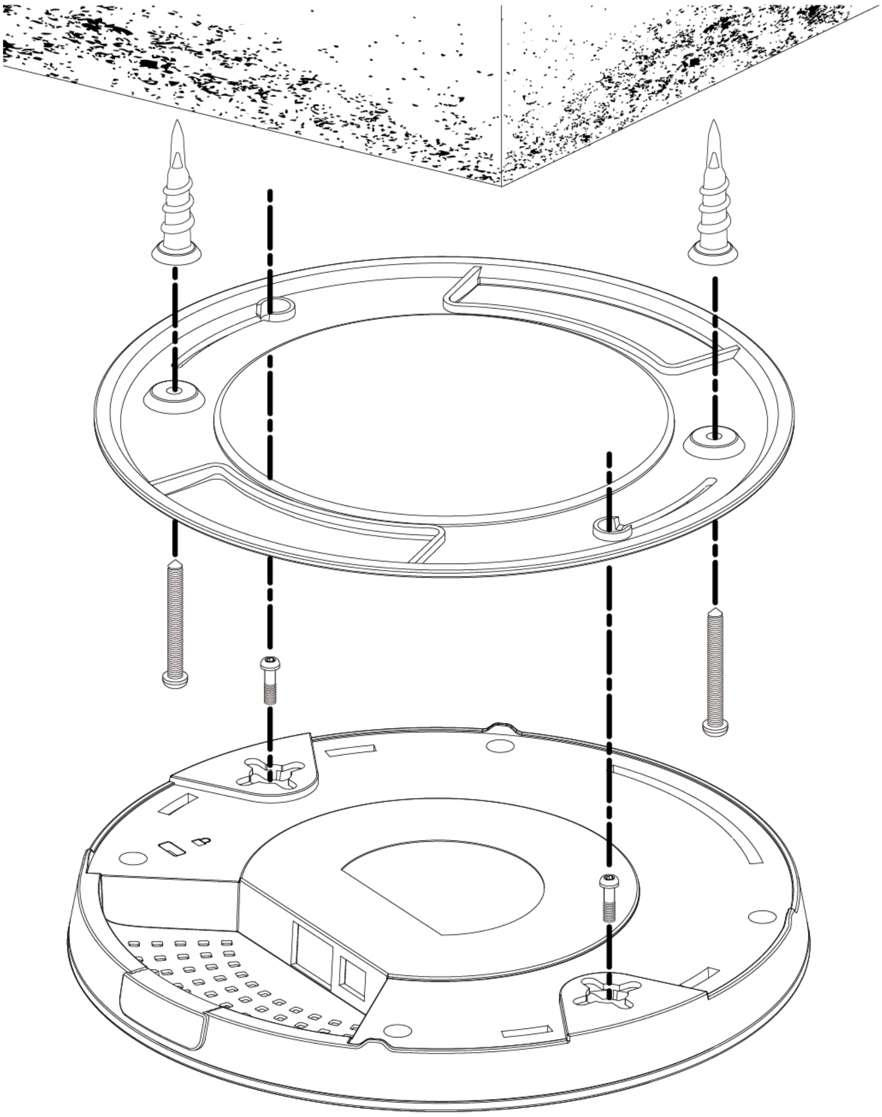
5. Fix the access point to the ceiling bracket by inserting the attached screws **iv** into hole **vi** and twisting the access point.

6. Lock the access point firmly into place by twisting it to align screws **iv** with the grooves in the ceiling mount.

A



B



II-3. T-Rail Mount

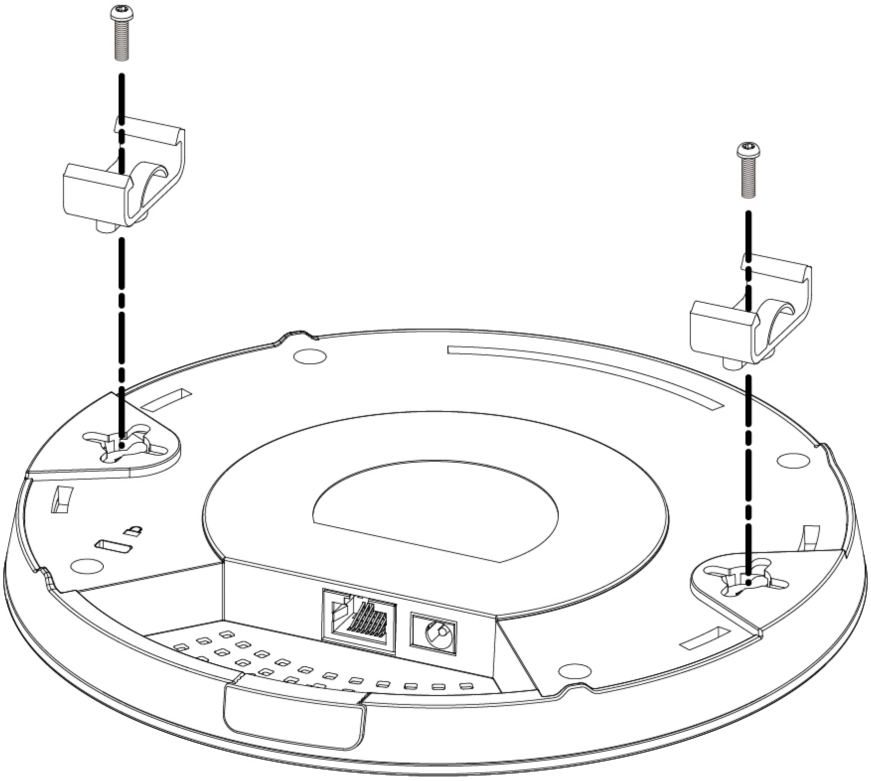
To mount the access point to a T-Rail, please follow the instructions below and refer to diagram **C, D** & **E**.

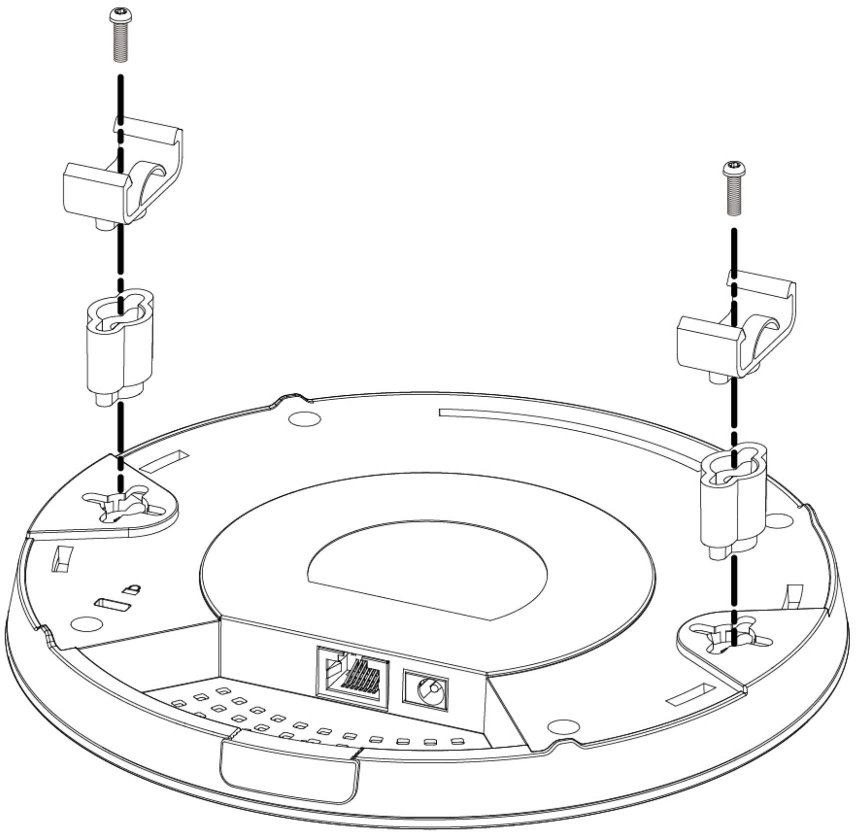
1. Select the correct size T-Rail bracket from the two sizes which are included in the package contents.

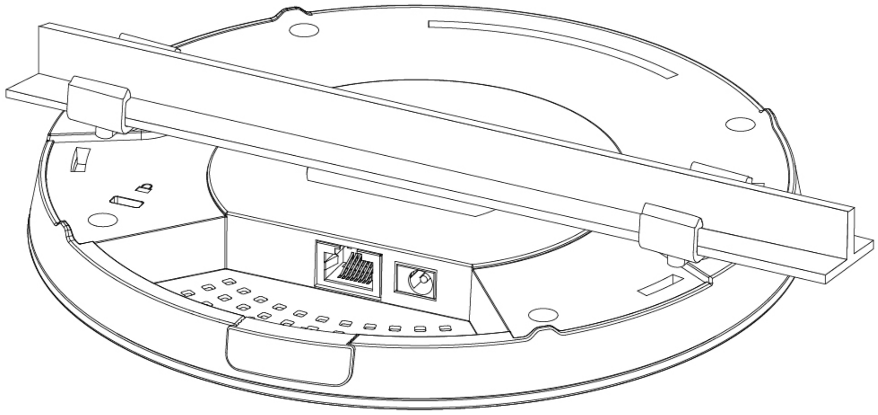
2. Attach the T-Rail bracket **i** to hole **ii** using screw **iii** (x 2) as shown in **C**.

   If you need more space between the access point and the T-Rail, then additionally use bracket *iv* ***between bracket*** *i* ***and hole*** *ii (x 2)****, and use the longer screws (x 2) included in the package contents.***

3. Clip the access point onto your T-Rail using the now attached T-Rail bracket.







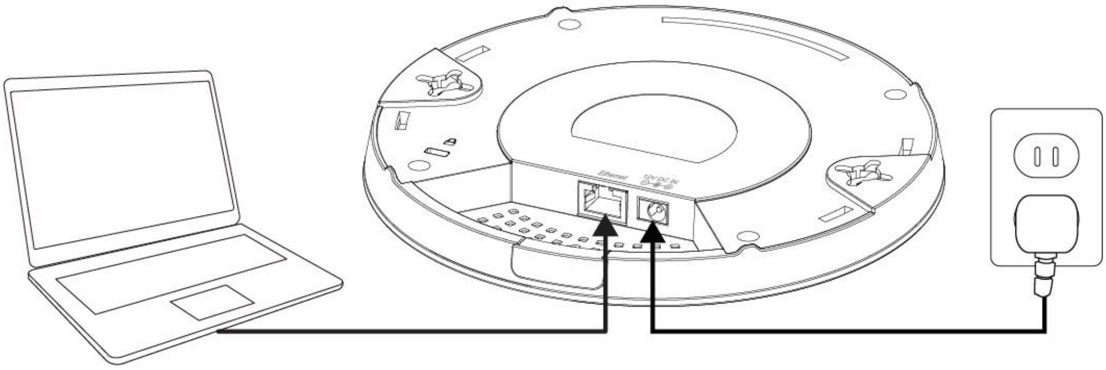
III. Quick Setup

Your access point can be up and running in just a few minutes. This quick installation guide will help to set up your access point in its default AP mode and configure its basic settings. For use a Managed AP within an AP array no settings are necessary. Configurations can be made from your Controller AP (refer to **Edimax Pro NMS**).

III-1. Initial Setup

1. Connect the access point to a computer via Ethernet cable.

2. Connect the power adapter to the access point's 12V DC port and plug the power adapter into a power supply using the included cable.



3. Please wait a moment for the access point to start up. The access point is ready when the LED is blue.

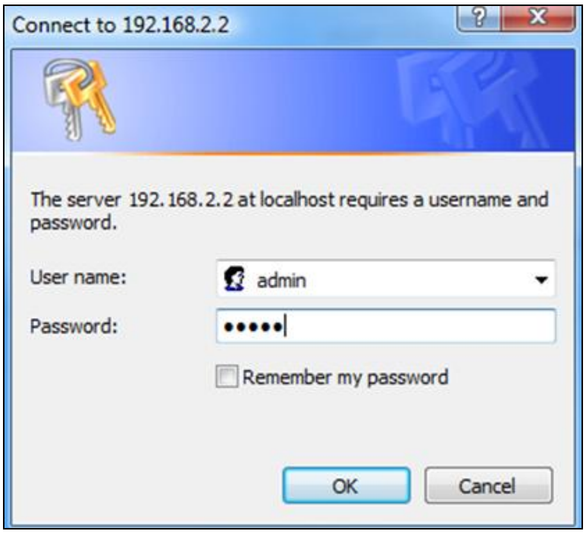
4. Set your computer's IP address to **192.168.2.x** where **x** is a number in the range **3 – 100**. If you are unsure how to do this, please refer to the user manual for more information.

> ***Please ensure there are no other active network connections on your computer (disconnect Wi-Fi connections and Ethernet cables).***

5. Enter the access point's default IP address **192.168.2.2** into the URL bar of a web browser.

http://192.168.2.2

6. You will be prompted for a username and password. Enter the default username "admin" and the default password "1234".



Connect to 192.168.2.2

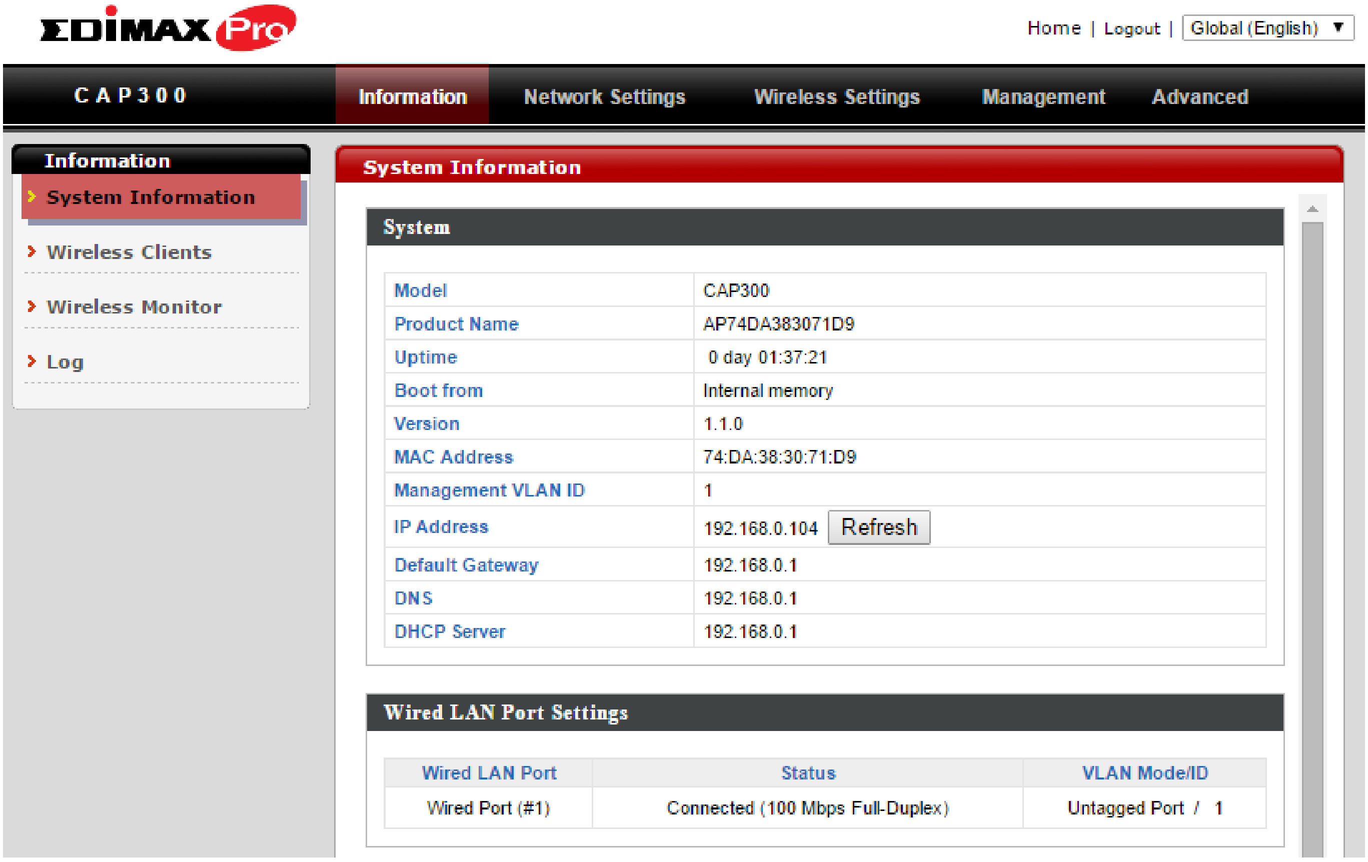
The server 192.168.2.2 at localhost requires a username and password.

User name: admin

Password: •••••

□ Remember my password

7. You will arrive the "System Information" screen shown below.



System

Model	CAP300
Product Name	AP74DA383071D9
Uptime	0 day 01:37:21
Boot from	Internal memory
Version	1.1.0
MAC Address	74:DA:38:30:71:D9
Management VLAN ID	1
IP Address	192.168.0.104
Default Gateway	192.168.0.1
DNS	192.168.0.1
DHCP Server	192.168.0.1

Wired LAN Port Settings

Wired LAN Port	Status	VLAN Mode/ID
Wired Port (#1)	Connected (100 Mbps Full-Duplex)	Untagged Port / 1

8. Next, please follow the instructions below in **II-2. Basic Settings** to configure the access point's basic settings.

For more advanced configurations, please refer to *IV. Browser Based Configuration Interface****.***

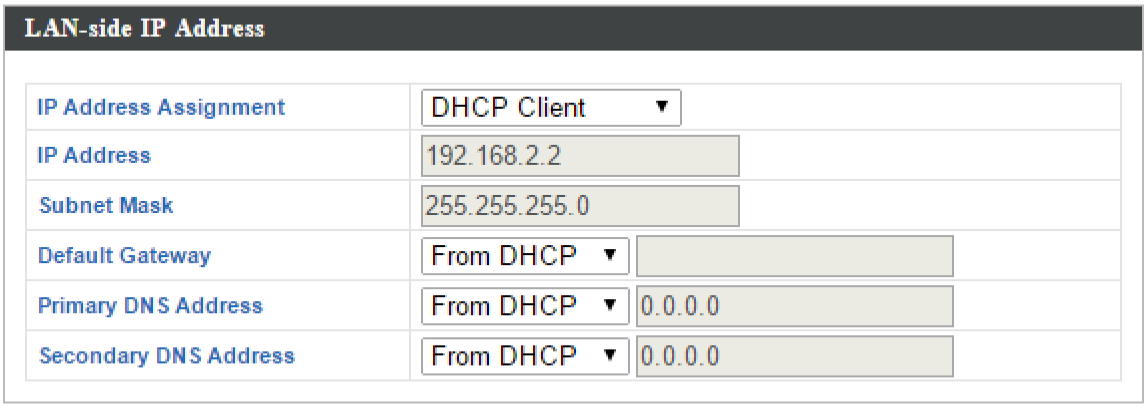
III-2. Basic Settings

The instructions below will help you to configure the following basic settings of the access point:

- ***LAN IP Address***
- ***2.4GHz SSID & Security***
- ***Administrator Name & Password***
- ***Time & Date***

It is recommended you configure these settings before using the access point.

1. To change the access point's LAN IP address, go to **"Network Settings" > "LAN-side IP Address"** and you will see the screen below.



LAN-side IP Address

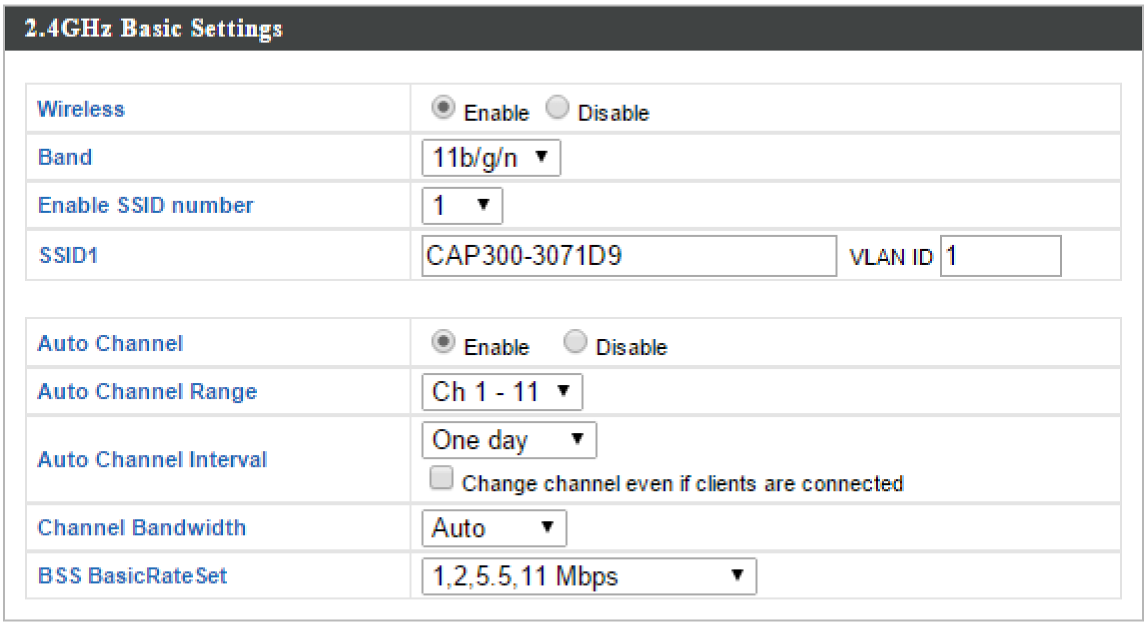
IP Address Assignment	DHCP Client ▼	
IP Address	192.168.2.2	
Subnet Mask	255.255.255.0	
Default Gateway	From DHCP ▼	
Primary DNS Address	From DHCP ▼	0.0.0.0
Secondary DNS Address	From DHCP ▼	0.0.0.0

2. Enter the IP address settings you wish to use for your access point. You can use a dynamic (DHCP) or static IP address, depending on your network environment. Click "Apply" to save the changes and wait a few moments for the access point to reload.

When you change your access point's IP address, you need to use the new IP address to access the browser based configuration interface instead of the default IP *192.168.2.2.*

3. To change the SSID of your access point's 2.4GHz wireless network(s), go to **"Wireless Setting" > "2.4GHz 11bgn" > "Basic"**. Enter the new SSID for your 2.4GHz wireless network in the "SSID1" field and click "Apply".

To utilize multiple 2.4GHz SSIDs, open the drop down menu labelled** “Enable SSID number” **and select how many SSIDs you require. Then enter a new SSID in the corresponding numbered fields below, before clicking “Apply”.

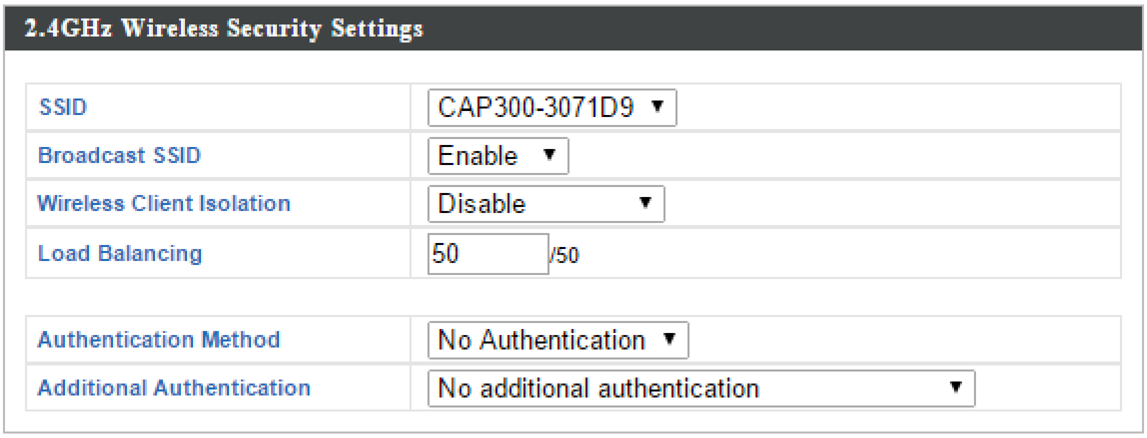


2.4GHz Basic Settings

Wireless	● Enable ○ Disable
Band	11b/g/n ▼
Enable SSID number	1 ▼
SSID1	CAP300-3071D9 VLAN ID 1
Auto Channel	● Enable ○ Disable
Auto Channel Range	Ch 1 - 11 ▼
Auto Channel Interval	One day ▼ □ Change channel even if clients are connected
Channel Bandwidth	Auto ▼
BSS BasicRateSet	1,2,5.5,11 Mbps ▼

4. To configure the security of your access point’s 2.4GHz wireless network(s), go to **“Wireless Setting” > “2.4GHz 11bgn” > “Security”**. Select an “Authentication Method” and enter a “Pre-shared Key” or “Encryption Key” depending on your choice, then click “Apply”.

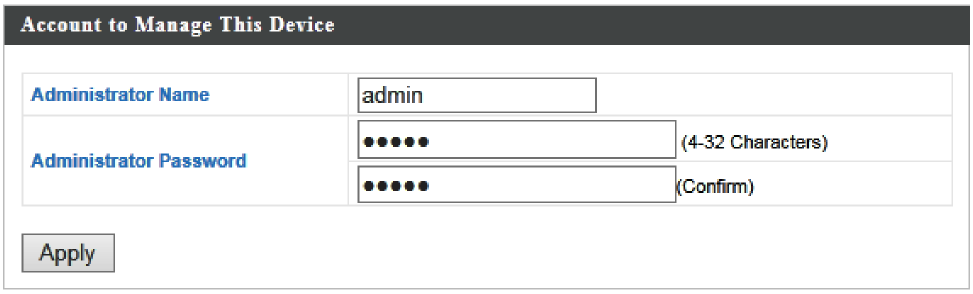
If using multiple SSIDs, specify which SSID to configure using the “SSID” drop down menu.



2.4GHz Wireless Security Settings

SSID	CAP300-3071D9 ▼
Broadcast SSID	Enable ▼
Wireless Client Isolation	Disable ▼
Load Balancing	50 /50
Authentication Method	No Authentication ▼
Additional Authentication	No additional authentication ▼

5. To change the administrator name and password for the browser based configuration interface, go to **"Management" > "Admin"**.



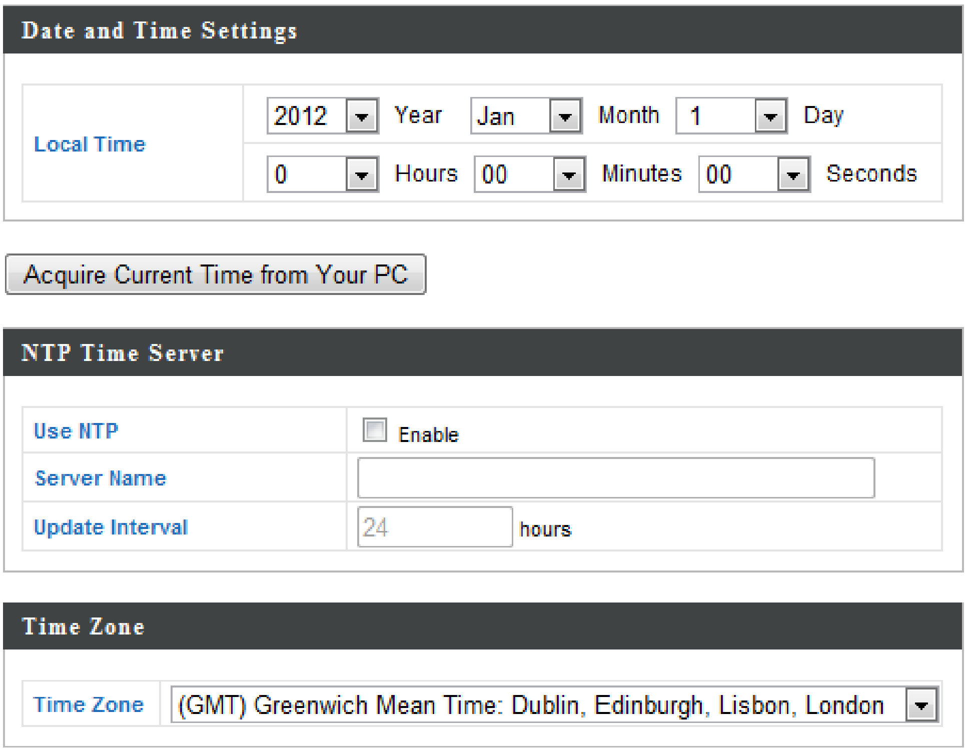
Account to Manage This Device

Administrator Name	admin
Administrator Password	••••• (4-32 Characters) ••••• (Confirm)

Apply

6. Complete the "Administrator Name" and "Administrator Password" fields and click "Apply".

7. To set the correct time for your access point, go to **"Management" > "Date and Time"**.



Date and Time Settings

Local Time	2012 Year Jan Month 1 Day 0 Hours 00 Minutes 00 Seconds

Acquire Current Time from Your PC

NTP Time Server

Use NTP	□ Enable
Server Name	
Update Interval	24 hours

Time Zone

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

8. Set the correct time and time zone for your access point using the drop down menus. The access point also supports NTP (Network Time Protocol) so alternatively you can enter the host name or IP address of a time server. Click "Apply" when you are finished.

You can use the "Acquire Current Time from your PC" button if you wish to set the access point to the same time as your PC.

9. The basic settings of your access point are now configured. Please refer to **II. Hardware Installation** for guidance on connecting your access point to a router or PoE switch.

IV. Browser Based Configuration Interface

In Managed AP mode some functions of the browser based configuration interface are disabled. Please use Edimax Pro NMS on your Controller AP to configure your Managed AP(s).

The browser-based configuration interface enables you to configure the access point's advanced features. The CAP300 features a range of advanced functions such as MAC filtering, MAC RADIUS authentication, VLAN configurations, up to 32 SSIDs and many more. To access the browser based configuration interface:

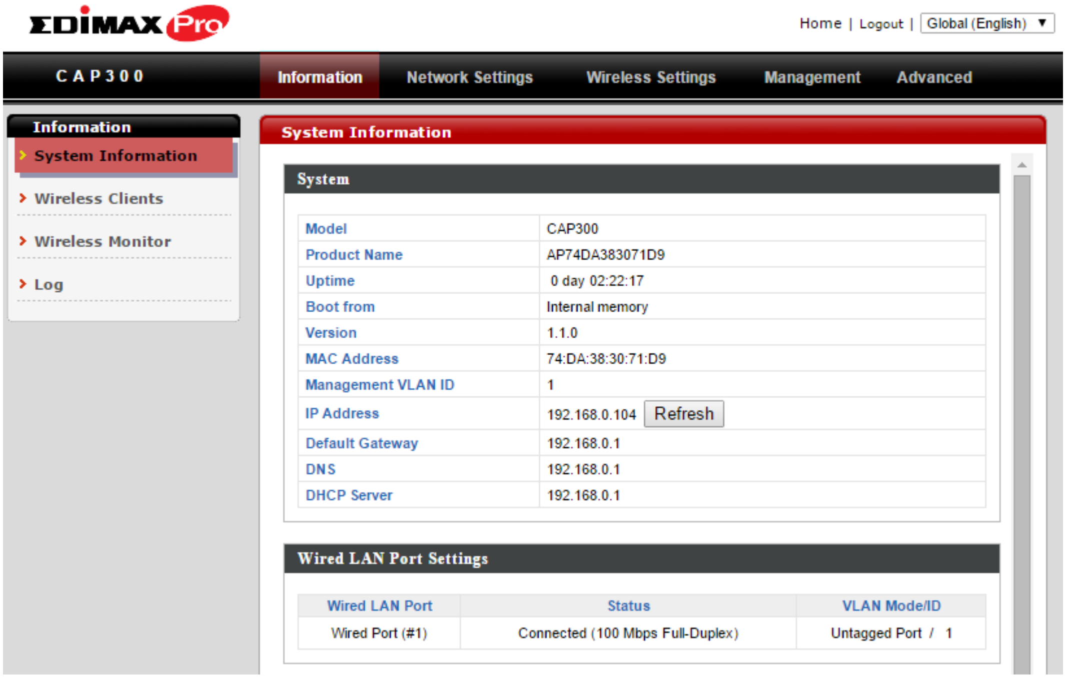
1. Connect a computer to your access point using an Ethernet cable.

2. Enter your access point's IP address in the URL bar of a web browser. The access point's default IP address is **192.168.2.2.**

3. You will be prompted for a username and password. The default username is "admin" and the default password is "1234", though it was recommended that you change the password during setup (see **III-2. Basic Settings**).

If you cannot remember your password, reset the access point back to its factory default settings. Refer to *I-5. Reset*

4. You will arrive at the "System Information" screen shown below.



System Information

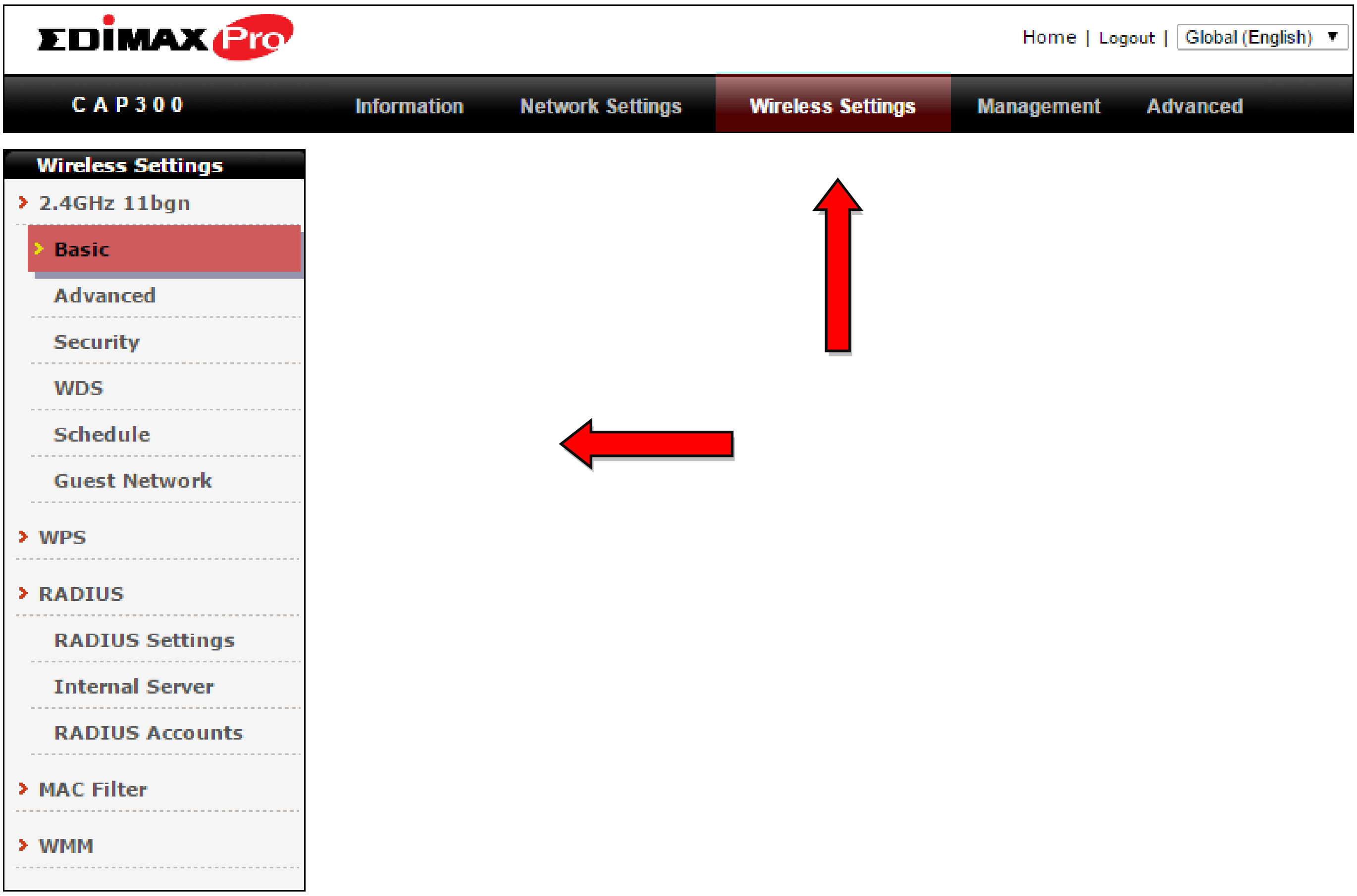
System

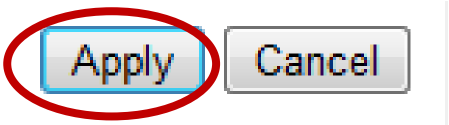
Model	CAP300
Product Name	AP74DA383071D9
Uptime	0 day 02:22:17
Boot from	Internal memory
Version	1.1.0
MAC Address	74:DA:38:30:71:D9
Management VLAN ID	1
IP Address	192.168.0.104 Refresh
Default Gateway	192.168.0.1
DNS	192.168.0.1
DHCP Server	192.168.0.1

Wired LAN Port Settings

Wired LAN Port	Status	VLAN Mode/ID
Wired Port (#1)	Connected (100 Mbps Full-Duplex)	Untagged Port / 1

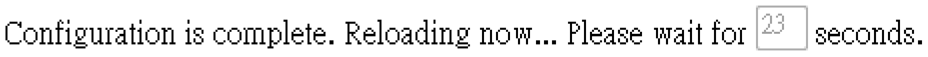
5. Use the menu across the top and down the left side to navigate.





6. Click "Apply" to save changes and reload the access point, or "Cancel" to cancel changes.

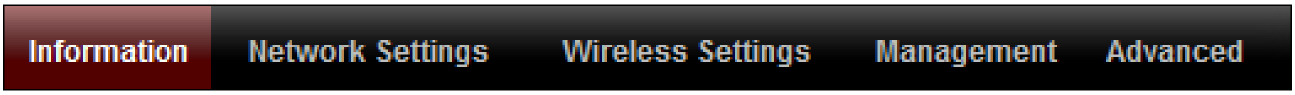
Please wait a few seconds for the access point to reload after you "Apply" changes, as shown below.



Configuration is complete. Reloading now... Please wait for 23 seconds.

7. Please refer to the following chapters for full descriptions of the browser based configuration interface features.

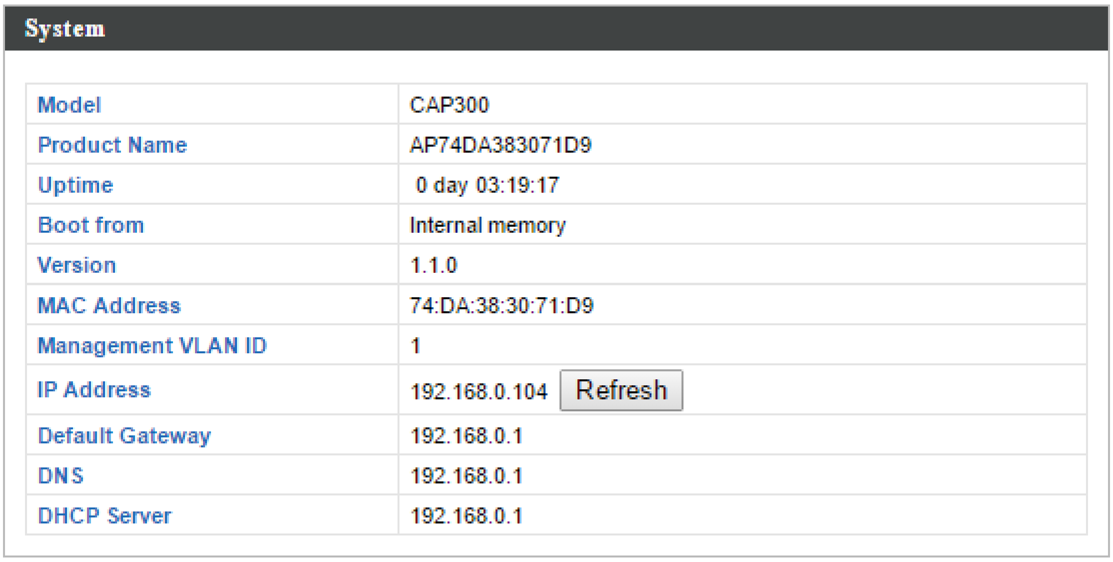
IV-1. Information



Screenshots displayed are examples. The information shown on your screen will vary depending on your configuration.

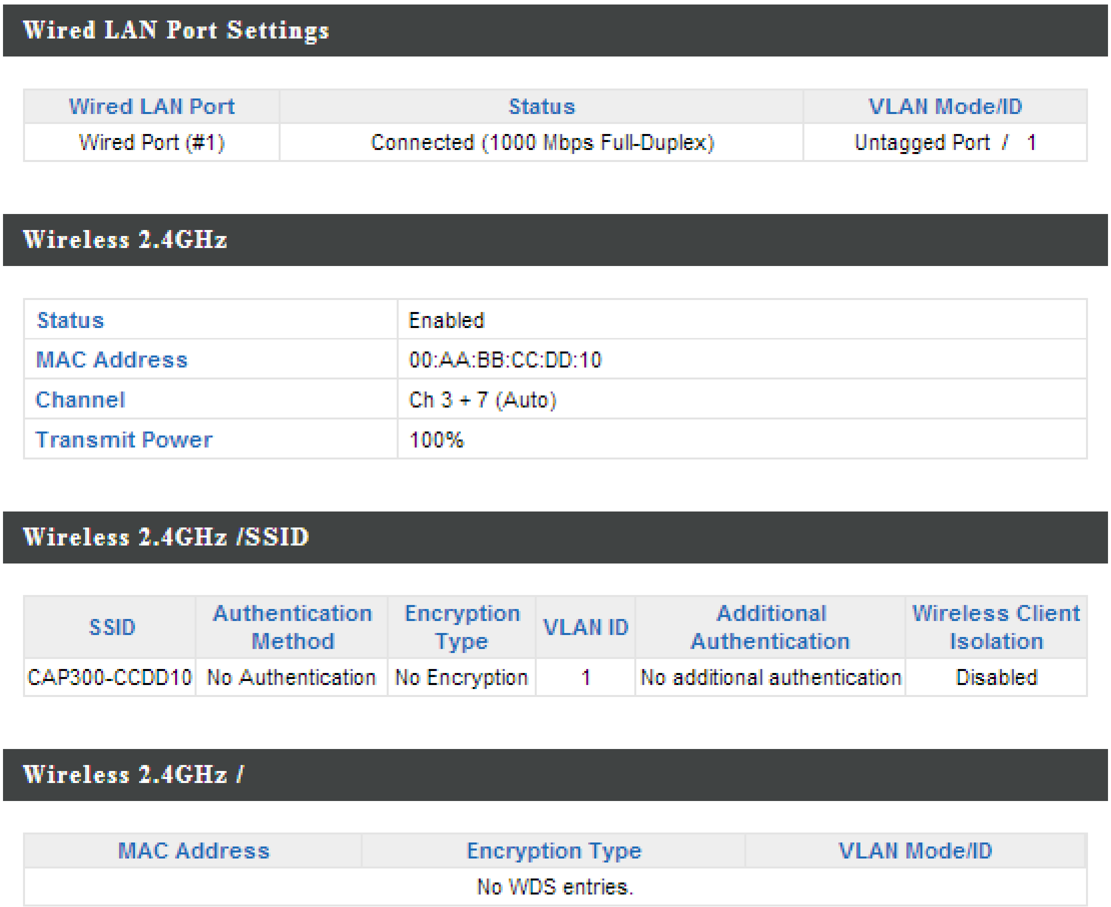
IV-1-1. System Information

The “System Information” page displays basic system information about the access point.



System

Model	CAP300
Product Name	AP74DA383071D9
Uptime	0 day 03:19:17
Boot from	Internal memory
Version	1.1.0
MAC Address	74:DA:38:30:71:D9
Management VLAN ID	1
IP Address	192.168.0.104 Refresh
Default Gateway	192.168.0.1
DNS	192.168.0.1
DHCP Server	192.168.0.1



Wired LAN Port Settings

Wired LAN Port	Status	VLAN Mode/ID
Wired Port (#1)	Connected (1000 Mbps Full-Duplex)	Untagged Port / 1

Wireless 2.4GHz

Status	Enabled
MAC Address	00:AA:BB:CC:DD:10
Channel	Ch 3 + 7 (Auto)
Transmit Power	100%

Wireless 2.4GHz /SSID

SSID	Authentication Method	Encryption Type	VLAN ID	Additional Authentication	Wireless Client Isolation
CAP300-CCDD10	No Authentication	No Encryption	1	No additional authentication	Disabled

Wireless 2.4GHz /

MAC Address	Encryption Type	VLAN Mode/ID
	No WDS entries.	

System	
Model	Displays the model number of the access point.
Product Name	Displays the product name for reference, which consists of "AP" plus the MAC address.
Uptime	Displays the total time since the device was turned on.
Boot From	Displays information for the booted hardware, booted from either USB or internal memory.
Version	Displays the firmware version.
MAC Address	Displays the access point's MAC address.
Management VLAN ID	Displays the management VLAN ID.
IP Address	Displays the IP address of this device. Click "Refresh" to update this value.
Default Gateway	Displays the IP address of the default gateway.
DNS	IP address of DNS (Domain Name Server)
DHCP Server	IP address of DHCP Server.

Wired LAN Port Settings	
Wired LAN Port	Specifies which LAN port (1 or 2).
Status	Displays the status of the specified LAN port (connected or disconnected).
VLAN Mode/ID	Displays the VLAN mode (tagged or untagged) and VLAN ID for the specified LAN port. See **IV-2-3. VLAN**

Wireless 2.4GHz	
Status	Displays the status of the 2.4GHz wireless (enabled or disabled).
MAC Address	Displays the access point’s MAC address.
Channel	Displays the channel number the specified wireless frequency is using for broadcast.
Transmit Power	Displays the wireless radio transmit power level as a percentage.

Wireless 2.4GHZ / SSID	
SSID	Displays the SSID name(s) for 2.4GHz wireless.
Authentication Method	Displays the authentication method for the specified SSID. See **IV-3. Wireless Settings**
Encryption Type	Displays the encryption type for the specified SSID. See **IV-3. Wireless Settings**
VLAN ID	Displays the VLAN ID for the specified SSID. See **IV-2-3. VLAN**
Additional Authentication	Displays the additional authentication type for the specified SSID. See **IV-3. Wireless Settings**
Wireless Client Isolation	Displays whether wireless client isolation is in use for the specified SSID. See **IV-2-3. VLAN**

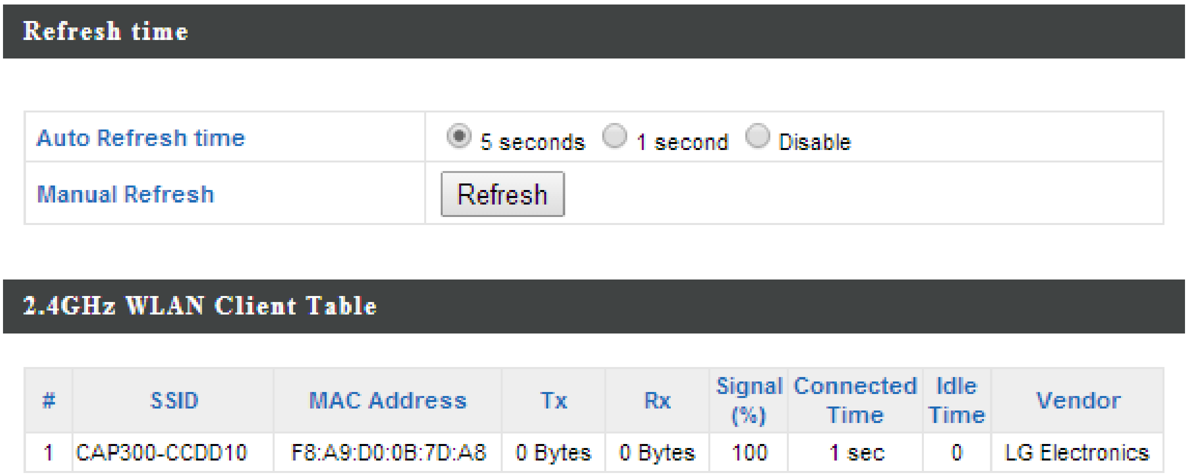
Wireless 2.4GHZ / WDS Status	
MAC Address	Displays the peer access point’s MAC address.
Encryption Type	Displays the encryption type for the specified WDS. See **IV-3-1-4. WDS**
VLAN Mode/ID	Displays the VLAN ID for the specified WDS. See **IV-3-1-4. WDS**

Refresh	Click to refresh all information.

IV-1-2. Wireless Clients

Wireless Clients

The “Wireless Clients” page displays information about all wireless clients connected to the access point on the 2.4GHz frequency.



Refresh time

Auto Refresh time	● 5 seconds ○ 1 second ○ Disable
Manual Refresh	Refresh

2.4GHz WLAN Client Table

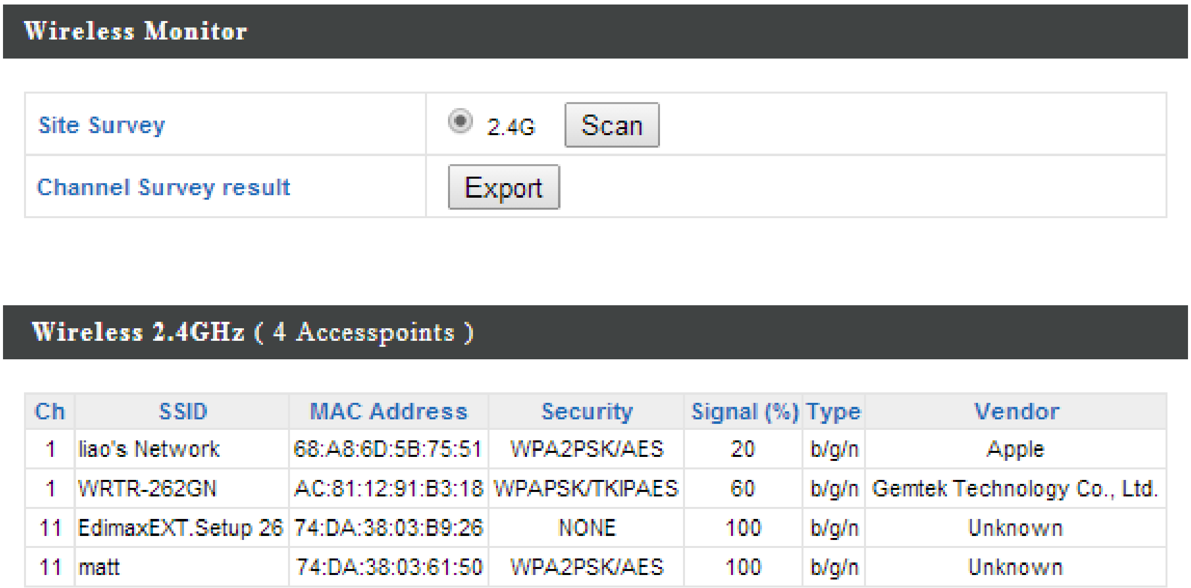
#	SSID	MAC Address	Tx	Rx	Signal (%)	Connected Time	Idle Time	Vendor
1	CAP300-CCDD10	F8:A9:D0:0B:7D:A8	0 Bytes	0 Bytes	100	1 sec	0	LG Electronics

Refresh time	
Auto Refresh Time	Select a time interval for the client table list to automatically refresh.
Manual Refresh	Click refresh to manually refresh the client table.

2.4GHz WLAN Client Table	
SSID	Displays the SSID which the client is connected to.
MAC Address	Displays the MAC address of the client.
Tx	Displays the total data packets transmitted by the specified client.
Rx	Displays the total data packets received by the specified client.
Signal (%)	Displays the wireless signal strength for the specified client.
Connected Time	Displays the total time the wireless client has been connected to the access point.
Idle Time	Client idle time is the time for which the client has not transmitted any data packets i.e. is idle.
Vendor	The vendor of the client’s wireless adapter is displayed here.

IV-1-3. Wireless Monitor

Wireless Monitor is a tool built into the access point to scan and monitor the surrounding wireless environment. Select a frequency and click “Scan” to display a list of all SSIDs within range along with relevant details for each SSID.



Wireless Monitor

Site Survey	● 2.4G Scan
Channel Survey result	Export

Wireless 2.4GHz (4 Accesspoints)

Ch	SSID	MAC Address	Security	Signal (%)	Type	Vendor
1	liao's Network	68:A8:6D:5B:75:51	WPA2PSK/AES	20	b/g/n	Apple
1	WRTR-262GN	AC:81:12:91:B3:18	WPAPSK/TKIPAES	60	b/g/n	Gemtek Technology Co., Ltd.
11	EdimaxEXT.Setup 26	74:DA:38:03:B9:26	NONE	100	b/g/n	Unknown
11	matt	74:DA:38:03:61:50	WPA2PSK/AES	100	b/g/n	Unknown

Wireless Monitor	
Site Survey	Click “Scan” to begin the survey.
Channel Survey Result	After a scan is complete, click “Export” to save the results to local storage.

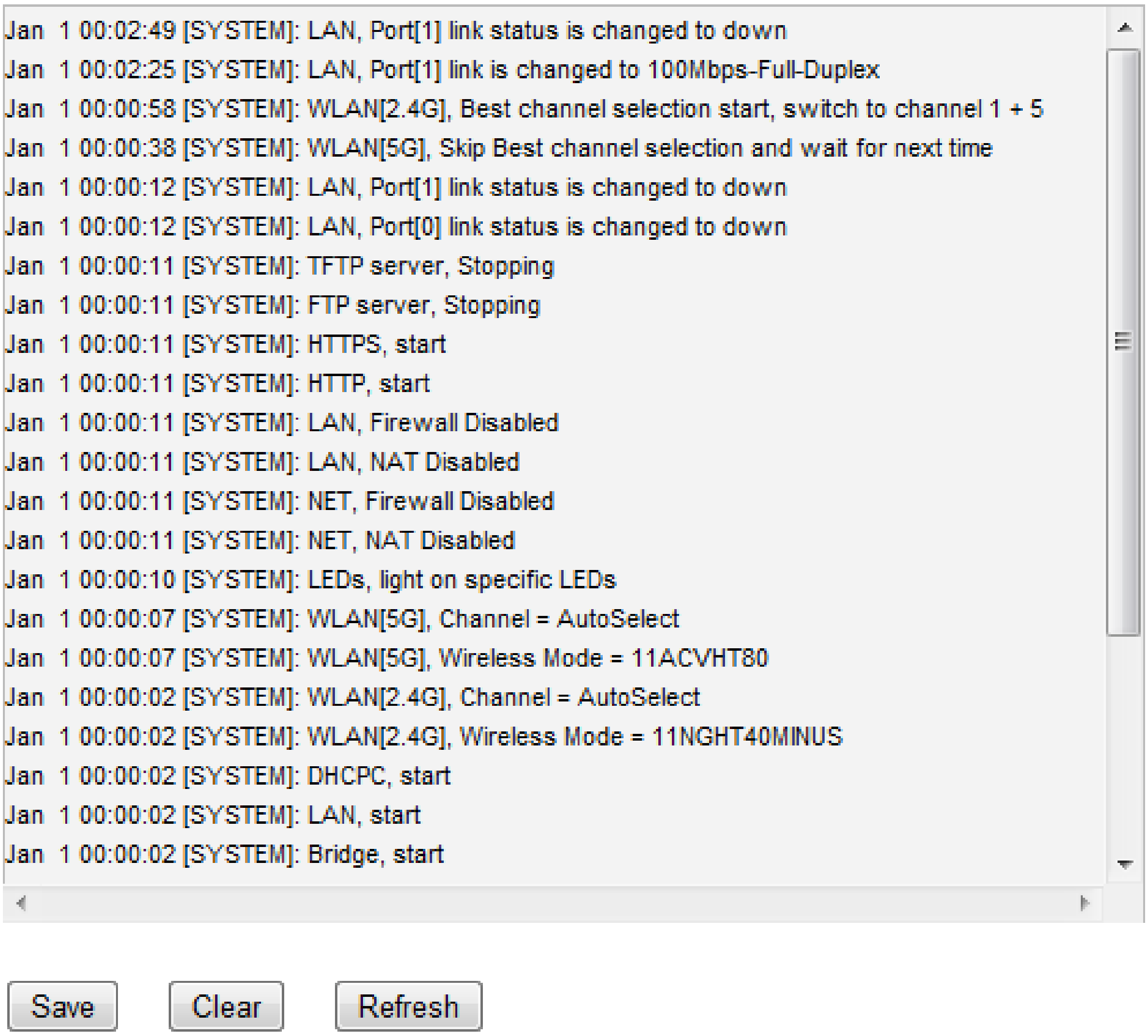
Site Survey Results	
Ch	Displays the channel number used by the specified SSID.
SSID	Displays the SSID identified by the scan.
MAC Address	Displays the MAC address of the wireless router/access point for the specified SSID.
Security	Displays the authentication/encryption type of the specified SSID.
Signal (%)	Displays the current signal strength of the SSID.
Type	Displays the 802.11 wireless networking standard(s) of the specified SSID.
Vendor	Displays the vendor of the wireless router/access point for the specified SSID.

IV-1-4. Log

System Log

The system log displays system operation information such as up time and connection processes. This information is useful for network administrators.

When the log is full, old entries are overwritten.



```
Jan  1 00:02:49 [SYSTEM]: LAN, Port[1] link status is changed to down
Jan  1 00:02:25 [SYSTEM]: LAN, Port[1] link is changed to 100Mbps-Full-Duplex
Jan  1 00:00:58 [SYSTEM]: WLAN[2.4G], Best channel selection start, switch to channel 1 + 5
Jan  1 00:00:38 [SYSTEM]: WLAN[5G], Skip Best channel selection and wait for next time
Jan  1 00:00:12 [SYSTEM]: LAN, Port[1] link status is changed to down
Jan  1 00:00:12 [SYSTEM]: LAN, Port[0] link status is changed to down
Jan  1 00:00:11 [SYSTEM]: TFTP server, Stopping
Jan  1 00:00:11 [SYSTEM]: FTP server, Stopping
Jan  1 00:00:11 [SYSTEM]: HTTPS, start
Jan  1 00:00:11 [SYSTEM]: HTTP, start
Jan  1 00:00:11 [SYSTEM]: LAN, Firewall Disabled
Jan  1 00:00:11 [SYSTEM]: LAN, NAT Disabled
Jan  1 00:00:11 [SYSTEM]: NET, Firewall Disabled
Jan  1 00:00:11 [SYSTEM]: NET, NAT Disabled
Jan  1 00:00:10 [SYSTEM]: LEDs, light on specific LEDs
Jan  1 00:00:07 [SYSTEM]: WLAN[5G], Channel = AutoSelect
Jan  1 00:00:07 [SYSTEM]: WLAN[5G], Wireless Mode = 11ACVHT80
Jan  1 00:00:02 [SYSTEM]: WLAN[2.4G], Channel = AutoSelect
Jan  1 00:00:02 [SYSTEM]: WLAN[2.4G], Wireless Mode = 11NGHT40MINUS
Jan  1 00:00:02 [SYSTEM]: DHCPC, start
Jan  1 00:00:02 [SYSTEM]: LAN, start
Jan  1 00:00:02 [SYSTEM]: Bridge, start
```

Save	Click to save the log as a file on your local computer.
Clear	Clear all log entries.
Refresh	Refresh the current log.

The following information/events are recorded by the log:

- **USB**
  Mount & unmount
- **Wireless Client**
  Connected & disconnected
  Key exchange success & fail
- **Authentication**
  Authentication fail or successful.
- **Association**
  Success or fail
- **WPS**
  M1 - M8 messages
  WPS success
- **Change Settings**
- **System Boot**
  Displays current model name
- **NTP Client**
- **Wired Link**
  LAN Port link status and speed status
- **Proxy ARP**
  Proxy ARP module start & stop
- **Bridge**
  Bridge start & stop.
- **SNMP**
  SNMP server start & stop.
- **HTTP**
  HTTP start & stop.
- **HTTPS**
  HTTPS start & stop.
- **SSH**
  SSH-client server start & stop.
- **Telnet**
  Telnet-client server start or stop.
- **WLAN (2.4G)**
  WLAN (2.4G] channel status and country/region status

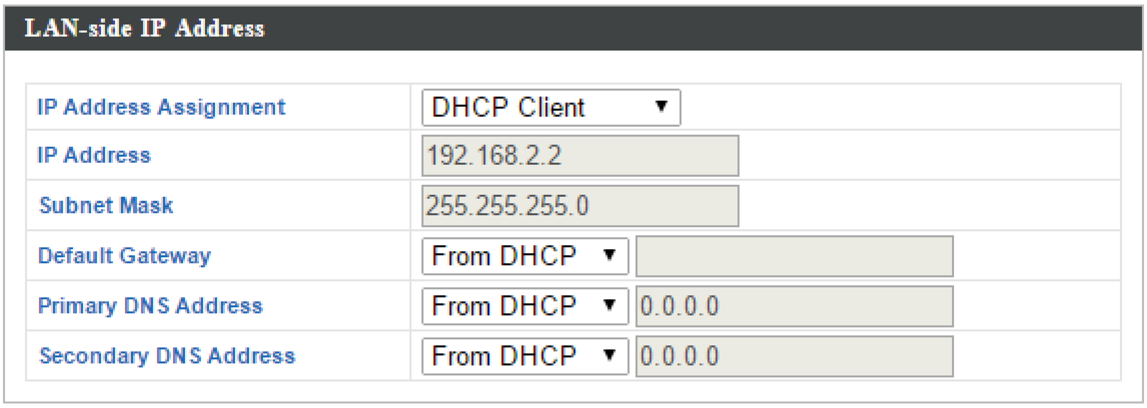
IV-2. Network Settings

Screenshots displayed are examples. The information shown on your screen will vary depending on your configuration.

IV-2-1. LAN-Side IP Address

The “LAN-side IP address” page allows you to configure your access point on your Local Area Network (LAN). You can enable the access point to dynamically receive an IP address from your router’s DHCP server or you can specify a static IP address for your access point, as well as configure DNS servers.

The access point’s default IP address is 192.168.2.2.



LAN-side IP Address

IP Address Assignment	DHCP Client ▾	
IP Address	192.168.2.2	
Subnet Mask	255.255.255.0	
Default Gateway	From DHCP ▾	
Primary DNS Address	From DHCP ▾	0.0.0.0
Secondary DNS Address	From DHCP ▾	0.0.0.0

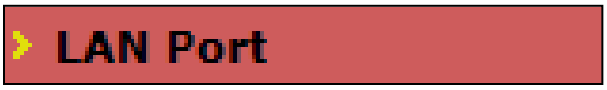
LAN-side IP Address	
IP Address Assignment	Select “DHCP Client” for your access point to be assigned a dynamic IP address from your router’s DHCP server, or select “Static IP” to manually specify a static/fixed IP address for your access point (below).
IP Address	Specify the IP address here. This IP address will be assigned to your access point and will replace the default IP address.
Subnet Mask	Specify a subnet mask. The default value is 255.255.255.0

Default Gateway	For DHCP users, select “From DHCP” to get default gateway from your DHCP server or “User-Defined” to enter a gateway manually. For static IP users, the default value is blank.

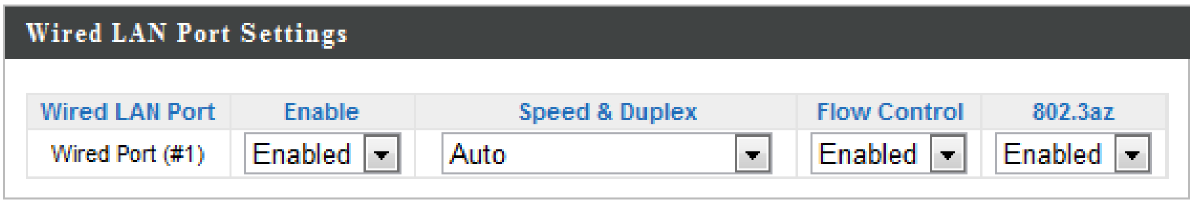
DHCP users can select to get DNS servers’ IP address from DHCP or manually enter a value. For static IP users, the default value is blank.

Primary Address	DHCP users can select “From DHCP” to get primary DNS server’s IP address from DHCP or “User-Defined” to manually enter a value. For static IP users, the default value is blank.
Secondary Address	Users can manually enter a value when DNS server’s primary address is set to “User-Defined”.

IV-2-2. LAN Port



The “LAN Port” page allows you to configure the settings for your access point’s two wired LAN (Ethernet) ports.



Wired LAN Port Settings

Wired LAN Port	Enable	Speed & Duplex	Flow Control	802.3az
Wired Port (#1)	Enabled	Auto	Enabled	Enabled

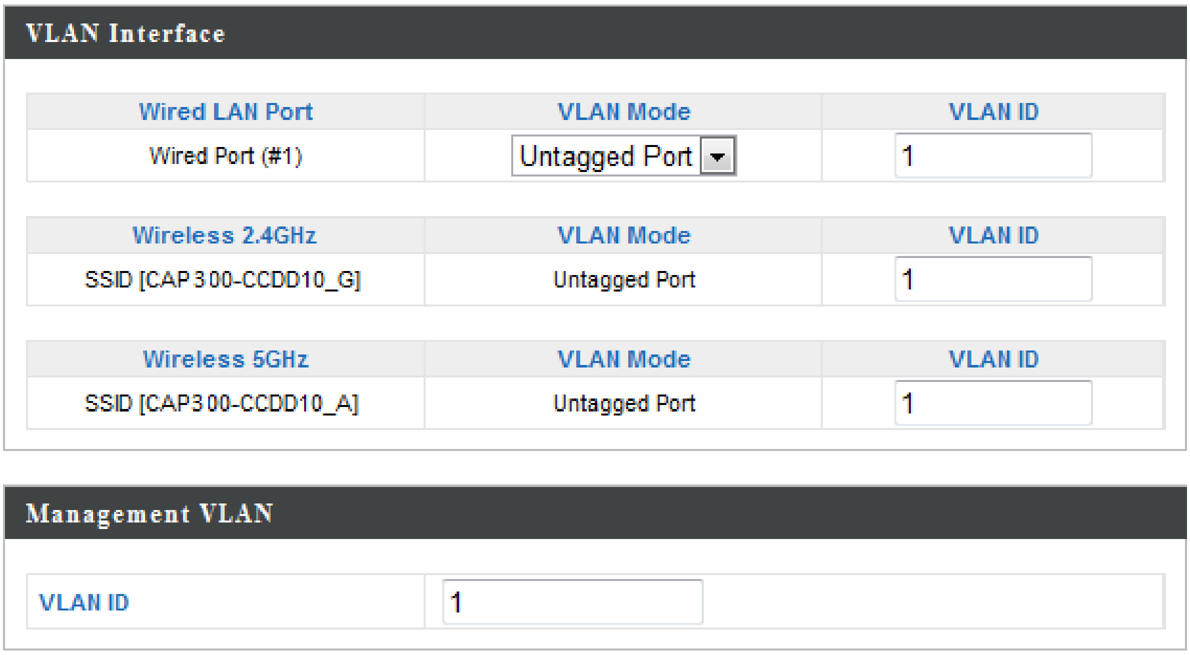
Wired LAN Port	Identifies LAN port 1 or 2.
Enable	Enable/disable specified LAN port.
Speed & Duplex	Select a speed & duplex type for specified LAN port, or use the “Auto” value. LAN ports can operate up to 1000Mbps and full-duplex enables simultaneous data packets transfer/receive.
Flow Control	Enable/disable flow control. Flow control can pause new session request until current data processing is complete, in order to avoid device overloads under heavy traffic.
802.3az	Enable/disable 802.3az. 802.3az is an Energy Efficient Ethernet feature which disables unused interfaces to reduce power usage.

IV-2-3. VLAN

VLAN

The “VLAN” (Virtual Local Area Network) enables you to configure VLAN settings. A VLAN is a local area network which maps workstations virtually instead of physically and allows you to group together or isolate users from each other. VLAN IDs 1 – 4095 are supported.

VLAN IDs in the range 1 – 4095 are supported.



VLAN Interface

Wired LAN Port	VLAN Mode	VLAN ID
Wired Port (#1)	Untagged Port ▾	1

Wireless 2.4GHz	VLAN Mode	VLAN ID
SSID [CAP300-CCDD10_G]	Untagged Port	1

Wireless 5GHz	VLAN Mode	VLAN ID
SSID [CAP300-CCDD10_A]	Untagged Port	1

Management VLAN

VLAN ID	1

VLAN Interface	
Wired LAN Port/Wireless	Identifies LAN port 1 or 2 and wireless SSIDs.
VLAN Mode	Select “Tagged Port” or “Untagged Port” for specified LAN interface.
VLAN ID	Set a VLAN ID for specified interface, if “Untagged Port” is selected.

Management VLAN	
VLAN ID	Specify the VLAN ID of the management VLAN. Only the hosts belonging to the same VLAN can manage the device.

IV-3. Wireless Settings

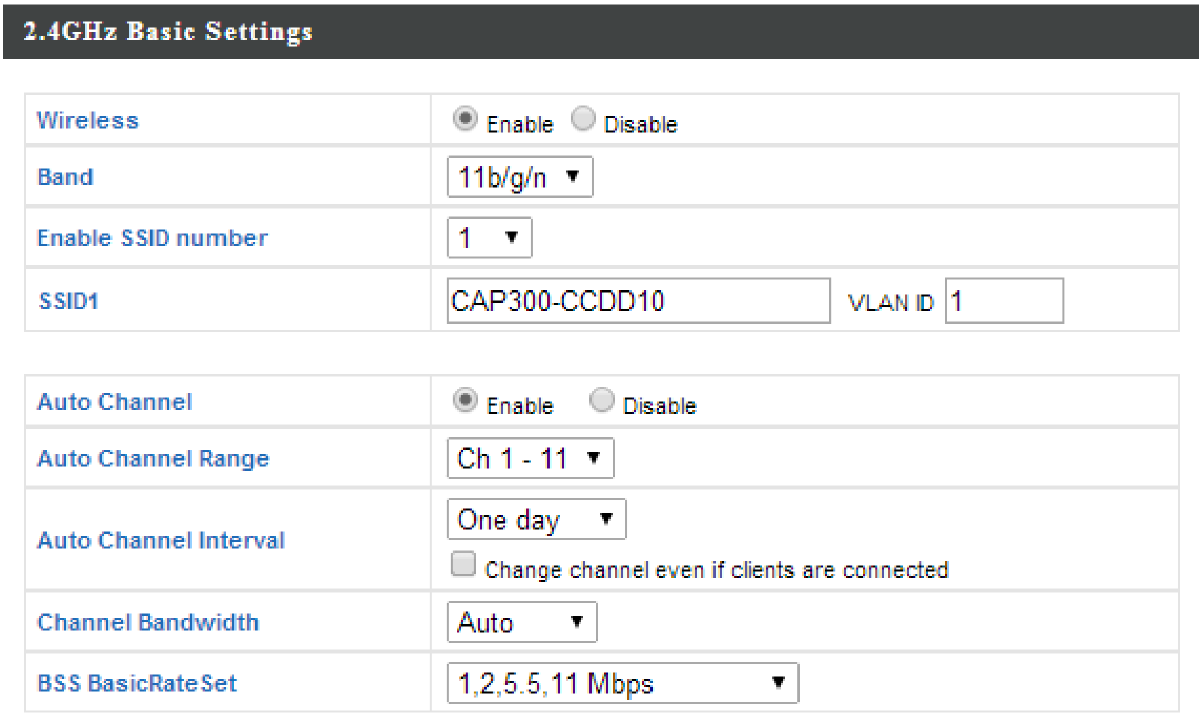
Screenshots displayed are examples. The information shown on your screen will vary depending on your configuration.

IV-3-1. 2.4GHz 11bgn

The “2.4GHz 11bgn” menu allows you to view and configure information for your access point’s 2.4GHz wireless network across five categories: Basic, Advanced, Security, WDS & Schedule.

IV-3-1-1. Basic

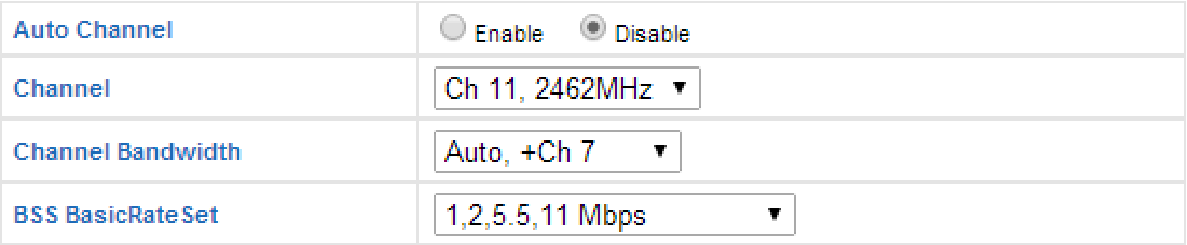
The “Basic” screen displays basic settings for your access point’s 2.4GHz Wi-Fi network (s).



2.4GHz Basic Settings

Wireless	● Enable ○ Disable
Band	11b/g/n ▼
Enable SSID number	1 ▼
SSID1	CAP300-CCDD10 VLAN ID 1

Auto Channel	● Enable ○ Disable
Auto Channel Range	Ch 1 - 11 ▼
Auto Channel Interval	One day ▼ □ Change channel even if clients are connected
Channel Bandwidth	Auto ▼
BSS BasicRateSet	1,2,5.5,11 Mbps ▼



Auto Channel	○ Enable ● Disable
Channel	Ch 11, 2462MHz ▼
Channel Bandwidth	Auto, +Ch 7 ▼
BSS BasicRateSet	1,2,5.5,11 Mbps ▼

Wireless	Enable or disable the access point’s 2.4GHz wireless radio. When disabled, no 2.4GHz SSIDs will be active.
Band	Select the wireless standard used for the access point. Combinations of 802.11b, 802.11g & 802.11n can be selected.
Enable SSID Number	Select how many SSIDs to enable for the 2.4GHz frequency from the drop down menu. A maximum of 16 can be enabled.
SSID#	Enter the SSID name for the specified SSID (up to 16). The SSID can consist of any combination of up to 32 alphanumeric characters.
VLAN ID	Specify a VLAN ID for each SSID.
Auto Channel	Enable/disable auto channel selection. Auto channel selection will automatically set the wireless channel for the access point’s 2.4GHz frequency based on availability and potential interference. When disabled, select a channel manually as shown in the next table.
Auto Channel Range	Select a range from which the auto channel setting (above) will choose a channel.
Auto Channel Interval	Specify a frequency for how often the auto channel setting will check/reassign the wireless channel. Check/uncheck the “Change channel even if clients are connected” box according to your preference.
Channel Bandwidth	Set the channel bandwidth: 20MHz (lower performance but less interference), 40MHz (higher performance but potentially higher interference) or Auto (automatically select based on interference level).
BSS BasicRateSet	Set a Basic Service Set (BSS) rate: this is a series of rates to control communication frames for wireless clients.

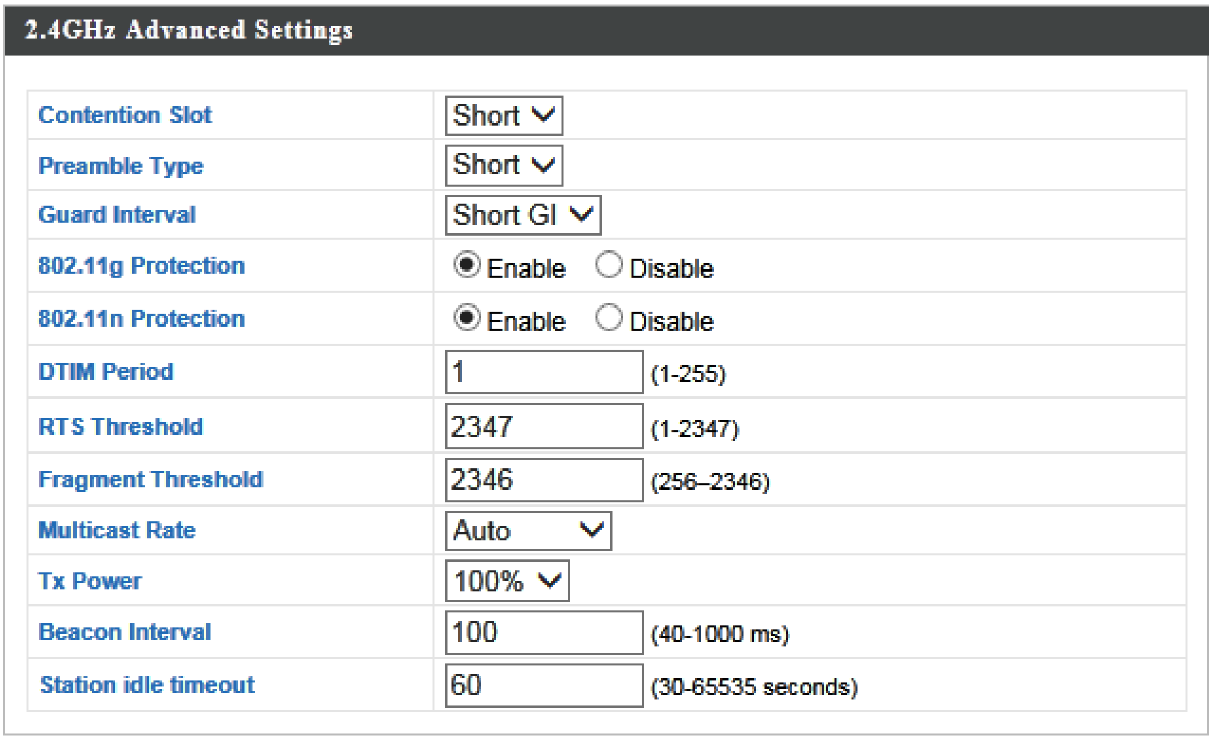
When auto channel is disabled, select a wireless channel manually:

Channel	Select a wireless channel from 1 – 11.
Channel Bandwidth	Set the channel bandwidth: 20MHz (lower performance but less interference), 40MHz (higher performance but potentially higher interference) or Auto (automatically select based on interference level).
BSS BasicRate Set	Set a Basic Service Set (BSS) rate: this is a series of rates to control communication frames for wireless clients.

IV-3-1-2. Advanced

These settings are for experienced users only. Please do not change any of the values on this page unless you are already familiar with these functions.

Changing these settings can adversely affect the performance of your access point.



2.4GHz Advanced Settings

Contention Slot	Short
Preamble Type	Short
Guard Interval	Short GI
802.11g Protection	● Enable ○ Disable
802.11n Protection	● Enable ○ Disable
DTIM Period	1 (1-255)
RTS Threshold	2347 (1-2347)
Fragment Threshold	2346 (256–2346)
Multicast Rate	Auto
Tx Power	100%
Beacon Interval	100 (40-1000 ms)
Station idle timeout	60 (30-65535 seconds)

Contention Slot	Select “Short” or “Long” – this value is used for contention windows in WMM (see **IV-3-6. WMM**).
Preamble Type	Set the wireless radio preamble type. The preamble type in 802.11 based wireless communication defines the length of the CRC (Cyclic Redundancy Check) block for communication between the access point and roaming wireless adapters. The default value is “Short Preamble”.
Guard Interval	Set the guard interval. A shorter interval can improve performance.

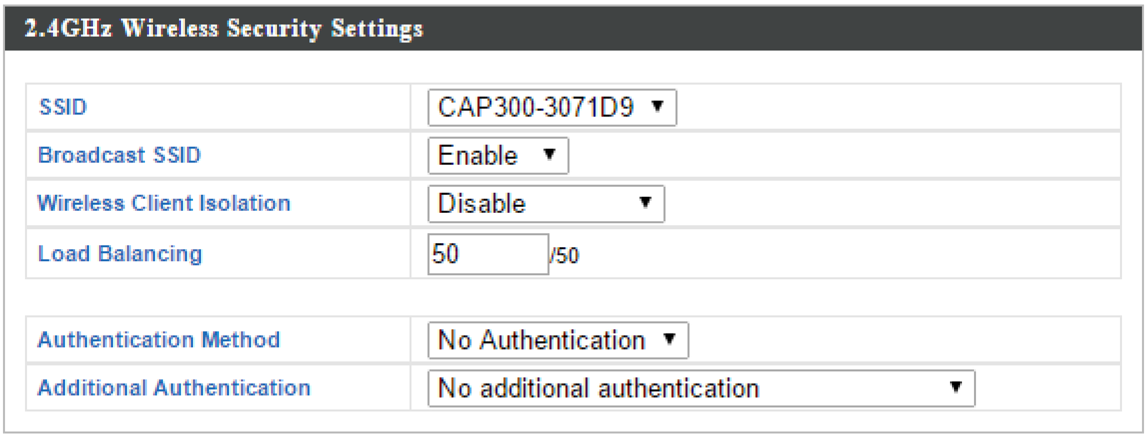
802.11g Protection	Enable/disable 802.11g protection, which increases reliability but reduces bandwidth (clients will send Request to Send (RTS) to access point, and access point will broadcast Clear to Send (CTS), before a packet is sent from client.)
802.11n Protection	Enable/disable 802.11n protection, which increases reliability but reduces bandwidth (clients will send Request to Send (RTS) to access point, and access point will broadcast Clear to Send (CTS), before a packet is sent from client.)
DTIM Period	Set the DTIM (delivery traffic indication message) period value of the wireless radio. The default value is 1.
RTS Threshold	Set the RTS threshold of the wireless radio. The default value is 2347.
Fragment Threshold	Set the fragment threshold of the wireless radio. The default value is 2346.
Multicast Rate	Set the transfer rate for multicast packets or use the "Auto" setting.
Tx Power	Set the power output of the wireless radio. You may not require 100% output power. Setting a lower power output can enhance security since potentially malicious/unknown users in distant areas will not be able to access your signal.
Beacon Interval	Set the beacon interval of the wireless radio. The default value is 100.
Station idle timeout	Set the interval for keepalive messages from the access point to a wireless client to verify if the station is still alive/active.

IV-3-1-3. Security

The access point provides various security options (wireless data encryption). When data is encrypted, information transmitted wirelessly cannot be read by anyone who does not know the correct encryption key.

It's essential to configure wireless security in order to prevent unauthorised access to your network.

Select hard-to-guess passwords which include combinations of numbers, letters and symbols, and change your password regularly.



2.4GHz Wireless Security Settings

SSID	CAP300-3071D9 ▼
Broadcast SSID	Enable ▼
Wireless Client Isolation	Disable ▼
Load Balancing	50 /50
Authentication Method	No Authentication ▼
Additional Authentication	No additional authentication ▼

SSID Selection	Select which SSID to configure security settings for.
Broadcast SSID	Enable or disable SSID broadcast. When enabled, the SSID will be visible to clients as an available Wi-Fi network. When disabled, the SSID will not be visible as an available Wi-Fi network to clients – clients must manually enter the SSID in order to connect. A hidden (disabled) SSID is typically more secure than a visible (enabled) SSID.
Wireless Client Isolation	Enable or disable wireless client isolation. Wireless client isolation prevents clients connected to the access point from communicating with each other and improves security. Typically, this function is useful for corporate environments or public hot spots and can prevent brute force attacks on clients' usernames and passwords.
Load Balancing	Load balancing limits the number of wireless clients connected to an SSID. Set a load balancing value (maximum 50).
Authentication Method	Select an authentication method from the drop down menu and refer to the information below appropriate for your method.
Additional Authentication	Select an additional authentication method from the drop down menu and refer to the information below (**IV-3-1-3-6.**) appropriate for your method.

IV-3-1-3-1. No Authentication

Authentication is disabled and no password/key is required to connect to the access point.

Disabling wireless authentication is not recommended. When disabled, anybody within range can connect to your device's SSID.

IV-3-1-3-2. WEP

WEP (Wired Equivalent Privacy) is a basic encryption type. For a higher level of security consider using WPA encryption.

Key Length	Select 64-bit or 128-bit. 128-bit is more secure than 64-bit and is recommended.
Key Type	Choose from “ASCII” (any alphanumerical character 0-9, a-z and A-Z) or “Hex” (any characters from 0-9, a-f and A-F).
Default Key	Select which encryption key (1 – 4 below) is the default key. For security purposes, you can set up to four keys (below) and change which is the default key.
Encryption Key 1 – 4	Enter your encryption key/password according to the format you selected above.

IV-3-1-3-3. IEEE802.1x/EAP

Key Length	Select 64-bit or 128-bit. 128-bit is more secure than 64-bit and is recommended.

IV-3-1-3-4. WPA-PSK

WPA-PSK is a secure wireless encryption type with strong data protection and user authentication, utilizing 128-bit encryption keys.

WPA Type	Select from WPA/WPA2 Mixed Mode-PSK, WPA2 or WPA only. WPA2 is safer than WPA only, but not supported by all wireless clients. Please make sure your wireless client supports your selection.
Encryption	Select “TKIP/AES Mixed Mode” or “AES” encryption type.
Key Renewal Interval	Specify a frequency for key renewal in minutes.
Pre-Shared Key Type	Choose from “Passphrase” (8 – 63 alphanumeric characters) or “Hex” (up to 64

	characters from 0-9, a-f and A-F).
Pre-Shared Key	Please enter a security key/password according to the format you selected above.

IV-3-1-3-5. WPA-EAP

WPA Type	Select from WPA/WPA2 Mixed Mode-EAP, WPA2-EAP or WPA-EAP.
Encryption Type	Select "TKIP/AES Mixed Mode" or "AES" encryption type.
Key Renewal Interval	Specify a frequency for key renewal in minutes.

WPA-EAP must be disabled to use MAC-RADIUS authentication.

IV-3-1-3-6. Additional Authentication

Additional wireless authentication methods can also be used:

WPS must be disabled to use additional authentication. See *IV-3-3.* ***for WPS settings.***

MAC Address Filter
Restrict wireless clients access based on MAC address specified in the MAC filter table.

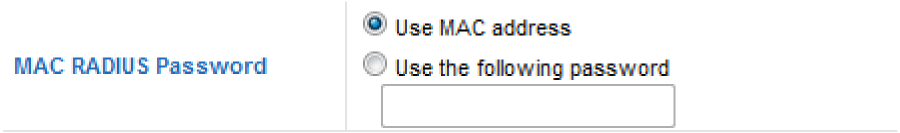
See *IV-3-5.MAC Filter* ***to configure MAC filtering.***

MAC Filter & MAC-RADIUS Authentication
Restrict wireless clients access using both of the above MAC filtering & RADIUS authentication methods.

MAC-RADIUS Authentication
Restrict wireless clients access based on MAC address via a RADIUS server, or password authentication via a RADIUS server.

See *IV-3-4.RADIUS* ***to configure RADIUS servers.***

WPS must be disabled to use MAC-RADIUS authentication. See *IV-3-3*. ***for WPS settings.***



MAC RADIUS Password

● Use MAC address

○ Use the following password

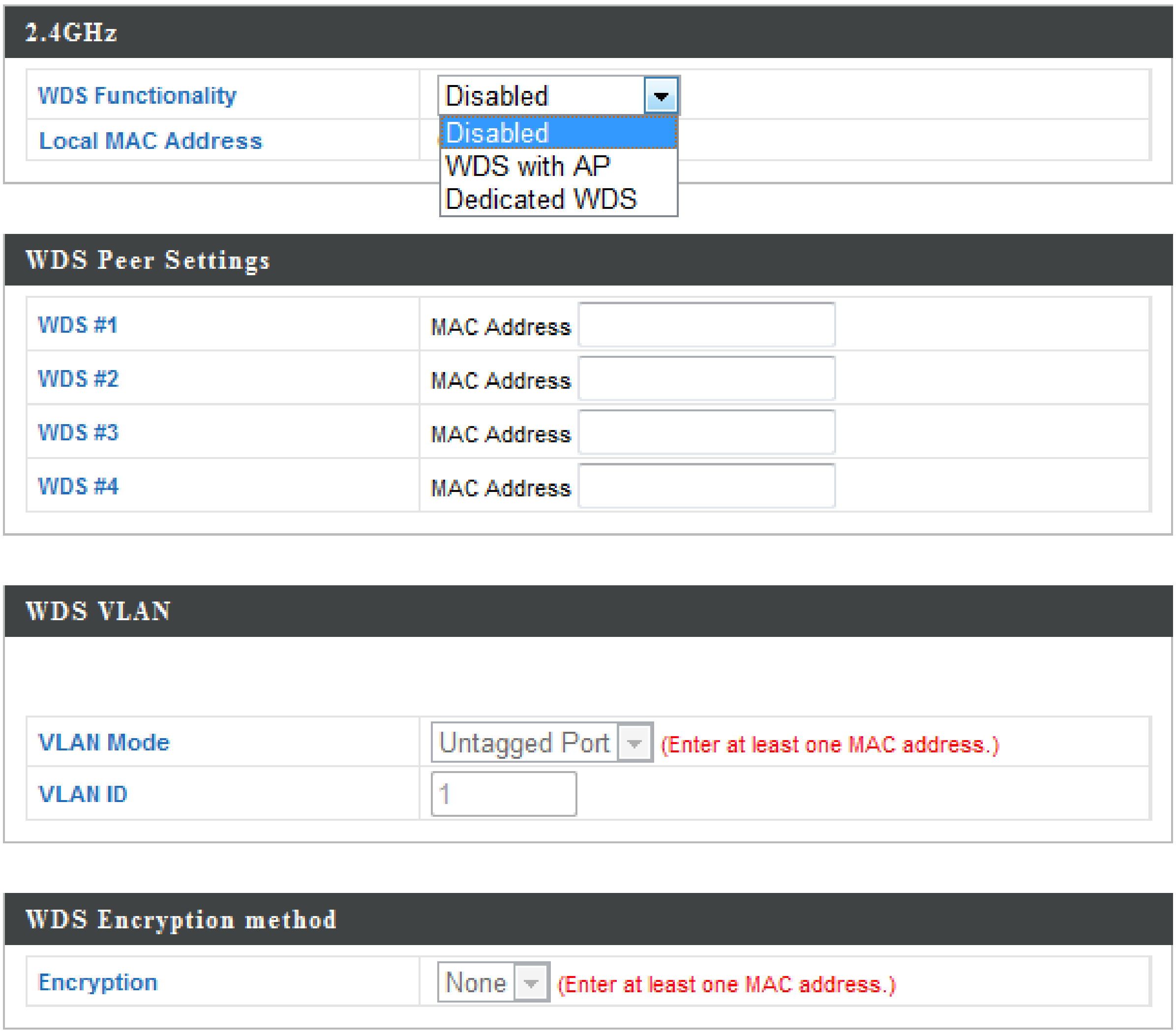
MAC RADIUS Password	Select whether to use MAC address or password authentication via RADIUS server. If you select “Use the following password”, enter the password in the field below. The password should match the “Shared Secret” used in **IV-3-4. RADIUS**.

IV-3-1-4. WDS

Wireless Distribution System (WDS) can bridge/repeat access points together in an extended network. WDS settings can be configured as shown below.

When using WDS, configure the IP address of each access point to be in the same subnet and ensure there is only one active DHCP server among connected access points, preferably on the WAN side.

WDS must be configured on each access point, using correct MAC addresses. All access points should use the same wireless channel and encryption method.



2.4GHz

WDS Functionality	Disabled
Local MAC Address	

WDS Peer Settings

WDS #1	MAC Address	
WDS #2	MAC Address	
WDS #3	MAC Address	
WDS #4	MAC Address	

WDS VLAN

VLAN Mode	Untagged Port (Enter at least one MAC address.)
VLAN ID	1

WDS Encryption method

Encryption	None (Enter at least one MAC address.)

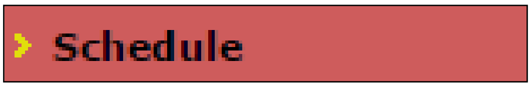
2.4GHz	
WDS Functionality	Select "WDS with AP" to use WDS with access point or "WDS Dedicated Mode" to use WDS and also block communication with regular wireless clients. When WDS is used, each access point should be configured with corresponding MAC addresses, wireless channel and wireless encryption method.
Local MAC Address	Displays the MAC address of your access point.

WDS Peer Settings	
WDS #	Enter the MAC address for up to four other WDS devices you wish to connect.

WDS VLAN	
VLAN Mode	Specify the WDS VLAN mode to "Untagged Port" or "Tagged Port".
VLAN ID	Specify the WDS VLAN ID when "Untagged Port" is selected above.

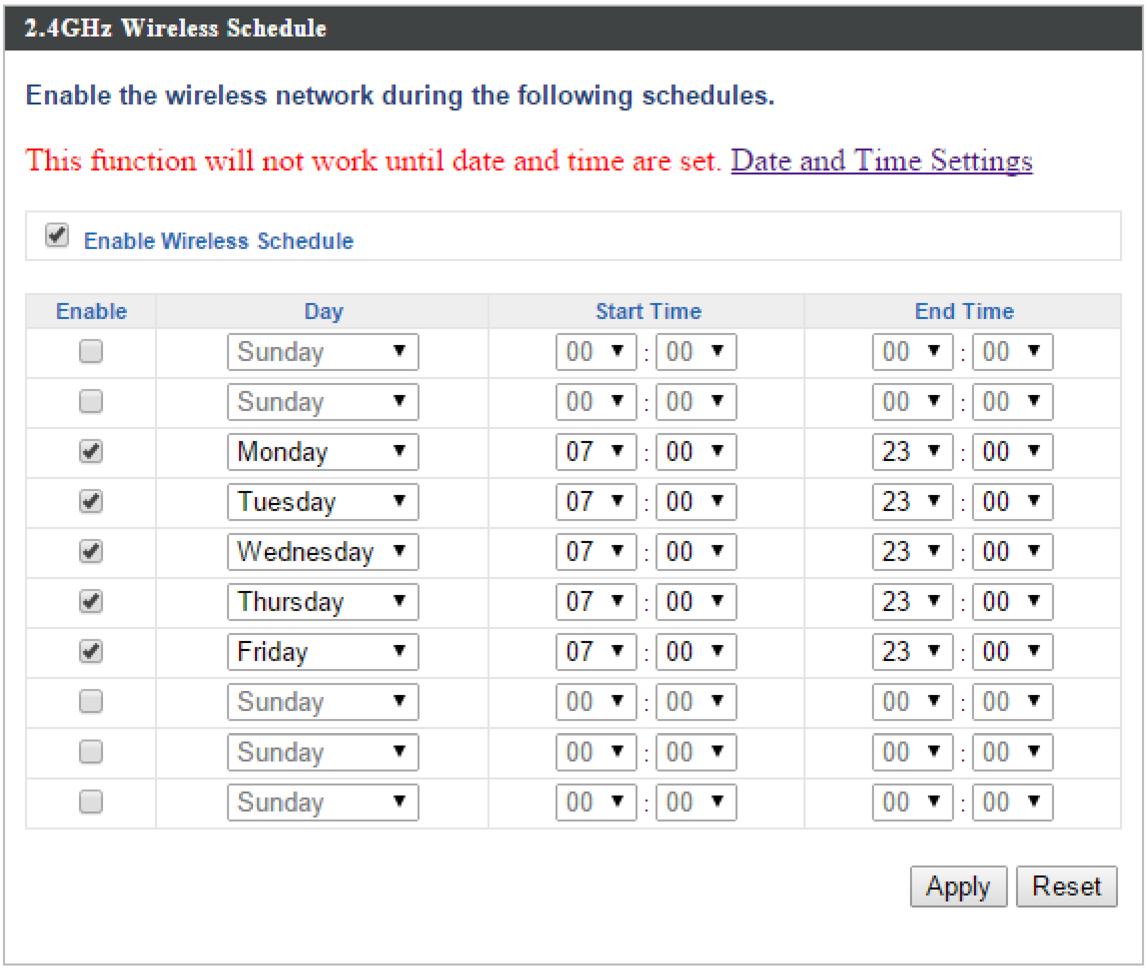
WDS Encryption method	
Encryption	Select whether to use "None" or "AES" encryption and enter a pre-shared key for AES consisting of 8-63 alphanumeric characters.

IV-3-1-5. Schedule



The schedule feature allows you to automate the wireless network for specified times. Check/uncheck the box "Enable Wireless Schedule" to enable/disable the wireless scheduling function.

The access point's time and date settings must be set in order to use this function.



2.4GHz Wireless Schedule

Enable the wireless network during the following schedules.

This function will not work until date and time are set. Date and Time Settings

☑ Enable Wireless Schedule

Enable	Day	Start Time	End Time
□	Sunday	00 : 00	00 : 00
□	Sunday	00 : 00	00 : 00
☑	Monday	07 : 00	23 : 00
☑	Tuesday	07 : 00	23 : 00
☑	Wednesday	07 : 00	23 : 00
☑	Thursday	07 : 00	23 : 00
☑	Friday	07 : 00	23 : 00
□	Sunday	00 : 00	00 : 00
□	Sunday	00 : 00	00 : 00
□	Sunday	00 : 00	00 : 00

Wireless scheduling can save energy and increase the security of your network.

1. Use the "Enable" checkboxes to select schedule(s).

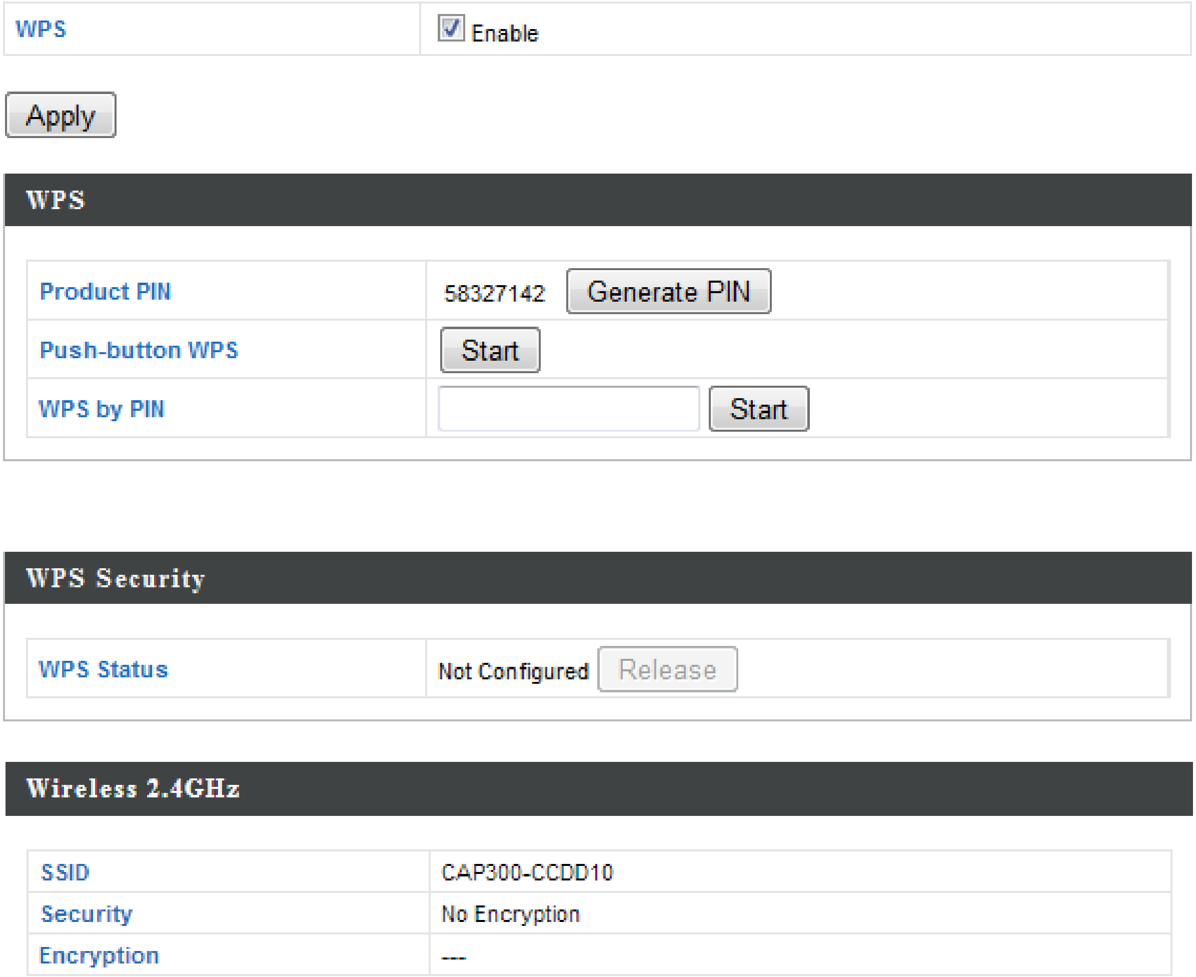
2. Specify a day, start time and end time for the schedule using the drop-down menus.

3. Click "Apply" to save the schedules or "Reset" to reset all values back to default.

IV-3-2. WPS

Wi-Fi Protected Setup is a simple way to establish connections between WPS compatible devices. WPS can be activated on compatible devices by pushing a WPS button on the device or from within the device’s firmware/configuration interface (known as PBC or “Push Button Configuration”). When WPS is activated in the correct manner and at the correct time for two compatible devices, they will automatically connect. “PIN code WPS” is a variation of PBC which includes the additional use of a PIN code between the two devices for verification.

Please refer to manufacturer’s instructions for your other WPS device.



WPS	☑ Enable

WPS

Product PIN	58327142 Generate PIN
Push-button WPS	Start
WPS by PIN	Start

WPS Security

WPS Status	Not Configured Release

Wireless 2.4GHz

SSID	CAP300-CCDD10
Security	No Encryption
Encryption	---

WPS	Check/uncheck this box to enable/disable WPS functionality. WPS must be disabled when using MAC-RADIUS authentication (see **IV-3-1-3-6 & IV-3-4**).

WPS	
Product PIN	Displays the WPS PIN code of the device, used for PIN code WPS. You will be required to enter this PIN code into another WPS device for PIN code WPS. Click “Generate PIN” to generate a new WPS PIN code.
Push-Button WPS	Click “Start” to activate WPS on the access point for approximately 2 minutes. This has the same effect as physically pushing the access point’s WPS button.
WPS by PIN	Enter the PIN code of another WPS device and click “Start” to attempt to establish a WPS connection for approximately 2 minutes.

WPS Security	
WPS Status	WPS security status is displayed here. Click “Release” to clear the existing status.

Wireless 2.4GHz	
SSID	Displays the SSID name(s) for the specified frequency.
Security	Displays the security for the specified SSID.
Encryption	Displays the encryption type for the specified SSID. See **IV-3. Wireless Settings**

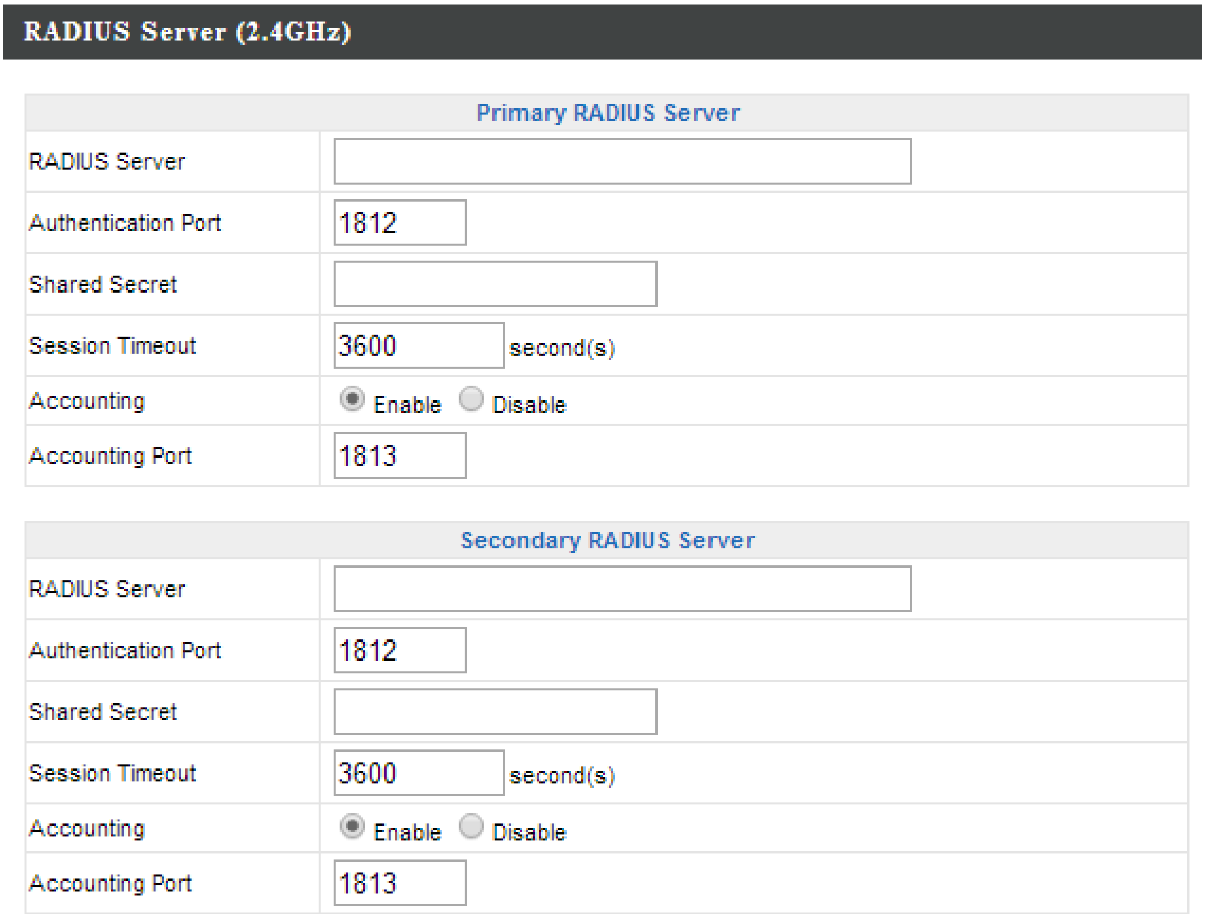
IV-3-3. RADIUS

The RADIUS menu allows you to configure the access point’s external RADIUS server settings.

A RADIUS server provides user-based authentication to improve security and offer wireless client control – users can be authenticated before gaining access to a network.

The access point can utilize both a primary and secondary (backup) external RADIUS server.

To use RADIUS servers, go to** “Wireless Settings” **→** “Security” **and select** “MAC RADIUS Authentication” **→** “Additional Authentication” **and select** “MAC RADIUS Authentication” **(see** IV-3-1-3. **&** IV-3-2-3**).



RADIUS Server (2.4GHz)

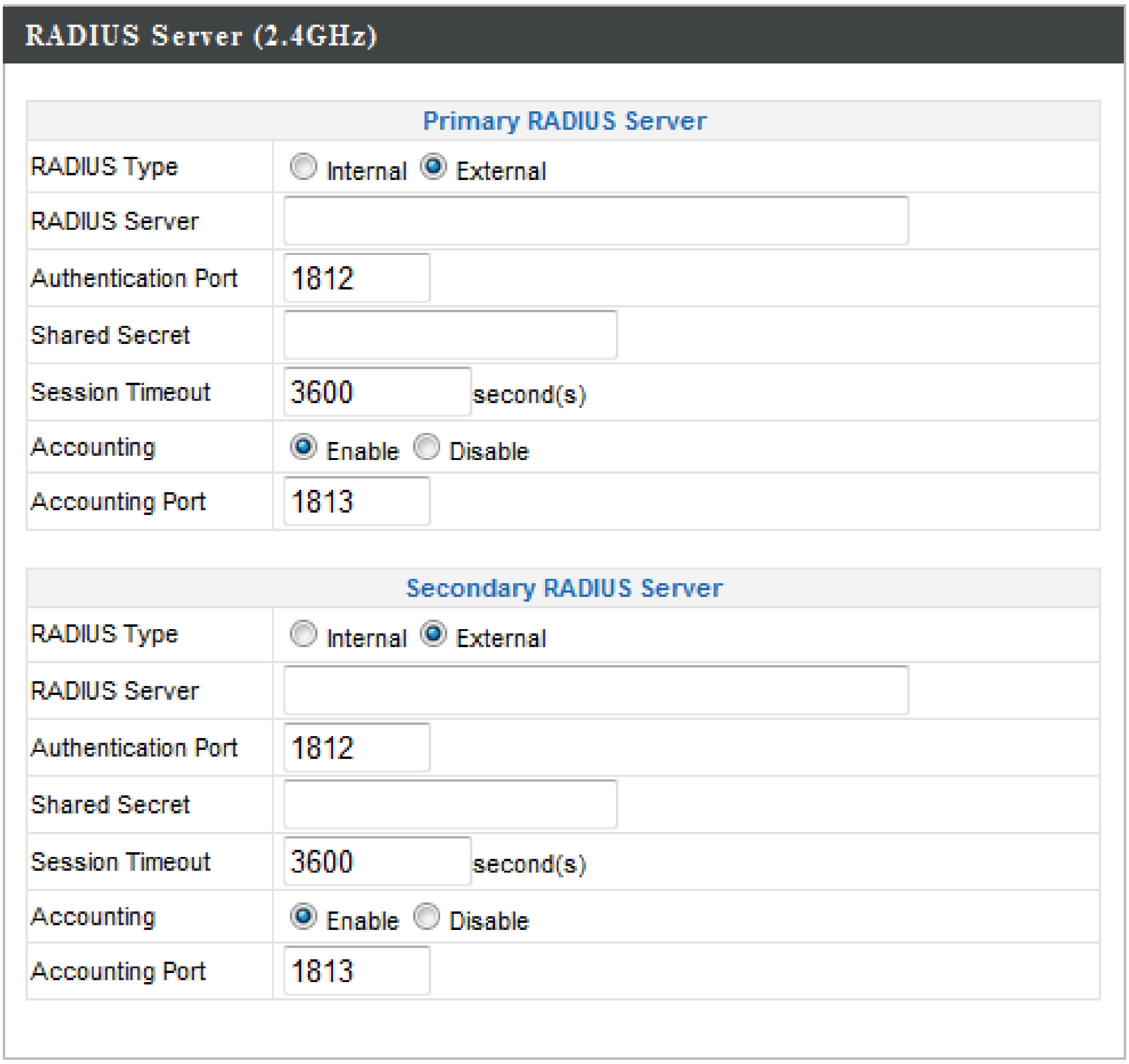
Primary RADIUS Server	
RADIUS Server	
Authentication Port	1812
Shared Secret	
Session Timeout	3600 second(s)
Accounting	● Enable ○ Disable
Accounting Port	1813
Secondary RADIUS Server	
RADIUS Server	
Authentication Port	1812
Shared Secret	
Session Timeout	3600 second(s)
Accounting	● Enable ○ Disable
Accounting Port	1813

RADIUS Server	Enter the RADIUS server host IP address.

Authentication Port	Set the UDP port used in the authentication protocol of the RADIUS server. Value must be between 1 – 65535.
Shared Secret	Enter a shared secret/password between 1 – 99 characters in length. This should match the “MAC-RADIUS” password used in **IV-3-1-3-6** or **IV-3-2-3**.
Session Timeout	Set a duration of session timeout in seconds between 0 – 86400.
Accounting	Enable or disable RADIUS accounting.
Accounting Port	When accounting is enabled (above), set the UDP port used in the accounting protocol of the RADIUS server. Value must be between 1 – 65535.

IV-3-3-1. RADIUS Settings

Configure the RADIUS server settings for 2.4GHz. Each frequency can use an internal or external RADIUS server.



RADIUS Server (2.4GHz)

Primary RADIUS Server

RADIUS Type	○ Internal ● External
RADIUS Server	
Authentication Port	1812
Shared Secret	
Session Timeout	3600 second(s)
Accounting	● Enable ○ Disable
Accounting Port	1813

Secondary RADIUS Server

RADIUS Type	○ Internal ● External
RADIUS Server	
Authentication Port	1812
Shared Secret	
Session Timeout	3600 second(s)
Accounting	● Enable ○ Disable
Accounting Port	1813

RADIUS Type	Select “Internal” to use the access point’s built-in RADIUS server or “external” to use an external RADIUS server.
RADIUS Server	Enter the RADIUS server host IP address.
Authentication Port	Set the UDP port used in the authentication protocol of the RADIUS server. Value must be between 1 – 65535.

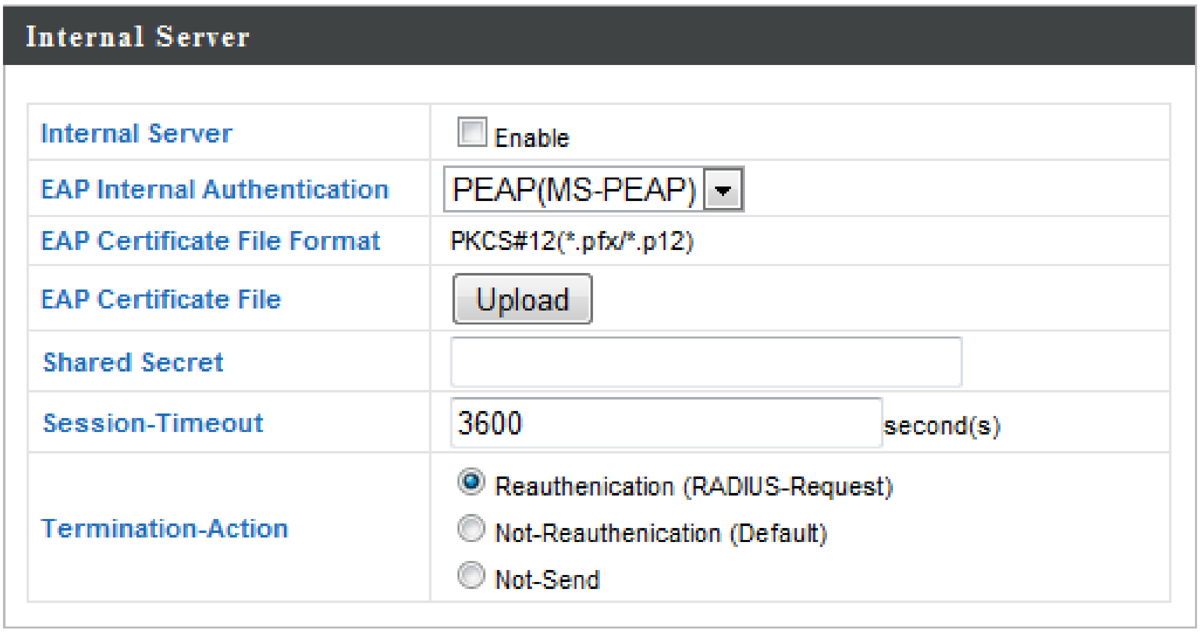
Shared Secret	Enter a shared secret/password between 1 – 99 characters in length. This should match the “MAC-RADIUS” password used in **IV-3-1-3-6** or **IV-3-2-3**.
Session Timeout	Set a duration of session timeout in seconds between 0 – 86400.
Accounting	Enable or disable RADIUS accounting.
Accounting Port	When accounting is enabled (above), set the UDP port used in the accounting protocol of the RADIUS server. Value must be between 1 – 65535.

IV-3-3-2. Internal Server

Internal Server

The access point features a built-in RADIUS server which can be configured as shown below used when “Internal” is selected for “RADIUS Type” in the “Wireless Settings” → “RADIUS” → “RADIUS Settings” menu.

To use RADIUS servers, go to** “Wireless Settings” → “Security” **and select** “MAC RADIUS Authentication” → “Additional Authentication” **and select** “MAC RADIUS Authentication” **(see** IV-3-1-3. **&** IV-3-2-3**).



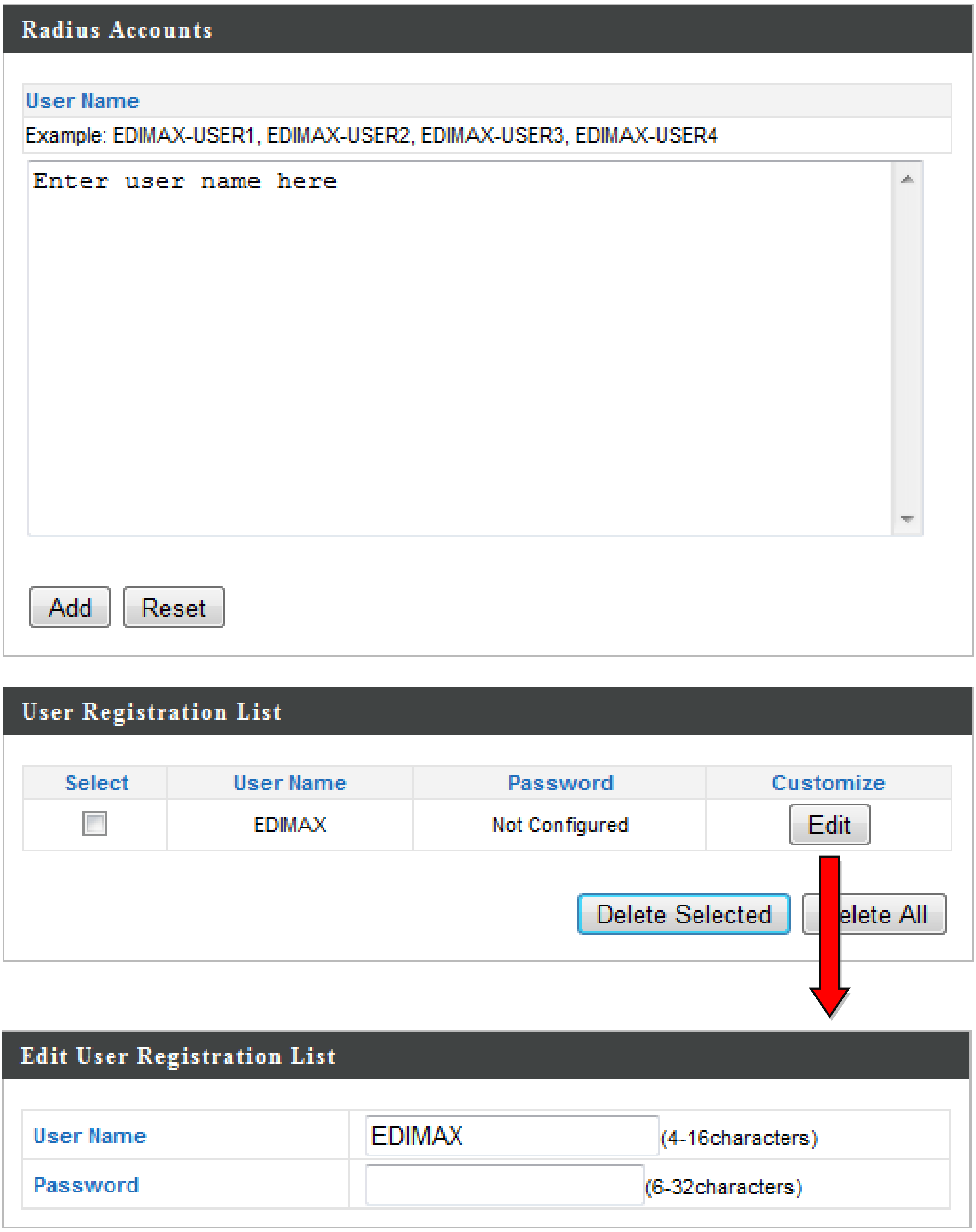
Internal Server

Internal Server	□ Enable
EAP Internal Authentication	PEAP(MS-PEAP) ▾
EAP Certificate File Format	PKCS#12(*.pfx/*.p12)
EAP Certificate File	Upload
Shared Secret	
Session-Timeout	3600 second(s)
Termination-Action	● Reauthenication (RADIUS-Request) ○ Not-Reauthenication (Default) ○ Not-Send

Internal Server	Check/uncheck to enable/disable the access point's internal RADIUS server.
EAP Internal Authentication	Select EAP internal authentication type from the drop down menu.
EAP Certificate File Format	Displays the EAP certificate file format: PCK#12(*.pfx/*.p12)
EAP Certificate File	Click "Upload" to open a new window and select the location of an EAP certificate file to use. If no certificate file is uploaded, the internal RADIUS server will use a self-made certificate.
Shared Secret	Enter a shared secret/password for use between the internal RADIUS server and RADIUS client. The shared secret should be 1 – 99 characters in length. This should match the "MAC-RADIUS" password used in **IV-3-1-3-6** or **IV-3-2-3**.
Session Timeout	Set a duration of session timeout in seconds between 0 – 86400.
Termination Action	Select a termination-action attribute: "Reauthentication" sends a RADIUS request to the access point, "Not-Reathentication" sends a default termination-action attribute to the access point, "Not-Send" no termination-action attribute is sent to the access point.

IV-3-3-3. RADIUS Accounts

The internal RADIUS server can authenticate up to 256 user accounts. The "RADIUS Accounts" page allows you to configure and manage users.



Radius Accounts

User Name

Example: EDIMAX-USER1, EDIMAX-USER2, EDIMAX-USER3, EDIMAX-USER4

Enter user name here

User Registration List

Select	User Name	Password	Customize
□	EDIMAX	Not Configured	Edit

Edit User Registration List

User Name	EDIMAX	(4-16characters)
Password		(6-32characters)

User Name	Enter the user names here, separated by commas.
Add	Click “Add” to add the user to the user registration list.
Reset	Clear text from the user name box.

Select	Check the box to select a user.
User Name	Displays the user name.
Password	Displays if specified user name has a password (configured) or not (not configured).
Customize	Click “Edit” to open a new field to set/edit a password for the specified user name (below).

Delete Selected	Delete selected user from the user registration list.
Delete All	Delete all users from the user registration list.

Edit User Registration List

User Name	Existing user name is displayed here and can be edited according to your preference.
Password	Enter or edit a password for the specified user.

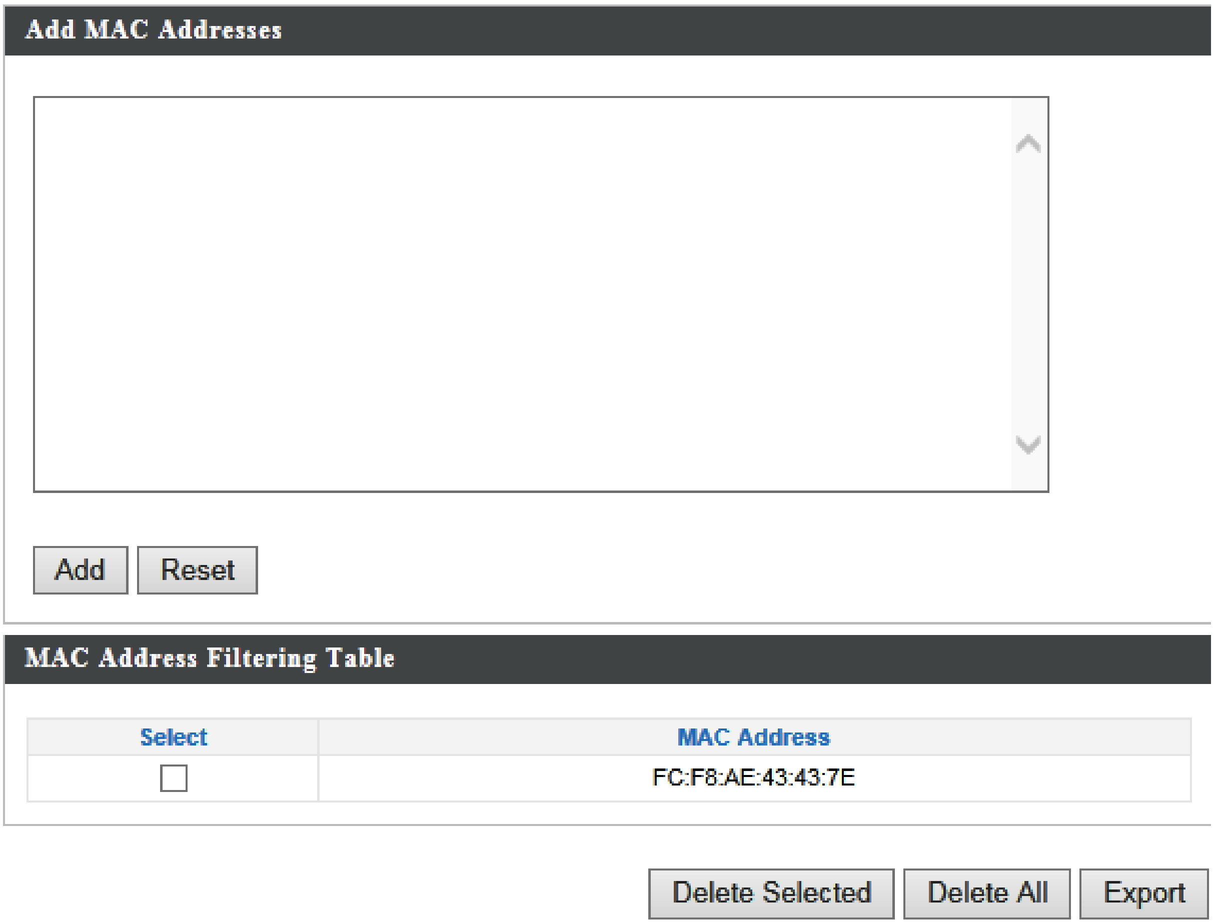
IV-3-4. MAC Filter

Mac filtering is a security feature that can help to prevent unauthorized users from connecting to your access point.

This function allows you to define a list of network devices permitted to connect to the access point. Devices are each identified by their unique MAC address. If a device which is not on the list of permitted MAC addresses attempts to connect to the access point, it will be denied.

> ***To enable MAC filtering, go to** "Wireless Settings" → "2.4G Hz 11bgn" → "Security" → "Additional Authentication" **and select** "MAC Filter" **(see** IV-3-1-3**).***

The MAC address filtering table is displayed below:



Select	MAC Address
□	FC:F8:AE:43:43:7E

Add MAC Address	Enter a MAC address of computer or network device manually e.g. 'aa-bb-cc-dd-ee-ff' or enter multiple MAC addresses separated with

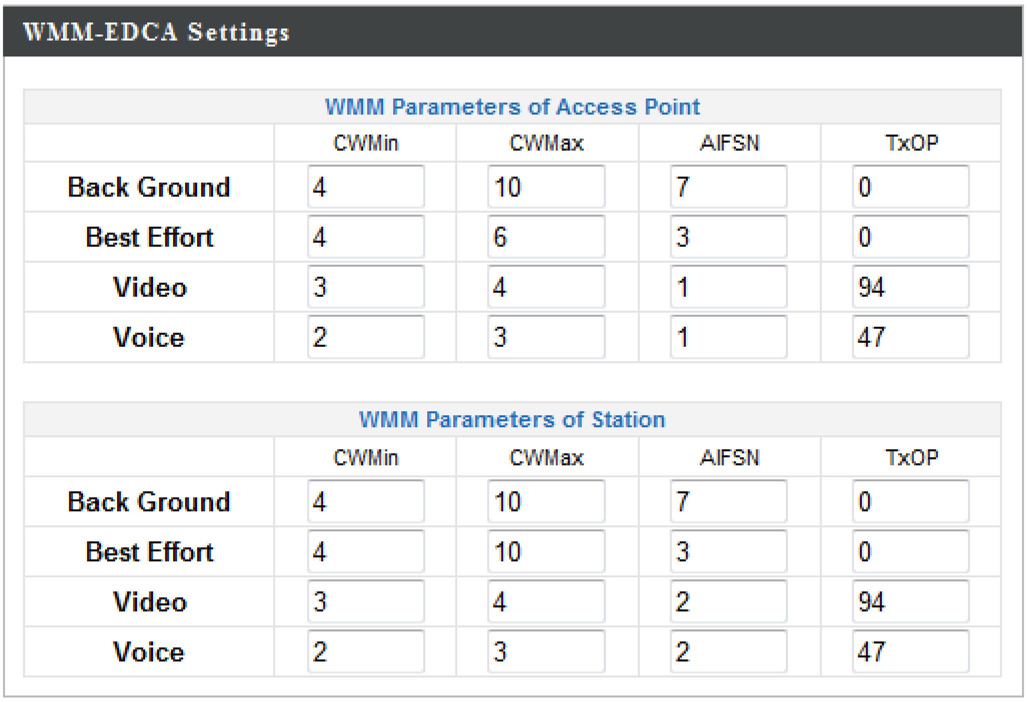
	commas, e.g. ‘aa-bb-cc-dd-ee-ff,aa-bb-cc-dd-ee-gg’
Add	Click “Add” to add the MAC address to the MAC address filtering table.
Reset	Clear all fields.

MAC address entries will be listed in the “MAC Address Filtering Table”. Select an entry using the “Select” checkbox.

Select	Delete selected or all entries from the table.
MAC Address	The MAC address is listed here.
Delete Selected	Delete the selected MAC address from the list.
Delete All	Delete all entries from the MAC address filtering table.
Export	Click “Export” to save a copy of the MAC filtering table. A new window will pop up for you to select a location to save the file.

IV-3-5. WMM

Wi-Fi Multimedia (WMM) is a Wi-Fi Alliance interoperability certification based on the IEEE 802.11e standard, which provides Quality of Service (QoS) features to IEE 802.11 networks. WMM prioritizes traffic according to four categories: background, best effort, video and voice.



WMM-EDCA Settings

WMM Parameters of Access Point

	CWMin	CWMax	AIFSN	TxOP
Back Ground	4	10	7	0
Best Effort	4	6	3	0
Video	3	4	1	94
Voice	2	3	1	47

WMM Parameters of Station

	CWMin	CWMax	AIFSN	TxOP
Back Ground	4	10	7	0
Best Effort	4	10	3	0
Video	3	4	2	94
Voice	2	3	2	47

Configuring WMM consists of adjusting parameters on queues for different categories of wireless traffic. Traffic is sent to the following queues:

Background	Low Priority	High throughput, non time sensitive bulk data e.g. FTP
Best Effort	Medium Priority	Traditional IP data, medium throughput and delay.
Video	High Priority	Time sensitive video data with minimum time delay.
Voice	High Priority	Time sensitive data such as VoIP and streaming media with minimum time delay.

Queues automatically provide minimum transmission delays for video, voice, multimedia and critical applications. The values can further be adjusted manually:

CWMin	Minimum Contention Window (milliseconds): This value is input to the initial random backoff wait time algorithm for retry of a data frame transmission. The backoff wait time will be generated between 0 and this value. If the frame is not sent, the random backoff value is doubled until the value reaches the number defined by CWMax (below). The CWMin value must be lower than the CWMax value. The contention window scheme helps to avoid frame collisions and determine priority of frame transmission. A shorter window has a higher probability (priority) of transmission.
CWMax	Maximum Contention Window (milliseconds): This value is the upper limit to random backoff value doubling (see above).
AIFSN	Arbitration Inter-Frame Space (milliseconds): Specifies additional time between when a channel goes idle and the AP/client sends data frames. Traffic with a lower AIFSN value has a higher priority.
TxOP	Transmission Opportunity (milliseconds): The maximum interval of time an AP/client can transmit. This makes channel access more efficiently prioritized. A value of 0 means only one frame per transmission. A greater value effects higher priority.

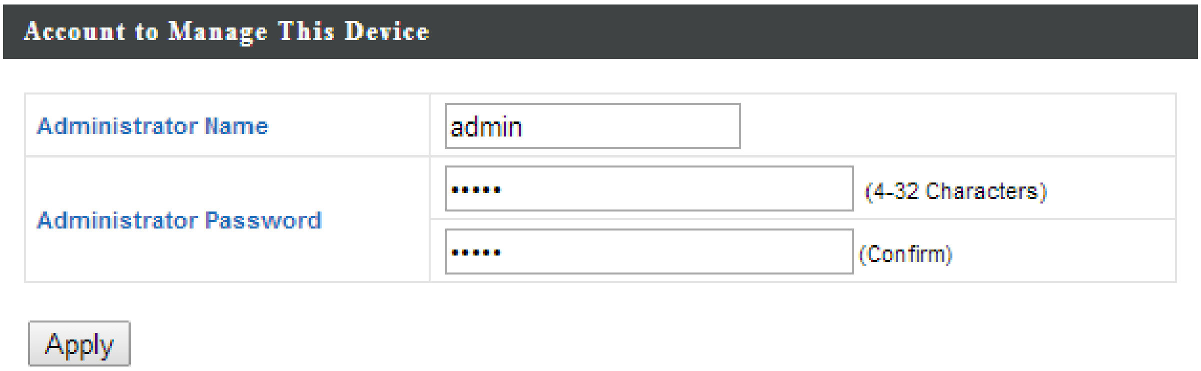
IV-4. Management

Screenshots displayed are examples. The information shown on your screen will vary depending on your configuration.

IV-4-1. Admin

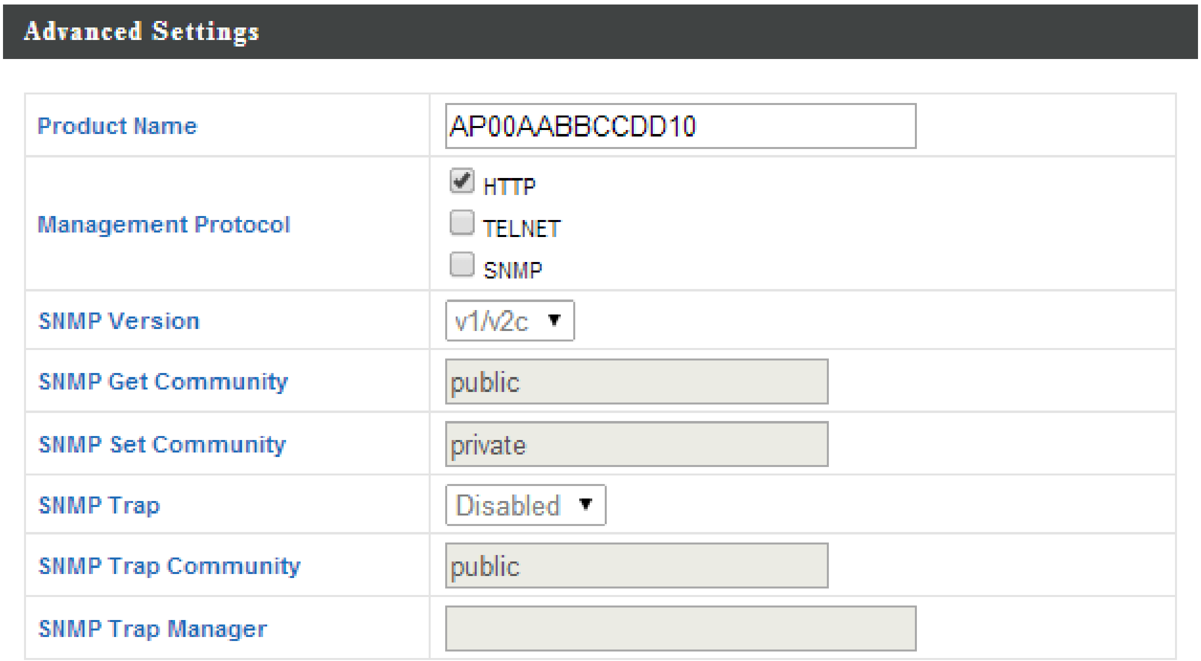
You can change the password used to login to the browser-based configuration interface here. It is advised to do so for security purposes.

If you change the administrator password, please make a note of the new password. In the event that you forget this password and are unable to login to the browser based configuration interface, see *I-5. Reset* ***for how to reset the access point.***



Account to Manage This Device

Administrator Name	admin
Administrator Password	••••• (4-32 Characters) ••••• (Confirm)



Advanced Settings

Product Name	AP00AABBCCDD10
Management Protocol	☑ HTTP □ TELNET □ SNMP
SNMP Version	v1/v2c ▼
SNMP Get Community	public
SNMP Set Community	private
SNMP Trap	Disabled ▼
SNMP Trap Community	public
SNMP Trap Manager	

Account to Manage This Device	
Administrator Name	Set the access point’s administrator name. This is used to log in to the browser based configuration interface and must be between 4-16 alphanumeric characters (case sensitive).
Administrator Password	Set the access point’s administrator password. This is used to log in to the browser based configuration interface and must be between 4-32 alphanumeric characters (case sensitive).

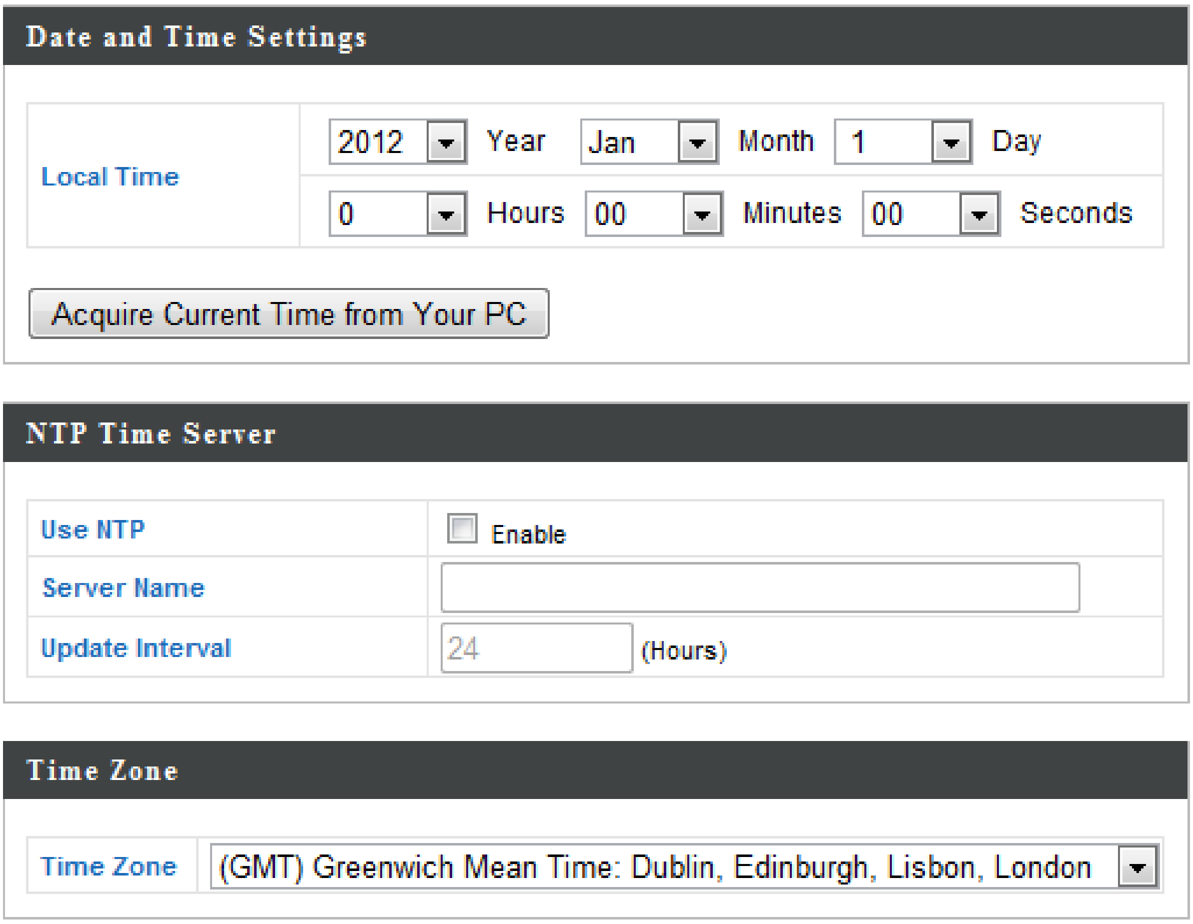
Advanced Settings	
Product Name	Edit the product name according to your preference consisting of 1-32 alphanumeric characters. This name is used for reference purposes.
Management Protocol	Check/uncheck the boxes to enable/disable specified management interfaces (see below).

	When SNMP is enabled, complete the SNMP fields below.
SNMP Version	Select SNMP version appropriate for your SNMP manager.
SNMP Get Community	Enter an SNMP Get Community name for verification with the SNMP manager for SNMP-GET requests.
SNMP Set Community	Enter an SNMP Set Community name for verification with the SNMP manager for SNMP-SET requests.
SNMP Trap	Enable or disable SNMP Trap to notify SNMP manager of network errors.
SNMP Trap Community	Enter an SNMP Trap Community name for verification with the SNMP manager for SNMP-TRAP requests.
SNMP Trap Manager	Specify the IP address or sever name (2-128 alphanumeric characters) of the SNMP manager.

HTTP
Internet browser HTTP protocol management interface
TELNET
Client terminal with telnet protocol management interface
SNMP
Simple Network Management Protocol. SNMPv1, v2 & v3 protocol supported. SNMPv2 can be used with community based authentication. SNMPv3 uses user-based security model (USM) architecture.

IV-4-2. Date and Time

You can configure the time zone settings of your access point here. The date and time of the device can be configured manually or can be synchronized with a time server.



Date and Time Settings

Local Time: 2012 Year, Jan Month, 1 Day; 0 Hours, 00 Minutes, 00 Seconds

Acquire Current Time from Your PC

NTP Time Server

Use NTP	☐ Enable
Server Name	
Update Interval	24 (Hours)

Time Zone

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

Date and Time Settings	
Local Time	Set the access point's date and time manually using the drop down menus.
Acquire Current Time from your PC	Click "Acquire Current Time from Your PC" to enter the required values automatically according to your computer's current time and date.

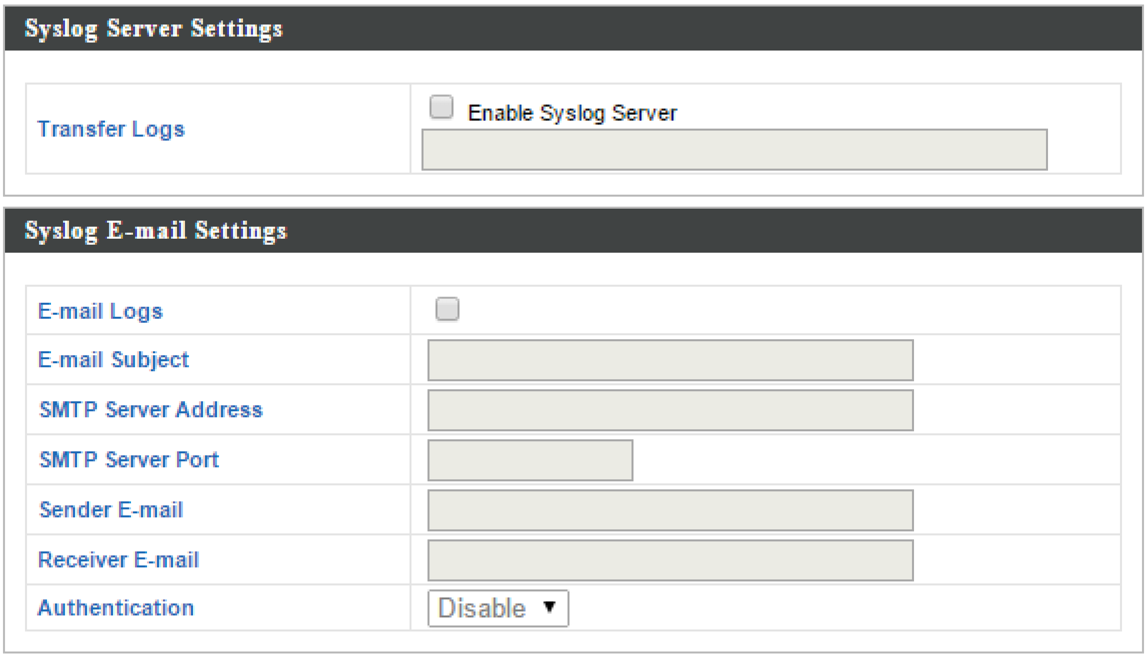
NTP Time Server	
Use NTP	The access point also supports NTP (Network Time Protocol) for automatic time and date setup.

Server Name	Enter the host name or IP address of the time server if you wish.
Update Interval	Specify a frequency (in hours) for the access point to update/synchronize with the NTP server.

Time Zone	
Time Zone	Select the time zone of your country/ region. If your country/region is not listed, please select another country/region whose time zone is the same as yours.

IV-4-3. Syslog Server

The system log can be sent to a server or to attached USB storage.



Syslog Server Settings

Transfer Logs	□ Enable Syslog Server

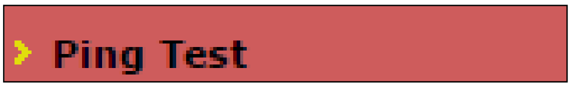
Syslog E-mail Settings

E-mail Logs	□
E-mail Subject	
SMTP Server Address	
SMTP Server Port	
Sender E-mail	
Receiver E-mail	
Authentication	Disable ▼

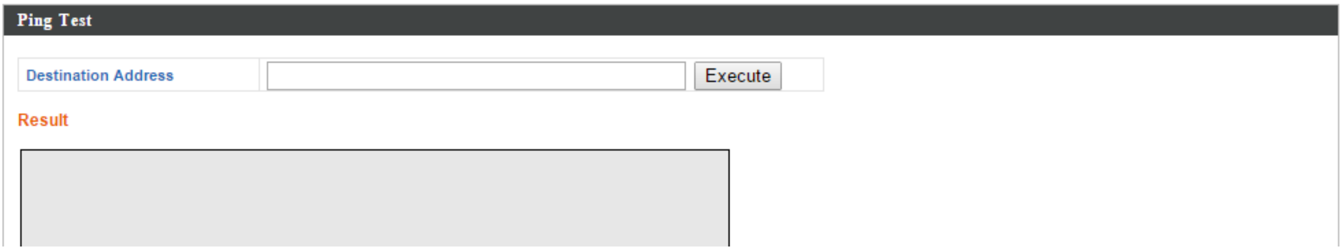
Syslog Server Settings	
Transfer Logs	Check/uncheck the box to enable/disable the use of a syslog server, and enter a host name, domain or IP address for the server, consisting of up to 128 alphanumeric characters.

Syslog E-mail Settings	
E-mail Logs	Check the box to enable/disable e-mail logs.
E-mail Subject	Specify the subject line of log emails.
SMTP Server Address	Specify the SMTP server address used to send log emails.
SMTP Server Port	Specify the SMTP server port used to send log emails.
Sender E-mail	Specify the sender email address.
Receiver E-mail	Specify the email to receive log emails.
Authentication	Disable or select authentication type: SSL or TLS. When using SSL or TLS, enter the username and password.

IV-4-4. Ping Test



The access point includes a built-in ping test function. Ping is a computer network administration utility used to test whether a particular host is reachable across an IP network and to measure the round-trip time for sent messages.

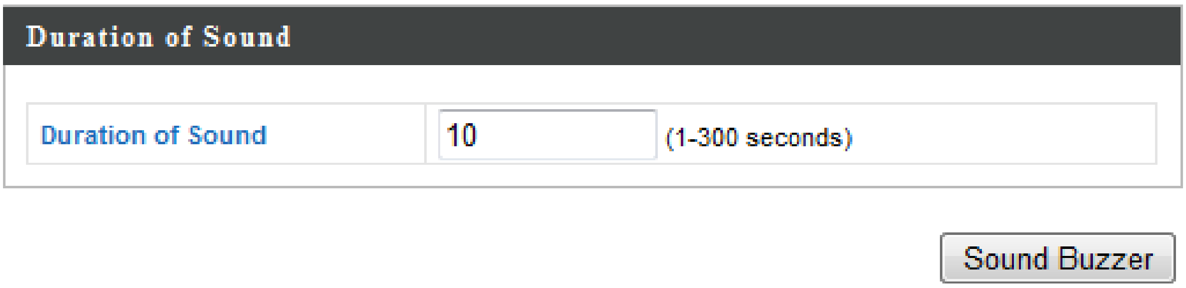


Destination Address	Enter the address of the host.
Execute	Click execute to ping the host.

IV-4-5. I’m Here

I'm Here

The access point features a built-in buzzer which can sound on command using the “I’m Here” page. This is useful for network administrators and engineers working in complex network environments to locate the access point.



Duration of Sound

Duration of Sound: 10 (1-300 seconds)

⚠ ***The buzzer is loud!***

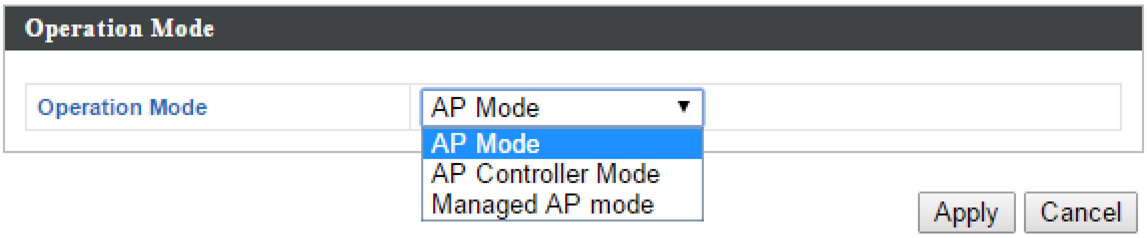
Duration of Sound	Set the duration for which the buzzer will sound when the “Sound Buzzer” button is clicked.
Sound Buzzer	Activate the buzzer sound for the above specified duration of time.

IV-4-6. Operation Mode

The access point can function in three different modes. Set the operation mode of the access point here. AP mode is a standalone access point, AP controller mode acts as the designated master of the AP array, and Managed AP mode acts as a slave AP within the AP array. Refer back to **Overview** and **Edimax Pro NMS I. Product Information** for more help.

In Managed AP mode some functions of the access point will be disabled in this user interface and must be set using Edimax Pro NMS on the AP Controller.

In AP Controller Mode the access point will switch to the Edimax Pro NMS user interface.

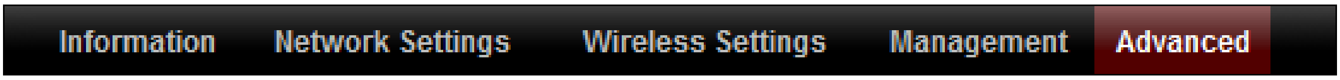


Operation Mode

Operation Mode: AP Mode

Operation Mode	AP Mode is a standard access point in a wireless network. AP Controller Mode is the master of an AP array and controls all other managed APs (below) using Edimax Pro NMS. Managed AP mode is an AP which is part of the AP array and is managed by the Controller AP.

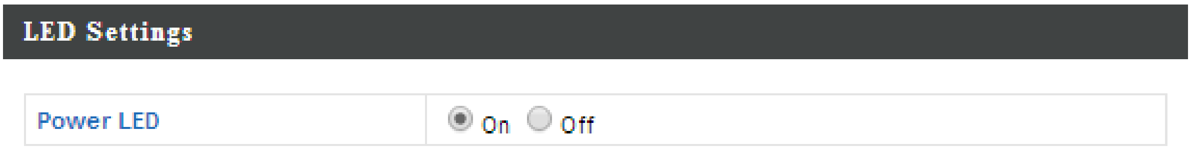
IV-5. Advanced



Screenshots displayed are examples. The information shown on your screen will vary depending on your configuration.

IV-5-1. LED Settings

The access point's LEDs can be manually enabled or disabled according to your preference.



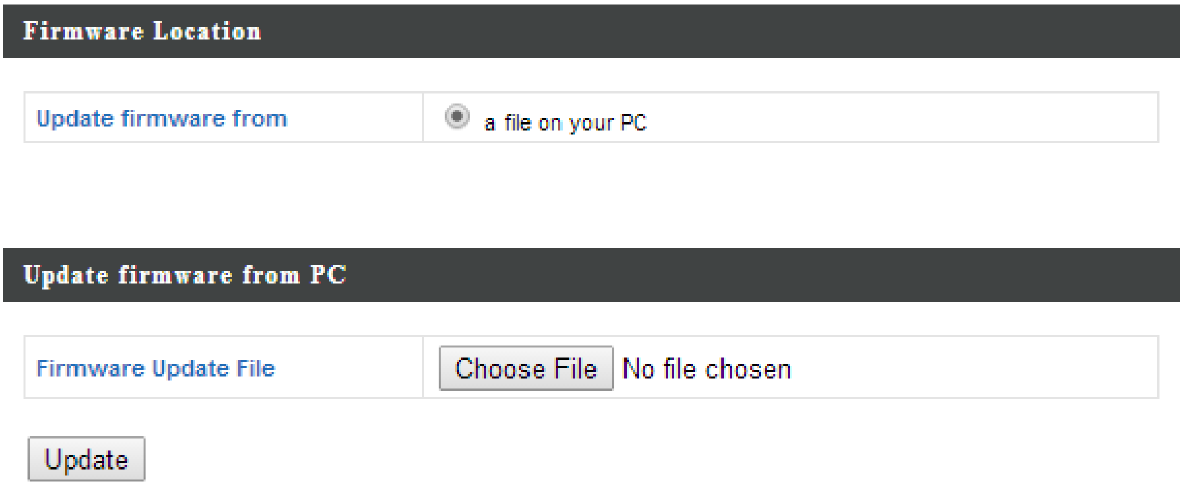
LED Settings

Power LED ● On ○ Off

Power LED	Select on or off.

IV-5-2. Update Firmware

The “Firmware” page allows you to update the system firmware to a more recent version. Updated firmware versions often offer increased performance and security, as well as bug fixes. You can download the latest firmware from the Edimax website.



Firmware Location

Update firmware from ● a file on your PC

Update firmware from PC

Firmware Update File [Choose File] No file chosen

[Update]

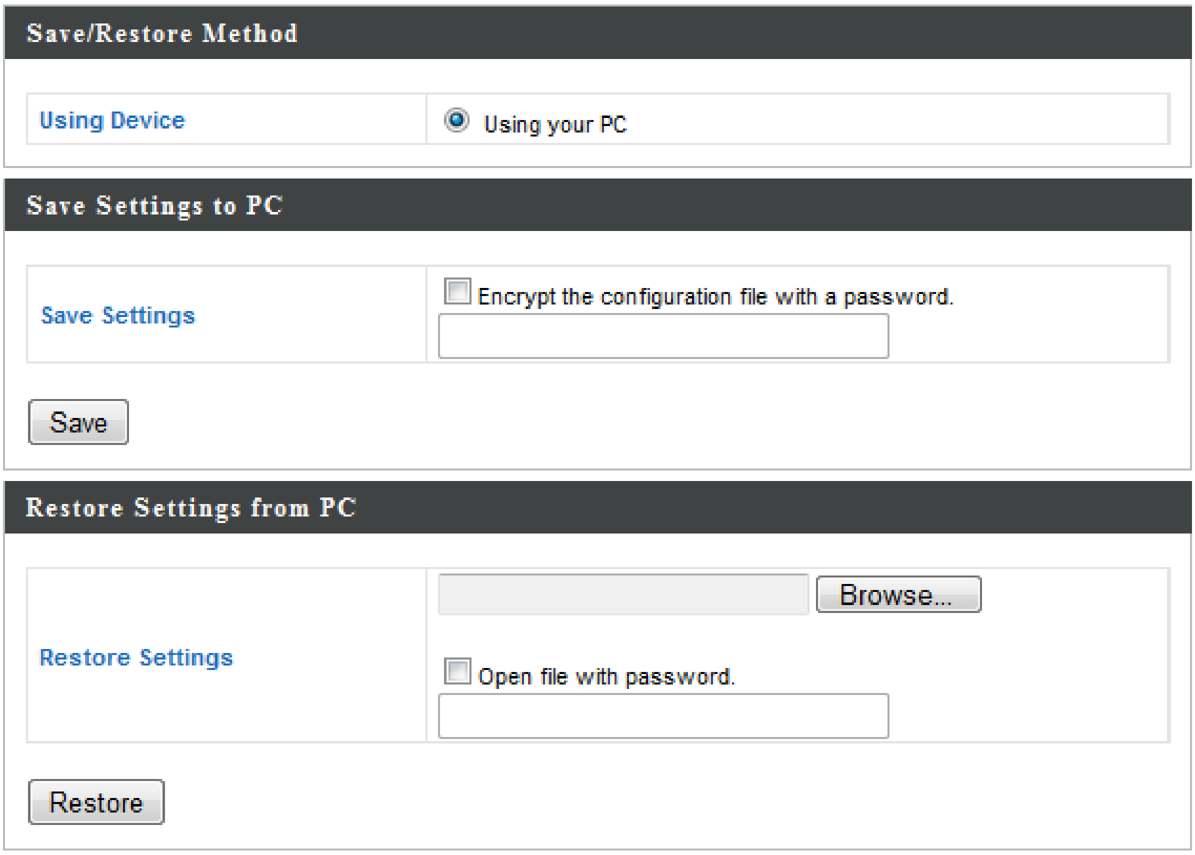
Do not switch off or disconnect the access point during a firmware upgrade, as this could damage the device.

Update Firmware From	Select “a file on your PC” to upload firmware from your local computer.
Firmware Update File	Click “Choose File” to open a new window to locate and select the firmware file in your computer.
Update	Click “Update” to upload the specified firmware file to your access point.

IV-5-3. Save/Restore Settings

Save/Restore Settings

The access point’s “Save/Restore Settings” page enables you to save/backup the access point’s current settings as a file to your local computer or a USB device attached to the access point, and restore the access point to previously saved settings.



Save/Restore Method

Using Device	● Using your PC

Save Settings to PC

Save Settings	□ Encrypt the configuration file with a password.

Restore Settings from PC

Restore Settings	Browse... □ Open file with password.

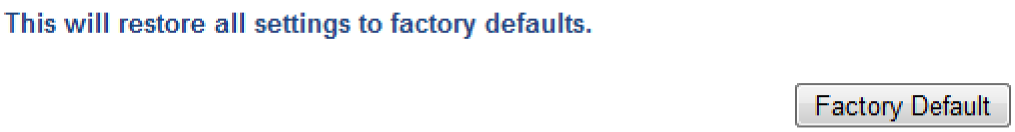
Save / Restore Settings	
Using Device	Select “Using your PC” to save the access point’s settings to your local computer.

Save Settings to PC	
Save Settings	Click “Save” to save settings and a new window will open to specify a location to save the settings file. You can also check the “Encrypt the configuration file with a password” box and enter a password to protect the file in the field underneath, if you wish.

Restore Settings from PC	
Restore Settings	Click the browse button to find a previously saved settings file on your computer, then click "Restore" to replace your current settings. If your settings file is encrypted with a password, check the "Open file with password" box and enter the password in the field underneath.

IV-5-4. Factory Default

If the access point malfunctions or is not responding, then it is recommended that you reboot the device (see **IV-5.5**) or reset the device back to its factory default settings. You can reset the access point back to its default settings using this feature if the location of the access point is not convenient to access the reset button.



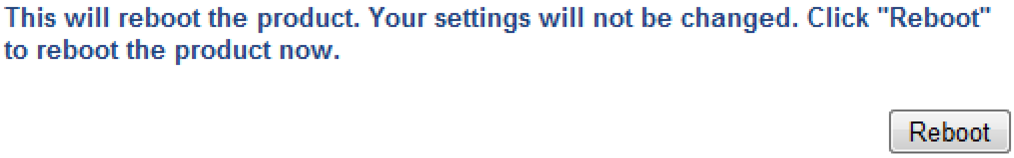
This will restore all settings to factory defaults.

Factory Default	Click “Factory Default” to restore settings to the factory default. A pop-up window will appear and ask you to confirm.

After resetting to factory defaults, please wait for the access point to reset and restart.

IV-5-5. Reboot

If the access point malfunctions or is not responding, then it is recommended that you reboot the device or reset the access point back to its factory default settings (see **IV-5-4**). You can reboot the access point remotely using this feature.



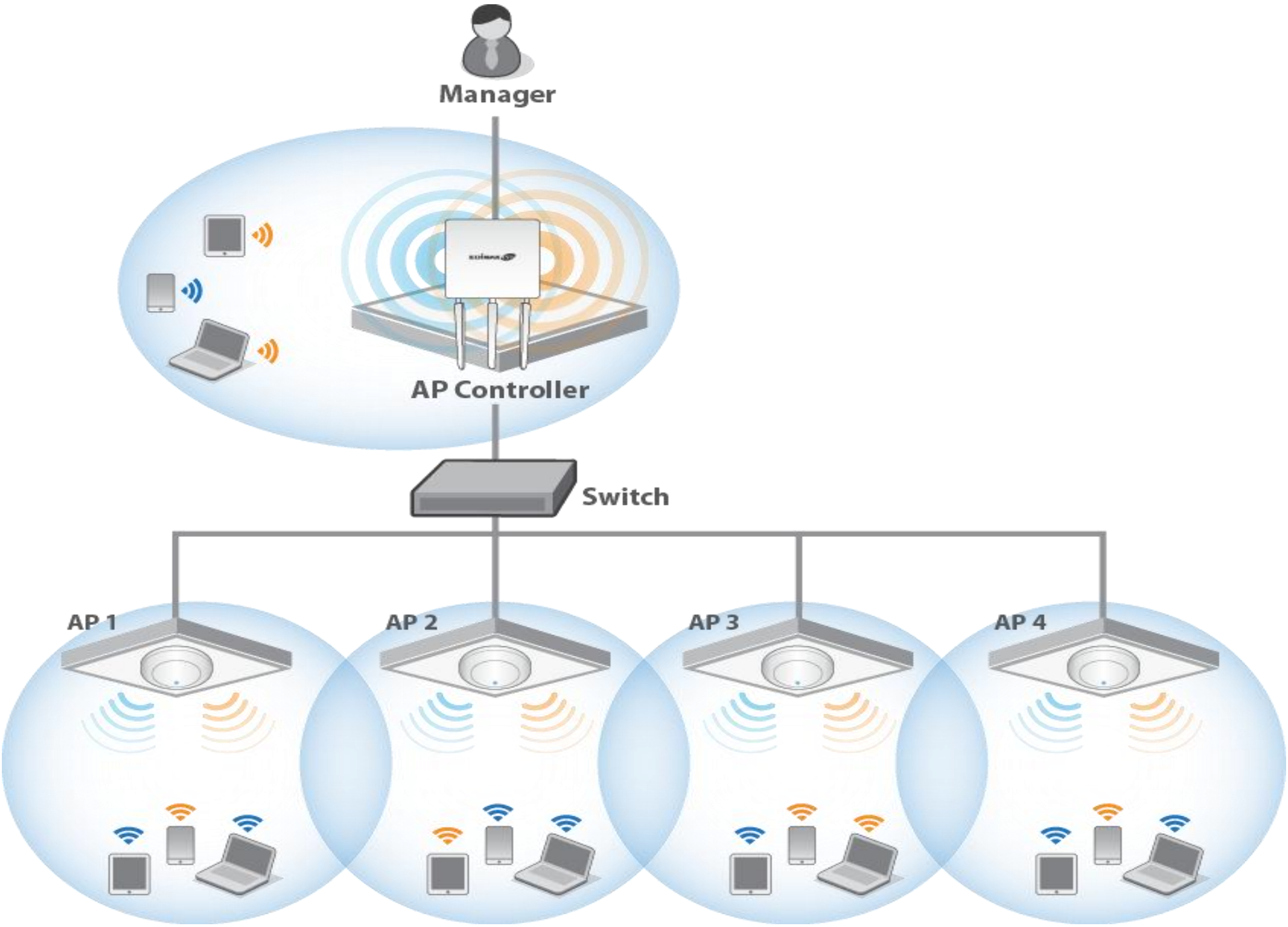
This will reboot the product. Your settings will not be changed. Click "Reboot" to reboot the product now.

Reboot	Click “Reboot” to reboot the device. A countdown will indicate the progress of the reboot.

I. Product Information

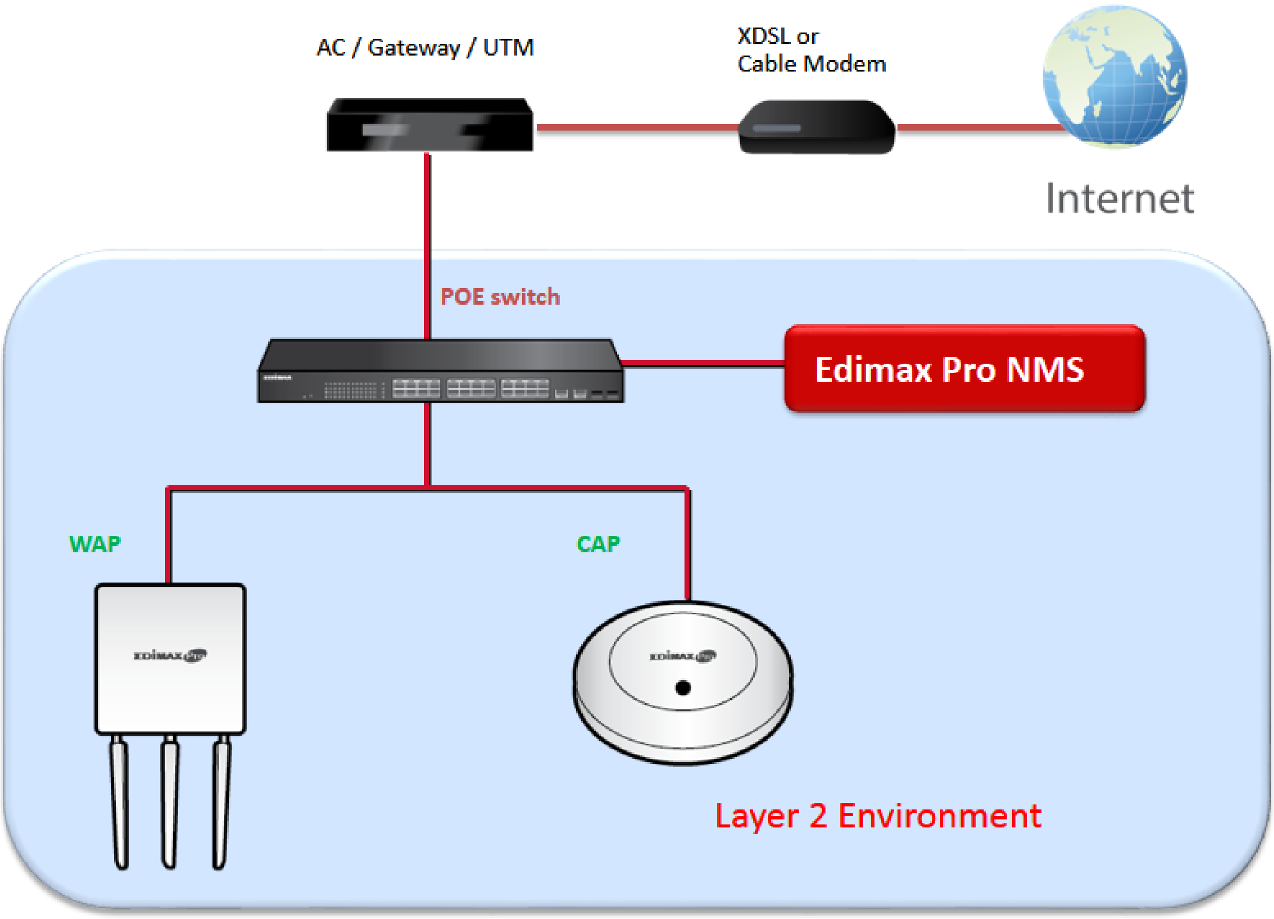
Edimax Pro Network Management Suite (NMS) supports the central management of a group of access points, otherwise known as an AP Array. NMS can be installed on one access point and support up to 8 Edimax Pro access points with no additional wireless controller required, reducing costs and facilitating efficient remote AP management.

Access points can be deployed and configured according to requirements, creating a powerful network architecture which can be easily managed and expanded in the future, with an easy to use interface and a full range of functionality – ideal for small and mid-sized office environments. A secure WLAN can be deployed and administered from a single point, minimizing cost and complexity.



II. Quick Setup

Edimax Pro NMS is simple to setup. An overview of the system is shown below:

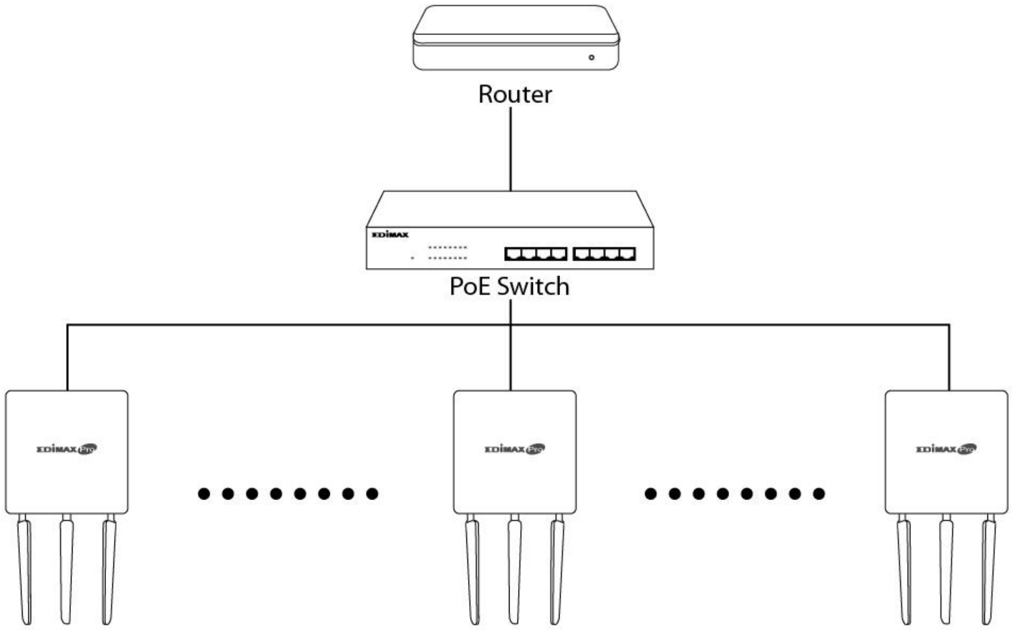


One AP (access point) is designated as the AP Controller (master) and other connected Edimax Pro APs are automatically designated as Managed APs (slaves). Using Edimax Pro NMS you can monitor, configure and manage all Managed APs (up to 8) from the single AP Controller.

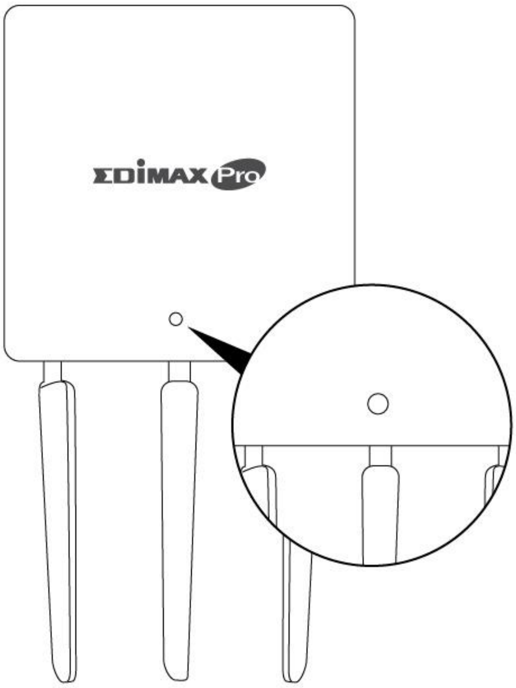
Follow the steps below:

Ensure you have the latest firmware from the Edimax website for your Edimax Pro products.

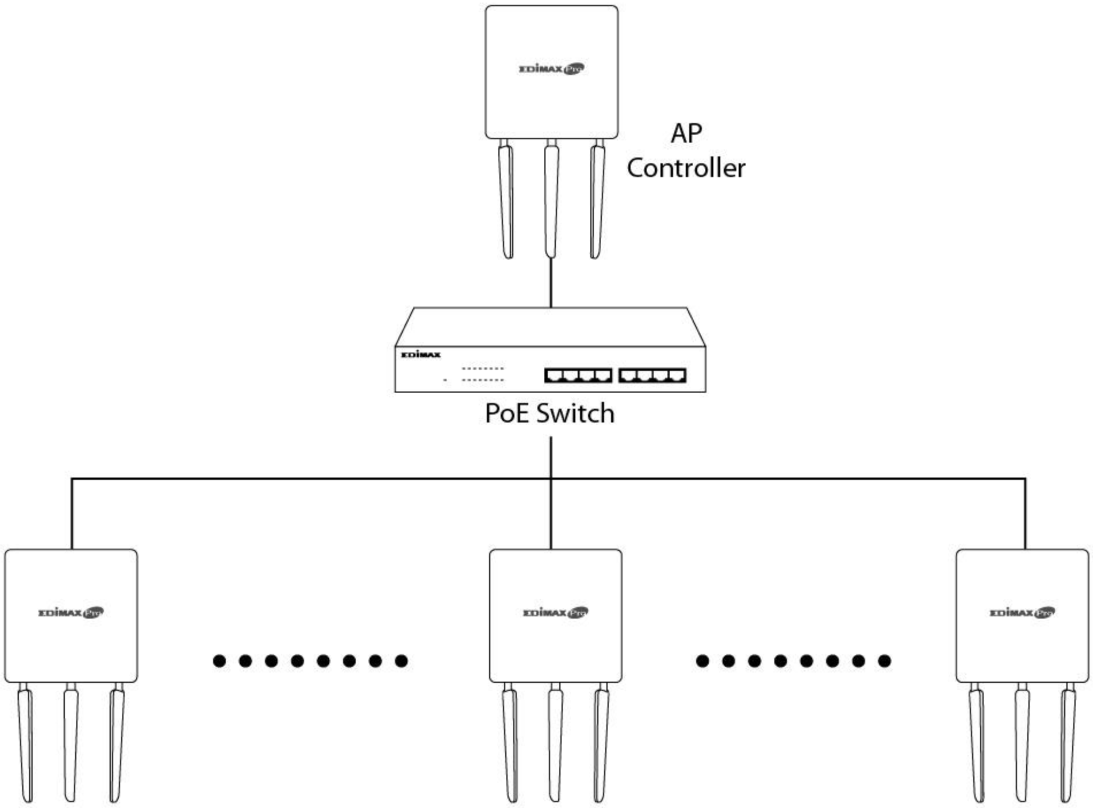
1. Connect all APs to an Ethernet or PoE switch which is connected to a gateway/router.



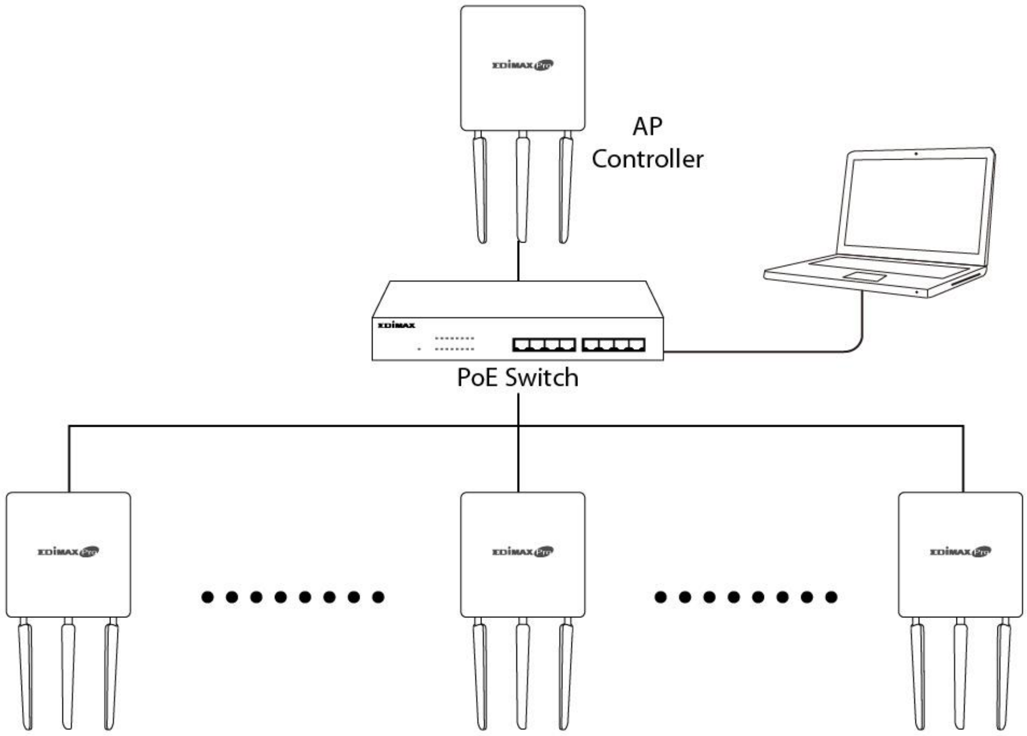
2. Ensure all APs are powered on and check LEDs.



3. Designate one AP as the AP Controller which will manage all other connected APs (up to 8).

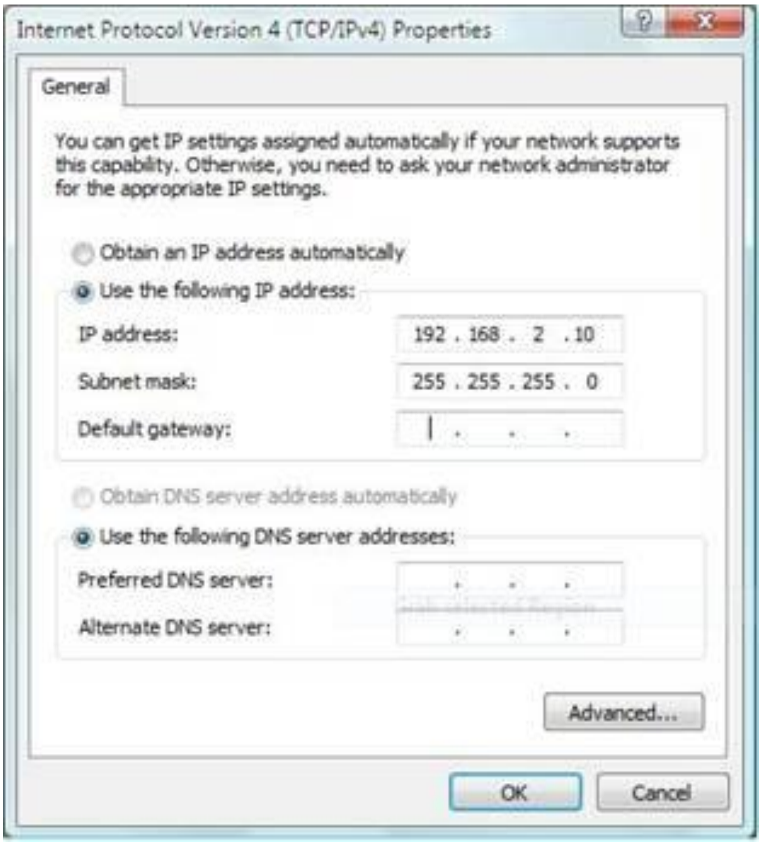


4. Connect a computer to the designated AP Controller using an Ethernet cable.



5. Open a web browser and enter the AP Controller’s IP address in the address field. The default IP address is **192.168.2.2**

Your computer’s IP address must be in the same subnet as the AP Controller. Refer to *V-1. Configuring your IP* ***Address for help.***



Internet Protocol Version 4 (TCP/IPv4) Properties

General

You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

○ Obtain an IP address automatically

● Use the following IP address:

IP address: 192 . 168 . 2 . 10

Subnet mask: 255 . 255 . 255 . 0

Default gateway: . . .

○ Obtain DNS server address automatically

● Use the following DNS server addresses:

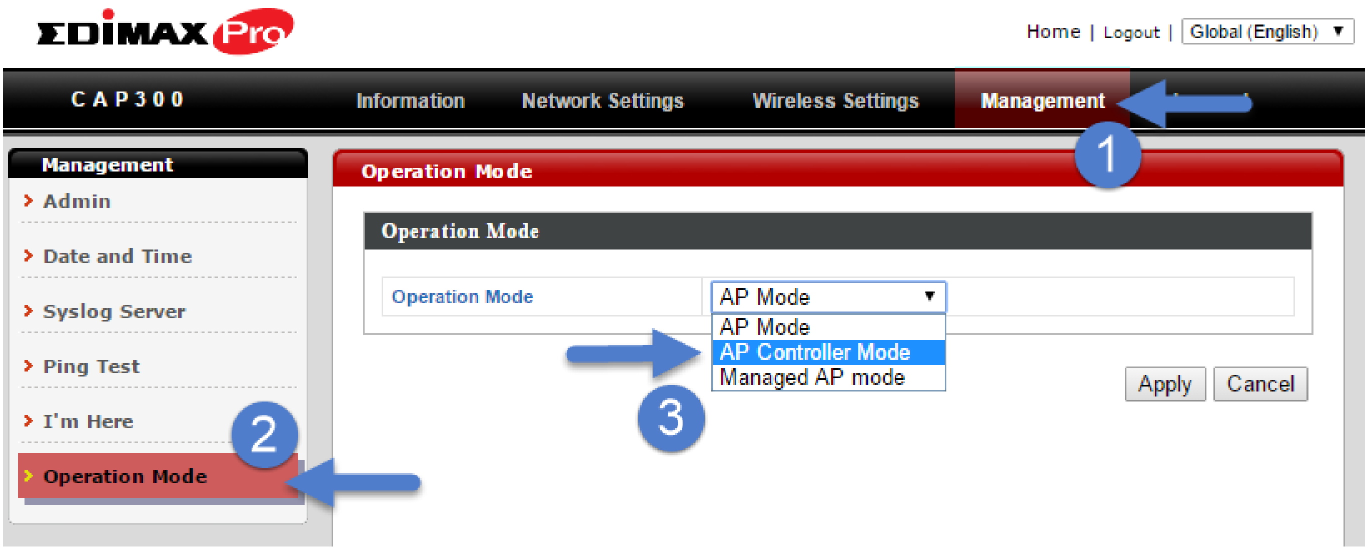
Preferred DNS server: . . .

Alternate DNS server: . . .

If you changed the AP Controller’s IP address, or if your gateway/router uses a DHCP server, ensure you enter the correct IP address. Refer to your gateway/router’s settings.

6. Enter the username & password to login. The default username & password are **admin** & **1234**.

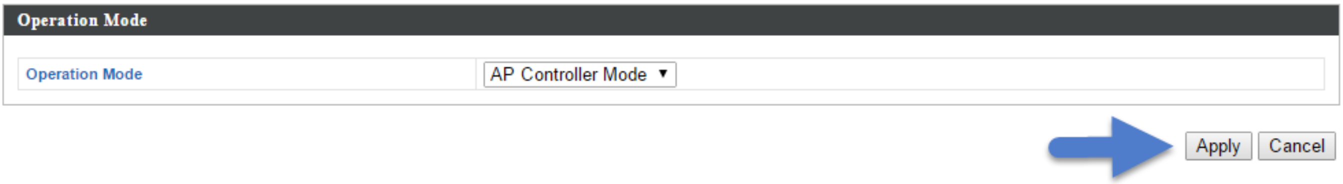
7. You will arrive at the Edimax Pro NMS Dashboard. Go to **“Management”** → **“Operation Mode”** and select **“AP Controller Mode”** from the drop down menu.



Operation Mode

Operation Mode: AP Mode

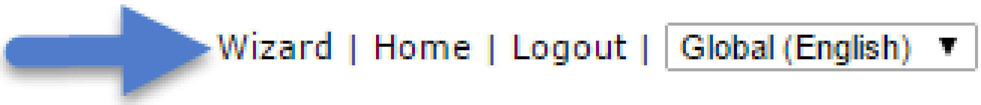
8. Click “Apply” to save the settings.



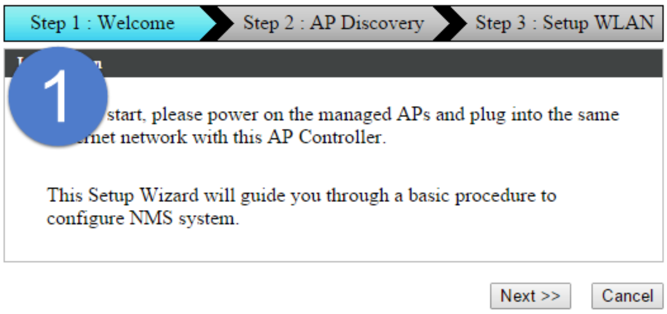
Operation Mode

Operation Mode: AP Controller Mode

9. Edimax Pro NMS includes a wizard to quickly setup the SSID & security for Managed APs. Click “Wizard” in the top right corner to begin.

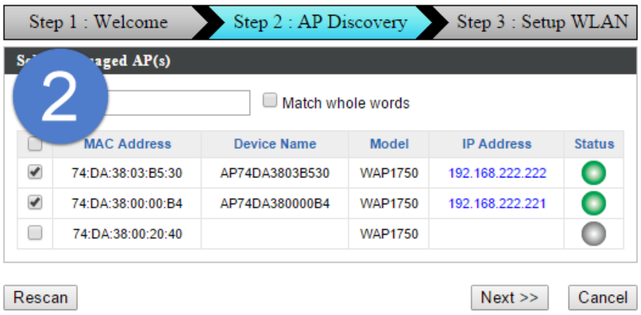


10. Follow the instructions on-screen to complete **Steps 1, 2 & 3** and click **“Finish”** to save the settings.



start, please power on the managed APs and plug into the same rnet network with this AP Controller.

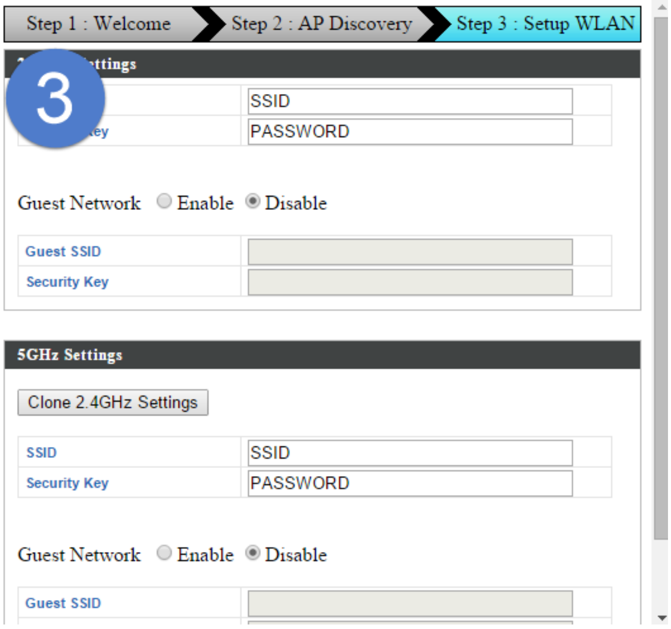
This Setup Wizard will guide you through a basic procedure to configure NMS system.



aged AP(s)

☐ Match whole words

☐	MAC Address	Device Name	Model	IP Address	Status
☑	74:DA:38:03:B5:30	AP74DA3803B530	WAP1750	192.168.222.222	●
☑	74:DA:38:00:00:B4	AP74DA380000B4	WAP1750	192.168.222.221	●
☐	74:DA:38:00:20:40		WAP1750		●



ttings

	SSID
ey	PASSWORD

Guest Network ○ Enable ● Disable

Guest SSID	
Security Key	

5GHz Settings

Clone 2.4GHz Settings

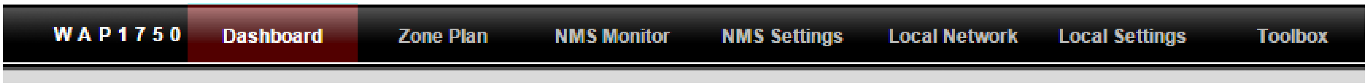
SSID	SSID
Security Key	PASSWORD

Guest Network ○ Enable ● Disable

Guest SSID	

If any of your Managed APs are not found *during Step 2 AP Discovery*, ***reset the Managed AP to its factory default settings.***

11. Your AP Controller & Managed APs should be fully functional. Use the top menu to navigate around Edimax Pro NMS.



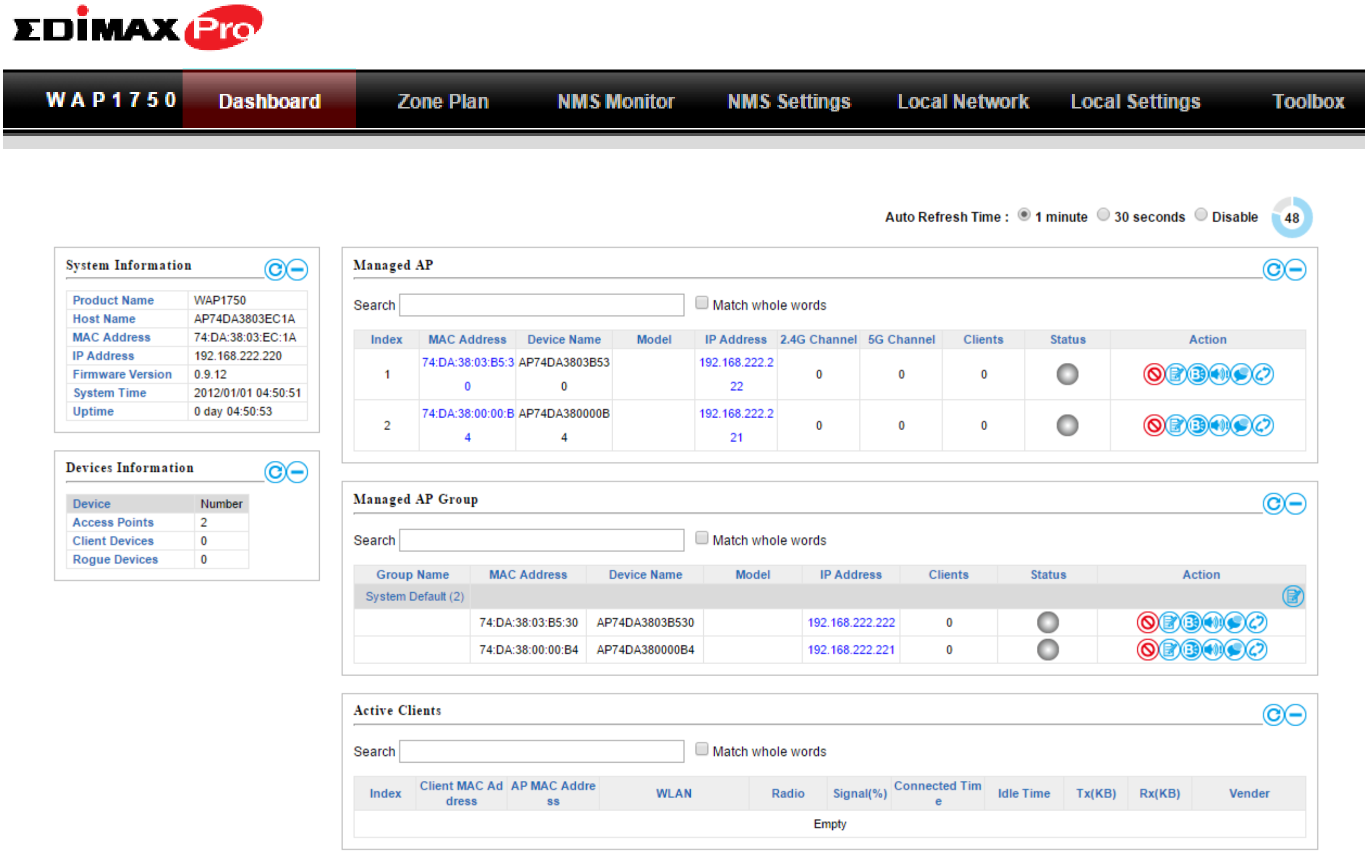
Use ***Dashboard, Zone Plan, NMS Monitor*** & ***NMS Settings*** to configure Managed APs.

Use ***Local Network & Local Settings*** to configure your AP Controller.

III. Software Layout

The top menu features 7 panels: *Dashboard, Zone Plan, NMS Monitor, NMS Settings, Local Network, Local Settings & Toolbox.*

Dashboard



Auto Refresh Time : ● 1 minute ○ 30 seconds ○ Disable

System Information

Product Name	WAP1750
Host Name	AP74DA3803EC1A
MAC Address	74:DA:38:03:EC:1A
IP Address	192.168.222.220
Firmware Version	0.9.12
System Time	2012/01/01 04:50:51
Uptime	0 day 04:50:53

Devices Information

Device	Number
Access Points	2
Client Devices	0
Rogue Devices	0

Managed AP

Search ☐ Match whole words

Index	MAC Address	Device Name	Model	IP Address	2.4G Channel	5G Channel	Clients	Status	Action
1	74:DA:38:03:B5:30	AP74DA3803B530		192.168.222.222	0	0	0	●	
2	74:DA:38:00:00:B4	AP74DA380000B4		192.168.222.221	0	0	0	●	

Managed AP Group

Search ☐ Match whole words

Group Name	MAC Address	Device Name	Model	IP Address	Clients	Status	Action
System Default (2)							
	74:DA:38:03:B5:30	AP74DA3803B530		192.168.222.222	0	●	
	74:DA:38:00:00:B4	AP74DA380000B4		192.168.222.221	0	●	

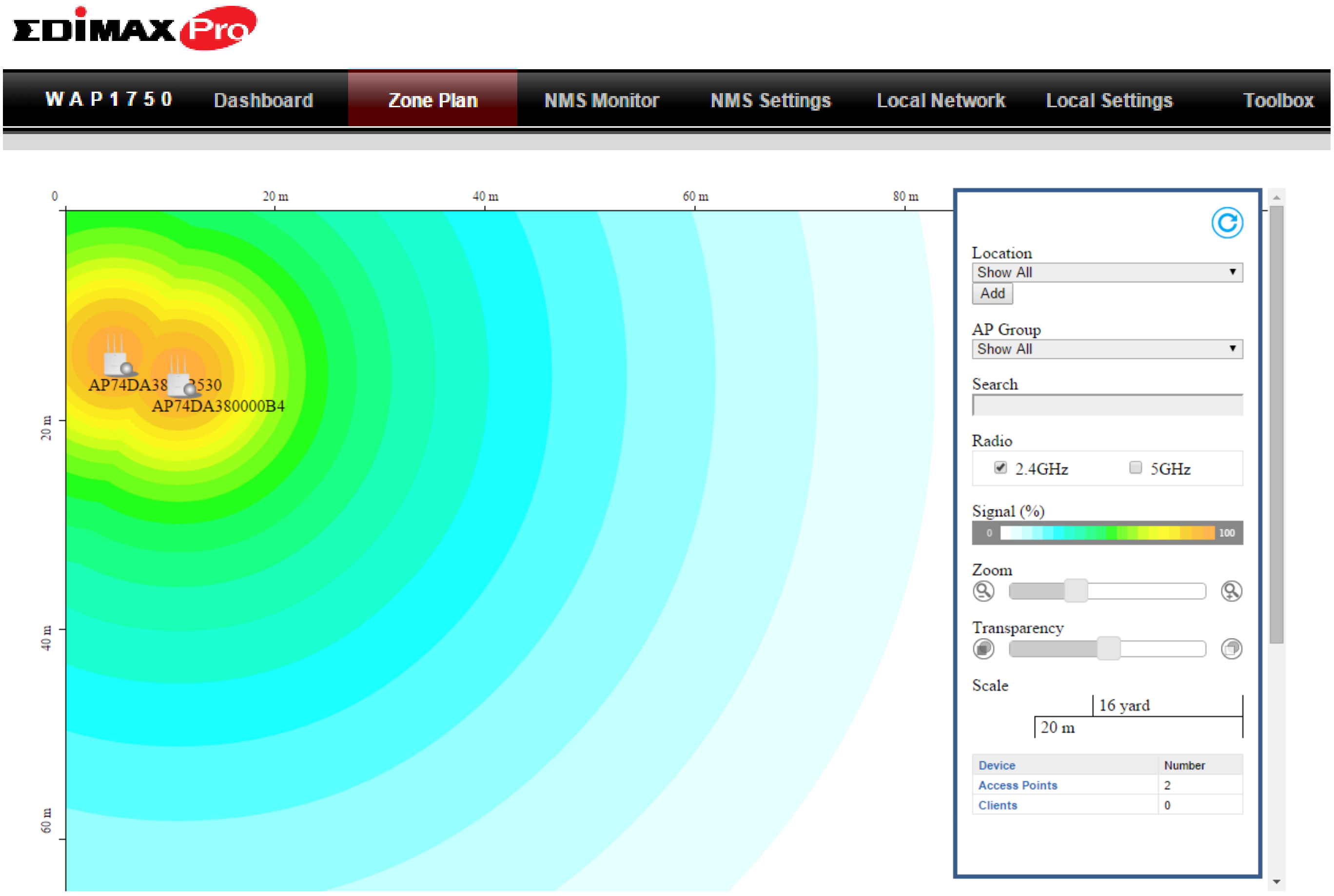
Active Clients

Search ☐ Match whole words

Index	Client MAC Address	AP MAC Address	WLAN	Radio	Signal(%)	Connected Time	Idle Time	Tx(KB)	Rx(KB)	Vender
Empty										

The **Dashboard** panel displays an overview of your network and key system information, with quick links to access configuration options for Managed APs and Managed AP groups. Each panel can be refreshed, collapsed or moved according to your preference.

Zone Plan



Location: Show All

AP Group: Show All

Search

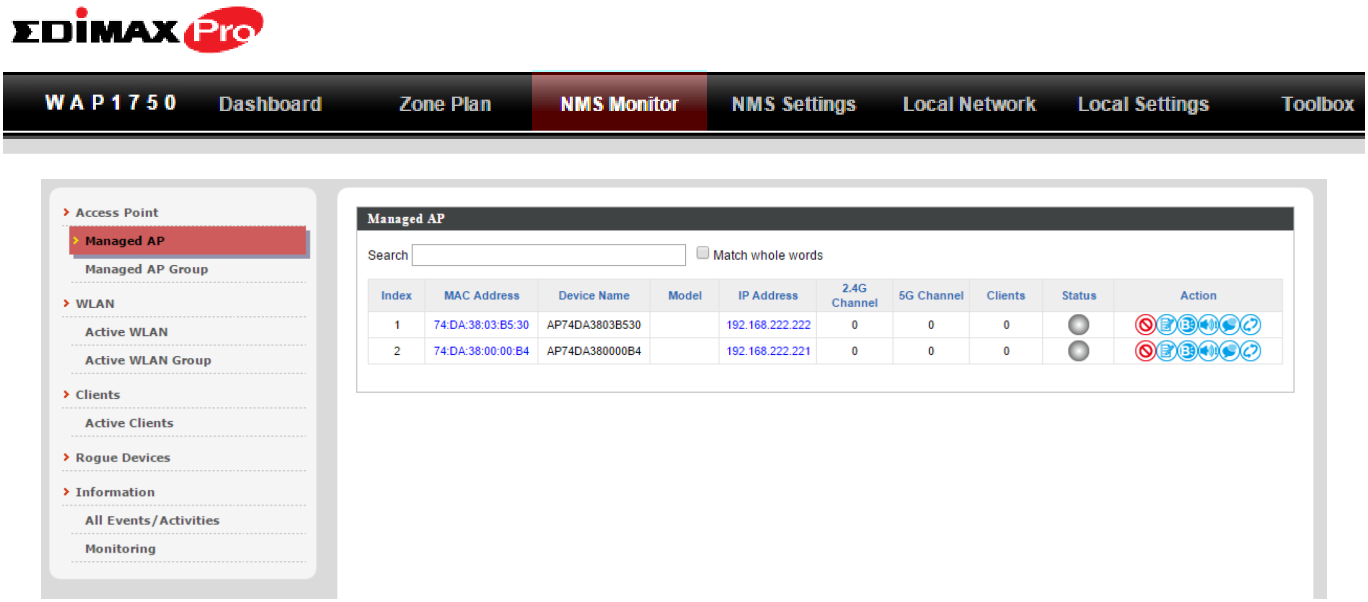
Radio: ☑ 2.4GHz □ 5GHz

Scale: 16 yard, 20 m

Device	Number
Access Points	2
Clients	0

Zone Plan displays a customizable live map of Managed APs for a visual representation of your network coverage. Each AP icon can be moved around the map, and a background image can be uploaded for user-defined location profiles using **NMS Settings → Zone Edit**. Options can be configured using the menu on the right side and signal strength is displayed for each AP.

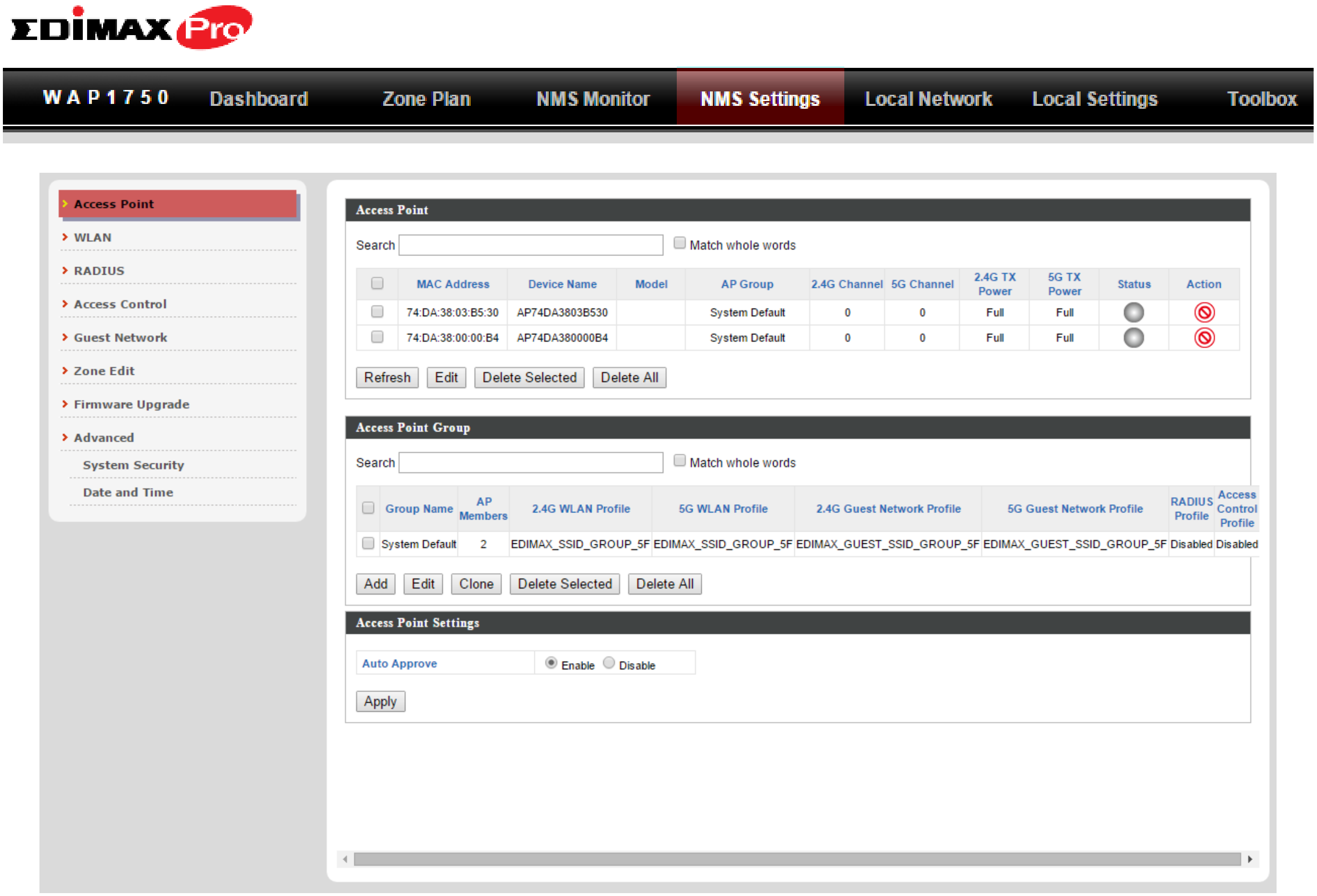
NMS Monitor



Index	MAC Address	Device Name	Model	IP Address	2.4G Channel	5G Channel	Clients	Status	Action
1	74:DA:38:03:B5:30	AP74DA3803B530		192.168.222.222	0	0	0	●	
2	74:DA:38:00:00:B4	AP74DA380000B4		192.168.222.221	0	0	0	●	

The **NMS Monitor** panel provides more detailed monitoring information about the AP Array than found on the Dashboard, grouped according to categories in the menu down the left side.

NMS Settings



Access Point

Search □ Match whole words

□	MAC Address	Device Name	Model	AP Group	2.4G Channel	5G Channel	2.4G TX Power	5G TX Power	Status	Action
□	74:DA:38:03:B5:30	AP74DA3803B530		System Default	0	0	Full	Full	●	⊘
□	74:DA:38:00:00:B4	AP74DA380000B4		System Default	0	0	Full	Full	●	⊘

Access Point Group

Search □ Match whole words

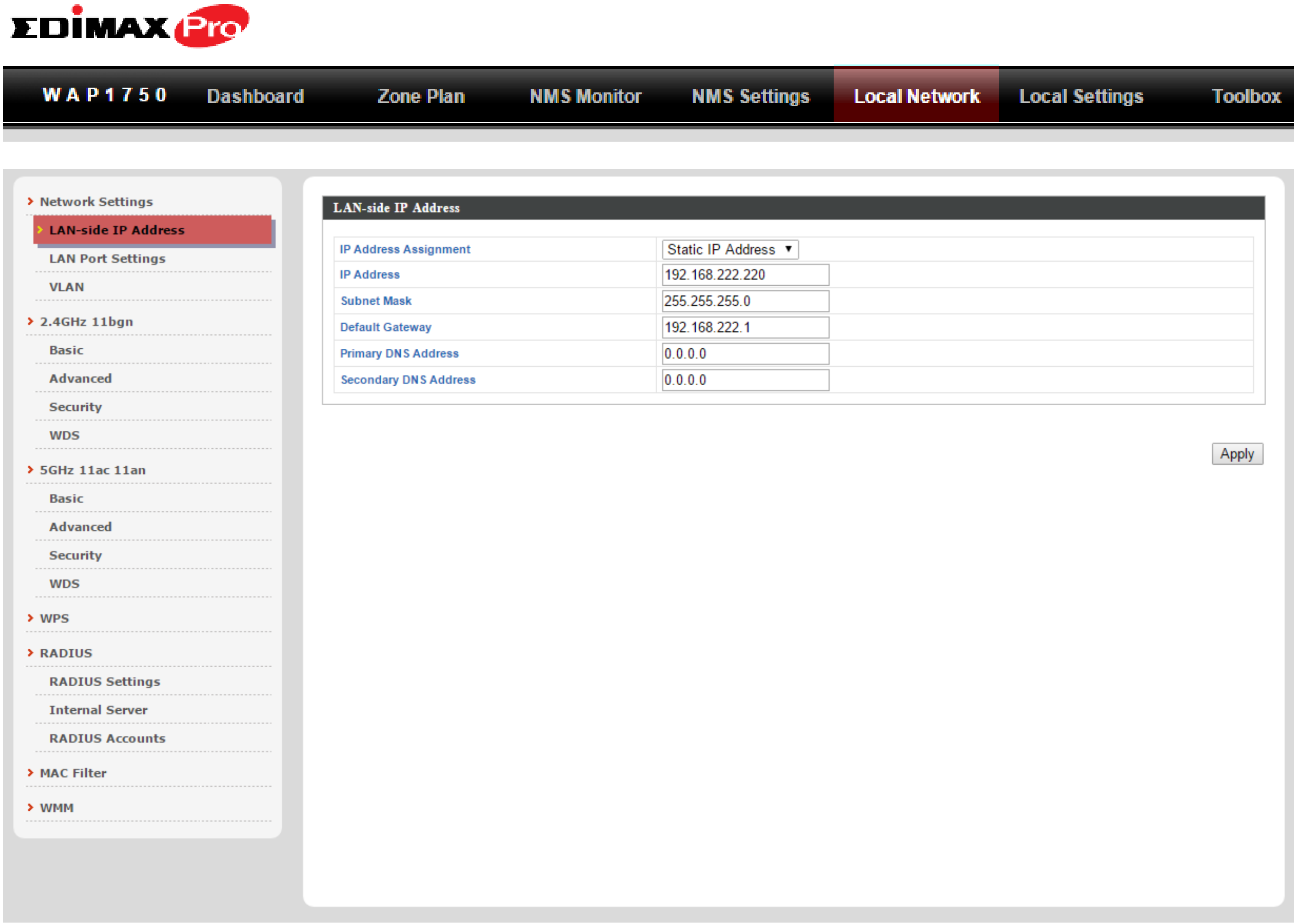
□	Group Name	AP Members	2.4G WLAN Profile	5G WLAN Profile	2.4G Guest Network Profile	5G Guest Network Profile	RADIUS Profile	Access Control Profile
□	System Default	2	EDIMAX_SSID_GROUP_5F	EDIMAX_SSID_GROUP_5F	EDIMAX_GUEST_SSID_GROUP_5F	EDIMAX_GUEST_SSID_GROUP_5F	Disabled	Disabled

Access Point Settings

Auto Approve ● Enable ○ Disable

NMS Settings provides extensive configuration options for the AP Array. You can manage each access point, assign access points into groups, manage WLAN, RADIUS & guest network settings as well as upgrade firmware across multiple access points. The Zone Plan can also be configured using “Zone Edit”.

Local Network

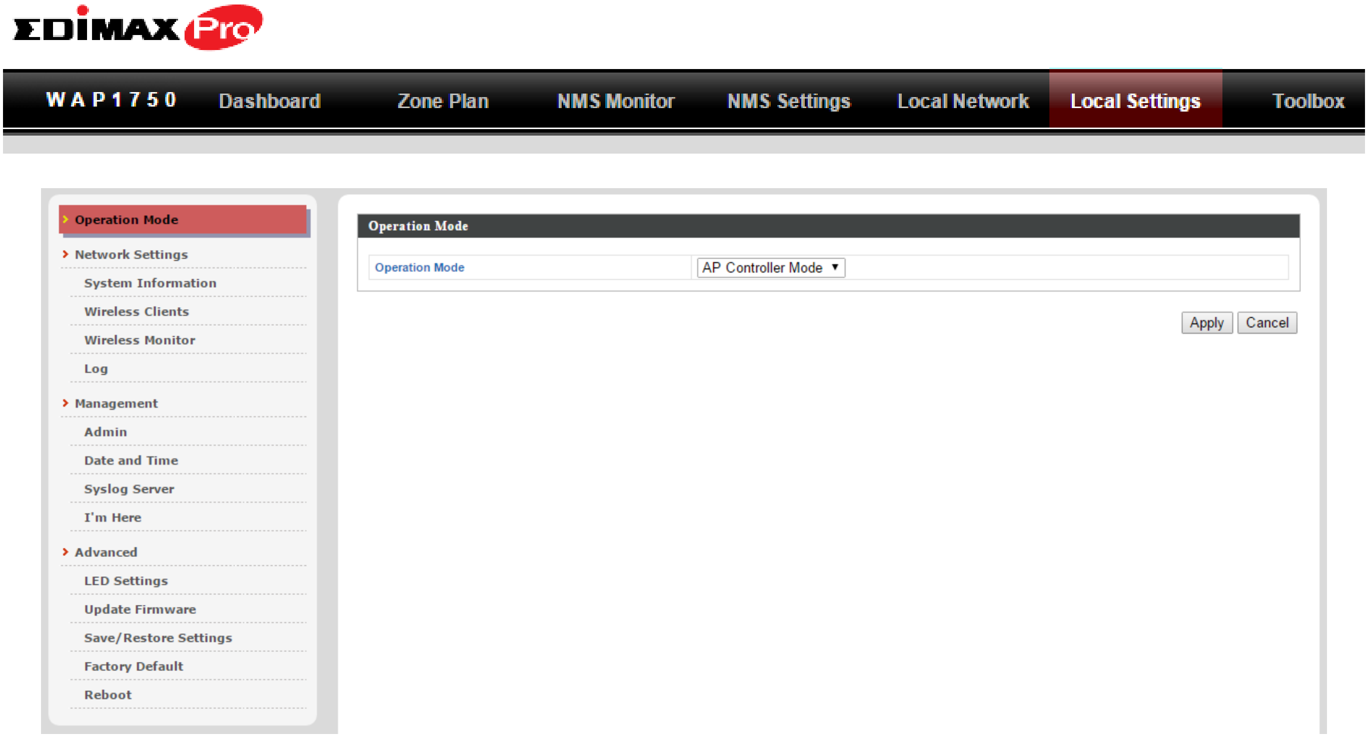


LAN-side IP Address

IP Address Assignment	Static IP Address ▼
IP Address	192.168.222.220
Subnet Mask	255.255.255.0
Default Gateway	192.168.222.1
Primary DNS Address	0.0.0.0
Secondary DNS Address	0.0.0.0

Local Network settings are for your AP Controller. You can configure the IP address and DHCP server of the AP Controller in addition to 2.4GHz & 5Ghz Wi-Fi and security, with WPS, RADIUS server, MAC filtering and WMM settings also available.

Local Settings

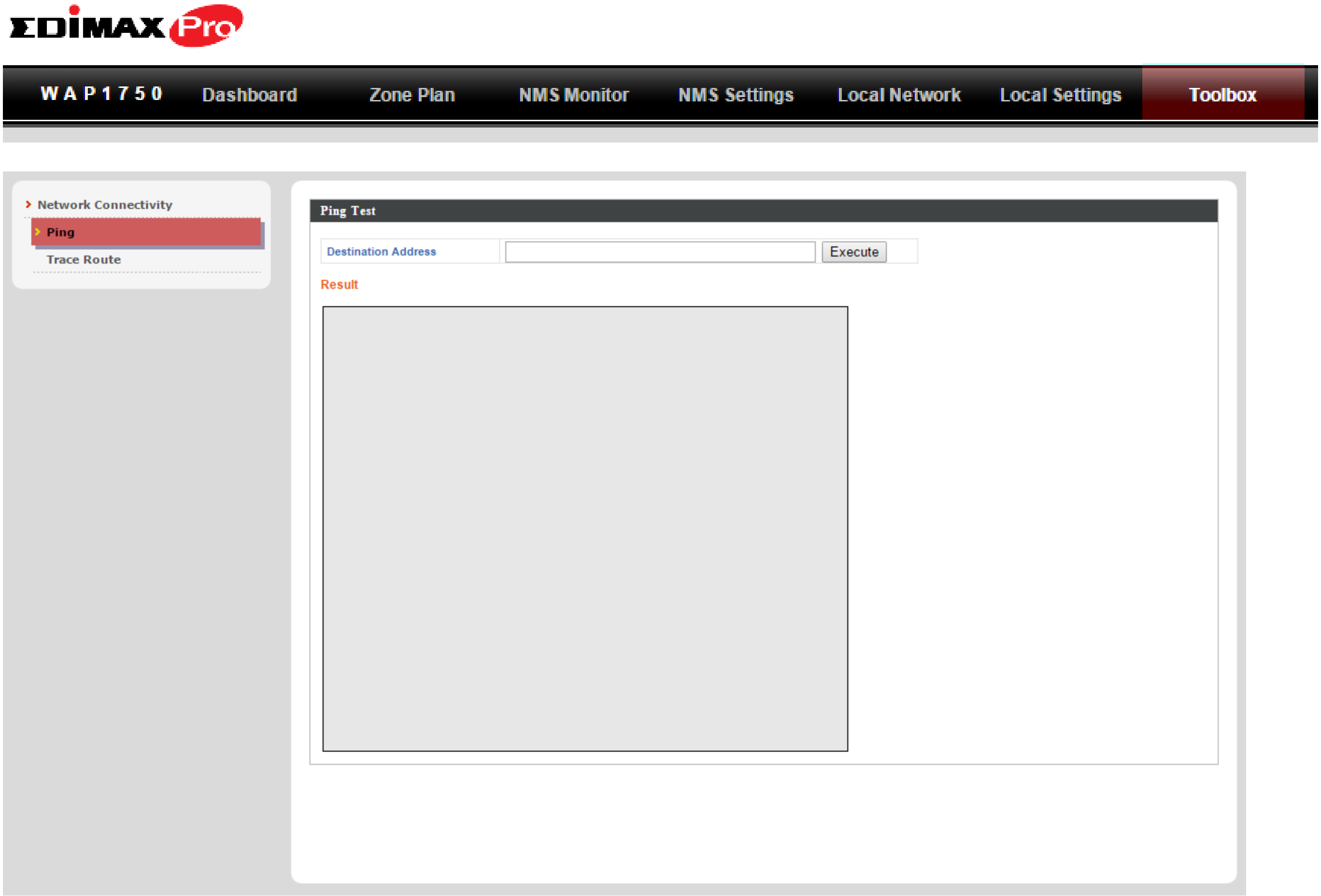


Operation Mode

Operation Mode: AP Controller Mode

Local Settings are for your AP Controller. You can set the operation mode and view network settings (clients and logs) specifically for the AP Controller, as well as other management settings such as date/time, admin accounts, firmware and reset.

Toolbox



The Toolbox panel provides a network diagnostic tools: *ping* and *traceroute*.

IV. Features

Descriptions of the functions of each main panel *Dashboard, Zone Plan, NMS Monitor, NMS Settings, Local Network, Local Settings & Toolbox* can be found below. When using Edimax NMS, click "Apply" to save changes:

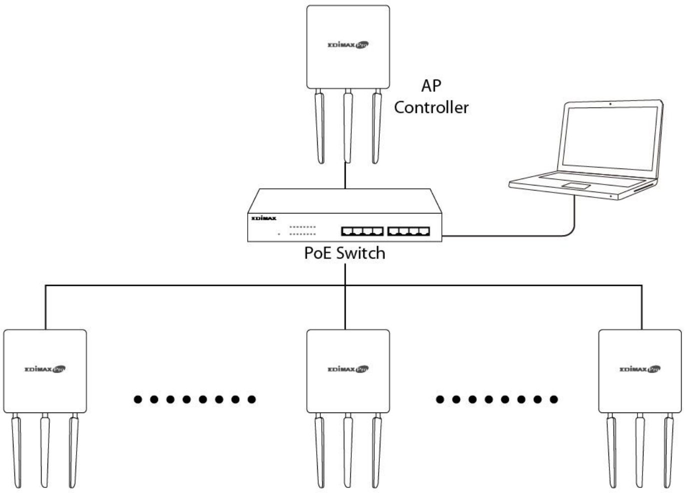
Screenshots displayed are examples. The information shown on your screen will vary depending on your configuration.

IV-1. LOGIN, LOGOUT & RESTART

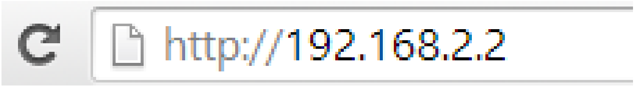
It is recommended that you login to the AP Controller to make configurations to Managed APs.

LOGIN

1. Connect a computer to the designated AP Controller using an Ethernet cable:



2. Open a web browser and enter the AP Controller's IP address in the address field. The default IP address is **192.168.2.2**



http://192.168.2.2

Your computer's IP address must be in the same subnet as the AP Controller. Refer to *V-1. Configuring your IP Address* ***for more help.***

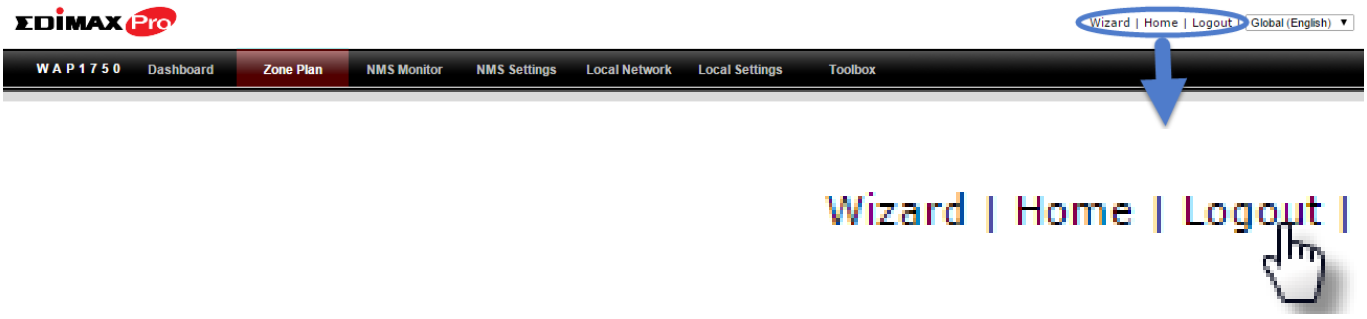
If you changed the AP Controller's IP address, or if your gateway/router uses a DHCP server, ensure you enter the correct IP address. Refer to your gateway/router's settings.

If using a DHCP server on the network, it is advised to use your DHCP server's settings to assign the AP Controller a static IP address.

3. Enter the username & password to login. The default username & password are **admin** & **1234**.

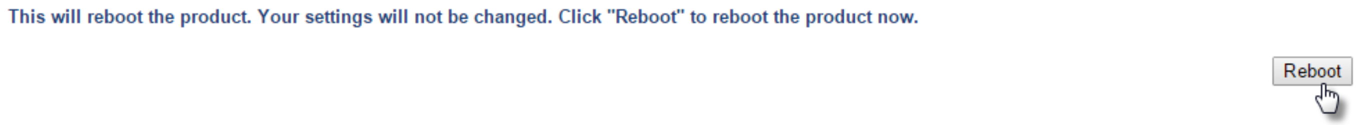
LOGOUT

To logout from Edimax NMS, click "Logout" in the top right corner:

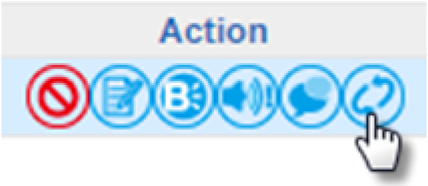


RESTART

You can restart your AP Controller or any Managed AP using Edimax NMS. To restart your AP Controller go to **Local Settings → Advanced → Reboot** and click "Reboot".

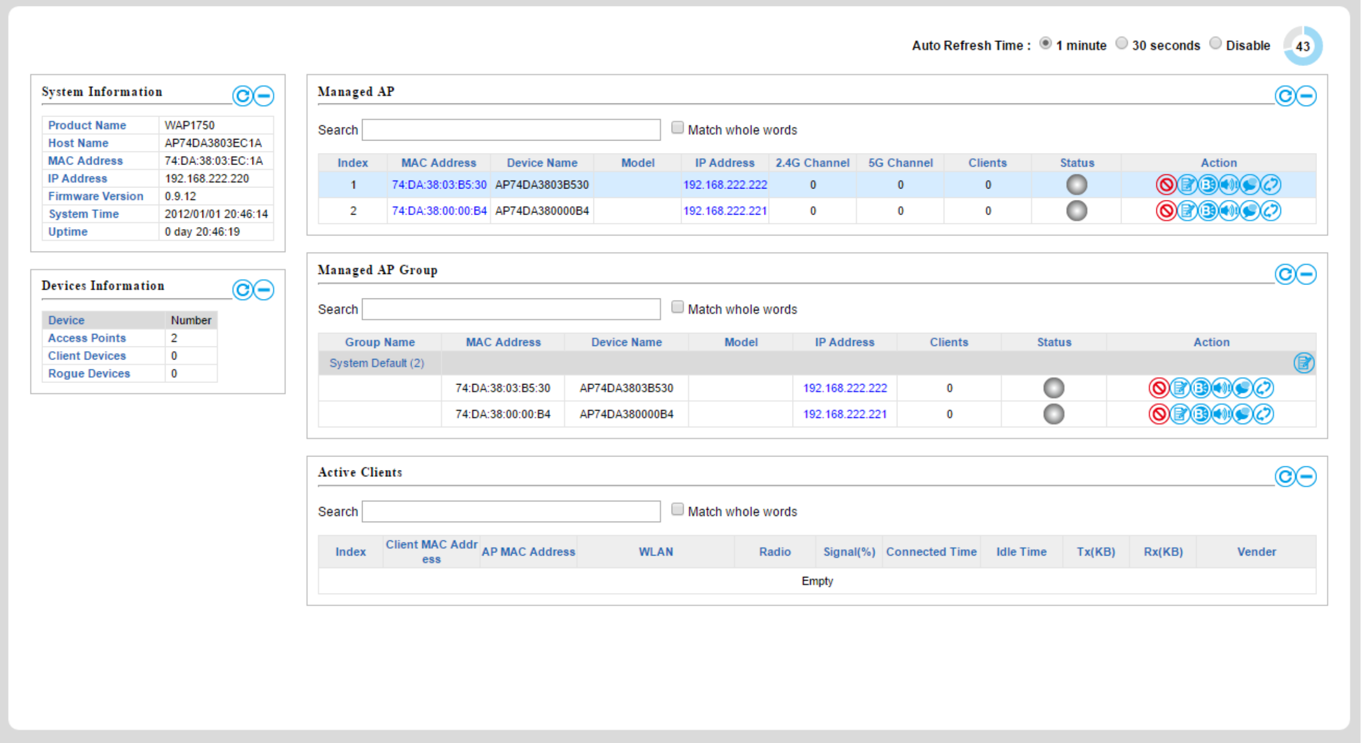

This will reboot the product. Your settings will not be changed. Click "Reboot" to reboot the product now.

To restart Managed APs click the Restart icon for the specified AP on the Dashboard:



IV-2. DASHBOARD

The dashboard displays an overview of your AP array:



Auto Refresh Time : ● 1 minute ○ 30 seconds ○ Disable 43

System Information

Product Name	WAP1750
Host Name	AP74DA3803EC1A
MAC Address	74:DA:38:03:EC:1A
IP Address	192.168.222.220
Firmware Version	0.9.12
System Time	2012/01/01 20:46:14
Uptime	0 day 20:46:19

Devices Information

Device	Number
Access Points	2
Client Devices	0
Rogue Devices	0

Managed AP

Search □ Match whole words

Index	MAC Address	Device Name	Model	IP Address	2.4G Channel	5G Channel	Clients	Status	Action
1	74:DA:38:03:B5:30	AP74DA3803B530		192.168.222.222	0	0	0	●	
2	74:DA:38:00:00:B4	AP74DA380000B4		192.168.222.221	0	0	0	●	

Managed AP Group

Search □ Match whole words

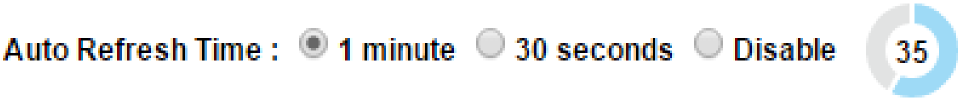
Group Name	MAC Address	Device Name	Model	IP Address	Clients	Status	Action
System Default (2)							
	74:DA:38:03:B5:30	AP74DA3803B530		192.168.222.222	0	●	
	74:DA:38:00:00:B4	AP74DA380000B4		192.168.222.221	0	●	

Active Clients

Search □ Match whole words

Index	Client MAC Address	AP MAC Address	WLAN	Radio	Signal(%)	Connected Time	Idle Time	Tx(KB)	Rx(KB)	Vender
Empty										

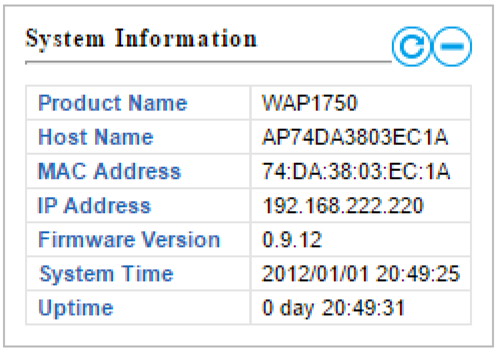
Use the blue icons above to refresh or collapse each panel in the dashboard. Click and drag to move a panel to suit your preference. You can set the dashboard to auto-refresh every 1 minute, 30 seconds or disable auto-refresh:



Auto Refresh Time : ● 1 minute ○ 30 seconds ○ Disable 35

IV-2-1. System Information

System Information displays information about the AP Controller: *Product Name (model), Host Name, MAC Address, IP Address, Firmware Version, System Time and Uptime (time the access point has been on).*

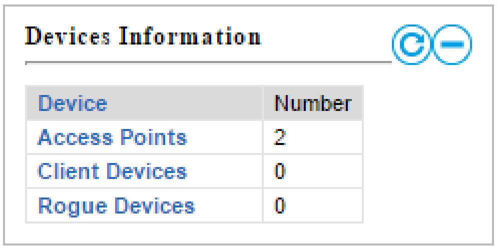


System Information

Product Name	WAP1750
Host Name	AP74DA3803EC1A
MAC Address	74:DA:38:03:EC:1A
IP Address	192.168.222.220
Firmware Version	0.9.12
System Time	2012/01/01 20:49:25
Uptime	0 day 20:49:31

IV-2-2. Devices Information

Devices Information is a summary of the number of all devices in the local network: *Access Points, Clients Connected, and Rogue (unidentified) Devices.*

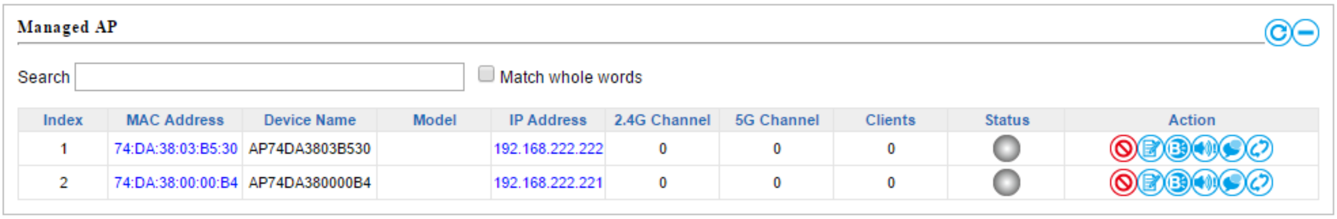


Devices Information

Device	Number
Access Points	2
Client Devices	0
Rogue Devices	0

IV-2-3. Managed AP

Managed AP displays information about each Managed AP in the local network: *Index (reference number), MAC Address, Device Name, Model, IP Address, 2.4GHz & 5GHz Wireless Channel Number, No. of Clients connected to each access point, and Status (connected, connecting or disconnected).*



Managed AP

Search □ Match whole words

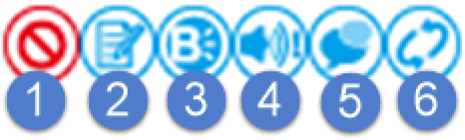
Index	MAC Address	Device Name	Model	IP Address	2.4G Channel	5G Channel	Clients	Status	Action
1	74:DA:38:03:B5:30	AP74DA3803B530		192.168.222.222	0	0	0	●	⊘ ✎ B 🔊 💬 ⟳
2	74:DA:38:00:00:B4	AP74DA380000B4		192.168.222.221	0	0	0	●	⊘ ✎ B 🔊 💬 ⟳

The **search** function can be used to locate a specific Managed AP. Type in the search box and the list will update:

Search □ Match whole words

The **Status** icon displays *grey* (disconnected), *yellow* (connecting) or *green* (connected) for each Managed AP.

Each Managed AP has “**Action**” icons with the following functions:



1. **Disallow**
   Remove the Managed AP from the AP array and disable connectivity.

2. **Edit**
   *Edit various settings for the Managed AP (refer to **IV-5-1. Access Point**).*

3. **Blink LED**
   The Managed AP’s LED will flash temporarily to help identify & locate access points.

4. **Buzzer**
   The Managed AP’s buzzer will sound temporarily to help identify & locate access points.

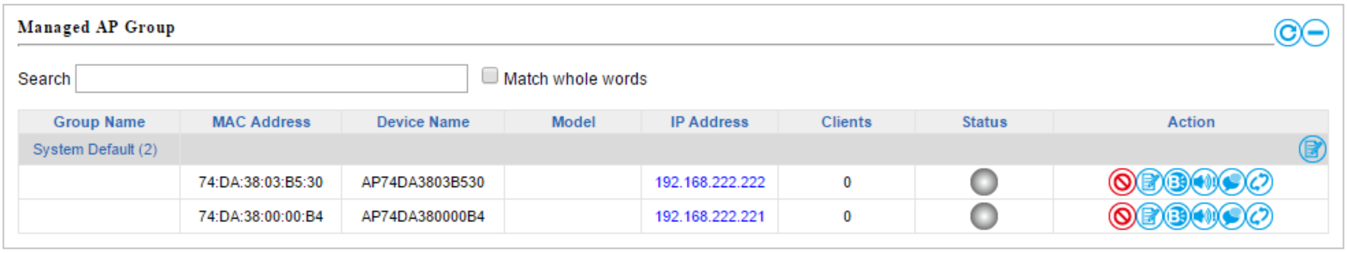
5. **Network Connectivity**
   Go to the "Network Connectivity" panel to perform a ping or traceroute.

6. **Restart**
   Restarts the Managed AP.

IV-2-4. Managed AP Group

Managed APs can be grouped according to your requirements. **Managed AP Group** displays information about each Managed AP group in the local network: *Group Name, MAC Address, Device Name, Model, IP Address, 2.4GHz & 5GHz Wireless Channel Number, No. of Clients connected to each access point, and Status (connected or disconnected).*

To edit Managed AP Groups go to **NMS Settings → Access Point** (refer to **IV-5-1. Access Point**).



Managed AP Group

Search □ Match whole words

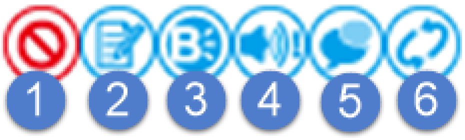
Group Name	MAC Address	Device Name	Model	IP Address	Clients	Status	Action
System Default (2)							
	74:DA:38:03:B5:30	AP74DA3803B530		192.168.222.222	0	●	
	74:DA:38:00:00:B4	AP74DA380000B4		192.168.222.221	0	●	

The search function can be used to locate a specific Managed AP Group. Type in the search box and the list will update:

Search □ Match whole words

The **Status** icon displays *grey* (disconnected), *yellow* (connecting) or *green* (connected) for each individual Managed AP.

Each Managed AP has "**Action**" icons with the following functions:



1. **Disallow**
   Remove the Managed AP from the AP array and disable connectivity.

2. **Edit**
   Edit various settings for the Managed AP (refer to ***IV-5-1. Access Point****)*

3. **Blink LED**
   The Managed AP's LED will flash temporarily to help identify & locate access points.

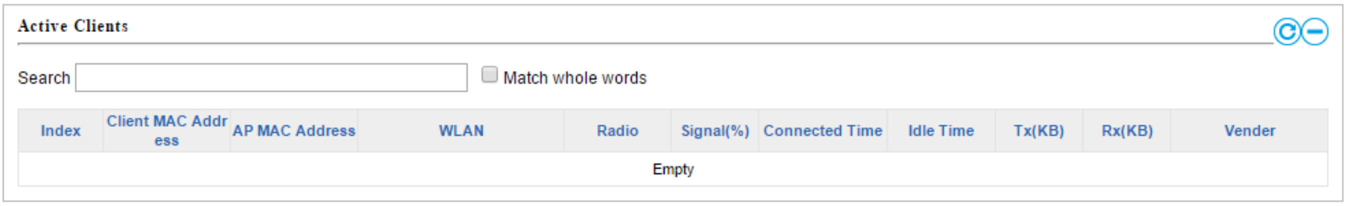
4. **Buzzer**
   The Managed AP's buzzer will sound temporarily to help identify & locate access points.

5. **Network Connectivity**
   Go to the "Network Connectivity" panel to perform a ping or traceroute.

6. **Restart**
   Restarts the Managed AP.

IV-2-5. Active Clients

Active Clients displays information about each client in the local network: *Index (reference number), Client MAC Address, Device Name, Model, IP Address, 2.4GHz & 5GHz Wireless Channel Number, No. of Clients connected to each access point, and Status (on or off).*



Active Clients

Search ☐ Match whole words

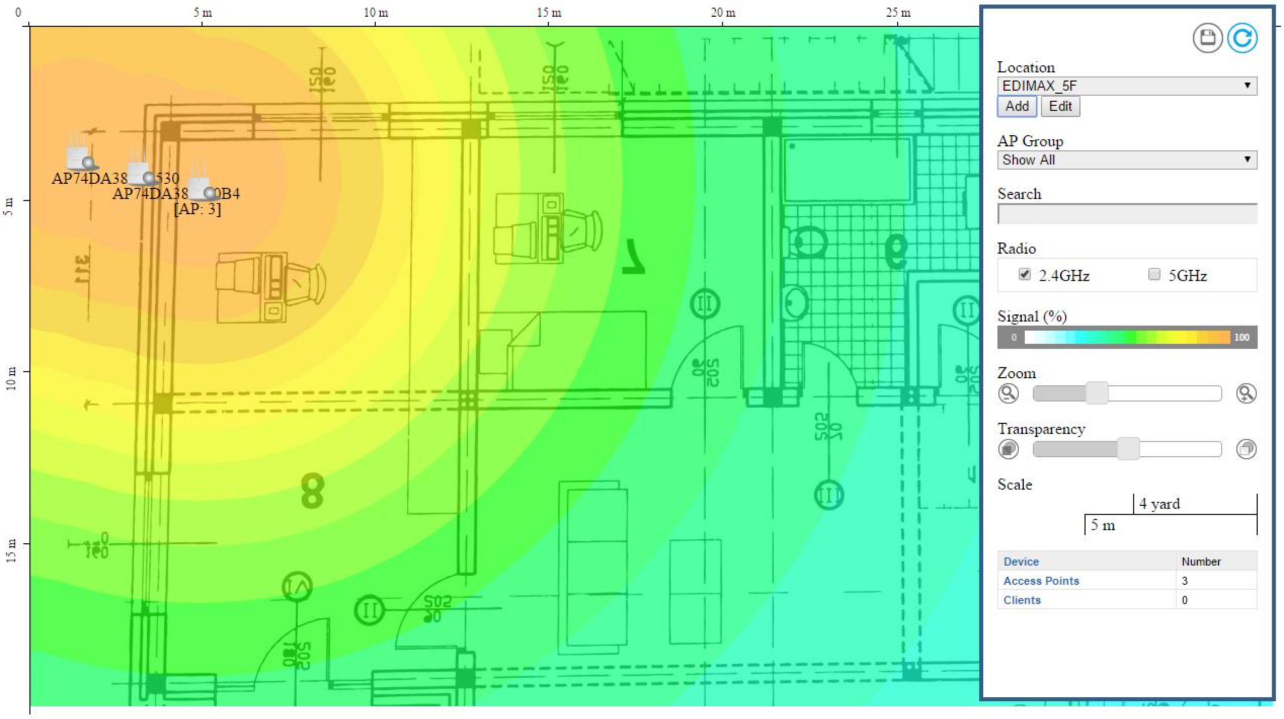
Index	Client MAC Address	AP MAC Address	WLAN	Radio	Signal(%)	Connected Time	Idle Time	Tx(KB)	Rx(KB)	Vender
					Empty					

The search function can be used to locate a specific client. Type in the search box and the list will update:

Search ☐ Match whole words

IV-3. ZONE PLAN

The Zone Plan can be fully customized to match your network environment. You can move the AP icons and select different location images (upload location images in **NMS Settings → Zone Edit**) to create a visual map of your AP array.



Location: EDIMAX_5F

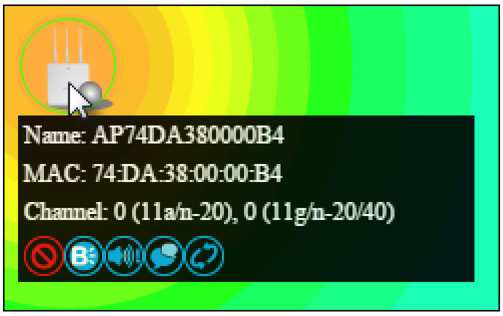
AP Group: Show All

Search:

Radio: ☑ 2.4GHz □ 5GHz

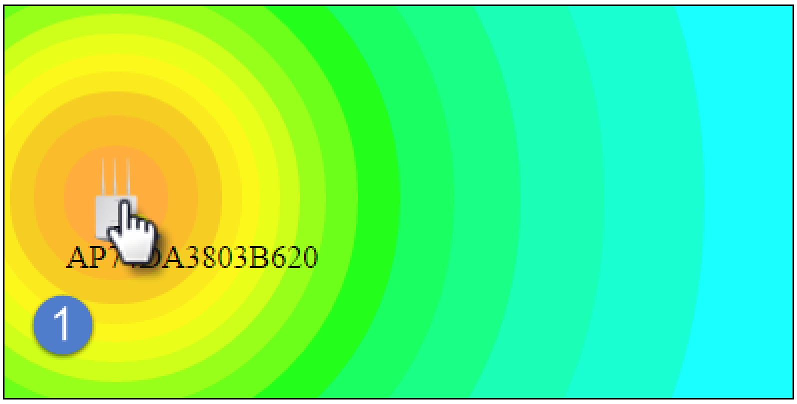
Device	Number
Access Points	3
Clients	0

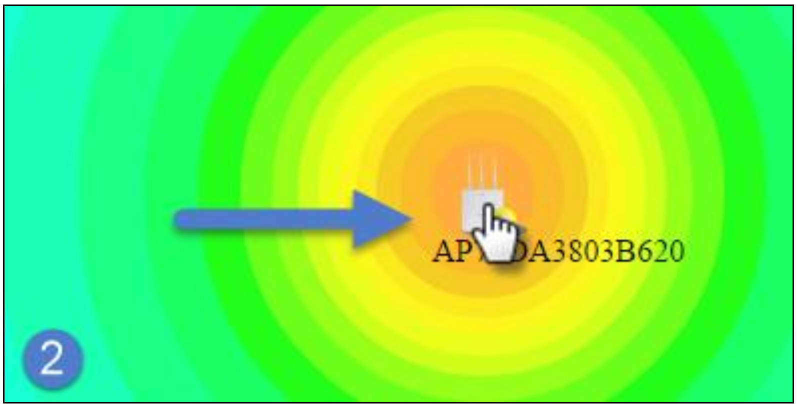
Use the menu on the right side to make adjustments and mouse-over an AP icon in the zone map to see more information. Click an AP icon in the zone map to select it and display action icons:



Name: AP74DA380000B4
MAC: 74:DA:38:00:00:B4
Channel: 0 (11a/n-20), 0 (11g/n-20/40)

Click and drag an AP icon to move the icon around the zone map. The signal strength for each AP is displayed according to the “Signal” key in the menu on the right side:





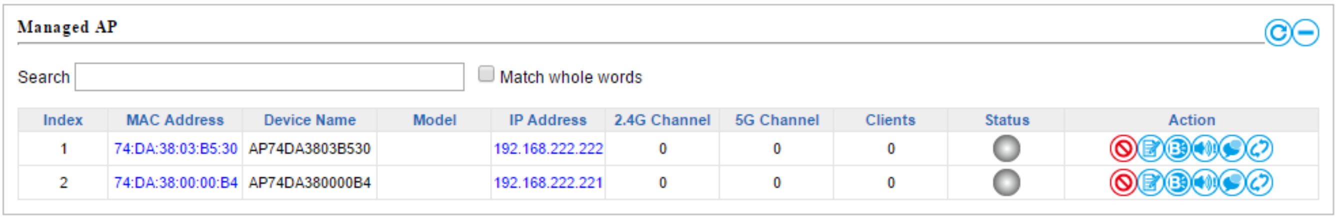
Location	Select a pre-defined location from the drop down menu. When you upload a location image in **NMS Settings → Zone Edit**, it will be available for selection here.
AP Group	You can select an AP Group to display in the zone map. Edit AP Groups in **NMS Settings → Access Point.**
Search	Use the search box to quickly locate an AP.
Radio	Use the checkboxes to display APs according to 2.4GHz or 5GHz wireless radio frequency.
Signal	Signal strength key for the signal strength display around each AP in the zone map.
Zoom	Use the slider to adjust the zoom level of the map.
Transparency	Use the slider to adjust the transparency of location images.
Scale	Zone map scale.
Device/Number	Displays number and type of devices in the zone map.

IV-4. NMS MONITOR

IV-4-1. Access Point

IV-4-1-1. Managed AP

Displays information about each Managed AP in the local network: *Index (reference number), MAC Address, Device Name, Model, IP Address, 2.4GHz & 5GHz Wireless Channel Number, No. of Clients connected to each access point, and Status (connected, connecting or disconnected).*



Managed AP

Search □ Match whole words

Index	MAC Address	Device Name	Model	IP Address	2.4G Channel	5G Channel	Clients	Status	Action
1	74:DA:38:03:B5:30	AP74DA3803B530		192.168.222.222	0	0	0	●	
2	74:DA:38:00:00:B4	AP74DA380000B4		192.168.222.221	0	0	0	●	

The **search** function can be used to locate a specific Managed AP. Type in the search box and the list will update:

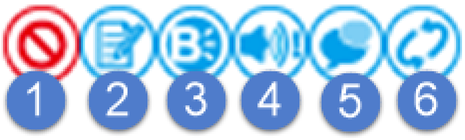
Search □ Match whole words

The **Status** icon displays the status of each Managed AP.

Status Icons			
Icon	**Color**	**Status**	**Definition**
●	Grey	Disconnected	Managed AP is disconnected. *Please check the network connection and ensure the Managed AP is in the same IP subnet as the AP Controller.*
●	Red	Authentication Failed Or Incompatible NMS Version	System security must be the same for all access points in the AP array. *Please check security settings (refer to **IV-5-8-1. System Security**).* Access points must use the same version of Edimax NMS: the managed AP will not be able to make configurations. *Please*

			*use the AP Controller's firmware upgrade function (refer to **IV-5-7. Firmware Upgrade**).*
🟠	Orange	Configuring or Upgrading	*Please wait while the Managed AP makes configurations or while the firmware is upgrading.*
🟡	Yellow	Connecting	*Please wait while Managed AP is connecting.*
🟢	Green	Connected	*Managed AP is connected.*
🔵	Blue	Waiting for Approval	Managed AP is waiting for approval. *Refer to **IV-5-1. Access Point: Auto Approval**. Note: Eight Managed APs are supported. Additional APs will display this status until an existing Managed AP is removed.*

Each Managed AP has "**Action**" icons with the following functions:



1. **Disallow**
   Remove the Managed AP from the AP array and disable connectivity.

1. **Edit**
   *Edit various settings for the Managed AP (refer to **IV-5-1. Access Point**).*

2. **Blink LED**
   The Managed AP's LED will flash temporarily to help identify & locate access points.

3. **Buzzer**
   The Managed AP's buzzer will sound temporarily to help identify & locate access points.

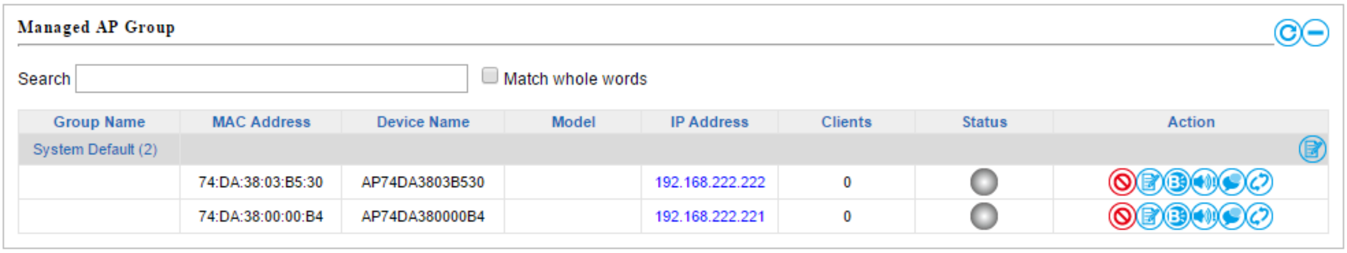
4. **Network Connectivity**
   Go to the "Network Connectivity" panel to perform a ping or traceroute.

5. **Restart**
   Restarts the Managed AP.

IV-4-1-2. Managed AP Group

Managed APs can be grouped according to your requirements. Managed AP Group displays information about each Managed AP group in the local network: *Group Name, MAC Address, Device Name, Model, IP Address, 2.4GHz & 5GHz Wireless Channel Number, No. of Clients connected to each access point, and Status (connected or disconnected).*

To edit Managed AP Groups go to **NMS Settings → Access Point** (refer to **IV-5-1. Access Point**).



Managed AP Group

Search □ Match whole words

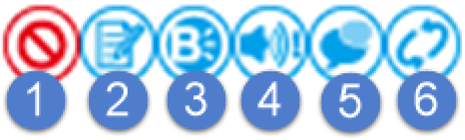
Group Name	MAC Address	Device Name	Model	IP Address	Clients	Status	Action
System Default (2)							
	74:DA:38:03:B5:30	AP74DA3803B530		192.168.222.222	0	●	
	74:DA:38:00:00:B4	AP74DA380000B4		192.168.222.221	0	●	

The search function can be used to locate a specific Managed AP Group. Type in the search box and the list will update:

Search □ Match whole words

The **Status** icon displays *grey* (disconnected), *red* (authentication failed/incompatible NMS version), *orange* (upgrading firmware), *yellow* (connecting), *green* (connected) or *blue* (waiting for approval) for each individual Managed AP. Refer **to IV-4-1-1. Managed AP:** *Status Icons* for full descriptions.

Each Managed AP has "**Action**" icons with the following functions:



2. **Disallow**
   Remove the Managed AP from the AP array and disable connectivity.

3. **Edit**
   Edit various settings for the Managed AP (refer to ***IV-5-1. Access Point****).*

4. **Blink LED**
   The Managed AP's LED will flash temporarily to help identify & locate access points.

5. **Buzzer**
   The Managed AP's buzzer will sound temporarily to help identify & locate access points.

6. **Network Connectivity**
   Go to the "Network Connectivity" panel to perform a ping or traceroute.

7. **Restart**
   Restarts the Managed AP.

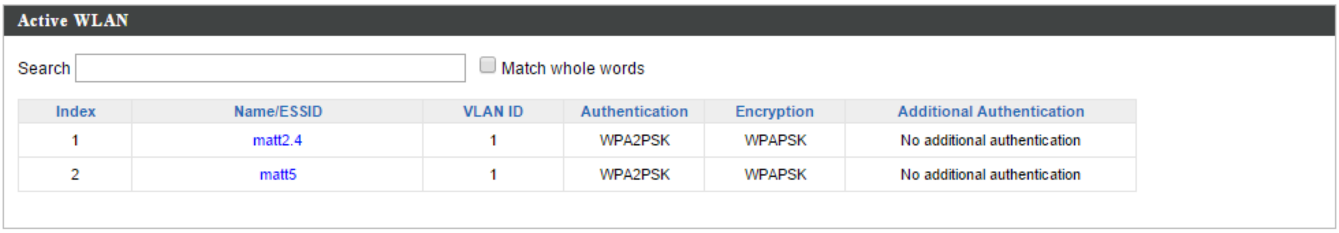
IV-4-2. WLAN

IV-4-2-1. Active WLAN

Displays information about each SSID in the AP Array: *Index (reference number), Name/SSID, VLAN ID, Authentication, Encryption, IP Address and Additional Authentication.*

To configure encryption and VLANs for Managed APs go to **NMS Settings → WLAN**.

The search function can be used to locate a specific SSID. Type in the search box and the list will update:

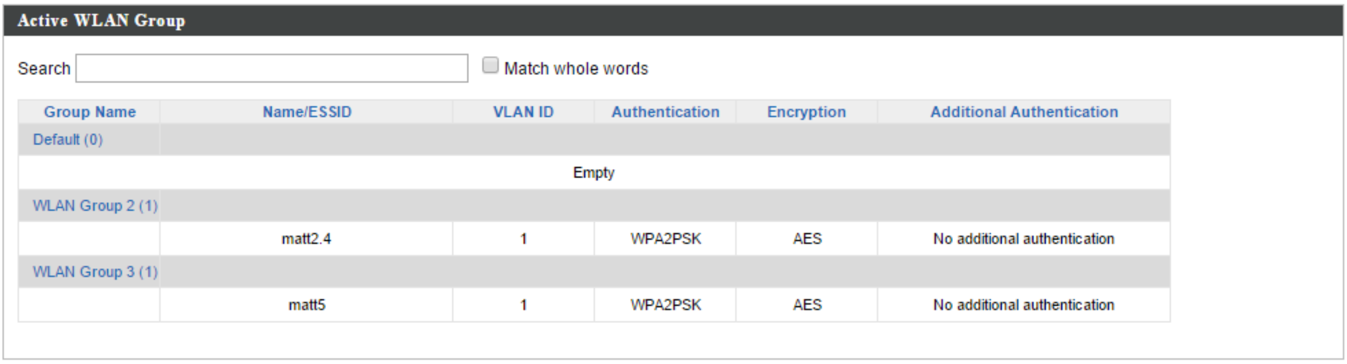


Index	Name/ESSID	VLAN ID	Authentication	Encryption	Additional Authentication
1	matt2.4	1	WPA2PSK	WPAPSK	No additional authentication
2	matt5	1	WPA2PSK	WPAPSK	No additional authentication

IV-4-2-2. Active WLAN Group

WLAN groups can be created according to your preference. Active WLAN Group displays information about WLAN group: *Group Name, Name/SSID, VLAN ID, Authentication, Encryption, IP Address and Additional Authentication.*

The search function can be used to locate a specific Active WLAN Group. Type in the search box and the list will update:



Active WLAN Group

Search □ Match whole words

Group Name	Name/ESSID	VLAN ID	Authentication	Encryption	Additional Authentication
Default (0)					
	Empty				
WLAN Group 2 (1)					
	matt2.4	1	WPA2PSK	AES	No additional authentication
WLAN Group 3 (1)					
	matt5	1	WPA2PSK	AES	No additional authentication

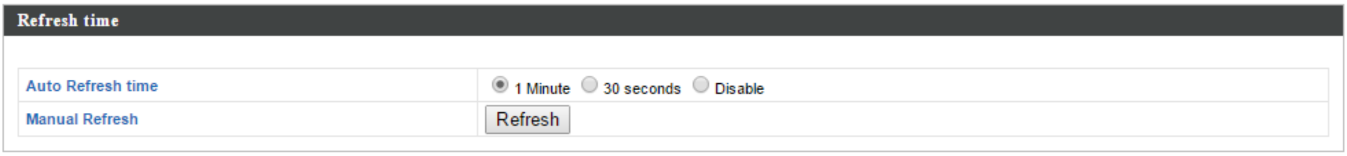
IV-4-3. Clients

IV-4-3-1. Active Clients

Displays information about clients currently connected to the AP Array: *Index (reference number), Client MAC Address, AP MAC Address, WLAN (SSID), Radio (2.4GHz or 5GHz), Signal Strength received by Client, Connected Time, Idle Time, Tx & Rx (Data transmitted and received by Client in KB), and the Vendor of the client device.*

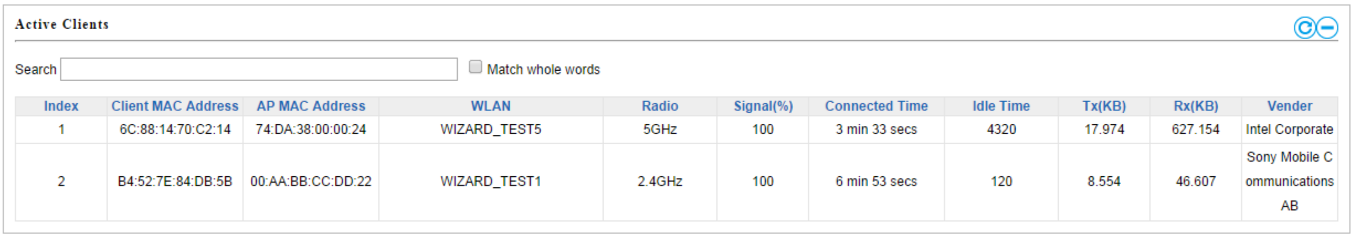
You can set or disable the auto-refresh time for the client list or click “Refresh” to manually refresh.

The search function can be used to locate a specific client. Type in the search box and the list will update:



Refresh time

Auto Refresh time	● 1 Minute ○ 30 seconds ○ Disable
Manual Refresh	Refresh



Active Clients

Search □ Match whole words

Index	Client MAC Address	AP MAC Address	WLAN	Radio	Signal(%)	Connected Time	Idle Time	Tx(KB)	Rx(KB)	Vender
1	6C:88:14:70:C2:14	74:DA:38:00:00:24	WIZARD_TEST5	5GHz	100	3 min 33 secs	4320	17.974	627.154	Intel Corporate
2	B4:52:7E:84:DB:5B	00:AA:BB:CC:DD:22	WIZARD_TEST1	2.4GHz	100	6 min 53 secs	120	8.554	46.607	Sony Mobile Communications AB

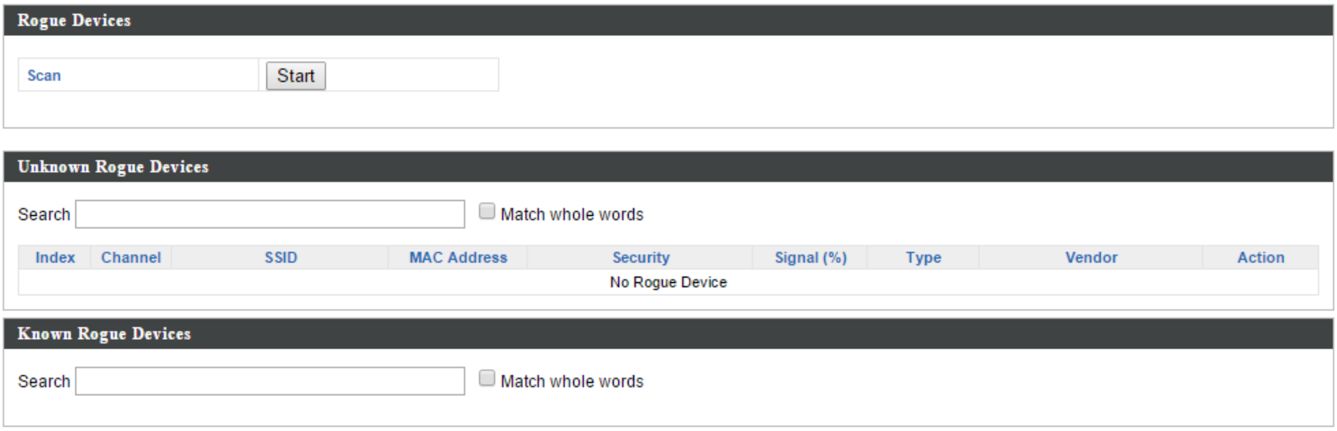
IV-4-4. Rogue Devices

Rogue access point detection can identify any unauthorized access points which may have been installed in the network.

Click “Start” to scan for rogue devices:

Unknown Rogue Devices displays information about rogue devices discovered during the scan: *Index (reference number), Channel, SSID, MAC Address, Security, Signal Strength, Type, Vendor and Action.*

The search function can be used to locate a known rogue device. Type in the search box and the list will update:



Rogue Devices

Scan	Start

Unknown Rogue Devices

Search □ Match whole words

Index	Channel	SSID	MAC Address	Security	Signal (%)	Type	Vendor	Action
No Rogue Device								

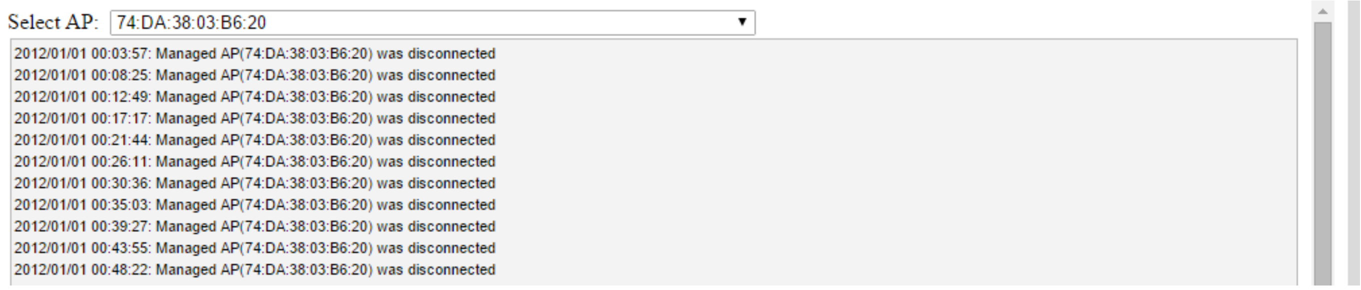
Known Rogue Devices

Search □ Match whole words

IV-4-5. Information

IV-4-5-1. All Events/Activities

Displays a log of time-stamped events for each access point in the Array – use the drop down menu to select an access point and view the log.



Select AP: 74:DA:38:03:B6:20

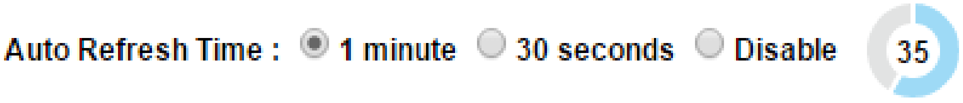
```
2012/01/01 00:03:57: Managed AP(74:DA:38:03:B6:20) was disconnected
2012/01/01 00:08:25: Managed AP(74:DA:38:03:B6:20) was disconnected
2012/01/01 00:12:49: Managed AP(74:DA:38:03:B6:20) was disconnected
2012/01/01 00:17:17: Managed AP(74:DA:38:03:B6:20) was disconnected
2012/01/01 00:21:44: Managed AP(74:DA:38:03:B6:20) was disconnected
2012/01/01 00:26:11: Managed AP(74:DA:38:03:B6:20) was disconnected
2012/01/01 00:30:36: Managed AP(74:DA:38:03:B6:20) was disconnected
2012/01/01 00:35:03: Managed AP(74:DA:38:03:B6:20) was disconnected
2012/01/01 00:39:27: Managed AP(74:DA:38:03:B6:20) was disconnected
2012/01/01 00:43:55: Managed AP(74:DA:38:03:B6:20) was disconnected
2012/01/01 00:48:22: Managed AP(74:DA:38:03:B6:20) was disconnected
```

IV-4-5-2. Monitoring

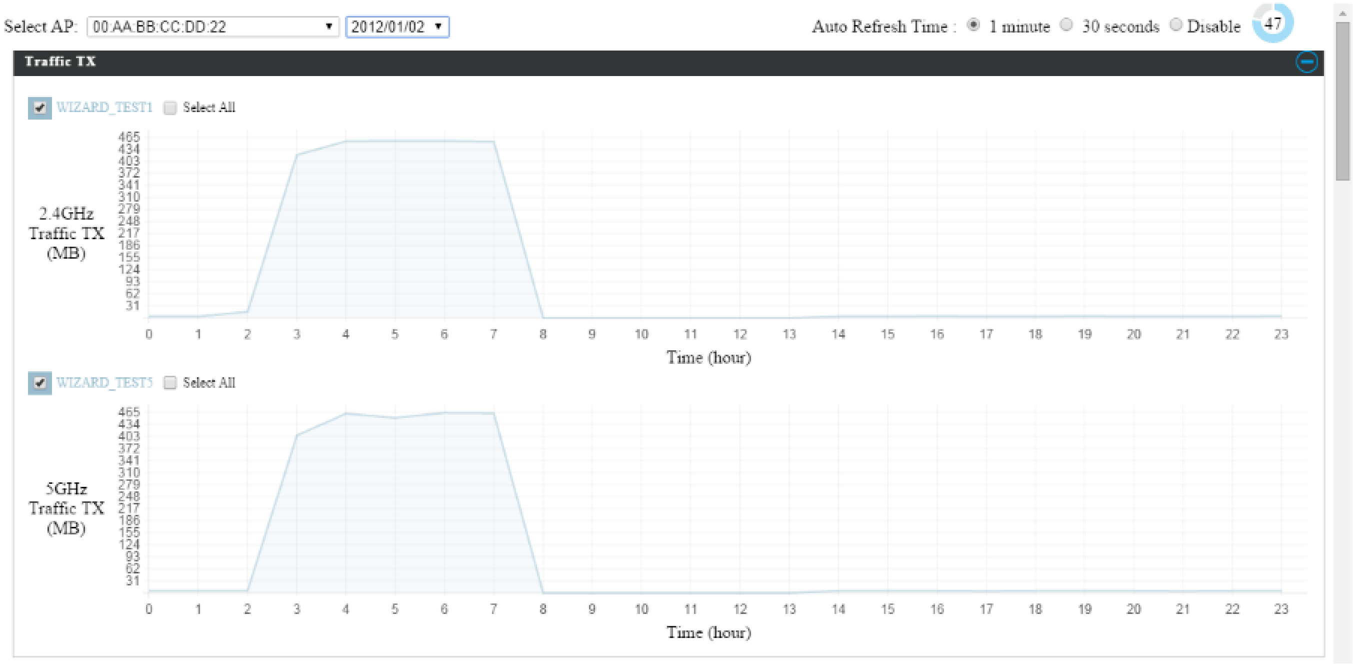
Displays graphical monitoring information about access points in the Array for 2.4GHz & 5GHz: *Traffic Tx (data transmitted in MB), Traffic Rx (data received in MB), No. of Clients, Wireless Channel, Tx Power (wireless radio power), CPU Usage and Memory Usage.*

Use the drop down menus to select an access point and date.

You can set or disable the auto-refresh time for the data:



Auto Refresh Time : ● 1 minute ○ 30 seconds ○ Disable 35



Select AP: 00:AA:BB:CC:DD:22 ▾ 2012/01/02 ▾

Auto Refresh Time : ● 1 minute ○ 30 seconds ○ Disable 47

Traffic TX

☑ WIZARD_TEST1 □ Select All

☑ WIZARD_TEST5 □ Select All

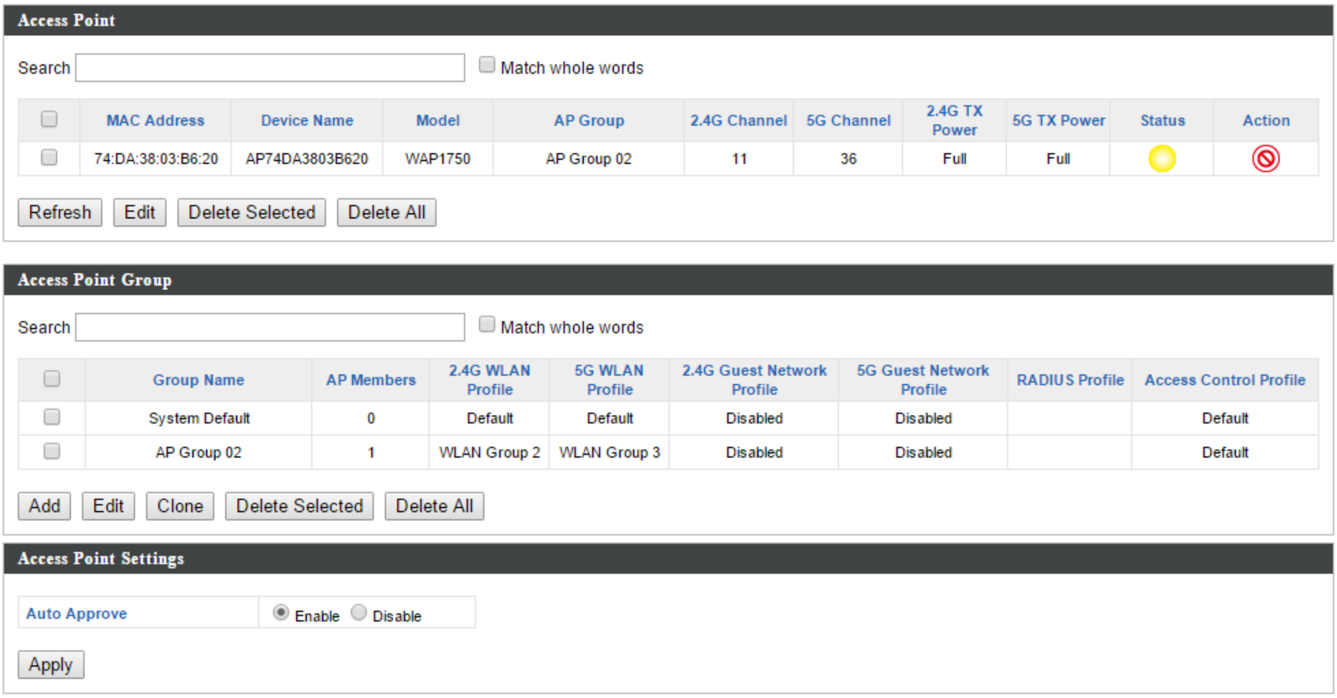
IV-5. NMS Settings

IV-5-1. Access Point

Displays information about each access point and access point group in the local network and allows you to edit access points and edit or add access point groups.

The **search** function can be used to locate an access point or access point group. Type in the search box and the list will update:

Search □ Match whole words



Access Point

Search □ Match whole words

□	MAC Address	Device Name	Model	AP Group	2.4G Channel	5G Channel	2.4G TX Power	5G TX Power	Status	Action
□	74:DA:38:03:B6:20	AP74DA3803B620	WAP1750	AP Group 02	11	36	Full	Full	●	🚫

Access Point Group

Search □ Match whole words

□	Group Name	AP Members	2.4G WLAN Profile	5G WLAN Profile	2.4G Guest Network Profile	5G Guest Network Profile	RADIUS Profile	Access Control Profile
□	System Default	0	Default	Default	Disabled	Disabled		Default
□	AP Group 02	1	WLAN Group 2	WLAN Group 3	Disabled	Disabled		Default

Access Point Settings

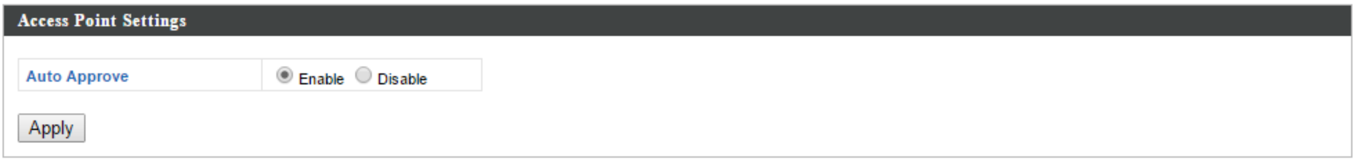
Auto Approve	● Enable ○ Disable

The **Status** icon displays *grey* (disconnected), *red* (authentication failed/incompatible NMS version), *orange* (upgrading firmware), *yellow* (connecting), *green* (connected) or *blue* (waiting for approval) for each individual Managed AP. Refer **to IV-4-1-1. Managed AP:** *Status Icons* for full descriptions.

The **"Action"** icons enable you to allow or disallow an access point: 🚫 ✓

Select an access point or access point group using the check-boxes and click “**Edit**” to make configurations, or click “**Add**” to add a new access point group:

The **Access Point Settings** panel can enable or disable Auto Approve for all Managed APs. When enabled, Managed APs will automatically join the AP Array with the Controller AP. When disabled, Managed APs must be manually approved to join the AP Array with the Controller AP.



Access Point Settings

Auto Approve ● Enable ○ Disable

Apply

Access Point Settings	
Auto Approve	Enable or disable Auto Approve for all Managed APs.

To manually approve a Managed AP, use the *allow* “Action” icon for the specified access point:

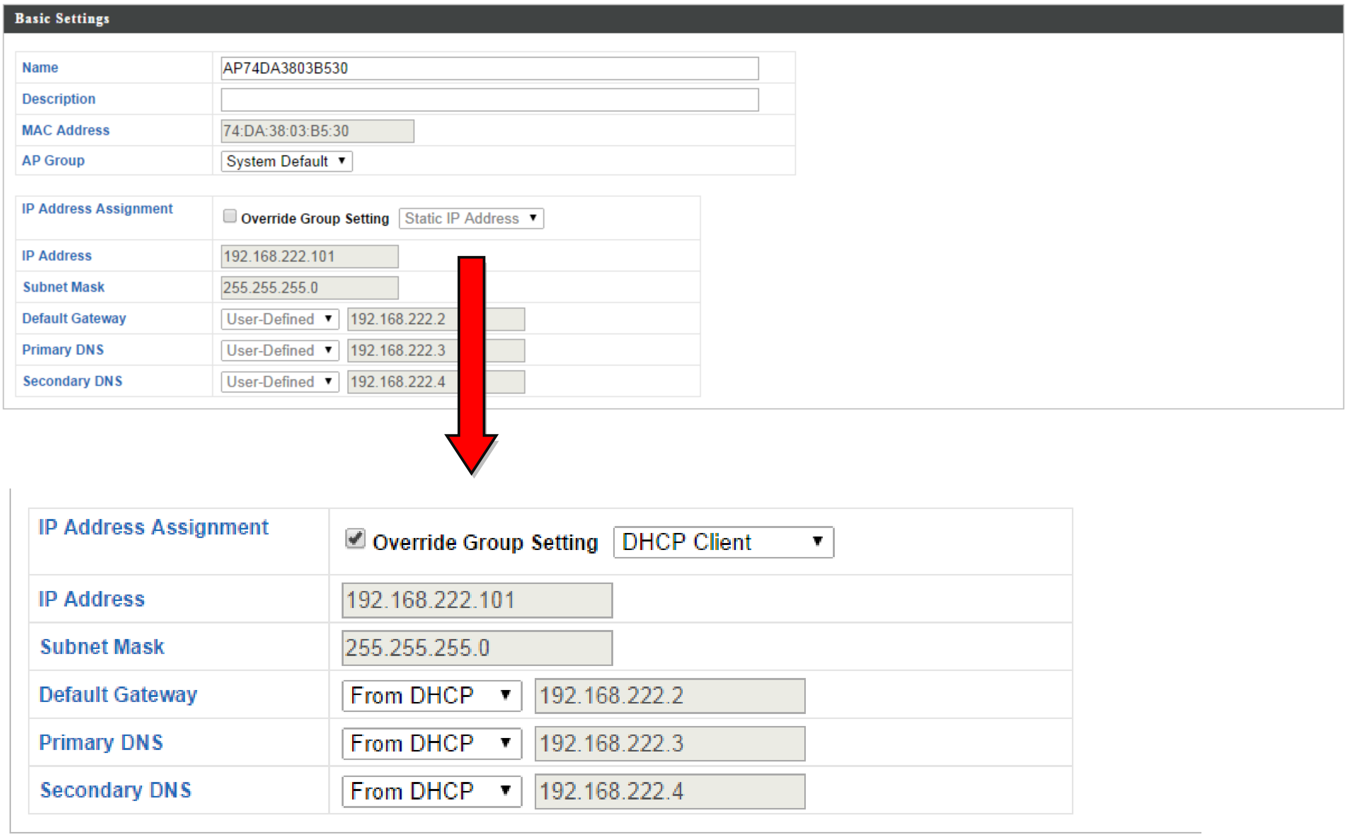
Edit Access Point

Configure your selected access point on your LAN. You can set the access point as a DHCP client or specify a static IP address for your access point, and assign the access point to an AP group, as well as edit 2.4GHz & 5GHz wireless radio settings. An events log is displayed at the bottom of the page.

You can also use **Profile Settings** to assign the access point to WLAN, Guest Network, RADIUS and Access Control groups independently from Access Point Group settings.

Check the “**Override Group Settings**” box to use different individual settings for access points assigned to AP Groups:

☑ Override Group Setting



Basic Settings

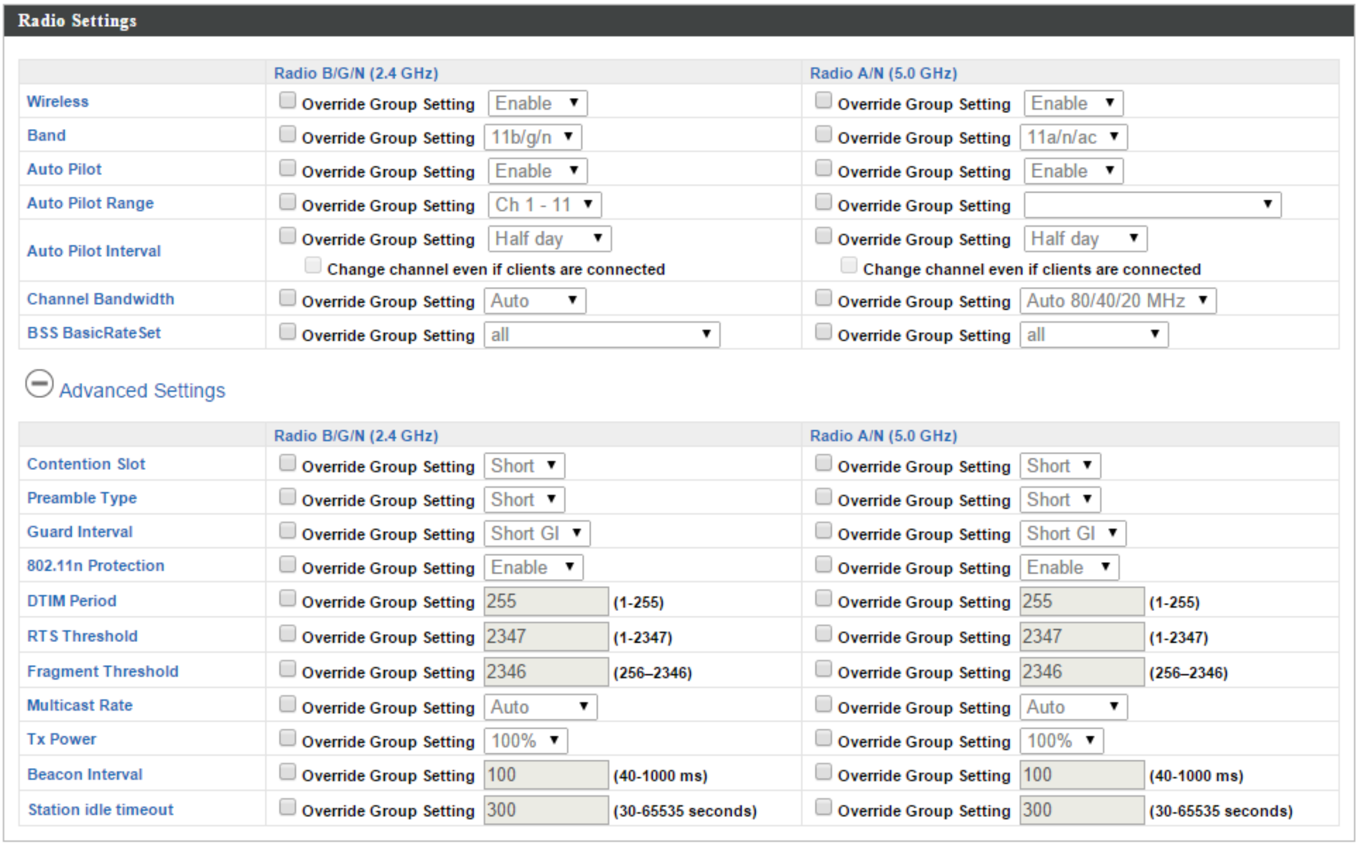
Name	AP74DA3803B530
Description	
MAC Address	74:DA:38:03:B5:30
AP Group	System Default ▾

IP Address Assignment	□ Override Group Setting	Static IP Address ▾
IP Address	192.168.222.101	
Subnet Mask	255.255.255.0	
Default Gateway	User-Defined ▾	192.168.222.2
Primary DNS	User-Defined ▾	192.168.222.3
Secondary DNS	User-Defined ▾	192.168.222.4

IP Address Assignment	☑ Override Group Setting	DHCP Client ▾
IP Address	192.168.222.101	
Subnet Mask	255.255.255.0	
Default Gateway	From DHCP ▾	192.168.222.2
Primary DNS	From DHCP ▾	192.168.222.3
Secondary DNS	From DHCP ▾	192.168.222.4

Basic Settings	
Name	Edit the access point name. The default name is AP + MAC address.
Description	Enter a description of the access point for reference e.g. 2nd Floor Office.
MAC Address	Displays MAC address.
AP Group	Use the drop down menu to assign the AP to an AP Group. You can edit AP Groups from the **NMS Settings → Access Point** page.
IP Address Assignment	Select "DHCP Client" for your access point to be assigned a dynamic IP address from your router's DHCP server, or select "Static IP" to manually specify a static/fixed IP address for your access point (below). Check the box "Override Group Setting" if the AP is a member of an AP Group and you wish to use a different setting than the AP Group setting.
IP Address	Specify the IP address here. This IP address will be assigned to your access point and will replace the default IP address.
Subnet Mask	Specify a subnet mask. The default value is 255.255.255.0

Default Gateway	For DHCP users, select “From DHCP” to get default gateway from your DHCP server or “User-Defined” to enter a gateway manually. For static IP users, the default value is blank.
Primary DNS	DHCP users can select “From DHCP” to get primary DNS server’s IP address from DHCP or “User-Defined” to manually enter a value. For static IP users, the default value is blank.
Secondary DNS	DHCP users can select “From DHCP” to get secondary DNS server’s IP address from DHCP or “User-Defined” to manually enter a value. For static IP users, the default value is blank.



Radio Settings

	Radio B/G/N (2.4 GHz)	Radio A/N (5.0 GHz)
Wireless	□ Override Group Setting Enable ▼	□ Override Group Setting Enable ▼
Band	□ Override Group Setting 11b/g/n ▼	□ Override Group Setting 11a/n/ac ▼
Auto Pilot	□ Override Group Setting Enable ▼	□ Override Group Setting Enable ▼
Auto Pilot Range	□ Override Group Setting Ch 1 - 11 ▼	□ Override Group Setting ▼
Auto Pilot Interval	□ Override Group Setting Half day ▼ □ Change channel even if clients are connected	□ Override Group Setting Half day ▼ □ Change channel even if clients are connected
Channel Bandwidth	□ Override Group Setting Auto ▼	□ Override Group Setting Auto 80/40/20 MHz ▼
BSS BasicRateSet	□ Override Group Setting all ▼	□ Override Group Setting all ▼

⊖ Advanced Settings

	Radio B/G/N (2.4 GHz)	Radio A/N (5.0 GHz)
Contention Slot	□ Override Group Setting Short ▼	□ Override Group Setting Short ▼
Preamble Type	□ Override Group Setting Short ▼	□ Override Group Setting Short ▼
Guard Interval	□ Override Group Setting Short GI ▼	□ Override Group Setting Short GI ▼
802.11n Protection	□ Override Group Setting Enable ▼	□ Override Group Setting Enable ▼
DTIM Period	□ Override Group Setting 255 (1-255)	□ Override Group Setting 255 (1-255)
RTS Threshold	□ Override Group Setting 2347 (1-2347)	□ Override Group Setting 2347 (1-2347)
Fragment Threshold	□ Override Group Setting 2346 (256–2346)	□ Override Group Setting 2346 (256–2346)
Multicast Rate	□ Override Group Setting Auto ▼	□ Override Group Setting Auto ▼
Tx Power	□ Override Group Setting 100% ▼	□ Override Group Setting 100% ▼
Beacon Interval	□ Override Group Setting 100 (40-1000 ms)	□ Override Group Setting 100 (40-1000 ms)
Station idle timeout	□ Override Group Setting 300 (30-65535 seconds)	□ Override Group Setting 300 (30-65535 seconds)

Radio Settings	
Wireless	Enable or disable the access point’s 2.4GHz or 5GHz wireless radio. When disabled, no SSIDs on that frequency will be active.
Band	Select the wireless standard used for the access point. Combinations of 802.11b, 802.11g, 802.11n & 802.11ac can be selected.
Auto Pilot	Enable/disable auto channel selection. Auto

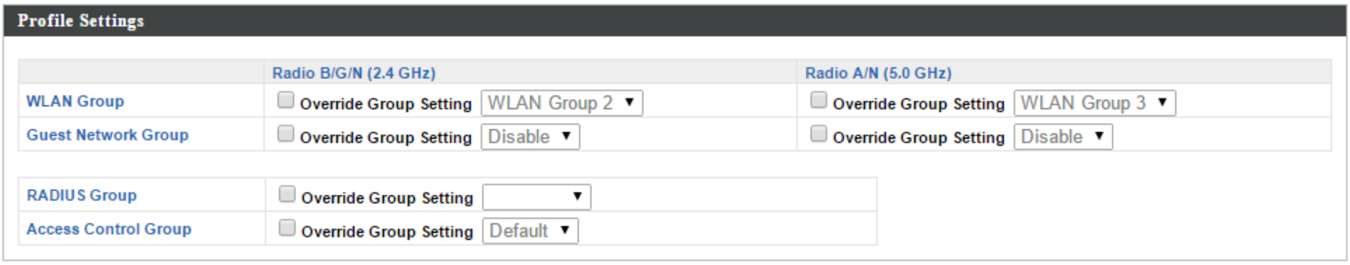
	channel selection will automatically set the wireless channel for the access point’s 2.4GHz or 5GHz frequency based on availability and potential interference. When disabled, select a channel manually.
Auto Pilot Range	Select a range from which the auto channel setting (above) will choose a channel.
Auto Pilot Interval	Specify a frequency for how often the auto channel setting will check/reassign the wireless channel. Check/uncheck the “Change channel even if clients are connected” box according to your preference.
Channel Bandwidth	Set the channel bandwidth or use Auto (automatically select based on interference level).
BSS BasicRateSet	Set a Basic Service Set (BSS) rate: this is a series of rates to control communication frames for wireless clients.

These settings are for experienced users only. Please do not change any of the values on this page unless you are already familiar with these functions.

Changing these settings can adversely affect the performance of your access point.

Advanced Settings	
Contention Slot	Select “Short” or “Long” – this value is used for contention windows in WMM (see **IV-6-7. WMM**).
Preamble Type	Set the wireless radio preamble type. The preamble type in 802.11 based wireless communication defines the length of the CRC (Cyclic Redundancy Check) block for communication between the access point and roaming wireless adapters. The default value is “Short Preamble”.
Guard Interval	Set the guard interval. A shorter interval can improve performance.

802.11g Protection	Enable/disable 802.11g protection, which increases reliability but reduces bandwidth (clients will send Request to Send (RTS) to access point, and access point will broadcast Clear to Send (CTS), before a packet is sent from client.)
802.11n Protection	Enable/disable 802.11n protection, which increases reliability but reduces bandwidth (clients will send Request to Send (RTS) to access point, and access point will broadcast Clear to Send (CTS), before a packet is sent from client.)
DTIM Period	Set the DTIM (delivery traffic indication message) period value of the wireless radio. The default value is 1.
RTS Threshold	Set the RTS threshold of the wireless radio. The default value is 2347.
Fragment Threshold	Set the fragment threshold of the wireless radio. The default value is 2346.
Multicast Rate	Set the transfer rate for multicast packets or use the “Auto” setting.
Tx Power	Set the power output of the wireless radio. You may not require 100% output power. Setting a lower power output can enhance security since potentially malicious/unknown users in distant areas will not be able to access your signal.
Beacon Interval	Set the beacon interval of the wireless radio. The default value is 100.
Station idle timeout	Set the interval for keepalive messages from the access point to a wireless client to verify if the station is still alive/active.



Profile Settings

	Radio B/G/N (2.4 GHz)	Radio A/N (5.0 GHz)
WLAN Group	□ Override Group Setting WLAN Group 2 ▼	□ Override Group Setting WLAN Group 3 ▼
Guest Network Group	□ Override Group Setting Disable ▼	□ Override Group Setting Disable ▼

RADIUS Group	□ Override Group Setting ▼
Access Control Group	□ Override Group Setting Default ▼

Profile Settings	
WLAN Group	Assign the access point’s 2.4GHz or 5GHz

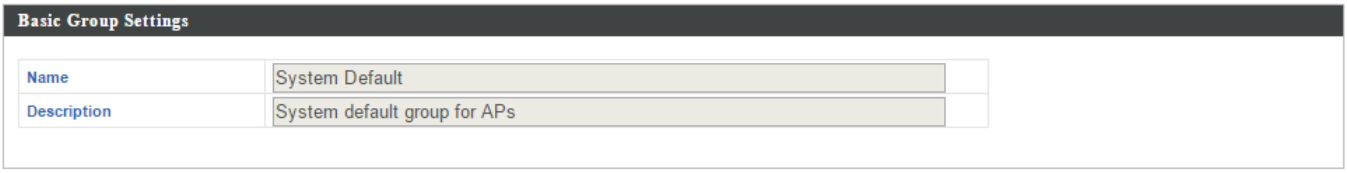
	SSID(s) to a WLAN Group. You can edit WLAN groups in **NMS Settings → WLAN**.
Guest Network Group	Assign the access point's 2.4GHz or 5GHz SSID(s) to a Guest Network Group. You can edit Guest Network groups in **NMS Settings → Guest Network**.
RADIUS Group	Assign the access point's 2.4GHz SSID(s) to a RADIUS group. You can edit RADIUS groups in **NMS Settings → RADIUS**.
Access Control Group	Assign the access point's 2.4GHz SSID(s) to a RADIUS group. You can edit RADIUS groups in **NMS Settings → Access Control**

Add/Edit Access Point Group

Configure your selected access point group. Access point group settings apply to all access points in the group, unless individually set to override group settings.

You can use **Profile Group Settings** to assign the access point group to WLAN, Guest Network, RADIUS and Access Control groups.

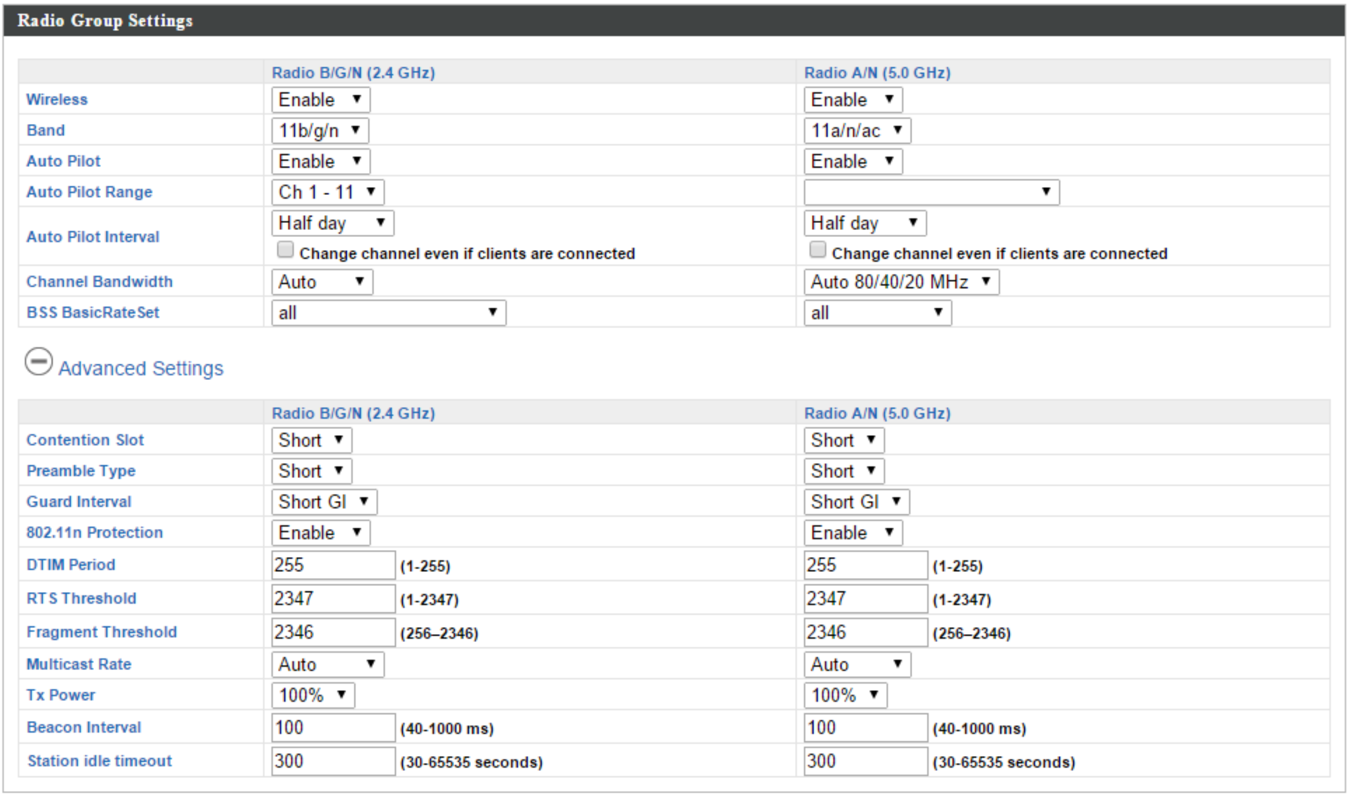
The **Group Settings** panel can be used to quickly move access points between exsiting groups: select an access point and use the drop down menu or search to select access point groups and use << and >> arrows to move APs between groups.



Basic Group Settings

Name	System Default
Description	System default group for APs

Basic Group Settings	
Name	Edit the access point group name.
Description	Enter a description of the access point group for reference e.g. 2nd Floor Office Group.



Radio Group Settings

	Radio B/G/N (2.4 GHz)	Radio A/N (5.0 GHz)
Wireless	Enable	Enable
Band	11b/g/n	11a/n/ac
Auto Pilot	Enable	Enable
Auto Pilot Range	Ch 1 - 11	
Auto Pilot Interval	Half day □ Change channel even if clients are connected	Half day □ Change channel even if clients are connected
Channel Bandwidth	Auto	Auto 80/40/20 MHz
BSS BasicRateSet	all	all

⊖ Advanced Settings

	Radio B/G/N (2.4 GHz)	Radio A/N (5.0 GHz)
Contention Slot	Short	Short
Preamble Type	Short	Short
Guard Interval	Short GI	Short GI
802.11n Protection	Enable	Enable
DTIM Period	255 (1-255)	255 (1-255)
RTS Threshold	2347 (1-2347)	2347 (1-2347)
Fragment Threshold	2346 (256–2346)	2346 (256–2346)
Multicast Rate	Auto	Auto
Tx Power	100%	100%
Beacon Interval	100 (40-1000 ms)	100 (40-1000 ms)
Station idle timeout	300 (30-65535 seconds)	300 (30-65535 seconds)

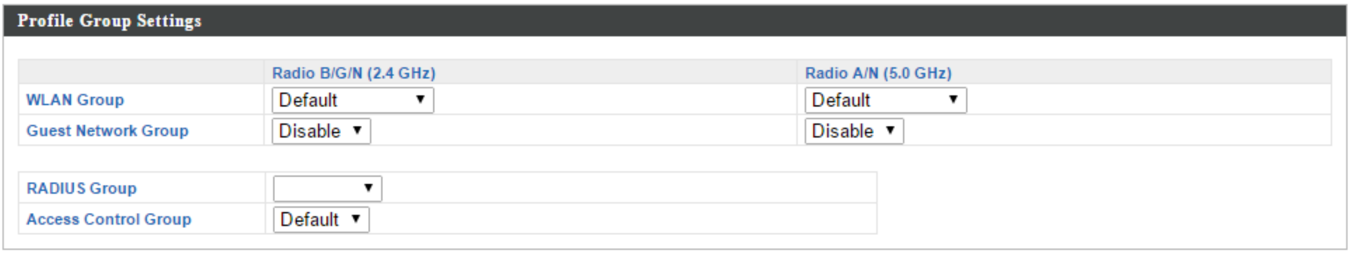
Radio Group Settings	
Wireless	Enable or disable the access point group's 2.4GHz or 5GHz wireless radio. When disabled, no SSIDs on that frequency will be active.
Band	Select the wireless standard used for the access point group. Combinations of 802.11b, 802.11g, 802.11n & 802.11ac can be selected.
Auto Pilot	Enable/disable auto channel selection. Auto channel selection will automatically set the wireless channel for the access point group's 2.4GHz or 5GHz frequency based on availability and potential interference. When disabled, select a channel manually.
Auto Pilot Range	Select a range from which the auto channel setting (above) will choose a channel.
Auto Pilot Interval	Specify a frequency for how often the auto channel setting will check/reassign the wireless channel. Check/uncheck the "Change channel even if clients are connected" box according to your preference.
Channel Bandwidth	Set the channel bandwidth or use Auto (automatically select based on interference level).
BSS BasicRateSet	Set a Basic Service Set (BSS) rate: this is a series of rates to control communication frames for wireless clients.

These settings are for experienced users only. Please do not change any of the values on this page unless you are already familiar with these functions.

Changing these settings can adversely affect the performance of your access points.

Advanced Settings	
Contention Slot	Select "Short" or "Long" – this value is used for contention windows in WMM (see **IV-6-7. WMM**).

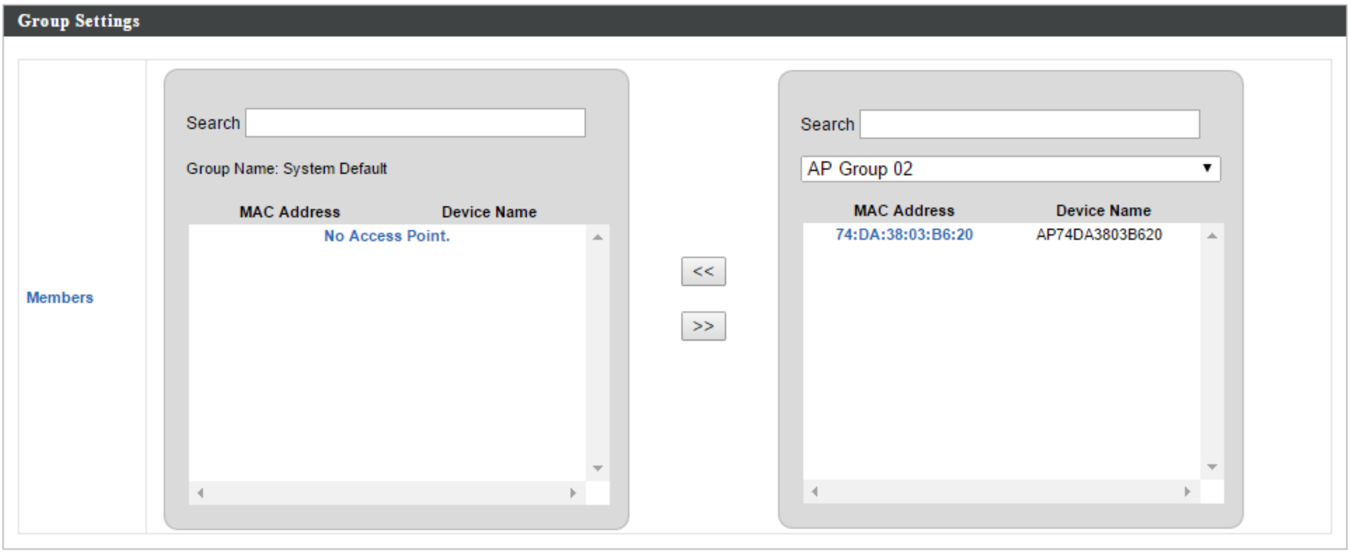
Preamble Type	Set the wireless radio preamble type. The preamble type in 802.11 based wireless communication defines the length of the CRC (Cyclic Redundancy Check) block for communication between the access point and roaming wireless adapters. The default value is "Short Preamble".
Guard Interval	Set the guard interval. A shorter interval can improve performance.
802.11g Protection	Enable/disable 802.11g protection, which increases reliability but reduces bandwidth (clients will send Request to Send (RTS) to access point, and access point will broadcast Clear to Send (CTS), before a packet is sent from client.)
802.11n Protection	Enable/disable 802.11n protection, which increases reliability but reduces bandwidth (clients will send Request to Send (RTS) to access point, and access point will broadcast Clear to Send (CTS), before a packet is sent from client.)
DTIM Period	Set the DTIM (delivery traffic indication message) period value of the wireless radio. The default value is 1.
RTS Threshold	Set the RTS threshold of the wireless radio. The default value is 2347.
Fragment Threshold	Set the fragment threshold of the wireless radio. The default value is 2346.
Multicast Rate	Set the transfer rate for multicast packets or use the "Auto" setting.
Tx Power	Set the power output of the wireless radio. You may not require 100% output power. Setting a lower power output can enhance security since potentially malicious/unknown users in distant areas will not be able to access your signal.
Beacon Interval	Set the beacon interval of the wireless radio. The default value is 100.
Station idle timeout	Set the interval for keepalive messages from the access point to a wireless client to verify if the station is still alive/active.



Profile Group Settings

	Radio B/G/N (2.4 GHz)	Radio A/N (5.0 GHz)
WLAN Group	Default ▾	Default ▾
Guest Network Group	Disable ▾	Disable ▾

RADIUS Group	▾
Access Control Group	Default ▾



Group Settings

Members

Search

Group Name: System Default

MAC Address	Device Name
No Access Point.	

<<

>>

Search

AP Group 02 ▾

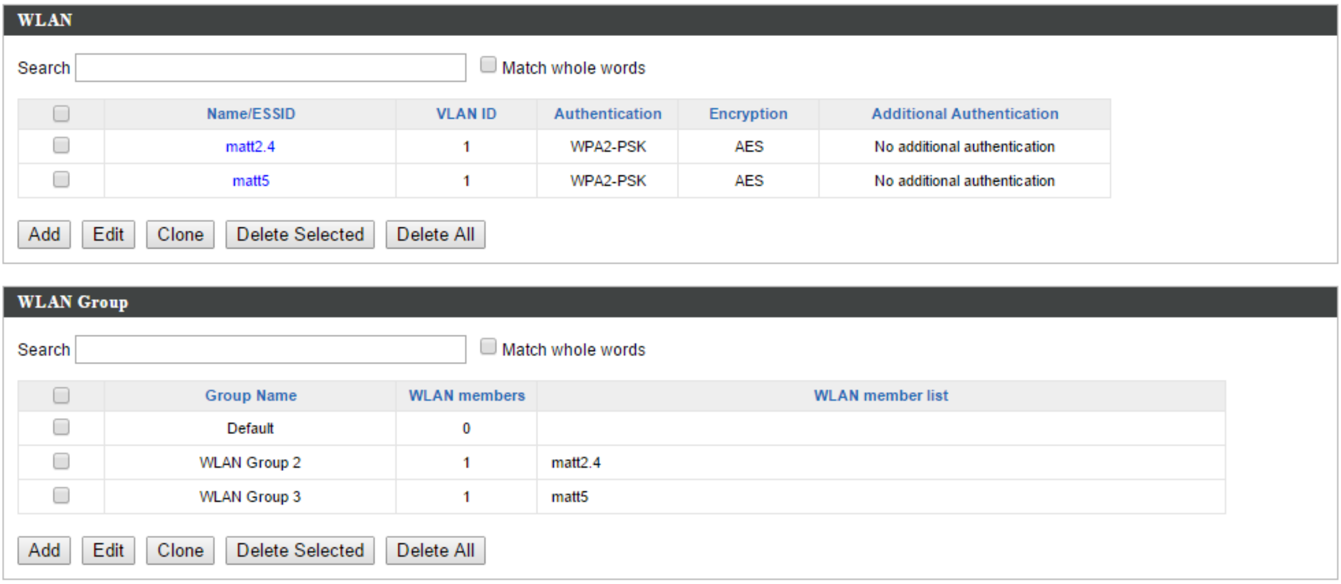
MAC Address	Device Name
74:DA:38:03:B6:20	AP74DA3803B620

Profile Group Settings	
WLAN Group	Assign the access point group's 2.4GHz or 5GHz SSIDs to a WLAN Group. You can edit WLAN groups in **NMS Settings → WLAN**.
Guest Network Group	Assign the access point group's 2.4GHz or 5GHz SSIDs to a Guest Network Group. You can edit Guest Network groups in **NMS Settings → Guest Network**.
RADIUS Group	Assign the access point group's 2.4GHz SSIDs to a RADIUS group. You can edit RADIUS groups in **NMS Settings → RADIUS**.
Access Control Group	Assign the access point's 2.4GHz SSIDs to a RADIUS group. You can edit RADIUS groups in **NMS Settings → Access Control.**

IV-5-2. WLAN

Displays information about each WLAN and WLAN group in the local network and allows you to add or edit WLANs & WLAN Groups. When you add a WLAN Group, it will be available for selection in **NMS Settings → Access Point** access point **Profile Settings** & access point group **Profile Group Settings** (**IV-5-1.**)

The **search** function can be used to locate a WLAN or WLAN Group. Type in the search box and the list will update:

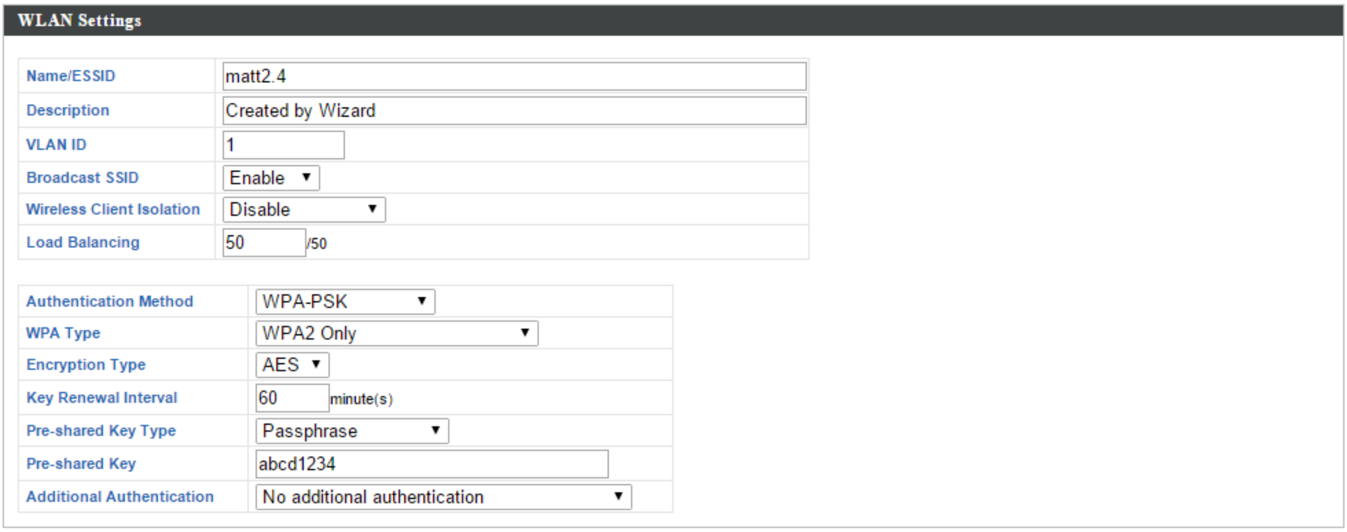


□	Name/ESSID	VLAN ID	Authentication	Encryption	Additional Authentication
□	matt2.4	1	WPA2-PSK	AES	No additional authentication
□	matt5	1	WPA2-PSK	AES	No additional authentication

□	Group Name	WLAN members	WLAN member list
□	Default	0	
□	WLAN Group 2	1	matt2.4
□	WLAN Group 3	1	matt5

Select a WLAN or WLAN Group using the check-boxes and click "**Edit**" or click "**Add**" to add a new WLAN or WLAN Group:

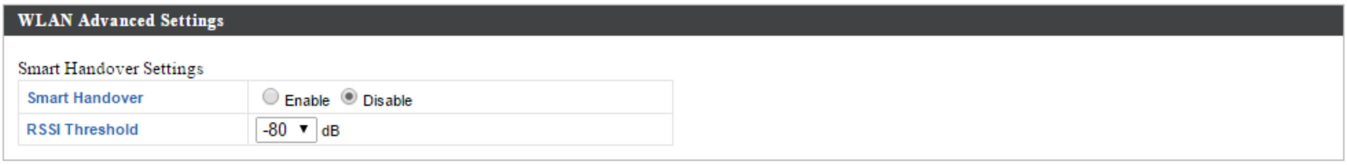
Add/Edit WLAN



WLAN Settings

Name/ESSID	matt2.4
Description	Created by Wizard
VLAN ID	1
Broadcast SSID	Enable ▼
Wireless Client Isolation	Disable ▼
Load Balancing	50 /50

Authentication Method	WPA-PSK ▼
WPA Type	WPA2 Only ▼
Encryption Type	AES ▼
Key Renewal Interval	60 minute(s)
Pre-shared Key Type	Passphrase ▼
Pre-shared Key	abcd1234
Additional Authentication	No additional authentication ▼



WLAN Advanced Settings

Smart Handover Settings

Smart Handover	○ Enable ● Disable
RSSI Threshold	-80 ▼ dB

WLAN Settings	
Name/ESSID	Edit the WLAN name (SSID).
Description	Enter a description of the SSID for reference e.g. 2nd Floor Office HR.
SSID	Select which SSID to configure security settings for.
VLAN ID	Specify the VLAN ID.
Broadcast SSID	Enable or disable SSID broadcast. When enabled, the SSID will be visible to clients as an available Wi-Fi network. When disabled, the SSID will not be visible as an available Wi-Fi network to clients – clients must manually enter the SSID in order to connect. A hidden (disabled) SSID is typically more secure than a visible (enabled) SSID.
Wireless Client Isolation	Enable or disable wireless client isolation. Wireless client isolation prevents clients connected to the access point from communicating with each other and improves security. Typically, this function is useful for corporate environments or public hot spots and can prevent brute force attacks on

	clients’ usernames and passwords.
Load Balancing	Load balancing limits the number of wireless clients connected to an SSID. Set a load balancing value (maximum 50).
Authentication Method	Select an authentication method from the drop down menu.
Additional Authentication	Select an additional authentication method from the drop down menu.

Various security options (wireless data encryption) are available. When data is encrypted, information transmitted wirelessly cannot be read by anyone who does not know the correct encryption key.

⚠ ***It’s essential to configure wireless security in order to prevent unauthorised access to your network.***

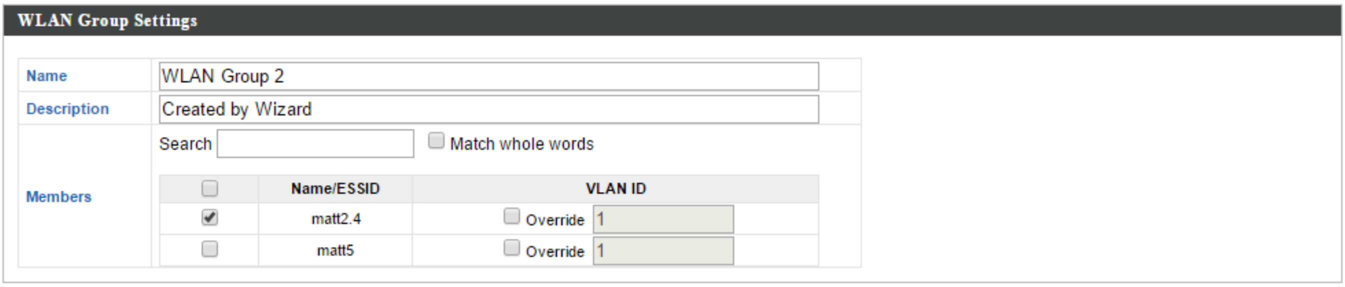
⚠ ***Select hard-to-guess passwords which include combinations of numbers, letters and symbols, and change your password regularly.***

Please refer to **IV-6-2-3.Security** for more information on authentication and additional authentication types.

WLAN Advanced Settings	
Smart Handover	Enable or disable Smart Handover.
RSSI Threshold	Set a RSSI Threshold level.

Add/Edit WLAN Group

When you add a WLAN Group, it will be available for selection in **NMS Settings → Access Point** access point **Profile Settings** & access point group **Profile Group Settings** (**IV-5-1.**)



WLAN Group Settings

Name	WLAN Group 2
Description	Created by Wizard
Members	Search ______ □ Match whole words

□	Name/ESSID	VLAN ID
☑	matt2.4	□ Override 1
□	matt5	□ Override 1

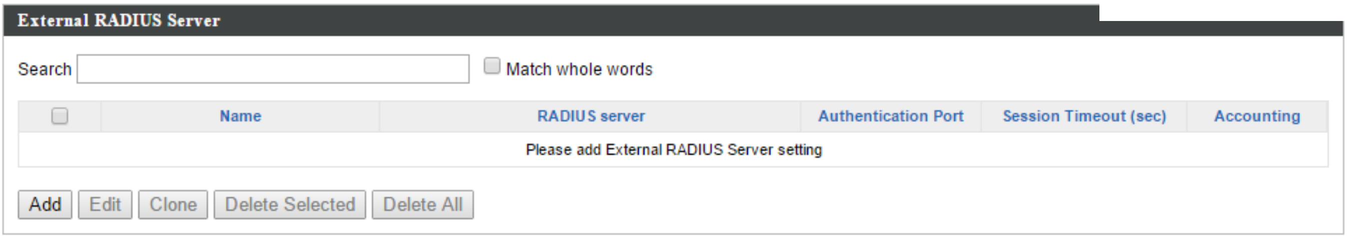
WLAN Group Settings	
Name	Edit the WLAN Group name.
Description	Enter a description of the WLAN Group for reference e.g. 2nd Floor Office HR Group.
Members	Select SSIDs to include in the group using the checkboxes and assign VLAN IDs.

IV-5-3. RADIUS

Displays information about External & Internal RADIUS Servers, Accounts and Groups and allows you to add or edit RADIUS Servers, Accounts & Groups. When you add a RADIUS Group, it will be available for selection in **NMS Settings → Access Point** access point **Profile Settings** & access point group **Profile Group Settings** (**IV-5-1.**)

The **search** function can be used to locate a RADIUS Server, Account or Group. Type in the search box and the list will update:

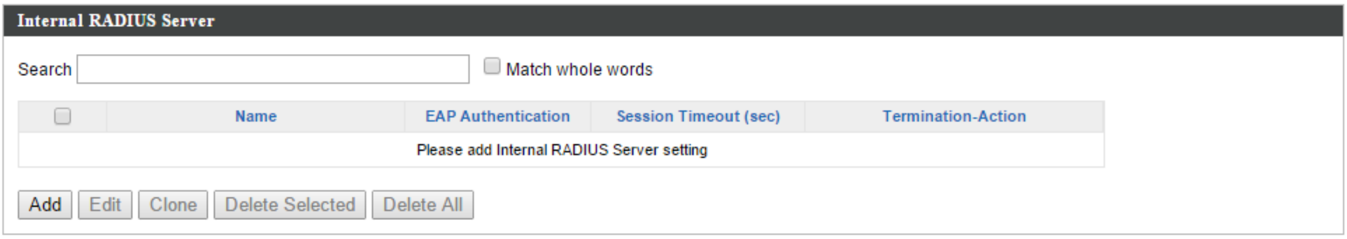
Make a selection using the check-boxes and click "**Edit**" or click "**Add**" to add a new WLAN or WLAN Group:



External RADIUS Server

Search □ Match whole words

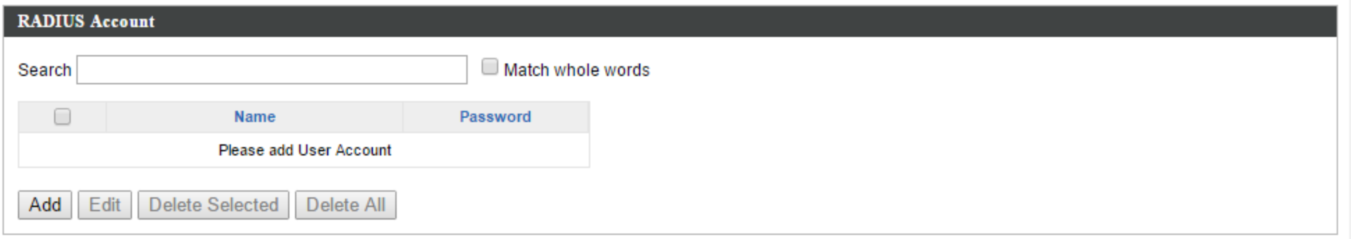
□	Name	RADIUS server	Authentication Port	Session Timeout (sec)	Accounting
Please add External RADIUS Server setting					



Internal RADIUS Server

Search □ Match whole words

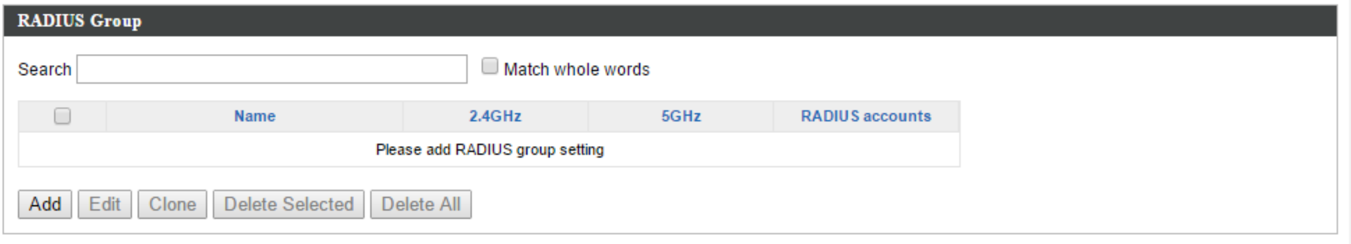
□	Name	EAP Authentication	Session Timeout (sec)	Termination-Action
Please add Internal RADIUS Server setting				



RADIUS Account

Search □ Match whole words

□	Name	Password
Please add User Account		

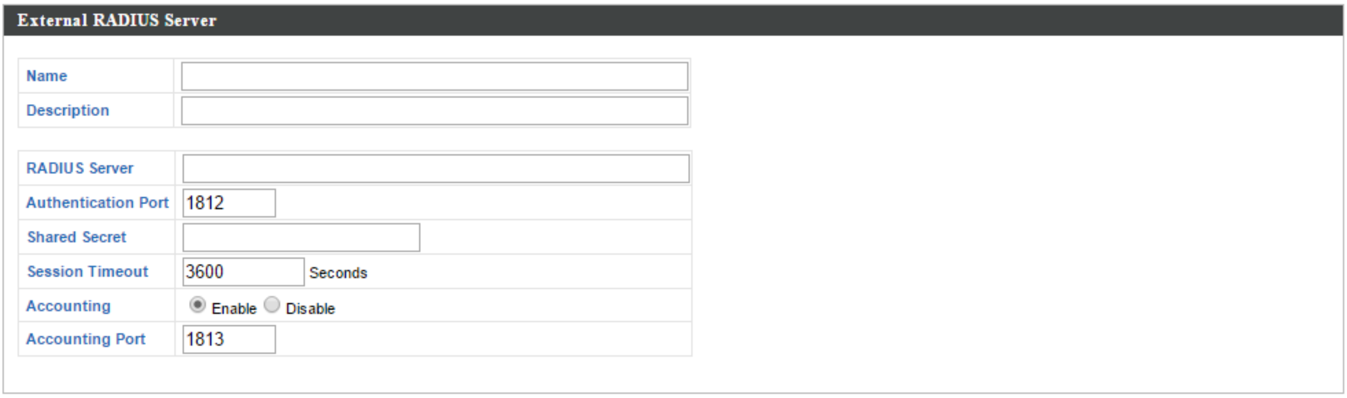


RADIUS Group

Search □ Match whole words

□	Name	2.4GHz	5GHz	RADIUS accounts
Please add RADIUS group setting				

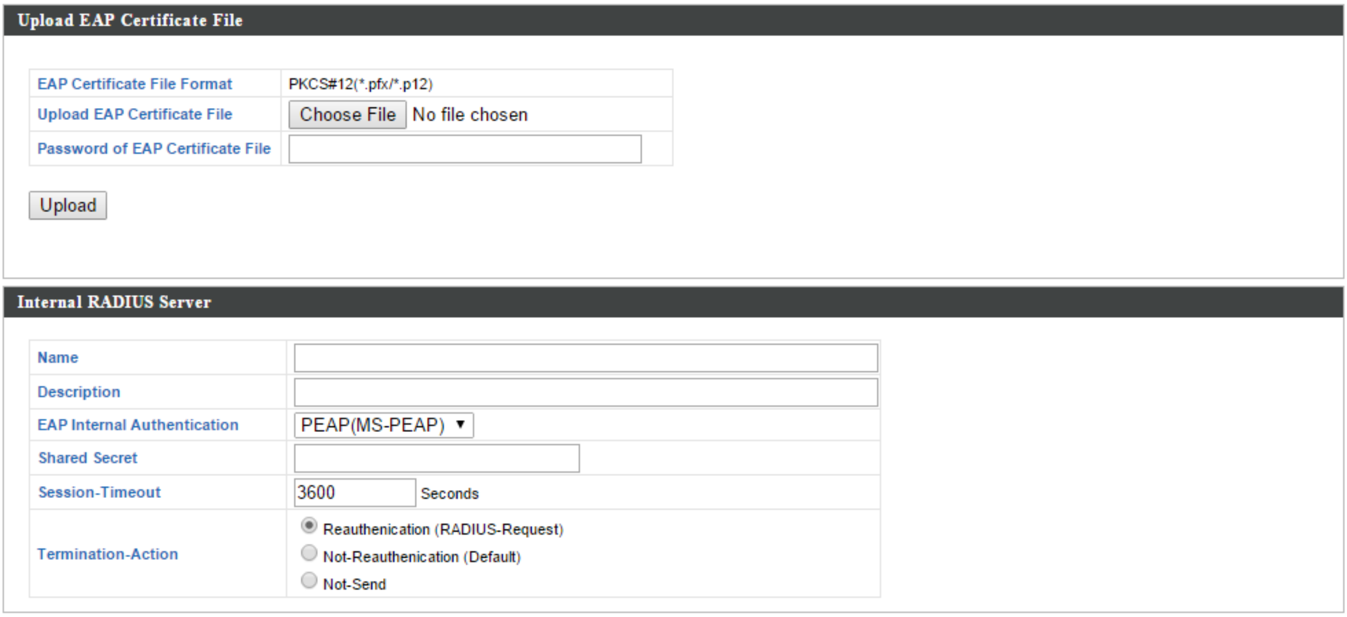
Add/Edit External RADIUS Server



External RADIUS Server

Name	
Description	
RADIUS Server	
Authentication Port	1812
Shared Secret	
Session Timeout	3600 Seconds
Accounting	● Enable ○ Disable
Accounting Port	1813

Name	Enter a name for the RADIUS Server.
Description	Enter a description of the RADIUS Server for reference.
RADIUS Server	Enter the RADIUS server host IP address.
Authentication Port	Set the UDP port used in the authentication protocol of the RADIUS server. Value must be between 1 – 65535.
Shared Secret	Enter a shared secret/password between 1 – 99 characters in length. This should match the “MAC-RADIUS” password used in **IV-3-1-3-6** or **IV-3-2-3**.
Session Timeout	Set a duration of session timeout in seconds between 0 – 86400.
Accounting	Enable or disable RADIUS accounting.
Accounting Port	When accounting is enabled (above), set the UDP port used in the accounting protocol of the RADIUS server. Value must be between 1 – 65535.



Upload EAP Certificate File

EAP Certificate File Format	PKCS#12(*.pfx/*.p12)
Upload EAP Certificate File	Choose File No file chosen
Password of EAP Certificate File	

Upload

Internal RADIUS Server

Name	
Description	
EAP Internal Authentication	PEAP(MS-PEAP) ▼
Shared Secret	
Session-Timeout	3600 Seconds
Termination-Action	● Reauthenication (RADIUS-Request) ○ Not-Reauthenication (Default) ○ Not-Send

Add/Edit Internal RADIUS Server

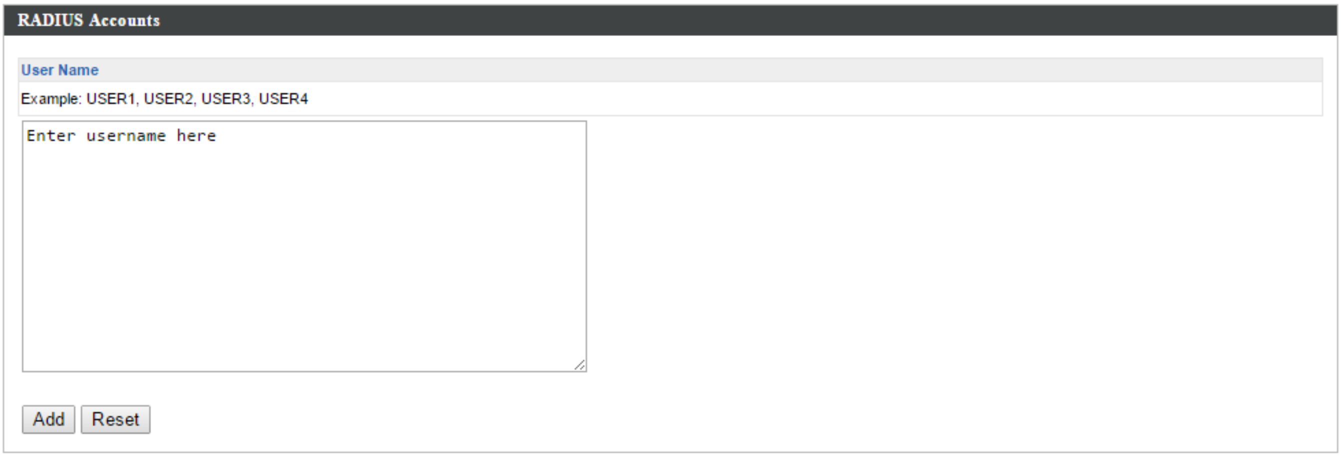
Upload EAP Certificate File	
EAP Certificate File Format	Displays the EAP certificate file format: PCK#12(*.pfx/*.p12)
EAP Certificate File	Click “Upload” to open a new window and select the location of an EAP certificate file to use. If no certificate file is uploaded, the internal RADIUS server will use a self-made certificate.

Internal RADIUS Server	
Name	Enter a name for the Internal RADIUS Server.
Description	Enter a description of the Internal RADIUS Server for reference.
EAP Certificate File Format	Displays the EAP certificate file format: PCK#12(*.pfx/*.p12)
EAP Certificate File	Click “Upload” to open a new window and select the location of an EAP certificate file to use. If no certificate file is uploaded, the internal RADIUS server will use a self-made certificate.
EAP Internal Authentication	Select EAP internal authentication type from the drop down menu.

Shared Secret	Enter a shared secret/password for use between the internal RADIUS server and RADIUS client. The shared secret should be 1 – 99 characters in length.
Session Timeout	Set a duration of session timeout in seconds between 0 – 86400.
Termination Action	Select a termination-action attribute: “Reauthentication” sends a RADIUS request to the access point, “Not-Reathentication” sends a default termination-action attribute to the access point, “Not-Send” no termination-action attribute is sent to the access point.

Add/Edit RADIUS Accounts

The internal RADIUS server can authenticate up to 256 user accounts. The “RADIUS Accounts” page allows you to configure and manage users.

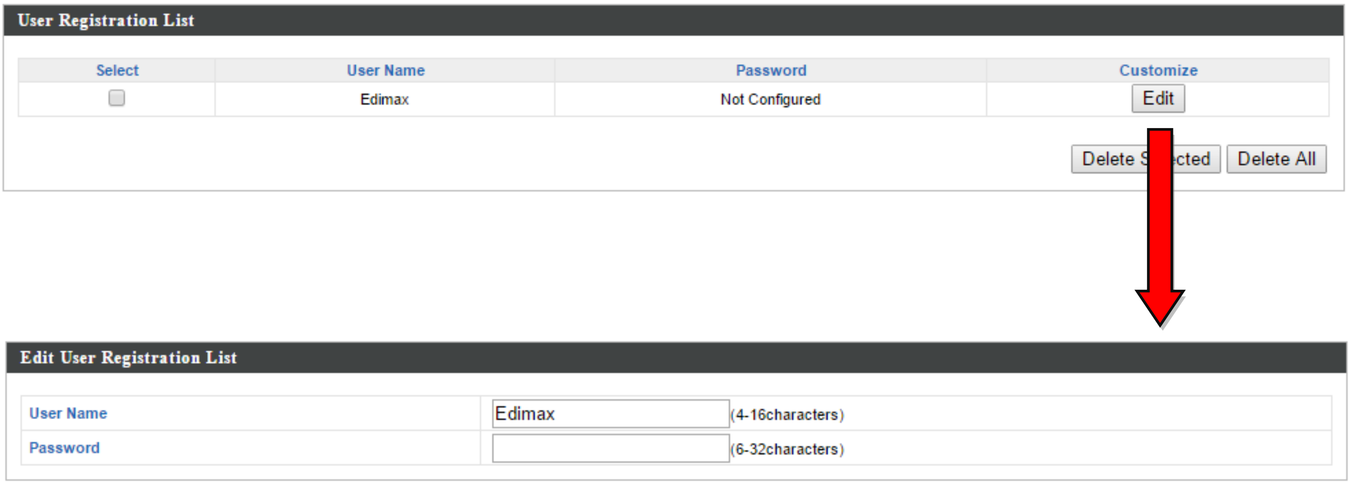


RADIUS Accounts

User Name

Example: USER1, USER2, USER3, USER4

Enter username here



User Registration List

Select	User Name	Password	Customize
□	Edimax	Not Configured	Edit

Edit User Registration List

User Name	Edimax	(4-16characters)
Password		(6-32characters)

RADIUS Accounts	
User Name	Enter the user names here, separated by commas.
Add	Click "Add" to add the user to the user registration list.
Reset	Clear text from the user name box.

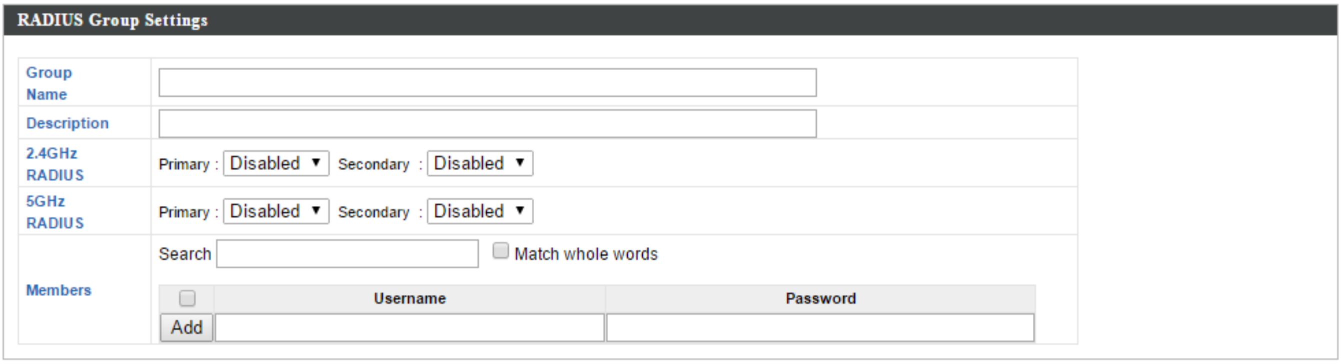
User Registration List	
Select	Check the box to select a user.
User Name	Displays the user name.
Password	Displays if specified user name has a password (configured) or not (not configured).
Customize	Click "Edit" to open a new field to set/edit a password for the specified user name (below).

Delete Selected	Delete selected user from the user registration list.
Delete All	Delete all users from the user registration list.

Edit User Registration List	
User Name	Existing user name is displayed here and can be edited according to your preference.
Password	Enter or edit a password for the specified user.

Add/Edit RADIUS Group

When you add a RADIUS Group, it will be available for selection in **NMS Settings → Access Point** access point **Profile Settings** & access point group **Profile Group Settings** (**IV-5-1.**)



RADIUS Group Settings

Group Name	
Description	
2.4GHz RADIUS	Primary : Disabled ▼ Secondary : Disabled ▼
5GHz RADIUS	Primary : Disabled ▼ Secondary : Disabled ▼
Members	Search ☐ Match whole words

☐	Username	Password
Add		

RADIUS Group Settings	
Group Name	Edit the RADIUS Group name.
Description	Enter a description of the RADIUS Group for reference.
2.4GHz RADIUS	Enable/Disable primary & secondary RADIUS servers for 2.4GHz.
5GHz RADIUS	Enable/Disable primary & secondary RADIUS servers for 5GHz.
Members	Add RADIUS user accounts to the RADIUS group.

IV-5-4. Access Control

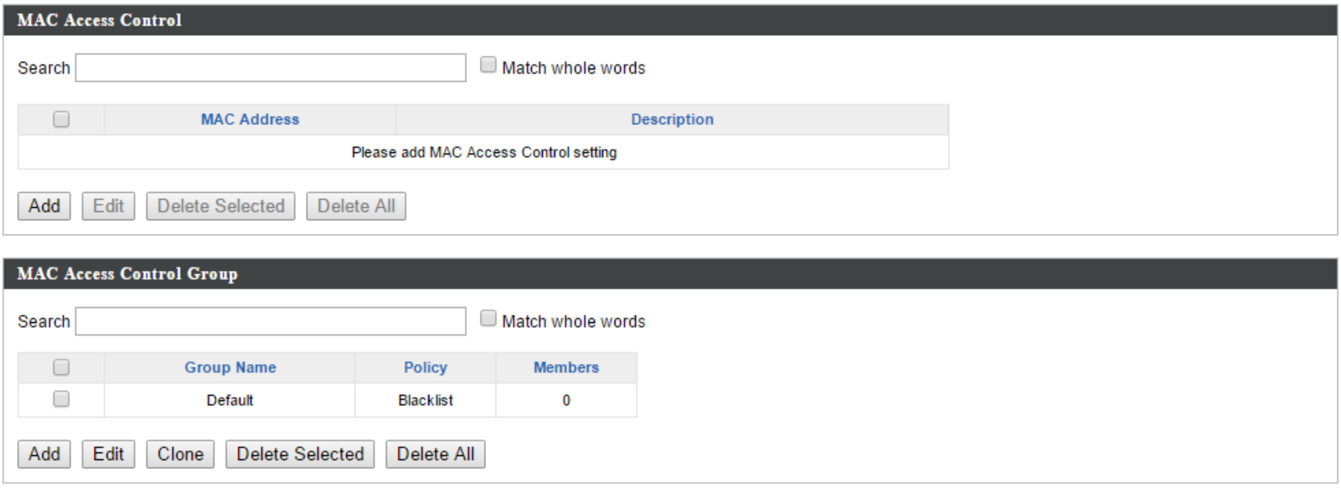
MAC Access Control is a security feature that can help to prevent unauthorized users from connecting to your access point.

This function allows you to define a list of network devices permitted to connect to the access point. Devices are each identified by their unique MAC address. If a device which is not on the list of permitted MAC addresses attempts to connect to the access point, it will be denied.

The Access Control panel displays information about MAC Access Control & MAC Access Control Groups and Groups and allows you to add or edit MAC Access Control & MAC Access Control Group settings. When you add an Access Control Group, it will be available for selection in **NMS Settings → Access Point** access point **Profile Settings** & access point group **Profile Group Settings** (**IV-5-1.**)

The **search** function can be used to locate a MAC address or MAC Access Control Group. Type in the search box and the list will update:

Make a selection using the check-boxes and click "**Edit**" or click "**Add**" to add a new MAC Address or MAC Access Control Group:



MAC Access Control

Search □ Match whole words

□	MAC Address	Description
Please add MAC Access Control setting		

Add | Edit | Delete Selected | Delete All

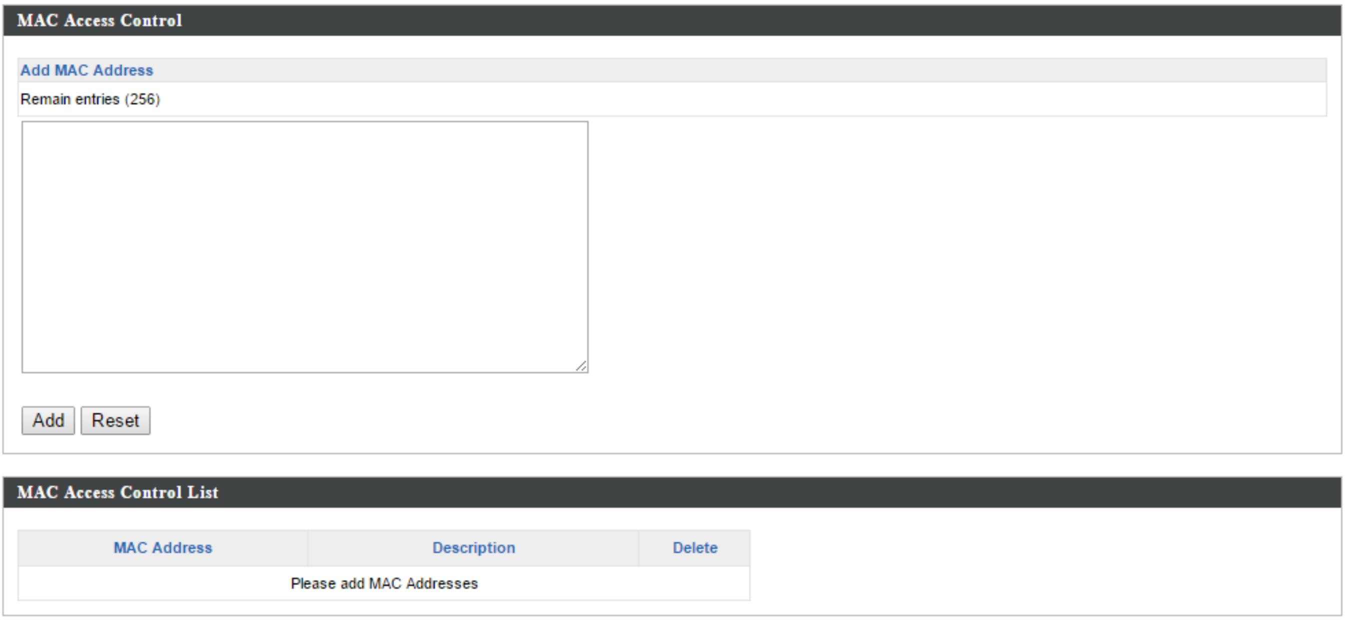
MAC Access Control Group

Search □ Match whole words

□	Group Name	Policy	Members
□	Default	Blacklist	0

Add | Edit | Clone | Delete Selected | Delete All

Add/Edit MAC Access Control



MAC Access Control

Add MAC Address

Remain entries (256)

MAC Access Control List

MAC Address	Description	Delete
Please add MAC Addresses		

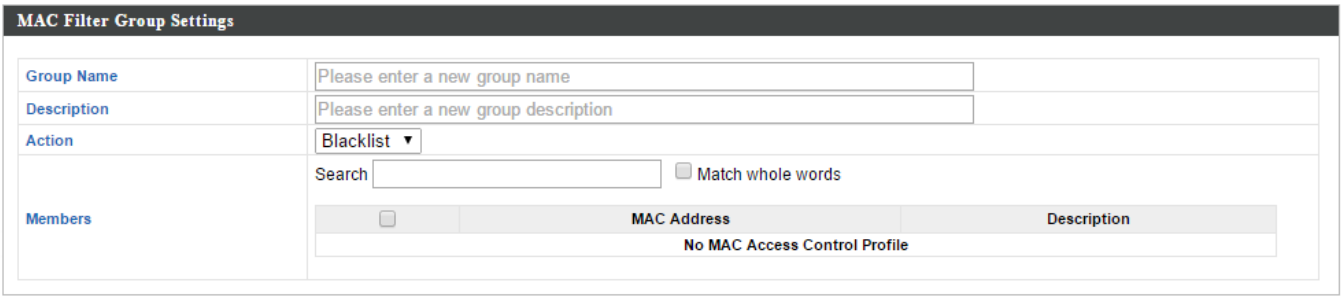
Add MAC Address	Enter a MAC address of computer or network device manually e.g. 'aa-bb-cc-dd-ee-ff' or enter multiple MAC addresses separated with commas, e.g. 'aa-bb-cc-dd-ee-ff,aa-bb-cc-dd-ee-gg'
Add	Click "Add" to add the MAC address to the MAC address filtering table.
Reset	Clear all fields.

MAC address entries will be listed in the "MAC Address Filtering Table". Select an entry using the "Select" checkbox.

Select	Delete selected or all entries from the table.
MAC Address	The MAC address is listed here.
Delete Selected	Delete the selected MAC address from the list.
Delete All	Delete all entries from the MAC address filtering table.
Export	Click "Export" to save a copy of the MAC filtering table. A new window will pop up for you to select a location to save the file.

Add/Edit MAC Access Control Group

When you add an Access Control Group, it will be available for selection in **NMS Settings → Access Point** access point **Profile Settings** & access point group **Profile Group Settings** (**IV-5-1.**)



MAC Filter Group Settings

Group Name	Please enter a new group name
Description	Please enter a new group description
Action	Blacklist ▼
Members	Search □ Match whole words

□	MAC Address	Description
No MAC Access Control Profile		

MAC Filter Group Settings	
Group Name	Edit the MAC Access Control Group name.
Description	Enter a description of the MAC Access Control Group for reference.
Action	Select “Blacklist” to deny access to specified MAC addresses in the group, and select “Whitelist” to permit access to specified MAC address in the group.
Members	Add MAC addresses to the group.

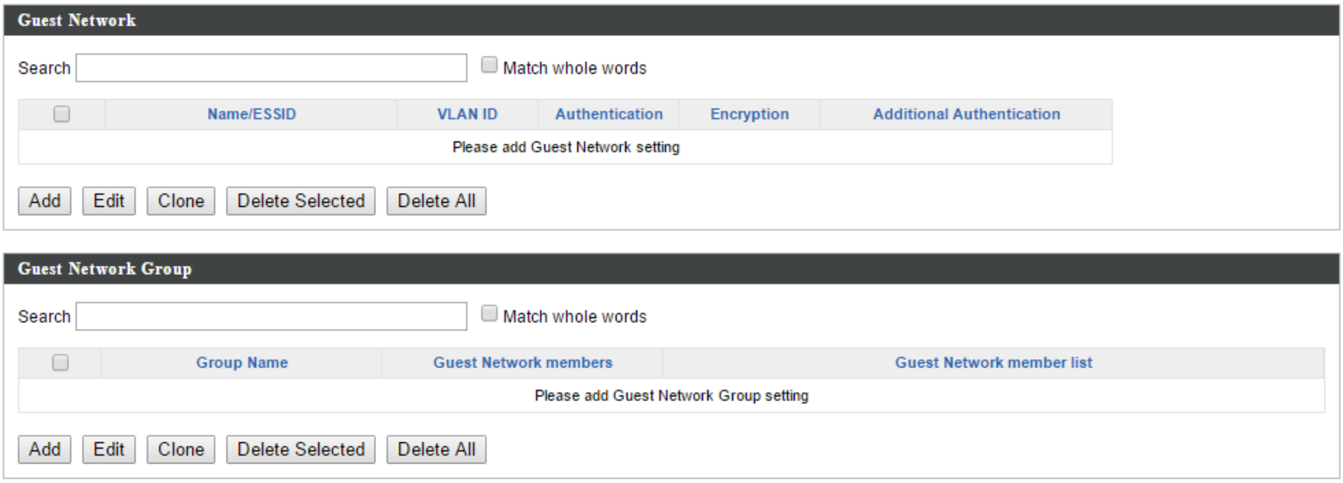
IV-5-5. Guest Network

You can setup an additional “Guest” Wi-Fi network so guest users can enjoy Wi-Fi connectivity without accessing your primary networks. The “Guest” screen displays settings for your guest Wi-Fi network.

The Guest Network panel displays information about Guest Networks and Guest Network Groups and allows you to add or edit Guest Network and Guest Network Group settings. When you add a Guest Network Group, it will be available for selection in **NMS Settings → Access Point** access point **Profile Settings** & access point group **Profile Group Settings** (**IV-5-1.**)

The **search** function can be used to locate a Guest Network or Guest Network Group. Type in the search box and the list will update:

Make a selection using the check-boxes and click “**Edit**” or click “**Add**” to add a new Guest Network or Guest Network Group.



Guest Network

Search □ Match whole words

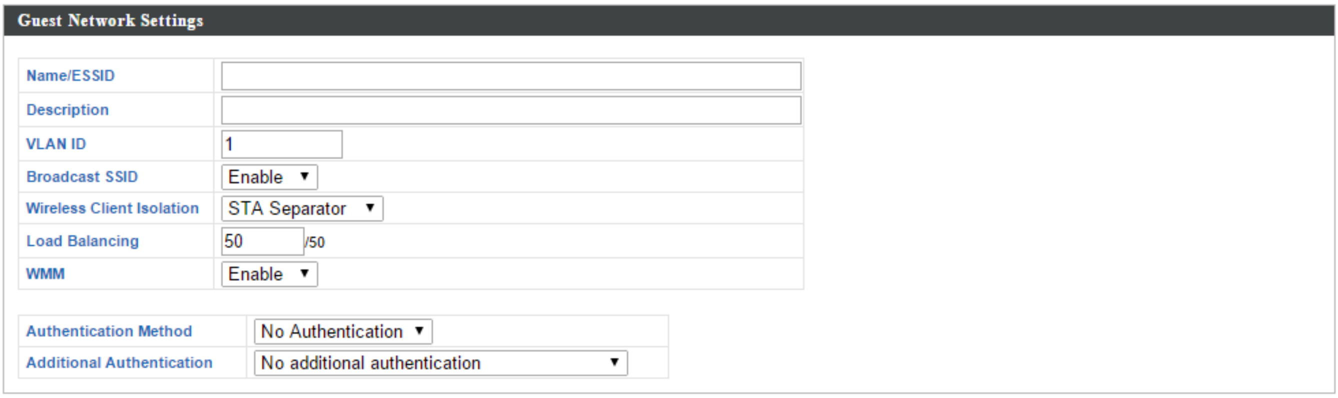
□	Name/ESSID	VLAN ID	Authentication	Encryption	Additional Authentication
Please add Guest Network setting					

Guest Network Group

Search □ Match whole words

□	Group Name	Guest Network members	Guest Network member list
Please add Guest Network Group setting			

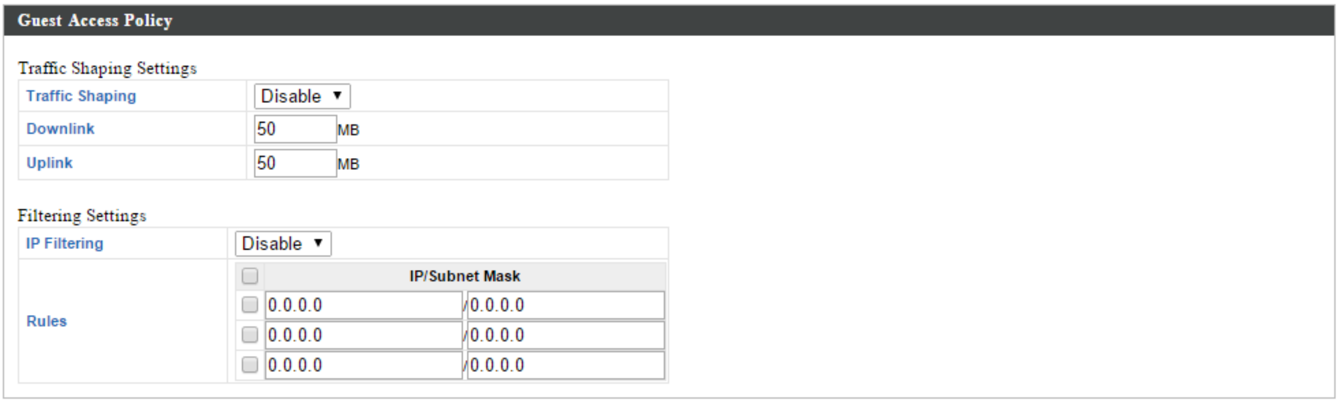
Add/Edit Guest Network



Guest Network Settings

Name/ESSID	
Description	
VLAN ID	1
Broadcast SSID	Enable ▼
Wireless Client Isolation	STA Separator ▼
Load Balancing	50 /50
WMM	Enable ▼

Authentication Method	No Authentication ▼
Additional Authentication	No additional authentication ▼



Guest Access Policy

Traffic Shaping Settings

Traffic Shaping	Disable ▼
Downlink	50 MB
Uplink	50 MB

Filtering Settings

IP Filtering	Disable ▼	
Rules	□ IP/Subnet Mask	
	□ 0.0.0.0	/0.0.0.0
	□ 0.0.0.0	/0.0.0.0
	□ 0.0.0.0	/0.0.0.0

Guest Network Settings	
Name/ESSID	Edit the Guest Network name (SSID).
Description	Enter a description of the Guest Network for reference e.g. 2nd Floor Office HR.
VLAN ID	Specify the VLAN ID.
Broadcast SSID	Enable or disable SSID broadcast. When enabled, the SSID will be visible to clients as an available Wi-Fi network. When disabled, the SSID will not be visible as an available Wi-Fi network to clients – clients must manually enter the SSID in order to connect. A hidden (disabled) SSID is typically more secure than a visible (enabled) SSID.
Wireless Client Isolation	Enable or disable wireless client isolation. Wireless client isolation prevents clients connected to the access point from communicating with each other and improves security. Typically, this function is useful for corporate environments or public hot spots and can prevent brute force attacks on

	clients’ usernames and passwords.
Load Balancing	Load balancing limits the number of wireless clients connected to an SSID. Set a load balancing value (maximum 50).
WMM	Enable or disable WMM (Wi-Fi Multimedia) traffic prioritizing.
Authentication Method	Select an authentication method from the drop down menu.
Additional Authentication	Select an additional authentication method from the drop down menu.

Various security options (wireless data encryption) are available. When data is encrypted, information transmitted wirelessly cannot be read by anyone who does not know the correct encryption key.

It’s essential to configure wireless security in order to prevent unauthorised access to your network.

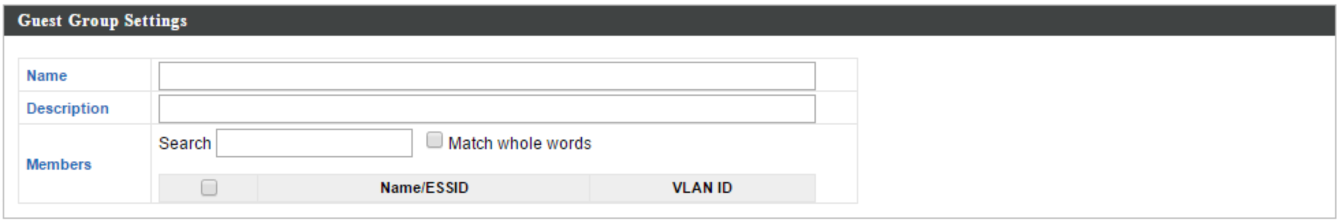
Select hard-to-guess passwords which include combinations of numbers, letters and symbols, and change your password regularly.

Please refer to **IV-6-2-3.Security** for more information on authentication and additional authentication types.

Guest Access Policy	
Traffic Shaping	Enable or disable traffic shaping for the guest network.
Downlink	Enter a downlink limit in MB.
Uplink	Enter an uplink limit in MB.
IP Filtering	Select “Deny” or “Allow” to deny or allow specified IP addresses to access the guest network. Select “Disable” to disable IP filtering.
Rules	Enter IP addresses to be filtered according to the Deny or Allow rule specified above and check the box for each IP address to be filtered.

Add/Edit Guest Network Group

When you add a Guest Network Group, it will be available for selection in **NMS Settings → Access Point** access point **Profile Settings** & access point group **Profile Group Settings** (**IV-5-1.**)



Guest Group Settings

Name	
Description	
Members	Search □ Match whole words

□	Name/ESSID	VLAN ID

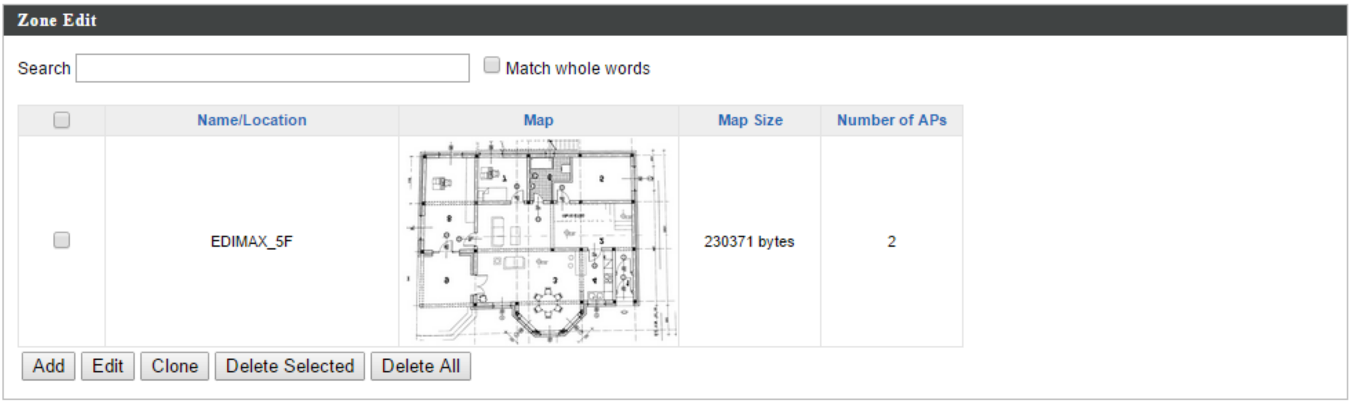
Guest Network Group Settings	
Group Name	Edit the Guest Network Group name.
Description	Enter a description of the Guest Network for reference.
Members	Add SSIDs to the Guest Network group.

IV-5-6. Zone Edit

Zone Edit displays information about zones for use with the Zone Plan feature and allows you to add or edit zones.

The **search** function can be used to find existing zones. Type in the search box and the list will update:

Make a selection using the check-boxes and click “**Edit**” or click “**Add**” to add a new zone.



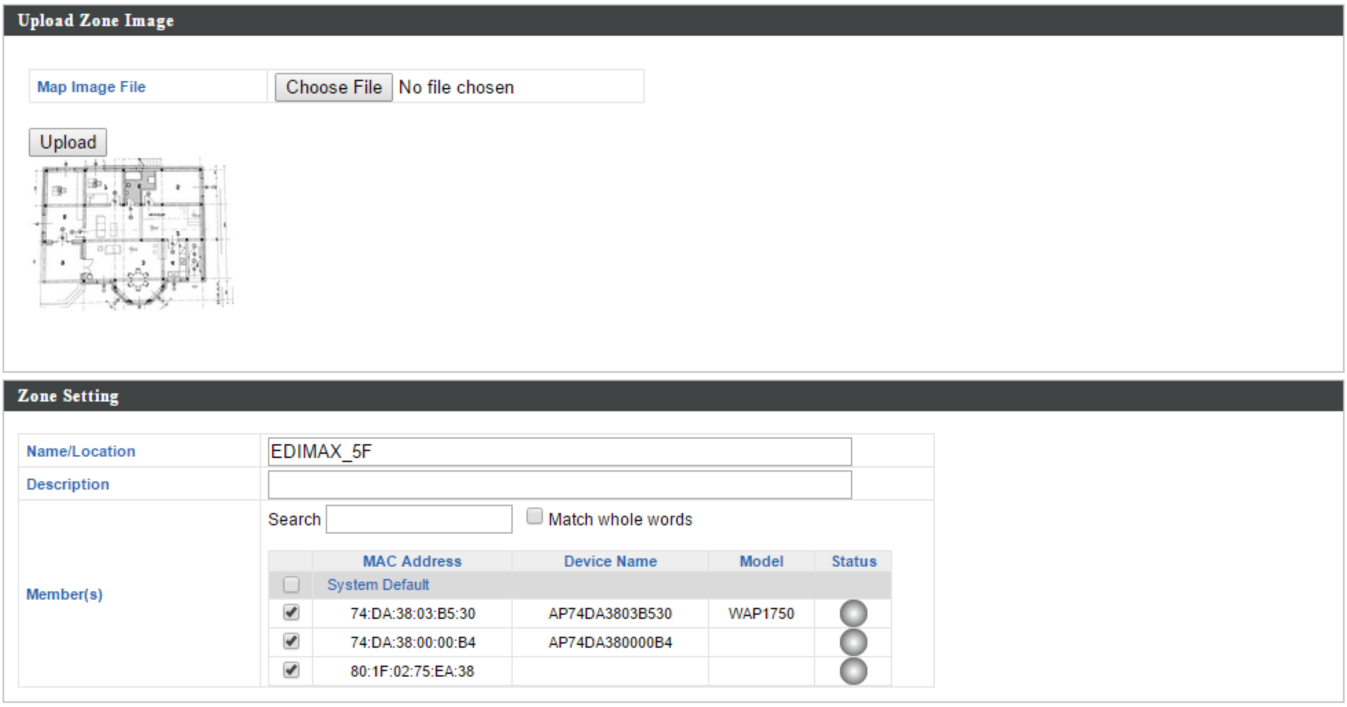
Zone Edit

Search □ Match whole words

□	Name/Location	Map	Map Size	Number of APs
□	EDIMAX_5F		230371 bytes	2

Add | Edit | Clone | Delete Selected | Delete All

Add/Edit Zone



Upload Zone Image

Map Image File	Choose File No file chosen

Upload

Zone Setting

Name/Location	EDIMAX_5F
Description	
Member(s)	Search □ Match whole words

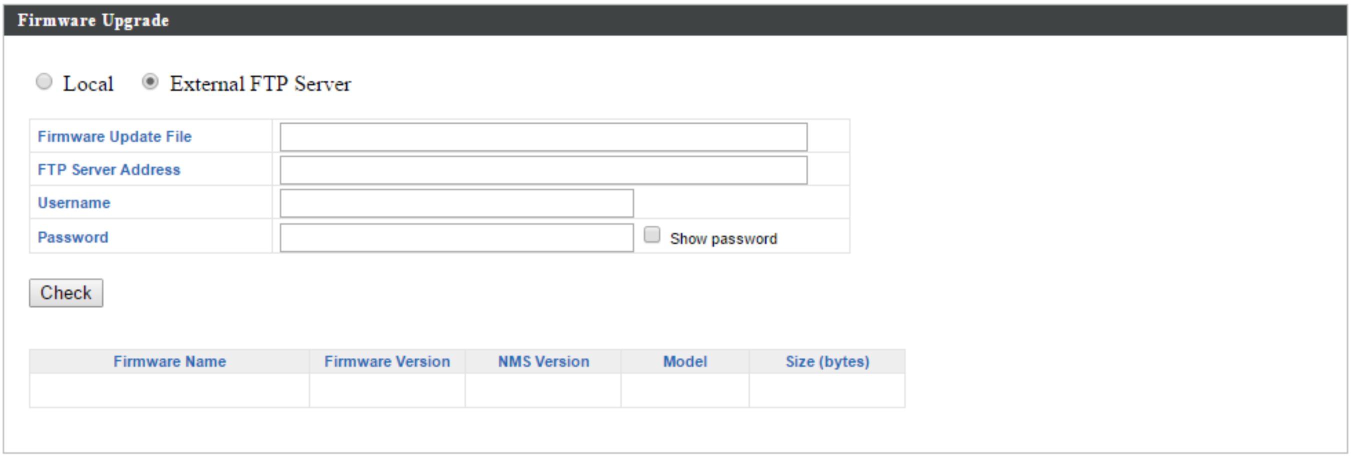
	MAC Address	Device Name	Model	Status
□	System Default			
☑	74:DA:38:03:B5:30	AP74DA3803B530	WAP1750	●
☑	74:DA:38:00:00:B4	AP74DA380000B4		●
☑	80:1F:02:75:EA:38			●

Upload Zone Image	
Choose File	Click to locate an image file to be displayed as a map in the Zone Plan feature. Typically a floor plan image is useful.
Zone Setting	
Name/Location	Enter a name of the zone/location.
Description	Enter a description of the zone/location for reference.
Members	Assign access points to the specified zone/location for use with the Zone Plan feature.

IV-5-7. Firmware Upgrade

Firmware Upgrade allows you to upgrade firmware to Access Point Groups. First, upload the firmware file from a local disk or external FTP server: locate the file and click “Upload” or “Check”. The table below will display the *Firmware Name, Firmware Version, NMS Version, Model and Size*.

Then click “Upgrade All” to upgrade all access points in the Array or select Access Point groups from the list using check-boxes and click “Upgrade Selected” to upgrade only selected access points.

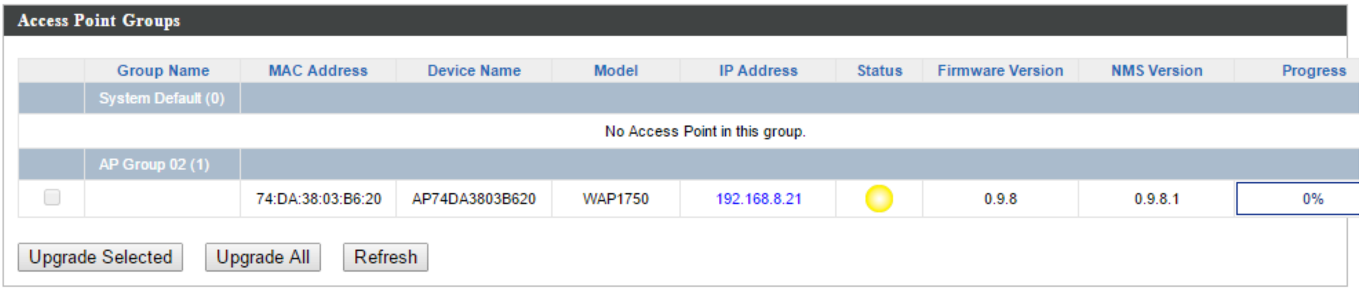


Firmware Upgrade

○ Local ● External FTP Server

Firmware Update File	
FTP Server Address	
Username	
Password	□ Show password

Firmware Name	Firmware Version	NMS Version	Model	Size (bytes)



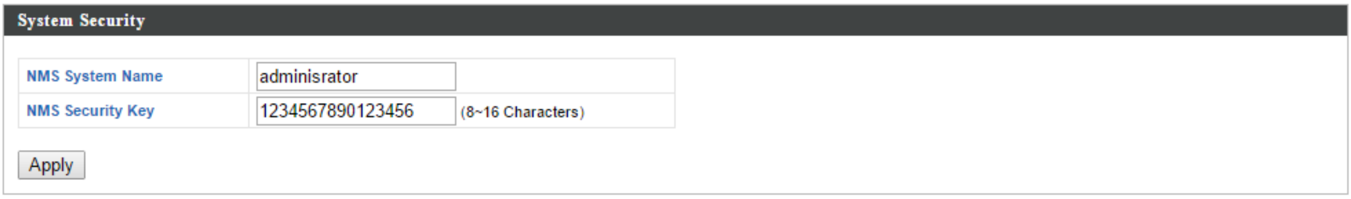
Access Point Groups

	Group Name	MAC Address	Device Name	Model	IP Address	Status	Firmware Version	NMS Version	Progress
	System Default (0)								
No Access Point in this group.									
	AP Group 02 (1)								
□		74:DA:38:03:B6:20	AP74DA3803B620	WAP1750	192.168.8.21	●	0.9.8	0.9.8.1	0%

IV-5-8. Advanced

IV-5-8-1. System Security

Configure the NMS system login name and password.

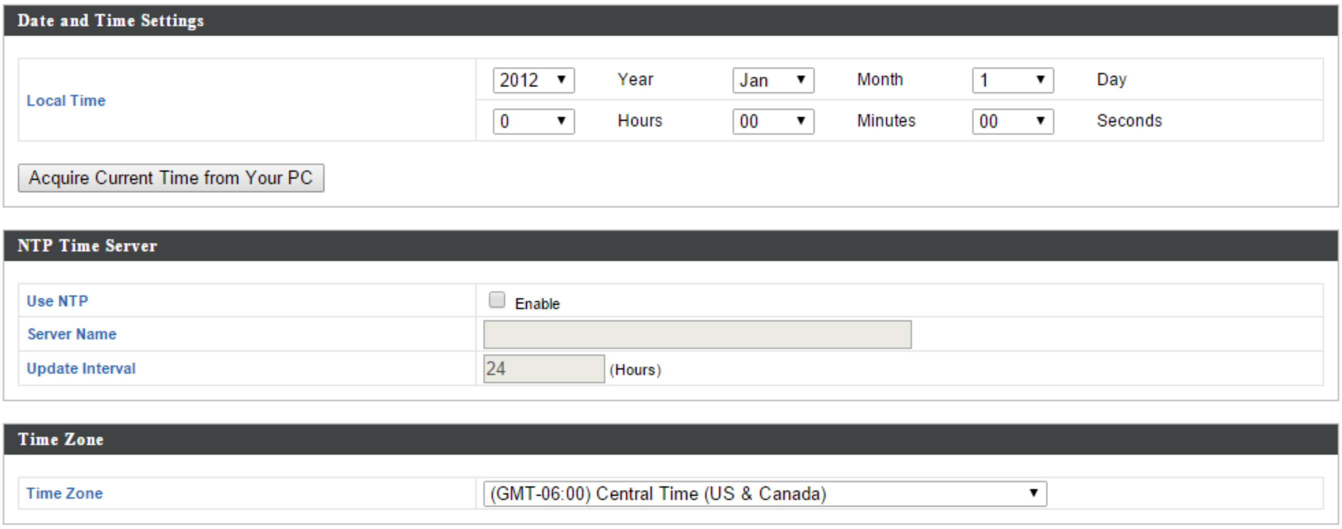


System Security

NMS System Name	administrator
NMS Security Key	1234567890123456 (8~16 Characters)

IV-5-8-2. Date & Time

Configure the date & time settings of the AP Array. The date and time of the access points can be configured manually or can be synchronized with a time server.



Date and Time Settings

Local Time	2012	Year	Jan	Month	1	Day
	0	Hours	00	Minutes	00	Seconds

NTP Time Server

Use NTP	□ Enable
Server Name	
Update Interval	24 (Hours)

Time Zone

Time Zone	(GMT-06:00) Central Time (US & Canada)

Date and Time Settings	
Local Time	Set the access point's date and time manually using the drop down menus.
Acquire Current Time from your PC	Click "Acquire Current Time from Your PC" to enter the required values automatically according to your computer's current time and date.

NTP Time Server	
Use NTP	The access point also supports NTP (Network Time Protocol) for automatic time and date setup.
Server Name	Enter the host name or IP address of the time server if you wish.
Update Interval	Specify a frequency (in hours) for the access point to update/synchronize with the NTP server.

Time Zone	
Time Zone	Select the time zone of your country/ region. If your country/region is not listed, please select another country/region whose time zone is the same as yours.

IV-6. Local Network

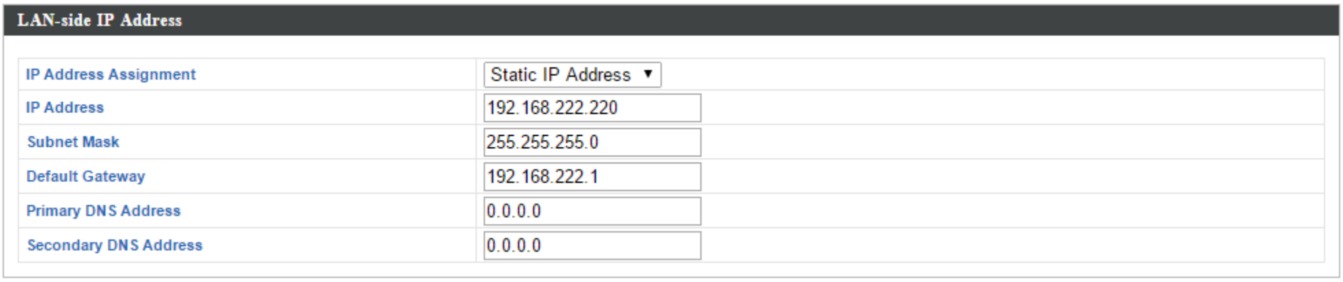
IV-6-1. Network Settings

IV-6-1-1. LAN-Side IP Address

The “LAN-side IP address” page allows you to configure your AP Controller on your Local Area Network (LAN). You can enable the access point to dynamically receive an IP address from your router’s DHCP server or you can specify a static IP address for your access point, as well as configure DNS servers. You can also set your AP Controller as a DHCP server to assign IP addresses to other devices on your LAN.

The access point’s default IP address is 192.168.2.2

Disable other DHCP servers on the LAN if using AP Controllers DHCP Server.



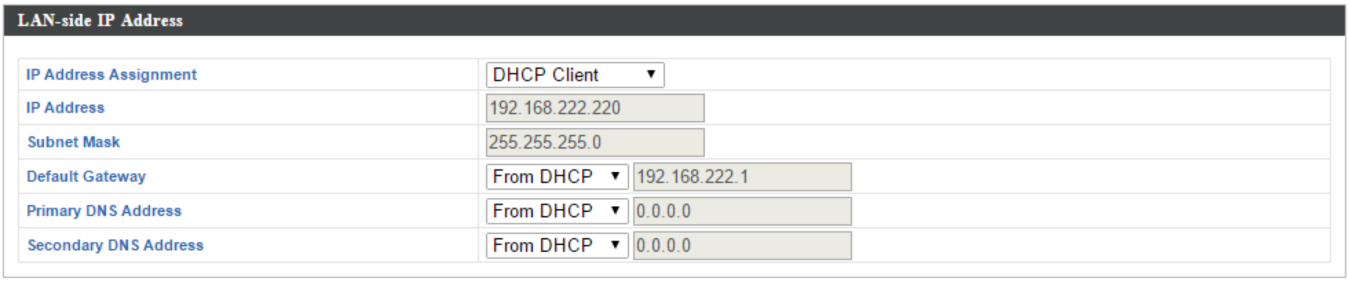
LAN-side IP Address

IP Address Assignment	Static IP Address ▼
IP Address	192.168.222.220
Subnet Mask	255.255.255.0
Default Gateway	192.168.222.1
Primary DNS Address	0.0.0.0
Secondary DNS Address	0.0.0.0

LAN-side IP Address	
IP Address Assignment	Select “Static IP” to manually specify a static/fixed IP address for your access point. Select “DHCP Client” for your access point to be assigned a dynamic IP address from your router’s DHCP server, or select “DHCP Server” for your access point to act as a DHCP server and assign IP addresses on your LAN.

Static IP Address	
IP Address	Specify the IP address here. This IP address will be assigned to your access point and will

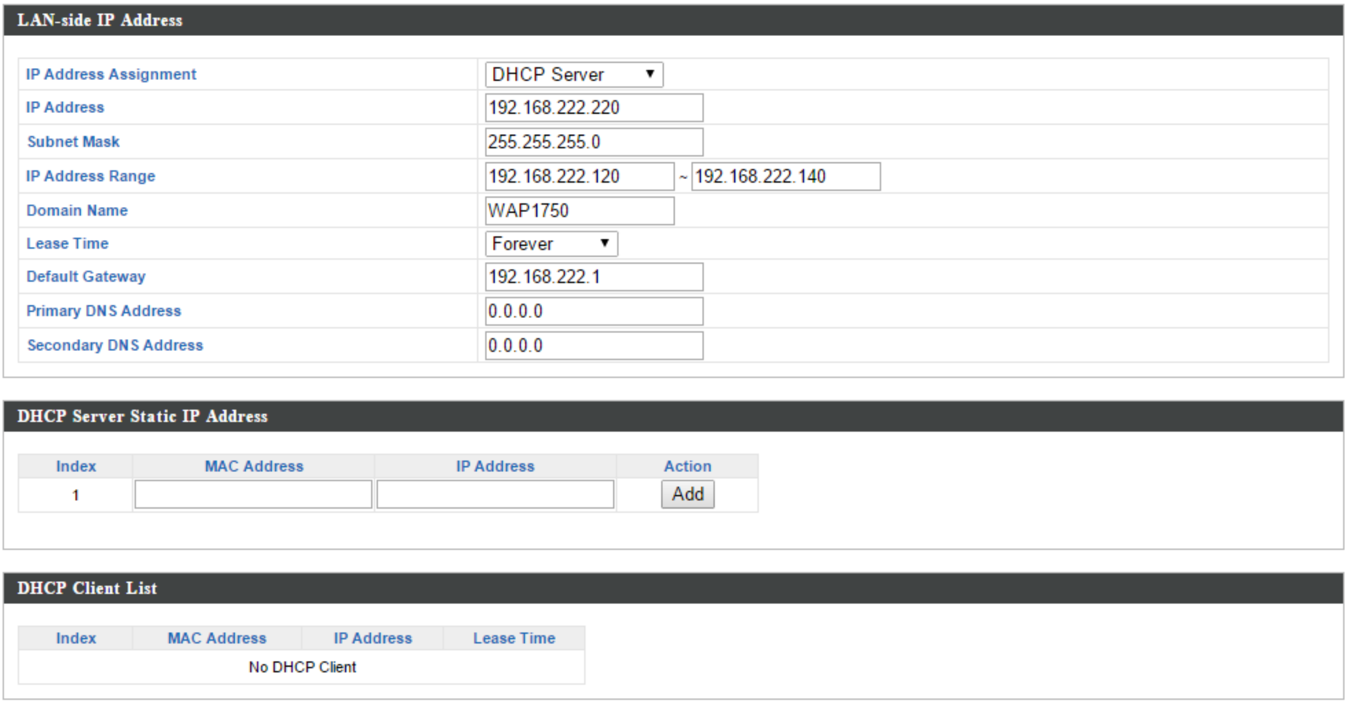
	replace the default IP address.
Subnet Mask	Specify a subnet mask. The default value is 255.255.255.0
Default Gateway	For DHCP users, select “From DHCP” to get default gateway from your DHCP server or “User-Defined” to enter a gateway manually. For static IP users, the default value is blank.
Primary DNS Address	For static IP users, the default value is blank.
Secondary DNS Address	For static IP users, the default value is blank.



LAN-side IP Address

IP Address Assignment	DHCP Client ▾
IP Address	192.168.222.220
Subnet Mask	255.255.255.0
Default Gateway	From DHCP ▾ 192.168.222.1
Primary DNS Address	From DHCP ▾ 0.0.0.0
Secondary DNS Address	From DHCP ▾ 0.0.0.0

DHCP Client	
IP Address	When “DHCP Client” is selected this value cannot be modified.
Subnet Mask	When “DHCP Client” is selected this value cannot be modified.
Default Gateway	Select “From DHCP” or select “User-Defined” and enter a default gateway.
Primary DNS Address	Select “From DHCP” or select “User-Defined” and enter a primary DNS address.
Secondary DNS Address	Select “From DHCP” or select “User-Defined” and enter a secondary DNS address.



LAN-side IP Address

IP Address Assignment	DHCP Server ▾
IP Address	192.168.222.220
Subnet Mask	255.255.255.0
IP Address Range	192.168.222.120 ~ 192.168.222.140
Domain Name	WAP1750
Lease Time	Forever ▾
Default Gateway	192.168.222.1
Primary DNS Address	0.0.0.0
Secondary DNS Address	0.0.0.0

DHCP Server Static IP Address

Index	MAC Address	IP Address	Action
1			Add

DHCP Client List

Index	MAC Address	IP Address	Lease Time
No DHCP Client			

DHCP Server	
IP Address	Specify the IP address here. This IP address will be assigned to your access point and will replace the default IP address.
Subnet Mask	Specify a subnet mask. The default value is 255.255.255.0
IP Address Range	Enter the start and end IP address of the IP address range which your access point's DHCP server will assign to devices on the network.
Domain Name	Enter a domain name.
Lease Time	Select a lease time from the drop down menu. IP addresses will be assigned for this period of time.
Default Gateway	Enter a default gateway.
Primary DNS Address	Enter a primary DNS address.
Secondary DNS Address	Enter a secondary DNS address.

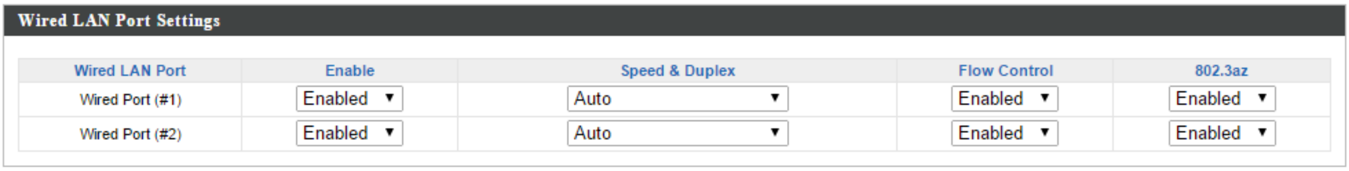
Your access point's DHCP server can be configured to assign static (fixed) IP addresses to specified network devices, identified by their unique MAC address:

DHCP Server Static IP Address	
MAC Address	Enter the MAC address of the network device to be assigned a static IP address.

IP Address	Specify the IP address to assign the device.
Add	Click to assign the IP address to the device.

IV-6-1-2. LAN Port Settings

The “LAN Port” page allows you to configure the settings for your AP Controllers wired LAN (Ethernet) ports.



Wired LAN Port Settings

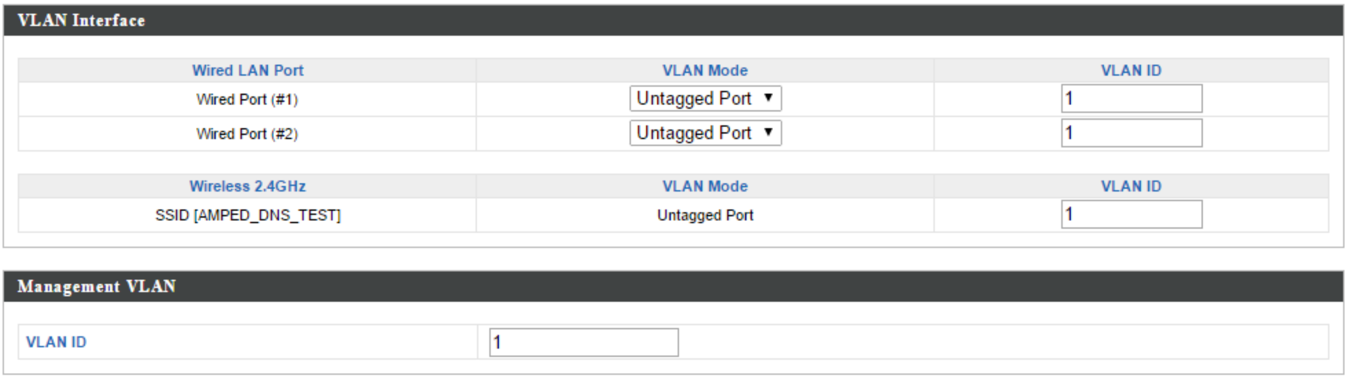
Wired LAN Port	Enable	Speed & Duplex	Flow Control	802.3az
Wired Port (#1)	Enabled ▼	Auto ▼	Enabled ▼	Enabled ▼
Wired Port (#2)	Enabled ▼	Auto ▼	Enabled ▼	Enabled ▼

Wired LAN Port	Identifies LAN port 1 or 2.
Enable	Enable/disable specified LAN port.
Speed & Duplex	Select a speed & duplex type for specified LAN port, or use the “Auto” value. LAN ports can operate up to 1000Mbps and full-duplex enables simultaneous data packets transfer/receive.
Flow Control	Enable/disable flow control. Flow control can pause new session request until current data processing is complete, in order to avoid device overloads under heavy traffic.
802.3az	Enable/disable 802.3az. 802.3az is an Energy Efficient Ethernet feature which disables unused interfaces to reduce power usage.

IV-6-1-3. VLAN

The “VLAN” (Virtual Local Area Network) page enables you to configure VLAN settings. A VLAN is a local area network which maps workstations virtually instead of physically and allows you to group together or isolate users from each other. VLAN IDs 1 – 4095 are supported.

VLAN IDs in the range 1 – 4095 are supported.



VLAN Interface

Wired LAN Port	VLAN Mode	VLAN ID
Wired Port (#1)	Untagged Port ▼	1
Wired Port (#2)	Untagged Port ▼	1

Wireless 2.4GHz	VLAN Mode	VLAN ID
SSID [AMPED_DNS_TEST]	Untagged Port	1

Management VLAN

VLAN ID	1

VLAN Interface	
Wired LAN Port/Wireless	Identifies LAN port 1 or 2 and wireless SSIDs (2.4GHz or 5GHz).
VLAN Mode	Select “Tagged Port” or “Untagged Port” for specified LAN interface.
VLAN ID	Set a VLAN ID for specified interface, if “Untagged Port” is selected.

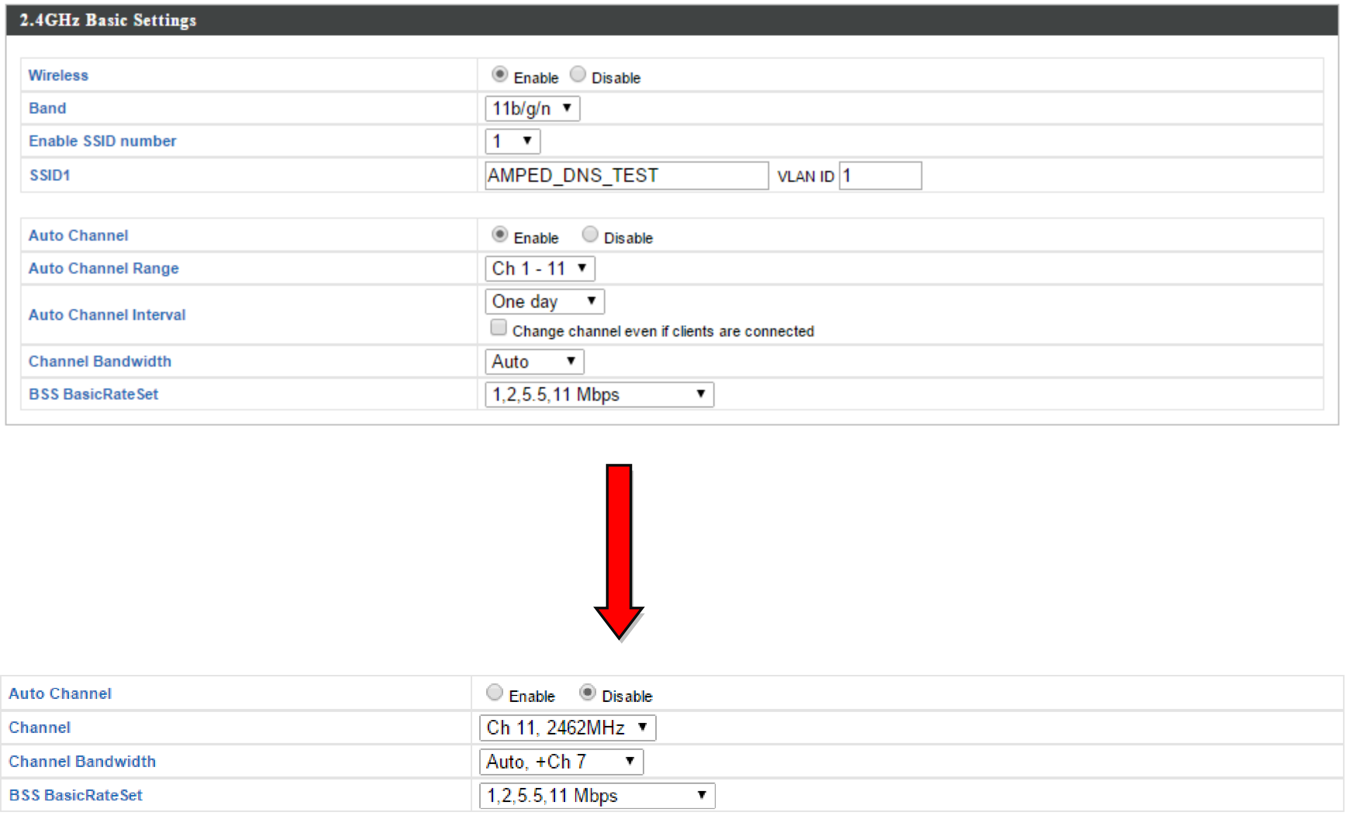
Management VLAN	
VLAN ID	Specify the VLAN ID of the management VLAN. Only the hosts belonging to the same VLAN can manage the device.

IV-6-2. 2.4GHz 11bgn

The “2.4GHz 11bgn” menu allows you to view and configure information for your access point’s 2.4GHz wireless network across four categories: Basic, Advanced, Security and WDS.

IV-6-2-1. Basic

The “Basic” screen displays basic settings for your access point’s 2.4GHz Wi-Fi network(s).



2.4GHz Basic Settings

Wireless	● Enable ○ Disable
Band	11b/g/n ▼
Enable SSID number	1 ▼
SSID1	AMPED_DNS_TEST VLAN ID 1
Auto Channel	● Enable ○ Disable
Auto Channel Range	Ch 1 - 11 ▼
Auto Channel Interval	One day ▼ □ Change channel even if clients are connected
Channel Bandwidth	Auto ▼
BSS BasicRateSet	1,2,5.5,11 Mbps ▼

Auto Channel	○ Enable ● Disable
Channel	Ch 11, 2462MHz ▼
Channel Bandwidth	Auto, +Ch 7 ▼
BSS BasicRateSet	1,2,5.5,11 Mbps ▼

Wireless	Enable or disable the access point’s 2.4GHz wireless radio. When disabled, no 2.4GHz SSIDs will be active.
Band	Select the wireless standard used for the access point. Combinations of 802.11b, 802.11g & 802.11n can be selected.
Enable SSID Number	Select how many SSIDs to enable for the 2.4GHz frequency from the drop down menu. A maximum of 16 can be enabled.
SSID#	Enter the SSID name for the specified SSID (up

	to 16). The SSID can consist of any combination of up to 32 alphanumeric characters.
VLAN ID	Specify a VLAN ID for each SSID.
Auto Channel	Enable/disable auto channel selection. Auto channel selection will automatically set the wireless channel for the access point's 2.4GHz frequency based on availability and potential interference. When disabled, select a channel manually as shown in the next table.
Auto Channel Range	Select a range from which the auto channel setting (above) will choose a channel.
Auto Channel Interval	Specify a frequency for how often the auto channel setting will check/reassign the wireless channel. Check/uncheck the "Change channel even if clients are connected" box according to your preference.
Channel Bandwidth	Set the channel bandwidth: 20MHz (lower performance but less interference), 40MHz (higher performance but potentially higher interference) or Auto (automatically select based on interference level).
BSS BasicRateSet	Set a Basic Service Set (BSS) rate: this is a series of rates to control communication frames for wireless clients.

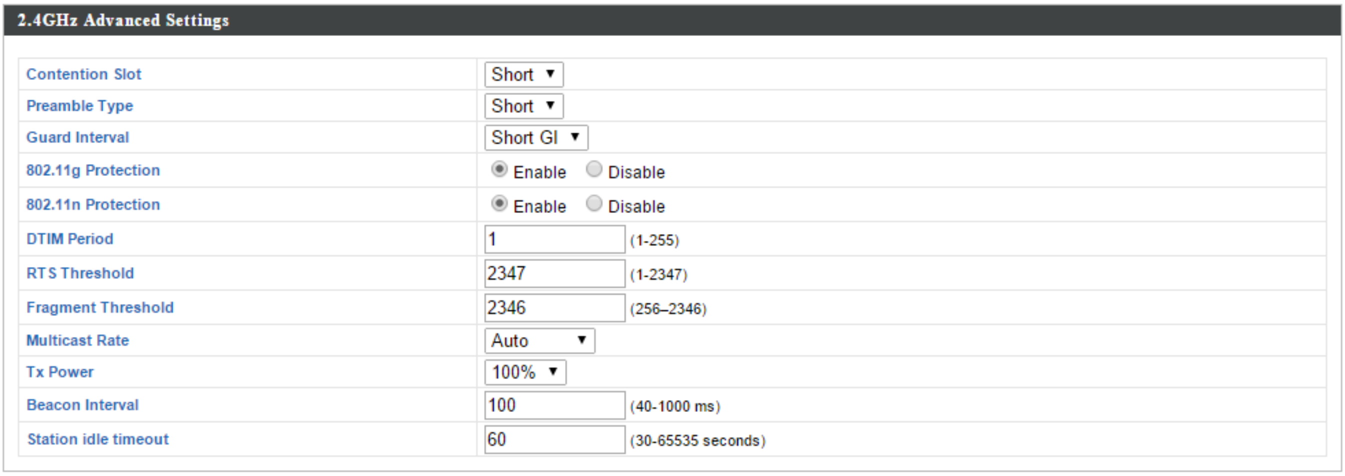
When auto channel is disabled, select a wireless channel manually:

Channel	Select a wireless channel from 1 – 11.
Channel Bandwidth	Set the channel bandwidth: 20MHz (lower performance but less interference), 40MHz (higher performance but potentially higher interference) or Auto (automatically select based on interference level).
BSS BasicRate Set	Set a Basic Service Set (BSS) rate: this is a series of rates to control communication frames for wireless clients.

IV-6-2-2. Advanced

These settings are for experienced users only. Please do not change any of the values on this page unless you are already familiar with these functions.

Changing these settings can adversely affect the performance of your access point.



2.4GHz Advanced Settings

Contention Slot	Short ▾
Preamble Type	Short ▾
Guard Interval	Short GI ▾
802.11g Protection	● Enable ○ Disable
802.11n Protection	● Enable ○ Disable
DTIM Period	1 (1-255)
RTS Threshold	2347 (1-2347)
Fragment Threshold	2346 (256–2346)
Multicast Rate	Auto ▾
Tx Power	100% ▾
Beacon Interval	100 (40-1000 ms)
Station idle timeout	60 (30-65535 seconds)

Contention Slot	Select “Short” or “Long” – this value is used for contention windows in WMM (see **IV-6-7. WMM**).
Preamble Type	Set the wireless radio preamble type. The preamble type in 802.11 based wireless communication defines the length of the CRC (Cyclic Redundancy Check) block for communication between the access point and roaming wireless adapters. The default value is “Short Preamble”.
Guard Interval	Set the guard interval. A shorter interval can improve performance.
802.11g Protection	Enable/disable 802.11g protection, which increases reliability but reduces bandwidth (clients will send Request to Send (RTS) to access point, and access point will broadcast Clear to Send (CTS), before a packet is sent from client.)

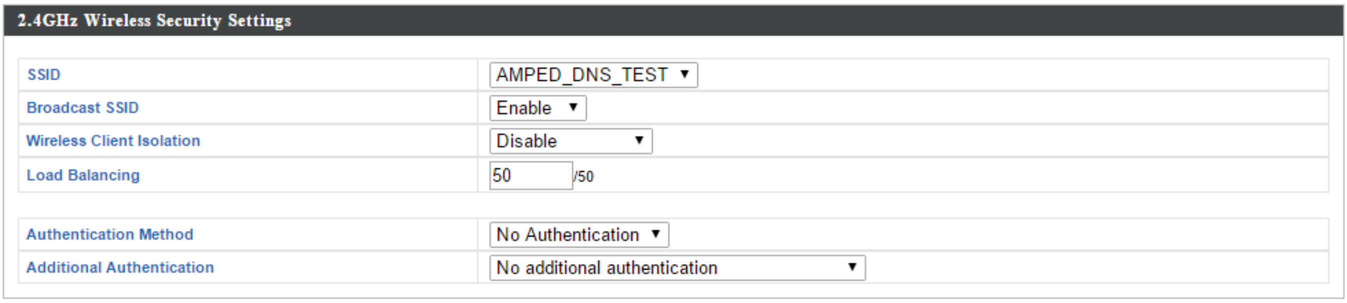
802.11n Protection	Enable/disable 802.11n protection, which increases reliability but reduces bandwidth (clients will send Request to Send (RTS) to access point, and access point will broadcast Clear to Send (CTS), before a packet is sent from client.)
DTIM Period	Set the DTIM (delivery traffic indication message) period value of the wireless radio. The default value is 1.
RTS Threshold	Set the RTS threshold of the wireless radio. The default value is 2347.
Fragment Threshold	Set the fragment threshold of the wireless radio. The default value is 2346.
Multicast Rate	Set the transfer rate for multicast packets or use the “Auto” setting.
Tx Power	Set the power output of the wireless radio. You may not require 100% output power. Setting a lower power output can enhance security since potentially malicious/unknown users in distant areas will not be able to access your signal.
Beacon Interval	Set the beacon interval of the wireless radio. The default value is 100.
Station idle timeout	Set the interval for keepalive messages from the access point to a wireless client to verify if the station is still alive/active.

IV-6-2-3. Security

The access point provides various security options (wireless data encryption). When data is encrypted, information transmitted wirelessly cannot be read by anyone who does not know the correct encryption key.

It's essential to configure wireless security in order to prevent unauthorised access to your network.

Select hard-to-guess passwords which include combinations of numbers, letters and symbols, and change your password regularly.



2.4GHz Wireless Security Settings

SSID	AMPED_DNS_TEST ▾
Broadcast SSID	Enable ▾
Wireless Client Isolation	Disable ▾
Load Balancing	50 /50
Authentication Method	No Authentication ▾
Additional Authentication	No additional authentication ▾

SSID	Select which SSID to configure security settings for.
Broadcast SSID	Enable or disable SSID broadcast. When enabled, the SSID will be visible to clients as an available Wi-Fi network. When disabled, the SSID will not be visible as an available Wi-Fi network to clients – clients must manually enter the SSID in order to connect. A hidden (disabled) SSID is typically more secure than a visible (enabled) SSID.
Wireless Client Isolation	Enable or disable wireless client isolation. Wireless client isolation prevents clients connected to the access point from communicating with each other and improves security. Typically, this function is useful for corporate environments or public hot spots and can prevent brute force attacks on clients' usernames and passwords.

Load Balancing	Load balancing limits the number of wireless clients connected to an SSID. Set a load balancing value (maximum 50).
Authentication Method	Select an authentication method from the drop down menu and refer to the information below appropriate for your method.
Additional Authentication	Select an additional authentication method from the drop down menu and refer to the information below (**IV-6-2-3-6.**) appropriate for your method.

IV-6-2-3-1. No Authentication

Authentication is disabled and no password/key is required to connect to the access point.

Disabling wireless authentication is not recommended. When disabled, anybody within range can connect to your device's SSID.

IV-6-2-3-2. WEP

WEP (Wired Equivalent Privacy) is a basic encryption type. For a higher level of security consider using WPA encryption.

Key Length	Select 64-bit or 128-bit. 128-bit is more secure than 64-bit and is recommended.
Key Type	Choose from "ASCII" (any alphanumerical character 0-9, a-z and A-Z) or "Hex" (any characters from 0-9, a-f and A-F).
Default Key	Select which encryption key (1 – 4 below) is the default key. For security purposes, you can set up to four keys (below) and change which is the default key.
Encryption Key 1 – 4	Enter your encryption key/password according to the format you selected above.

IV-6-2-3-3. IEEE802.1x/EAP

Key Length	Select 64-bit or 128-bit. 128-bit is more secure than 64-bit and is recommended.

IV-6-2-3-4. WPA-PSK

WPA-PSK is a secure wireless encryption type with strong data protection and user authentication, utilizing 128-bit encryption keys.

WPA Type	Select from WPA/WPA2 Mixed Mode-PSK, WPA2 or WPA only. WPA2 is safer than WPA only, but not supported by all wireless clients. Please make sure your wireless client supports your selection.
Encryption	Select “TKIP/AES Mixed Mode” or “AES” encryption type.
Key Renewal Interval	Specify a frequency for key renewal in minutes.
Pre-Shared Key Type	Choose from “Passphrase” (8 – 63 alphanumeric characters) or “Hex” (up to 64 characters from 0-9, a-f and A-F).
Pre-Shared Key	Please enter a security key/password according to the format you selected above.

IV-6-2-3-5. WPA-EAP

WPA Type	Select from WPA/WPA2 Mixed Mode-EAP, WPA2-EAP or WPA-EAP.
Encryption	Select “TKIP/AES Mixed Mode” or “AES” encryption type.
Key Renewal Interval	Specify a frequency for key renewal in minutes.

WPA-EAP must be disabled to use MAC-RADIUS authentication.

IV-6-2-3-6. Additional Authentication

Additional wireless authentication methods can also be used:

MAC Address Filter
Restrict wireless clients access based on MAC address specified in the MAC filter table.

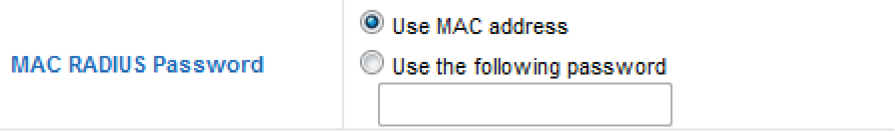
See *IV-6-6.MAC Filter* ***to configure MAC filtering.***

MAC Filter & MAC-RADIUS Authentication
Restrict wireless clients access using both of the above MAC filtering & RADIUS authentication methods.

MAC-RADIUS Authentication
Restrict wireless clients access based on MAC address via a RADIUS server, or password authentication via a RADIUS server.

See *IV-6-5.RADIUS* ***to configure RADIUS servers.***

WPS must be disabled to use MAC-RADIUS authentication. See *IV-6-4*. ***for WPS settings.***



MAC RADIUS Password

● Use MAC address
○ Use the following password

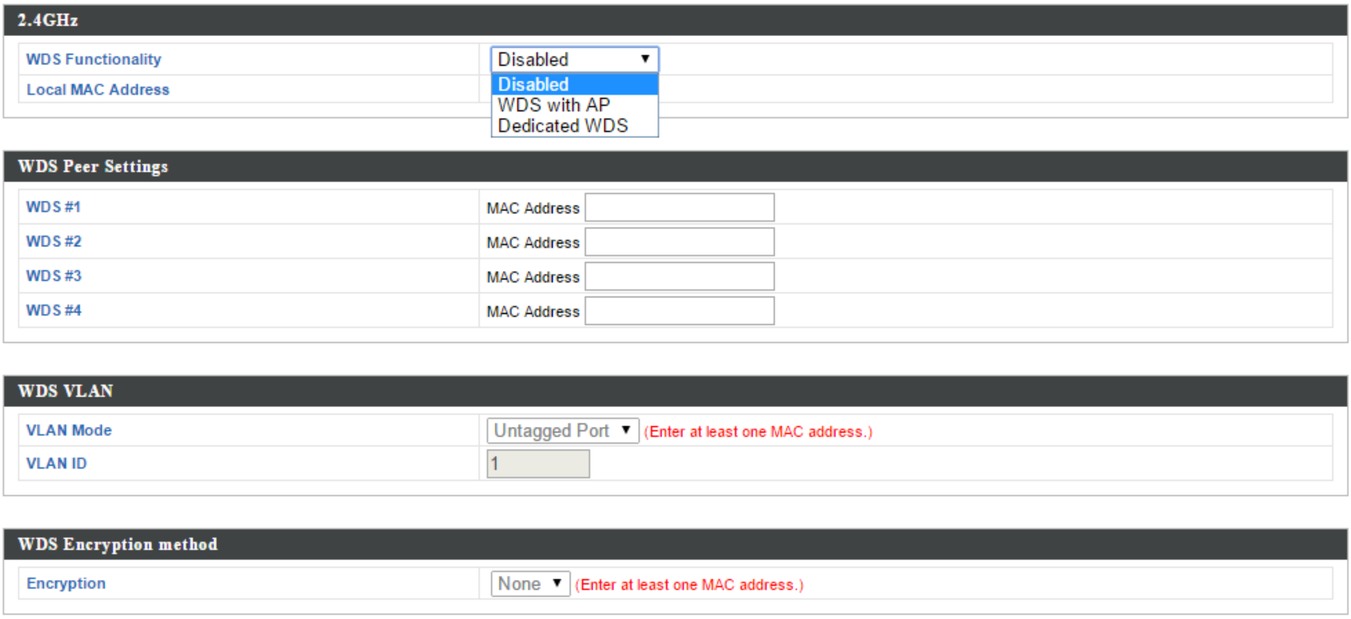
MAC RADIUS Password	Select whether to use MAC address or password authentication via RADIUS server. If you select “Use the following password”, enter the password in the field below. The password should match the “Shared Secret” used in **IV-6-5. RADIUS**.

IV-6-2-4. WDS

Wireless Distribution System (WDS) can bridge/repeat access points together in an extended network. WDS settings can be configured as shown below.

> ***When using WDS, configure the IP address of each access point to be in the same subnet and ensure there is only one active DHCP server among connected access points, preferably on the WAN side.***

WDS must be configured on each access point, using correct MAC addresses. All access points should use the same wireless channel and encryption method.



2.4GHz

WDS Functionality	Disabled ▾ (Disabled / WDS with AP / Dedicated WDS)
Local MAC Address	

WDS Peer Settings

WDS #1	MAC Address	
WDS #2	MAC Address	
WDS #3	MAC Address	
WDS #4	MAC Address	

WDS VLAN

VLAN Mode	Untagged Port ▾ (Enter at least one MAC address.)
VLAN ID	1

WDS Encryption method

Encryption	None ▾ (Enter at least one MAC address.)

2.4GHz	
WDS Functionality	Select “WDS with AP” to use WDS with access point or “WDS Dedicated Mode” to use WDS and also block communication with regular wireless clients. When WDS is used, each access point should be configured with corresponding MAC addresses, wireless channel and wireless encryption method.
Local MAC Address	Displays the MAC address of your access point.

WDS Peer Settings	
WDS #	Enter the MAC address for up to four other WDS devices you wish to connect.

WDS VLAN	
VLAN Mode	Specify the WDS VLAN mode to “Untagged Port” or “Tagged Port”.
VLAN ID	Specify the WDS VLAN ID when “Untagged Port” is selected above.

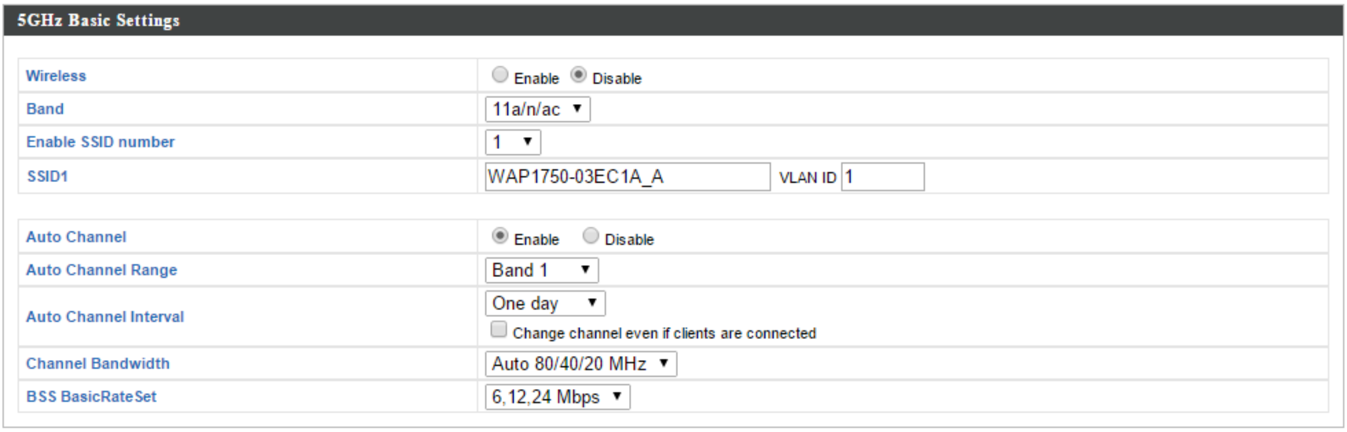
WDS Encryption method	
Encryption	Select whether to use “None” or “AES” encryption and enter a pre-shared key for AES consisting of 8-63 alphanumeric characters.

IV-6-3. 5GHz 11ac 11an

The "5GHz 11ac 11an" menu allows you to view and configure information for your access point's 5GHz wireless network across four categories: Basic, Advanced, Security and WDS.

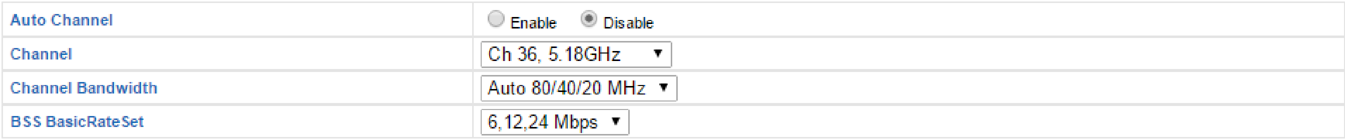
IV-6-3-1. Basic

The "Basic" screen displays basic settings for your access point's 5GHz Wi-Fi network (s).



5GHz Basic Settings

Wireless	○ Enable ● Disable
Band	11a/n/ac ▼
Enable SSID number	1 ▼
SSID1	WAP1750-03EC1A_A VLAN ID 1
Auto Channel	● Enable ○ Disable
Auto Channel Range	Band 1 ▼
Auto Channel Interval	One day ▼ □ Change channel even if clients are connected
Channel Bandwidth	Auto 80/40/20 MHz ▼
BSS BasicRateSet	6,12,24 Mbps ▼



Auto Channel	○ Enable ● Disable
Channel	Ch 36, 5.18GHz ▼
Channel Bandwidth	Auto 80/40/20 MHz ▼
BSS BasicRateSet	6,12,24 Mbps ▼

Wireless	Enable or disable the access point's 5GHz wireless radio. When disabled, no 5GHz SSIDs will be active.
Band	Select the wireless standard used for the access point. Combinations of 802.11a, 802.11n & 802.11ac can be selected.
Enable SSID Number	Select how many SSIDs to enable for the 5GHz frequency from the drop down menu. A maximum of 16 can be enabled.

SSID#	Enter the SSID name for the specified SSID (up to 16). The SSID can consist of any combination of up to 32 alphanumeric characters.
VLAN ID	Specify a VLAN ID for each SSID.
Auto Channel	Enable/disable auto channel selection. Auto channel selection will automatically set the wireless channel for the access point's 5GHz frequency based on availability and potential interference. When disabled, select a channel manually as shown in the next table.
Auto Channel Range	Select a range from which the auto channel setting (above) will choose a channel.
Auto Channel Interval	Specify a frequency for how often the auto channel setting will check/reassign the wireless channel. Check/uncheck the "Change channel even if clients are connected" box according to your preference.
Channel Bandwidth	Set the channel bandwidth: 20MHz (lower performance but less interference), Auto 40/20MHz or Auto 80/40/20MHz (automatically select based on interference level).
BSS BasicRate Set	Set a Basic Service Set (BSS) rate: this is a series of rates to control communication frames for wireless clients.

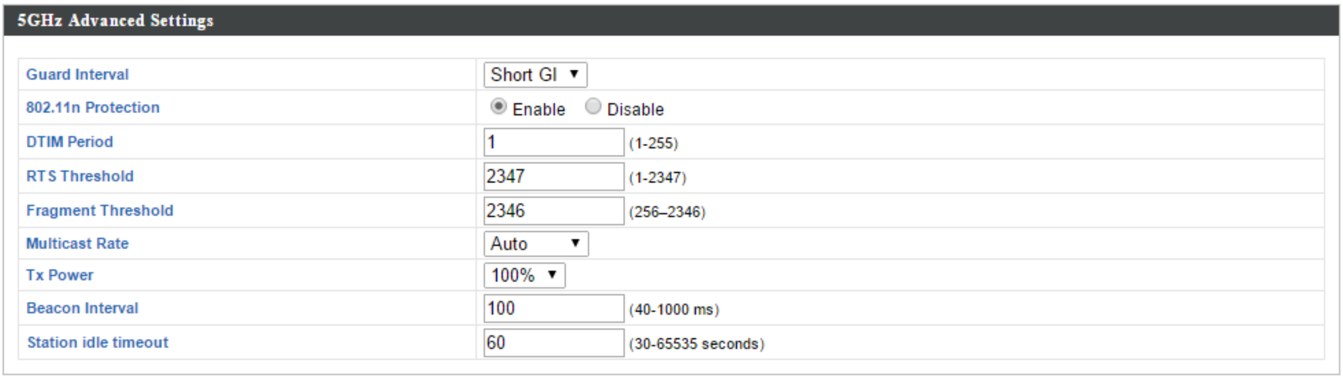
When auto channel is disabled, select a wireless channel manually:

Channel	Select a wireless channel.
Channel Bandwidth	Set the channel bandwidth: 20MHz (lower performance but less interference), Auto 40/20MHz or Auto 80/40/20MHz (automatically select based on interference level).
BSS BasicRate Set	Set a Basic Service Set (BSS) rate: this is a series of rates to control communication frames for wireless clients.

IV-6-3-2. Advanced

These settings are for experienced users only. Please do not change any of the values on this page unless you are already familiar with these functions.

Changing these settings can adversely affect the performance of your access point.



5GHz Advanced Settings

Guard Interval	Short GI ▾
802.11n Protection	● Enable ○ Disable
DTIM Period	1 (1-255)
RTS Threshold	2347 (1-2347)
Fragment Threshold	2346 (256–2346)
Multicast Rate	Auto ▾
Tx Power	100% ▾
Beacon Interval	100 (40-1000 ms)
Station idle timeout	60 (30-65535 seconds)

Guard Interval	Set the guard interval. A shorter interval can improve performance.
802.11n Protection	Enable/disable 802.11n protection, which increases reliability but reduces bandwidth (clients will send Request to Send (RTS) to access point, and access point will broadcast Clear to Send (CTS), before a packet is sent from client.)
DTIM Period	Set the DTIM (delivery traffic indication message) period value of the wireless radio. The default value is 1.
RTS Threshold	Set the RTS threshold of the wireless radio. The default value is 2347.
Fragment Threshold	Set the fragment threshold of the wireless radio. The default value is 2346.
Multicast Rate	Set the transfer rate for multicast packets or use the “Auto” setting.
Tx Power	Set the power output of the wireless radio. You may not require 100% output power. Setting a lower power output can enhance security since potentially malicious/unknown users in distant areas will not be able to access your signal.

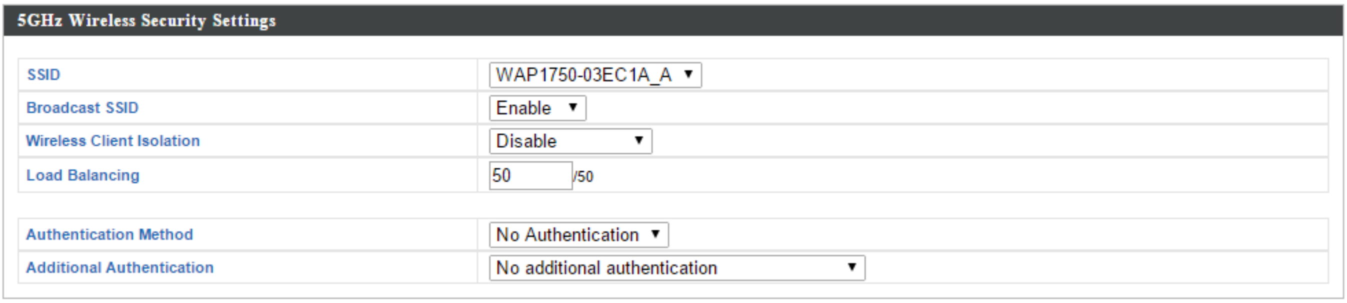
Beacon Interval	Set the beacon interval of the wireless radio. The default value is 100.
Station idle timeout	Set the interval for keepalive messages from the access point to a wireless client to verify if the station is still alive/active.

IV-6-3-3. Security

The access point provides various security options (wireless data encryption). When data is encrypted, information transmitted wirelessly cannot be read by anyone who does not know the correct encryption key.

It's essential to configure wireless security in order to prevent unauthorised access to your network.

Select hard-to-guess passwords which include combinations of numbers, letters and symbols, and change your password regularly.



5GHz Wireless Security Settings

SSID	WAP1750-03EC1A_A ▾
Broadcast SSID	Enable ▾
Wireless Client Isolation	Disable ▾
Load Balancing	50 /50
Authentication Method	No Authentication ▾
Additional Authentication	No additional authentication ▾

SSID	Select which SSID to configure security settings for.
Broadcast SSID	Enable or disable SSID broadcast. When enabled, the SSID will be visible to clients as an available Wi-Fi network. When disabled, the SSID will not be visible as an available Wi-Fi network to clients – clients must manually enter the SSID in order to connect. A hidden (disabled) SSID is typically more secure than a visible (enabled) SSID.
Wireless Client Isolation	Enable or disable wireless client isolation. Wireless client isolation prevents clients connected to the access point from communicating with each other and improves security. Typically, this function is useful for corporate environments or public hot spots and can prevent brute force attacks on clients' usernames and passwords.

Load Balancing	Load balancing limits the number of wireless clients connected to an SSID. Set a load balancing value (maximum 50).
Authentication Method	Select an authentication method from the drop down menu and refer to the information below appropriate for your method.
Additional Authentication	Select an additional authentication method from the drop down menu and refer to the information below appropriate for your method.

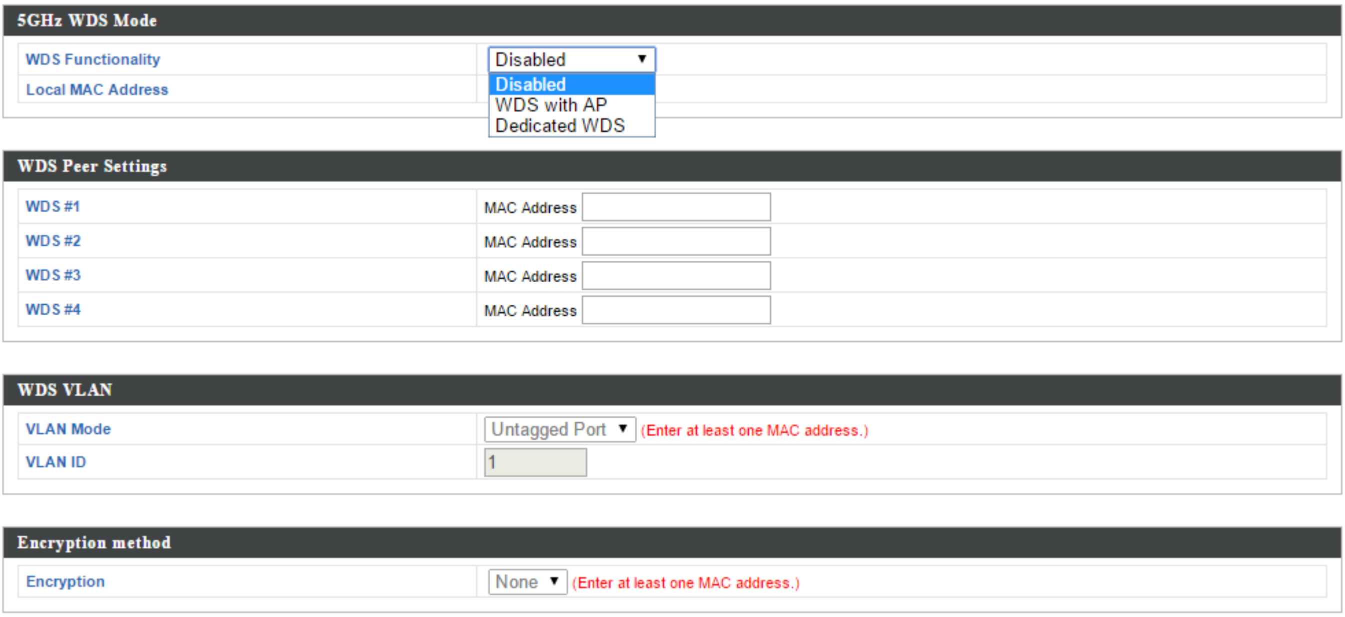
Please refer back to **IV-6-2-3. Security** for more information on authentication and additional authentication types.

IV-6-3-4. WDS

Wireless Distribution System (WDS) can bridge/repeat access points together in an extended network. WDS settings can be configured as shown below.

When using WDS, configure the IP address of each access point to be in the same subnet and ensure there is only one active DHCP server among connected access points, preferably on the WAN side.

WDS must be configured on each access point, using correct MAC addresses. All access points should use the same wireless channel and encryption method.



5GHz WDS Mode

WDS Functionality	Disabled ▼ Disabled WDS with AP Dedicated WDS
Local MAC Address	

WDS Peer Settings

WDS #1	MAC Address	
WDS #2	MAC Address	
WDS #3	MAC Address	
WDS #4	MAC Address	

WDS VLAN

VLAN Mode	Untagged Port ▼ (Enter at least one MAC address.)
VLAN ID	1

Encryption method

Encryption	None ▼ (Enter at least one MAC address.)

5GHz WDS Mode	
WDS Functionality	Select “WDS with AP” to use WDS with access point or “WDS Dedicated Mode” to use WDS and also block communication with regular wireless clients. When WDS is used, each access point should be configured with corresponding MAC addresses, wireless channel and wireless encryption method.
Local MAC Address	Displays the MAC address of your access point.

WDS Peer Settings

WDS #	Enter the MAC address for up to four other WDA devices you wish to connect.

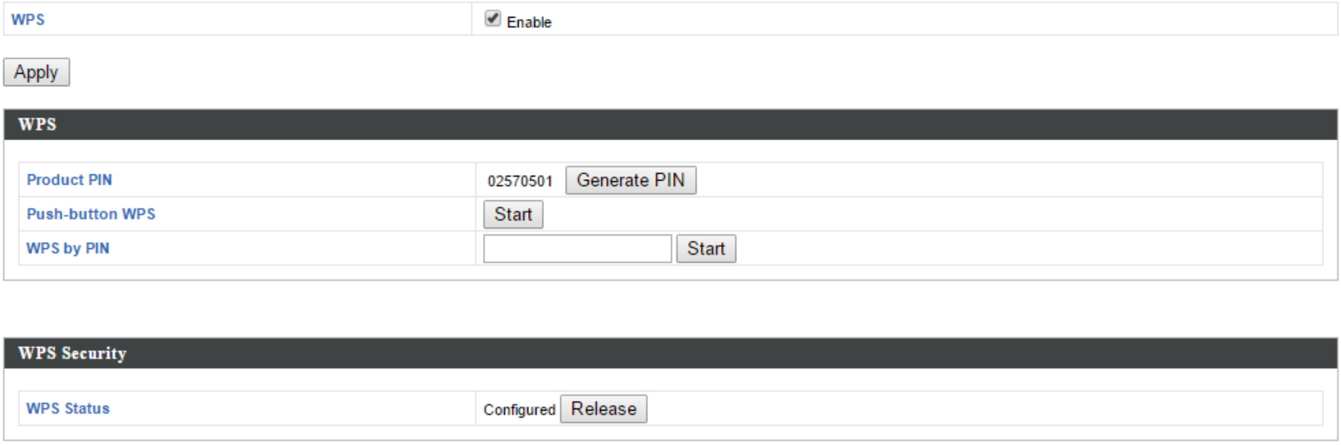
WDS VLAN	
VLAN Mode	Specify the WDS VLAN mode to “Untagged Port” or “Tagged Port”.
VLAN ID	Specify the WDS VLAN ID when “Untagged Port” is selected above.

WDS Encryption	
Encryption	Select whether to use “None” or “AES” encryption and enter a pre-shared key for AES with 8-63 alphanumeric characters.

IV-6-4. WPS

Wi-Fi Protected Setup is a simple way to establish connections between WPS compatible devices. WPS can be activated on compatible devices by pushing a WPS button on the device or from within the device's firmware/configuration interface (known as PBC or "Push Button Configuration"). When WPS is activated in the correct manner and at the correct time for two compatible devices, they will automatically connect. "PIN code WPS" is a variation of PBC which includes the additional use of a PIN code between the two devices for verification.

Please refer to manufacturer's instructions for your other WPS device.



WPS ☑ Enable

Apply

WPS

Product PIN	02570501 Generate PIN
Push-button WPS	Start
WPS by PIN	Start

WPS Security

WPS Status	Configured Release

WPS	Check/uncheck this box to enable/disable WPS functionality. WPS must be disabled when using MAC-RADIUS authentication (see **IV-6-2-3-6. & IV-6-5**).

Product PIN	Displays the WPS PIN code of the device, used for PIN code WPS. You will be required to enter this PIN code into another WPS device for PIN code WPS. Click "Generate PIN" to generate a new WPS PIN code.
Push-Button WPS	Click "Start" to activate WPS on the access point for approximately 2 minutes. This has the same effect as physically pushing the access point's WPS button.
WPS by PIN	Enter the PIN code of another WPS device and click "Start" to attempt to establish a WPS connection for approximately 2 minutes.

WPS Status	WPS security status is displayed here. Click “Release” to clear the existing status.

IV-6-5. RADIUS

The RADIUS sub menu allows you to configure the access point’s RADIUS server settings, categorized into three submenus: RADIUS settings, Internal Server and RADIUS accounts.

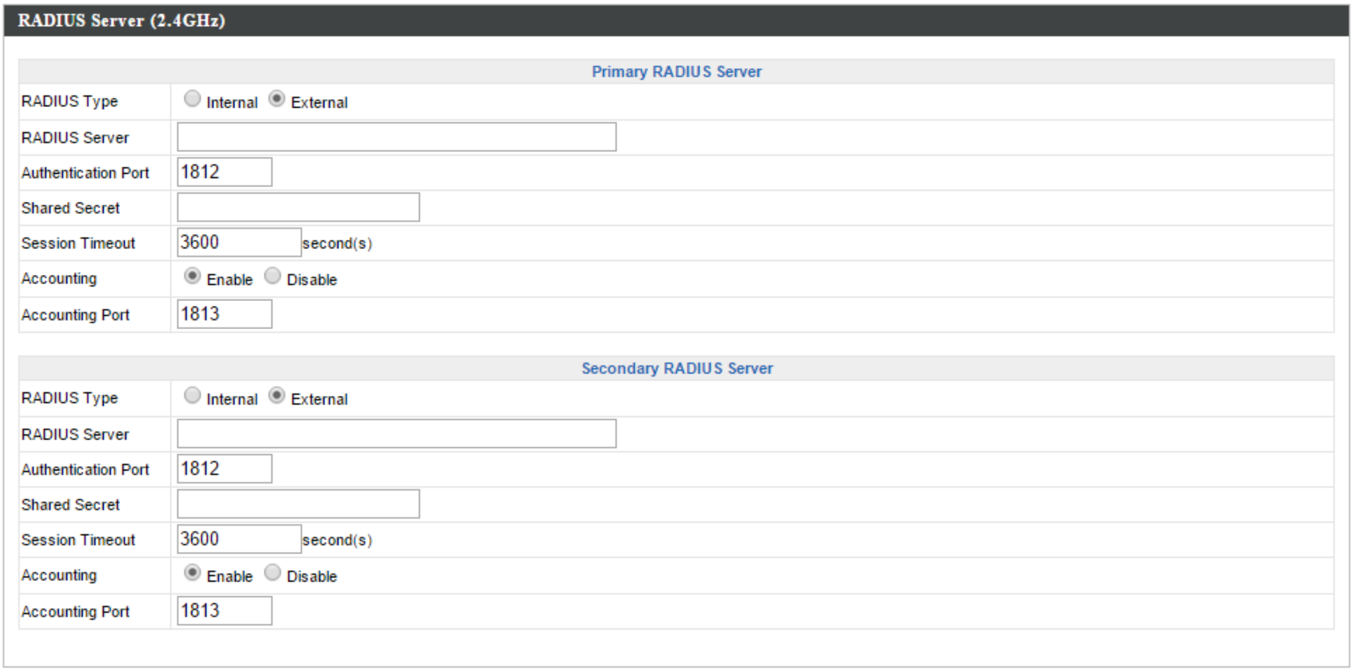
A RADIUS server provides user-based authentication to improve security and offer wireless client control – users can be authenticated before gaining access to a network.

The access point can utilize both a primary and secondary (backup) RADIUS server for each of its wireless frequencies (2.4GHz & 5GHz). External RADIUS servers can be used or the access point’s internal RADIUS server can be used.

***To use RADIUS servers, go to** “Local Network” → “Security” → “Additional Authentication” **and select** “MAC RADIUS Authentication” **(see** IV-6-2-3. **&** IV-6-3-3**).*

IV-6-5-1. RADIUS Settings

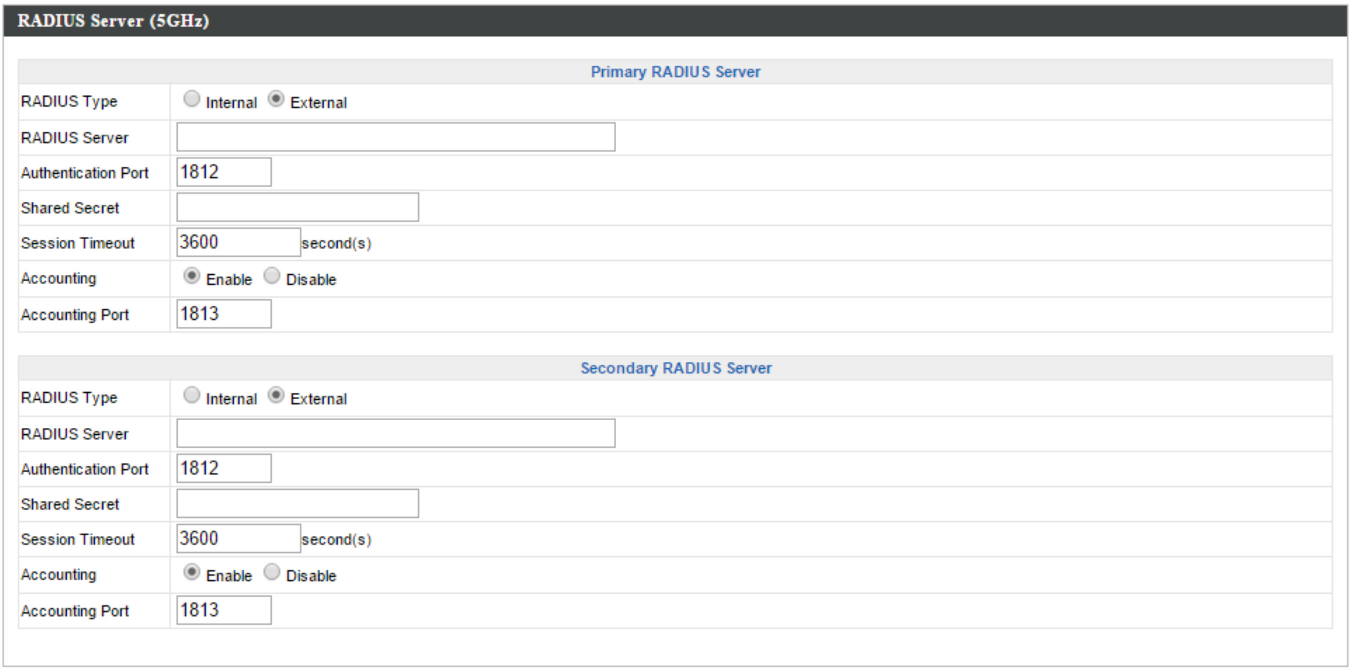
Configure the RADIUS server settings for 2.4GHz & 5GHz. Each frequency can use an internal or external RADIUS server.



RADIUS Server (2.4GHz)

Primary RADIUS Server	
RADIUS Type	○ Internal ● External
RADIUS Server	
Authentication Port	1812
Shared Secret	
Session Timeout	3600 second(s)
Accounting	● Enable ○ Disable
Accounting Port	1813

Secondary RADIUS Server	
RADIUS Type	○ Internal ● External
RADIUS Server	
Authentication Port	1812
Shared Secret	
Session Timeout	3600 second(s)
Accounting	● Enable ○ Disable
Accounting Port	1813



RADIUS Server (5GHz)

Primary RADIUS Server	
RADIUS Type	○ Internal ● External
RADIUS Server	
Authentication Port	1812
Shared Secret	
Session Timeout	3600 second(s)
Accounting	● Enable ○ Disable
Accounting Port	1813

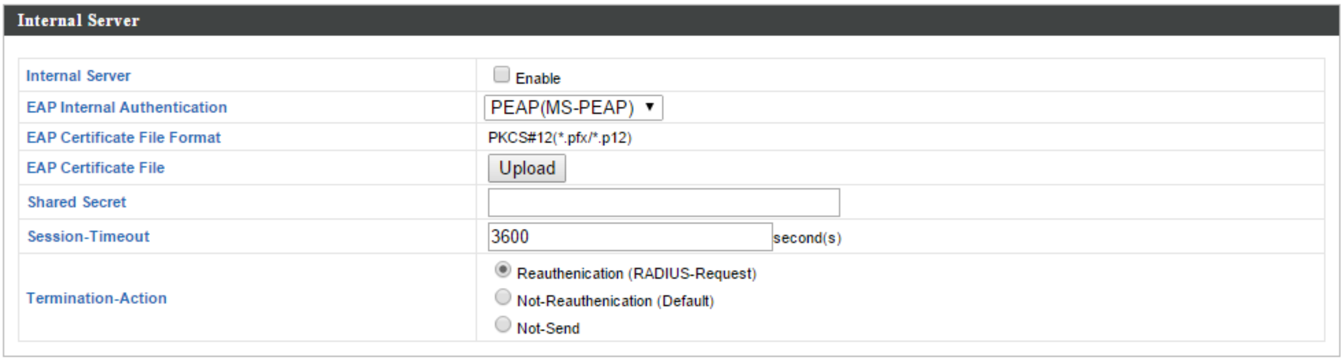
Secondary RADIUS Server	
RADIUS Type	○ Internal ● External
RADIUS Server	
Authentication Port	1812
Shared Secret	
Session Timeout	3600 second(s)
Accounting	● Enable ○ Disable
Accounting Port	1813

RADIUS Type	Select “Internal” to use the access point’s built-in RADIUS server or “external” to use an external RADIUS server.
RADIUS Server	Enter the RADIUS server host IP address.
Authentication Port	Set the UDP port used in the authentication protocol of the RADIUS server. Value must be between 1 – 65535.
Shared Secret	Enter a shared secret/password between 1 – 99 characters in length. This should match the “MAC-RADIUS” password used in **IV-3-1-3-6** or **IV-3-2-3**.
Session Timeout	Set a duration of session timeout in seconds between 0 – 86400.
Accounting	Enable or disable RADIUS accounting.
Accounting Port	When accounting is enabled (above), set the UDP port used in the accounting protocol of the RADIUS server. Value must be between 1 – 65535.

IV-6-5-2. Internal Server

The access point features a built-in RADIUS server which can be configured as shown below used when “Internal” is selected for “RADIUS Type” in the “Local Network” → “RADIUS Settings” menu.

To use RADIUS servers, go to *“Wireless Settings”* **→** *“Security” “Additional Authentication”* ***and select*** *“MAC RADIUS Authentication”* ***(see*** *IV-6-2-3.* **&** *IV-6-3-3***).**



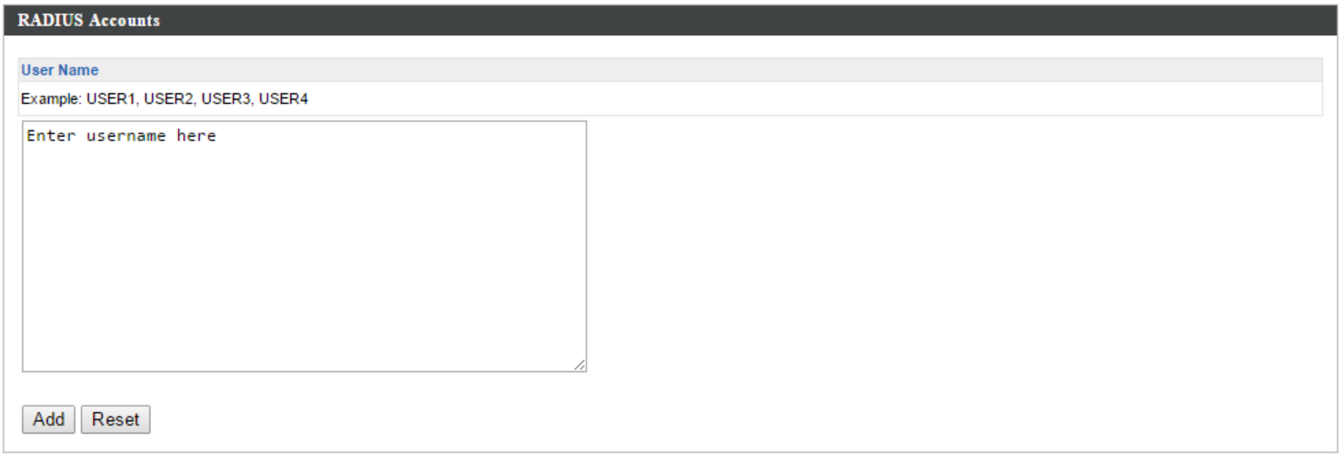
Internal Server

Internal Server	□ Enable
EAP Internal Authentication	PEAP(MS-PEAP) ▾
EAP Certificate File Format	PKCS#12(*.pfx/*.p12)
EAP Certificate File	Upload
Shared Secret	
Session-Timeout	3600 second(s)
Termination-Action	● Reauthenication (RADIUS-Request) ○ Not-Reauthenication (Default) ○ Not-Send

Internal Server	Check/uncheck to enable/disable the access point's internal RADIUS server.
EAP Internal Authentication	Select EAP internal authentication type from the drop down menu.
EAP Certificate File Format	Displays the EAP certificate file format: PCK#12(*.pfx/*.p12)
EAP Certificate File	Click "Upload" to open a new window and select the location of an EAP certificate file to use. If no certificate file is uploaded, the internal RADIUS server will use a self-made certificate.
Shared Secret	Enter a shared secret/password for use between the internal RADIUS server and RADIUS client. The shared secret should be 1 – 99 characters in length. This should match the "MAC-RADIUS" password used in **IV-6-2-3-6** or **IV-6-3-3**.
Session Timeout	Set a duration of session timeout in seconds between 0 – 86400.
Termination Action	Select a termination-action attribute: "Reauthentication" sends a RADIUS request to the access point, "Not-Reathentication" sends a default termination-action attribute to the access point, "Not-Send" no termination-action attribute is sent to the access point.

IV-6-5-3. RADIUS Accounts

The internal RADIUS server can authenticate up to 256 user accounts. The “RADIUS Accounts” page allows you to configure and manage users.

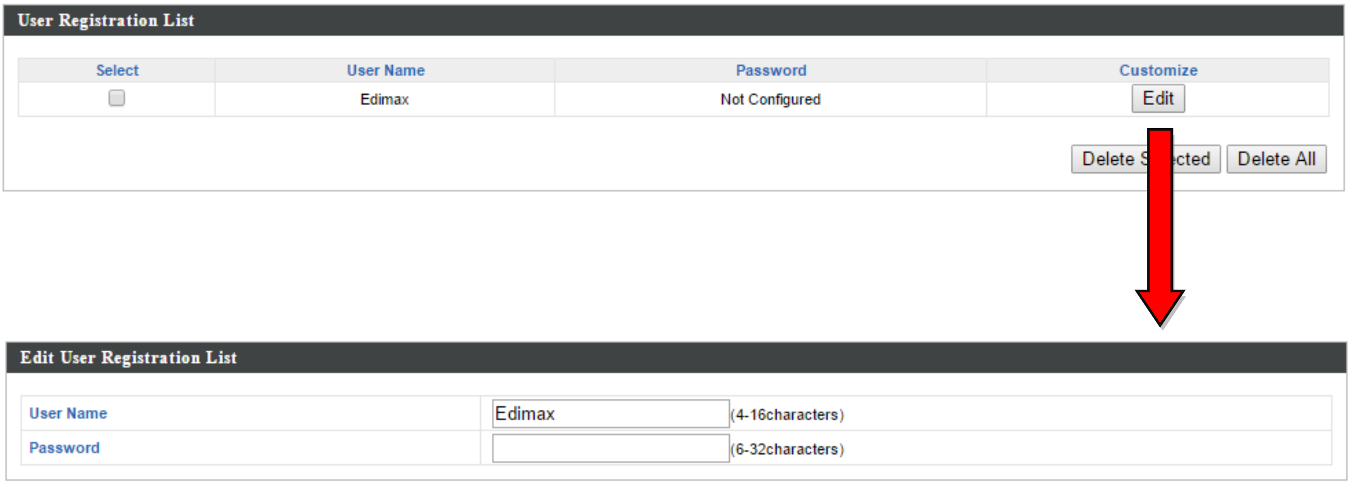


RADIUS Accounts

User Name

Example: USER1, USER2, USER3, USER4

Enter username here



User Registration List

Select	User Name	Password	Customize
□	Edimax	Not Configured	Edit

Edit User Registration List

User Name	Edimax (4-16characters)
Password	(6-32characters)

User Name	Enter the user names here, separated by commas.
Add	Click “Add” to add the user to the user registration list.
Reset	Clear text from the user name box.

Select	Check the box to select a user.
User Name	Displays the user name.
Password	Displays if specified user name has a password (configured) or not (not configured).
Customize	Click “Edit” to open a new field to set/edit a password for the specified user name (below).

Delete Selected	Delete selected user from the user registration list.
Delete All	Delete all users from the user registration list.

Edit User Registration List

User Name	Existing user name is displayed here and can be edited according to your preference.
Password	Enter or edit a password for the specified user.

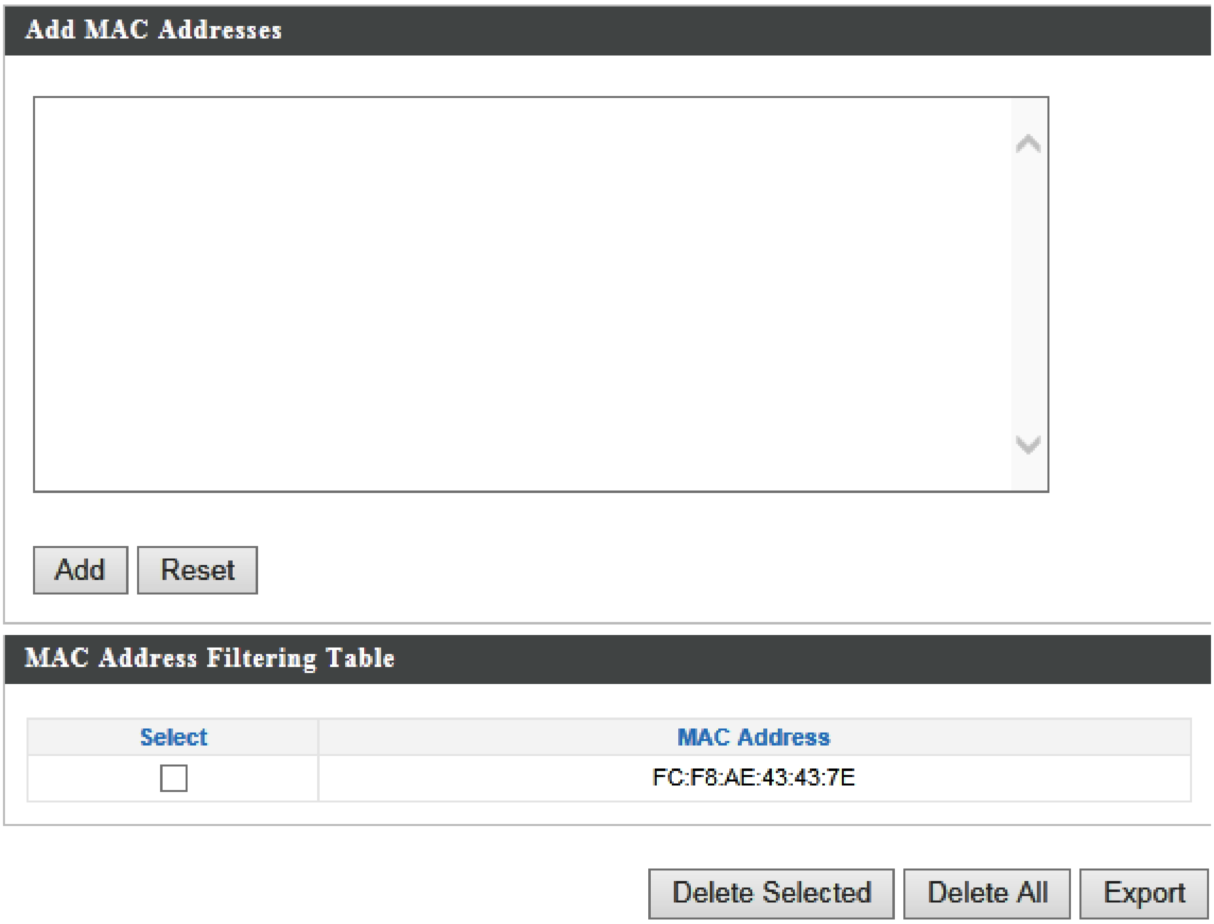
IV-6-6. MAC Filter

Mac filtering is a security feature that can help to prevent unauthorized users from connecting to your access point.

This function allows you to define a list of network devices permitted to connect to the access point. Devices are each identified by their unique MAC address. If a device which is not on the list of permitted MAC addresses attempts to connect to the access point, it will be denied.

To enable MAC filtering, go to** “Local Settings” → “Security” → “Additional Authentication” **and select** “MAC Filter” **(see** IV-6-2-3. **&** IV-6-3-3**).

The MAC address filtering table is displayed below:



Add MAC Addresses

MAC Address Filtering Table

Select	MAC Address
□	FC:F8:AE:43:43:7E

Add MAC Address	Enter a MAC address of computer or network device manually e.g. ‘aa-bb-cc-dd-ee-ff’ or enter multiple MAC addresses separated with

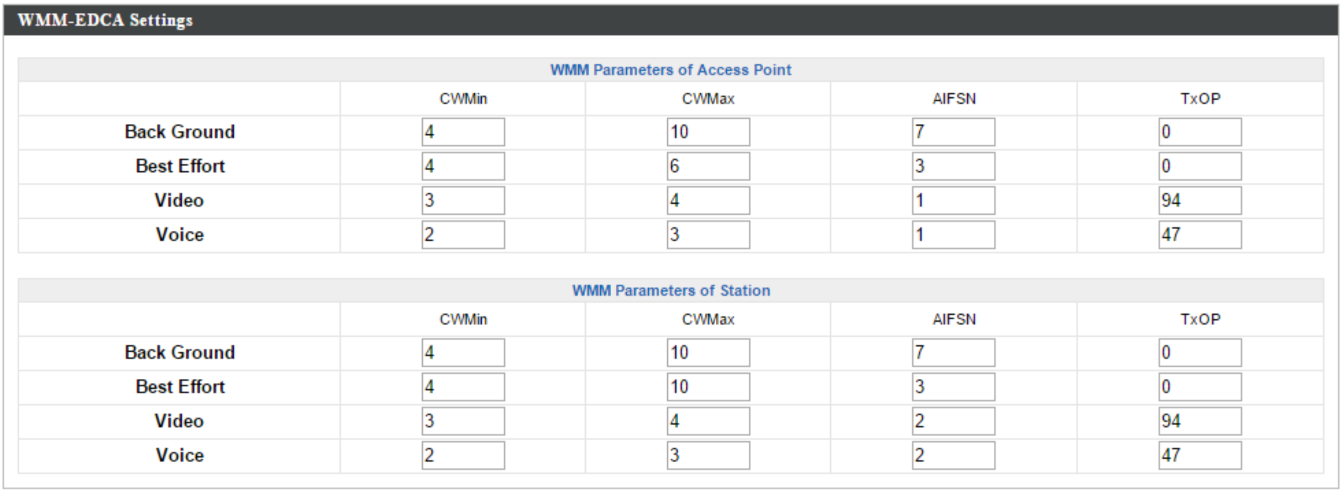
	commas, e.g. 'aa-bb-cc-dd-ee-ff,aa-bb-cc-dd-ee-gg'
Add	Click "Add" to add the MAC address to the MAC address filtering table.
Reset	Clear all fields.

MAC address entries will be listed in the "MAC Address Filtering Table". Select an entry using the "Select" checkbox.

Select	Delete selected or all entries from the table.
MAC Address	The MAC address is listed here.
Delete Selected	Delete the selected MAC address from the list.
Delete All	Delete all entries from the MAC address filtering table.
Export	Click "Export" to save a copy of the MAC filtering table. A new window will pop up for you to select a location to save the file.

IV-6-7. WMM

Wi-Fi Multimedia (WMM) is a Wi-Fi Alliance interoperability certification based on the IEEE 802.11e standard, which provides Quality of Service (QoS) features to IEE 802.11 networks. WMM prioritizes traffic according to four categories: background, best effort, video and voice.



WMM-EDCA Settings

WMM Parameters of Access Point

	CWMin	CWMax	AIFSN	TxOP
Back Ground	4	10	7	0
Best Effort	4	6	3	0
Video	3	4	1	94
Voice	2	3	1	47

WMM Parameters of Station

	CWMin	CWMax	AIFSN	TxOP
Back Ground	4	10	7	0
Best Effort	4	10	3	0
Video	3	4	2	94
Voice	2	3	2	47

Configuring WMM consists of adjusting parameters on queues for different categories of wireless traffic. Traffic is sent to the following queues:

Background	Low Priority	High throughput, non time sensitive bulk data e.g. FTP
Best Effort	Medium Priority	Traditional IP data, medium throughput and delay.
Video	High Priority	Time sensitive video data with minimum time delay.
Voice	High Priority	Time sensitive data such as VoIP and streaming media with minimum time delay.

Queues automatically provide minimum transmission delays for video, voice, multimedia and critical applications. The values can further be adjusted manually:

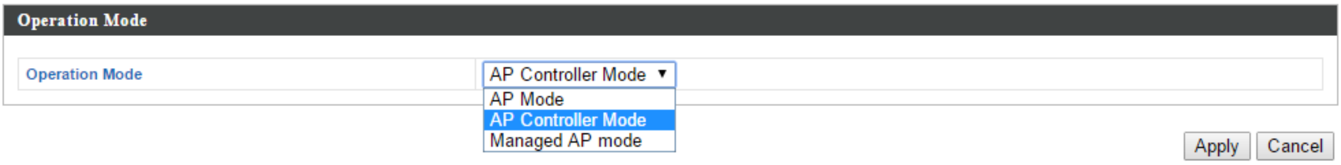
CWMin	Minimum Contention Window (milliseconds): This value is input to the initial random backoff wait time algorithm for retry of a data frame transmission. The backoff wait time will

	be generated between 0 and this value. If the frame is not sent, the random backoff value is doubled until the value reaches the number defined by CWMax (below). The CWMin value must be lower than the CWMax value. The contention window scheme helps to avoid frame collisions and determine priority of frame transmission. A shorter window has a higher probability (priority) of transmission.
CWMax	Maximum Contention Window (milliseconds): This value is the upper limit to random backoff value doubling (see above).
AIFSN	Arbitration Inter-Frame Space (milliseconds): Specifies additional time between when a channel goes idle and the AP/client sends data frames. Traffic with a lower AIFSN value has a higher priority.
TxOP	Transmission Opportunity (milliseconds): The maximum interval of time an AP/client can transmit. This makes channel access more efficiently prioritized. A value of 0 means only one frame per transmission. A greater value effects higher priority.

IV-7. Local Settings

IV-7-1. Operation Mode

Set the operation mode of the access point. AP mode is a standalone access point, AP controller mode acts as the designated master of the AP array, and Managed AP mode acts as a slave AP within the AP array.



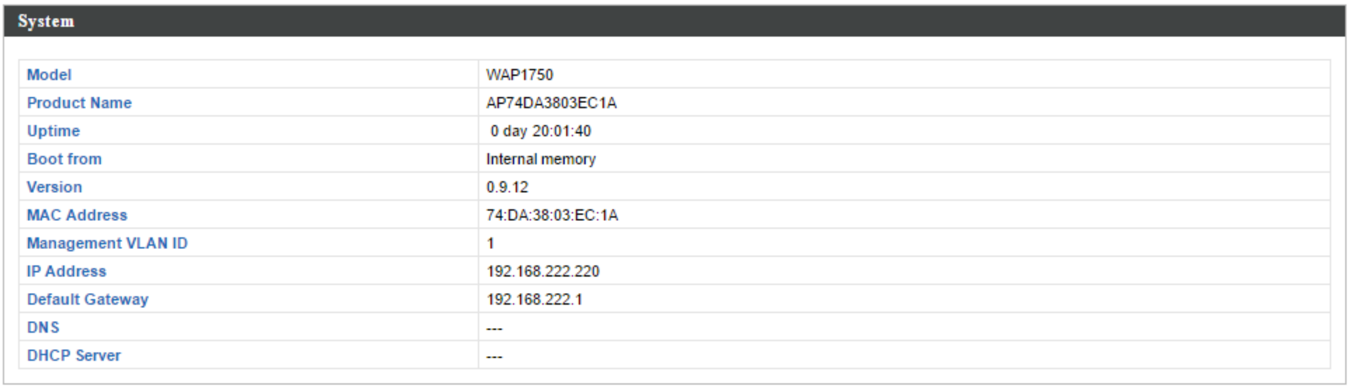
Operation Mode

Operation Mode: AP Controller Mode

IV-7-2. Network Settings

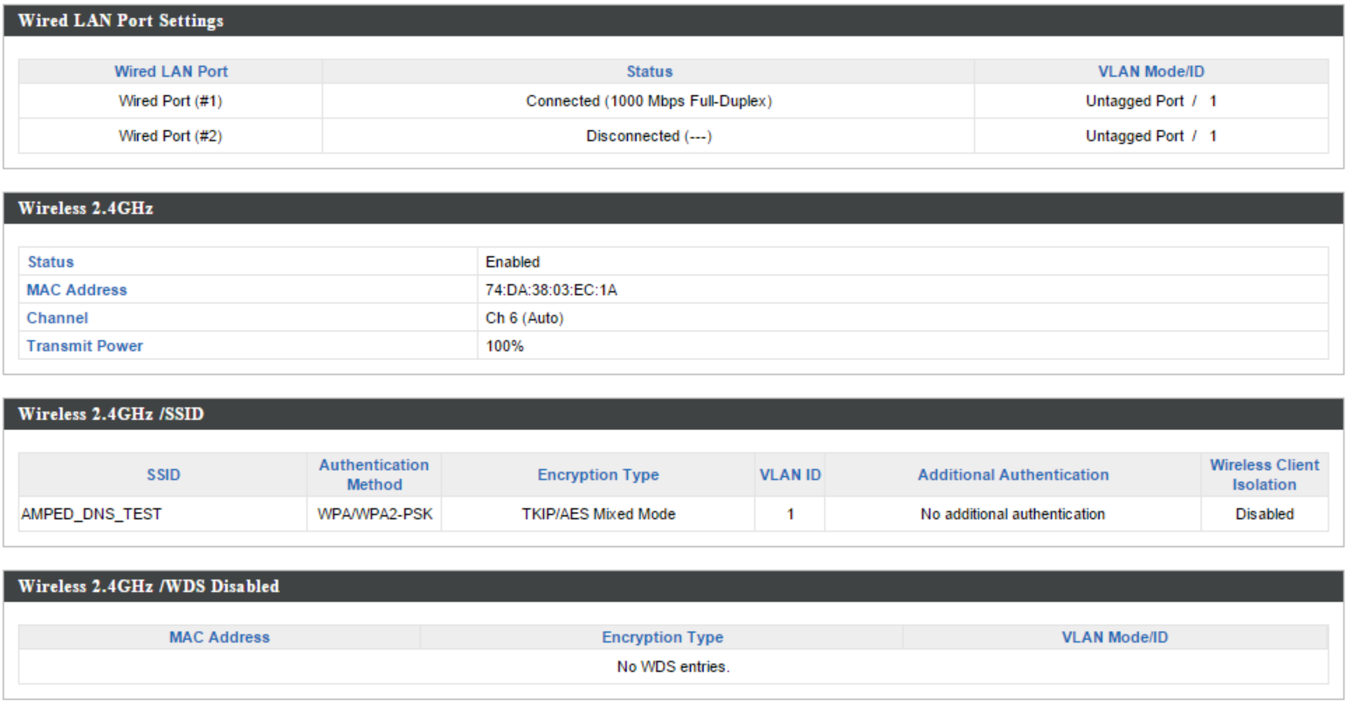
IV-7-2-1. System Information

The “System Information” page displays basic system information about the access point.



System

Model	WAP1750
Product Name	AP74DA3803EC1A
Uptime	0 day 20:01:40
Boot from	Internal memory
Version	0.9.12
MAC Address	74:DA:38:03:EC:1A
Management VLAN ID	1
IP Address	192.168.222.220
Default Gateway	192.168.222.1
DNS	---
DHCP Server	---



Wired LAN Port Settings

Wired LAN Port	Status	VLAN Mode/ID
Wired Port (#1)	Connected (1000 Mbps Full-Duplex)	Untagged Port / 1
Wired Port (#2)	Disconnected (---)	Untagged Port / 1

Wireless 2.4GHz

Status	Enabled
MAC Address	74:DA:38:03:EC:1A
Channel	Ch 6 (Auto)
Transmit Power	100%

Wireless 2.4GHz /SSID

SSID	Authentication Method	Encryption Type	VLAN ID	Additional Authentication	Wireless Client Isolation
AMPED_DNS_TEST	WPA/WPA2-PSK	TKIP/AES Mixed Mode	1	No additional authentication	Disabled

Wireless 2.4GHz /WDS Disabled

MAC Address	Encryption Type	VLAN Mode/ID
	No WDS entries.	

System	
Model	Displays the model number of the access point.
Product Name	Displays the product name for reference, which consists of “AP” plus the MAC address.
Uptime	Displays the total time since the device was turned on.
Boot From	Displays information for the booted hardware, booted from either USB or internal memory.
Version	Displays the firmware version.
MAC Address	Displays the access point’s MAC address.
Management VLAN ID	Displays the management VLAN ID.
IP Address	Displays the IP address of this device. Click “Refresh” to update this value.
Default Gateway	Displays the IP address of the default gateway.
DNS	IP address of DNS (Domain Name Server)
DHCP Server	IP address of DHCP Server.

Wired LAN Port Settings	
Wired LAN Port	Specifies which LAN port (1 or 2).
Status	Displays the status of the specified LAN port (connected or disconnected).

VLAN Mode/ID	Displays the VLAN mode (tagged or untagged) and VLAN ID for the specified LAN port. See **IV-6-1-3. VLAN**

Wireless 2.4GHz (5GHz)	
Status	Displays the status of the 2.4GHz or 5GHz wireless (enabled or disabled).
MAC Address	Displays the access point's MAC address.
Channel	Displays the channel number the specified wireless frequency is using for broadcast.
Transmit Power	Displays the wireless radio transmit power level as a percentage.

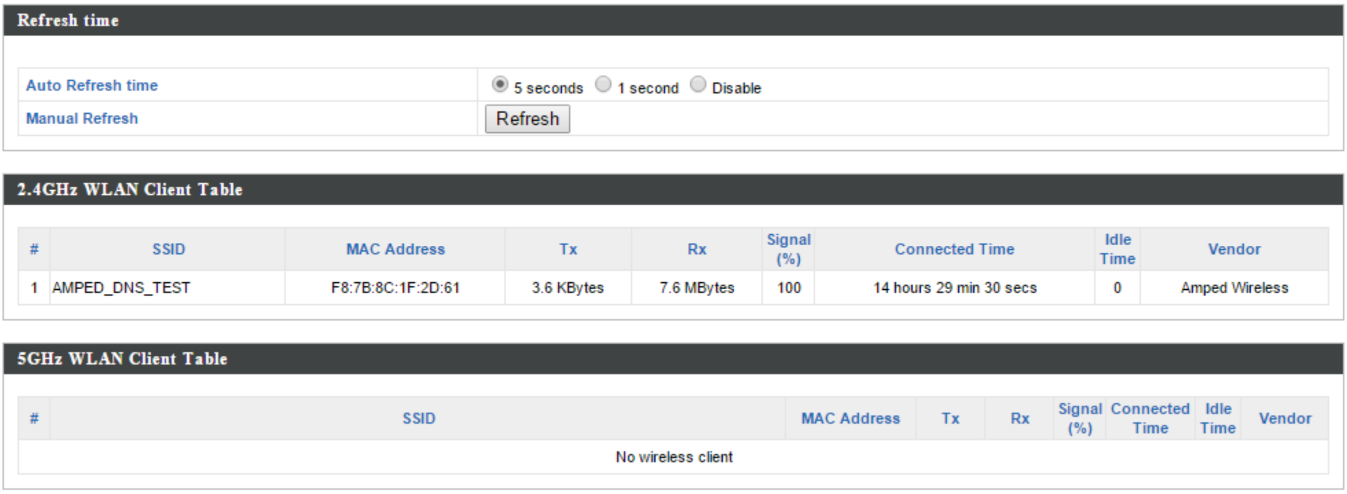
Wireless 2.4GHZ (5GHz) / SSID	
SSID	Displays the SSID name(s) for the specified frequency.
Authentication Method	Displays the authentication method for the specified SSID. See **IV-6. Wireless Settings**
Encryption Type	Displays the encryption type for the specified SSID. See **IV-6. Wireless Settings**
VLAN ID	Displays the VLAN ID for the specified SSID. See **IV-6-1-3. VLAN**
Additional Authentication	Displays the additional authentication type for the specified SSID. See **IV-6. Wireless Settings**
Wireless Client Isolation	Displays whether wireless client isolation is in use for the specified SSID. See **IV-6-1-3. VLAN**

Wireless 2.4GHZ (5GHz) / WDS Status	
MAC Address	Displays the peer access point's MAC address.
Encryption Type	Displays the encryption type for the specified WDS. See **IV-6-2-4. WDS**
VLAN Mode/ID	Displays the VLAN ID for the specified WDS. See **IV-6-2-4. WDS**

Refresh	Click to refresh all information.

IV-7-2-2. Wireless Clients

The “Wireless Clients” page displays information about all wireless clients connected to the access point on the 2.4GHz or 5GHz frequency.



Refresh time

Auto Refresh time	● 5 seconds ○ 1 second ○ Disable
Manual Refresh	Refresh

2.4GHz WLAN Client Table

#	SSID	MAC Address	Tx	Rx	Signal (%)	Connected Time	Idle Time	Vendor
1	AMPED_DNS_TEST	F8:7B:8C:1F:2D:61	3.6 KBytes	7.6 MBytes	100	14 hours 29 min 30 secs	0	Amped Wireless

5GHz WLAN Client Table

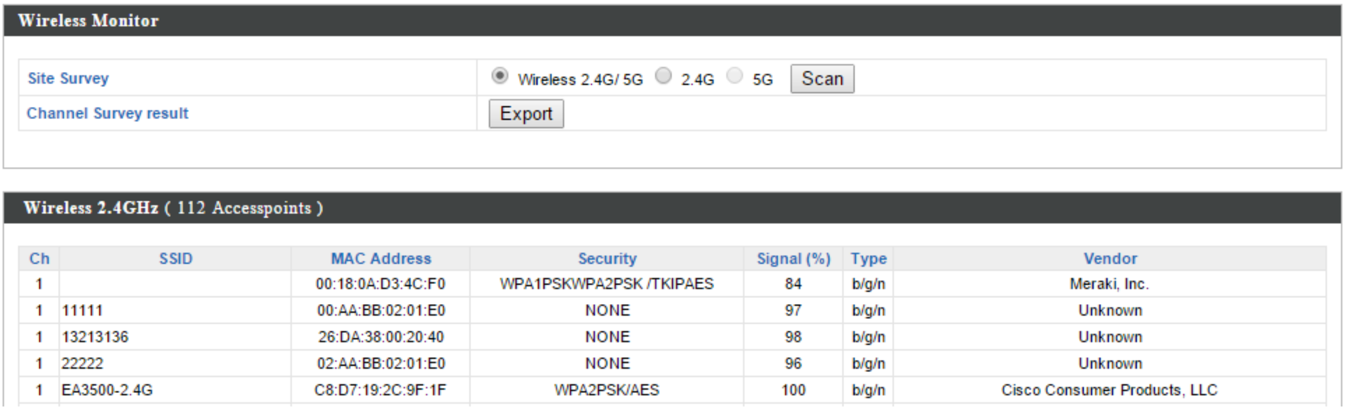
#	SSID	MAC Address	Tx	Rx	Signal (%)	Connected Time	Idle Time	Vendor
				No wireless client				

Refresh time	
Auto Refresh Time	Select a time interval for the client table list to automatically refresh.
Manual Refresh	Click refresh to manually refresh the client table.

2.4GHz (5GHz) WLAN Client Table	
SSID	Displays the SSID which the client is connected to.
MAC Address	Displays the MAC address of the client.
Tx	Displays the total data packets transmitted by the specified client.
Rx	Displays the total data packets received by the specified client.
Signal (%)	Displays the wireless signal strength for the specified client.
Connected Time	Displays the total time the wireless client has been connected to the access point.
Idle Time	Client idle time is the time for which the client has not transmitted any data packets i.e. is idle.
Vendor	The vendor of the client’s wireless adapter is displayed here.

IV-7-2-3. Wireless Monitor

Wireless Monitor is a tool built into the access point to scan and monitor the surrounding wireless environment. Select a frequency and click “Scan” to display a list of all SSIDs within range along with relevant details for each SSID.



Wireless Monitor

Site Survey	● Wireless 2.4G/ 5G ○ 2.4G ○ 5G Scan
Channel Survey result	Export

Wireless 2.4GHz (112 Accesspoints)

Ch	SSID	MAC Address	Security	Signal (%)	Type	Vendor
1		00:18:0A:D3:4C:F0	WPA1PSKWPA2PSK /TKIPAES	84	b/g/n	Meraki, Inc.
1	11111	00:AA:BB:02:01:E0	NONE	97	b/g/n	Unknown
1	13213136	26:DA:38:00:20:40	NONE	98	b/g/n	Unknown
1	22222	02:AA:BB:02:01:E0	NONE	96	b/g/n	Unknown
1	EA3500-2.4G	C8:D7:19:2C:9F:1F	WPA2PSK/AES	100	b/g/n	Cisco Consumer Products, LLC

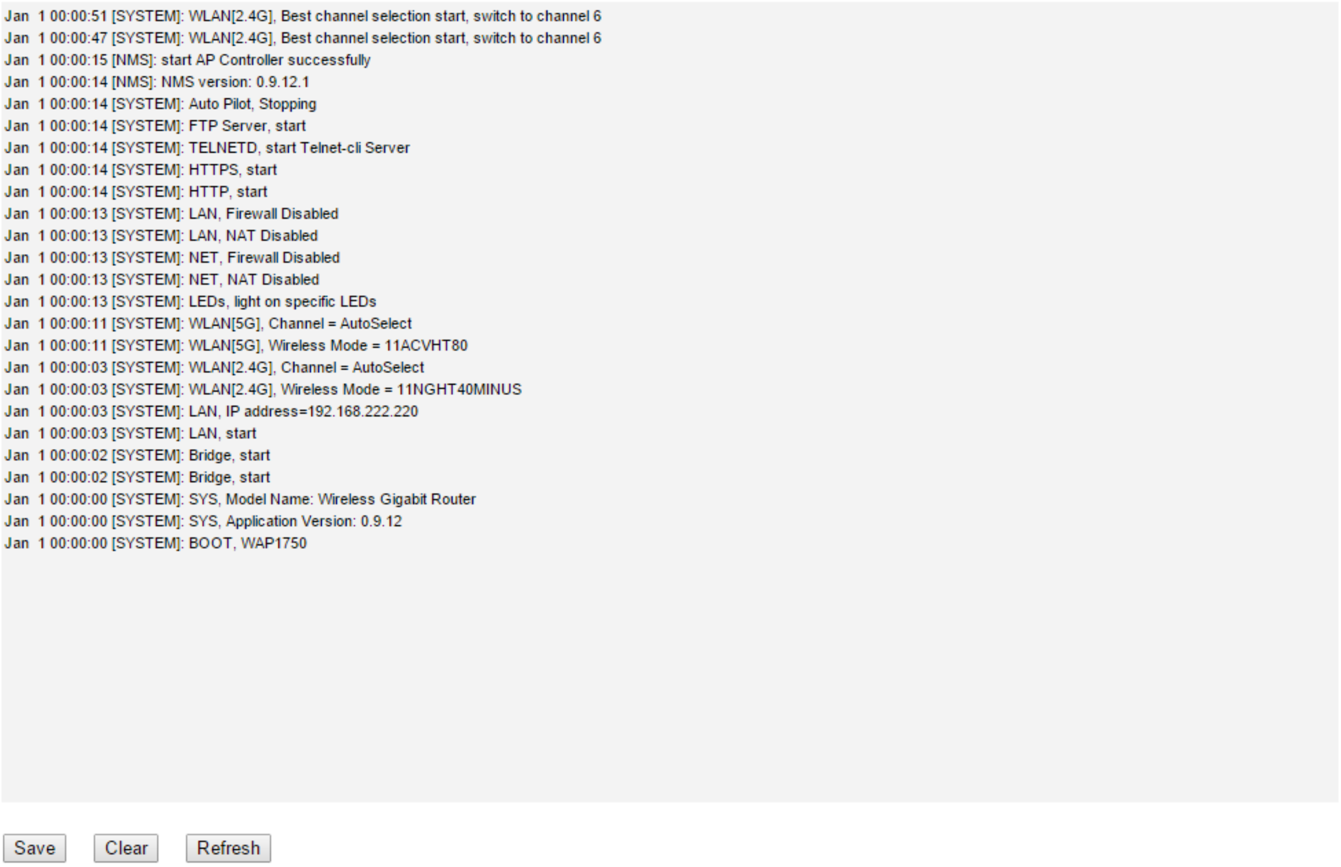
Wireless Monitor	
Site Survey	Select which frequency (or both) to scan, and click “Scan” to begin.
Channel Survey Result	After a scan is complete, click “Export” to save the results to local storage.

Site Survey Results	
Ch	Displays the channel number used by the specified SSID.
SSID	Displays the SSID identified by the scan.
MAC Address	Displays the MAC address of the wireless router/access point for the specified SSID.
Security	Displays the authentication/encryption type of the specified SSID.
Signal (%)	Displays the current signal strength of the SSID.
Type	Displays the 802.11 wireless networking standard(s) of the specified SSID.
Vendor	Displays the vendor of the wireless router/access point for the specified SSID.

IV-7-2-4. Log

The system log displays system operation information such as up time and connection processes. This information is useful for network administrators.

When the log is full, old entries are overwritten.



```
Jan  1 00:00:51 [SYSTEM]: WLAN[2.4G], Best channel selection start, switch to channel 6
Jan  1 00:00:47 [SYSTEM]: WLAN[2.4G], Best channel selection start, switch to channel 6
Jan  1 00:00:15 [NMS]: start AP Controller successfully
Jan  1 00:00:14 [NMS]: NMS version: 0.9.12.1
Jan  1 00:00:14 [SYSTEM]: Auto Pilot, Stopping
Jan  1 00:00:14 [SYSTEM]: FTP Server, start
Jan  1 00:00:14 [SYSTEM]: TELNETD, start Telnet-cli Server
Jan  1 00:00:14 [SYSTEM]: HTTPS, start
Jan  1 00:00:14 [SYSTEM]: HTTP, start
Jan  1 00:00:13 [SYSTEM]: LAN, Firewall Disabled
Jan  1 00:00:13 [SYSTEM]: LAN, NAT Disabled
Jan  1 00:00:13 [SYSTEM]: NET, Firewall Disabled
Jan  1 00:00:13 [SYSTEM]: NET, NAT Disabled
Jan  1 00:00:13 [SYSTEM]: LEDs, light on specific LEDs
Jan  1 00:00:11 [SYSTEM]: WLAN[5G], Channel = AutoSelect
Jan  1 00:00:11 [SYSTEM]: WLAN[5G], Wireless Mode = 11ACVHT80
Jan  1 00:00:03 [SYSTEM]: WLAN[2.4G], Channel = AutoSelect
Jan  1 00:00:03 [SYSTEM]: WLAN[2.4G], Wireless Mode = 11NGHT40MINUS
Jan  1 00:00:03 [SYSTEM]: LAN, IP address=192.168.222.220
Jan  1 00:00:03 [SYSTEM]: LAN, start
Jan  1 00:00:02 [SYSTEM]: Bridge, start
Jan  1 00:00:02 [SYSTEM]: Bridge, start
Jan  1 00:00:00 [SYSTEM]: SYS, Model Name: Wireless Gigabit Router
Jan  1 00:00:00 [SYSTEM]: SYS, Application Version: 0.9.12
Jan  1 00:00:00 [SYSTEM]: BOOT, WAP1750
```

Save	Click to save the log as a file on your local computer.
Clear	Clear all log entries.
Refresh	Refresh the current log.

The following information/events are recorded by the log:

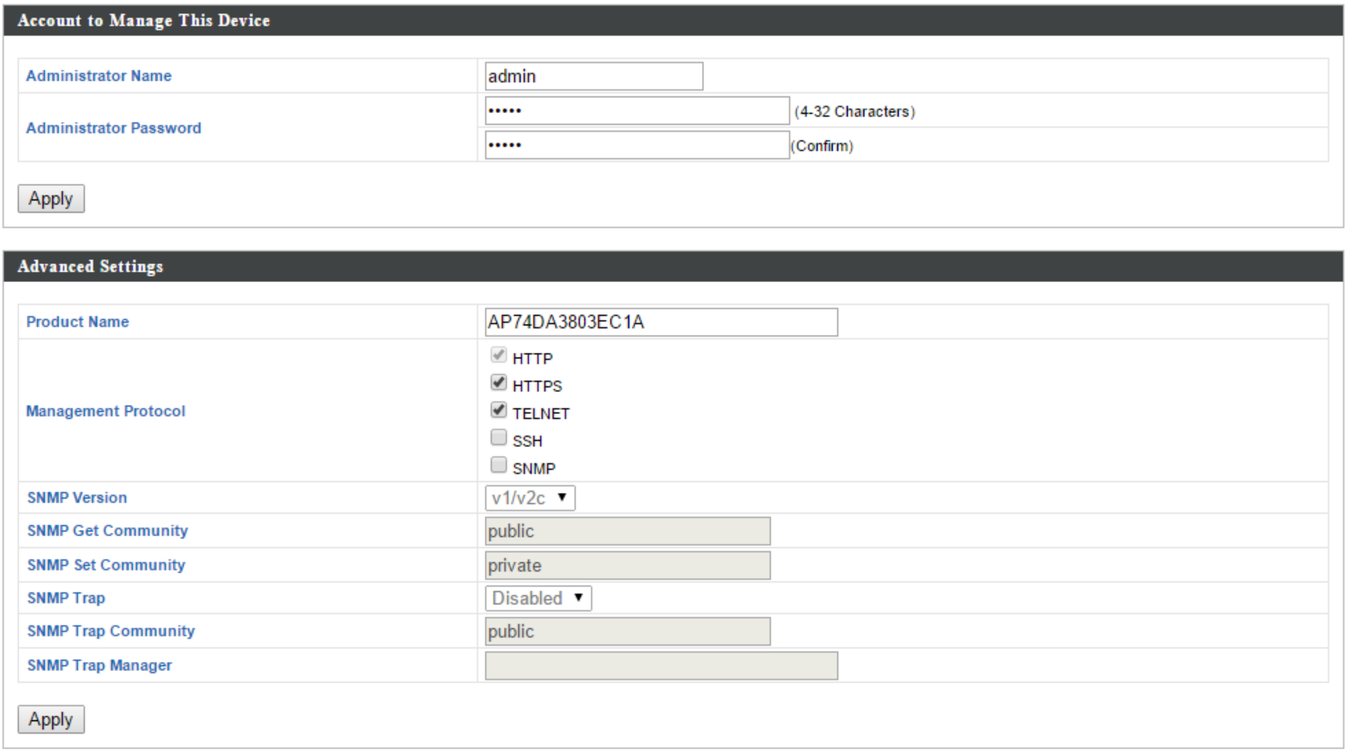
- **USB**
  Mount & unmount
- **Wireless Client**
  Connected & disconnected
  Key exchange success & fail
- **Authentication**
  Authentication fail or successful.
- **Association**
  Success or fail
- **WPS**
  M1 - M8 messages
  WPS success
- **Change Settings**
- **System Boot**
  Displays current model name
- **NTP Client**
- **Wired Link**
  LAN Port link status and speed status
- **Proxy ARP**
  Proxy ARP module start & stop
- **Bridge**
  Bridge start & stop.
- **SNMP**
  SNMP server start & stop.
- **HTTP**
  HTTP start & stop.
- **HTTPS**
  HTTPS start & stop.
- **SSH**
  SSH-client server start & stop.
- **Telnet**
  Telnet-client server start or stop.
- **WLAN (2.4G)**
  WLAN (2.4G] channel status and country/region status
- **WLAN (5G)**
  WLAN (5G) channel status and country/region status
- **ADT**

IV-7-3. Management

IV-7-3-1. Admin

You can change the password used to login to the browser-based configuration interface here. It is advised to do so for security purposes.

If you change the administrator password, please make a note of the new password. In the event that you forget this password and are unable to login to the browser based configuration interface, see** IV-7-4-4. Factory Default **for how to reset the access point.



Account to Manage This Device

Administrator Name	admin
Administrator Password	••••• (4-32 Characters) ••••• (Confirm)

Apply

Advanced Settings

Product Name	AP74DA3803EC1A
Management Protocol	☑ HTTP ☑ HTTPS ☑ TELNET ☐ SSH ☐ SNMP
SNMP Version	v1/v2c ▼
SNMP Get Community	public
SNMP Set Community	private
SNMP Trap	Disabled ▼
SNMP Trap Community	public
SNMP Trap Manager	

Apply

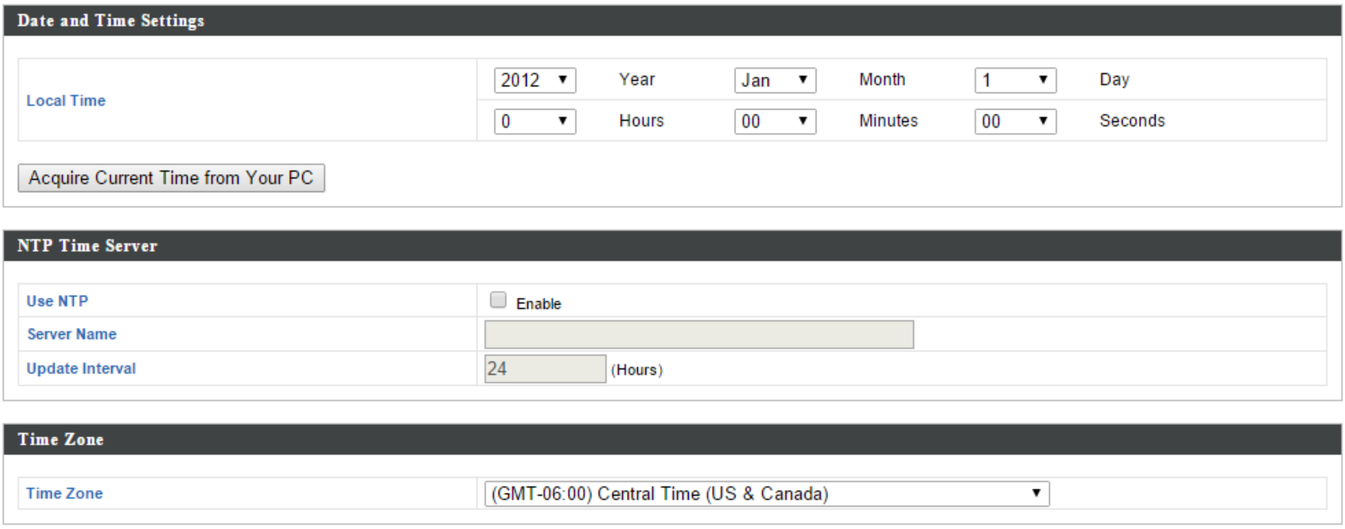
Account to Manage This Device	
Administrator Name	Set the access point’s administrator name. This is used to log in to the browser based configuration interface and must be between 4-16 alphanumeric characters (case sensitive).
Administrator Password	Set the access point’s administrator password. This is used to log in to the browser based configuration interface and must be between 4-32 alphanumeric characters (case sensitive).

Advanced Settings	
Product Name	Edit the product name according to your preference consisting of 1-32 alphanumeric characters. This name is used for reference purposes.
Management Protocol	Check/uncheck the boxes to enable/disable specified management interfaces (see below). When SNMP is enabled, complete the SNMP fields below.
SNMP Version	Select SNMP version appropriate for your SNMP manager.
SNMP Get Community	Enter an SNMP Get Community name for verification with the SNMP manager for SNMP-GET requests.
SNMP Set Community	Enter an SNMP Set Community name for verification with the SNMP manager for SNMP-SET requests.
SNMP Trap	Enable or disable SNMP Trap to notify SNMP manager of network errors.
SNMP Trap Community	Enter an SNMP Trap Community name for verification with the SNMP manager for SNMP-TRAP requests.
SNMP Trap Manager	Specify the IP address or sever name (2-128 alphanumeric characters) of the SNMP manager.

HTTP
Internet browser HTTP protocol management interface
HTTPS
Internet browser HTTPS protocol management interface
TELNET
Client terminal with telnet protocol management interface
SSH
Client terminal with SSH protocol version 1 or 2 management interface
SNMP
Simple Network Management Protocol. SNMPv1, v2 & v3 protocol supported. SNMPv2 can be used with community based authentication. SNMPv3 uses user-based security model (USM) architecture.

IV-7-3-2. Date and Time

You can configure the time zone settings of your access point here. The date and time of the device can be configured manually or can be synchronized with a time server.



Date and Time Settings

Local Time	2012 ▾	Year	Jan ▾	Month	1 ▾	Day
	0 ▾	Hours	00 ▾	Minutes	00 ▾	Seconds

NTP Time Server

Use NTP	□ Enable
Server Name	
Update Interval	24 (Hours)

Time Zone

Time Zone	(GMT-06:00) Central Time (US & Canada) ▾

Date and Time Settings	
Local Time	Set the access point's date and time manually using the drop down menus.
Acquire Current Time from your PC	Click "Acquire Current Time from Your PC" to enter the required values automatically according to your computer's current time and date.

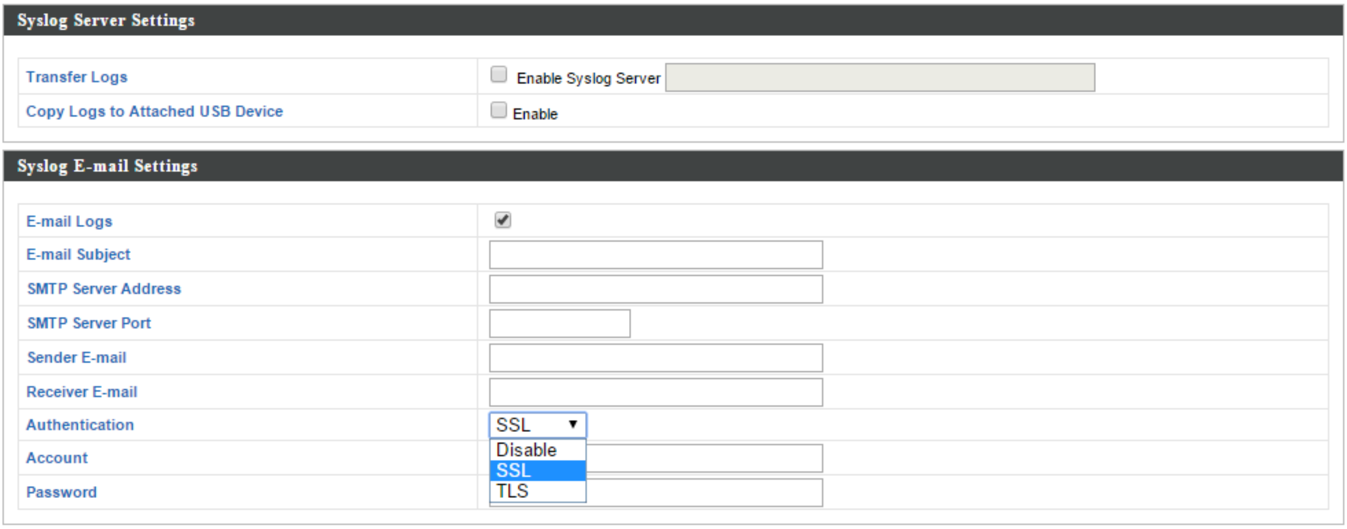
NTP Time Server	
Use NTP	The access point also supports NTP (Network Time Protocol) for automatic time and date setup.
Server Name	Enter the host name or IP address of the time server if you wish.
Update Interval	Specify a frequency (in hours) for the access point to update/synchronize with the NTP server.

Time Zone	
Time Zone	Select the time zone of your country/ region. If

	your country/region is not listed, please select another country/region whose time zone is the same as yours.

IV-7-3-3. Syslog Server

The system log can be sent to a server, attached to USB storage or sent via email.



Syslog Server Settings

Transfer Logs	☐ Enable Syslog Server
Copy Logs to Attached USB Device	☐ Enable

Syslog E-mail Settings

E-mail Logs	☑
E-mail Subject	
SMTP Server Address	
SMTP Server Port	
Sender E-mail	
Receiver E-mail	
Authentication	SSL ▼ Disable SSL TLS
Account	
Password	

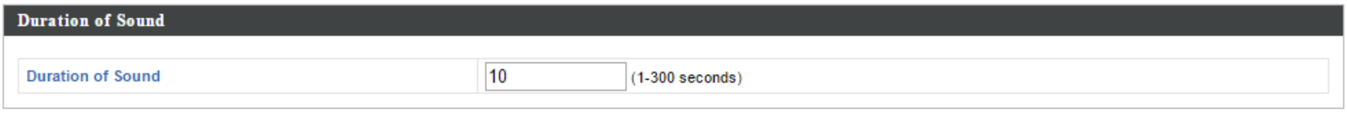
Syslog Server Settings	
Transfer Logs	Check/uncheck the box to enable/disable the use of a syslog server, and enter a host name, domain or IP address for the server, consisting of up to 128 alphanumeric characters.
Copy Logs to Attached USB Device	Check/uncheck the box to enable/disable copying logs to attached USB storage.

Syslog Email Settings	
Email Logs	Check/uncheck the box to enable/disable email logs. When enabled, the log will be emailed according to the settings below.
Email Subject	Enter the subject line of the email which will be sent containing the log.
SMTP Server Address	Specify the SMTP server address for the sender email account.
SMTP Server Port	Specify the SMTP server port for the sender email account.

Sender Email	Enter the sender’s email address.
Receiver Email	Specify the email recipient of the log.
Authentication	Select “Disable”, “SSL” or “TLS” according to your email authentication.
Account	When authentication is used above, enter the account name.
Password	When authentication is used above, enter the password.

IV-7-3-4. I’m Here

The access point features a built-in buzzer which can sound on command using the “I’m Here” page. This is useful for network administrators and engineers working in complex network environments to locate the access point.



Duration of Sound

Duration of Sound 10 (1-300 seconds)

The buzzer is loud!

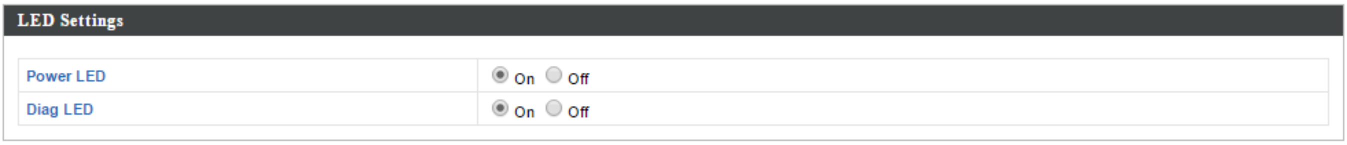
Duration of Sound	Set the duration for which the buzzer will sound when the “Sound Buzzer” button is clicked.
Sound Buzzer	Activate the buzzer sound for the above specified duration of time.

IV-7-4. Advanced

Wi-Fi Multimedia (WMM) is a Wi-Fi Alliance interoperability certification based on the IEEE 802.11e standard, which provides Quality of Service (QoS) features to IEE 802.11 networks. WMM prioritizes traffic according to four categories: background, best effort, video and voice.

IV-7-4-1. LED Settings

The access point's LEDs can be manually enabled or disabled according to your preference.



LED Settings

Power LED ● On ○ Off

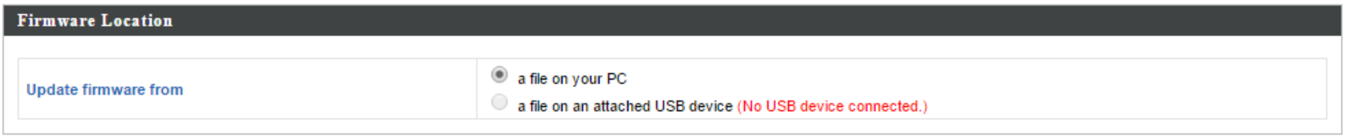
Diag LED ● On ○ Off

Power LED	Select on or off.
Diag LED	Select on or off.

IV-7-4-2. Update Firmware

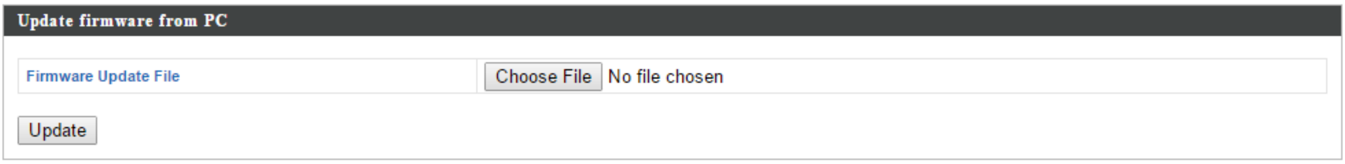
The "Firmware" page allows you to update the system firmware to a more recent version. Updated firmware versions often offer increased performance and security, as well as bug fixes. You can download the latest firmware from the Edimax website.

This firmware update is for an individual access point. To update firmware for multiple access points in the AP array, go to NMS Settings → Firmware Upgrade.



Firmware Location

Update firmware from ● a file on your PC
○ a file on an attached USB device (No USB device connected.)



Update firmware from PC

Firmware Update File [Choose File] No file chosen

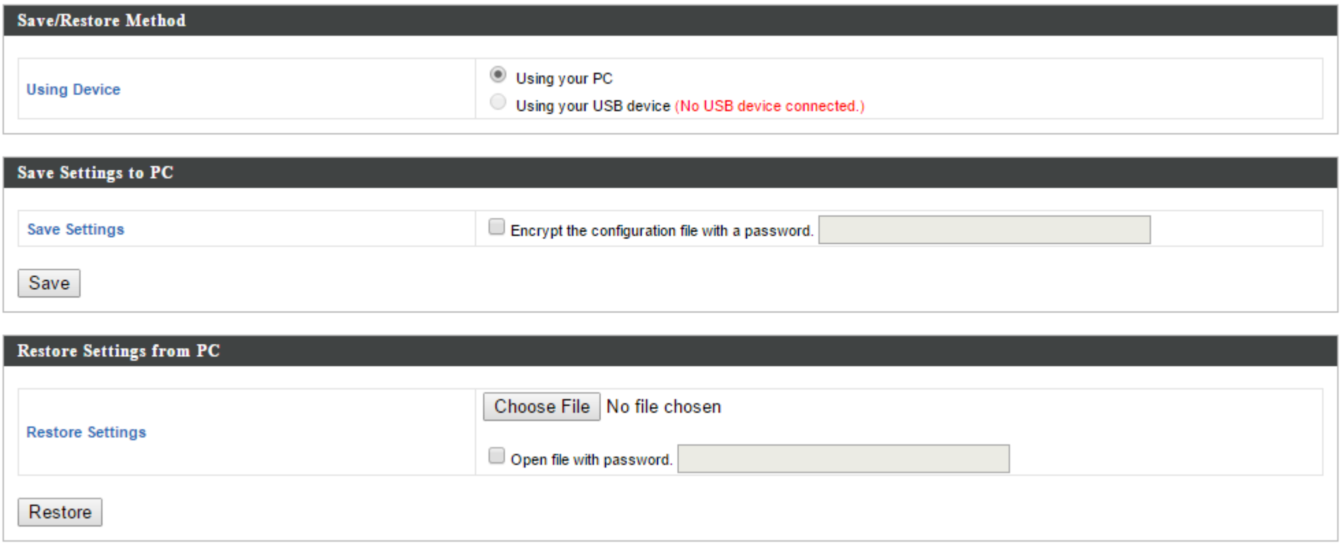
[Update]

⚠ ***Do not switch off or disconnect the access point during a firmware upgrade, as this could damage the device.***

Update Firmware From	Select "a file on your PC" to upload firmware from your local computer or from an attached USB device.
Firmware Update File	Click "Browse" to open a new window to locate and select the firmware file in your computer.
Update	Click "Update" to upload the specified firmware file to your access point.

IV-7-4-3. Save/Restore Settings

The access point's "Save/Restore Settings" page enables you to save/backup the access point's current settings as a file to your local computer or a USB device attached to the access point, and restore the access point to previously saved settings.



Save/Restore Method

Using Device: ● Using your PC ○ Using your USB device (No USB device connected.)

Save Settings to PC

Save Settings: □ Encrypt the configuration file with a password.

Restore Settings from PC

Restore Settings: No file chosen □ Open file with password.

Save / Restore Settings	
Using Device	Select "Using your PC" to save the access point's settings to your local computer or to an attached USB device.

Save Settings to PC	
Save Settings	Click "Save" to save settings and a new window will open to specify a location to save the settings file. You can also check the "Encrypt the configuration file with a password" box and enter a password to protect the file in the field underneath, if you wish.

Restore Settings from PC	
Restore Settings	Click the browse button to find a previously saved settings file on your computer, then click "Restore" to replace your current settings. If your settings file is encrypted with a password, check the "Open file with

	password” box and enter the password in the field underneath.

IV-7-4-4. Factory Default

If the access point malfunctions or is not responding, then it is recommended that you reboot the device (see **IV-7-4-5.**) or reset the device back to its factory default settings. You can reset the access point back to its default settings using this feature if the location of the access point is not convenient to access the reset button.

This will restore all settings to factory defaults.

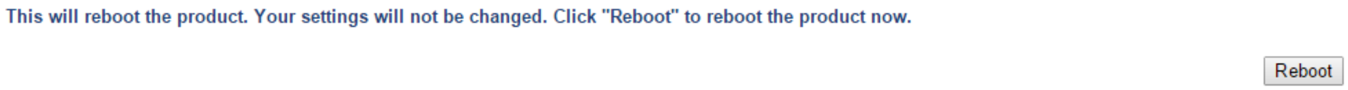
Factory Default

Factory Default	Click “Factory Default” to restore settings to the factory default. A pop-up window will appear and ask you to confirm.

After resetting to factory defaults, please wait for the access point to reset and restart.

IV-7-4-5. Reboot

If the access point malfunctions or is not responding, then it is recommended that you reboot the device or reset the access point back to its factory default settings (see **IV-7-4-4**). You can reboot the access point remotely using this feature.



This will reboot the product. Your settings will not be changed. Click "Reboot" to reboot the product now.

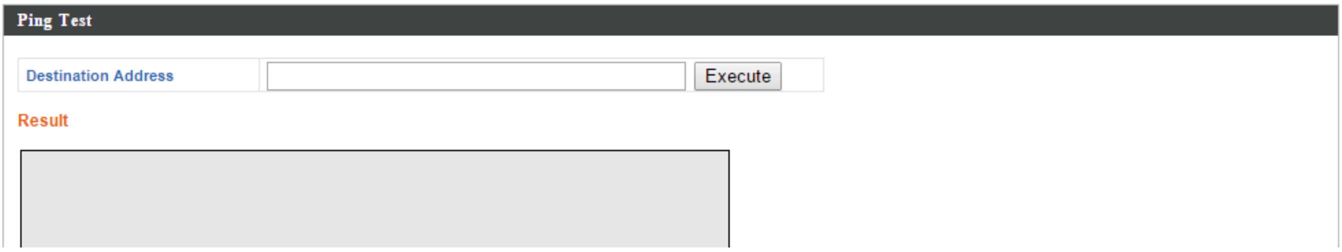
Reboot	Click “Reboot” to reboot the device. A countdown will indicate the progress of the reboot.

IV-8. Toolbox

IV-8-1. Network Connectivity

IV-8-1-1. Ping

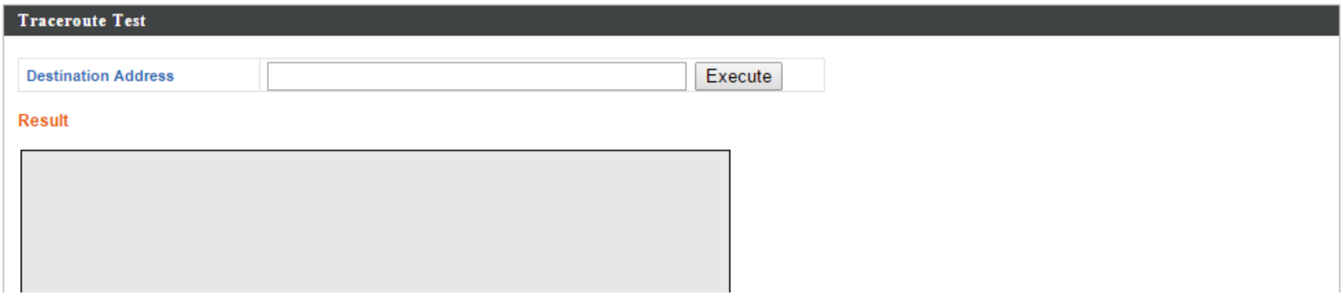
Ping is a computer network administration utility used to test whether a particular host is reachable across an IP network and to measure the round-trip time for sent messages.



Destination Address	Enter the address of the host.
Execute	Click execute to ping the host.

IV-8-1-2. Trace Route

Traceroute is a diagnostic tool for displaying the route (path) and measuring transit delays of packets across an IP network.



Destination Address	Enter the address of the host.
Execute	Click execute to execute the traceroute command.

V. Appendix

V-1. Configuring your IP address

The access point uses the default IP address **192.168.2.2**. In order to access the browser based configuration interface, you need to modify the IP address of your computer to be in the same IP address subnet e.g. **192.168.2.x (x = 3 – 254).**

The procedure for modifying your IP address varies across different operating systems; please follow the guide appropriate for your operating system.

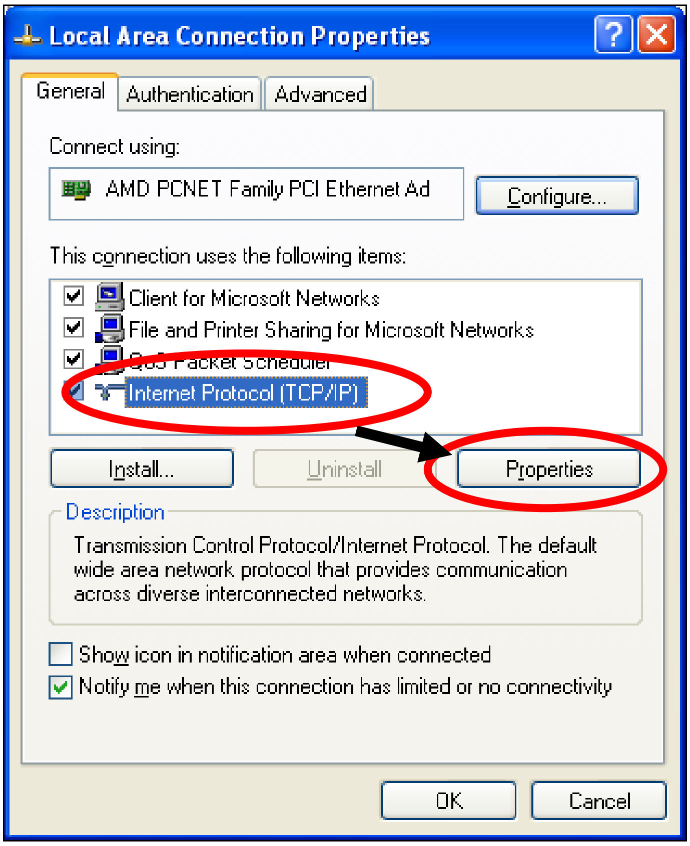
In the following examples we use the IP address **192.168.2.10** though you can use any IP address in the range **192.168.2.x (x = 3 – 254).**

⚠ ***If you changed the AP Controller's IP address, or if your gateway/router uses a DHCP server, ensure you enter the correct IP address. Refer to your gateway/router's settings. Your computer's IP address must be in the same subnet as the AP Controller.***

⚠ ***If using a DHCP server on the network, it is advised to use your DHCP server's settings to assign the AP Controller a static IP address.***

V-1-1. Windows XP

1. Click the “Start” button (it should be located in the lower-left corner of your computer), then click “Control Panel”. Double-click the “Network and Internet Connections” icon, click “Network Connections”, and then double-click “Local Area Connection”. The “Local Area Connection Status” window will then appear, click “Properties”.



Connect using:

AMD PCNET Family PCI Ethernet Ad

This connection uses the following items:

☑ Client for Microsoft Networks
☑ File and Printer Sharing for Microsoft Networks
☑ QoS Packet Scheduler
☑ Internet Protocol (TCP/IP)

Description

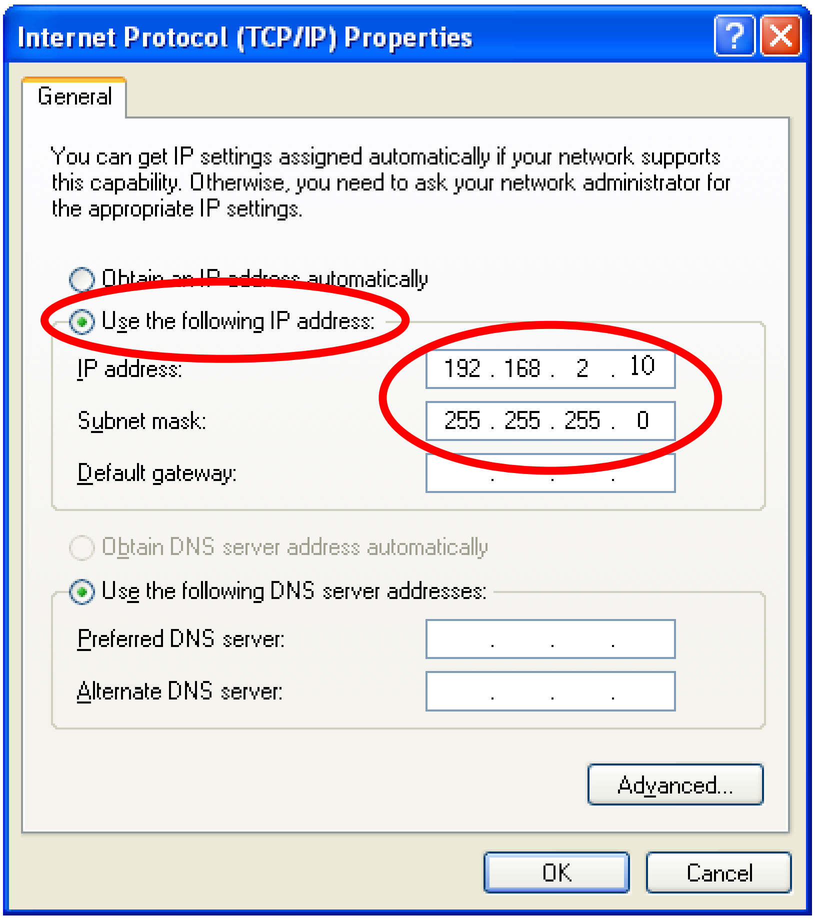
Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.

□ Show icon in notification area when connected
☑ Notify me when this connection has limited or no connectivity

2. Select “Use the following IP address”, then input the following values:

IP address: 192.168.2.10
Subnet Mask: 255.255.255.0

Click ‘OK’ when finished.



You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

○ Obtain an IP address automatically

● Use the following IP address:

IP address: 192 . 168 . 2 . 10

Subnet mask: 255 . 255 . 255 . 0

Default gateway: . . .

○ Obtain DNS server address automatically

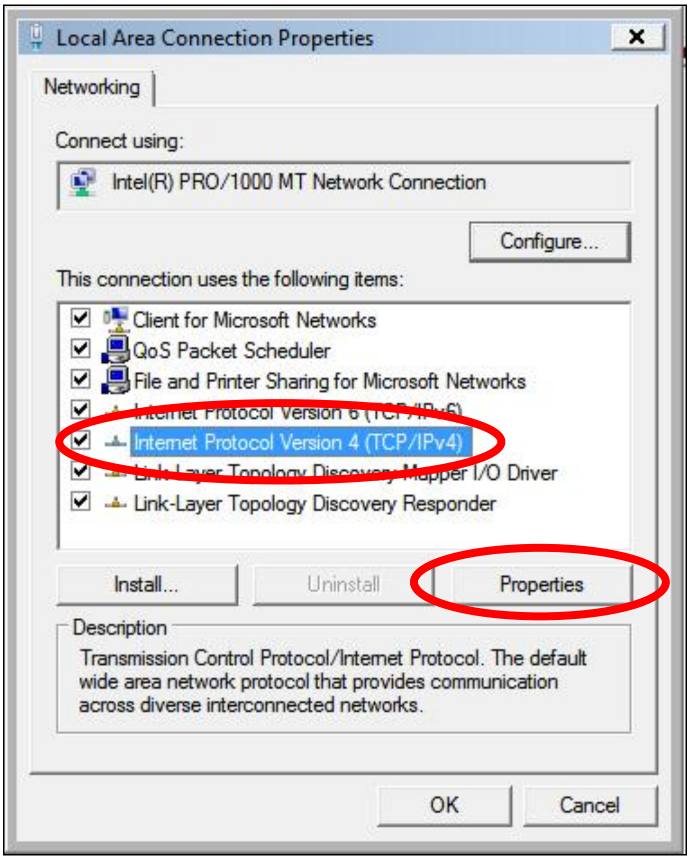
● Use the following DNS server addresses:

Preferred DNS server: . . .

Alternate DNS server: . . .

V-1-2. Windows Vista

1. Click the "Start" button (it should be located in the lower-left corner of your computer), then click "Control Panel". Click "View Network Status and Tasks", then click "Manage Network Connections". Right-click "Local Area Network", then select "Properties". The "Local Area Connection Properties" window will then appear, select "Internet Protocol Version 4 (TCP / IPv4)", and then click "Properties".



Local Area Connection Properties

Networking

Connect using:

Intel(R) PRO/1000 MT Network Connection

Configure...

This connection uses the following items:

- ☑ Client for Microsoft Networks
- ☑ QoS Packet Scheduler
- ☑ File and Printer Sharing for Microsoft Networks
- ☑ Internet Protocol Version 6 (TCP/IPv6)
- ☑ Internet Protocol Version 4 (TCP/IPv4)
- ☑ Link-Layer Topology Discovery Mapper I/O Driver
- ☑ Link-Layer Topology Discovery Responder

Install... Uninstall Properties

Description

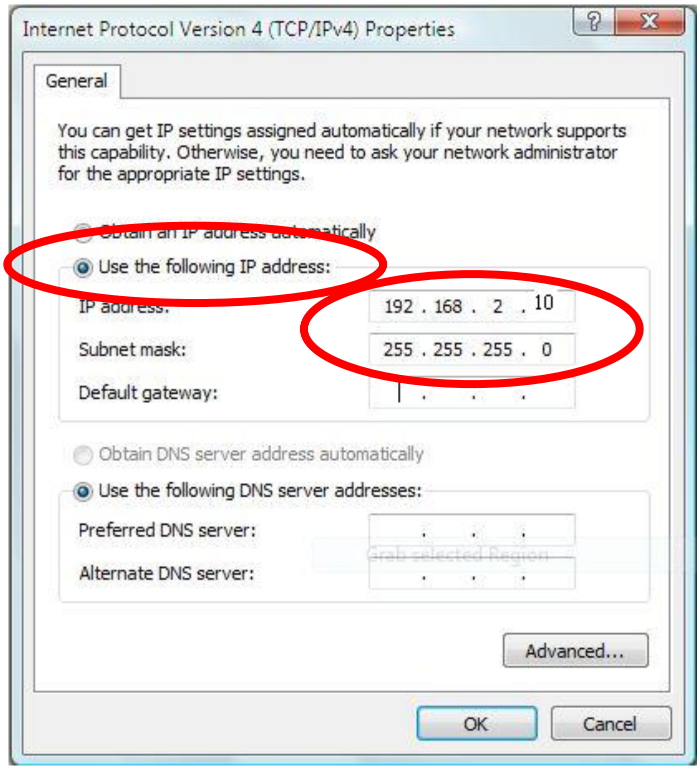
Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.

OK Cancel

2. Select "Use the following IP address", then input the following values:

IP address: 192.168.2.10
Subnet Mask: 255.255.255.0

Click 'OK' when finished.



Internet Protocol Version 4 (TCP/IPv4) Properties

General

You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

○ Obtain an IP address automatically

● Use the following IP address:

IP address: 192 . 168 . 2 . 10

Subnet mask: 255 . 255 . 255 . 0

Default gateway: . . .

○ Obtain DNS server address automatically

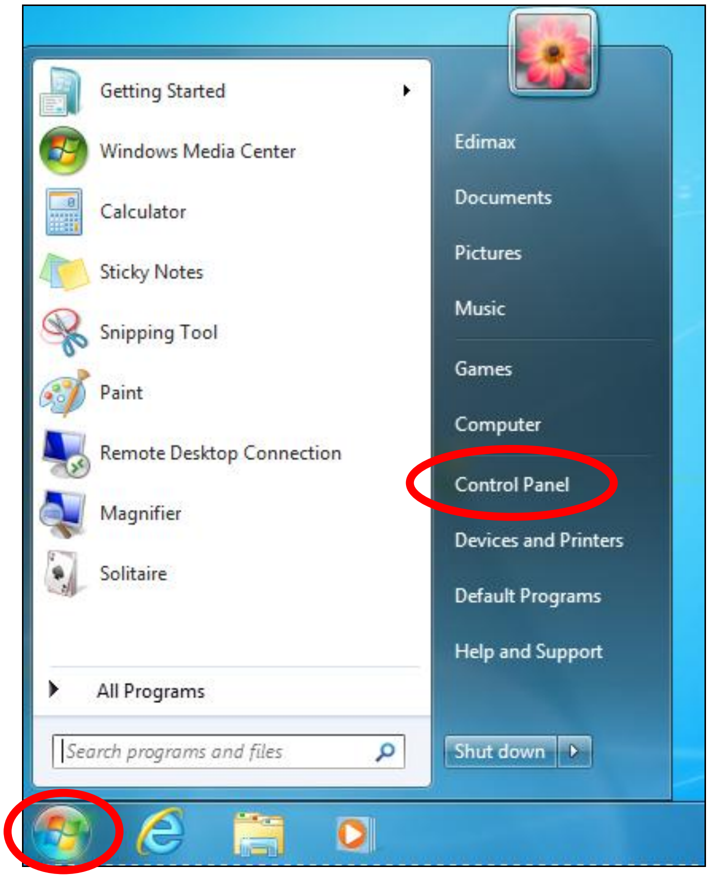
● Use the following DNS server addresses:

Preferred DNS server: . . .

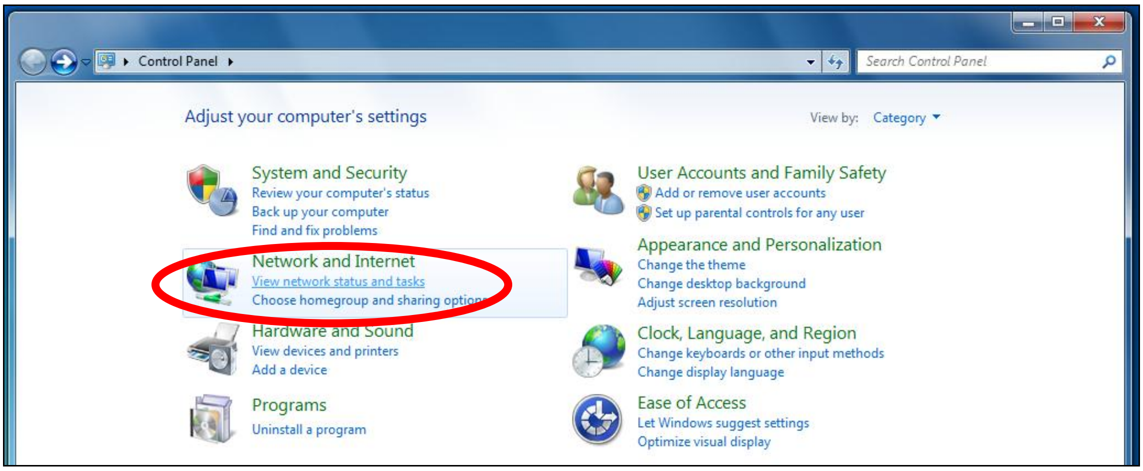
Alternate DNS server: . . .

V-1-3. Windows 7

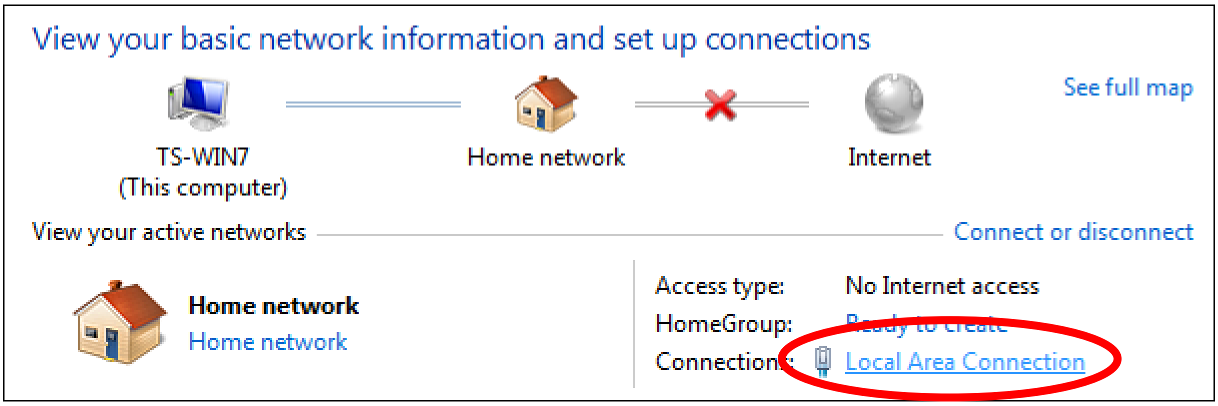
1. Click the “Start” button (it should be located in the lower-left corner of your computer), then click “Control Panel”.



2. Under “Network and Internet” click “View network status and tasks”.


Control Panel
Search Control Panel
Adjust your computer's settings
View by: Category
System and Security
Review your computer's status
Back up your computer
Find and fix problems
Network and Internet
View network status and tasks
Choose homegroup and sharing options
Hardware and Sound
View devices and printers
Add a device
Programs
Uninstall a program
User Accounts and Family Safety
Add or remove user accounts
Set up parental controls for any user
Appearance and Personalization
Change the theme
Change desktop background
Adjust screen resolution
Clock, Language, and Region
Change keyboards or other input methods
Change display language
Ease of Access
Let Windows suggest settings
Optimize visual display

3. Click “Local Area Connection”.



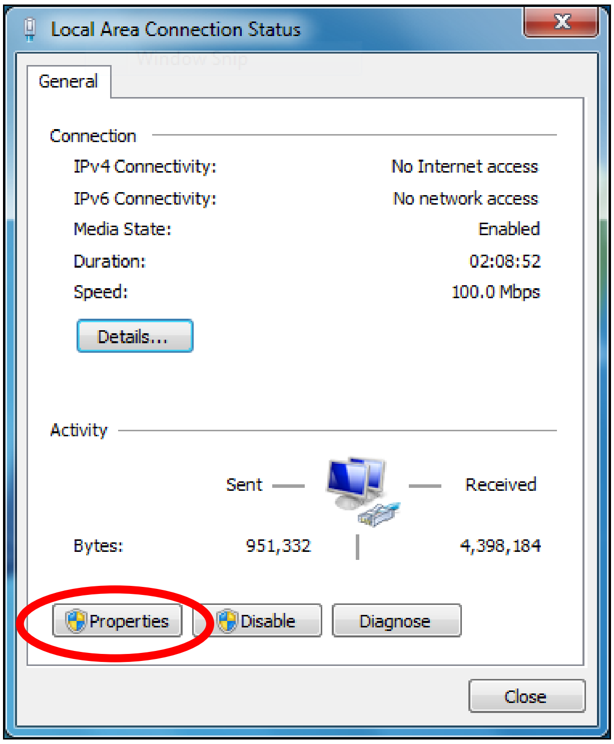
View your basic network information and set up connections

View your active networks — Connect or disconnect

Home network
Home network

Access type: No Internet access
HomeGroup: Ready to create
Connections: Local Area Connection

4. Click “Properties”.



Local Area Connection Status

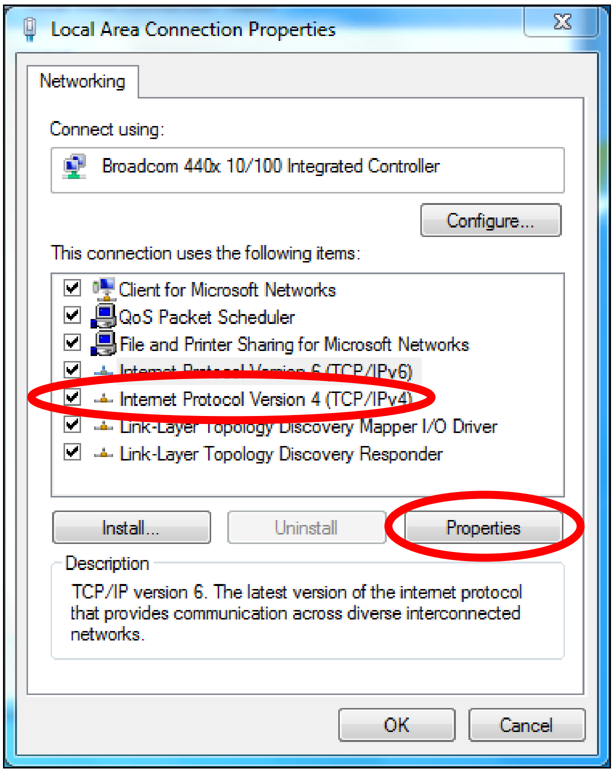
Connection

IPv4 Connectivity:	No Internet access
IPv6 Connectivity:	No network access
Media State:	Enabled
Duration:	02:08:52
Speed:	100.0 Mbps

Activity

	Sent	Received
Bytes:	951,332	4,398,184

5. Select “Internet Protocol Version 4 (TCP/IPv4) and then click “Properties”.



Connect using:

Broadcom 440x 10/100 Integrated Controller

This connection uses the following items:

☑ Client for Microsoft Networks
☑ QoS Packet Scheduler
☑ File and Printer Sharing for Microsoft Networks
☑ Internet Protocol Version 6 (TCP/IPv6)
☑ Internet Protocol Version 4 (TCP/IPv4)
☑ Link-Layer Topology Discovery Mapper I/O Driver
☑ Link-Layer Topology Discovery Responder

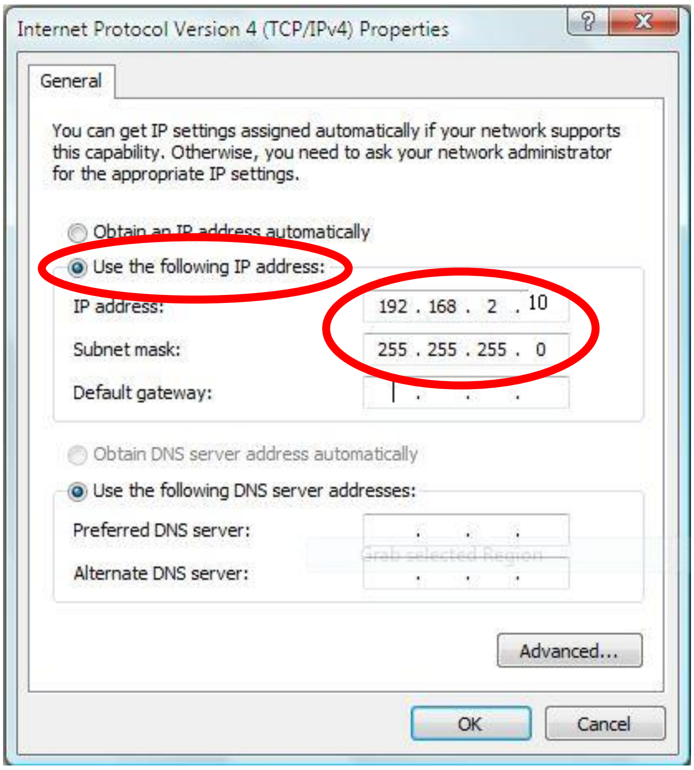
Description

TCP/IP version 6. The latest version of the internet protocol that provides communication across diverse interconnected networks.

6. Select “Use the following IP address”, then input the following values:

IP address: 192.168.2.10
Subnet Mask: 255.255.255.0

Click ‘OK’ when finished.



Internet Protocol Version 4 (TCP/IPv4) Properties

General

You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

○ Obtain an IP address automatically

● Use the following IP address:

IP address: 192 . 168 . 2 . 10

Subnet mask: 255 . 255 . 255 . 0

Default gateway: . . .

○ Obtain DNS server address automatically

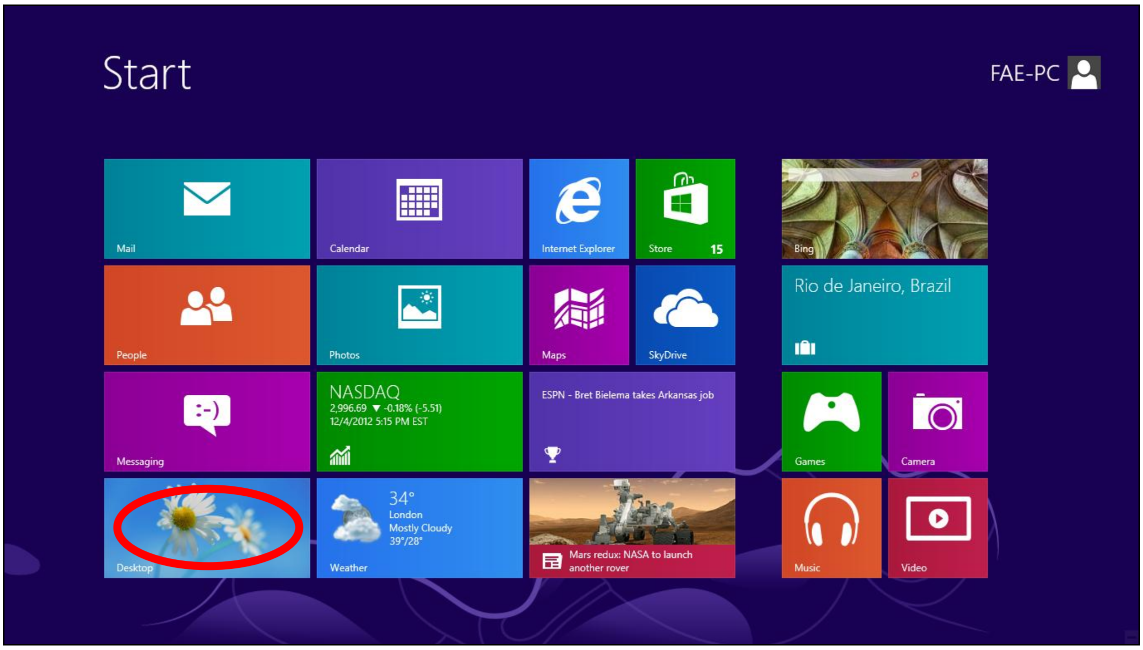
● Use the following DNS server addresses:

Preferred DNS server: . . .

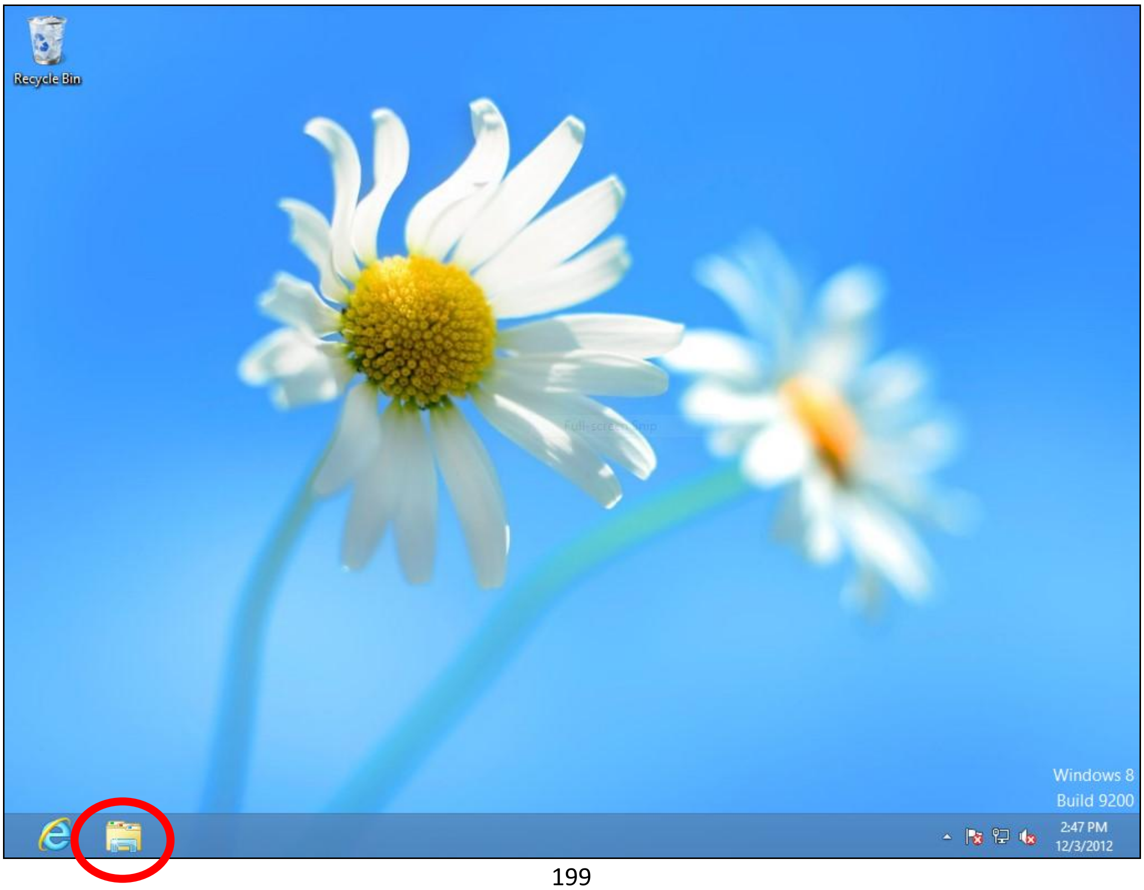
Alternate DNS server: . . .

V-1-4. Windows 8

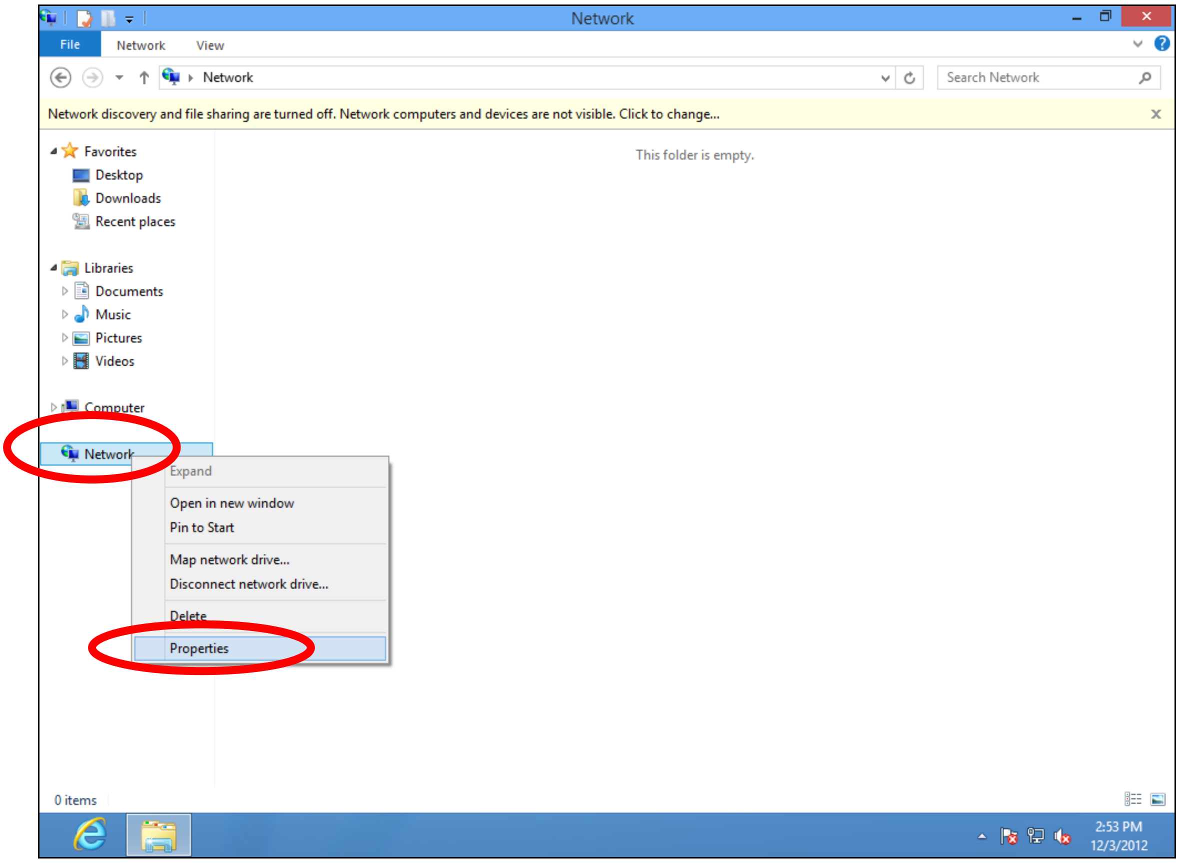
1. From the Windows 8 Start screen, you need to switch to desktop mode. Move your curser to the bottom left of the screen and click.



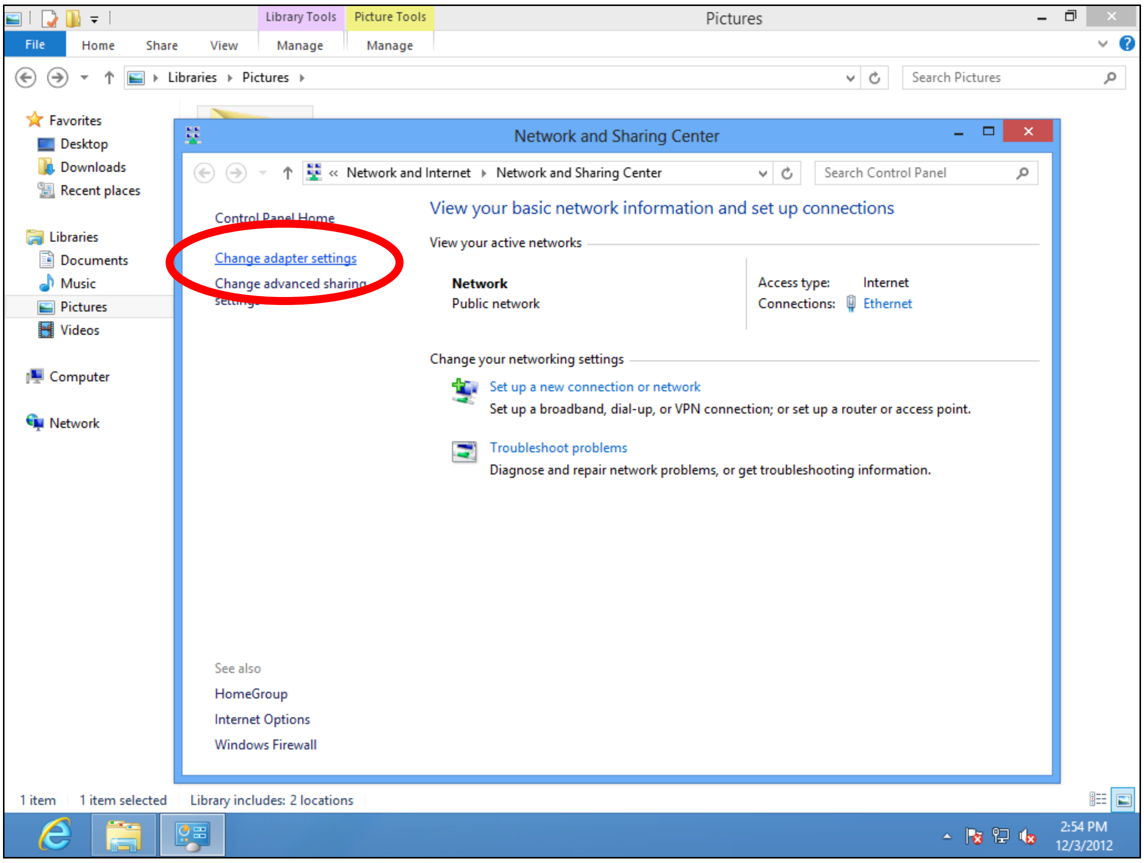
2. In desktop mode, click the File Explorer icon in the bottom left of the screen, as shown below.



3. Right click “Network” and then select “Properties”.



4. In the window that opens, select “Change adapter settings” from the left side.



View your basic network information and set up connections

View your active networks

Network
Public network

Access type: Internet
Connections: Ethernet

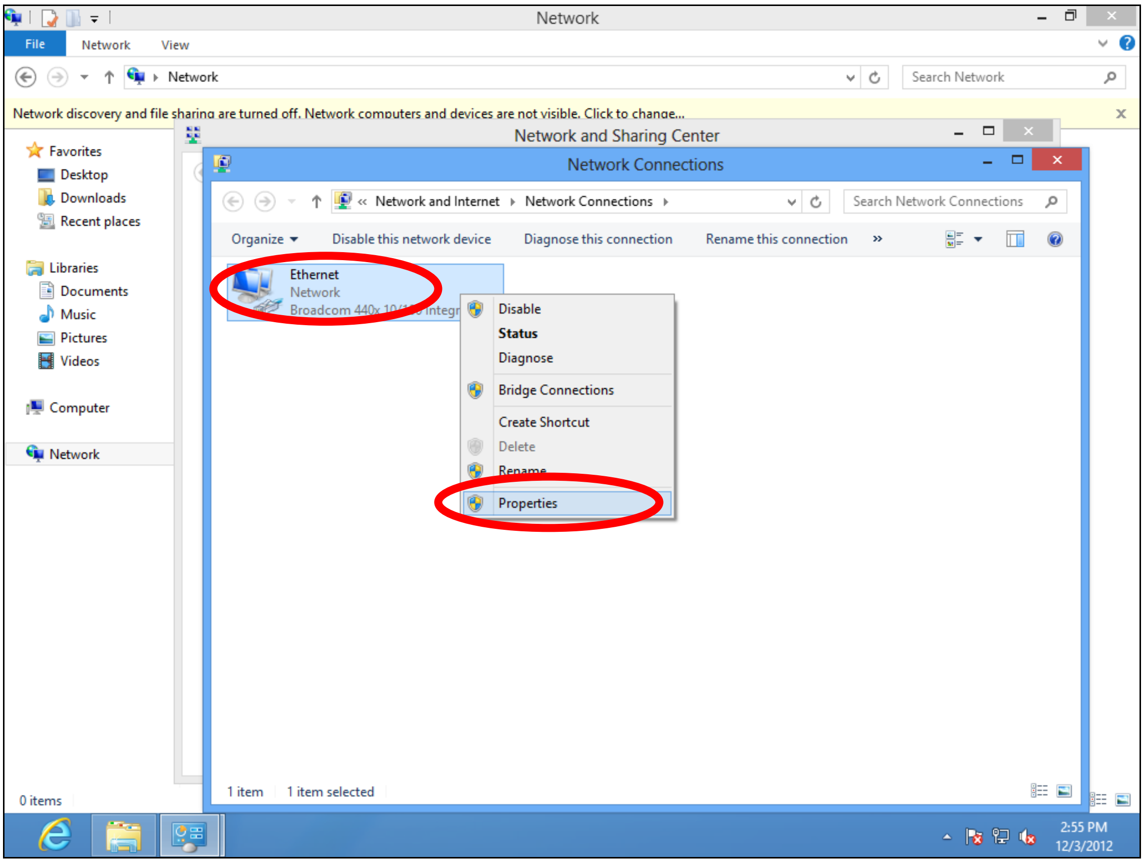
Change your networking settings

Set up a new connection or network
Set up a broadband, dial-up, or VPN connection; or set up a router or access point.

Troubleshoot problems
Diagnose and repair network problems, or get troubleshooting information.

1 item 1 item selected Library includes: 2 locations

5. Choose your connection and right click, then select “Properties”.



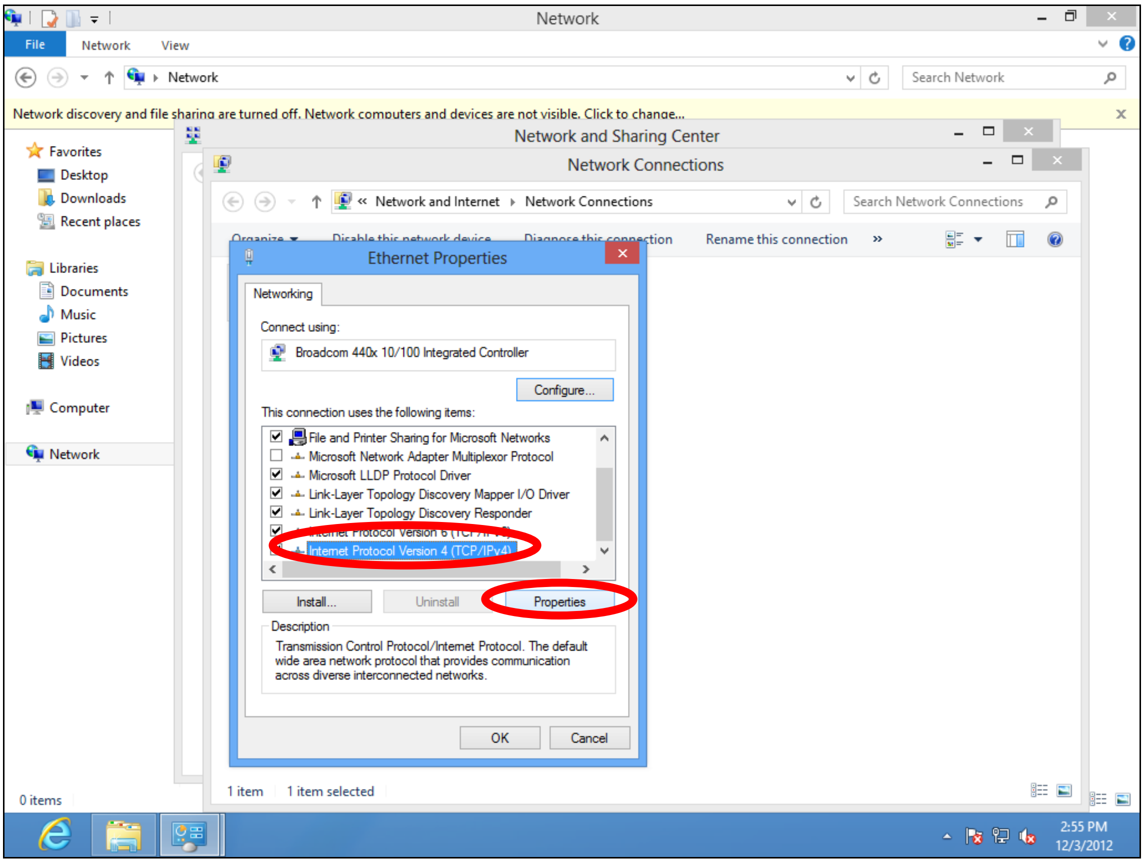
Network discovery and file sharing are turned off. Network computers and devices are not visible. Click to change...

Ethernet
Network
Broadcom 440x 10/100 Integr

1 item 1 item selected

0 items

6. Select “Internet Protocol Version 4 (TCP/IPv4) and then click “Properties”.



Connect using:

Broadcom 440x 10/100 Integrated Controller

This connection uses the following items:

☑ File and Printer Sharing for Microsoft Networks
□ Microsoft Network Adapter Multiplexor Protocol
☑ Microsoft LLDP Protocol Driver
☑ Link-Layer Topology Discovery Mapper I/O Driver
☑ Link-Layer Topology Discovery Responder
☑ Internet Protocol Version 6 (TCP/IPv6)
☑ Internet Protocol Version 4 (TCP/IPv4)

Description

Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.

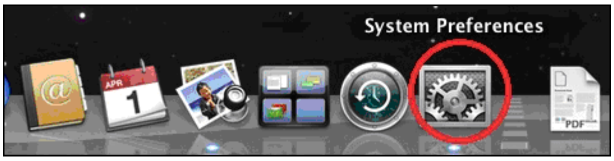
7. Select "Use the following IP address", then input the following values:

IP address: 192.168.2.10
Subnet Mask: 255.255.255.0

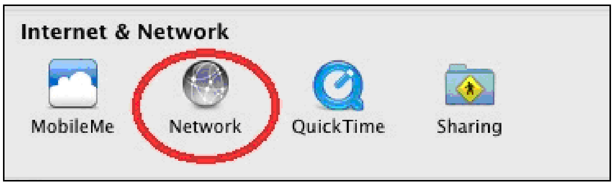
Click 'OK' when finished.

V-1-5. Mac

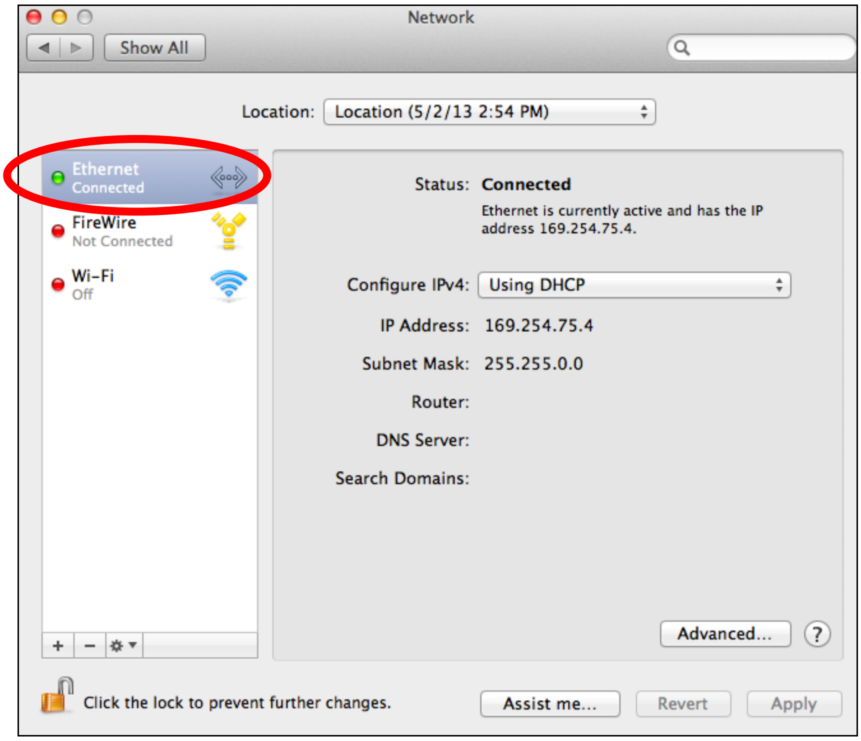
1. Have your Macintosh computer operate as usual, and click on "System Preferences"



2. In System Preferences, click on "Network".



3. Click on "Ethernet" in the left panel.



Location: Location (5/2/13 2:54 PM)

Ethernet
Connected

FireWire
Not Connected

Wi-Fi
Off

Status: **Connected**

Ethernet is currently active and has the IP address 169.254.75.4.

Configure IPv4: Using DHCP

IP Address: 169.254.75.4

Subnet Mask: 255.255.0.0

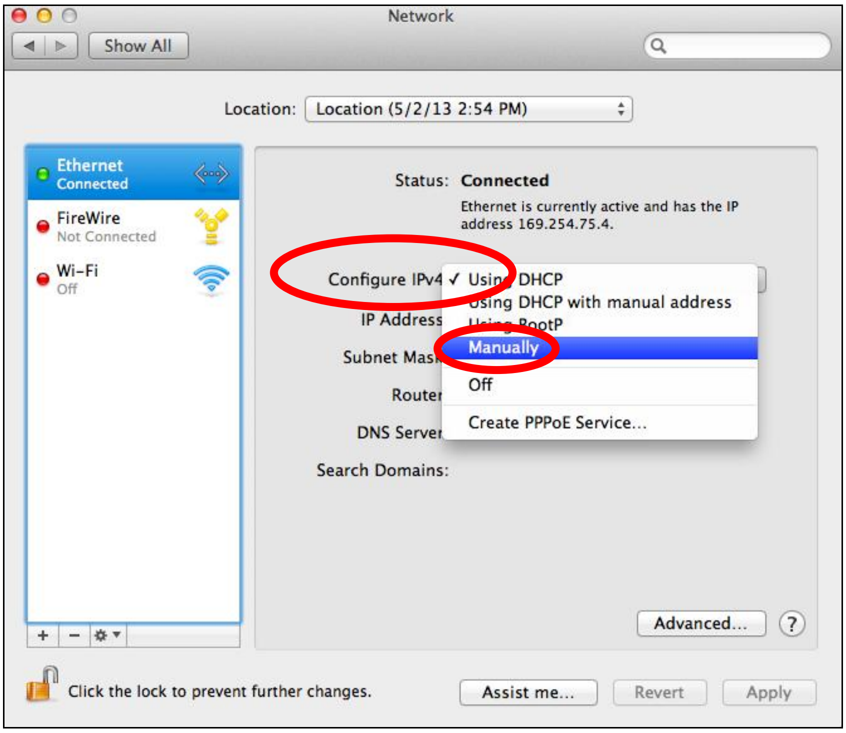
Router:

DNS Server:

Search Domains:

Click the lock to prevent further changes.

4. Open the drop-down menu labeled "Configure IPv4" and select "Manually".



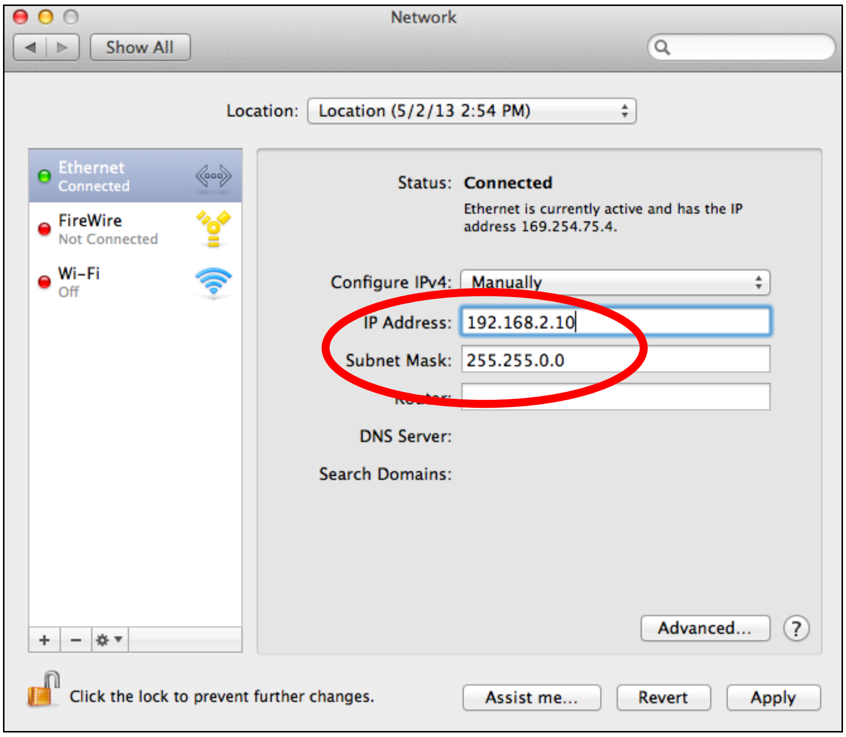
Location: Location (5/2/13 2:54 PM)

Status: Connected

Ethernet is currently active and has the IP address 169.254.75.4.

Configure IPv4 ✓ Using DHCP

5. Enter the IP address 192.168.2.10 and subnet mask 255.255.255.0. Click on “Apply” to save the changes.



Location: Location (5/2/13 2:54 PM)

Status: Connected

Ethernet is currently active and has the IP address 169.254.75.4.

Configure IPv4: Manually

IP Address: 192.168.2.10

Subnet Mask: 255.255.0.0

Router:

DNS Server:

Search Domains:

V. Best Practice

VI-1. How to Create and Link WLAN & Access Point Groups

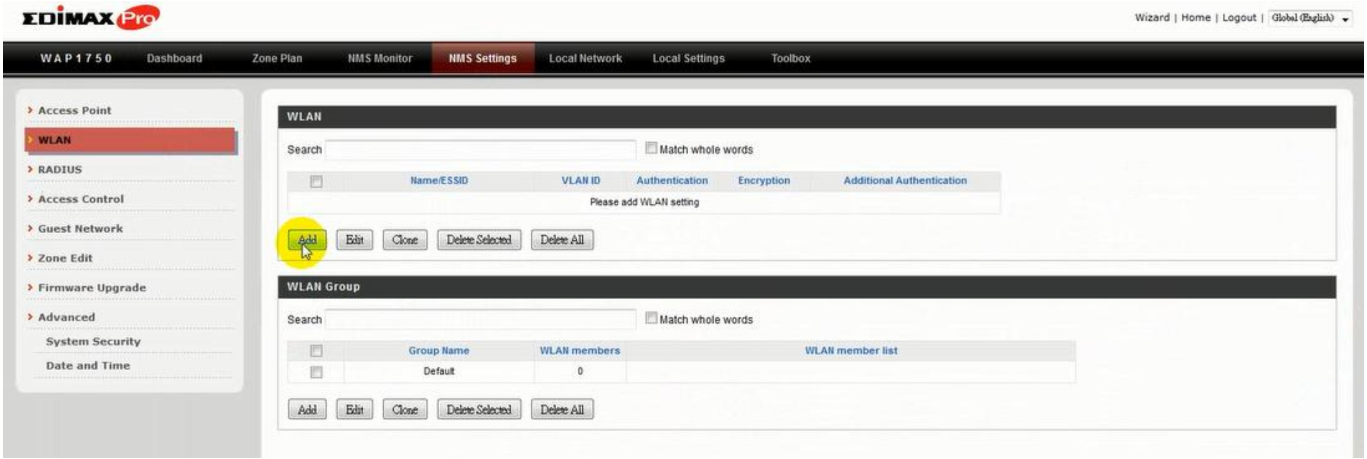
You can use NMS to create individual SSIDs and group multiple SSIDs together into WLAN groups. You can then assign individual access points to use those WLAN group settings and/or group multiple access points together into access point groups, which you can also assign to use WLAN group settings.

Follow the example below to:

A. Create a WLAN group.
B. Create an access point group.
C. Assign the access point group to use the SSID group settings.

A.

1. Go to **NMS Settings → WLAN** and click **"Add"** in the **WLAN** panel:



WLAN

Search □ Match whole words

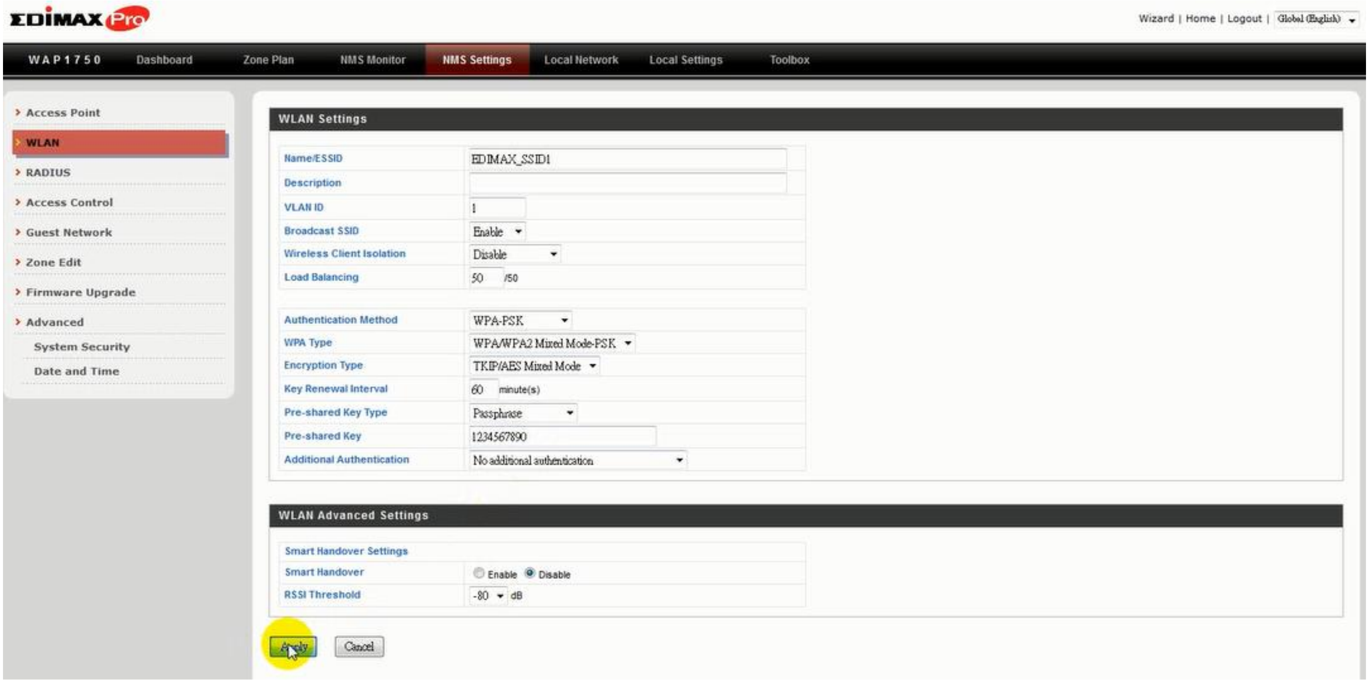
□	Name/ESSID	VLAN ID	Authentication	Encryption	Additional Authentication
Please add WLAN setting					

WLAN Group

Search □ Match whole words

□	Group Name	WLAN members	WLAN member list
□	Default	0	

2. Enter an SSID **name** and set **authentication/encryption** and click **"Apply"**:



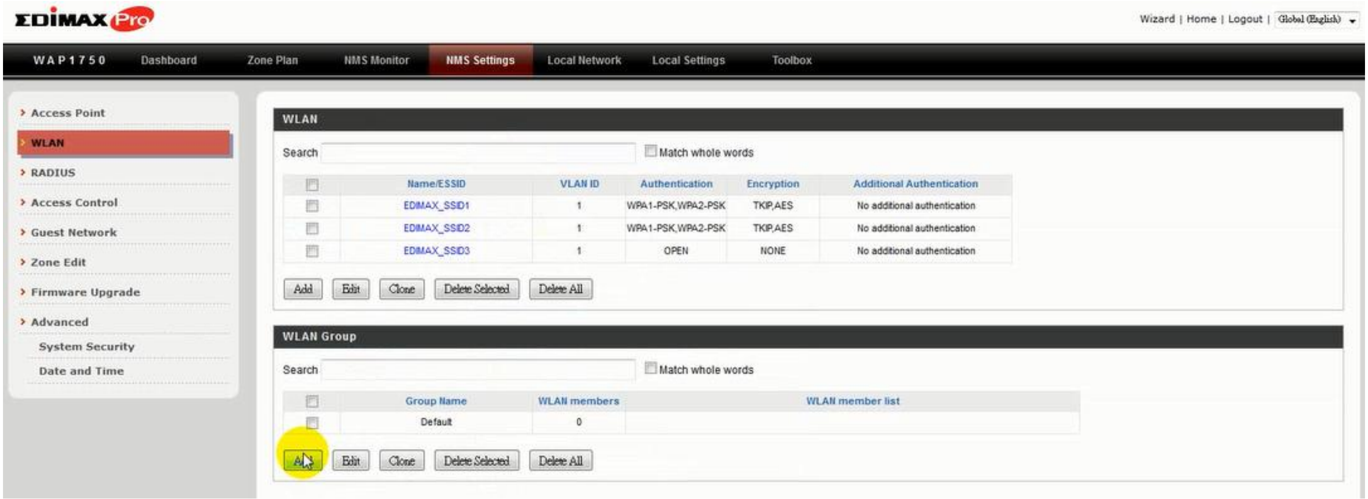
WLAN Settings

Name/ESSID	EDIMAX_SSID1
Description	
VLAN ID	1
Broadcast SSID	Enable
Wireless Client Isolation	Disable
Load Balancing	50 /50
Authentication Method	WPA-PSK
WPA Type	WPA/WPA2 Mixed Mode-PSK
Encryption Type	TKIP/AES Mixed Mode
Key Renewal Interval	60 minute(s)
Pre-shared Key Type	Passphrase
Pre-shared Key	1234567890
Additional Authentication	No additional authentication

WLAN Advanced Settings

Smart Handover Settings	
Smart Handover	○ Enable ● Disable
RSSI Threshold	-80 dB

3. The new SSID will be displayed in the **WLAN** panel. **Repeat** to add additional SSIDs according to your preference, and then click **"Add"** in the **WLAN Group** panel:



WLAN

Search □ Match whole words

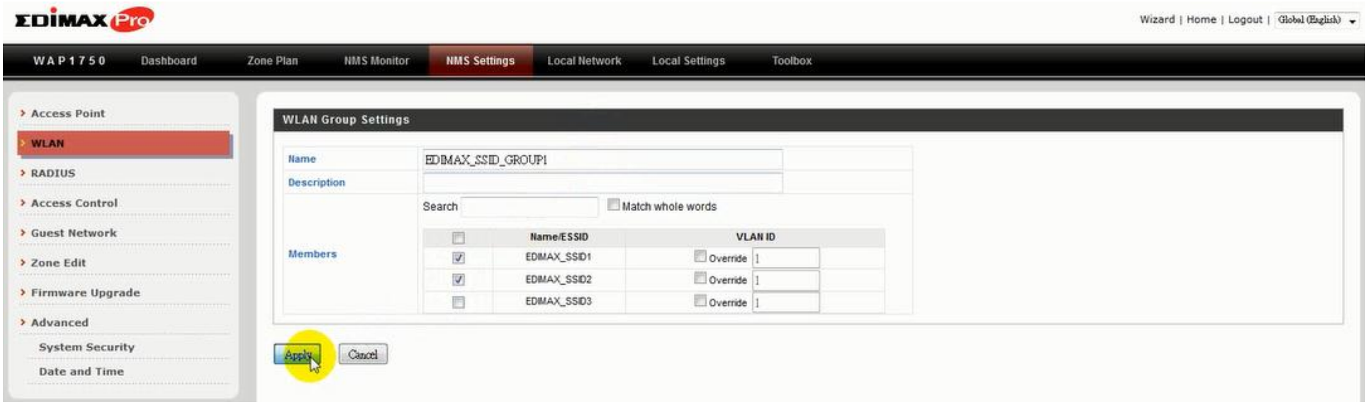
□	Name/ESSID	VLAN ID	Authentication	Encryption	Additional Authentication
□	EDIMAX_SSID1	1	WPA1-PSK,WPA2-PSK	TKIP,AES	No additional authentication
□	EDIMAX_SSID2	1	WPA1-PSK,WPA2-PSK	TKIP,AES	No additional authentication
□	EDIMAX_SSID3	1	OPEN	NONE	No additional authentication

WLAN Group

Search □ Match whole words

□	Group Name	WLAN members	WLAN member list
□	Default	0	

4. Enter a **name** for the **SSID group** and **check the boxes** to select which SSIDs to include within the group. Click "**Apply**" when done.



WLAN Group Settings

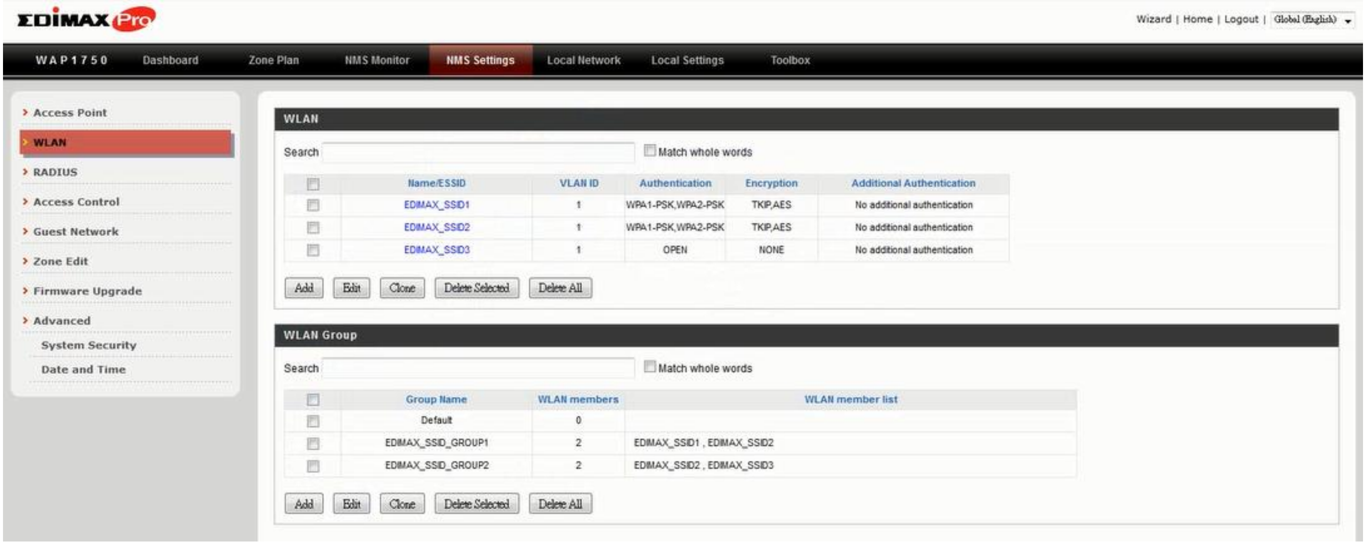
Name: EDIMAX_SSID_GROUP1

Description:

Members: Search □ Match whole words

□	Name/ESSID	VLAN ID
☑	EDIMAX_SSID1	□ Override 1
☑	EDIMAX_SSID2	□ Override 1
□	EDIMAX_SSID3	□ Override 1

5. The new **WLAN group** will be displayed in the **WLAN Group** panel. **Repeat** to add additional WLAN groups according to your preference:



WLAN

Search □ Match whole words

□	Name/ESSID	VLAN ID	Authentication	Encryption	Additional Authentication
□	EDIMAX_SSID1	1	WPA1-PSK,WPA2-PSK	TKIP,AES	No additional authentication
□	EDIMAX_SSID2	1	WPA1-PSK,WPA2-PSK	TKIP,AES	No additional authentication
□	EDIMAX_SSID3	1	OPEN	NONE	No additional authentication

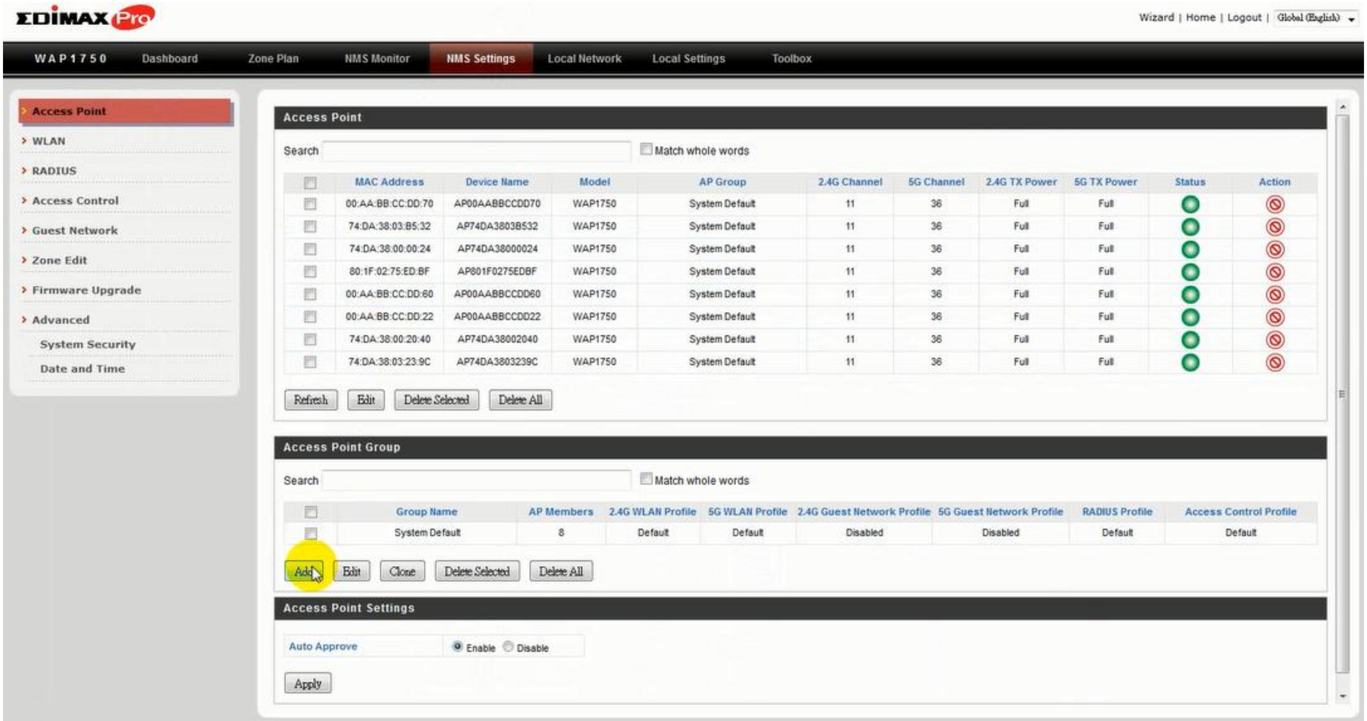
WLAN Group

Search □ Match whole words

□	Group Name	WLAN members	WLAN member list
□	Default	0	
□	EDIMAX_SSID_GROUP1	2	EDIMAX_SSID1 , EDIMAX_SSID2
□	EDIMAX_SSID_GROUP2	2	EDIMAX_SSID2 , EDIMAX_SSID3

B.

1. Go to **NMS Settings → Access Point** and click "Add" in the Access Point Group Panel:



Access Point

Search □ Match whole words

□	MAC Address	Device Name	Model	AP Group	2.4G Channel	5G Channel	2.4G TX Power	5G TX Power	Status	Action
□	00:AA:BB:CC:DD:70	AP00AABBCCDD70	WAP1750	System Default	11	36	Full	Full	●	⊘
□	74:DA:38:03:B5:32	AP74DA3803B532	WAP1750	System Default	11	36	Full	Full	●	⊘
□	74:DA:38:00:00:24	AP74DA38000024	WAP1750	System Default	11	36	Full	Full	●	⊘
□	80:1F:02:75:ED:BF	AP801F0275EDBF	WAP1750	System Default	11	36	Full	Full	●	⊘
□	00:AA:BB:CC:DD:60	AP00AABBCCDD60	WAP1750	System Default	11	36	Full	Full	●	⊘
□	00:AA:BB:CC:DD:22	AP00AABBCCDD22	WAP1750	System Default	11	36	Full	Full	●	⊘
□	74:DA:38:00:20:40	AP74DA38002040	WAP1750	System Default	11	36	Full	Full	●	⊘
□	74:DA:38:03:23:9C	AP74DA3803239C	WAP1750	System Default	11	36	Full	Full	●	⊘

Access Point Group

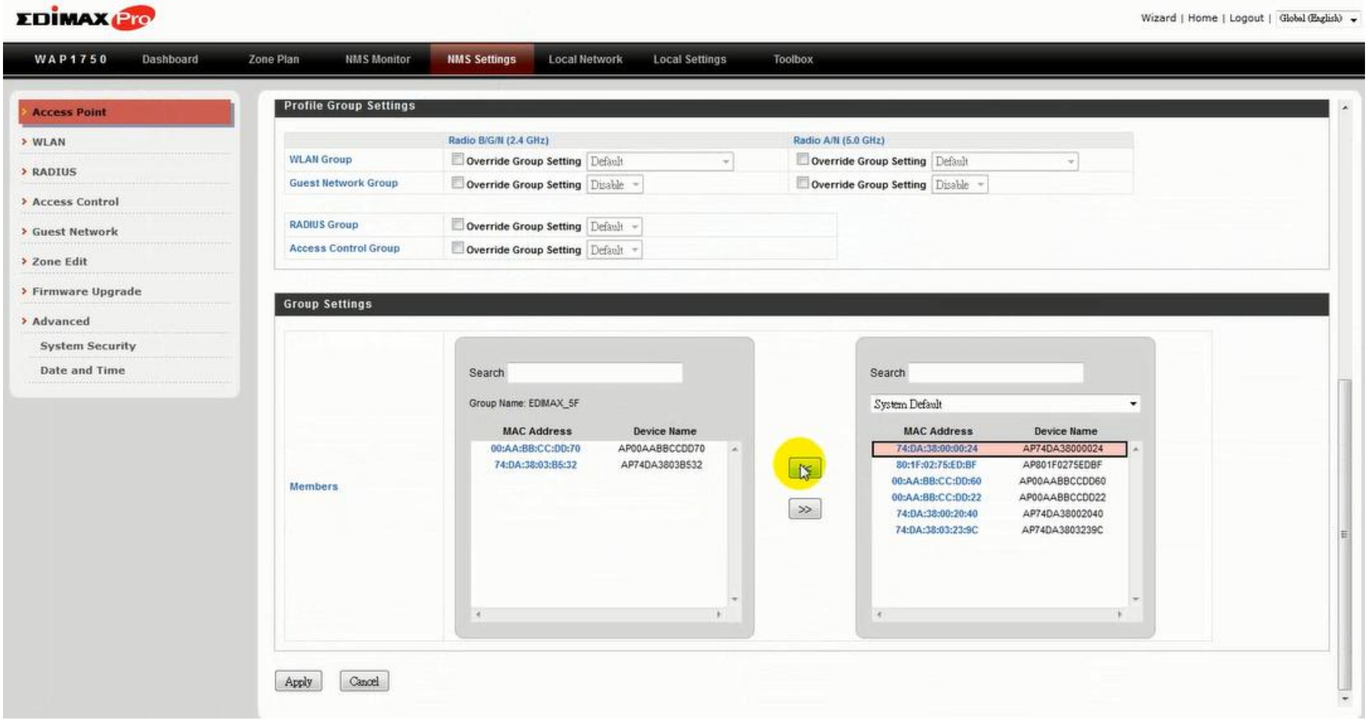
Search □ Match whole words

□	Group Name	AP Members	2.4G WLAN Profile	5G WLAN Profile	2.4G Guest Network Profile	5G Guest Network Profile	RADIUS Profile	Access Control Profile
□	System Default	8	Default	Default	Disabled	Disabled	Default	Default

Access Point Settings

Auto Approve ● Enable ○ Disable

2. Enter a **Name** and then scroll down to the **Group Settings** panel and use the **<<** button to **add** selected access points into your group from the box on the right side. Click **"Apply"** when done.



Profile Group Settings

	Radio B/G/N (2.4 GHz)	Radio A/N (5.0 GHz)
WLAN Group	□ Override Group Setting Default	□ Override Group Setting Default
Guest Network Group	□ Override Group Setting Disable	□ Override Group Setting Disable

RADIUS Group	□ Override Group Setting Default
Access Control Group	□ Override Group Setting Default

Group Settings

Members

Search

Group Name: EDIMAX_5F

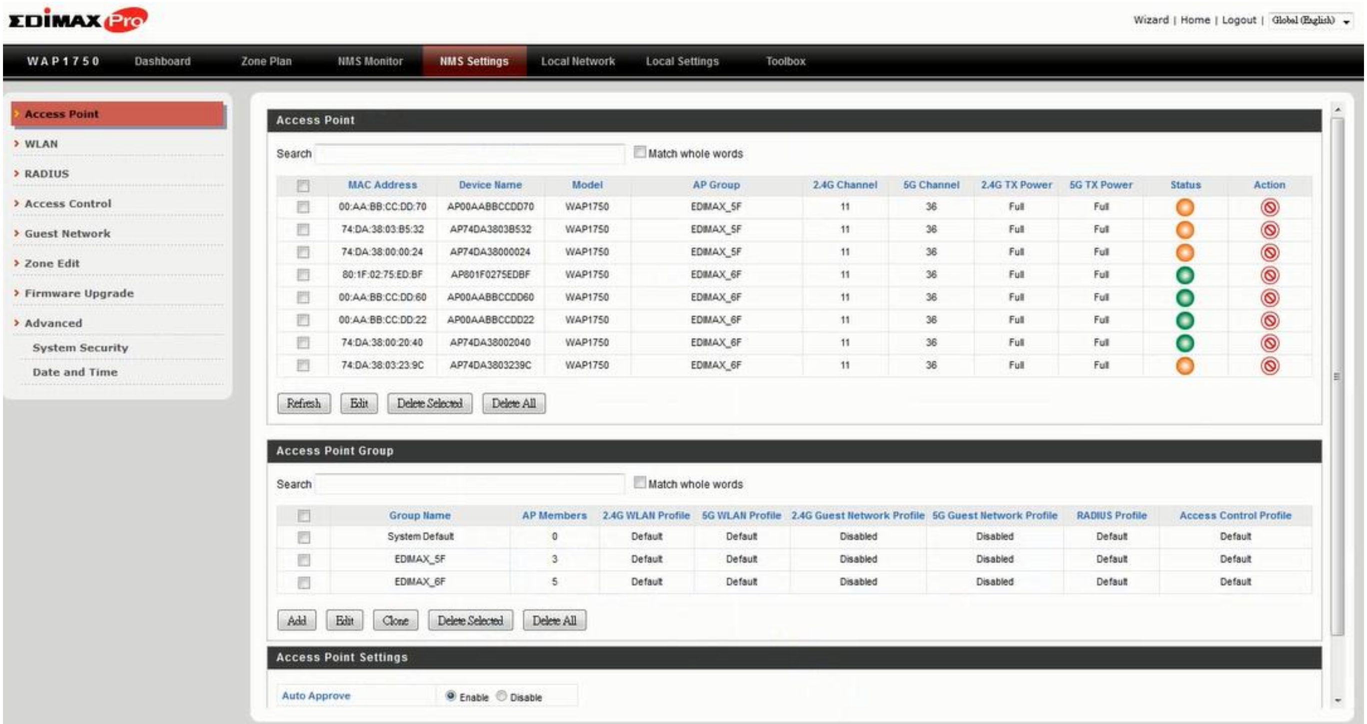
MAC Address	Device Name
00:AA:BB:CC:DD:70	AP00AABBCCDD70
74:DA:38:03:B5:32	AP74DA3803B532

Search

System Default

MAC Address	Device Name
74:DA:38:00:00:24	AP74DA38000024
80:1F:02:75:ED:BF	AP801F0275EDBF
00:AA:BB:CC:DD:60	AP00AABBCCDD60
00:AA:BB:CC:DD:22	AP00AABBCCDD22
74:DA:38:00:20:40	AP74DA38002040
74:DA:38:03:23:9C	AP74DA3803239C

3. The new **access point group** will be displayed in the **Access Point Group** panel. **Repeat** to add additional access point groups according to your preference:



Access Point

Search □ Match whole words

□	MAC Address	Device Name	Model	AP Group	2.4G Channel	5G Channel	2.4G TX Power	5G TX Power	Status	Action
□	00:AA:BB:CC:DD:70	AP00AABBCCDD70	WAP1750	EDIMAX_5F	11	36	Full	Full	●	⊘
□	74:DA:38:03:B5:32	AP74DA3803B532	WAP1750	EDIMAX_5F	11	36	Full	Full	●	⊘
□	74:DA:38:00:00:24	AP74DA38000024	WAP1750	EDIMAX_5F	11	36	Full	Full	●	⊘
□	80:1F:02:75:ED:BF	AP801F0275EDBF	WAP1750	EDIMAX_6F	11	36	Full	Full	●	⊘
□	00:AA:BB:CC:DD:60	AP00AABBCCDD60	WAP1750	EDIMAX_6F	11	36	Full	Full	●	⊘
□	00:AA:BB:CC:DD:22	AP00AABBCCDD22	WAP1750	EDIMAX_6F	11	36	Full	Full	●	⊘
□	74:DA:38:00:20:40	AP74DA38002040	WAP1750	EDIMAX_6F	11	36	Full	Full	●	⊘
□	74:DA:38:03:23:9C	AP74DA3803239C	WAP1750	EDIMAX_6F	11	36	Full	Full	●	⊘

Access Point Group

Search □ Match whole words

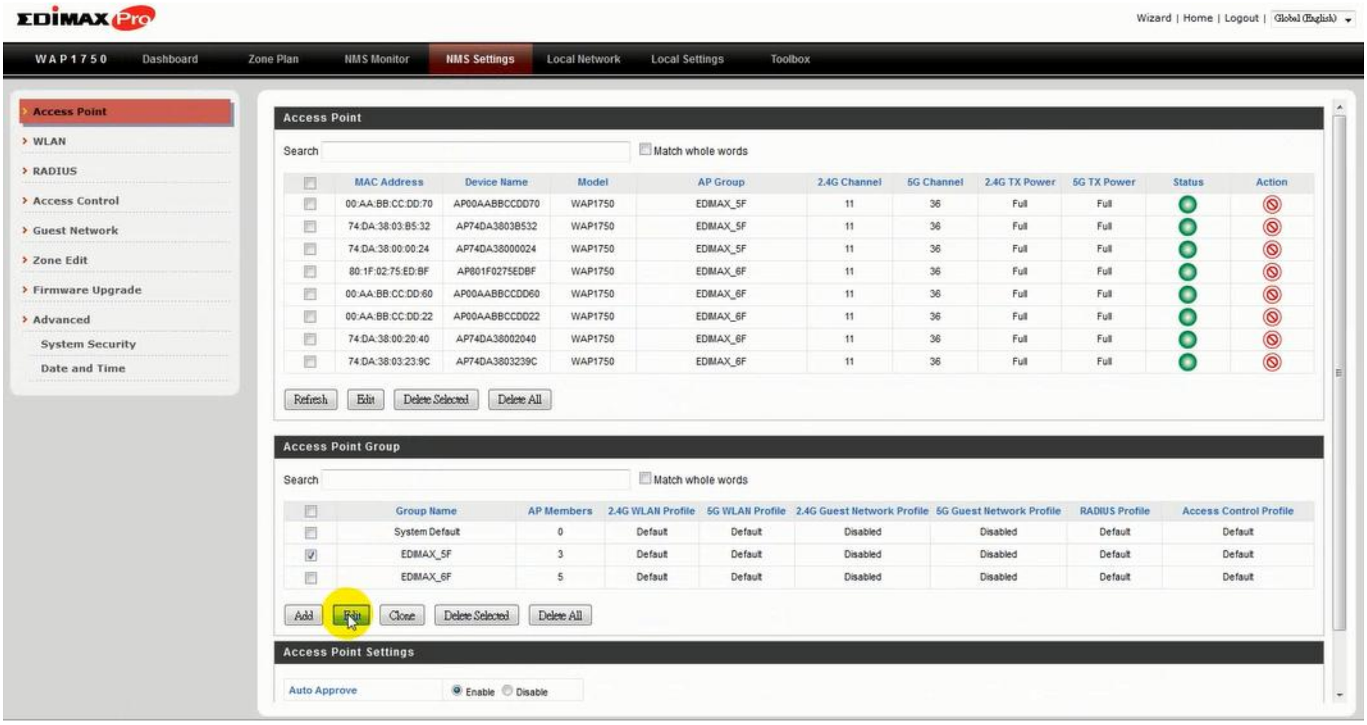
□	Group Name	AP Members	2.4G WLAN Profile	5G WLAN Profile	2.4G Guest Network Profile	5G Guest Network Profile	RADIUS Profile	Access Control Profile
□	System Default	0	Default	Default	Disabled	Disabled	Default	Default
□	EDIMAX_5F	3	Default	Default	Disabled	Disabled	Default	Default
□	EDIMAX_6F	5	Default	Default	Disabled	Disabled	Default	Default

Access Point Settings

Auto Approve ● Enable ○ Disable

C.

1. Go to **NMS Settings → Access Point** and select an access point group using the checkboxes in the **Access Point Group** panel. Click "**Edit**":



Access Point

Search □ Match whole words

□	MAC Address	Device Name	Model	AP Group	2.4G Channel	5G Channel	2.4G TX Power	5G TX Power	Status	Action
□	00:AA:BB:CC:DD:70	AP00AABBCCDD70	WAP1750	EDIMAX_5F	11	36	Full	Full	●	⊘
□	74:DA:38:03:B5:32	AP74DA3803B532	WAP1750	EDIMAX_5F	11	36	Full	Full	●	⊘
□	74:DA:38:00:00:24	AP74DA38000024	WAP1750	EDIMAX_5F	11	36	Full	Full	●	⊘
□	80:1F:02:75:ED:BF	AP801F0275EDBF	WAP1750	EDIMAX_6F	11	36	Full	Full	●	⊘
□	00:AA:BB:CC:DD:60	AP00AABBCCDD60	WAP1750	EDIMAX_6F	11	36	Full	Full	●	⊘
□	00:AA:BB:CC:DD:22	AP00AABBCCDD22	WAP1750	EDIMAX_6F	11	36	Full	Full	●	⊘
□	74:DA:38:00:20:40	AP74DA38002040	WAP1750	EDIMAX_6F	11	36	Full	Full	●	⊘
□	74:DA:38:03:23:9C	AP74DA3803239C	WAP1750	EDIMAX_6F	11	36	Full	Full	●	⊘

Access Point Group

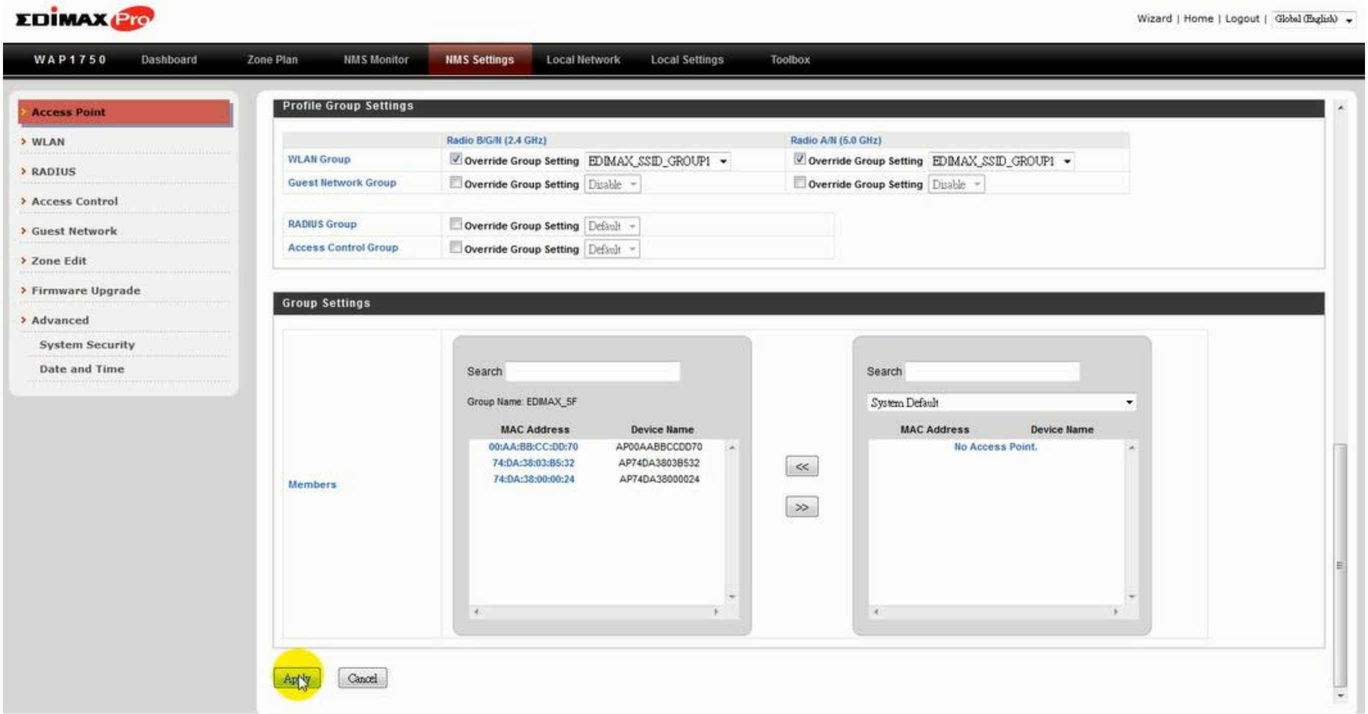
Search □ Match whole words

□	Group Name	AP Members	2.4G WLAN Profile	5G WLAN Profile	2.4G Guest Network Profile	5G Guest Network Profile	RADIUS Profile	Access Control Profile
□	System Default	0	Default	Default	Disabled	Disabled	Default	Default
☑	EDIMAX_5F	3	Default	Default	Disabled	Disabled	Default	Default
□	EDIMAX_6F	5	Default	Default	Disabled	Disabled	Default	Default

Access Point Settings

Auto Approve ● Enable ○ Disable

2. Scroll down to the **Profile Group Settings** panel and check the "**Override Group Settings**" box for **WLAN Group (2.4GHz and/or 5GHz).** Select your **WLAN group** from the drop-down menu and click "**Apply**":



Profile Group Settings

	Radio B/G/N (2.4 GHz)		Radio A/N (5.0 GHz)	
WLAN Group	☑ Override Group Setting	EDIMAX_SSID_GROUP1	☑ Override Group Setting	EDIMAX_SSID_GROUP1
Guest Network Group	☐ Override Group Setting	Disable	☐ Override Group Setting	Disable
RADIUS Group	☐ Override Group Setting	Default		
Access Control Group	☐ Override Group Setting	Default		

Group Settings

Members

Search

Group Name: EDIMAX_5F

MAC Address	Device Name
00:AA:BB:CC:DD:70	AP00AABBCCDD70
74:DA:38:03:B5:32	AP74DA3803B532
74:DA:38:00:00:24	AP74DA38000024

Search

System Default

MAC Address	Device Name
No Access Point.	

3. Repeat for other access point groups according to your preference.

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Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of 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:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio technician for help.

FCC Caution

This device and its antenna must not be co-located or operating in conjunction with any other antenna or transmitter. 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. Any changes or modifications not expressly approved by the party responsible for compliance could void the authority to operate equipment.

Federal Communications Commission (FCC) Radiation Exposure Statement

This equipment complies with FCC radiation exposure set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 2.5cm (1 inch) during normal operation.

Federal Communications Commission (FCC) RF Exposure Requirements

SAR compliance has been established in the laptop computer(s) configurations with PCMCIA slot on the side near the center, as tested in the application for certification, and can be used in laptop computer(s) with substantially similar physical dimensions, construction, and electrical and RF characteristics. Use in other devices such as PDAs or lap pads is not authorized. This transmitter is restricted for use with the specific antenna tested in the application for certification. The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

R&TTE Compliance Statement

This equipment complies with all the requirements of DIRECTIVE 1999/5/EC OF THE EUROPEAN PARLIAMENT AND THE COUNCIL of March 9, 1999 on radio equipment and telecommunication terminal equipment and the mutual recognition of their conformity (R&TTE). The R&TTE Directive repeals and replaces in the directive 98/13/EEC (Telecommunications Terminal Equipment and Satellite Earth Station Equipment) As of April 8, 2000.

Safety

This equipment is designed with the utmost care for the safety of those who install and use it. However, special attention must be paid to the dangers of electric shock and static electricity when working with electrical equipment. All guidelines of this and of the computer manufacture must therefore be allowed at all times to ensure the safe use of the equipment.

EU Countries Intended for Use

The ETSI version of this device is intended for home and office use in Austria, Belgium, Bulgaria, Cyprus, Czech, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Turkey, and United Kingdom. The ETSI version of this device is also authorized for use in EFTA member states: Iceland, Liechtenstein, Norway, and Switzerland.

EU Countries Not Intended for Use

None

EU Declaration of Conformity

English: This equipment is in compliance with the essential requirements and other relevant provisions of Directive 1995/5/EC, 2009/125/EC, 2006/95/EC, 2011/65/EC.

Français: Cet équipement est conforme aux exigences essentielles et autres dispositions de la directive 1995/5/CE, 2009/125/CE, 2006/95/CE, 2011/65/CE.

Čeština: Toto zařízení je v souladu se základními požadavky a ostatními příslušnými ustanoveními směrnic 1995/5/ES, 2009/125/ES, 2006/95/ES, 2011/65/ES.

Polski: Urządzenie jest zgodne z ogólnymi wymaganiami oraz szczególnymi warunkami określonymi Dyrektywą UE 1995/5/EC, 2009/125/EC, 2006/95/EC, 2011/65/EC..

Română: Acest echipament este în conformitate cu cerinţele esenţiale şi alte prevederi relevante ale Directivei 1995/5/CE, 2009/125/CE, 2006/95/CE, 2011/65/CE.

Русский: Это оборудование соответствует основным требованиям и положениям Директивы 1995/5/EC, 2009/125/EC, 2006/95/EC, 2011/65/EC.

Magyar: Ez a berendezés megfelel az alapvető követelményeknek és más vonatkozó irányelveknek (1995/5/EK, 2009/125/EK, 2006/95/EK, 2011/65/EK).

Türkçe: Bu cihaz 1995/5/EC, 2009/125/EC, 2006/95/EC, 2011/65/EC direktifleri zorunlu istekler ve diğer hükümlerle ile uyumludur.

Українська: Обладнання відповідає вимогам і умовам директиви 1995/5/EC, 2009/125/EC, 2006/95/EC, 2011/65/EC.

Slovenčina: Toto zariadenie spĺňa základné požiadavky a ďalšie príslušné ustanovenia smerníc 1995/5/ES, 2009/125/ES, 2006/95/ES, 2011/65/ES.

Deutsch: Dieses Gerät erfüllt die Voraussetzungen gemäß den Richtlinien 1995/5/EC, 2009/125/EC, 2006/95/EC, 2011/65/EC.

Español: El presente equipo cumple los requisitos esenciales de la Directiva 1995/5/EC, 2009/125/EC, 2006/95/EC, 2011/65/EC.

Italiano: Questo apparecchio è conforme ai requisiti essenziali e alle altre disposizioni applicabili della Direttiva 1995/5/CE, 2009/125/CE, 2006/95/CE, 2011/65/CE.

Nederlands: Dit apparaat voldoet aan de essentiële eisen en andere van toepassing zijnde bepalingen van richtlijn 1995/5/EC, 2009/125/EC, 2006/95/EC, 2011/65/EC..

Português: Este equipamento cumpre os requesitos essênciais da Directiva 1995/5/EC, 2009/125/EC, 2006/95/EC, 2011/65/EC.

Norsk: Dette utstyret er i samsvar med de viktigste kravene og andre relevante regler i Direktiv 1995/5/EC, 2009/125/EC, 2006/95/EC, 2011/65/EC.

Svenska: Denna utrustning är i överensstämmelse med de väsentliga kraven och övriga relevanta bestämmelser i direktiv 1995/5/EG, 2009/125/EG, 2006/95/EG, 2011/65/EG.

Dansk: Dette udstyr er i overensstemmelse med de væsentligste krav og andre relevante forordninger i direktiv 1995/5/EC, 2009/125/EC, 2006/95/EC, 2011/65/EC.

suomen kieli: Tämä laite täyttää direktiivien 1995/5/EY, 2009/125/EY, 2006/95/EY, 2011/65/EY oleelliset vaatimukset ja muut asiaankuuluvat määräykset.

FOR USE IN AT BE CY CZ DK EE FI FR
DE GR HU IE IT LV LT LU MT NL PL PT
SK SI ES SE GB IS LI NO CH BG RO TR

WEEE Directive & Product Disposal

At the end of its serviceable life, this product should not be treated as household or general waste. It should be handed over to the applicable collection point for the recycling of electrical and electronic equipment, or returned to the supplier for disposal.

Declaration of Conformity

We, Edimax Technology Co., Ltd., declare under our sole responsibility, that the equipment described below complies with the requirements of the European R&TTE directives.

Equipment: N300 Ceiling Mount Access Point
Model No.: CAP300

The following European standards for essential requirements have been followed:

Directives 1999/5/EC

Spectrum	:	ETSI EN 300 328 V1.8.1 (2012-06);

EMC	:	EN 301 489-1 V1.9.2 (2011-09);
		EN 301 489-17 V2.2.1 (2012-09);

Safety (LVD)	:	IEC 60950-1:2005 (2nd Edition);Am 1:2009+Am2:2013 EN 60950-1:2006+A11+A:2010+A12:2011+A2:2013

Recommendation19 99/5/EC

EMF	:	EN 62311:2008

Directives 2006/95/EC

Safety (LVD)	:	IEC 60950-1:2005 (2nd Edition);Am 1:2009+Am2:2013 EN 60950-1:2006+A11+A:2010+A12:20+A2:2013

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New Taipei City, Taiwan

Date of Signature: January, 2015
Signature:
Printed Name: Albert Chang
Title: Director
Edimax Technology Co., Ltd.

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