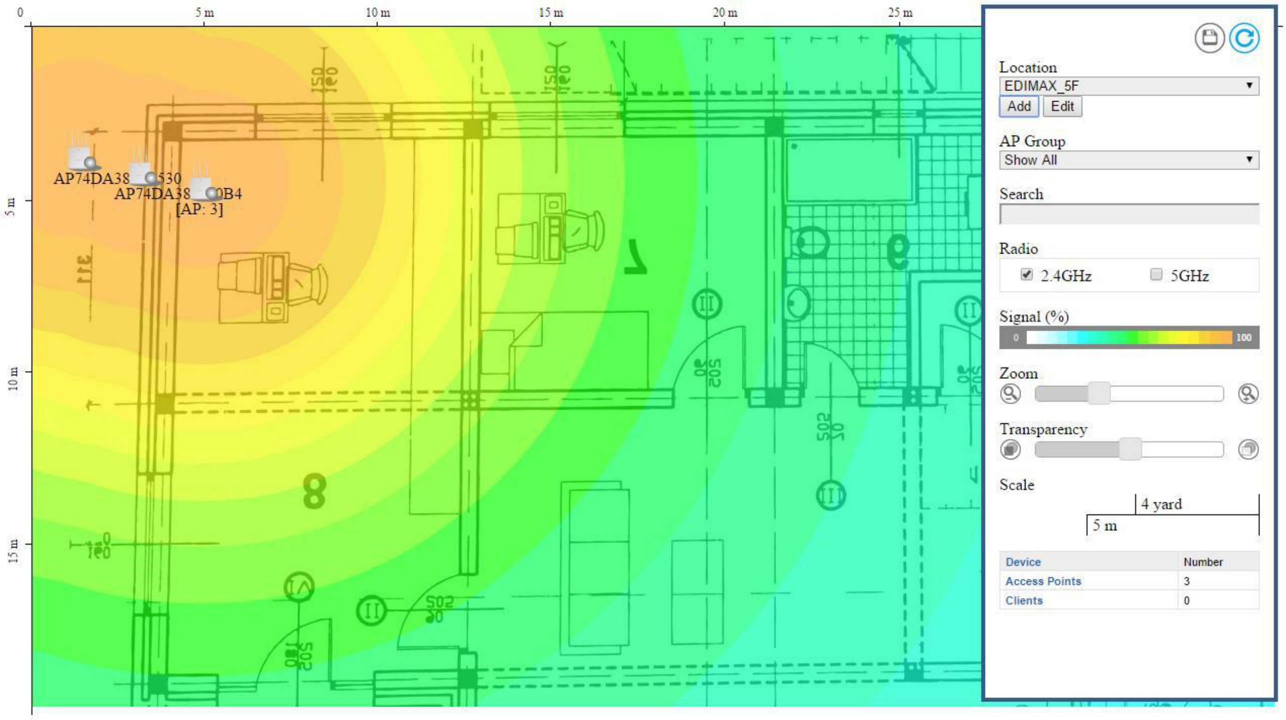
IV-3. ZONE PLAN

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

Add | Edit

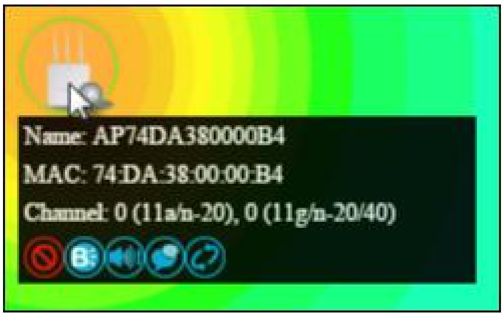
AP Group: Show All

Search

Radio: ☑ 2.4GHz ☐ 5GHz

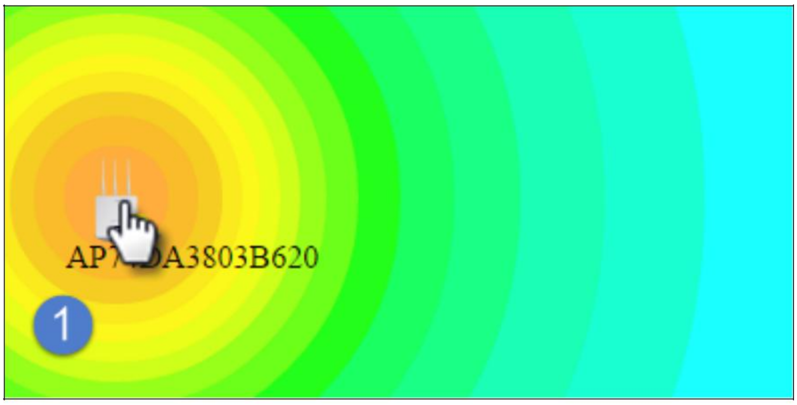
Device	Number
Access Points	3
Clients	0

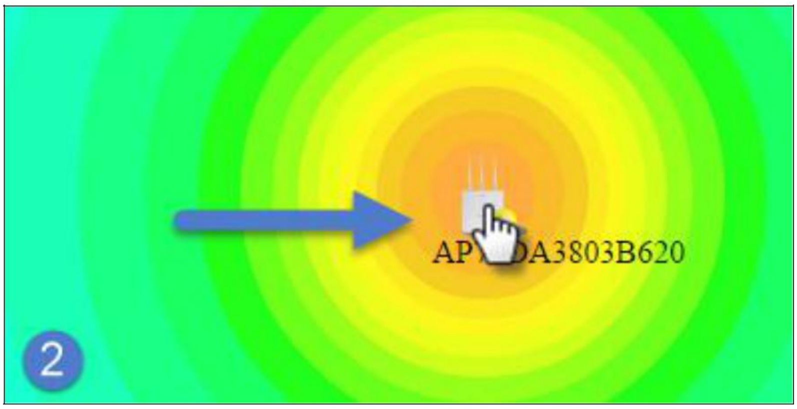
Use the menu on the right side to make adjustments and mouse-over an AP icon in the zone map to see more information. Click an AP icon in the zone map to select it and display action icons:



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:





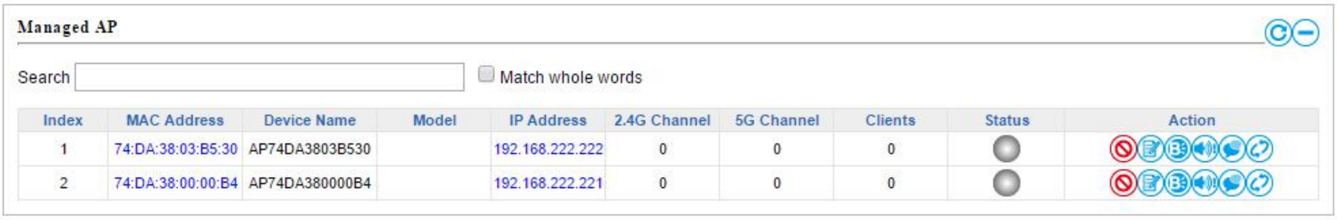
Location	Select a pre-defined location from the drop down menu. When you upload a location image in **NMS Settings** → **Zone Edit**, it will be available for selection here.
AP Group	You can select an AP Group to display in the zone map. Edit AP Groups in **NMS Settings** → **Access Point.**
Search	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

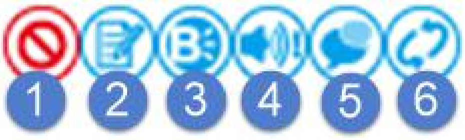
The **Status** icon displays the status of each Managed AP.

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.

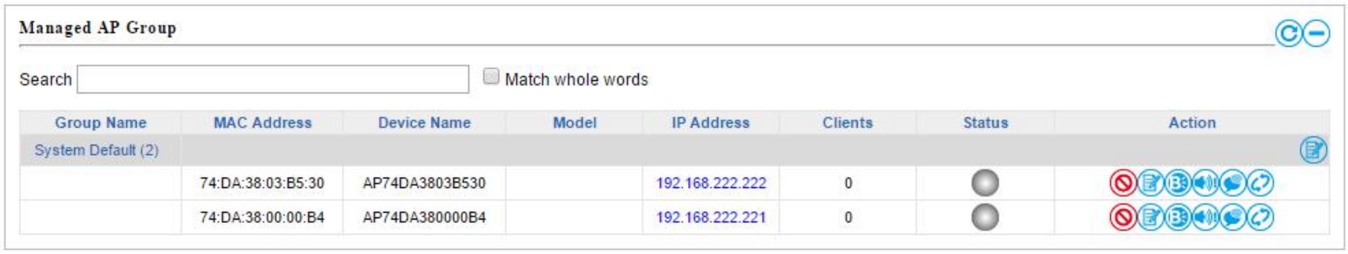
5. Restart

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

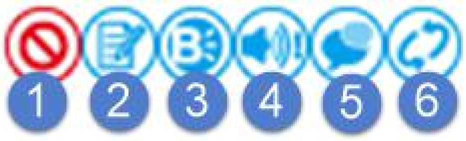
Group Name	MAC Address	Device Name	Model	IP Address	Clients	Status	Action
System Default (2)							
	74:DA:38:03:B5:30	AP74DA3803B530		192.168.222.222	0	●	
	74:DA:38:00:00:B4	AP74DA380000B4		192.168.222.221	0	●	

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.

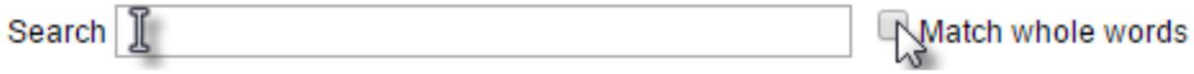
IV-4-2. WLAN

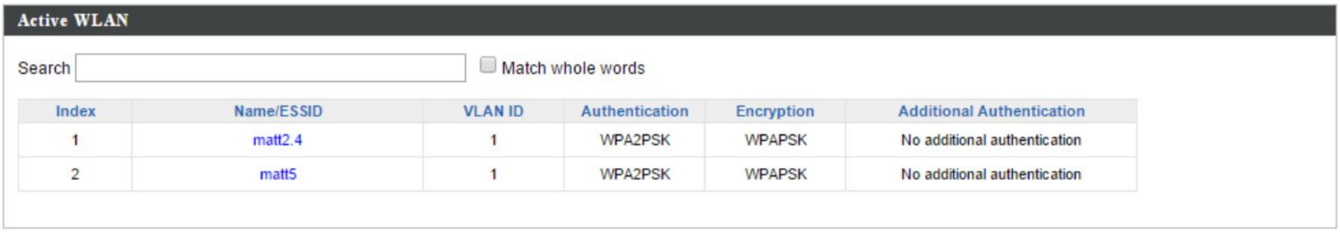
IV-4-2-1. Active WLAN

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:



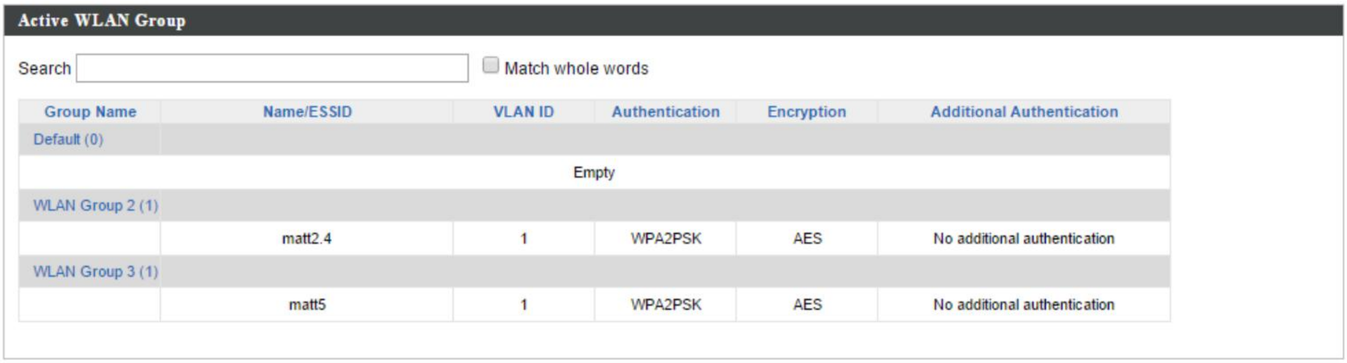


Index	Name/ESSID	VLAN ID	Authentication	Encryption	Additional Authentication
1	matt2.4	1	WPA2PSK	WPAPSK	No additional authentication
2	matt5	1	WPA2PSK	WPAPSK	No additional authentication

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

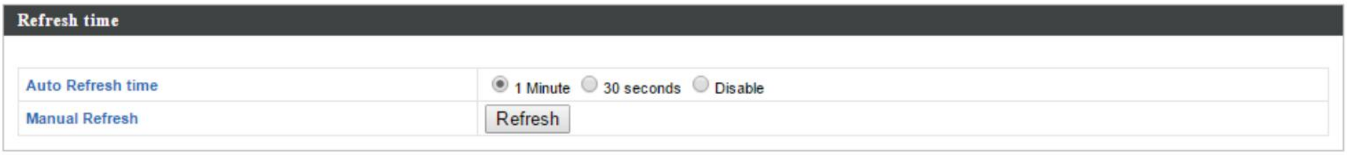
IV-4-3. Clients

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.*

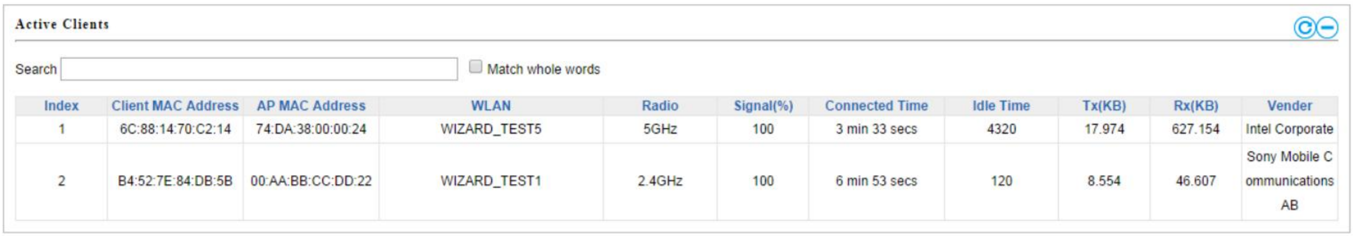
You can set or disable the auto-refresh time for the client list or click “Refresh” to manually refresh.

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

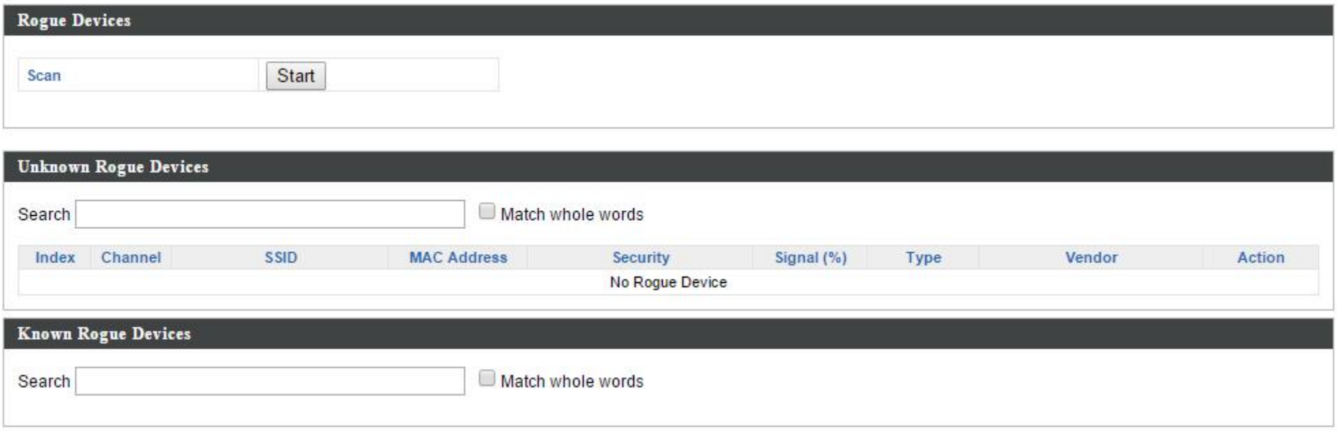
IV-4-4. Rogue Devices

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								

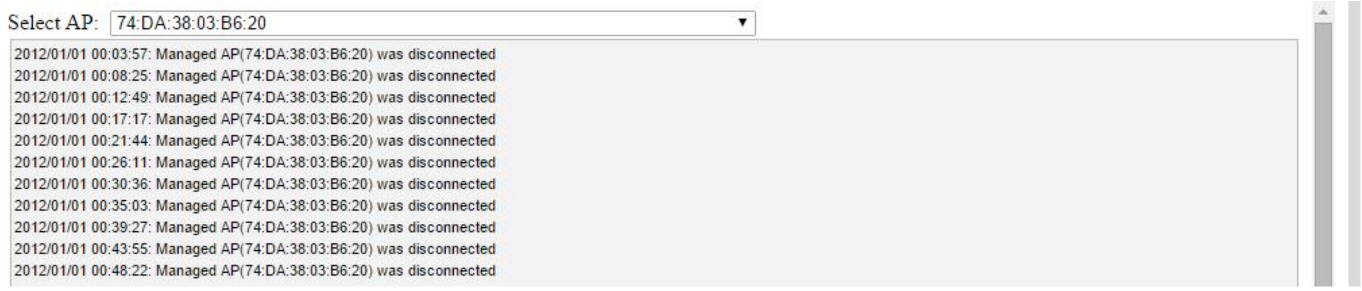
Known Rogue Devices

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

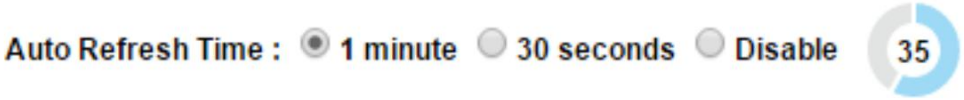
```
2012/01/01 00:03:57: Managed AP(74:DA:38:03:B6:20) was disconnected
2012/01/01 00:08:25: Managed AP(74:DA:38:03:B6:20) was disconnected
2012/01/01 00:12:49: Managed AP(74:DA:38:03:B6:20) was disconnected
2012/01/01 00:17:17: Managed AP(74:DA:38:03:B6:20) was disconnected
2012/01/01 00:21:44: Managed 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

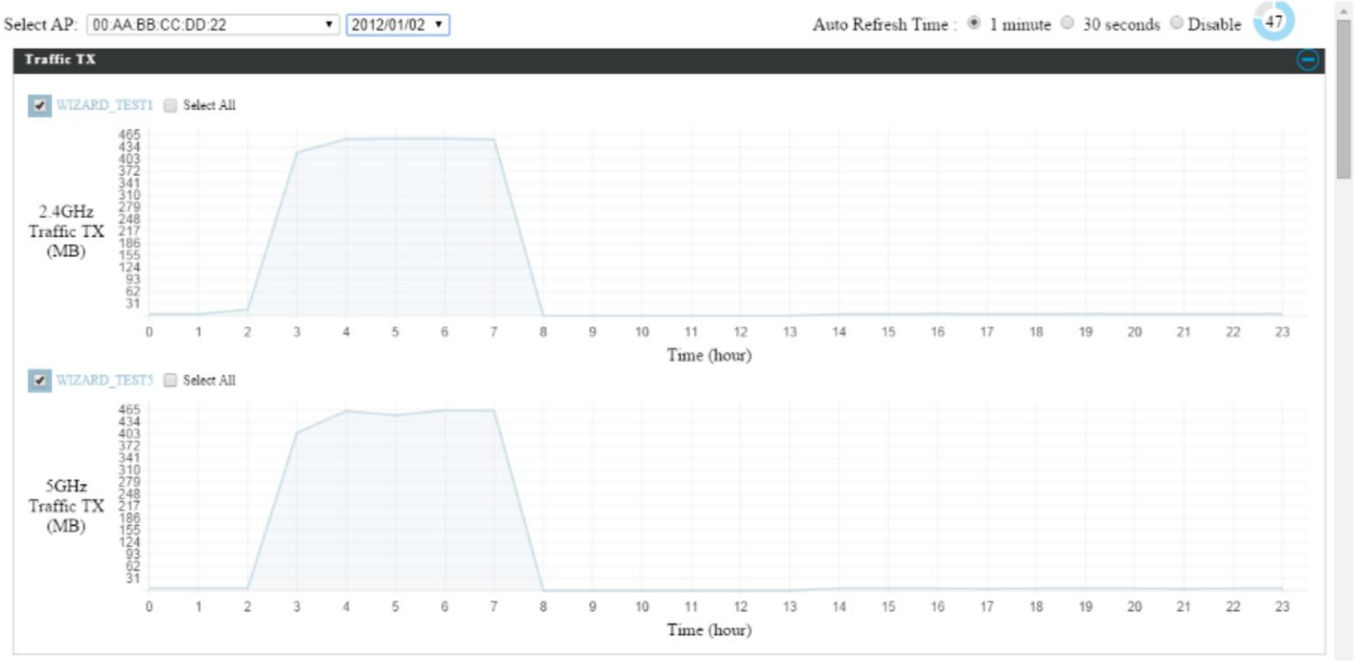
Displays graphical monitoring information about access points in the Array for 2.4GHz & 5GHz: *Traffic Tx (data transmitted in MB), Traffic Rx (data received in MB), No. of Clients, Wireless Channel, Tx Power (wireless radio power), CPU Usage and Memory Usage.*

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

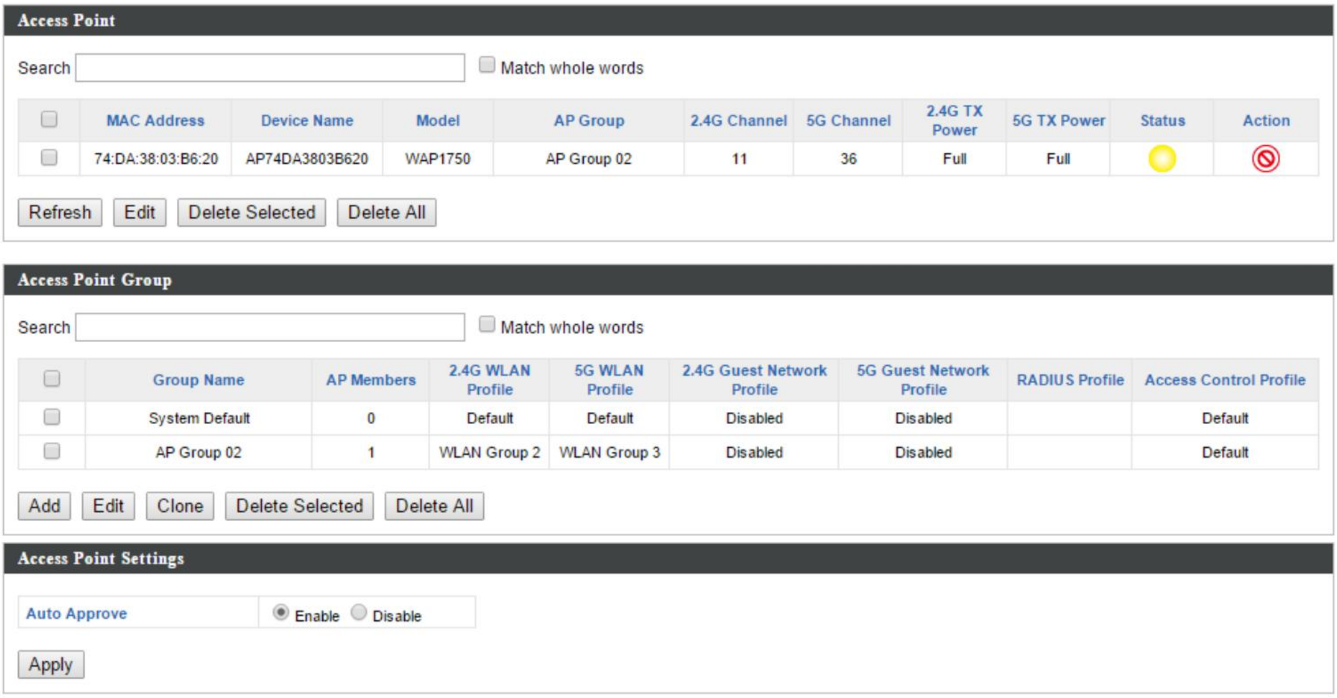
IV-5. NMS Settings

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	●	⊘

Refresh | Edit | Delete Selected | Delete All

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

Add | Edit | Clone | Delete Selected | Delete All

Access Point Settings

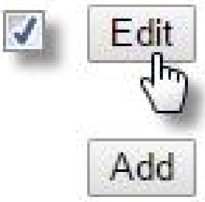
Auto Approve	● Enable ○ Disable

Apply

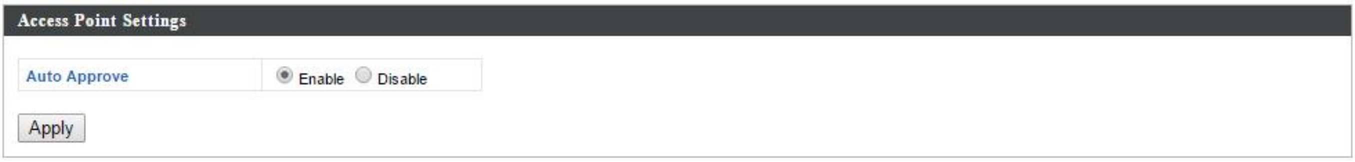
The **Status** icon displays *grey* (disconnected), *red* (authentication failed/incompatible NMS version), *orange* (upgrading firmware), *yellow* (connecting), *green* (connected) or *blue* (waiting for approval) for each individual Managed AP. Refer **to IV-4-1-1. Managed AP:** *Status Icons* for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

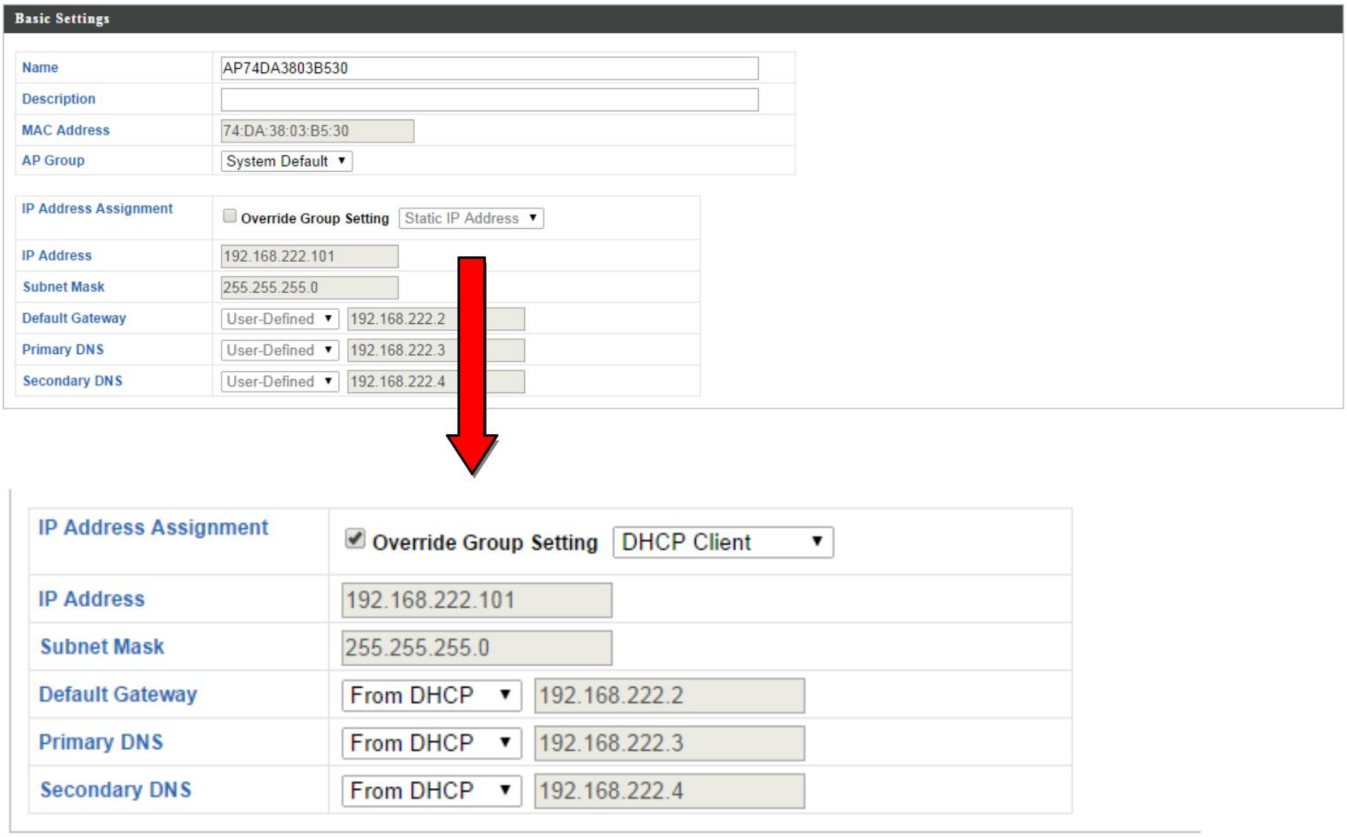
To manually approve a Managed AP, use the *allow* “Action” icon for the specified access point:

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:



Basic Settings

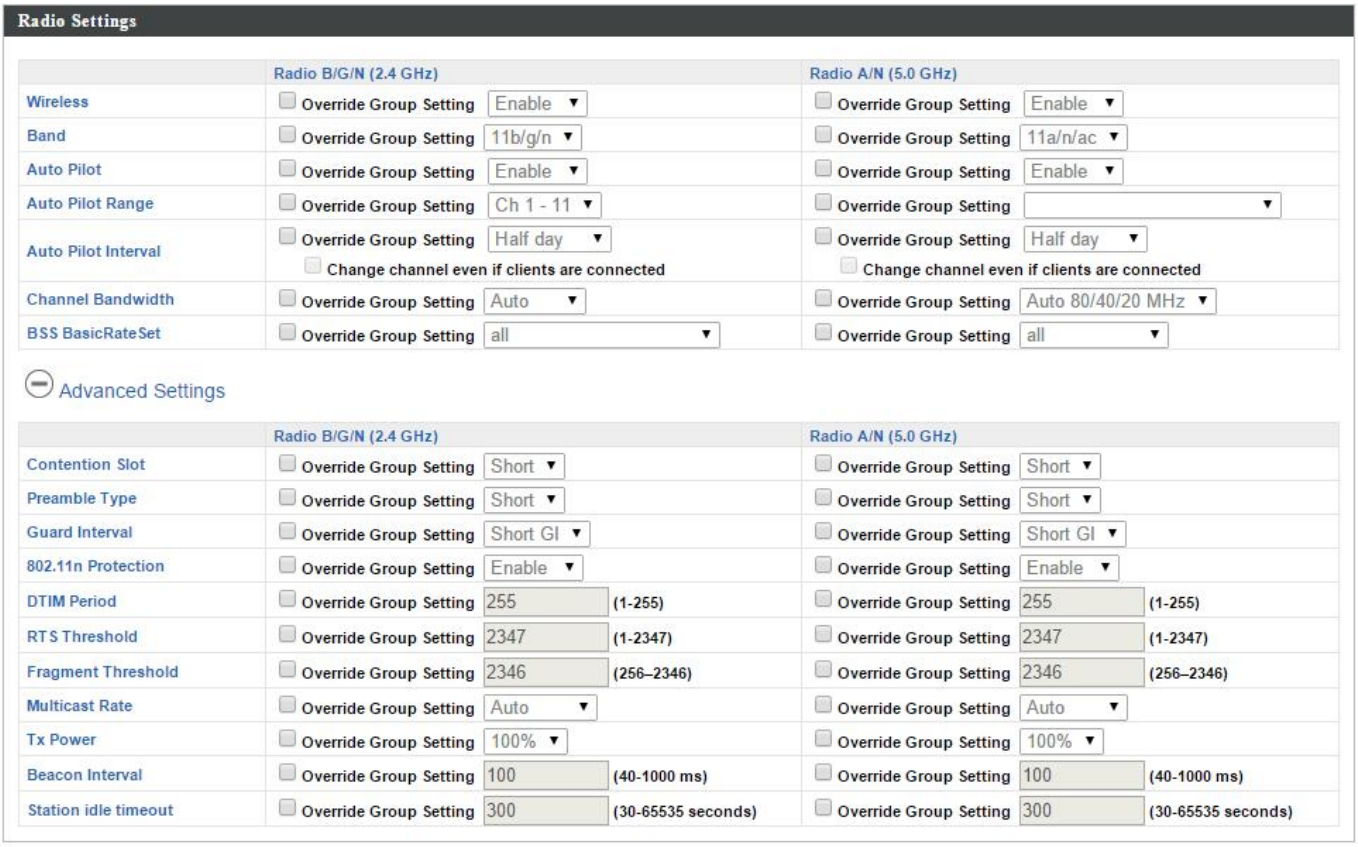
Name	AP74DA3803B530
Description	
MAC Address	74:DA:38:03:B5:30
AP Group	System Default ▾

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

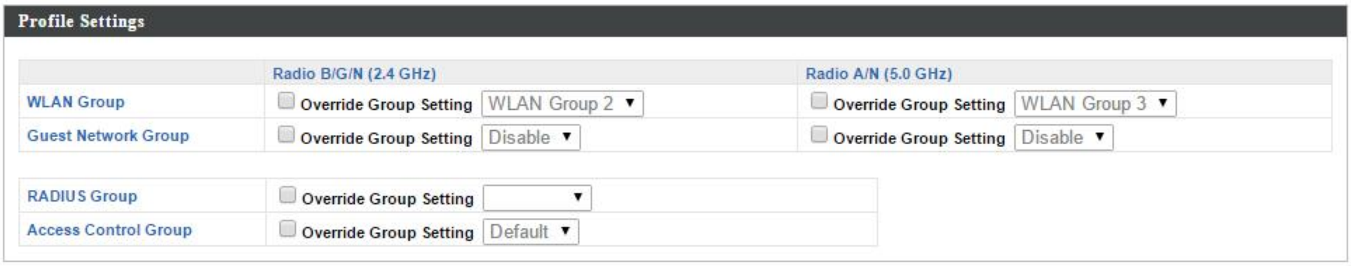
	channel selection will automatically set the wireless channel for the access point's 2.4GHz or 5GHz frequency based on availability and potential interference. When disabled, select a channel manually.
Auto Pilot Range	Select a range from which the auto channel setting (above) will choose a channel.
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

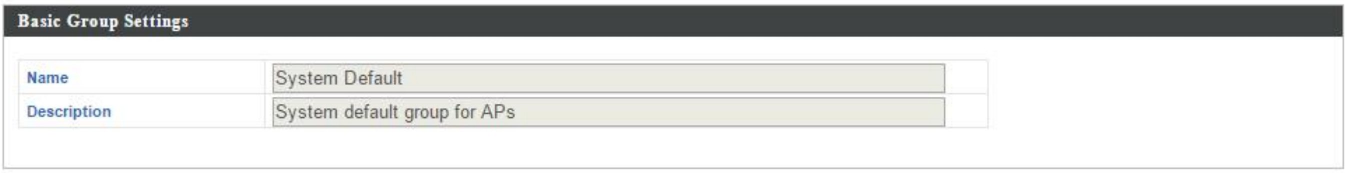
	SSID(s) to a WLAN Group. You can edit WLAN groups in **NMS Settings** → **WLAN**.
Guest Network Group	Assign the access point's 2.4GHz or 5GHz SSID(s) to a Guest Network Group. You can edit Guest Network groups in **NMS Settings** → **Guest Network**.
RADIUS Group	Assign the access point's 2.4GHz SSID(s)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

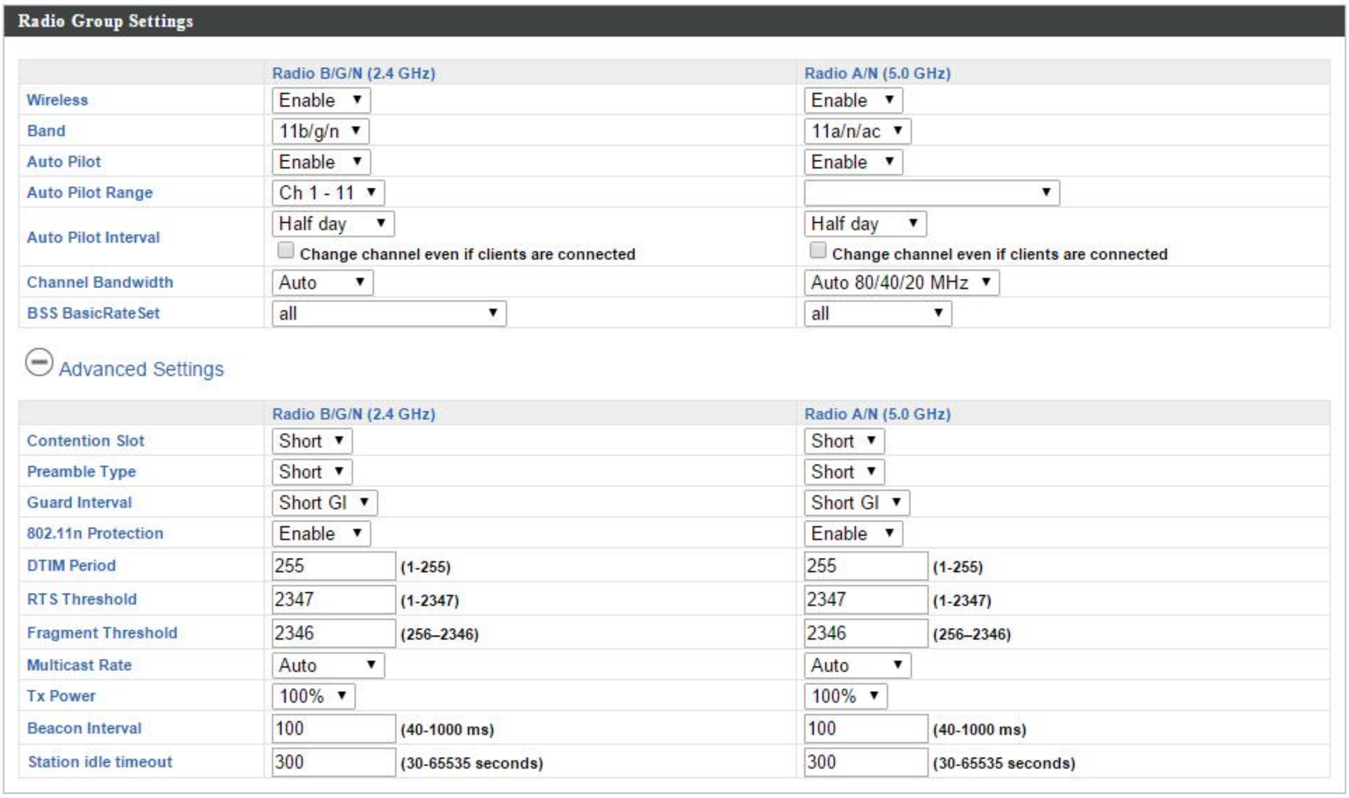
The **Group Settings** panel can be used to quickly move access points between exsiting groups: select an access point and use the drop down menu or search to select access point groups and use << and >> arrows to move APs between groups.



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)

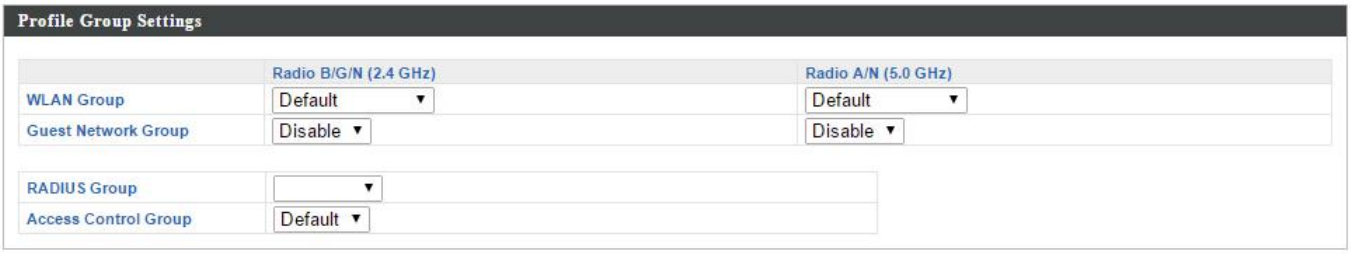
Radio Group Settings	
Wireless	Enable or disable the access point group's 2.4GHz or 5GHz wireless radio. When disabled, no SSIDs on that frequency will be active.
Band	Select the wireless standard used for the access point group. Combinations of 802.11b, 802.11g, 802.11n & 802.11ac can be selected.
Auto 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**).

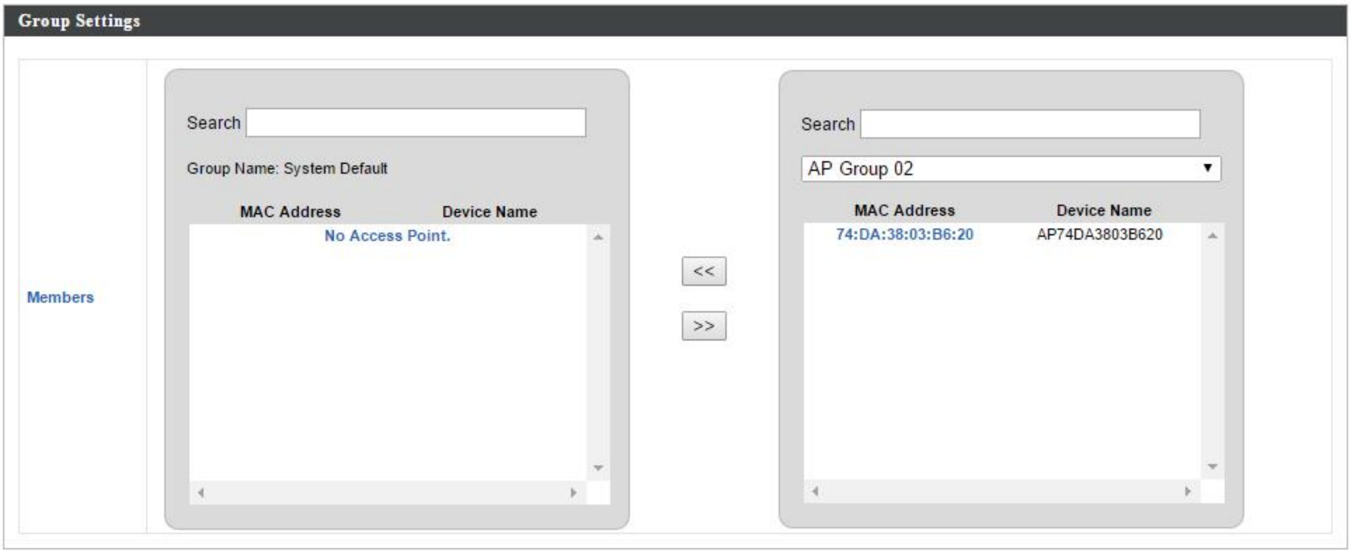
Preamble Type	Set the wireless radio preamble type. The preamble type in 802.11 based wireless communication defines the length of the CRC (Cyclic Redundancy Check) block for communication between the access point and roaming wireless adapters. The default value is “Short Preamble”.
Guard Interval	Set 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 ▾

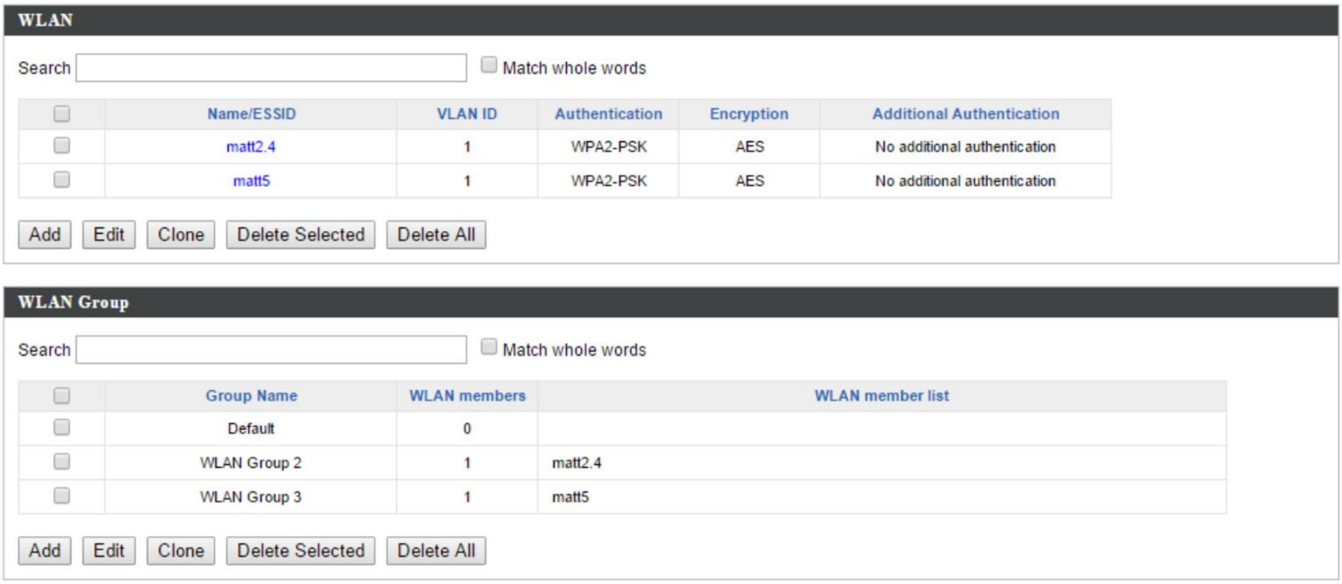
MAC Address	Device Name
74:DA:38:03:B6:20	AP74DA3803B620

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:



WLAN

Search □ Match whole words

□	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

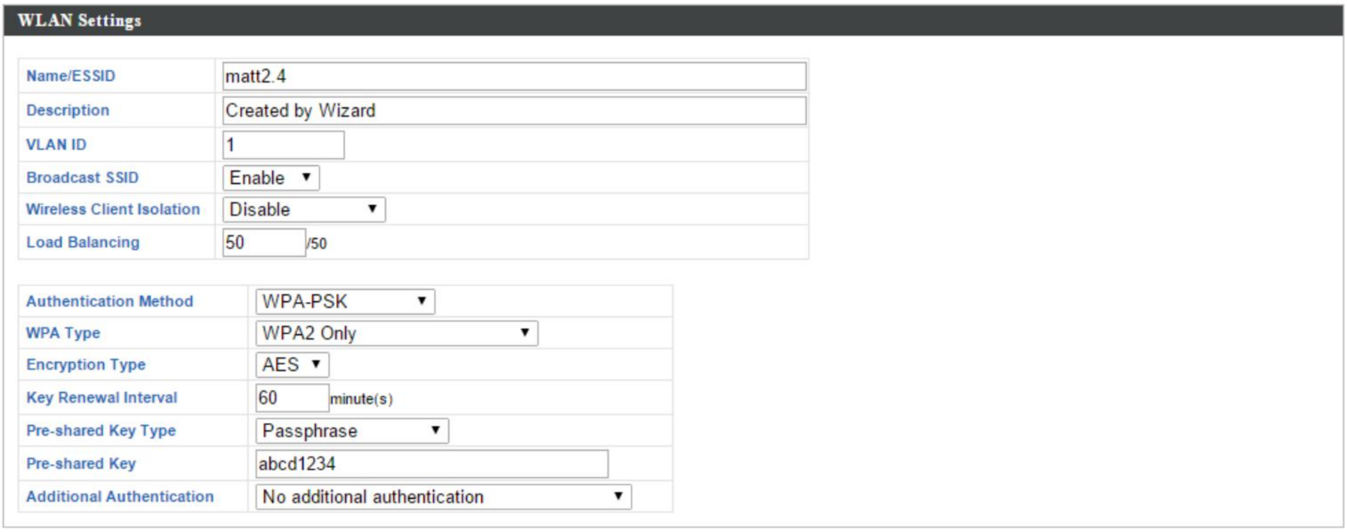
WLAN Group

Search □ Match whole words

□	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:

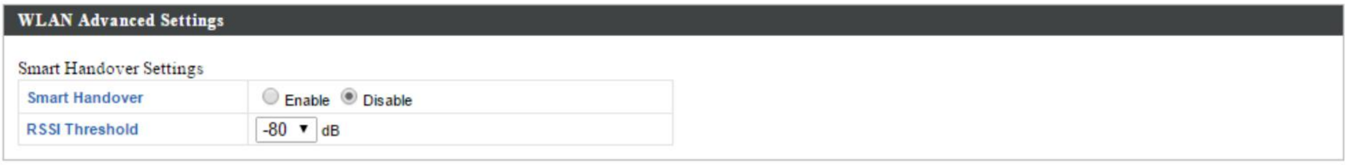
Add/Edit WLAN



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.

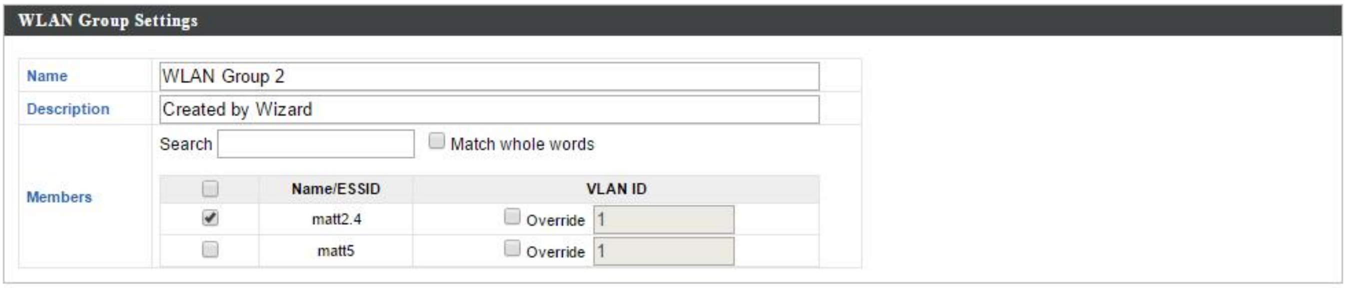
Select hard-to-guess passwords which include combinations of numbers, letters and symbols, and change your password regularly.

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

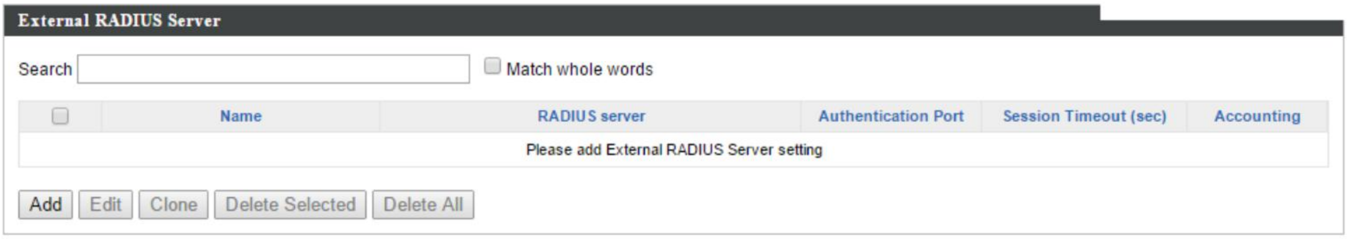
WLAN Group Settings	
Name	Edit the WLAN Group name.
Description	Enter a description of the WLAN Group for reference e.g. 2nd Floor Office HR Group.
Members	Select SSIDs to include in the group using the checkboxes and assign VLAN IDs.

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:

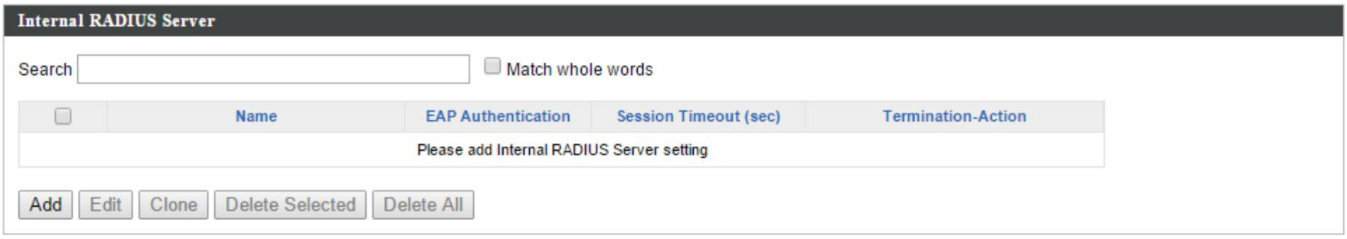
Make a selection using the check-boxes and click "**Edit**" or click "**Add**" to add a new WLAN or WLAN Group:



External RADIUS Server

Search □ Match whole words

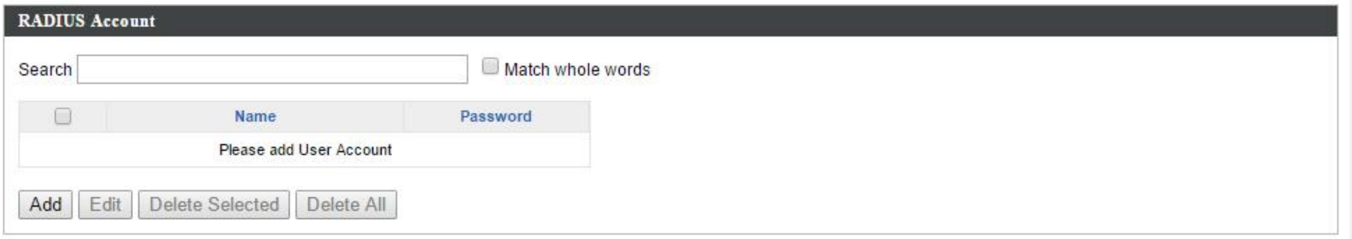
□	Name	RADIUS server	Authentication Port	Session Timeout (sec)	Accounting
Please add External RADIUS Server setting					



Internal RADIUS Server

Search □ Match whole words

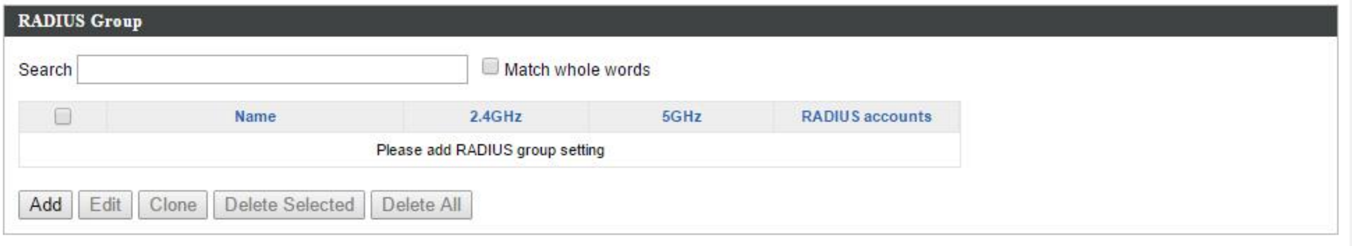
□	Name	EAP Authentication	Session Timeout (sec)	Termination-Action
Please add Internal RADIUS Server setting				



RADIUS Account

Search □ Match whole words

□	Name	Password
Please add User Account		

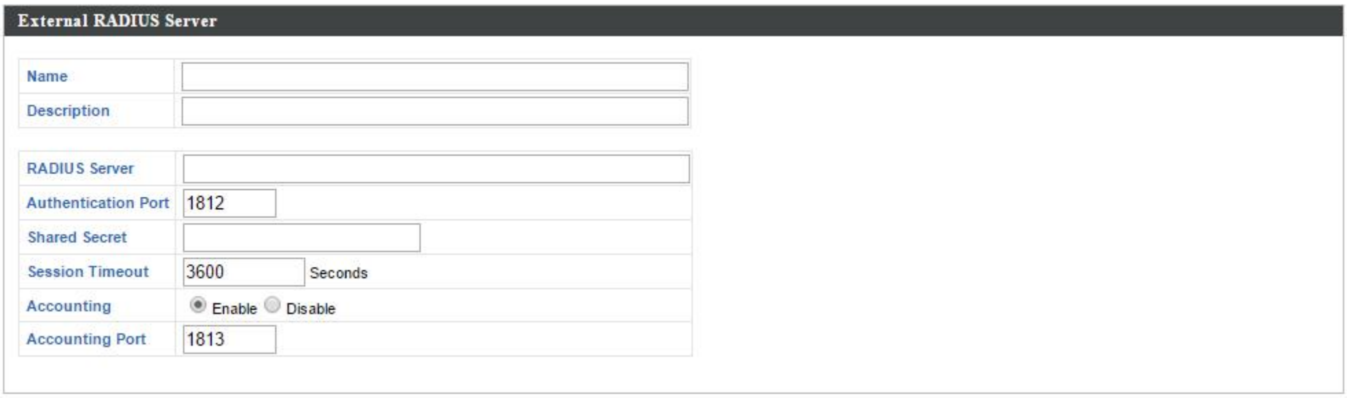


RADIUS Group

Search □ Match whole words

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

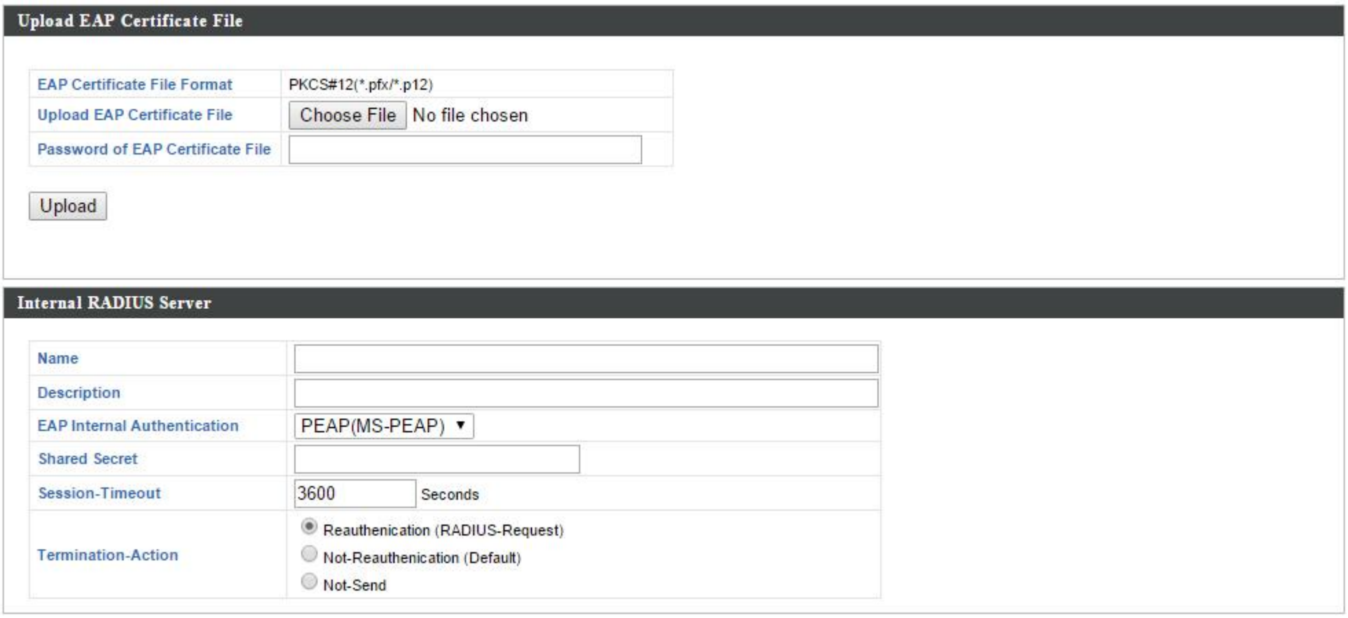
Add/Edit External RADIUS Server



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

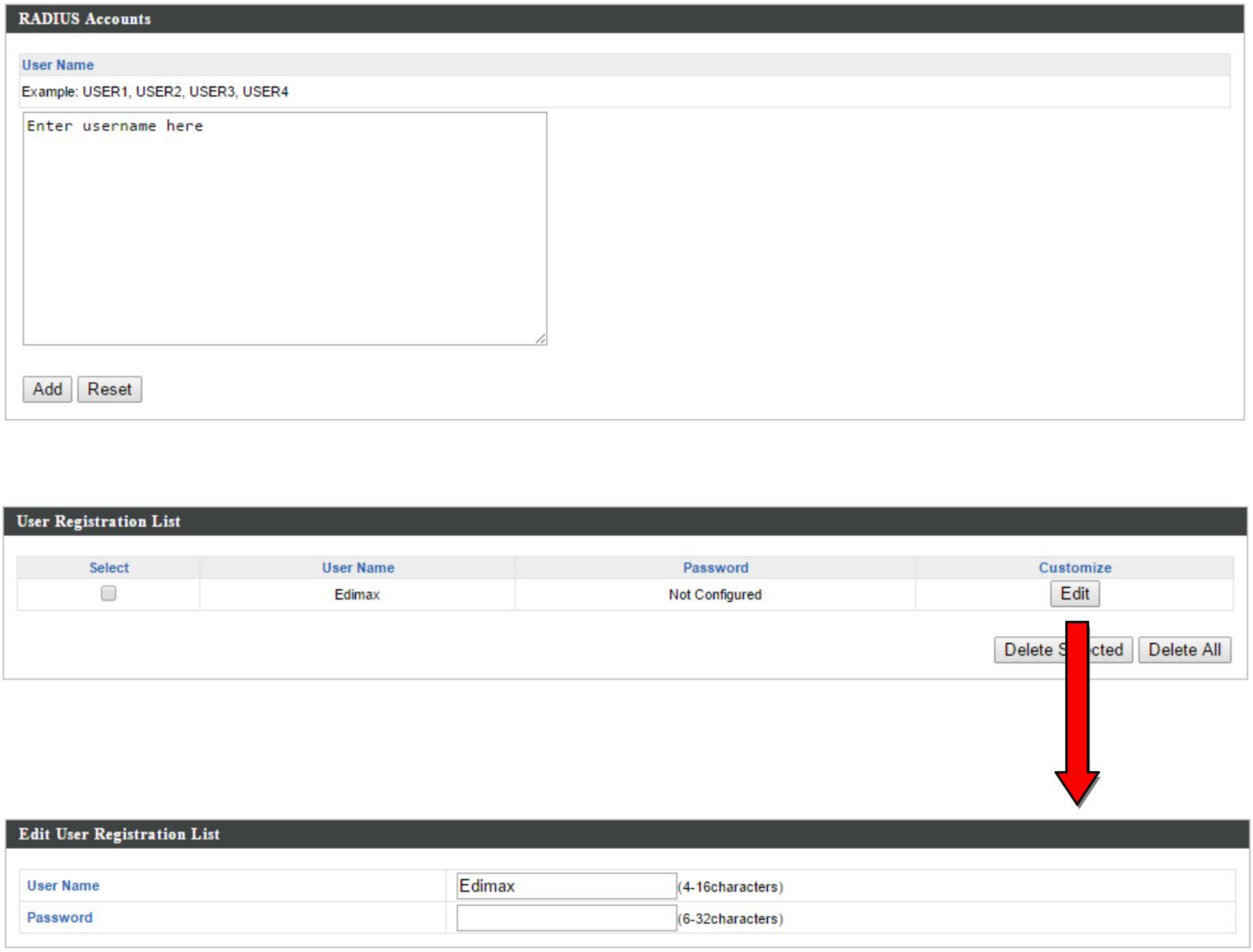
Upload EAP Certificate File	
EAP Certificate File Format	Displays the EAP certificate file format: PCK#12(*.pfx/*.p12)
EAP Certificate File	Click "Upload" to open a new window and select the location of an EAP certificate file to use. If no certificate file is uploaded, the internal RADIUS server will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

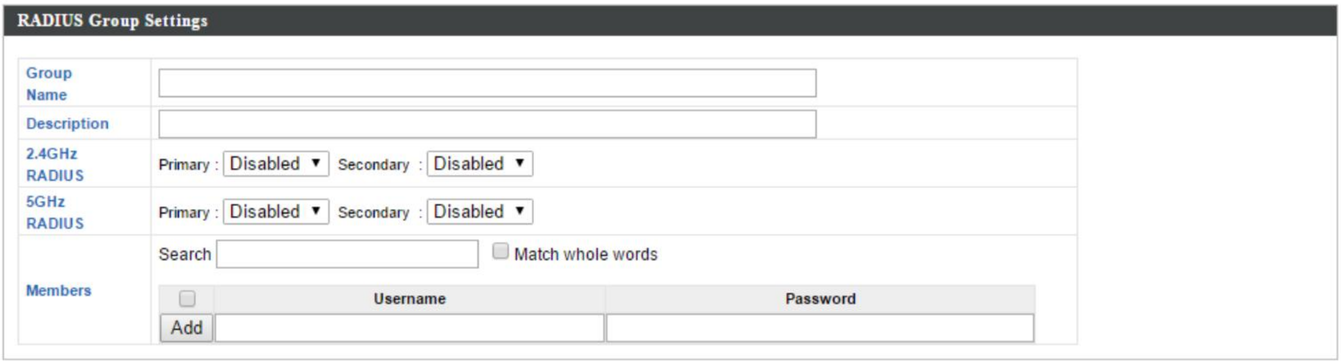
User Registration List	
Select	Check the box to select a user.
User Name	Displays the user name.
Password	Displays if specified user name has a password (configured) or not (not configured).
Customize	Click “Edit” to open a new field to set/edit a password for the specified user name (below).

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

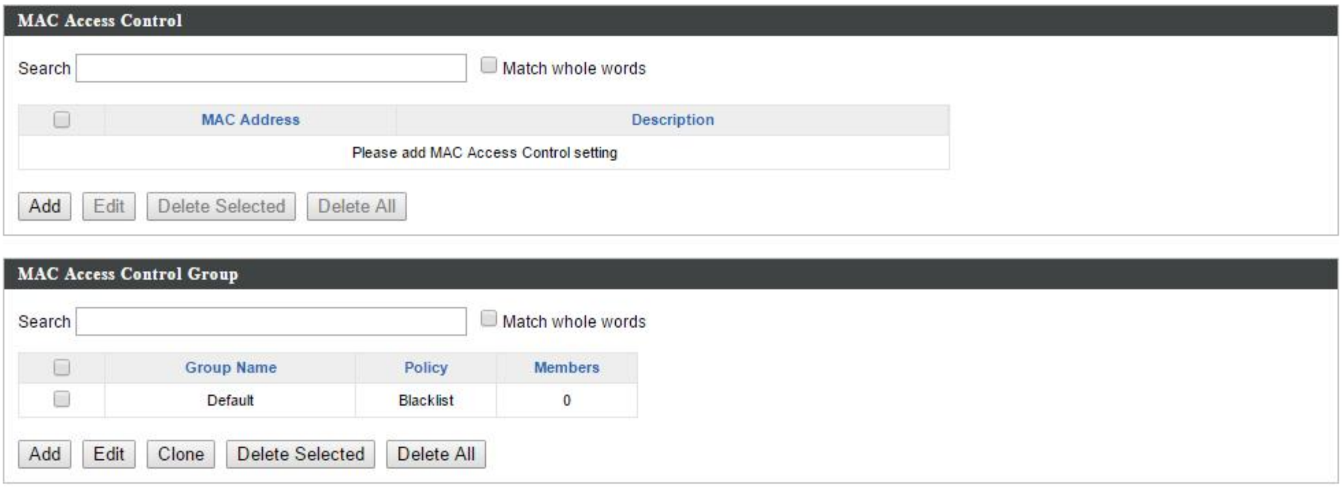
MAC Access Control is a security feature that can help to prevent unauthorized users from connecting to your access point.

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

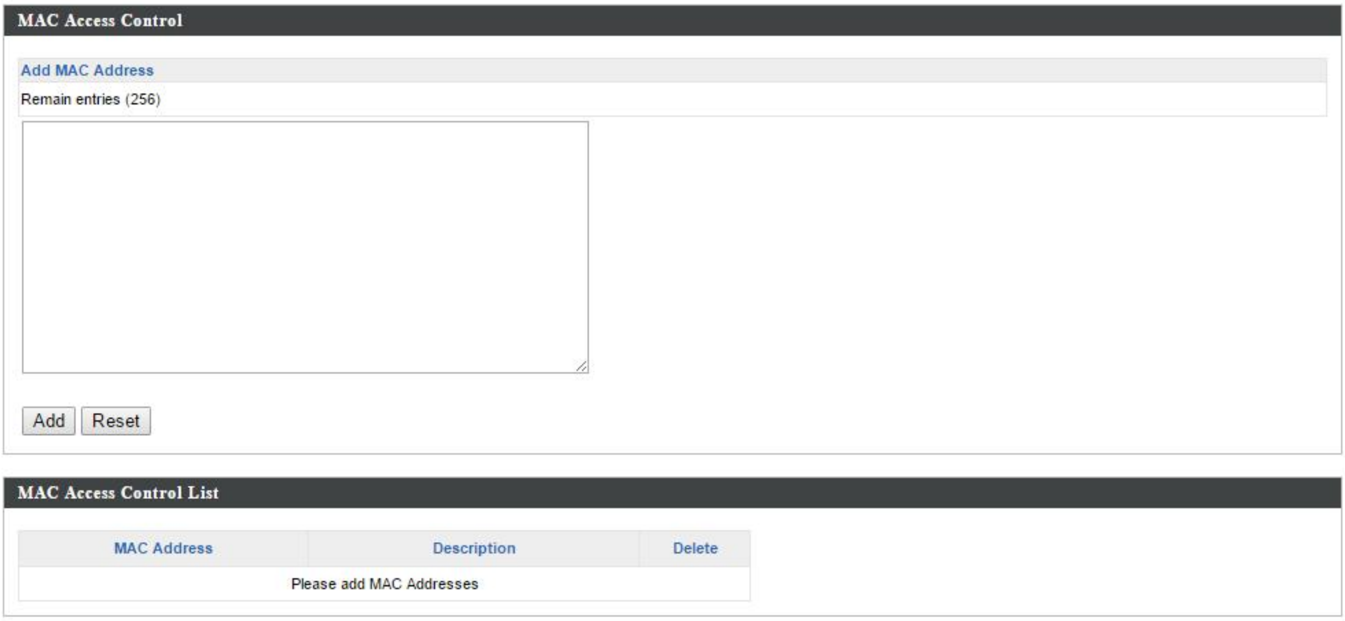
□	MAC Address	Description
Please add MAC Access Control setting		

MAC Access Control Group

Search □ Match whole words

□	Group Name	Policy	Members
□	Default	Blacklist	0

Add/Edit MAC Access Control



Remain entries (256)

MAC Address	Description	Delete
Please add MAC Addresses		

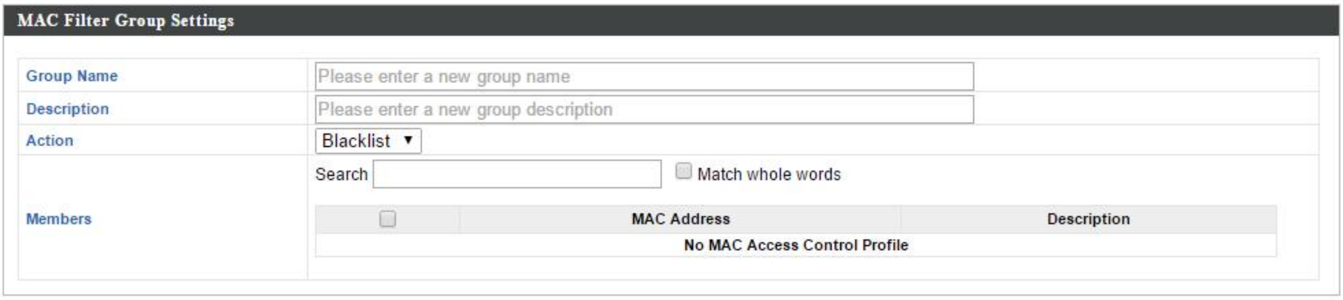
Add MAC Address	Enter a MAC address of computer or network device manually e.g. ‘aa-bb-cc-dd-ee-ff’ or enter multiple MAC addresses separated with commas, e.g. ‘aa-bb-cc-dd-ee-ff,aa-bb-cc-dd-ee-gg’
Add	Click “Add” to add the MAC address to the MAC address filtering table.
Reset	Clear all fields.

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.

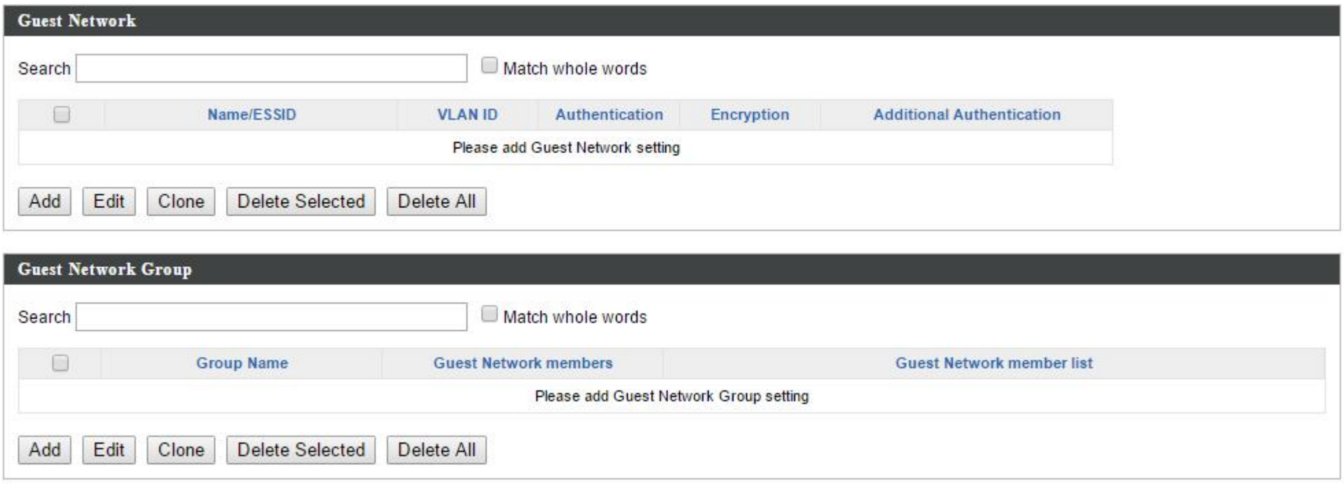
IV-5-5. Guest Network

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					

Add | Edit | Clone | Delete Selected | Delete All

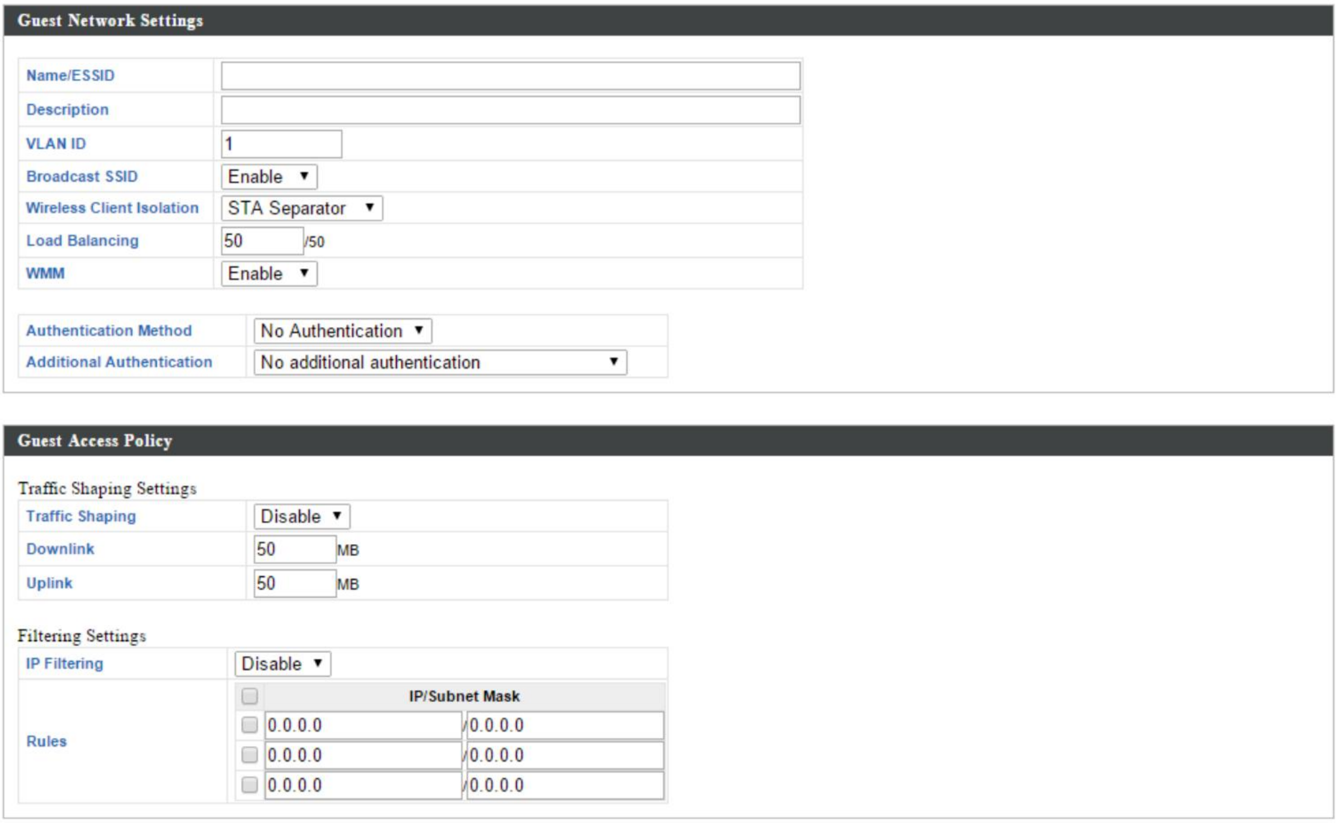
Guest Network Group

Search ☐ Match whole words

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

Add | Edit | Clone | Delete Selected | Delete All

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.

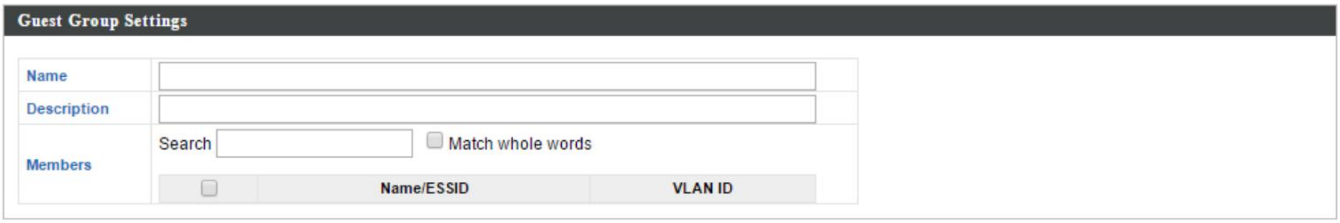
Select hard-to-guess passwords which include combinations of numbers, letters and symbols, and change your password regularly.

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.

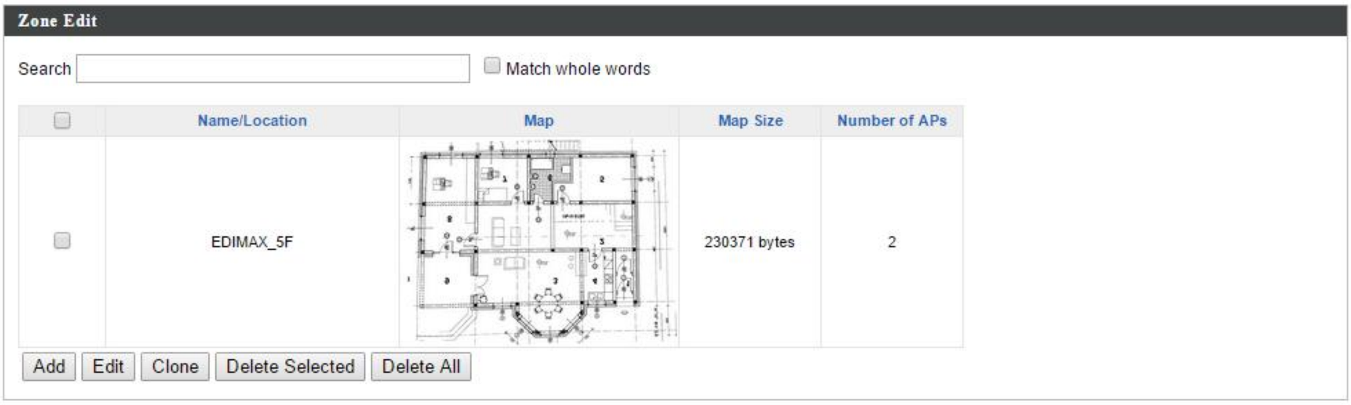
The **search** function can be used to find existing zones. Type in the search box and the list will update:

Search □ Match whole words

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

☑ Edit

Add



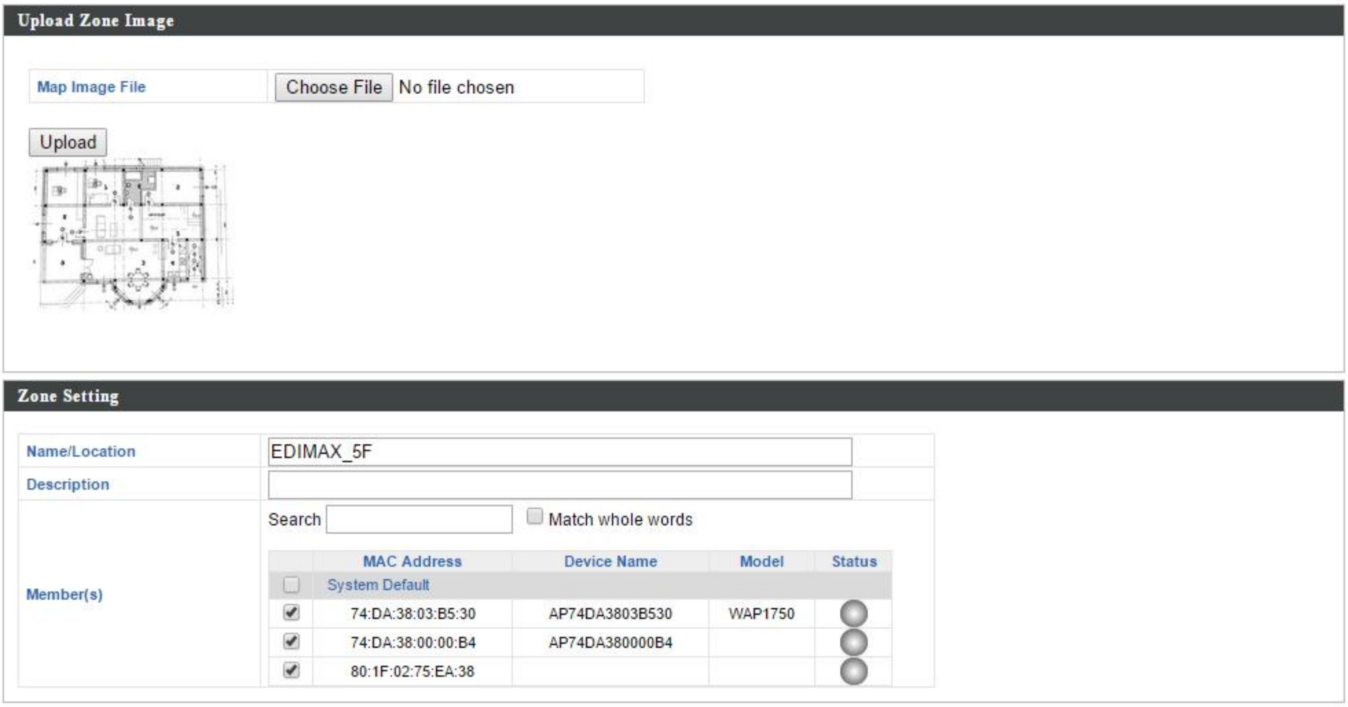
Zone Edit

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

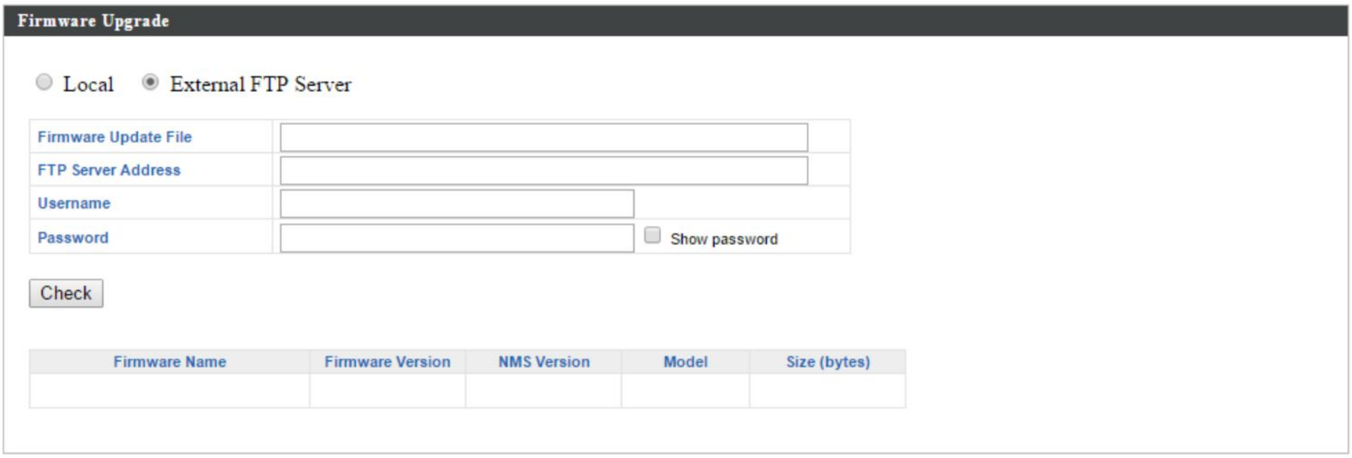
	MAC Address	Device Name	Model	Status
□	System Default			
☑	74:DA:38:03:B5:30	AP74DA3803B530	WAP1750	●
☑	74:DA:38:00:00:B4	AP74DA380000B4		●
☑	80:1F:02:75:EA:38			●

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.

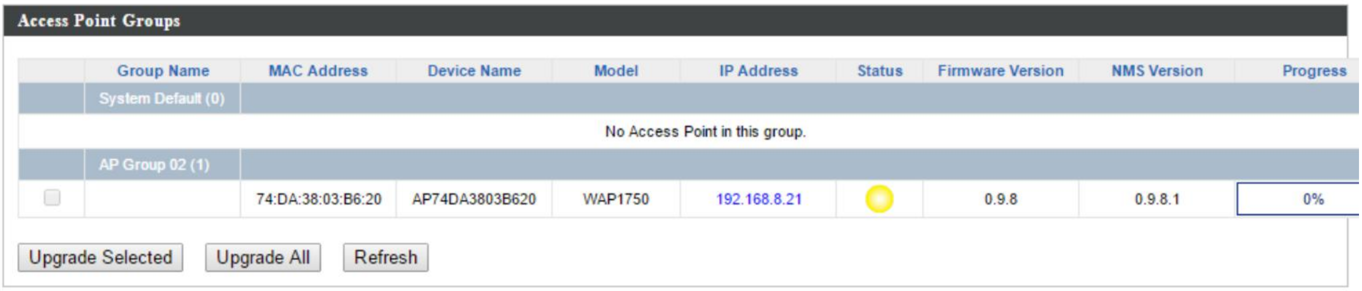


Firmware Upgrade

○ Local ● External FTP Server

Firmware Update File	
FTP Server Address	
Username	
Password	□ Show password

Firmware Name	Firmware Version	NMS Version	Model	Size (bytes)



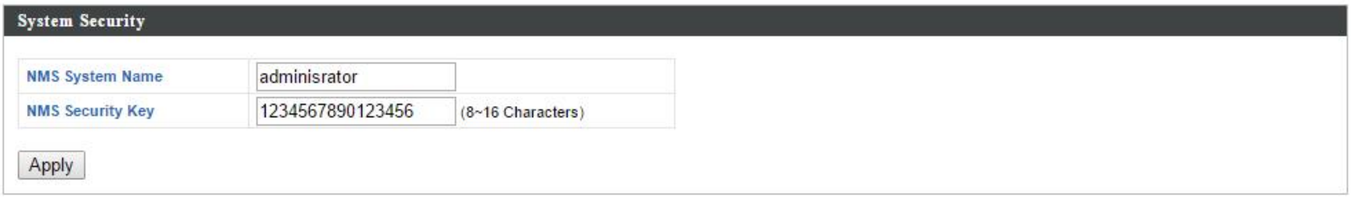
Access Point Groups

	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.

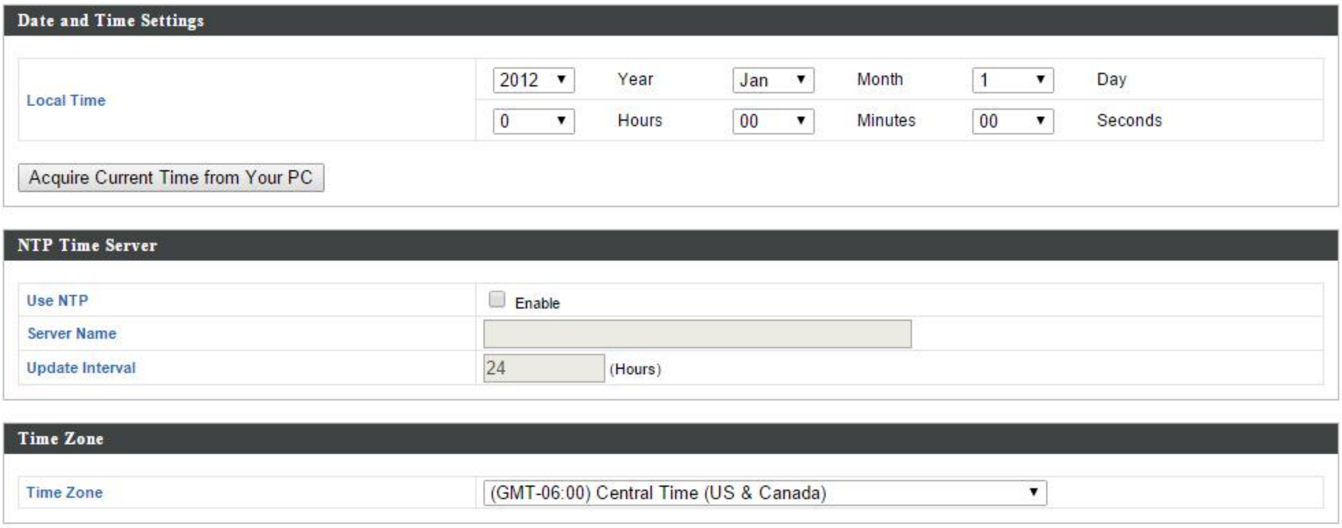


System Security

NMS System Name	adminisrator
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

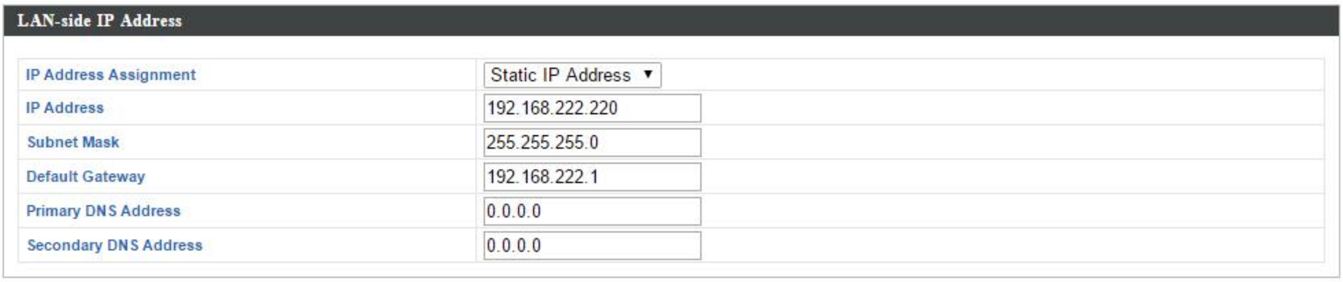
IV-6-1. Network Settings

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.***



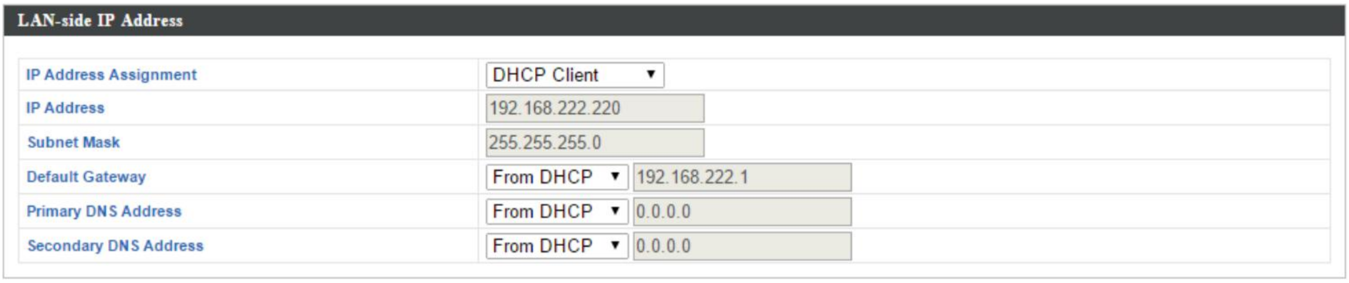
LAN-side IP Address

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

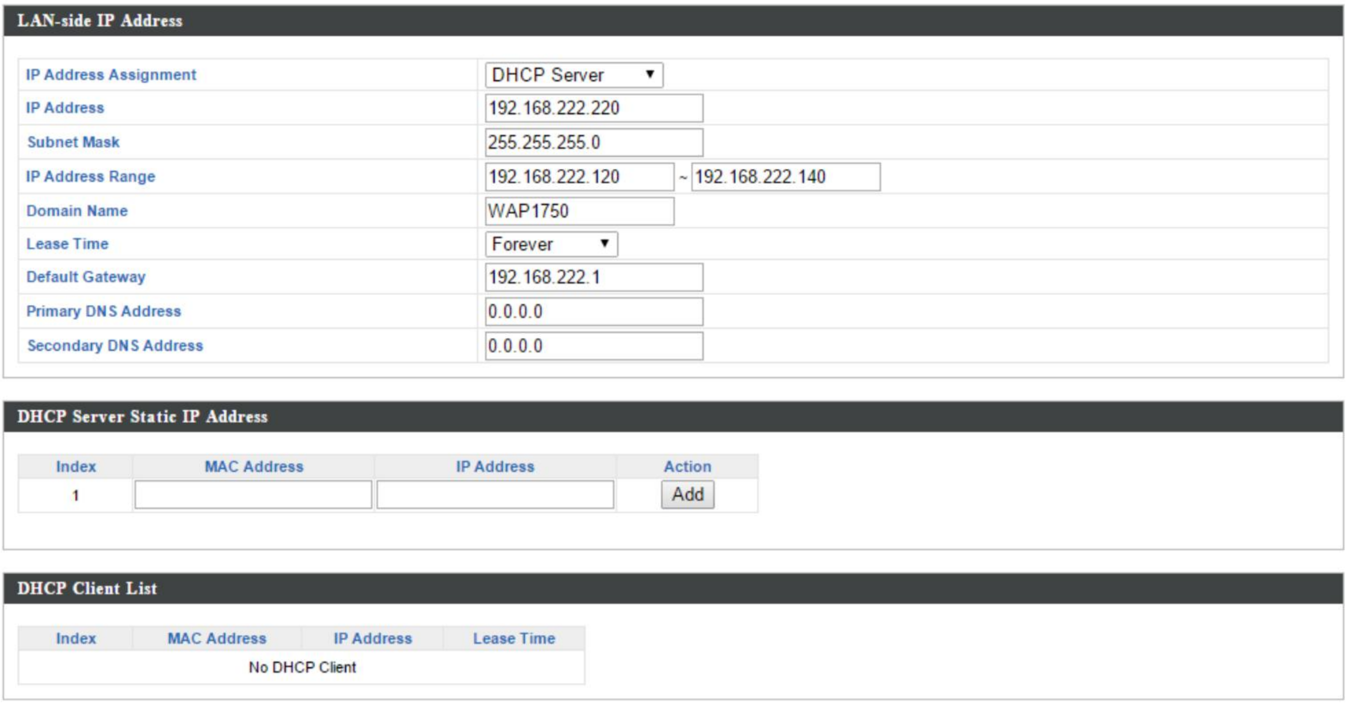
	replace the default IP address.
Subnet Mask	Specify a subnet mask. The default value is 255.255.255.0
Default Gateway	For DHCP users, select “From DHCP” to get default gateway from your DHCP server or “User-Defined” to enter a gateway manually. For static IP users, the default value is blank.
Primary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

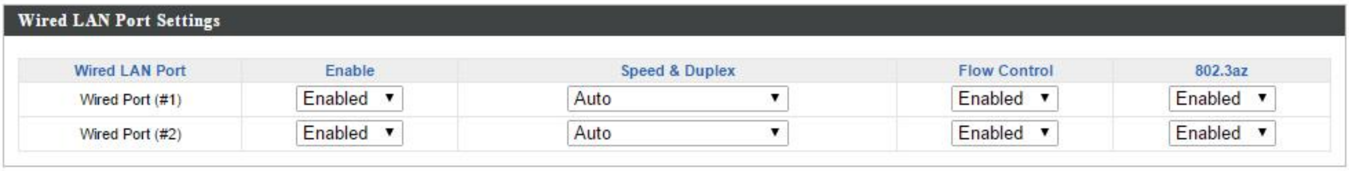
Your access point's DHCP server can be configured to assign static (fixed) IP addresses to specified network devices, identified by their unique MAC address:

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

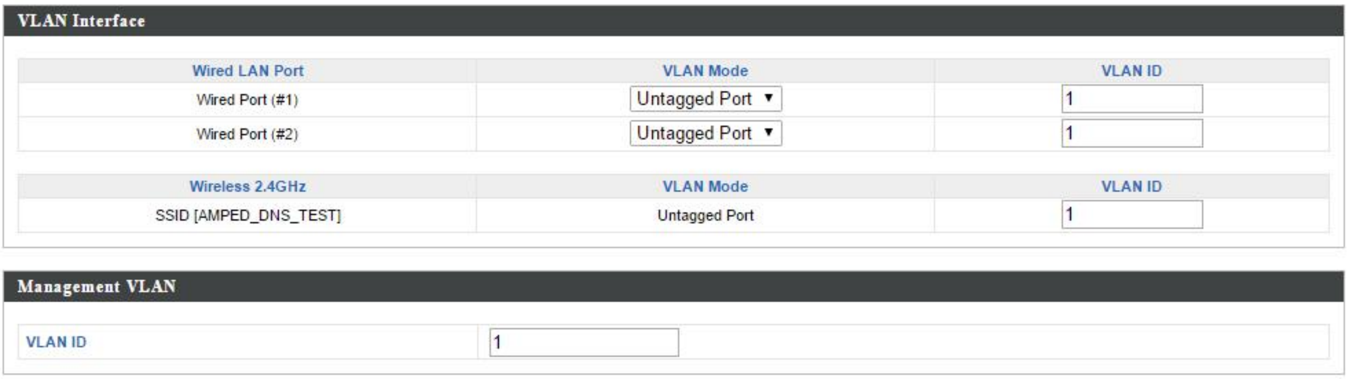
Wired LAN Port	Enable	Speed & Duplex	Flow Control	802.3az
Wired Port (#1)	Enabled ▼	Auto ▼	Enabled ▼	Enabled ▼
Wired Port (#2)	Enabled ▼	Auto ▼	Enabled ▼	Enabled ▼

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.

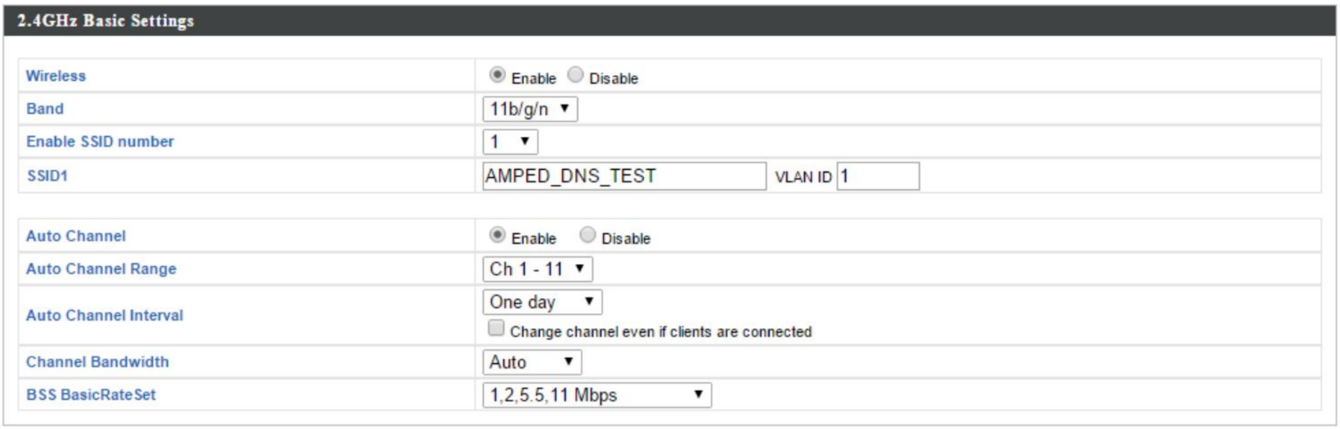
Management VLAN	
VLAN ID	Specify the VLAN ID of the management VLAN. Only the hosts belonging to the same VLAN can manage the device.

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.

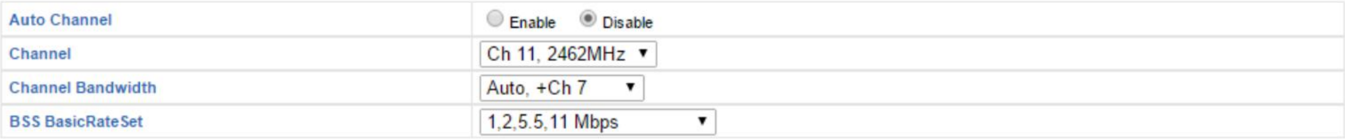
IV-6-2-1. Basic

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.

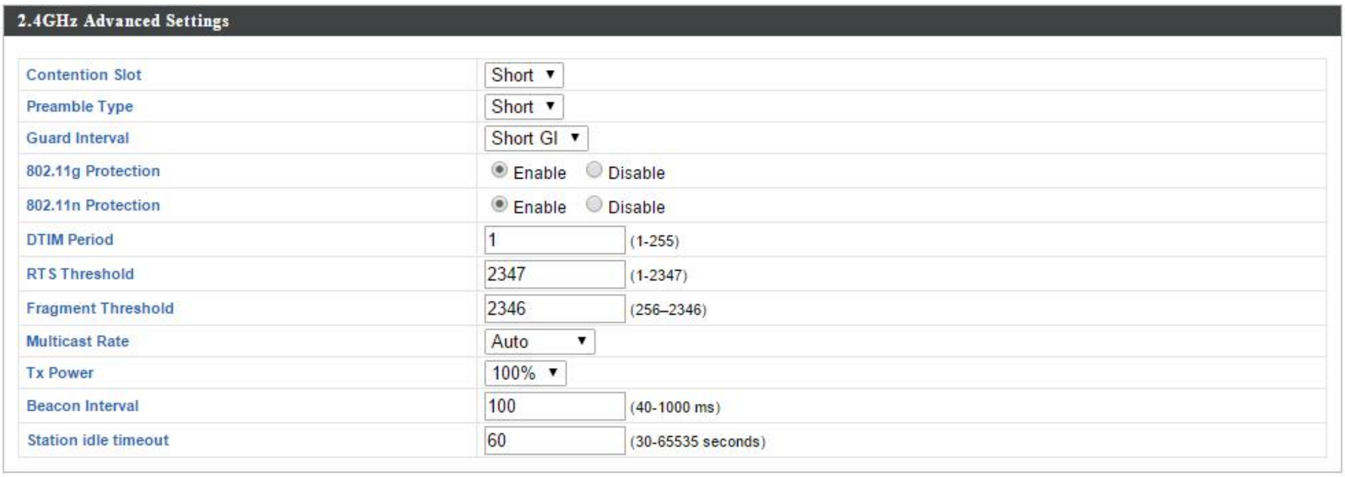
When auto channel is disabled, select a wireless channel manually:

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.)

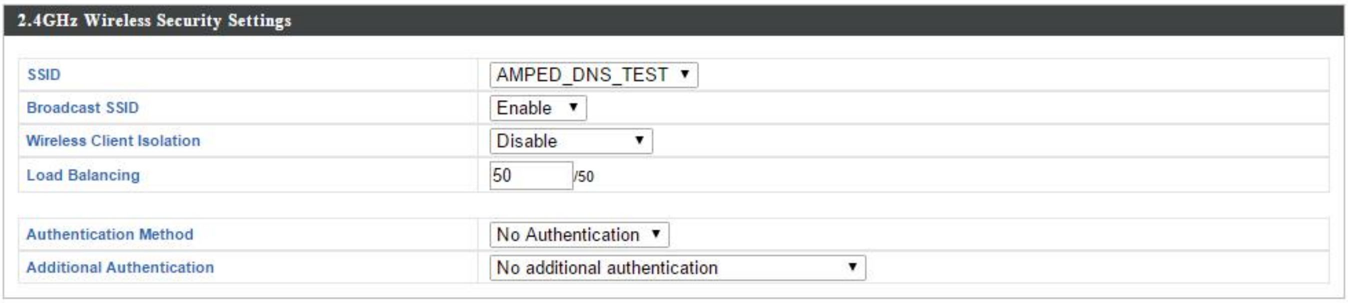
802.11n Protection	Enable/disable 802.11n protection, which increases reliability but reduces bandwidth (clients will send Request to Send (RTS) to access point, and access point will broadcast Clear to Send (CTS), before a packet is sent from client.)
DTIM Period	Set the DTIM (delivery traffic indication 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

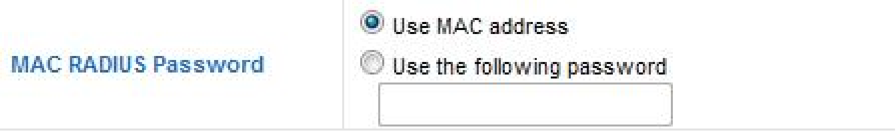
Restrict wireless clients access using both of the above MAC filtering & RADIUS authentication methods.

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

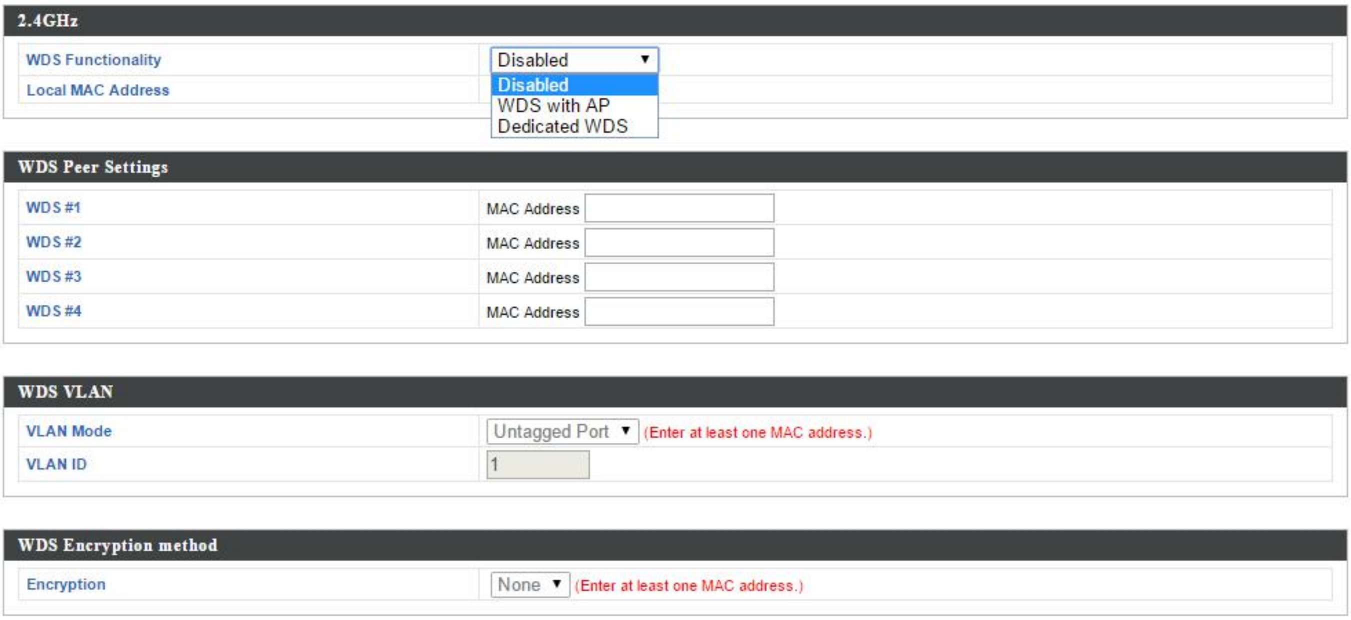
MAC RADIUS Password	Select whether to use MAC address or password authentication via RADIUS server. If you select “Use the following password”, enter the password in the field below. The password should match the “Shared Secret” used in **IV-6-5. RADIUS**.

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.

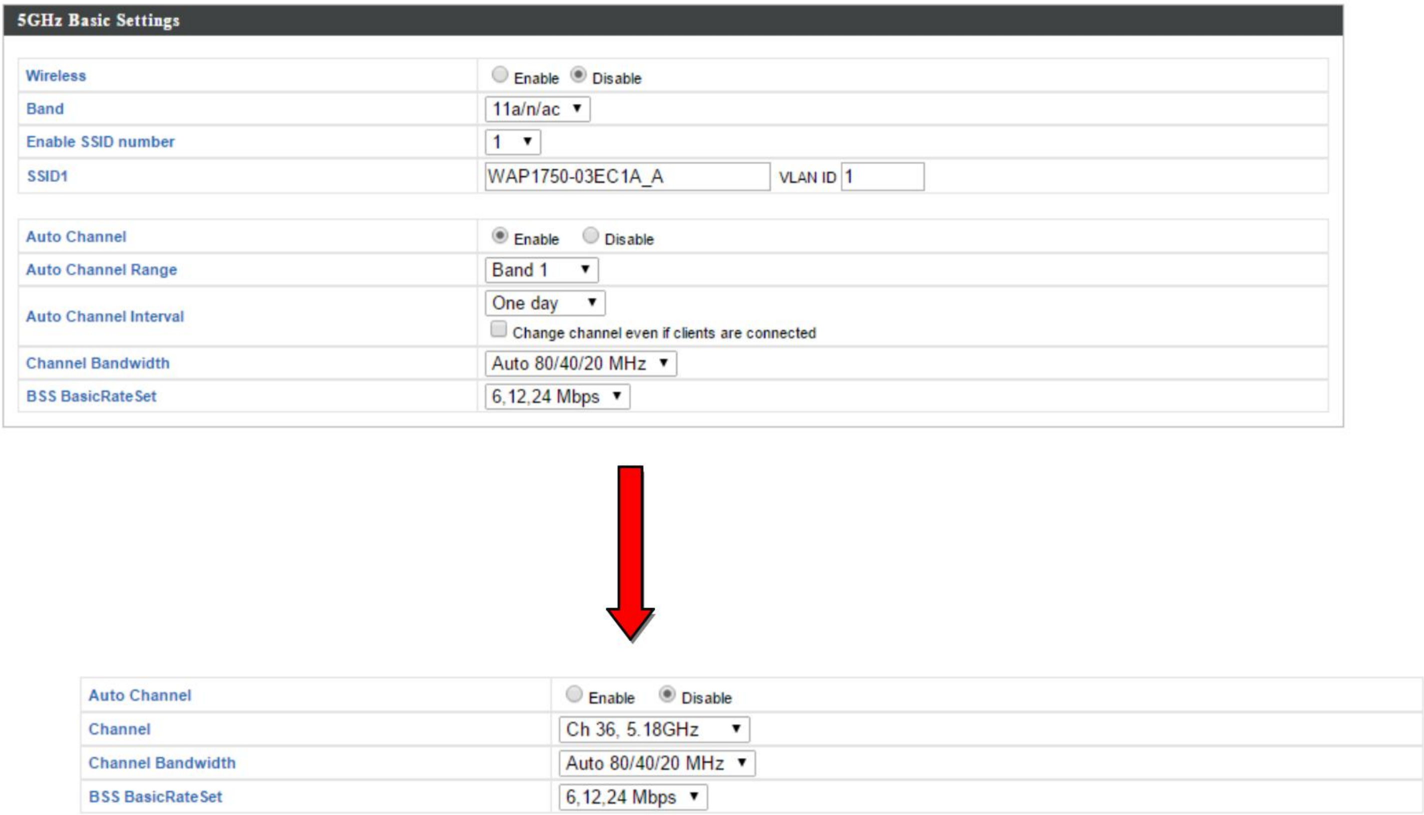
WDS Encryption method	
Encryption	Select whether to use “None” or “AES” encryption and enter a pre-shared key for AES consisting of 8-63 alphanumeric characters.

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.

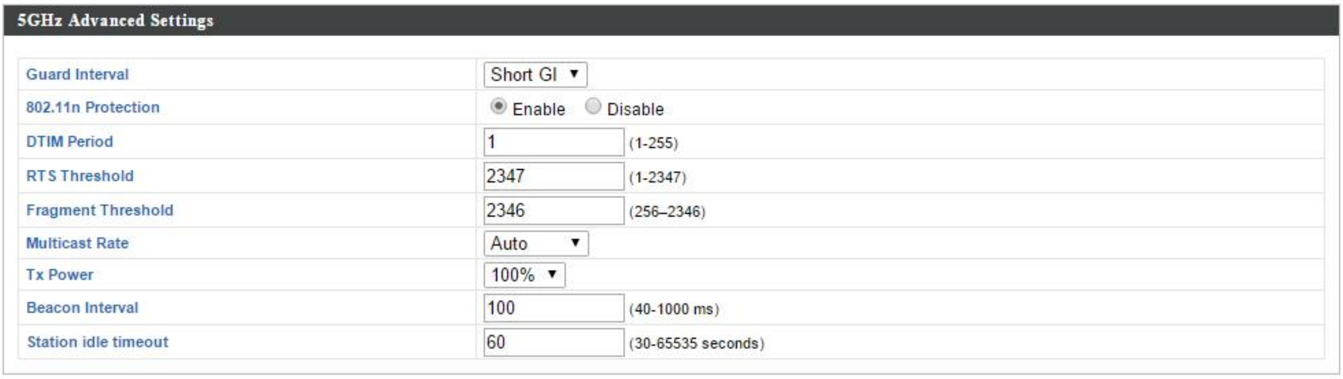
When auto channel is disabled, select a wireless channel manually:

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.

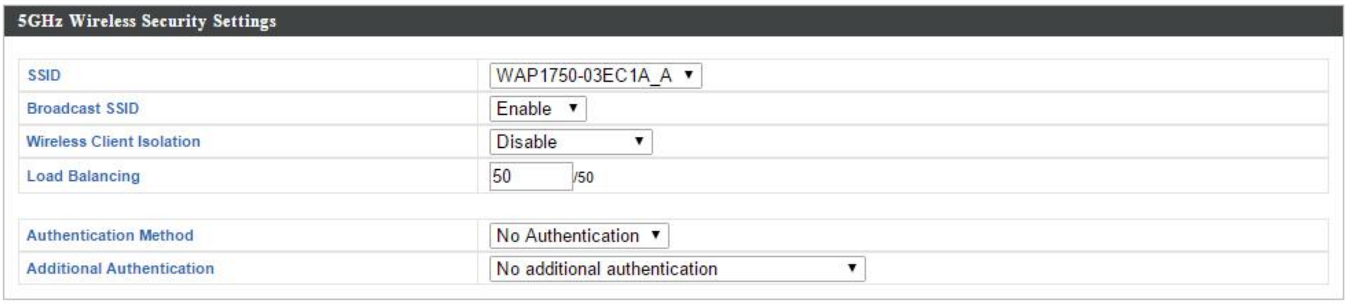
Beacon Interval	Set the beacon interval of the wireless radio. The default value is 100.
Station idle timeout	Set the interval for keepalive messages from the access point to a wireless client to verify if the station is still alive/active.

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.

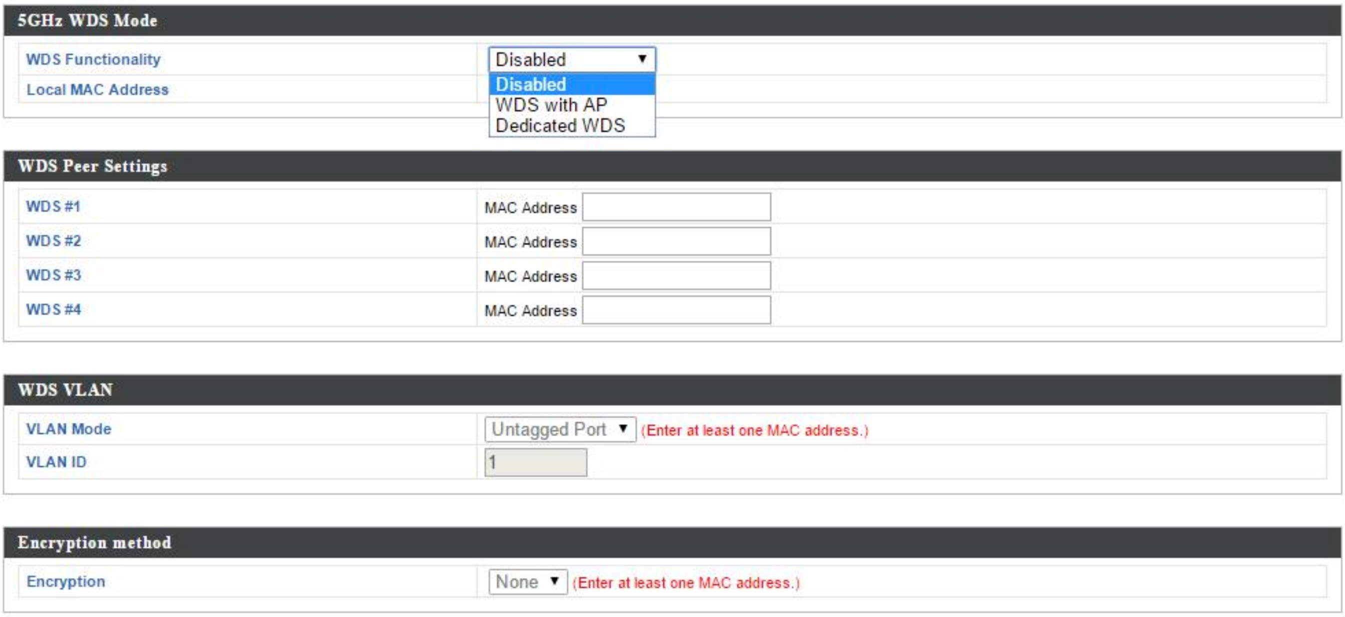
Please refer back to **IV-6-2-3. Security** for more information on authentication and additional authentication types.

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 ▾
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.

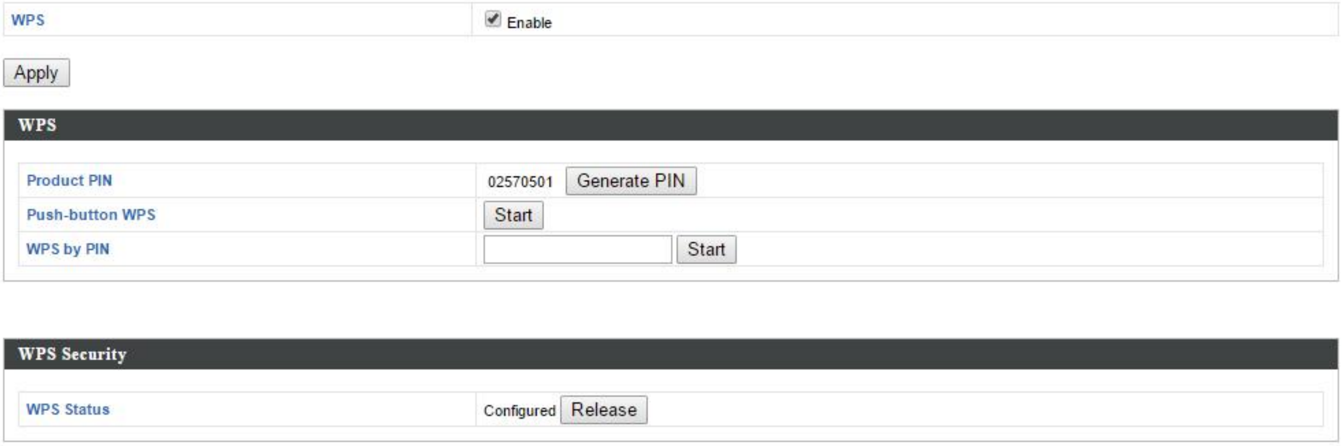
WDS VLAN	
VLAN Mode	Specify the WDS VLAN mode to "Untagged Port" or "Tagged Port".
VLAN ID	Specify the WDS VLAN ID when "Untagged Port" is selected above.

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.

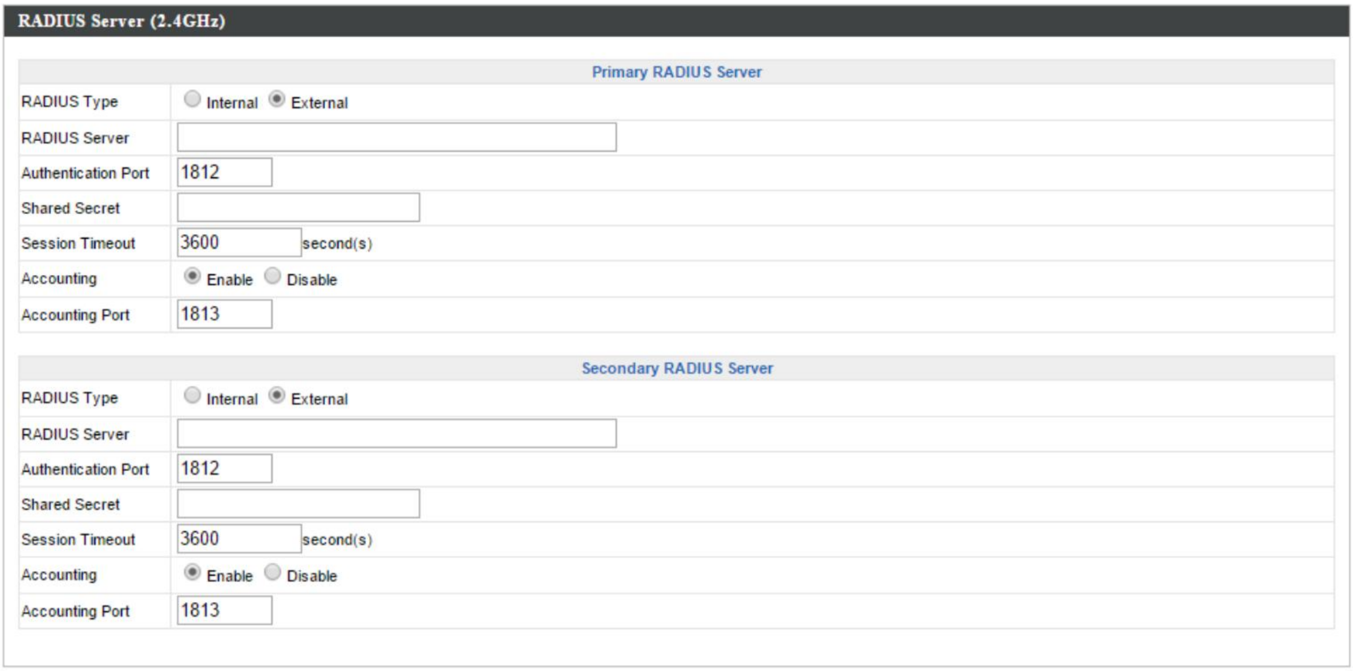
A RADIUS server provides user-based authentication to improve security and offer wireless client control – users can be authenticated before gaining access to a network.

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.



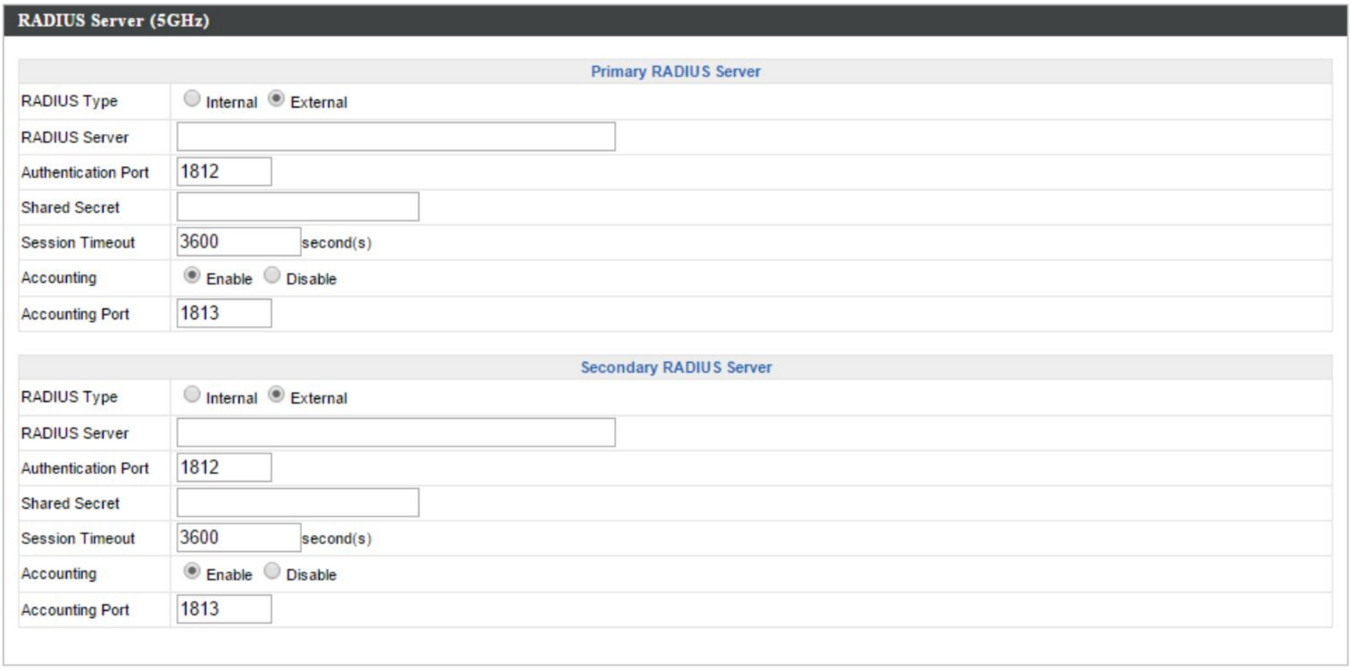
RADIUS Server (2.4GHz)

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

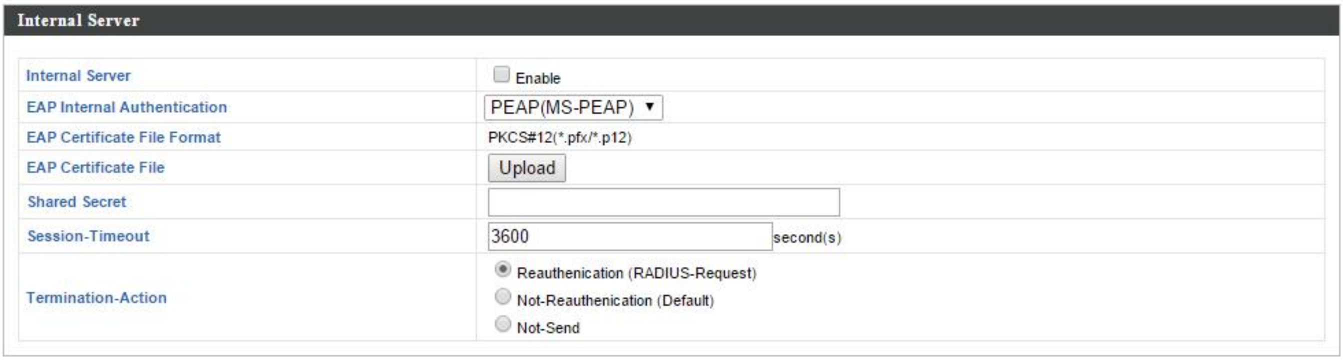
RADIUS Type	○ Internal ● External
RADIUS Server	
Authentication Port	1812
Shared Secret	
Session Timeout	3600 second(s)
Accounting	● Enable ○ Disable
Accounting Port	1813

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****).***



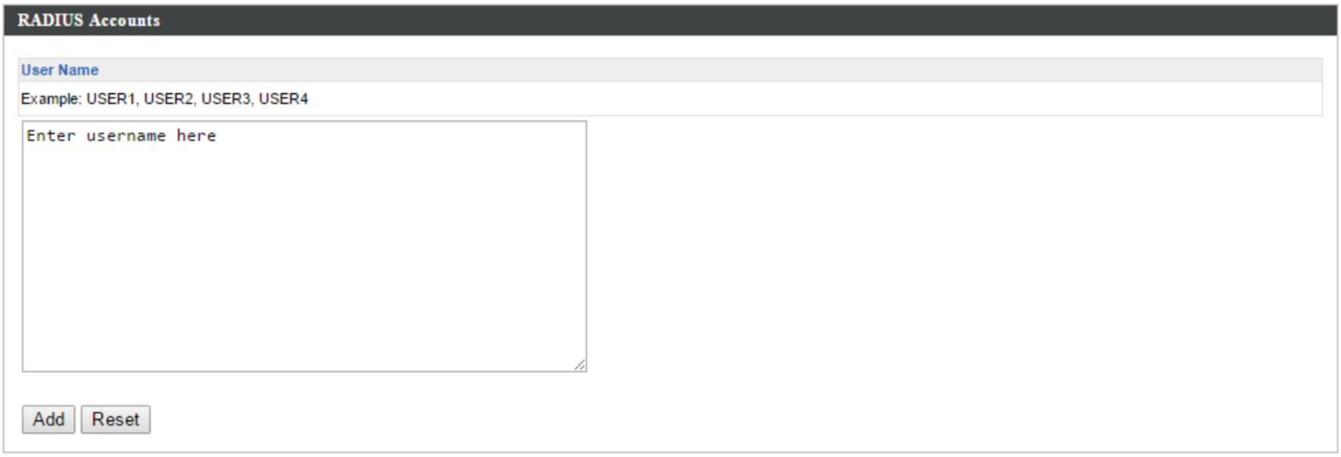
Internal Server

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

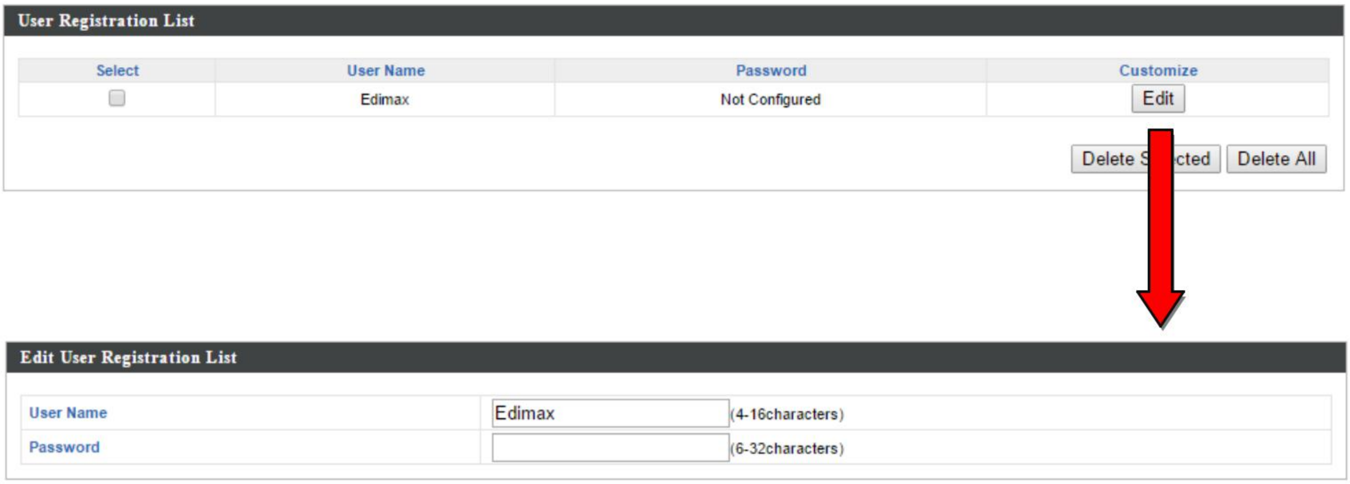
The internal RADIUS server can authenticate up to 256 user accounts. The “RADIUS Accounts” page allows you to configure and manage users.


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.

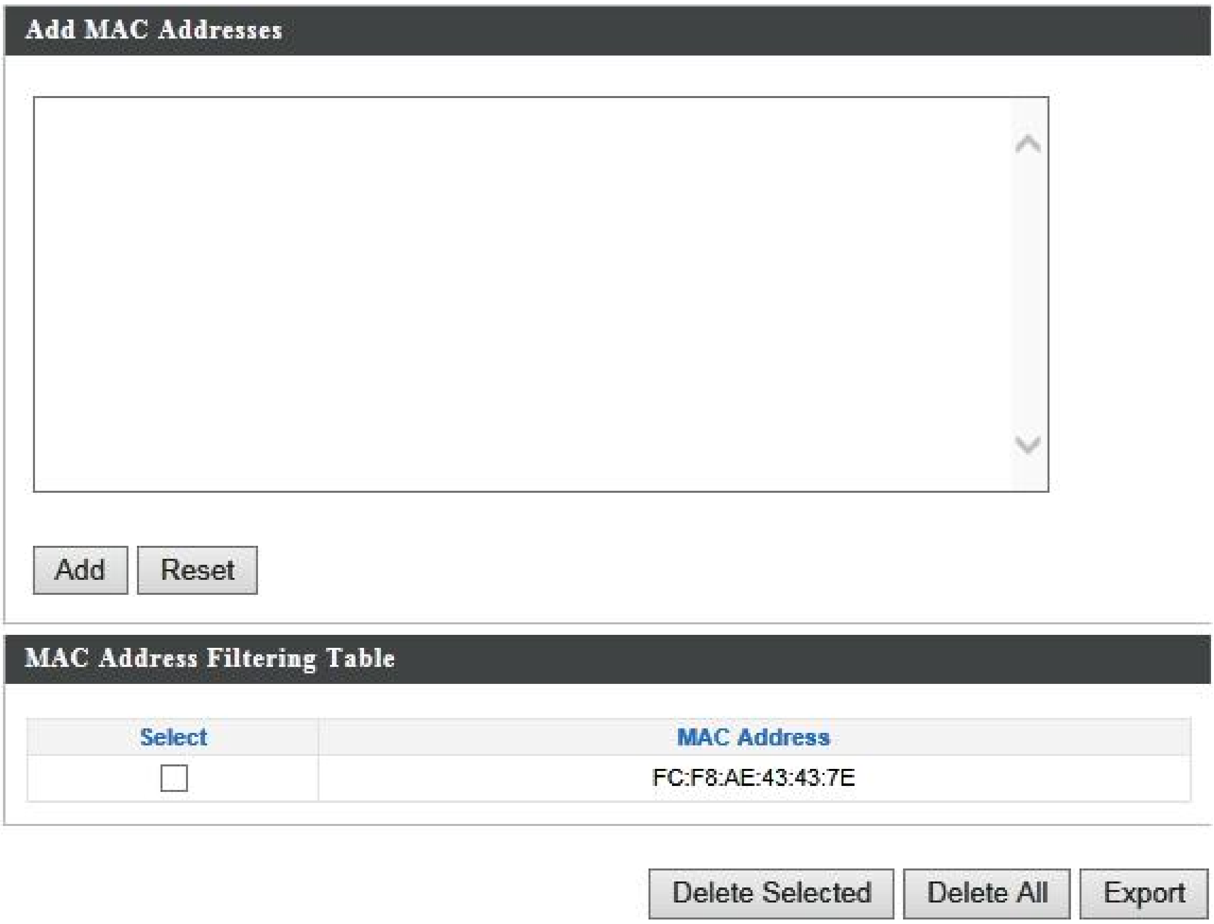
IV-6-6. MAC Filter

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:



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

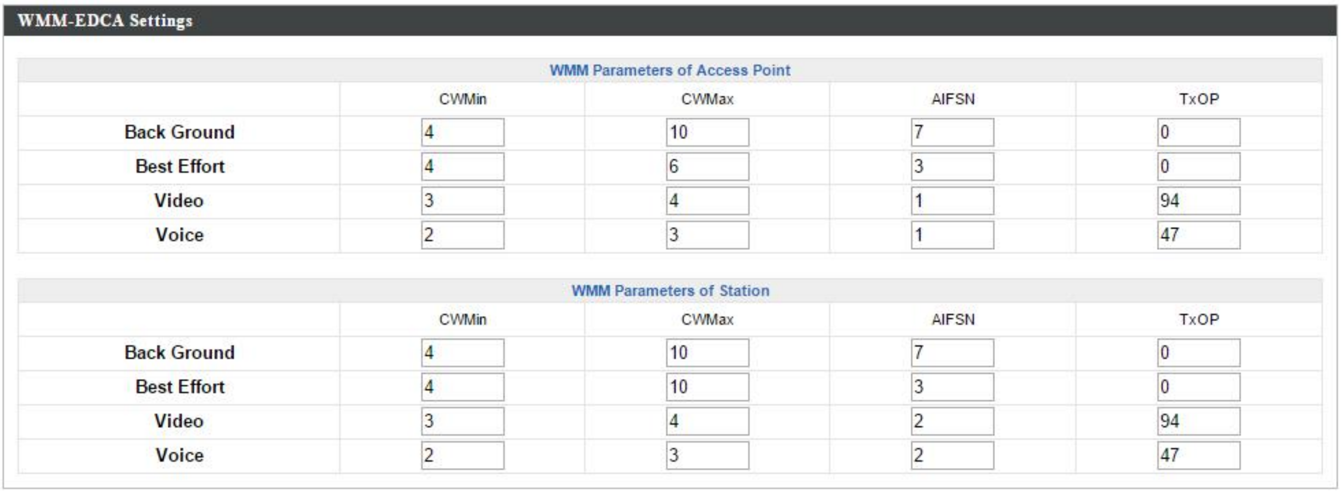
	commas, e.g. ‘aa-bb-cc-dd-ee-ff,aa-bb-cc-dd-ee-gg’
Add	Click “Add” to add the MAC address to the MAC address filtering table.
Reset	Clear all fields.

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:

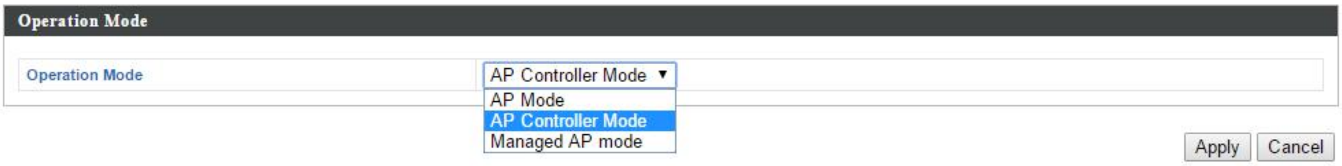
CWMin	Minimum Contention Window (milliseconds): This value is input to the initial random backoff wait time algorithm for retry of a data frame transmission. The backoff wait time will

	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.



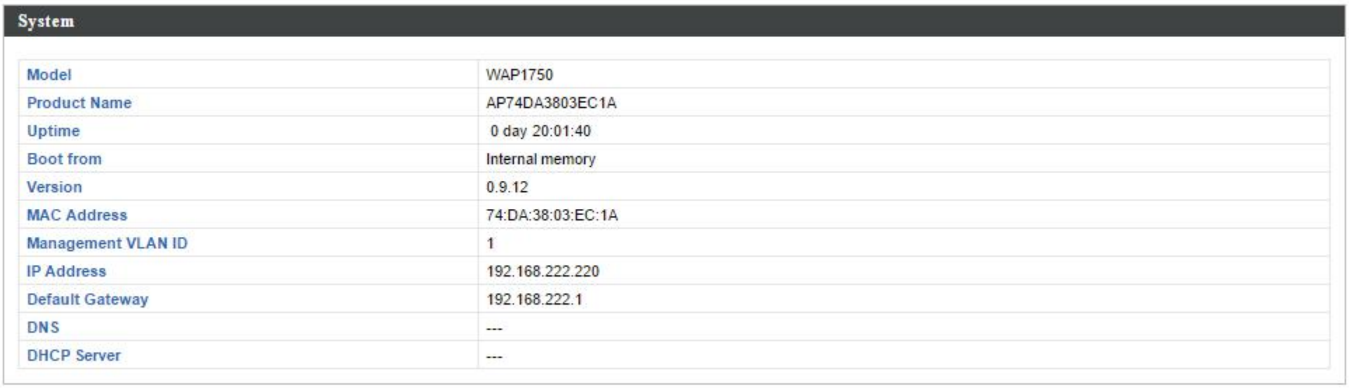
Operation Mode

Operation Mode	AP Controller Mode

IV-7-2. Network Settings

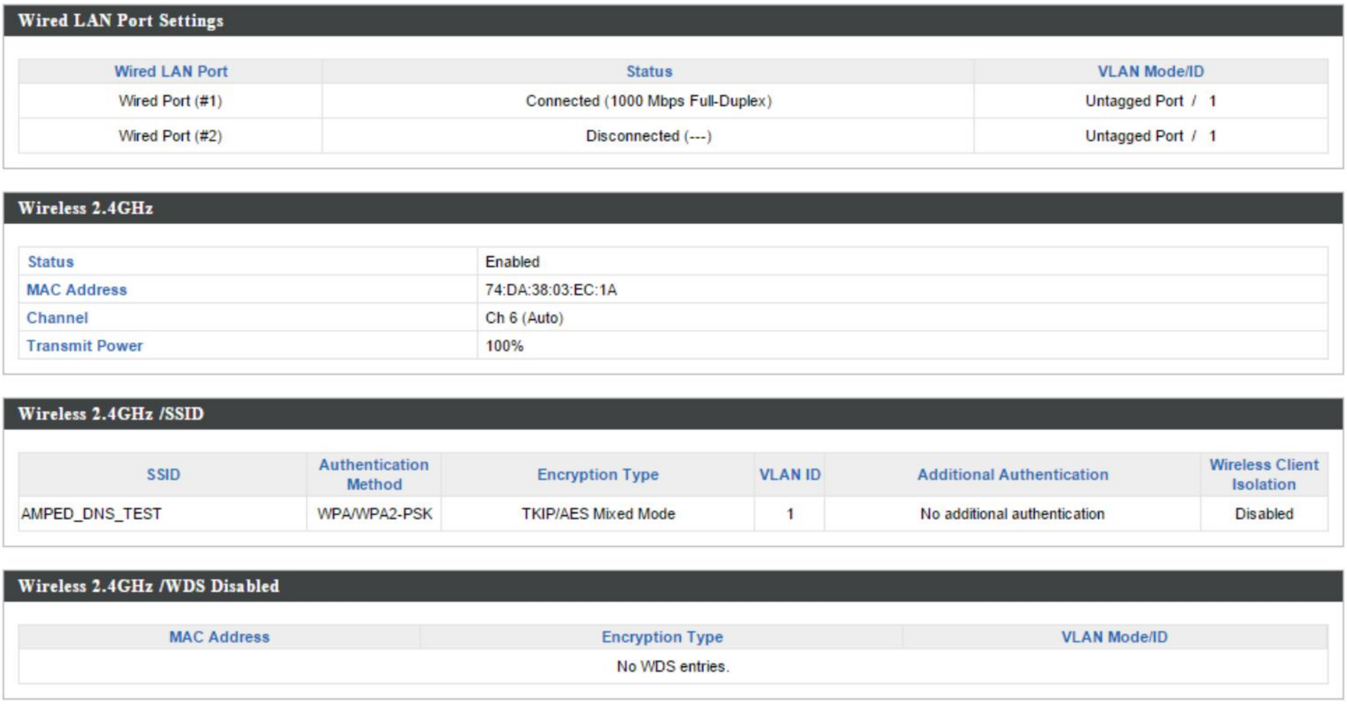
IV-7-2-1. System Information

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.

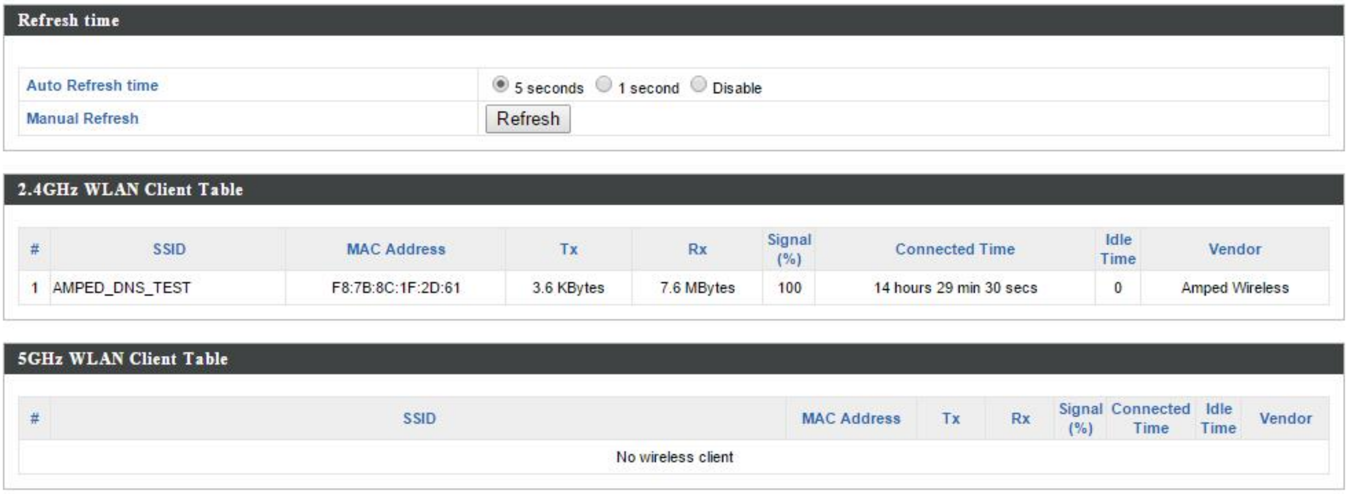
Wireless 2.4GHZ (5GHz) / SSID	
SSID	Displays the SSID name(s) for the specified frequency.
Authentication Method	Displays the authentication method for the specified SSID. See **IV-6. Wireless Settings**
Encryption Type	Displays the encryption type for the specified SSID. See **IV-6. Wireless Settings**
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

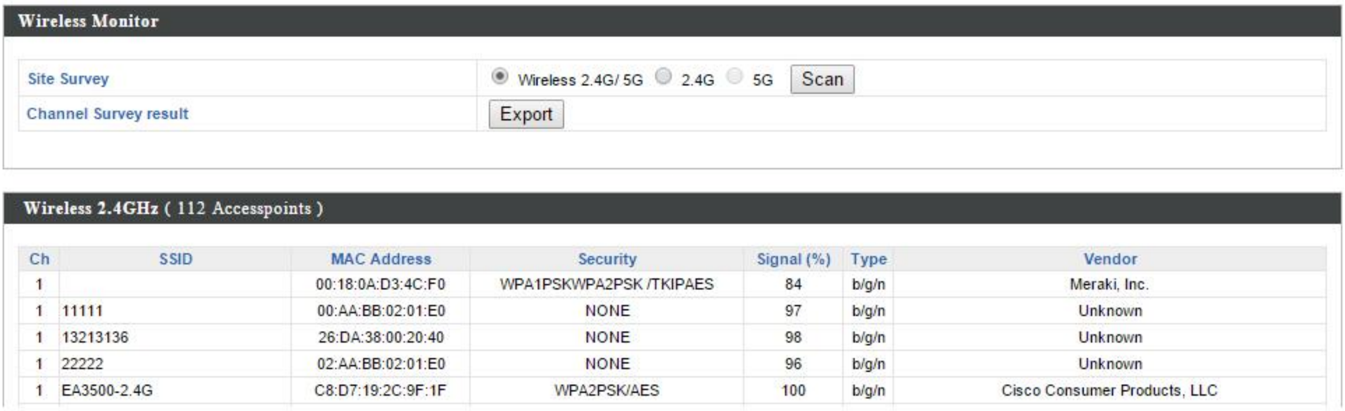
#	SSID	MAC Address	Tx	Rx	Signal (%)	Connected Time	Idle Time	Vendor
	No wireless client							

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

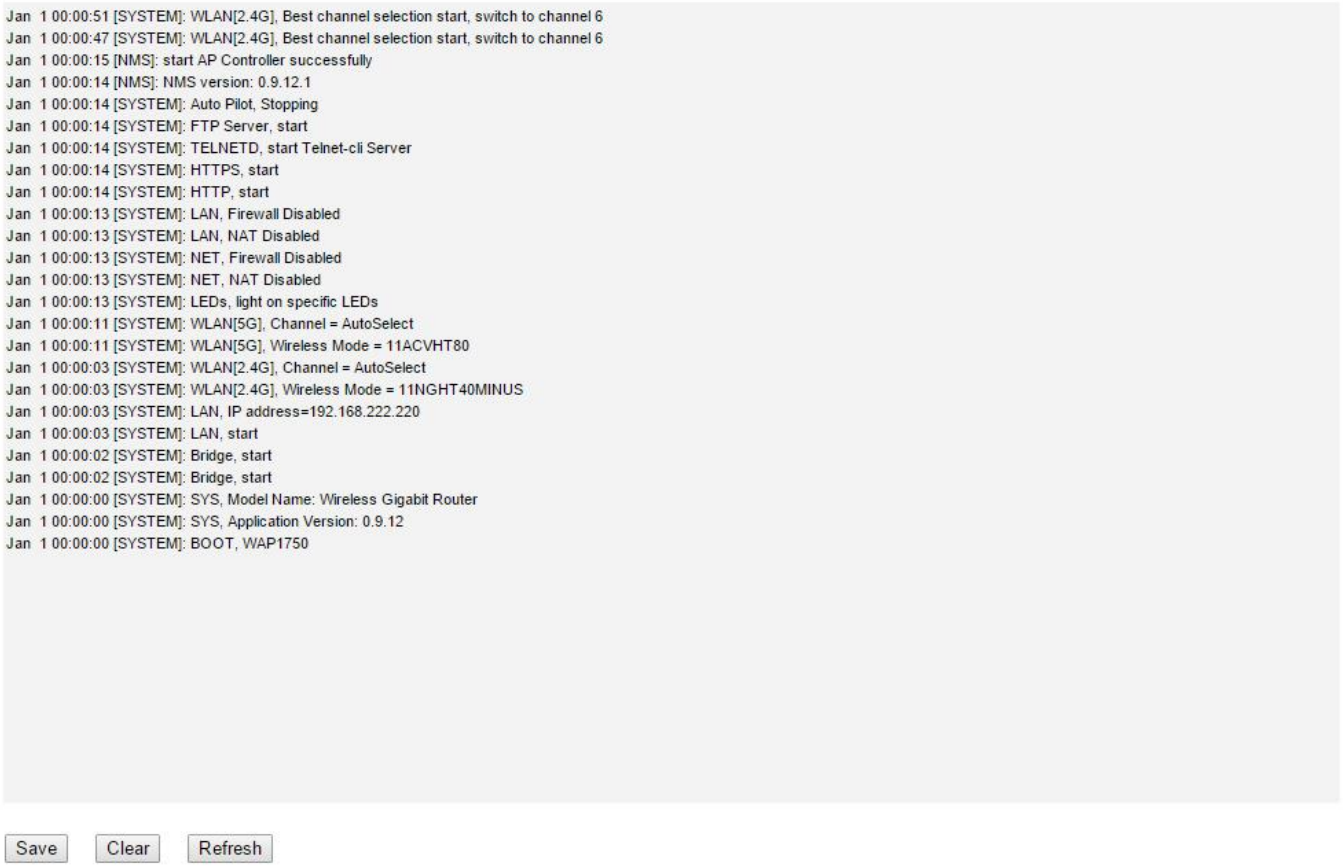
Wireless Monitor	
Site Survey	Select which frequency (or both) to scan, and click “Scan” to begin.
Channel Survey Result	After a scan is complete, click “Export” to save the results to local storage.

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:

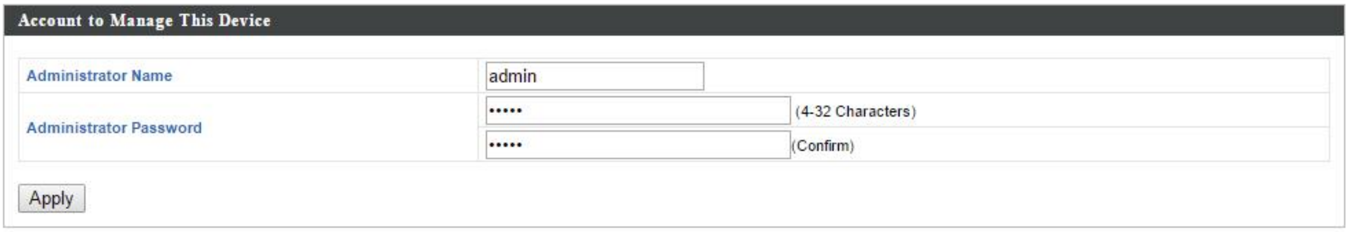
- **USB**
  Mount & unmount
- **Wireless Client** *Connected & disconnected Key exchange success & fail*
- **Authentication**
  Authentication fail or successful.
- **Association**
  Success or fail
- **WPS**
  M1 - M8 messages
  WPS success
- **Change Settings**
- **System Boot**
  Displays current 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

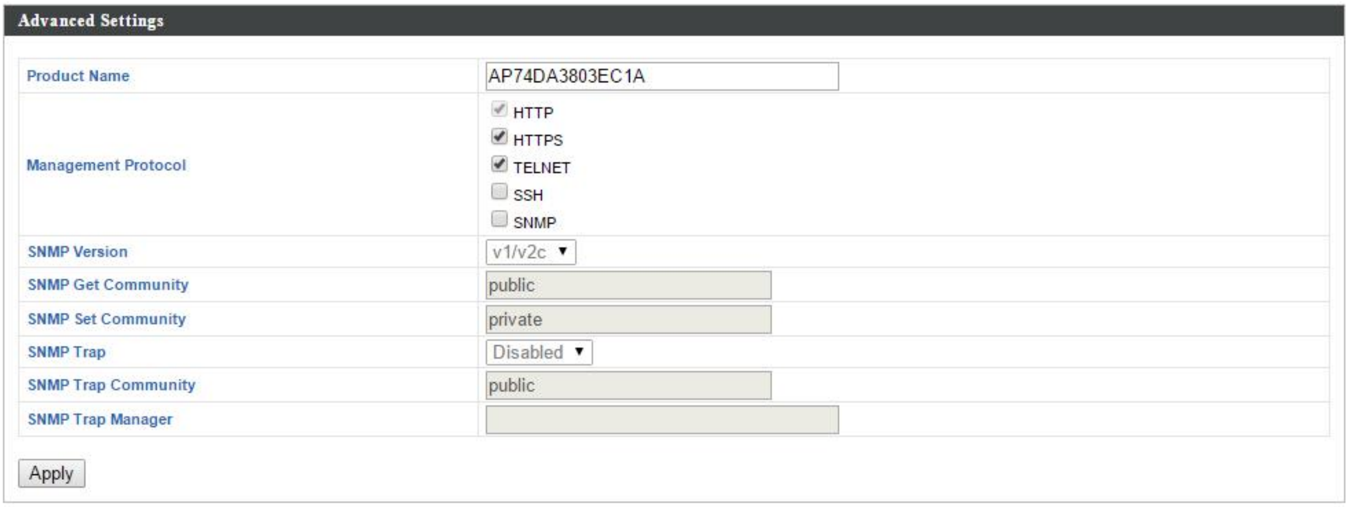
You can change the password used to login to the browser-based configuration interface here. It is advised to do so for security purposes.

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)



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	

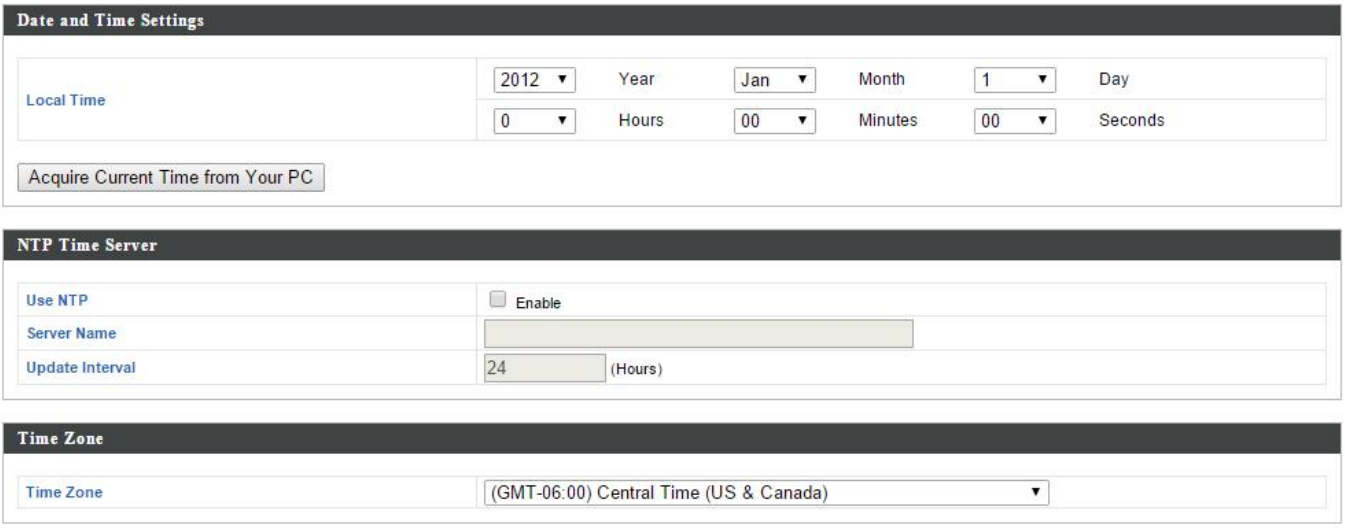
Account to Manage This Device	
Administrator Name	Set the access point's administrator name. This is used to log in to the browser based configuration interface and must be between 4-16 alphanumeric characters (case sensitive).
Administrator Password	Set the access point's administrator password. This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

Acquire Current Time from Your PC

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.

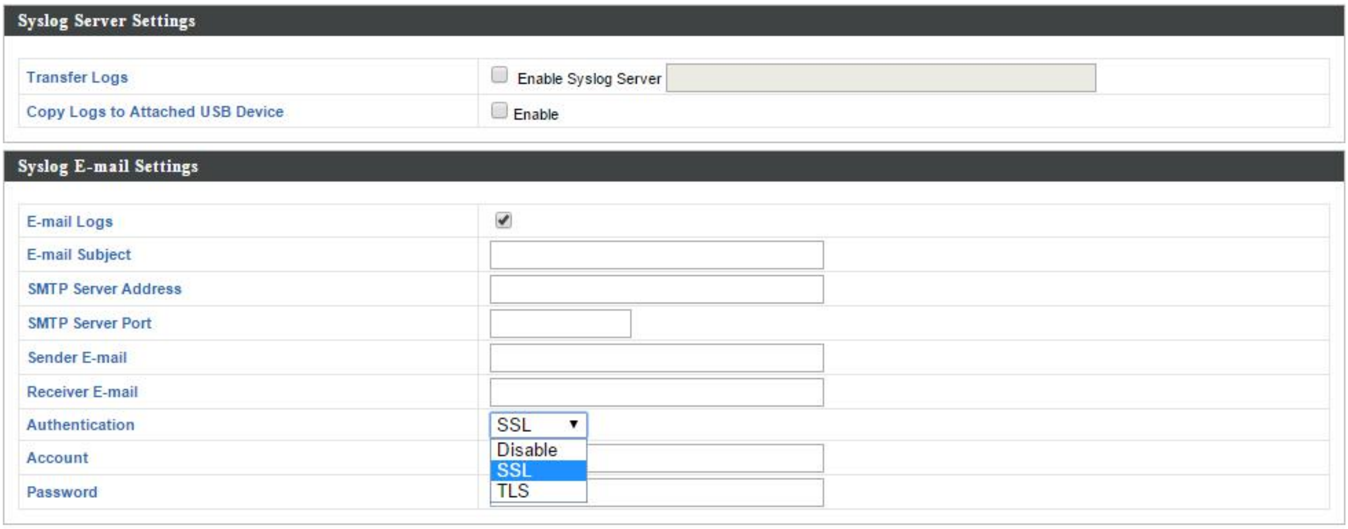
NTP Time Server	
Use NTP	The access point also supports NTP (Network Time Protocol) for automatic time and date setup.
Server Name	Enter the host name or IP address of the time server if you wish.
Update Interval	Specify a frequency (in hours) for the access point to update/synchronize with the NTP server.

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	

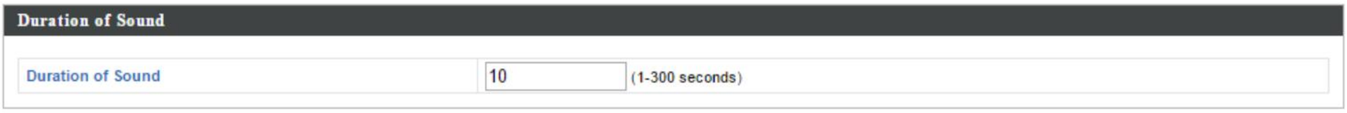
Syslog Server Settings	
Transfer Logs	Check/uncheck the box to enable/disable the use of a syslog server, and enter a host name, domain or IP address for the server, consisting of up to 128 alphanumeric characters.
Copy Logs to Attached USB Device	Check/uncheck the box to enable/disable copying logs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

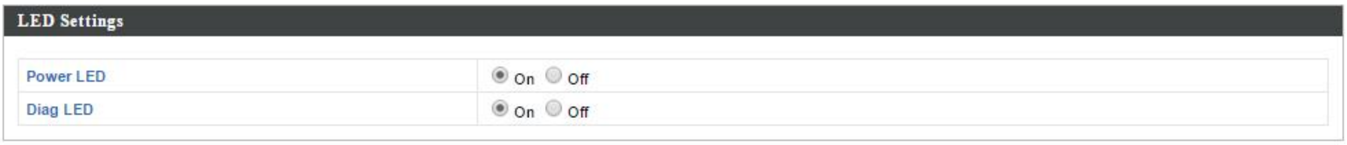
Duration of Sound	Set the duration for which the buzzer will sound when the "Sound Buzzer" button is clicked.
Sound Buzzer	Activate the buzzer sound for the above specified duration of time.

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

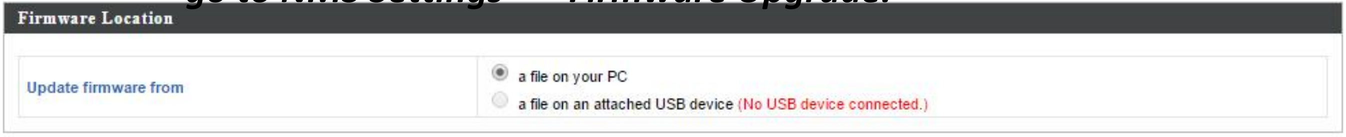
Power LED	● On ○ Off
Diag LED	● On ○ Off

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

IV-7-4-2. Update Firmware

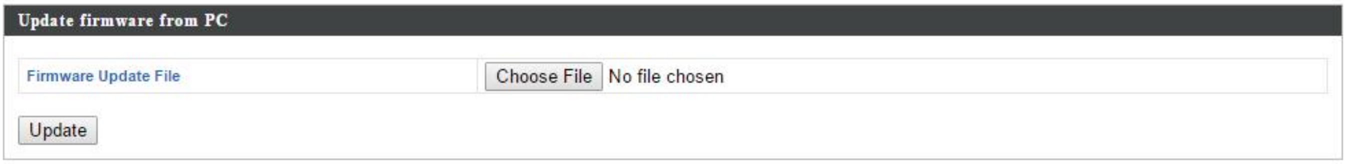
The "Firmware" page allows you to update the system firmware to a more recent version. Updated firmware versions often offer increased performance and security, as well as bug fixes. You can download the latest firmware from the Edimax website.

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

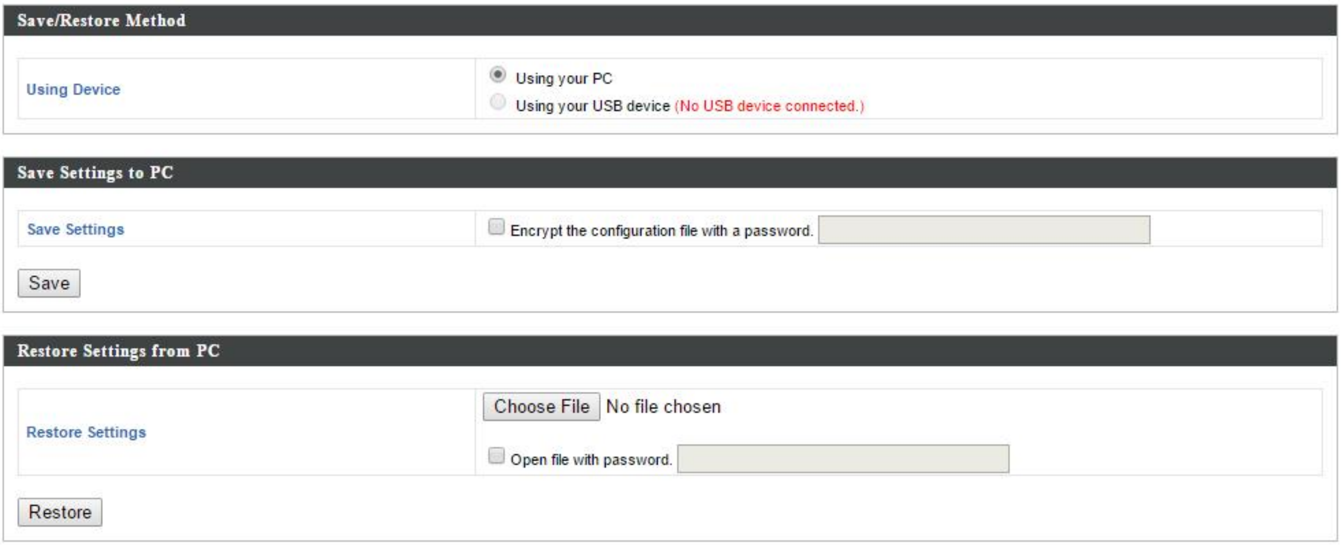
Update

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: Choose File 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.

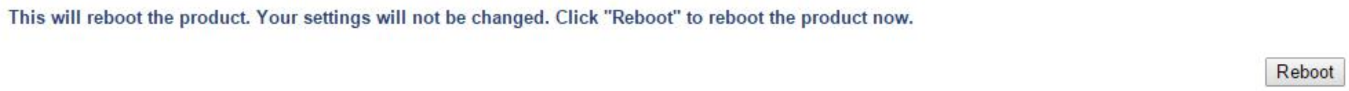
Factory Default

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.

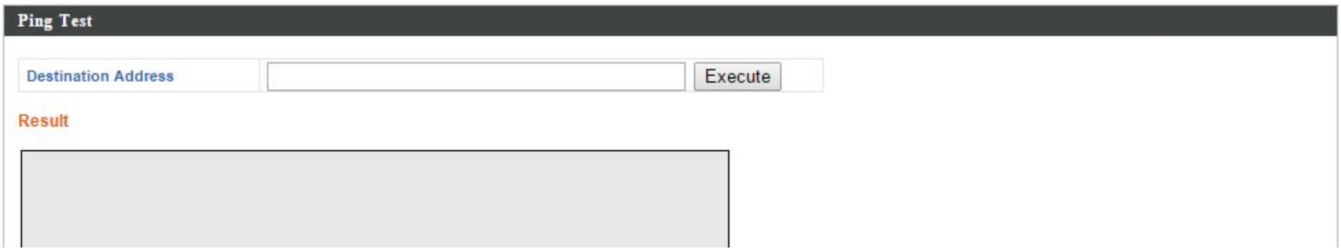
Reboot	Click “Reboot” to reboot the device. A countdown will indicate the progress of the reboot.

IV-8. Toolbox

IV-8-1. Network Connectivity

IV-8-1-1. Ping

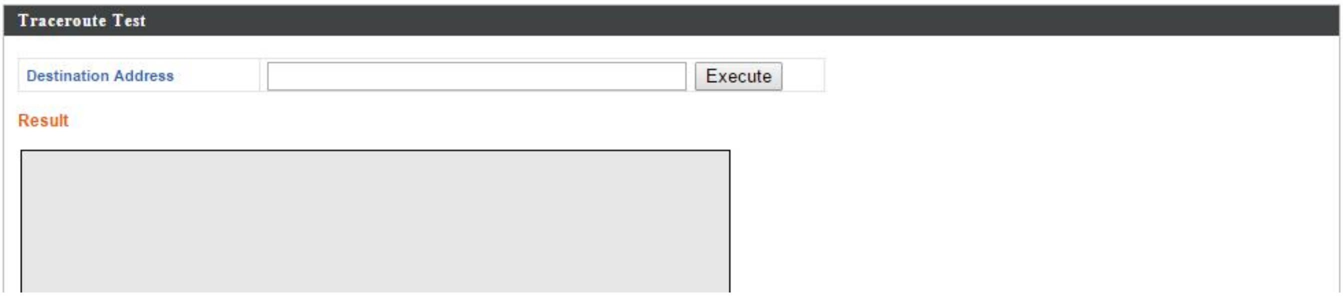
Ping is a computer network administration utility used to test whether a particular host is reachable across an IP network and to measure the round-trip time for sent messages.



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.

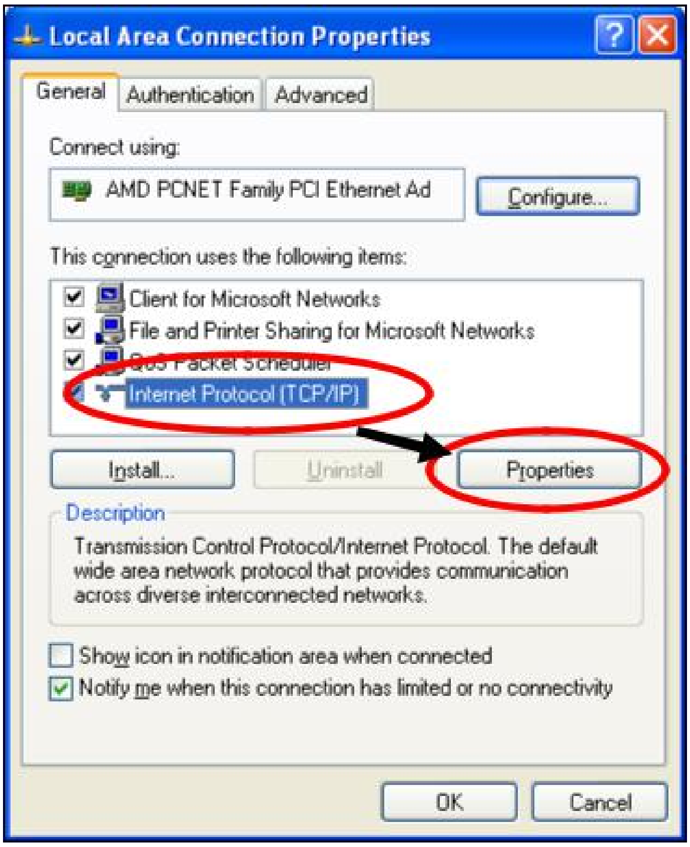
In the following examples we use the IP address **192.168.2.10** though you can use any IP address in the range **192.168.2.x (x = 3 – 254).**

⚠ ***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

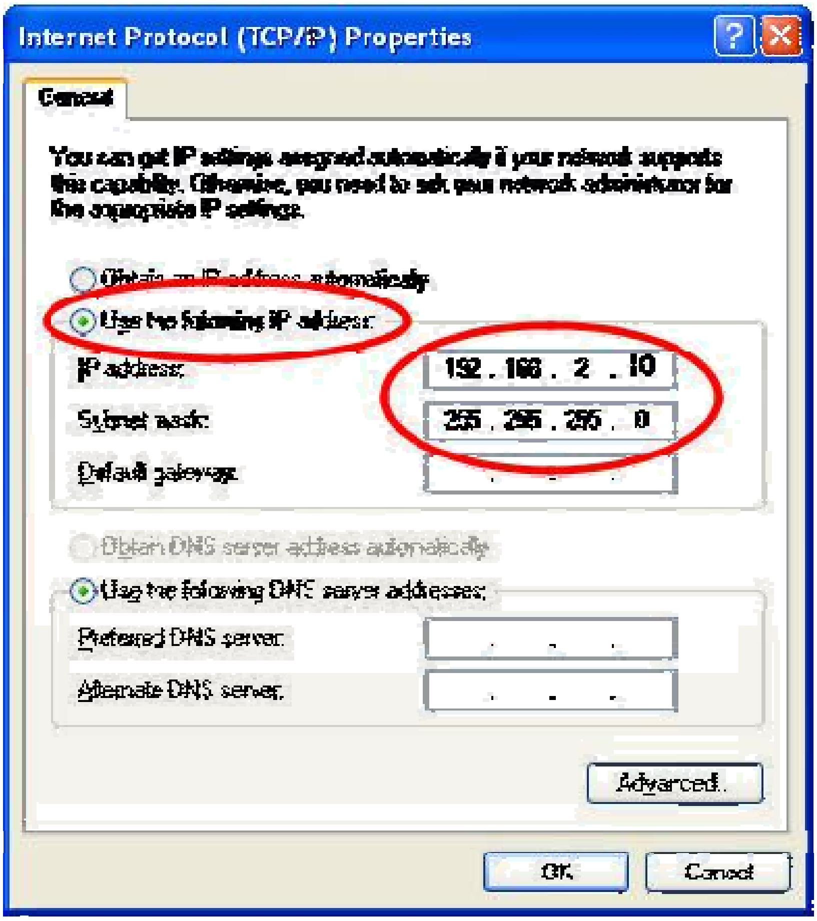
Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.

□ 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.



Internet Protocol (TCP/IP) 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

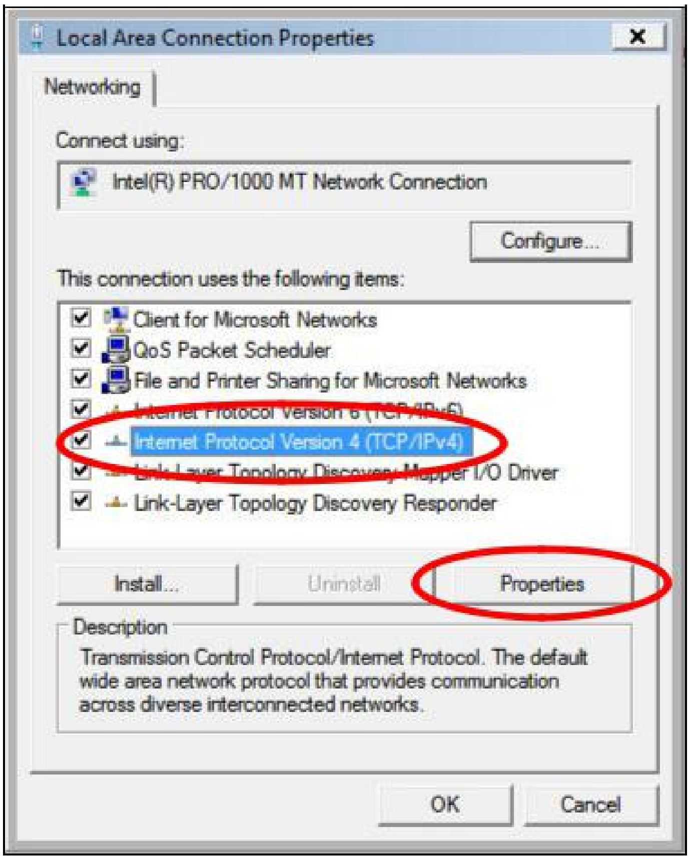
● Use the following DNS server addresses:

Preferred DNS server: . . .

Alternate DNS server: . . .

V-1-2. 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

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

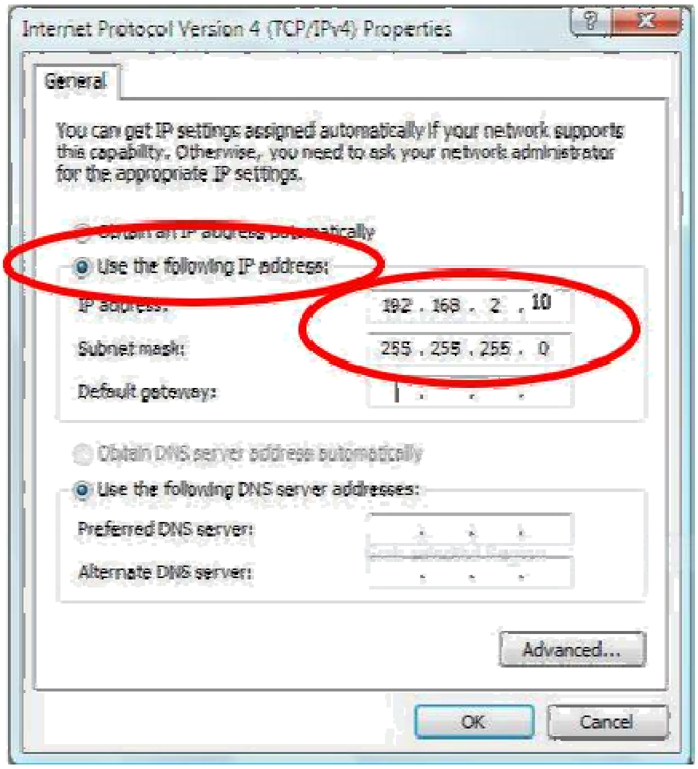
Description

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

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: . . .