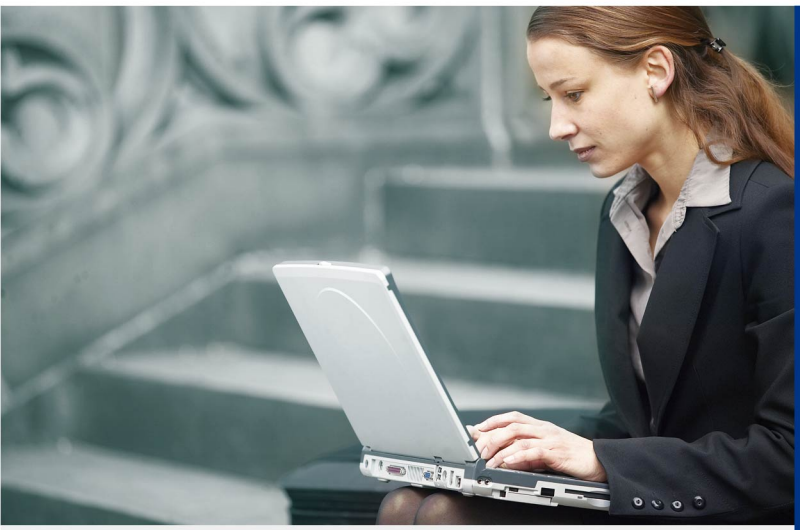
PLANET
Networking & Communication

AP Management User's Manual

Wireless AP Controller with 8-Port 802.3at PoE+

► WAPC-1232HP



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Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio technician for help.

FCC Caution

To assure continued compliance, use only shielded interface cables when connecting to computer or peripheral devices. Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference

(2) This device must accept any interference received, including interference that may cause undesired operation.

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

Federal Communication Commission (FCC) Radiation Exposure Statement

This equipment complies with FCC radiation exposure set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20 cm (8 inches) during normal operation.

R&TTE Compliance Statement

This equipment complies with all the requirements of DIRECTIVE 1999/5/CE OF THE EUROPEAN PARLIAMENT AND THE COUNCIL OF 9 March 1999 on radio equipment and telecommunication terminal Equipment and the mutual recognition of their conformity (R&TTE). The R&TTE Directive repeals and replaces in the directive 98/13/EEC (Telecommunications Terminal Equipment and Satellite Earth Station Equipment) as of April 8, 2000.

Safety

This equipment is designed with the utmost care for the safety of those who install and use it. However, special attention must be paid to the dangers of electric shock and static electricity when working with electrical equipment. All guidelines of this and of the computer manufacture must therefore be allowed at all times to ensure the safe use of the equipment.

National Restrictions

This device is intended for home and office use in all EU countries (and other countries following the EU directive 1999/5/EC) without any limitation except for the countries mentioned below:

Country	Restriction	Reasons/remarks
Bulgaria	None	General authorization required for outdoor use and public service
France	Outdoor use; limited to 10 mW e.i.r.p. within the band 2454-2483.5 MHz	Military Radiolocation use. Refarming of the 2.4 GHz band has been ongoing in recent years to allow current relaxed regulation. Full implementation planned 2012
Italy	None	If used outside of own premises, general authorization is required
Luxembourg	None	General authorization required for network and service supply(not for spectrum)
Norway	Implemented	This subsection does not apply for the geographical area within a radius of 20 km from the centre of Ny-Ålesund
Russian Federation	None	Only for indoor applications

Note: Please don’t use the product outdoors in France.

WEEE regulation

To avoid the potential effects on the environment and human health as a result of the presence of hazardous substances in electrical and electronic equipment, end users of electrical and electronic equipment should understand the meaning of the crossed-out wheeled bin symbol. Do not dispose of WEEE as unsorted municipal waste and have to collect such WEEE separately.

Revision

User Manual of PLANET Wireless AP Controller with 8-Port 802.3at PoE+

Model: WAPC-1232HP

Rev: 1.0 (Sep., 2015)

Part No. EM-WAPC-1232HP_v1.0 (2080- E70020-000)

CONTENTS

FIGURES

Chapter 1. Configuring the AP and Login the Controller

In this manual, we use the WDAP-C7200AC managed AP as an example to be controlled by the WAPC-1232HP Wireless AP Controller with 8-Port 802.3at PoE+.

Before configuring the WDAP-C7200AC in the managed AP mode to be managed by the AP controller, please ensure you have upgraded the AP to the firmware that supports the AP controller.

After the upgrade is finished, please go to the "**Management-> Reload Settings**" page to upload the latest config file included in the firmware package file. After the upload for the configuration is finished, please reset the AP to the factory default.

1.1 Operation Mode

Follow the steps below to set up the operation mode of the WDAP-C7200AC in the "**Managed AP**" mode.

Step 1. To access the WDAP-C7200AC, open a web-browser and enter the default IP address http://192.168.1.253 in the web address field of the browser.

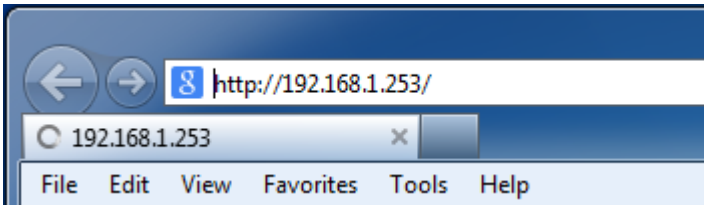

Figure 1-1 Login by default IP address

After a moment, a login window will appear. Enter **admin** for the User Name and Password, both in lower case letters. Then click the **OK** button or press the **Enter** key.

Figure 1-2 Login Window

Default IP Address: 192.168.1.253

Default User Name: admin

Default Password: admin

Note

If the above screen does not pop up, it may mean that your web-browser has been set to a proxy. Go to Tools menu>Internet Options>Connections>LAN Settings on the screen that appears, cancel the Using Proxy checkbox, and click OK to finish it.

Step 2. Go to the "**Operation Mode**" page to set the operation mode to "**Managed AP**". Then, click "**Apply Change**".

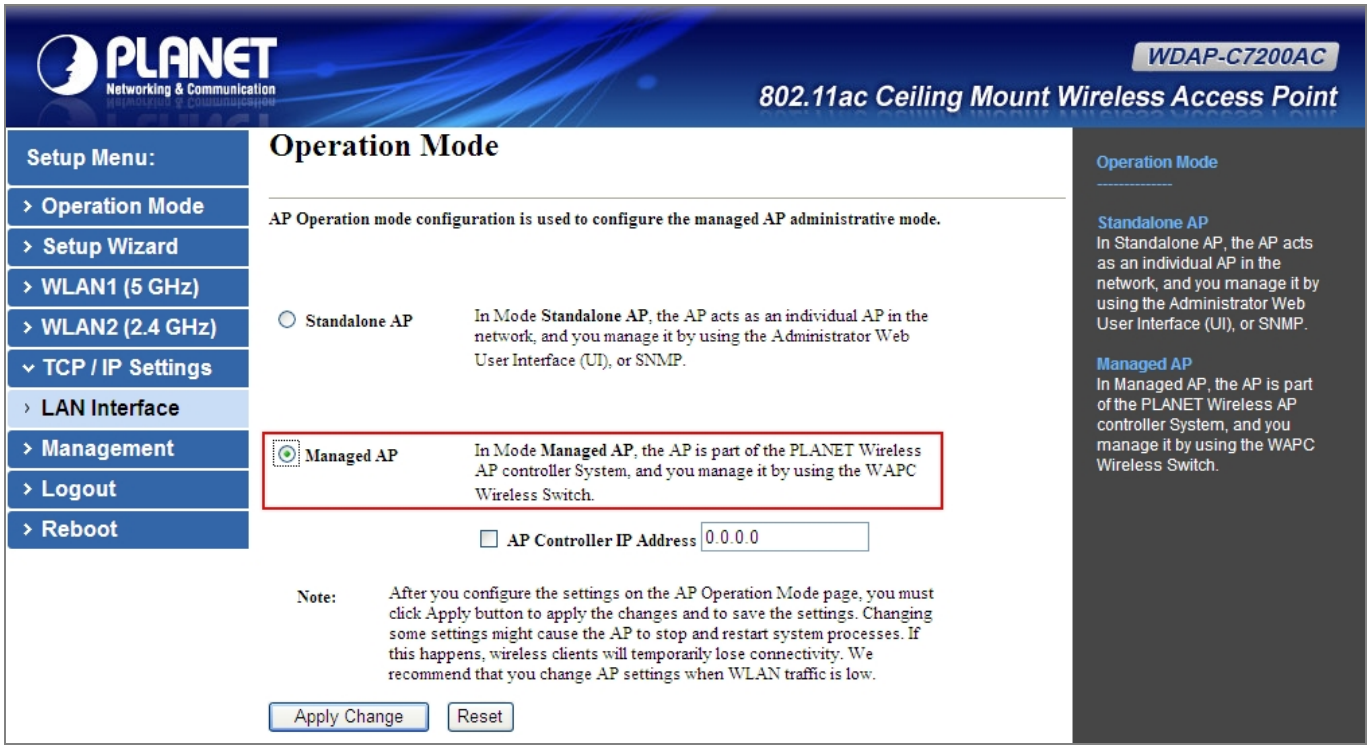

Figure 1-3 Operation Mode – Managed AP

Note

Please back up the configuration settings before switching from the Standalone AP mode to the Managed AP mode. All the configurations will be erased and at the same time, the system will return to the factory default settings once it is reverted to the Standalone AP mode.

The page includes the following fields:

Object	Description

Standalone AP	In the **Standalone AP mode**, the AP acts as an individual AP in the network, and you manage it by using the Administrator Web User Interface (UI), or SNMP.
Managed AP	In the **Managed AP mode**, the AP is part of the PLANET Wireless AP controller System, and you manage it by using the WAPC Wireless Switch.
AP Controller IP Address	IP address of the AP Controller. (Default = **0.0.0.0**) The default IP address of the PLANET AP Controller is "**192.168.1.100**". Entering "**0.0.0.0**" means all AP controllers in the same network segment are able to manage this AP.

Step 3. Connect the WDAP-C7200AC, Wireless AP Controller and your computer to the same network.

Figure 1-4 Topology – connect to AP Controller

Step 4. To access the AP controller, open a web browser and enter the default IP address http://192.168.1.100 in the web address field of the browser.

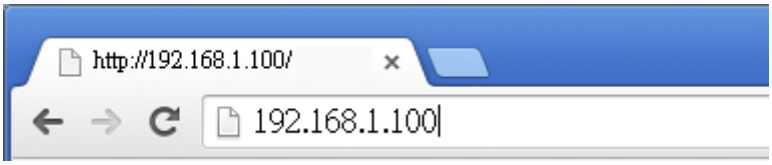

Figure 1-5 Login to the AP Controller

Step 5. Successfully login to the AP controller.

Figure 1-6 AP Controller – Main

Chapter 2. Assigning IP to Managed APs

Before configuring the AP, you can configure the AP controller to assign IP address to the managed APs which allow you to manage the APs with ease.

Step 1. Go to "**DHCP server-> Mode**" to switch the Mode to "Enabled". Then, click "**Apply**" to apply the setting.

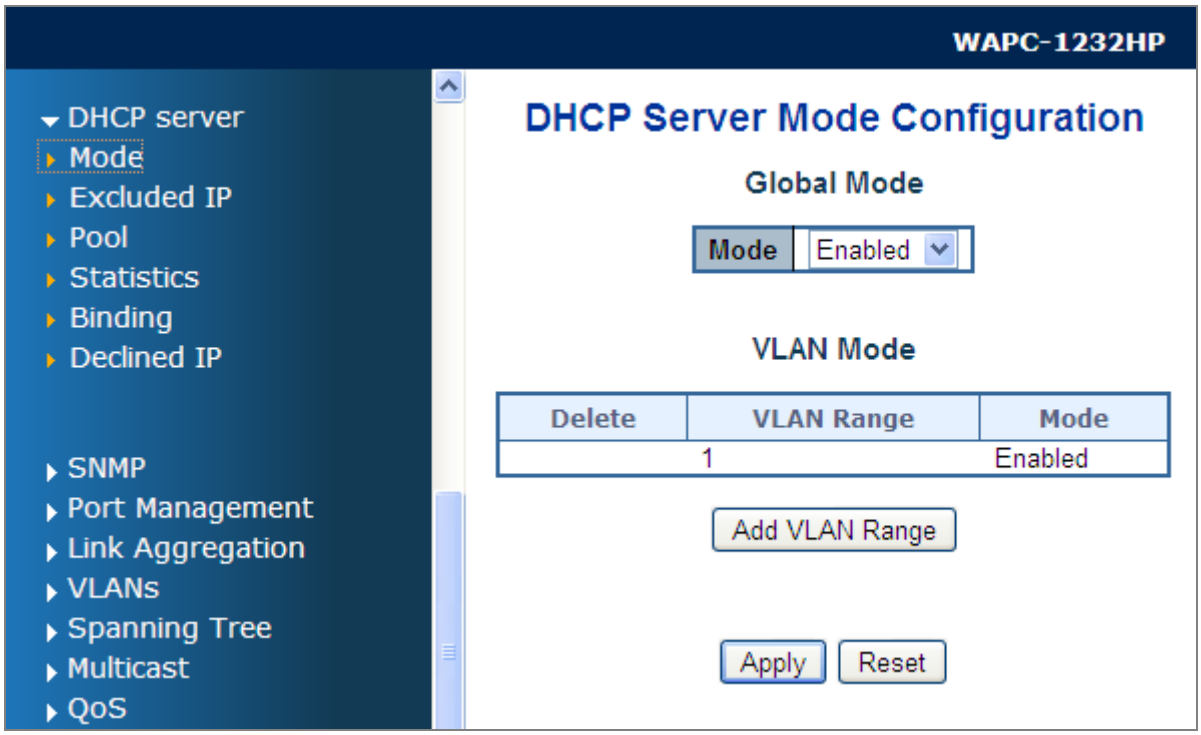

Figure 2-1 DHCP Server – Mode

Step 2. Go to "**System-> Save Startup Config**" to save configuration. Otherwise, the DHCP server will return to disabled after system reboot.

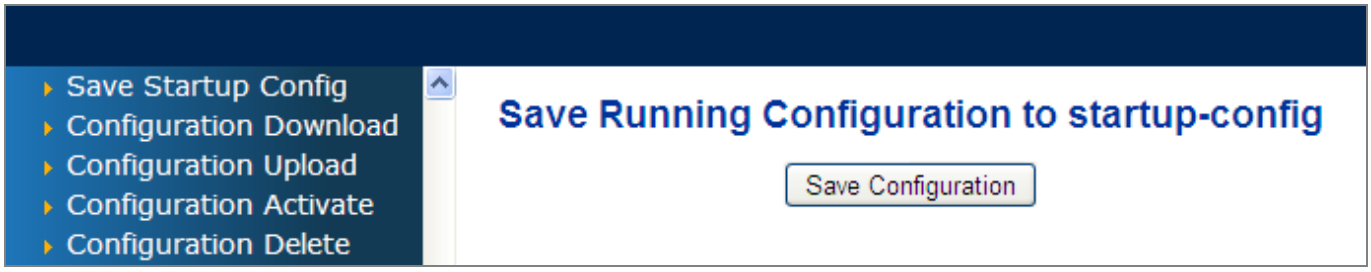

Figure 2-2 System – Save Startup Config

Step 3. Go to "**DHCP server-> Binding**" to ensure all devices have obtained an IP address successfully.

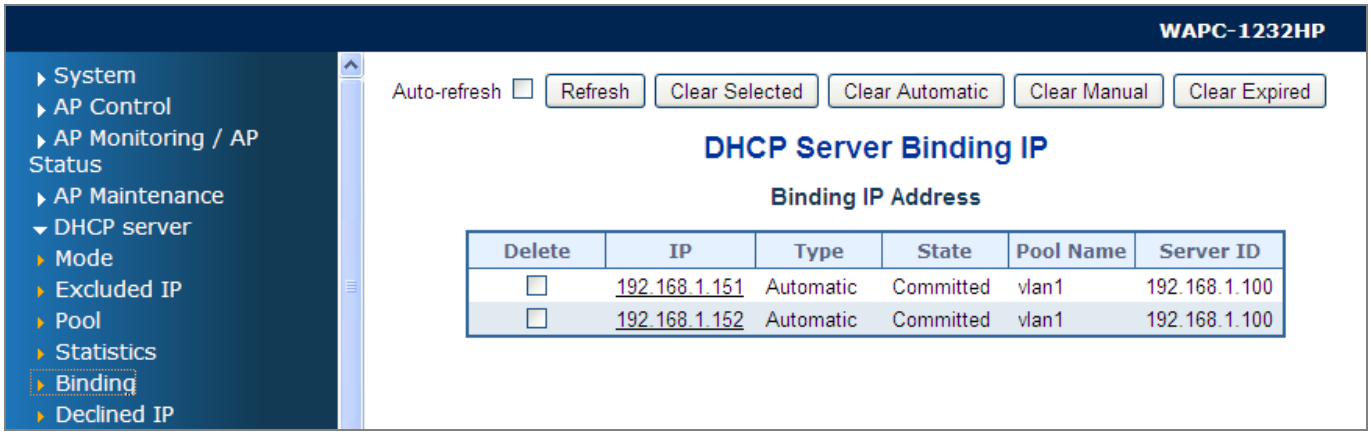

Figure 2-3 DHCP Server – Binding

Step 4. Now, you can continue to configure the managed AP in the next chapters.

Chapter 3. Configuring the AP Controller

This chapter delivers a detailed presentation of AP Controller's functionalities and features under 3 main menus including AP Control, AP Monitoring/AP Status and AP Maintenance, allowing you to manage the AP with ease.

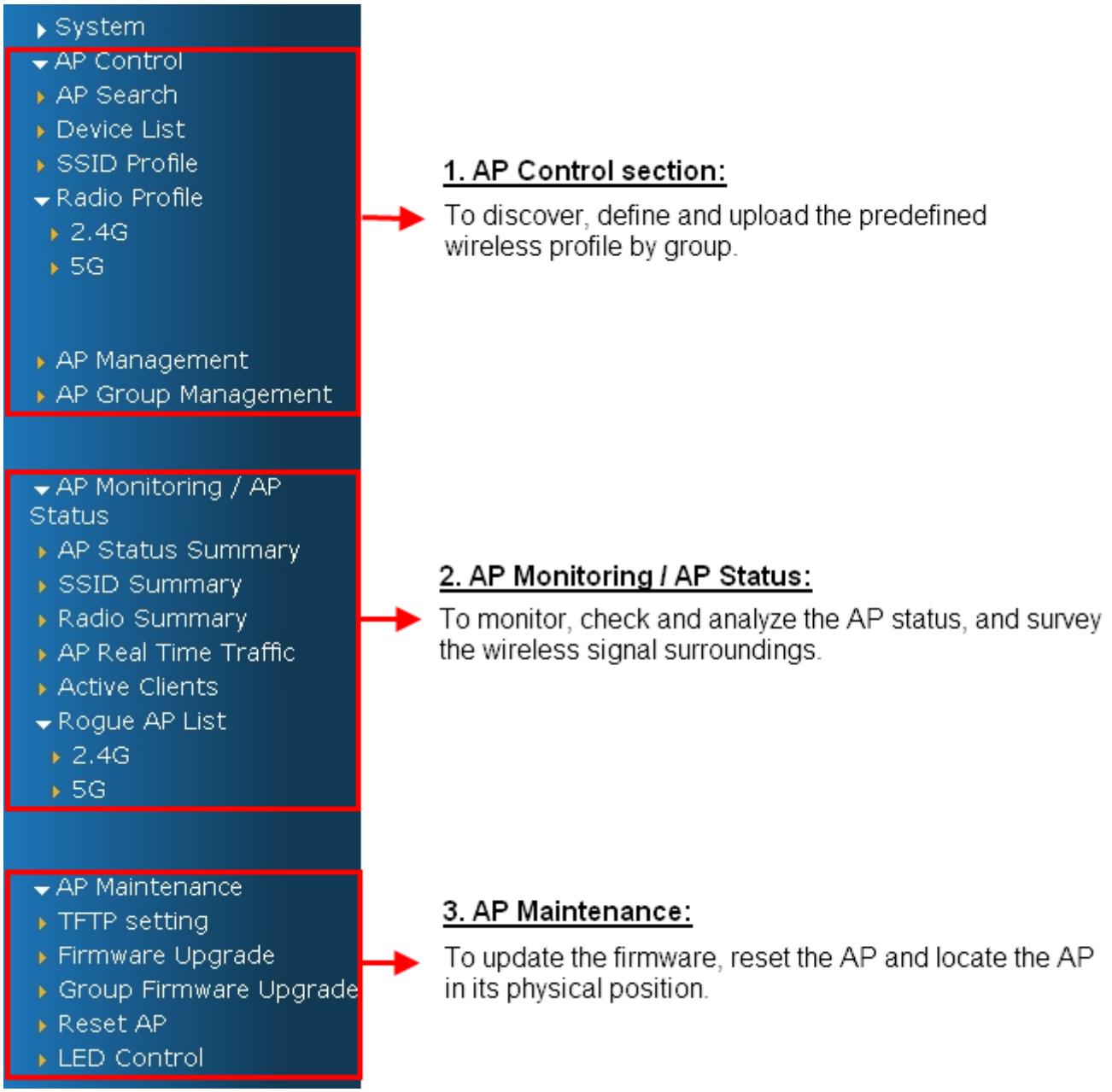

Figure 3-1 AP Controller – Menu

Chapter 4. AP Control

In the AP Control section, there are six sub menus which make you able to discover AP, create profile, and upload the pre-defined profiles to single or multiple APs at once.

Figure 4-1 Menu – AP Control

4.1 AP Search

Go to the "**AP Control-> AP Search**" page and then click "**Refresh**" to discover the managed AP available in the network. Only the AP existed in the same network segment can be discovered and added to the device list of controller.

A maximum of **64** devices can be found on the AP Search page.

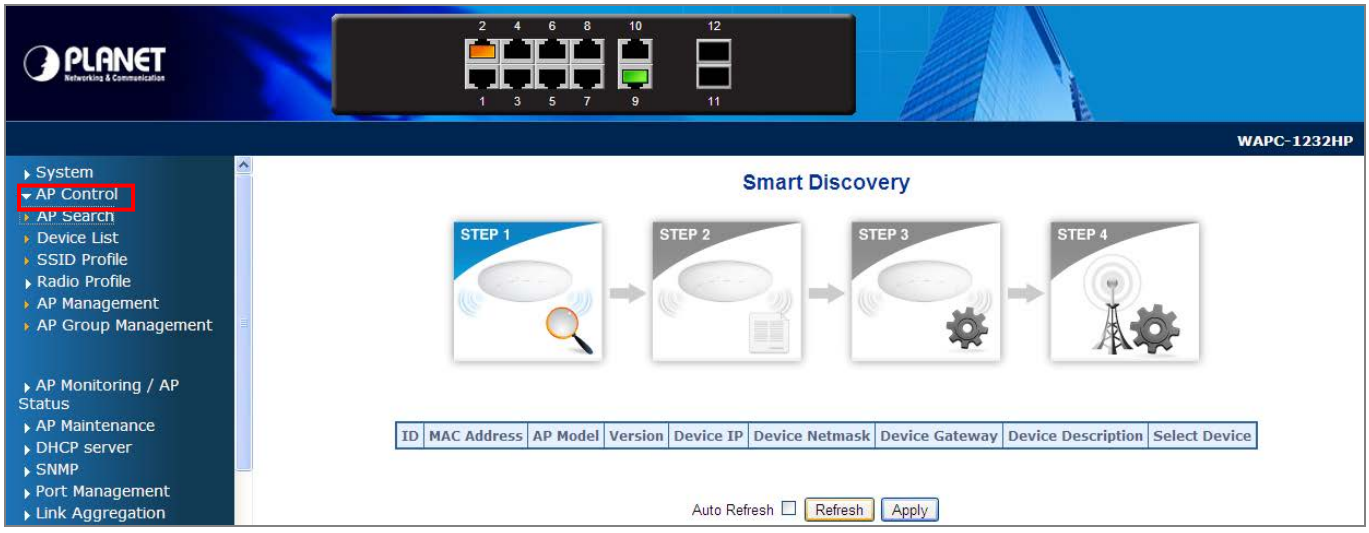

Figure 4-2 AP Search

In the "**Select Device**" field, check the AP that you want to manage and then click "Apply".

Figure 4-3 AP Search – select the AP from the list

The page includes the following fields:

Object	Description
ID	This field represents the numerical order of device.
MAC Address	The MAC address of the AP
AP Model	The model name of the AP
Version	The current firmware version of the AP
Device IP	The IP address of the AP
Device Netmask	The netmask of the AP
Device Gateway	The gateway IP address of the AP
Device Description	The device description of the AP
Select Device	Check this option to select the device from the managed AP list.
Auto Refresh	Check this option to let the system automatically refresh the list every 15 seconds.
Refresh	Click this button to refresh the list manually.
Apply	Click this button to apply the settings.

4.2 Device List

Go to the "**AP Control-> Device List**" page to ensure the AP is already selected from the list. This section is to confirm the AP selected on the "**AP Search**" page has been added to the Device List Table so that we can control it

by the following sections. On this page, you can click the hyperlink of IP address to link to the AP's Web UI directly. In addition, if this device is not the AP that you want to manage, you can check it in the delete field to remove it from the list. A maximum of **32** devices can be added on the Device List page.

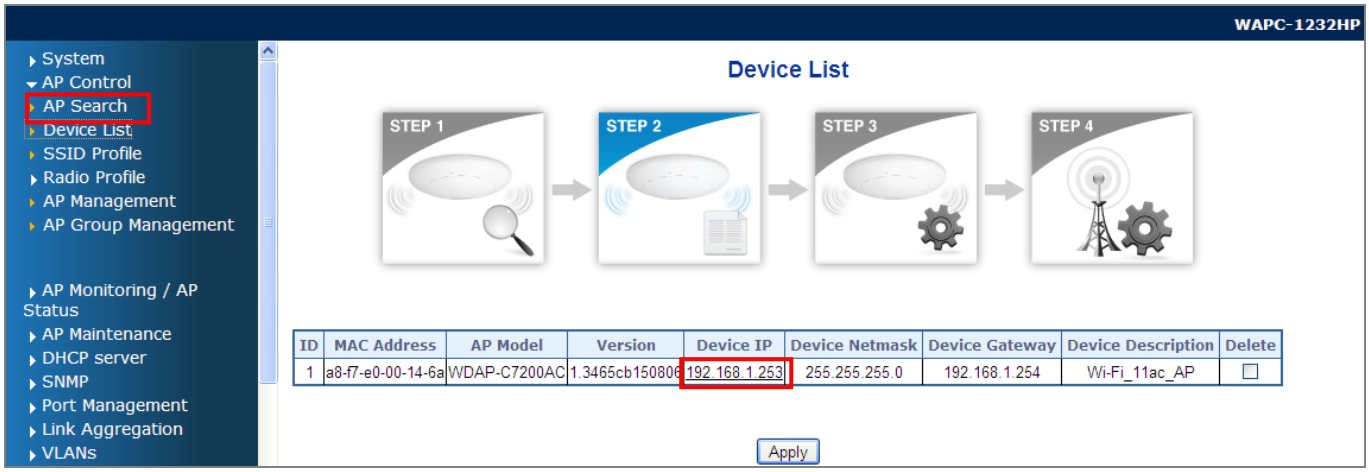

Figure 4-4 Device List

The page includes the following fields:

Object	Description
ID	This field represents the numerical order of device.
MAC Address	The MAC address of the AP
AP Model	The model name of the AP
Version	The current firmware version of the AP
Device IP	The IP address of the AP On the Device List page, the IP address is a hyperlink which enables the user to link to the AP's Web configuration page directly.
Device Netmask	The netmask of the AP
Device Gateway	The gateway IP address of the AP
Device Description	The device description of the AP
Delete	Check this option to remove the device from the managed AP list.
Auto Refresh	Check this option to let the system automatically refresh the list every 15 seconds.
Refresh	Click this button to refresh the list manually.

Apply	Click this button to apply the settings.

4.3 SSID Profile

Go to the "**AP Control-> SSID Profile**" page to create a new profile related to wireless SSID.

Figure 4-5 SSID Profile

Example of SSID Profile:

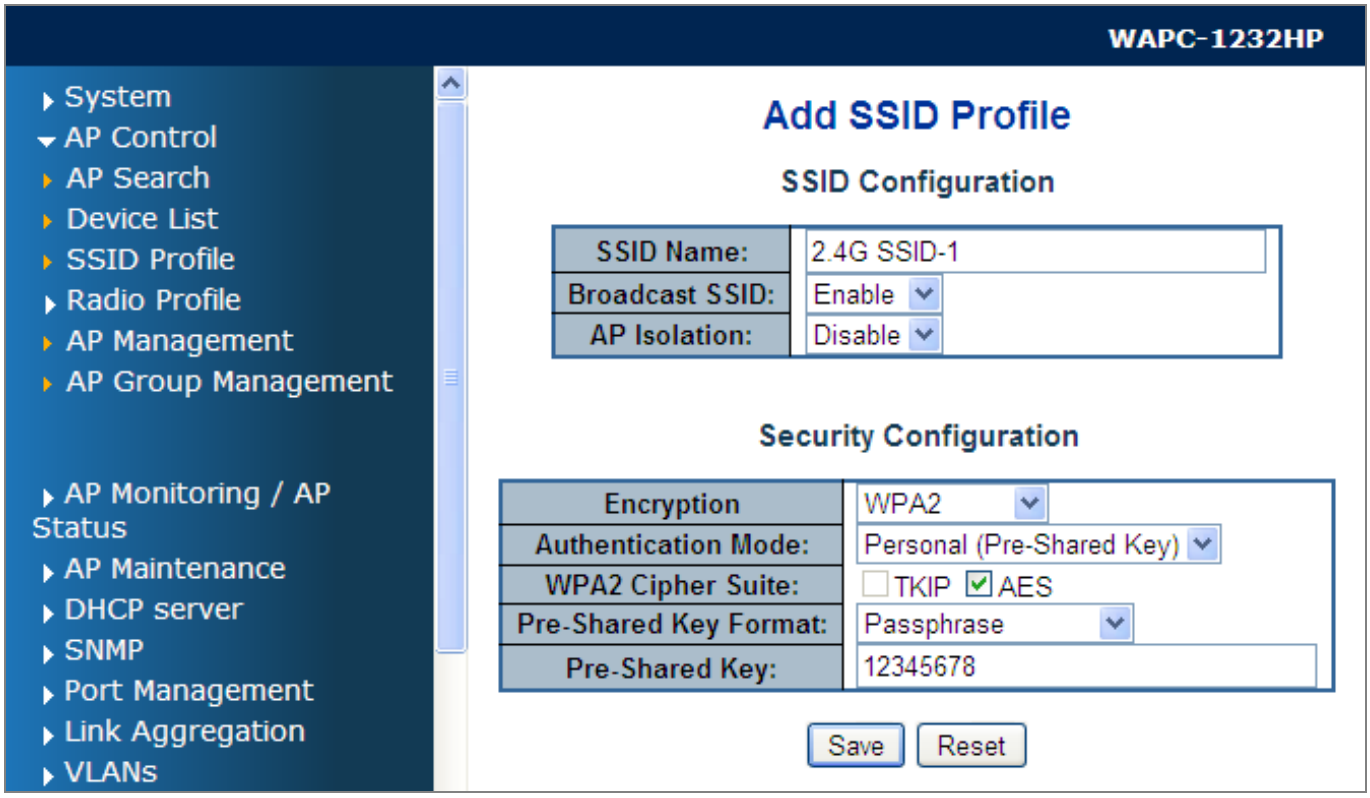

Figure 4-6 SSID Profile – Example

The page includes the following fields:

Object	Description
SSID Configuration	
SSID Name	This SSID name of the AP The length of an SSID should be limited to 32 characters (32 octets, normally ASCII letters and digits).
Broadcast SSID	Select “Enable” to enable the SSID Broadcasting. Select “Disable” to disable the SSID Broadcasting. Once disabling the SSID Broadcasting, the wireless clients will not able to see the SSID of the AP.
AP Isolation	Select “Enable” to enable the AP Isolation. Select “Disable” to disable the AP Isolation. Once enabling the AP Isolation, the wireless clients connected to the same SSID will be isolated.
Security Configuration	
Encryption	The encryption of the SSID
Authentication Mode	The authentication mode of the SSID
WPA2 Cipher Suite	The cipher suite of the encryption
Pre-shared Key Format	The security key format of the SSID
Pre-shared Key	The security key of the SSID
Save	Save the settings as a new profile.
Reset	Reset the values to default.

The fields on the Security Configuration page will vary according to the encryption you select. For a detailed description of each field, you may refer to the user manual of the AP. In this section, only the definitions of the fields are described.

After creating the SSID profile, you will see the profile in the list.

Click “**Apply**” to save and apply the setting.

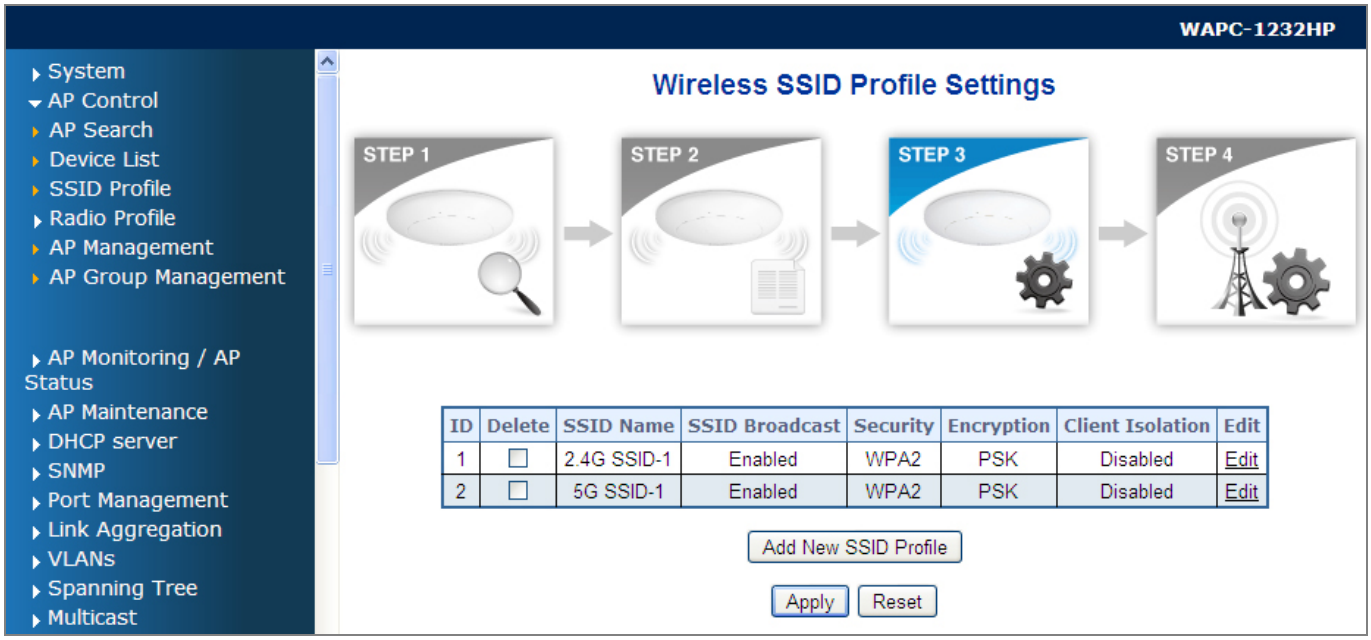

Figure 4-7 SSID Profile – List

The page includes the following fields:

Object	Description
ID	This field represents the numerical order of device.
SSID Name	This SSID name of the AP The length of an SSID should be limited to 32 characters (32 octets, normally ASCII letters and digits).
Broadcast SSID	Select “Enable” to enable the SSID Broadcasting. Select “Disable” to disable the SSID Broadcasting. Once disabling the SSID Broadcasting, the wireless clients will not be able to see the SSID of the AP.
Security	This field equals the “Encryption” field of the Security Configuration.
Encryption	This field equals the “Authentication Mode” field of the Security Configuration.
Client Isolation	Displays the setting of the client isolation which is to be configured by enabling it or not to by disabling.
Edit	Click “Edit” hyperlink to re-configure the profile.
Add New SSID Profile	Click the “Add New SSID Profile” button to create a new SSID profile.
Apply	In the delete field, check the profile that you want to delete and click

	“Apply” to apply the setting.
Reset	Click “Reset” to cancel the check box of the delete option back to uncheck status.

4.4 Radio Profile

In this section, you can create wireless advanced settings as 2.4GHz profile or 5GHz profile for future provisioning to multiple APs.

4.4.1 2.4G Radio Profile

Go to the “**AP Control-> Radio Profile-> 2.4G**” page to create a new 2.4GHz wireless profile related to wireless advance parameters.

Figure 4-8 2.4G Radio Profile

Example of the 2.4G Radio Profile:

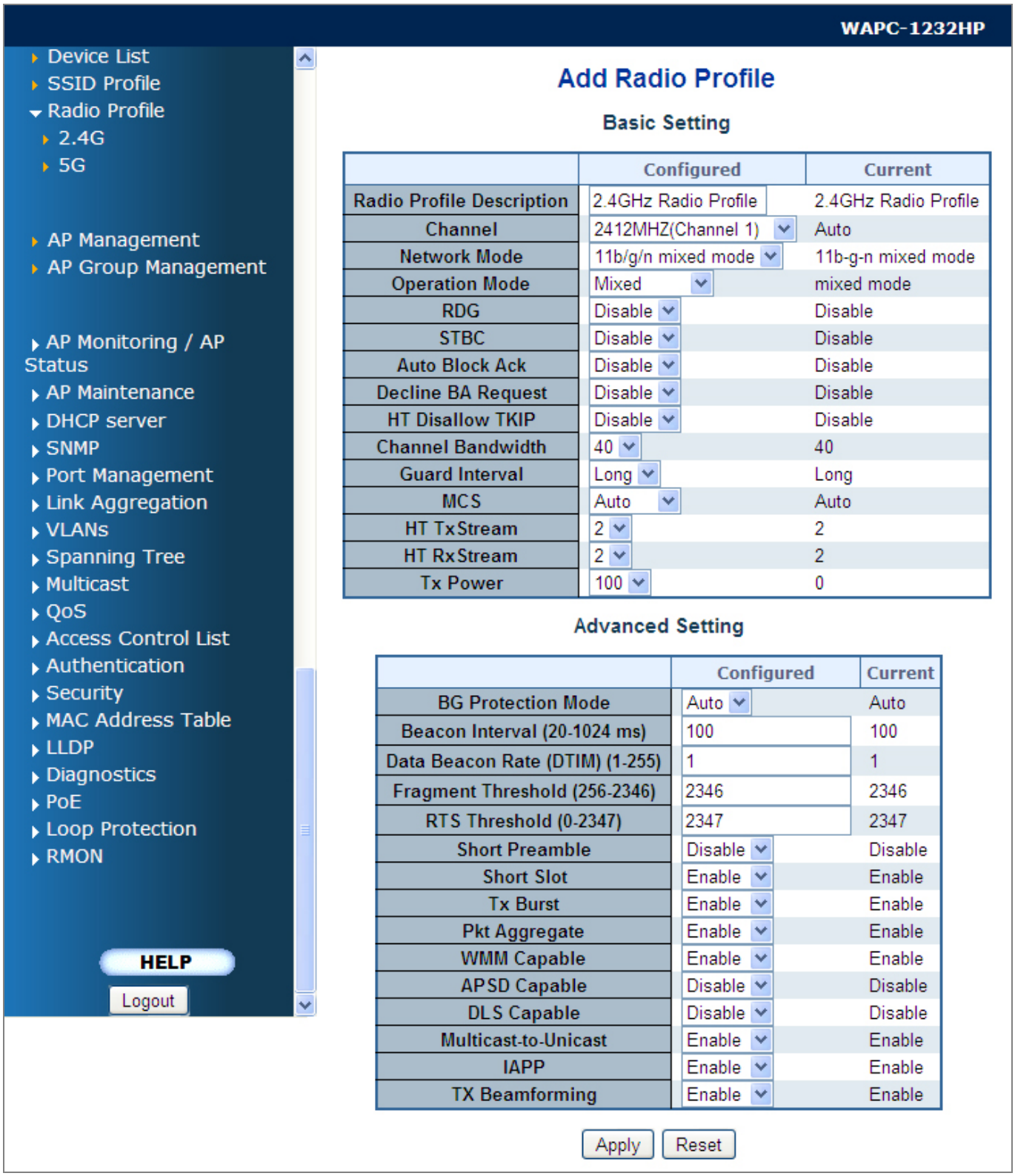

Figure 4-9 Radio Profile – example of 2.4G radio profile

The page includes the following fields:

Object	Description
Basic Setting	
Radio Profile Description	Enter the name of the profile
Channel	The operating frequency of the wireless network. The default is “Auto”.
Network Mode	The network mode of the wireless interface
Operation Mode	Mixed Mode work in 802.11b/g/n mode; Green Field operates only in 802.11n mode and is not compatible with legacy mode (802.11b/g mode). Default is “Mixed”.
RDG	When enabling Reverse Direction Grant, the wireless AP can reduce the transmitted data packet collision by using the Reverse Direction Protocol. During TXOP (Transmission Opportunity) period, the receiver could use the remaining transmission time to transmit data to a sender. The RDG improves transmission performance and scalability in a wireless environment. Default is “Disabled”.
STBC	A mechanism that allows a unit with only one antenna to leverage multiple antennas on other 802.11n devices to improve performance and range. Default is “Disabled”.
Auto Block Ack	An aggregation technique which prevents sending Ack in the communication to reduce the network congestion. If this option is enabled, the device will try to activate this function when transmitting massive data. Default is “Disabled”.
Decline BA Request	Enable this option to decline the Block Ack request addressed by the other devices. Default is “Disabled”.
HT Disallow TKIP	Prevents the use of TKIP data encryption when using 802.11n high throughput data rates. Default is “Disabled”.
Channel Bandwidth	The channel bandwidth of the 2.4GHz wireless interface. Default is “40”.
Guard Interval	Guard intervals are used to ensure that distinct transmissions do not interfere with one another. Only effective under Mixed Mode. Default is “Long”.
MCS	The Modulation and Coding Scheme (MCS) is a value that determines the modulation, coding and number of spatial channels. Default is “Auto”.

HT Tx Stream	HT means High Throughput. The number of HT TxStream means how many antennas will transmit data simultaneously. (Options: 1 or 2) Default is “2”.
HT Rx Stream	The number of HT RxStream means how many antennas will receive data simultaneously. (Option: 1 or 2) Default is “2”.
Tx Power	You can adjust the wireless transmit power here. By reducing the TX power, you can reduce the wireless coverage to make it only cover the area you need. Default is “100”.
Advanced Setting	
BG Protection Mode	In IEEE802.11b/g mixed environment, IEEE802.11g has priority over IEEE802.11b on the connection. Auto: STA will dynamically change to AP announcement. On: IEEE802.11g is used first on the connection. Off: In IEEE802.11b/g mixed environment, take slower conditions. Default is "Auto".
Beacon Interval (20-1024 ms)	The interval of time that this access point broadcasts a beacon. Beacon is used to synchronize the wireless network. Default is “100”.
Data Beacon Rate (DTIM) (1-255)	This is the Delivery Traffic Indication Map. It is used to alert the clients that multicast and broadcast packets buffered at the AP will be transmitted immediately after the transmission of this beacon frame. Default is “1”; if not supported, it will display “0”.
Fragment Threshold (256-2346)	You can specify the maximum size of packet during the fragmentation of data to be transmitted. If you set this value too low, it will result in bad performance. Default is “2346”.
RTS Threshold (0-2347)	When the packet size is smaller than the RTS threshold, the access point will not use the RTS/CTS mechanism to send this packet. Default is “2347”.
Short Preamble	The “Long Preamble” can provide better wireless LAN compatibility while the “Short Preamble” can provide better wireless LAN performance. Default is “Disabled” (Long Preamble).
Short Slot	Calculating the standby time before transmitting data, set up the base time for the wireless AP. If you enable the Short Slot, it can increase performance (if you only expect 802.11g traffic). 802.11b is not

	compatible with short slot time. Default is “Enabled”.
Tx Burst	A performance enhancement that transmits a number of data packets at the same time when the feature is supported by compatible clients. Default is “Enabled”.
Pkt Aggregate	A performance enhancement that combines data packets together when the feature is supported by compatible clients. Default is “Enabled”
WMM Capable	Provide the basic quality on the wireless network complied with IEEE 802.11. Default is “Enabled”.
APSD Capable	APSD function is used for controlling power consumption. APSD enables the Beacon interval at longer distance until the traffic reaches at the specified point. Default is “Disabled”.
DLS Capable	Direct Link Setting (DLS) enables all clients’ data to be transmitted effectively. If DSL is enabled, the wireless LAN router performs establishing the connection of all the clients at this unit and speeding up of data transmission. Default is “Disabled”.
Multicast-to-Unicast	Convert Multicast data to Unicast one. Default is “Enabled”.
IAPP	IAPP (Inter-Access Point Protocol) enabled is recommended as it describes an optional extension to IEEE 802.11 that provides wireless access-point communications among multi-vendor systems. Default is “Disabled”.
TX Beamforming	Enabling TX Beamforming focuses the AP’s energy toward a client. It increases the performance of wireless networks at medium ranges. At short ranges, the signal power is high enough that the SNR will support the maximum data rate. At long ranges, beamforming does not offer a substantial gain over an omnidirectional antenna, and data rates will be identical to non-beamformed transmissions. Default is “Enabled”.
Apply	Save and apply the settings as a new profile.
Reset	Reset the values to default.

After creating the 2.4GHz radio profile, you will see the profile in the list.

Click “**Apply**” to save and apply the setting.

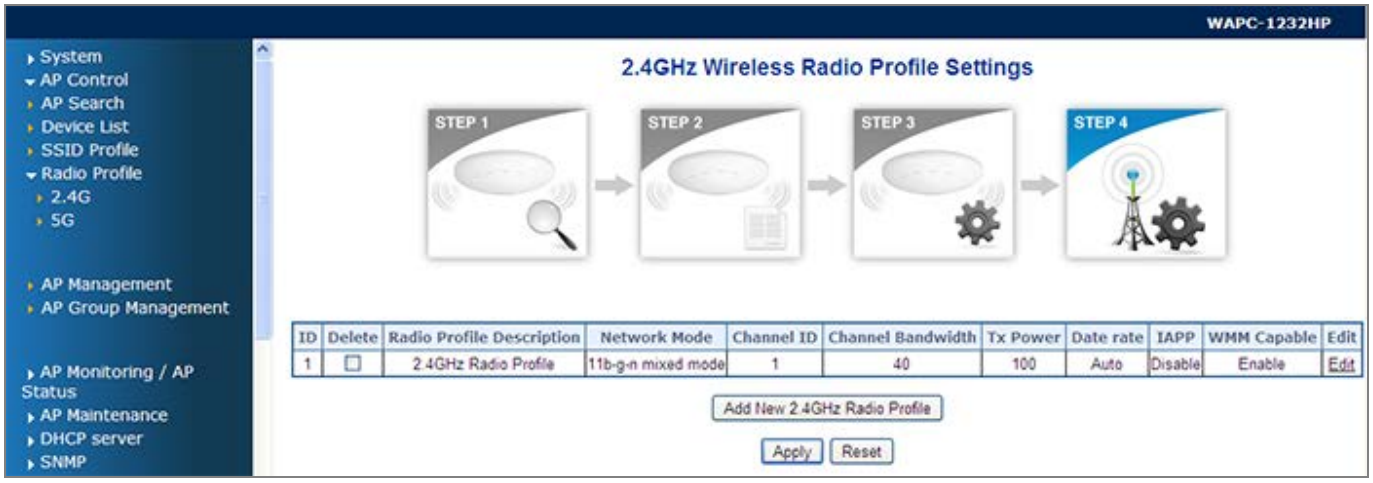

Figure 4-10 2.4G Radio Profile – List

The page includes the following fields:

Object	Description
ID	This field represents the numerical order of device.
Delete	Check this option and click “Apply” to delete the profile.
Radio Profile Description	This field displays the description of the profile.
Network Mode	This field displays the network mode of the profile.
Channel ID	This field displays the channel number of the profile.
Channel Bandwidth	This field displays the channel bandwidth of the profile.
Tx Power	This field displays the Tx power of the profile.
Data Rate	This field displays the data rate of the profile.
IAPP	This field displays the IAPP that is enabled or disabled.
WMM Capable	This field displays the WMM that is enabled or disabled.
Edit	Click “Edit” hyperlink to re-configure the profile.
Add New 2.4GHz Radio Profile	Click the “Add New 2.4GHz Radio Profile” button to create a new 2.4G radio profile.
Apply	In the delete field, check the profile that you want to delete and click “Apply” to apply the setting.
Reset	Click “Reset” to cancel the check box of the delete option back to

	uncheck status.

4.4.2 5G Radio Profile

Go to the "**AP Control-> Radio Profile-> 5G**" page to create a new 5GHz wireless profile related to wireless advance parameters.

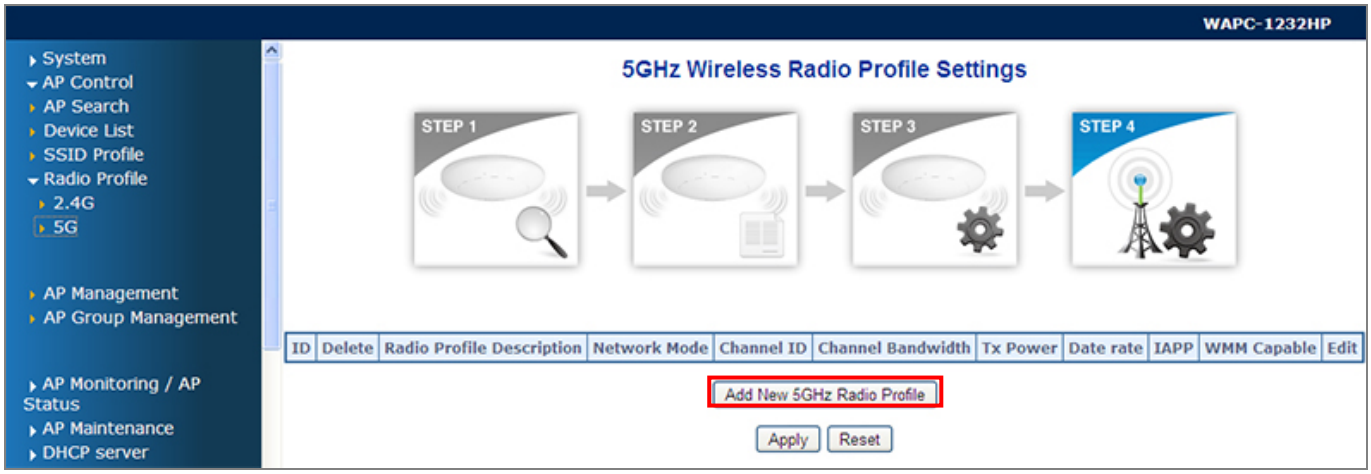

Figure 4-11 5G Radio Profile

Example of the 5G Radio Profile:

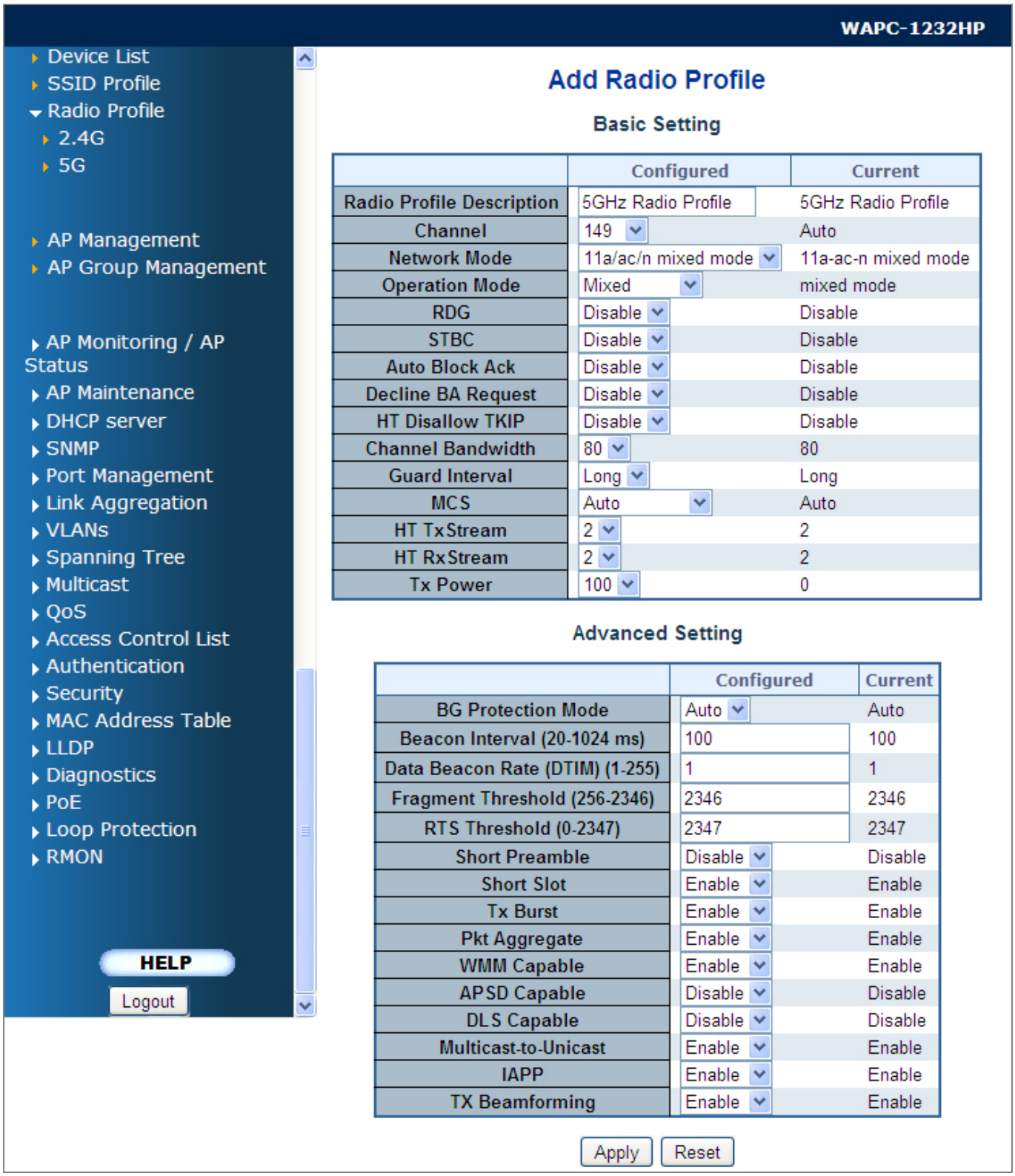

Figure 4-12 Radio Profile – example of 5G radio profile

The page includes the following fields:

Object	Description
Basic Setting	
Radio Profile Description	Enter the name of the profile.
Channel	The operating frequency of the wireless network. The default is “Auto”.
Network Mode	The network mode of the wireless interface
Operation Mode	Mixed Mode work in 802.11b/g/n mode; Green Field operates only in 802.11n mode and will not compatible with legacy mode (802.11b/g mode). Default is “Mixed”. This field only supports in 2.4GHz frequency band.
RDG	When enabling Reverse Direction Grant, the wireless AP can reduce the transmitted data packet collision by using the Reverse Direction Protocol. During TXOP (Transmission Opportunity) period, the receiver could use the remaining transmission time to transmit data to a sender. The RDG improves transmission performance and scalability in a wireless environment. Default is “Disabled”.
STBC	A mechanism that allows a unit with only one antenna to leverage multiple antennas on other 802.11n devices to improve performance and range. Default is “Disabled”.
Auto Block Ack	An aggregation technique which prevents sending Ack in the communication to reduce the network congestion. If this option is enabled, the device will try to activate this function when transmitting massive data. Default is “Disabled”.
Decline BA Request	Enable this option to decline the Block Ack request addressed by the other devices. Default is “Disabled”.
HT Disallow TKIP	Prevents the use of TKIP data encryption when using 802.11n high throughput data rates. Default is “Disabled”.
Channel Bandwidth	The channel bandwidth of the 5GHz wireless interface. Default is “80”.
Guard Interval	Guard intervals are used to ensure that distinct transmissions do not interfere with one another. Only effective under Mixed Mode. Default is “Long”.
MCS	The Modulation and Coding Scheme (MCS) is a value that determines

	the modulation, coding and number of spatial channels. Default is “Auto”.
HT Tx Stream	HT means High Throughput. The number of HT TxStream means how many antennas will transmit data simultaneously. (Option: 1 or 2) Default is “2”.
HT Rx Stream	The number of HT RxStream means how many antennas will receive data simultaneously. (Option: 1 or 2) Default is “2”.
Tx Power	You can adjust the wireless transmit power here. By reducing the TX power, you can reduce the wireless coverage to make it only cover the area you need. Default is “100”.
Advanced Setting	
BG Protection Mode	In IEEE802.11b/g mixed environment, IEEE802.11g has priority over IEEE802.11b on the connection. Auto: STA will dynamically change to AP announcement. On: IEEE802.11g is used first on the connection. Off: In IEEE802.11b/g mixed environment, take slower conditions. Default is "Auto". This field only supports in 2.4GHz frequency band.
Beacon Interval (20-1024 ms)	The interval of time that this access point broadcasts a beacon. Beacon is used to synchronize the wireless network. Default is “100”.
Data Beacon Rate (DTIM) (1-255)	This is the Delivery Traffic Indication Map. It is used to alert the clients that multicast and broadcast packets buffered at the AP will be transmitted immediately after the transmission of this beacon frame. Default is “1”; if not supported, it will display “0”.
Fragment Threshold (256-2346)	You can specify the maximum size of packet during the fragmentation of data to be transmitted. If you set this value too low, it will result in bad performance. Default is “2346”.
RTS Threshold (0-2347)	When the packet size is smaller than the RTS threshold, the access point will not use the RTS/CTS mechanism to send this packet. Default is “2347”.
Short Preamble	The “Long Preamble” can provide better wireless LAN compatibility while the “Short Preamble” can provide better wireless LAN performance. Default is “Disabled” (Long Preamble).

Short Slot	Calculating the standby time before transmitting data, set up the base time for the wireless AP. If you enable the Short Slot, it can increase performance (if you only expect 802.11g traffic). 802.11b is not compatible with short slot time. Default is “Enabled”.
Tx Burst	A performance enhancement that transmits a number of data packets at the same time when the feature is supported by compatible clients. Default is “Enabled”.
Pkt Aggregate	A performance enhancement that combines data packets together when the feature is supported by compatible clients. Default is “Enabled”
WMM Capable	Provide the basic quality on the wireless network complied with IEEE 802.11. Default is “Enabled”.
APSD Capable	APSD function is used for controlling power consumption. APSD enables the Beacon interval at longer distance until the traffic reaches at the specified point. Default is “Disabled”.
DLS Capable	Direct Link Setting (DLS) enables all clients’ data to be transmitted effectively. If DSL is enabled, the wireless LAN router performs establishing the connection of all the clients at this unit and speeding up of data transmission. Default is “Disabled”.
Multicast-to-Unicast	Convert Multicast data to Unicast one. Default is “Enabled”.
IAPP	IAPP (Inter-Access Point Protocol) enabled is recommended as it describes an optional extension to IEEE 802.11 that provides wireless access-point communications among multivendor systems. Default is “Disabled”.
TX Beamforming	Enable TX Beamforming focuses the AP’s energy toward a client. It increases the performance of wireless networks at medium ranges. At short ranges, the signal power is high enough that the SNR will support the maximum data rate. At long ranges, beamforming does not offer a substantial gain over an omnidirectional antenna, and data rates will be identical to non-beamformed transmissions. Default is “Enabled”.
Apply	Save and apply the settings as a new profile.
Reset	Reset the values to default.

After creating the 5GHz radio profile, you will see the profile in the list.

Click “**Apply**” to save and apply the setting.

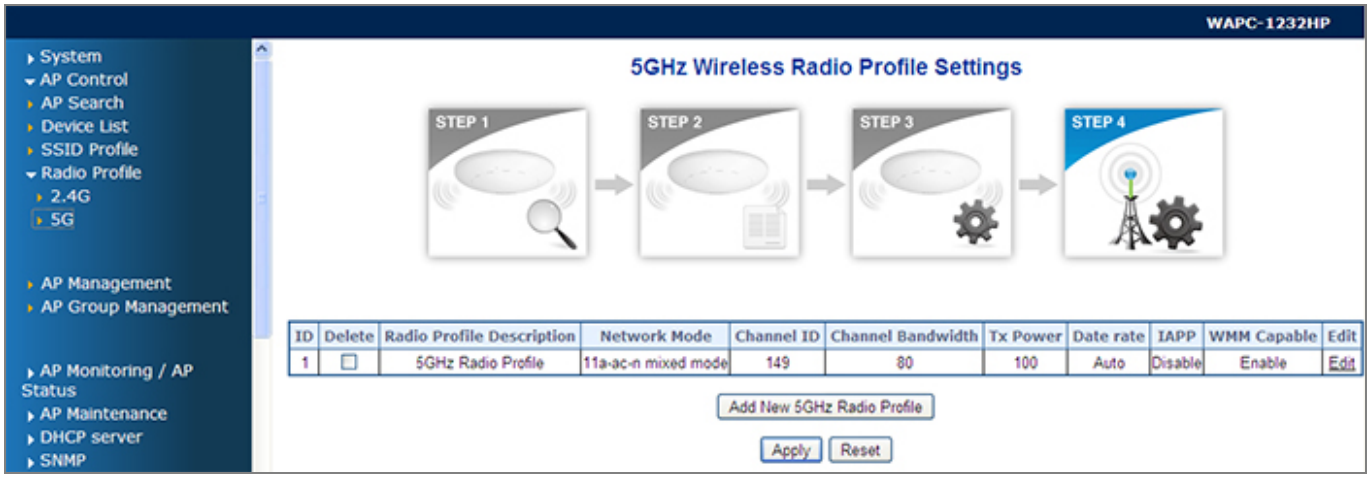

Figure 4-13 5G Radio Profile – List

The page includes the following fields:

Object	Description
ID	This field represents the numerical order of device.
Delete	Check this option and click “Apply” to delete the profile.
Radio Profile Description	This field displays the description of the profile.
Network Mode	This field displays the network mode of the profile.
Channel ID	This field displays the channel number of the profile.
Channel Bandwidth	This field displays the channel bandwidth of the profile.
Tx Power	This field displays the Tx power of the profile.
Data Rate	This field displays the data rate of the profile.
IAPP	This field displays the IAPP that is enabled or disabled.
WMM Capable	This field displays the WMM that is enabled or disabled.
Edit	Click “Edit” hyperlink to re-configure the profile.
Add New 5GHz Radio Profile	Click “Add New 5GHz Radio Profile” button to create a new 5G radio profile.
Apply	In the delete field, check the profile that you want to delete and click “Apply” to apply the setting.
Reset	Click “Reset” to cancel the check box of the delete option back to

	uncheck status.

4.5 AP Management

Go to the "**AP Control-> AP Management**" page to configure the wireless setting for each managed AP.

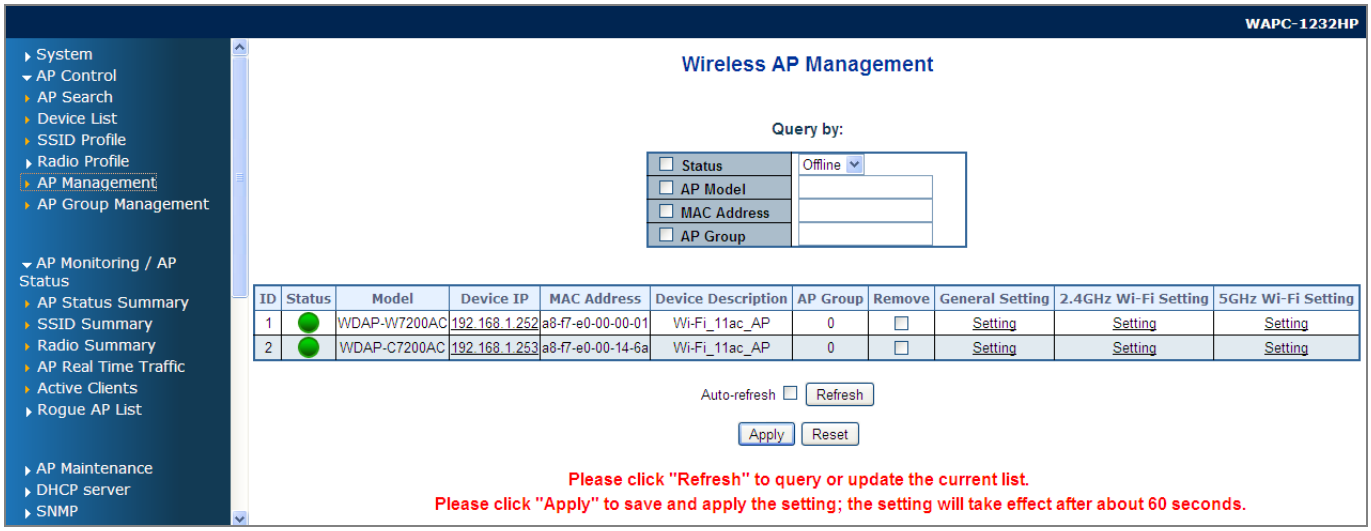

Figure 4-14 AP Management – AP List

The page includes the following fields:

Object	Description
Query by	Use one and multiple filtering rules to query the AP and click "Refresh" to execute the query. **Status:** Check this option and filter the AP list by the AP status online or offline. **AP Model:** Check this option and filter the AP list by the AP Model that user specifies. **MAC Address:** Check this option and filter the AP list by the MAC address that user specifies. **AP Group:** check this option and filter the AP list by the group that user specifies.
ID	This field represents the numerical order of device.
Status	**Online:** the AP is online **Offline:** the AP is offline **Wireless Disable:** the 2.4G & 5G wireless signals are both disabled

Model	The model name of the AP
Device IP	The IP address of the AP
MAC Address	The MAC address of the AP
Device Description	The device description of the AP This field can be modified through the “Setting” hyperlink under the sub-item “General Setting”.
AP Group	If the AP has been added to a group, the “General Setting”, “2.4GHz Wi-Fi Setting” and “5GHz Wi-Fi Setting” will be disabled; user must go to the AP Group Management page to configure this through its group.
Remove	Check this option and click “Apply” to remove the AP from the list.
General Setting	Click the “Setting” hyperlink to edit and apply the new general setting including the AP description and TCP/IP setting.
2.4GHz Wi-Fi Setting	Click the “Setting” hyperlink to apply the 2.4GHz SSID and Radio profiles to the AP.
5GHz Wi-Fi Setting	Click the “Setting” hyperlink to apply the 5GHz SSID and Radio profiles to the AP.
Auto-refresh	Check this option to let the system refresh the AP list every 15 seconds automatically.
Refresh	Click "Refresh" to query or update the current list.
Apply	Click "Apply" to save and apply the setting; the setting will take effect after about 60 seconds.
Reset	Click “Reset” to cancel the check box of the remove option back to uncheck status.

4.5.1 General Setting

Click the “**Setting**” hyperlink under the “**General Setting**” field to enter the sub-menu of AP Management.

On this page, you can edit and apply the new general setting including the AP description and TCP/IP setting.

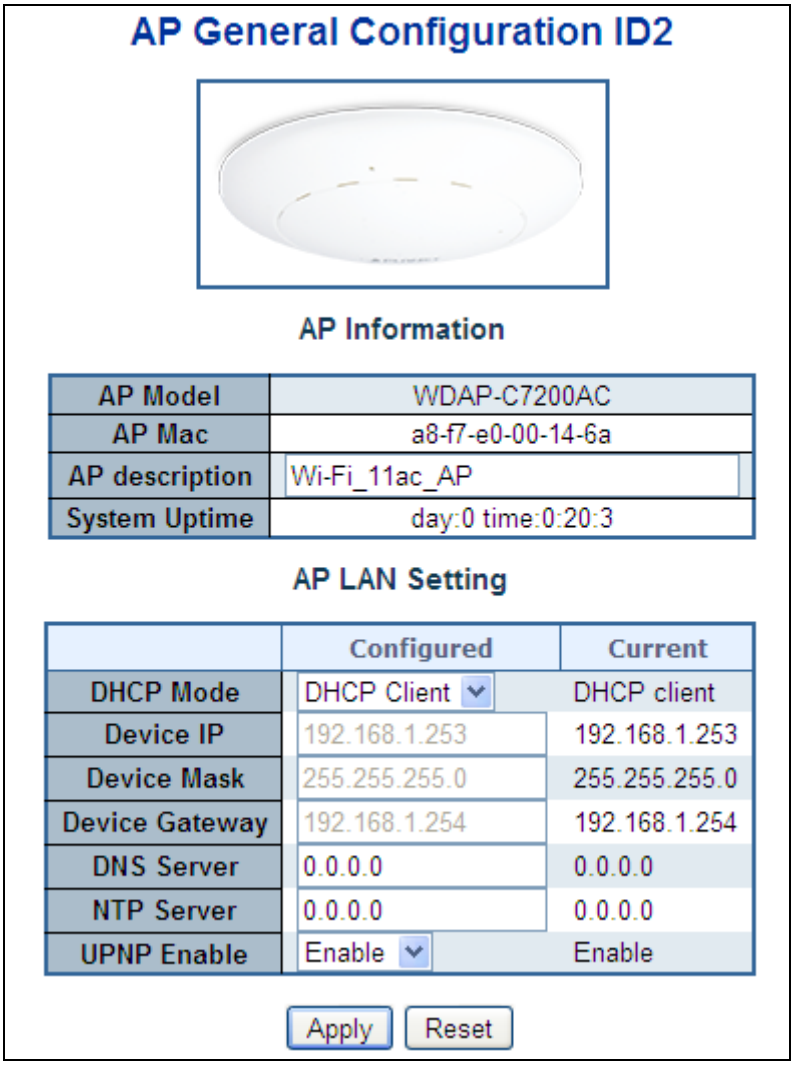

Figure 4-15 AP Management - General Setting

The page includes the following fields:

Object	Description
AP Information	
AP Model	The model name of the AP
AP MAC	The MAC address of the AP
AP Description	The device description of the AP This field length is limited to 32 characters.
System Uptime	The system bootup time
AP LAN Setting	

DHCP Mode	This field is used to enable or disable DHCP Server of the AP. Static: Choose this option to configure the static IP address for the AP. DHCP Client: Choose this option to obtain the IP address from the DHCP Server for the AP. DHCP Server: Choose this option to assign the IP address to the wireless clients for the AP.
Device IP	This field is used to set the IP address of the AP when the DHCP Mode is changed to “Static”.
Device Mask	This field is used to set the net mask of the AP when the DHCP Mode is changed to “Static”.
Device Gateway	This field is used to set the Gateway IP address of the AP when the DHCP Mode is changed to “Static”.
DNS Server	This field is used to set the DNS Server of the AP.
NTP Server	This field is used to set the NTP Server of the AP.
UPNP Enable	This field is used to enable or disable UPNP option of the AP.
Apply	Click "Apply" to save and apply the setting.
Reset	Click “Reset” to erase all settings to default values.

4.5.2 2.4GHz Wi-Fi Setting

Click the “**Setting**” hyperlink under the “**2.4GHz Wi-Fi Setting**” field to enter the sub-menu of AP Management. On this page, you can designate the AP to use the specific 2.4GHz SSID and Radio profiles.

d

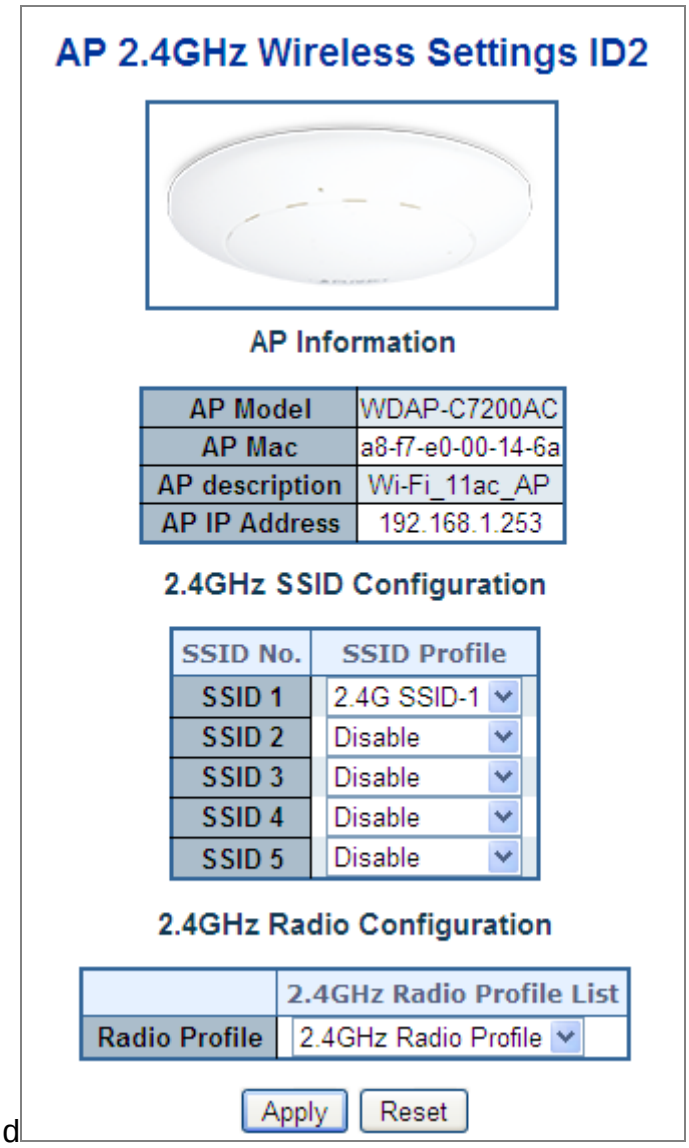

Figure 4-16 AP Management – 2.4G Wi-Fi Setting

The page includes the following fields:

Object	Description
AP Information	
AP Model	The model name of the AP
AP MAC	The MAC address of the AP
AP Description	The device description of the AP. To edit this field, please go to the “General Setting” page.
AP IP Address	This IP address of the AP

2.4GHz SSID Configuration	
SSID 1	This field is used to designate the 2.4GHz SSID Profile to the AP's 2.4GHz SSID-1. To create new SSID profile, please go to the **SSID Profile** page.
SSID 2	This field is used to designate the 2.4GHz SSID Profile to the AP's 2.4GHz SSID-2. To create new SSID profile, please go to the **SSID Profile** page.
SSID 3	This field is used to designate the 2.4GHz SSID Profile to the AP's 2.4GHz SSID-3. To create new SSID profile, please go to the **SSID Profile** page.
SSID 4	This field is used to designate the 2.4GHz SSID Profile to the AP's 2.4GHz SSID-4. To create new SSID profile, please go to the **SSID Profile** page.
SSID 5	This field is used to designate the 2.4GHz SSID Profile to the AP's 2.4GHz SSID-5. To create new SSID profile, please go to the **SSID Profile** page.
2.4GHz Radio Configuration	
Radio Profile	This field is used to designate the 2.4GHz Radio Profile to the AP's 2.4GHz advanced setting. To create new 2.4GHz radio profile, please go to the "**Radio Profile-> 2.4G**" page.
Apply	Click "Apply" to save and apply the setting.
Reset	Click "Reset" to erase all settings to default values.

4.5.3 5GHz Wi-Fi Setting

Click the "**Setting**" hyperlink under the "**5GHz Wi-Fi Setting**" field to enter the sub-menu of AP Management. On this page, you can designate the AP to use the specific 5GHz SSID and Radio profiles.

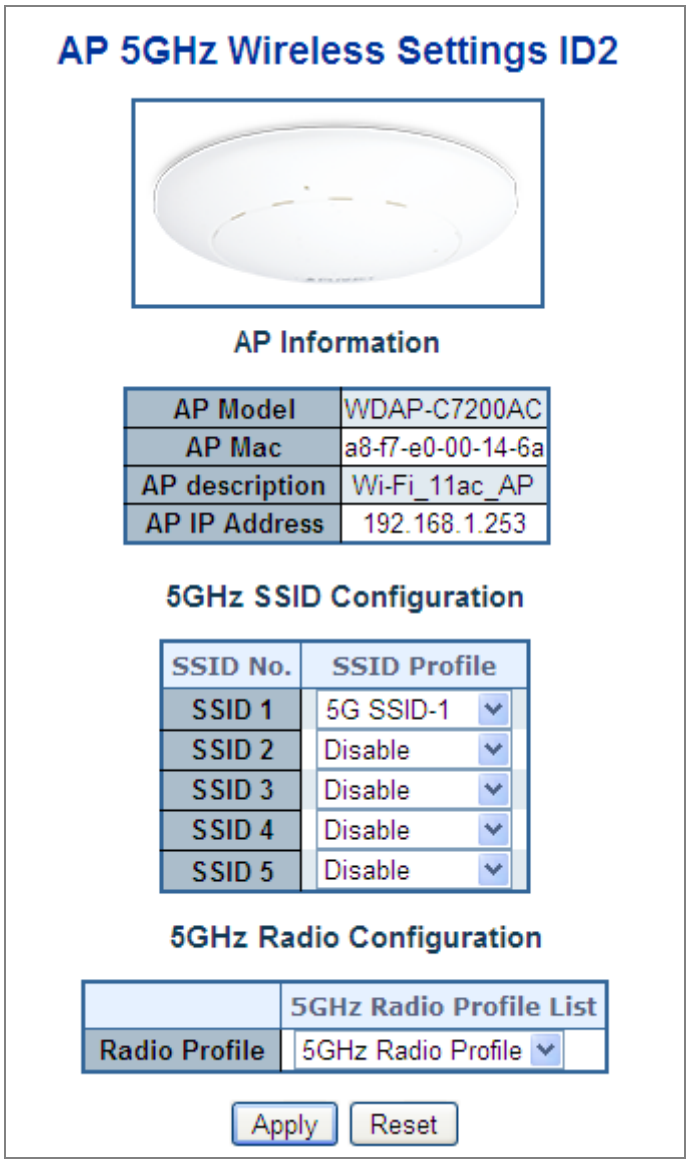

Figure 4-17 AP Management – 5G Wi-Fi Setting

The page includes the following fields:

Object	Description
AP Information	
AP Model	The model name of the AP
AP MAC	The MAC address of the AP
AP Description	The device description of the AP. To edit this field, please go to the “General Setting” page.
AP IP Address	This IP address of the AP

5GHz SSID Configuration	
SSID 1	This field is used to designate the 5GHz SSID Profile to the AP's 5GHz SSID-1. To create new SSID profile, please go to the **SSID Profile** page.
SSID 2	This field is used to designate the 5GHz SSID Profile to the AP's 5GHz SSID-2. To create new SSID profile, please go to the **SSID Profile** page.
SSID 3	This field is used to designate the 5GHz SSID Profile to the AP's 5GHz SSID-3. To create new SSID profile, please go to the **SSID Profile** page.
SSID 4	This field is used to designate the 5GHz SSID Profile to the AP's 5GHz SSID-4. To create new SSID profile, please go to the **SSID Profile** page.
SSID 5	This field is used to designate the 5GHz SSID Profile to the AP's 5GHz SSID-5. To create new SSID profile, please go to the **SSID Profile** page.
5GHz Radio Configuration	
Radio Profile	This field is used to designate the 5GHz Radio Profile to the AP's 5GHz advanced setting. To create new 5GHz radio profile, please go to the "**Radio Profile-> 5G**" page.
Apply	Click "Apply" to save and apply the setting.
Reset	Click "Reset" to erase all settings to default values.

4.6 AP Group Management

Go to the "**AP Control-> AP Group Management**" page to create a new AP group and then configure the wireless setting by group. Click "**Add Group Profile**" to add the new AP group.

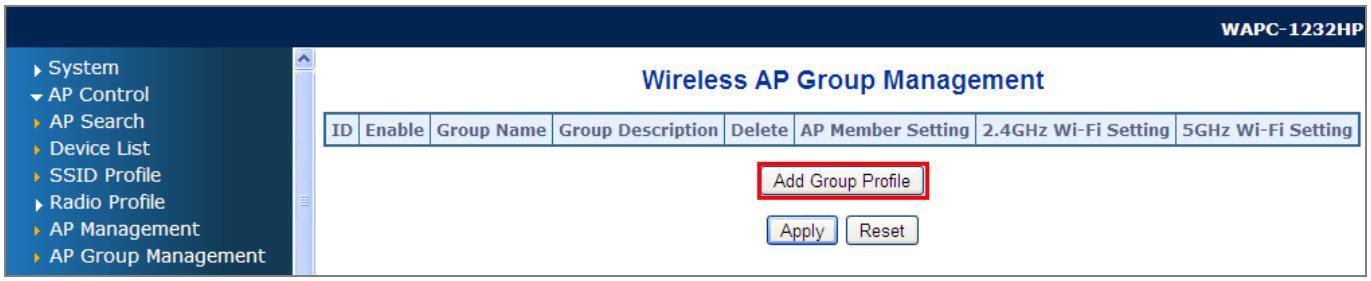

Figure 4-18 AP Group Management

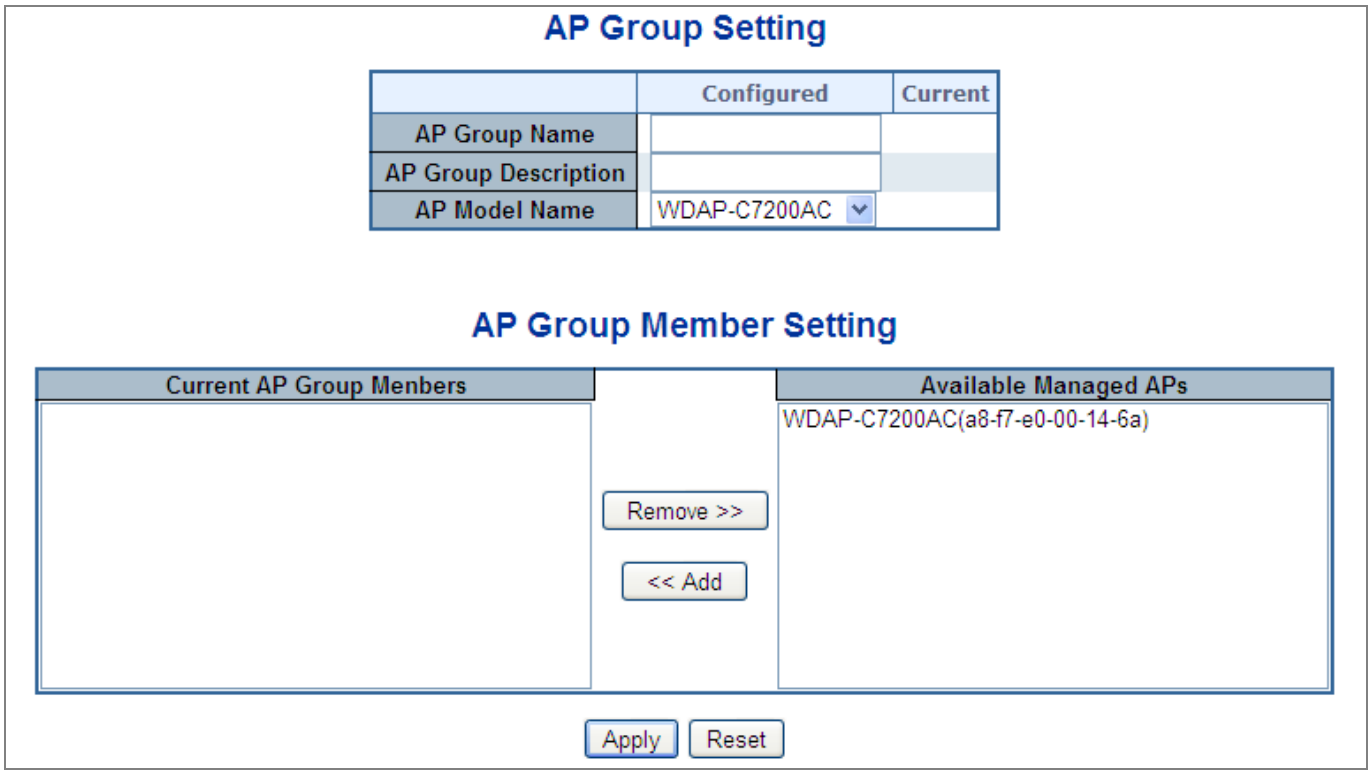

Figure 4-19 AP Group Management - add a new AP group

The page includes the following fields:

Object	Description
AP Group Setting	
AP Group Name	The AP group name The field length is limited to 16 characters.
AP Group Description	The description of the AP group The field length is limited to 16 characters.
AP Model Name	The model name of the AP Only the same model of the AP can be created as a group to prevent any wireless parameters from inconsistency caused by the provisioning failure.
AP Group Member Setting	
Current AP Group Members	This section displays the members in this AP group.
Available Managed APs	This section displays the APs conforming to user selected model, and is available for grouping.
Remove >>	Highlight the current AP and click "**Remove >>**" to remove it from the group.

<< Add	Highlight the available AP and click "**<< Add**" to add it to the group.
Apply	Click "Apply" to save and apply the settings.
Reset	Click "Reset" to erase all settings.

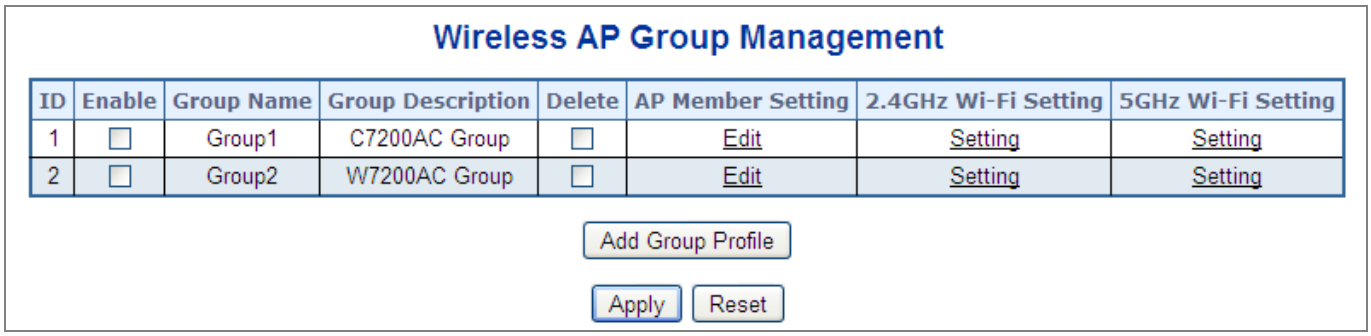

Figure 4-20 AP Group Management – group list

The page includes the following fields:

Object	Description
ID	This field represents the numerical order of device.
Enable	Check the group that you want to upload the new setting and click "Apply" to take effect.
Group Name	This field displays the group name.
Group Description	This field displays the group description.
Delete	Check the group that you want to delete and click "Apply" to delete the group.
AP Member Setting	Click "Edit" to edit the group.
2.4GHz Wi-Fi Setting	Click the "Setting" hyperlink to apply the 2.4GHz SSID and Radio profiles to the AP group.
5GHz Wi-Fi Setting	Click the "Setting" hyperlink to apply the 5GHz SSID and Radio profiles to the AP group.
Apply	Click the "Apply" button to let the following behaviors take effect. 1. In the **Enable** field, check the group that you want to upload the new setting and click "Apply" to take effect. 2. In the **Delete** field, check the group that you want to delete and click

	“Apply” to delete the group.
Reset	Click “Reset” to cancel any check box back to uncheck status.

4.6.1 2.4GHz Wi-Fi Setting

Click the “**Setting**” hyperlink under the “**2.4GHz Wi-Fi Setting**” field to enter the sub-menu of AP Group Management. On this page, you can designate the AP group to use the specific 2.4GHz SSID and Radio profiles.

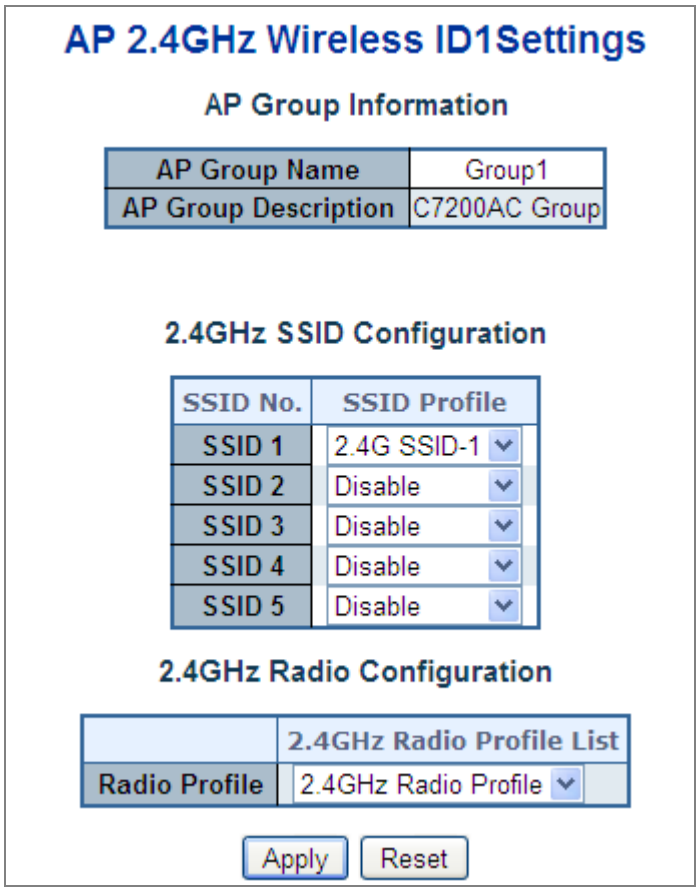

Figure 4-21 AP Group Management – 2.4G Wi-Fi Setting

The page includes the following fields:

Object	Description
AP Information	
AP Group Name	The AP group name To edit this field, please go back to the “AP Member Setting” page.
AP Group Description	The description of the AP group. To edit this field, please go back to the “AP Member Setting” page.

2.4GHz SSID Configuration	
SSID 1	This field is used to designate the 2.4GHz SSID Profile to the AP's 2.4GHz SSID-1. To create new SSID profile, please go to the **SSID Profile** page.
SSID 2	This field is used to designate the 2.4GHz SSID Profile to the AP's 2.4GHz SSID-2. To create new SSID profile, please go to the **SSID Profile** page.
SSID 3	This field is used to designate the 2.4GHz SSID Profile to the AP's 2.4GHz SSID-3. To create new SSID profile, please go to the **SSID Profile** page.
SSID 4	This field is used to designate the 2.4GHz SSID Profile to the AP's 2.4GHz SSID-4. To create new SSID profile, please go to the **SSID Profile** page.
SSID 5	This field is used to designate the 2.4GHz SSID Profile to the AP's 2.4GHz SSID-5. To create new SSID profile, please go to the **SSID Profile** page.
2.4GHz Radio Configuration	
Radio Profile	This field is used to designate the 2.4GHz Radio Profile to the AP's 2.4GHz advanced setting. To create new 2.4GHz radio profile, please go to "**Radio Profile-> 2.4G**" page.
Apply	Click "Apply" to save and apply the setting.
Reset	Click "Reset" to erase all settings to default values.

4.6.2 5GHz Wi-Fi Setting

Click the "**Setting**" hyperlink under the "**5GHz Wi-Fi Setting**" field to enter the sub-menu of AP Group Management. On this page, you can designate the AP group to use the specific 5GHz SSID and Radio profiles.

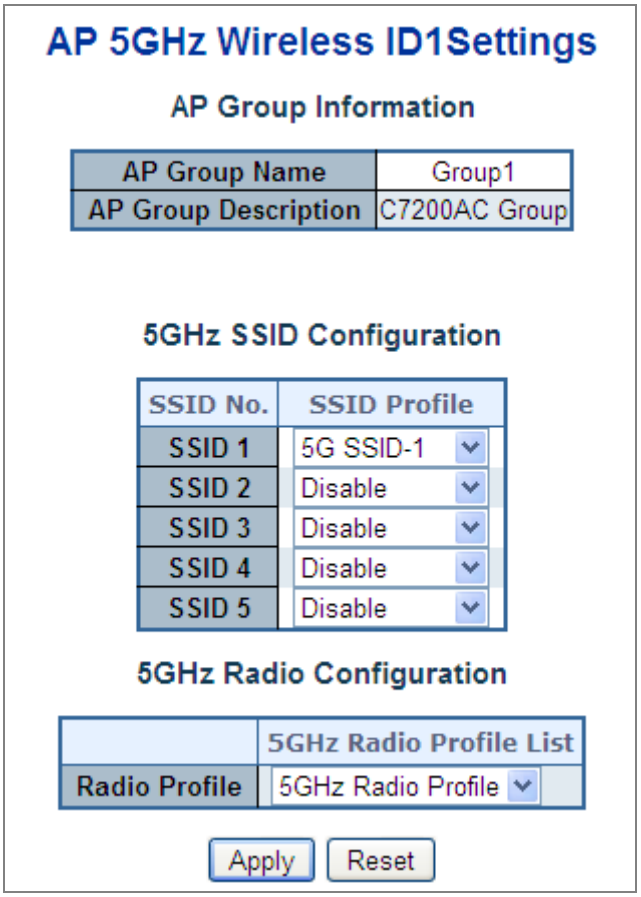

Figure 4-22 AP Group Management – 5G Wi-Fi Setting

The page includes the following fields:

Object	Description
AP Information	
AP Group Name	The AP group name To edit this field, please go back to the “AP Member Setting” page.
AP Group Description	The description of the AP group To edit this field, please go back to the “AP Member Setting” page.
5GHz SSID Configuration	
SSID 1	This field is used to designate the 5GHz SSID Profile to the AP’s 5GHz SSID-1. To create new SSID profile, please go to the **SSID Profile** page.
SSID 2	This field is used to designate the 5GHz SSID Profile to the AP’s 5GHz SSID-2. To create new SSID profile, please go to the **SSID Profile** page.
SSID 3	This field is used to designate the 5GHz SSID Profile to the AP’s 5GHz SSID-3. To create new SSID profile, please go to the **SSID Profile** page.

SSID 4	This field is used to designate the 5GHz SSID Profile to the AP's 5GHz SSID-4. To create new SSID profile, please go to the **SSID Profile** page.
SSID 5	This field is used to designate the 5GHz SSID Profile to the AP's 5GHz SSID-5. To create new SSID profile, please go to the **SSID Profile** page.
5GHz Radio Configuration	
Radio Profile	This field is used to designate the 5GHz Radio Profile to the AP's 5GHz advanced setting. To create new 5GHz radio profile, please go to the "**Radio Profile-> 5G**" page.
Apply	Click "Apply" to save and apply the setting.
Reset	Click "Reset" to erase all settings to default values.

Chapter 5. AP Monitoring/AP Status

In the AP Monitoring section, there are six sub menus which make you able to observe the current status of single or multiple APs at once.

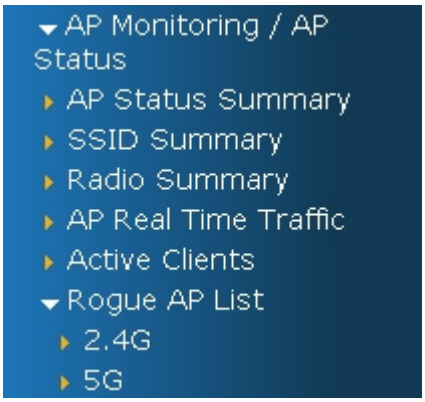

Figure 5-1 Menu – AP Monitoring/AP Status

5.1 AP Status Summary

Go to "**AP Monitoring/AP Status-> AP Status Summary**" to check the status of the managed APs in the Device List.

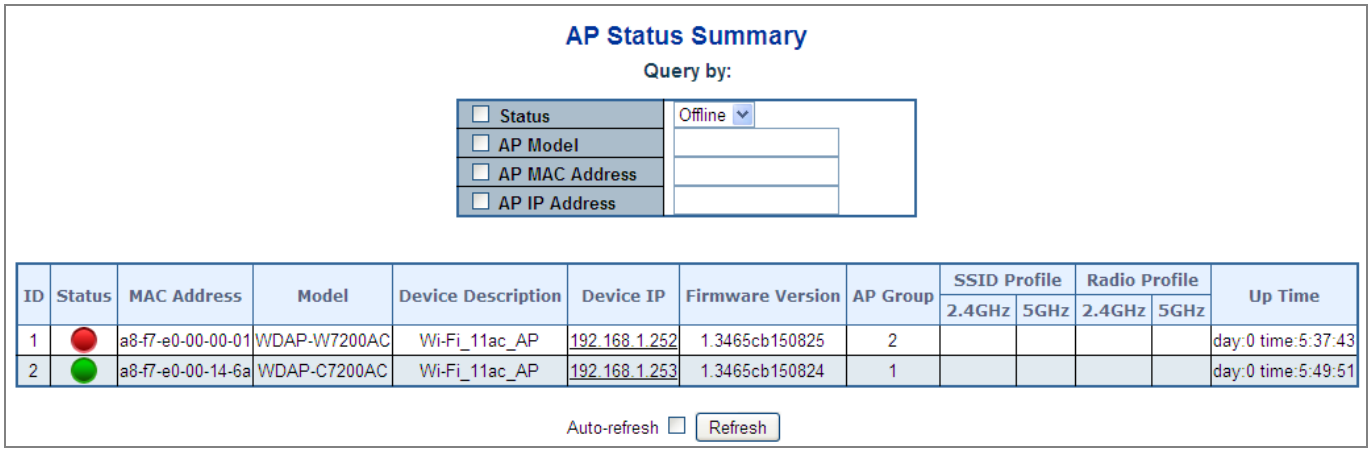

Figure 5-2 AP Monitoring/AP Status – AP Status Summary

The page includes the following fields:

Object	Description
Query by	Use one and multiple filtering rules to query the AP and click "Refresh" to execute the query.

	Status: Check this option and filter the AP list by the AP status online or offline. **AP Model:** Check this option and filter the AP list by the AP Model that user specifies. **AP MAC Address:** Check this option and filter the AP list by the MAC address that user specifies. **AP IP Address:** Check this option and filter the AP list by the IP address that user specifies.
ID	This field represents the numerical order of device.
Status	**Online:** the AP is online **Offline:** the AP is offline **Wireless Disable:** the 2.4G & 5G wireless signals are both disabled
MAC Address	The MAC address of the AP
Model	The model name of the AP
Device Description	The device description of the AP This field can be modified through the “Setting” hyperlink under the sub-item “General Setting”.
Device IP	The IP address of the AP
Firmware Version	The current firmware version of the AP.
AP Group	The AP group number of the AP
SSID Profile	2.4GHz: display the current 2.4G SSID profile that has been applied to this AP. 5GHz: display the current 5G SSID profile that has been applied to this AP. ※ If no profile has been applied to the AP, it will not display any value.
Radio Profile	2.4GHz: display the current 2.4G Radio profile that has been applied to this AP. 5GHz: display the current 5G Radio profile that has been applied to this AP. ※ If no profile has been applied to the AP, it will not display any value.
Auto-refresh	Check this option to let the system refresh the AP list every 15 seconds automatically.
Refresh	Click "Refresh" to query or update the current list.

5.2 SSID Summary

Go to "**AP Monitoring/AP Status-> SSID Summary**" to check each SSID configuration status of the managed APs in the Device List.

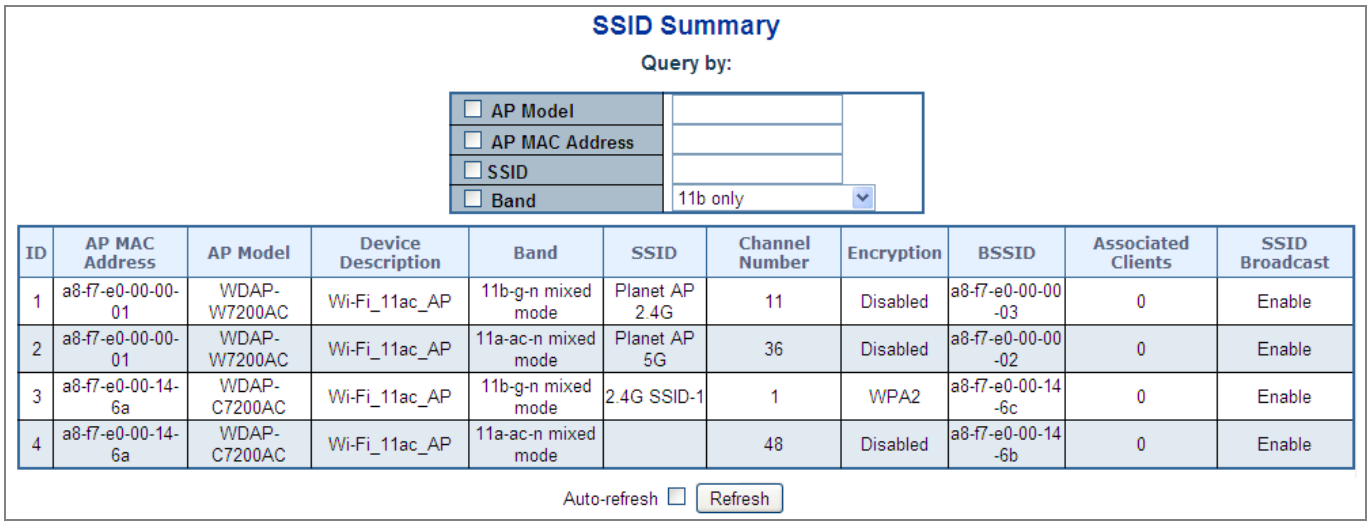

Figure 5-3 AP Monitoring/AP Status – SSID Summary

The page includes the following fields:

Object	Description
Query by	Use one and multiple filtering rules to query the AP and click "Refresh" to execute the query. **AP Model:** Check this option and filter the AP list by the AP model that user specifies. **AP MAC Address:** Check this option and filter the AP list by the MAC address that user specifies. **SSID:** Check this option and filter the AP list by the SSID name that user specifies. **Band:** Check this option and filter the AP list by the frequency band that user specifies.
ID	This field represents the numerical order of device.
AP MAC Address	The MAC address of the AP
AP Model	The model name of the AP
Device Description	The device description of the AP This field can be modified through the "Setting" hyperlink under the sub-item

	"General Setting".
Band	The frequency band of the AP
SSID	The SSID name of the AP
Channel Number	The channel number of the AP
Encryption	The encryption of the AP
BSSID	The basic service set identification (BSSID) of this VAP.
Associated Clients	The client number associated to this VAP.
SSID Broadcast	Displays the SSID Broadcast option that is enabled or disabled in this VAP.
Auto-refresh	Check this option to let the system refresh the AP list every 15 seconds automatically.
Refresh	Click "Refresh" to query or update the current list.

5.3 Radio Summary

Go to "**AP Monitoring / AP Status-> Radio Summary**" to check each Radio configuration status of the managed APs in the Device List.

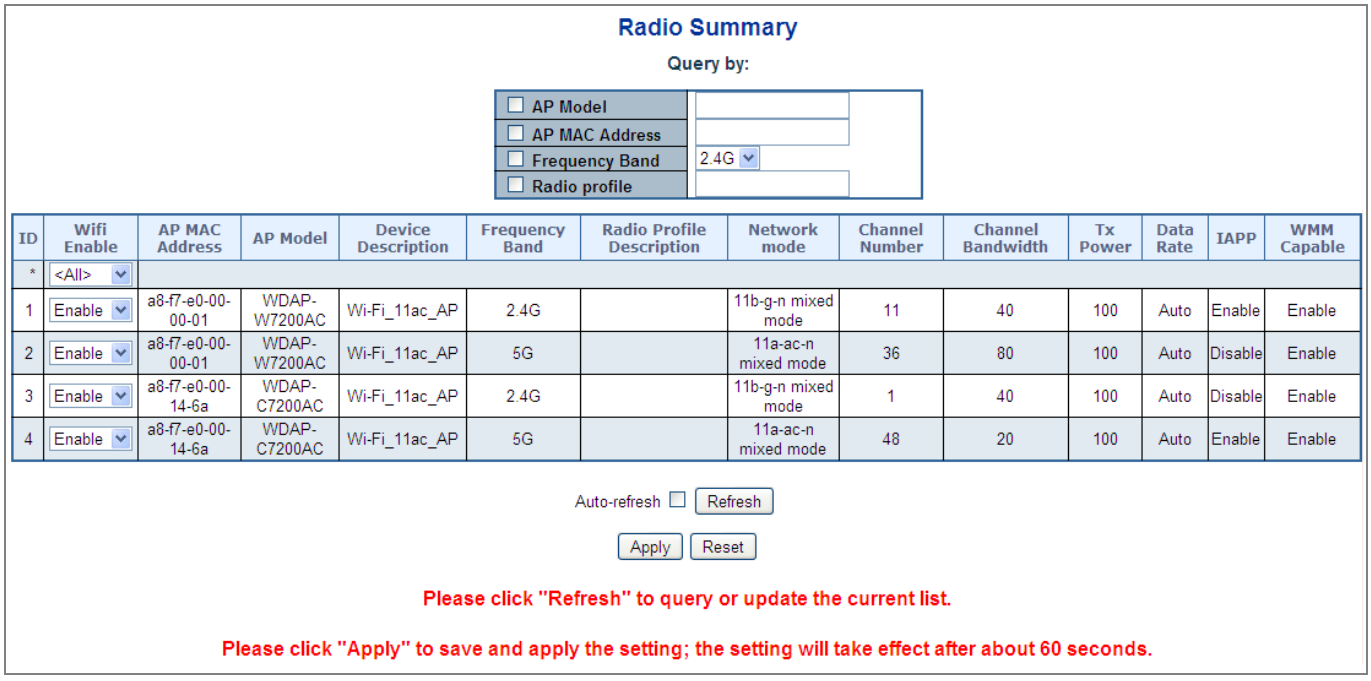

Figure 5-4 AP Monitoring/AP Status – Radio Summary

The page includes the following fields:

Object	Description
Query by	Use one and multiple filtering rules to query the AP and click “Refresh” to execute the query. **AP Model:** Check this option and filter the AP list by the AP model that user specifies. **AP MAC Address:** Check this option and filter the AP list by the MAC address that user specifies. **Frequency Band:** Check this option and filter the AP list by the frequency band that user specifies. **Radio Profile:** Check this option and filter the AP list by the radio profile name that user specifies.
ID	This field represents the numerical order of device.
AP MAC Address	The MAC address of the AP
AP Model	The model name of the AP
Device Description	The device description of the AP This field can be modified through the “Setting” hyperlink under the sub-item “General Setting”.
Frequency Band	The frequency band of the AP
Radio Profile Description	The radio profile description of the AP
Network Mode	The network mode of the AP
Channel Number	The channel number of the AP
Channel Bandwidth	The channel bandwidth of the AP
Tx Power	The Tx Power of the AP
Data Rate	The data rate of the AP
IAPP	The current IAPP status of the AP
WMM Capable	The current WMM status of the AP
Auto-refresh	Check this option to let the system refresh the AP list every 15 seconds automatically.
Refresh	Click "Refresh" to query or update the current list.

Apply	Click "Apply" to save and apply the setting.
Reset	Click “Reset” to erase all settings to default values.

5.4 AP Real Time Traffic

Go to “**AP Monitoring/AP Status-> AP Real Time Traffic**” to check real-time traffic of the managed APs including the LAN and wireless physical interfaces.

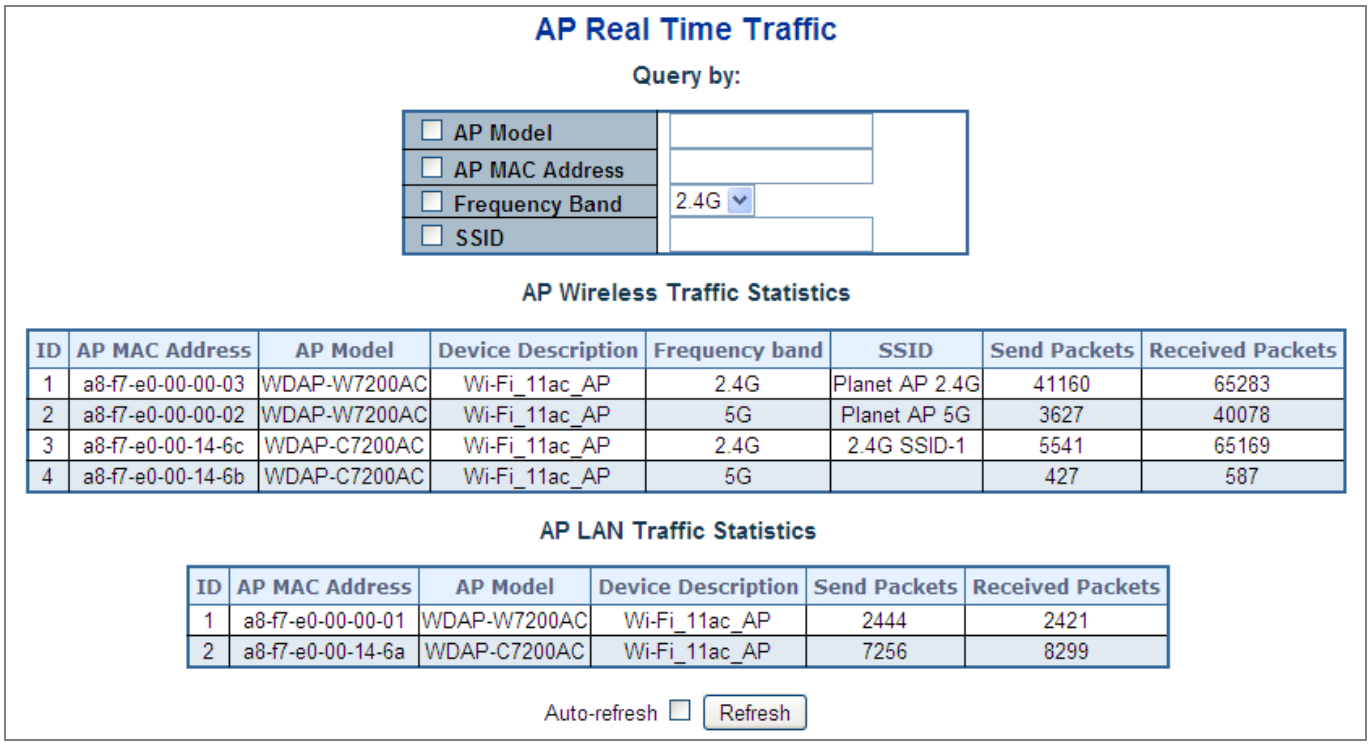

Figure 5-5 AP Monitoring/AP Status – AP Real Time Traffic

The page includes the following fields:

Object	Description
AP Wireless Traffic Statistics	
Query by	Use one and multiple filtering rules to query the AP and click “Refresh” to execute the query. **AP Model:** Check this option and filter the AP list by the AP Model that user specifies. **AP MAC Address:** Check this option and filter the AP list by the MAC address that user specifies. **Frequency Band:** Check this option and filter the AP list by the frequency

	band that user specifies. **SSID:** Check this option and filter the AP list by the SSID name that user specifies.
ID	This field represents the numerical order of device.
AP MAC Address	The MAC address of the wireless interface
AP Model	The model name of the AP
Device Description	The device description of the AP This field can be modified through the “Setting” hyperlink under the sub-item “General Setting”.
Frequency Band	The frequency band of the AP
SSID	The SSID name of the AP
Sent Packets	The packets sent by this interface
Received Packets	The packets received by this interface
AP LAN Traffic Statistics	
ID	This field represents the numerical order of device.
AP MAC Address	The MAC address of the LAN interface
AP Model	The model name of the AP
Device Description	The device description of the AP This field can be modified through the “Setting” hyperlink under the sub-item “General Setting”.
Sent Packets	The packets sent by this interface.
Received Packets	The packets received by this interface.
Auto-refresh	Check this option to let the system refresh the AP list every 15 seconds automatically.
Refresh	Click "Refresh" to query or update the current list.

5.5 Active Clients

Go to “**AP Monitoring/AP Status-> Active Clients**” to check current associated clients of the managed APs.

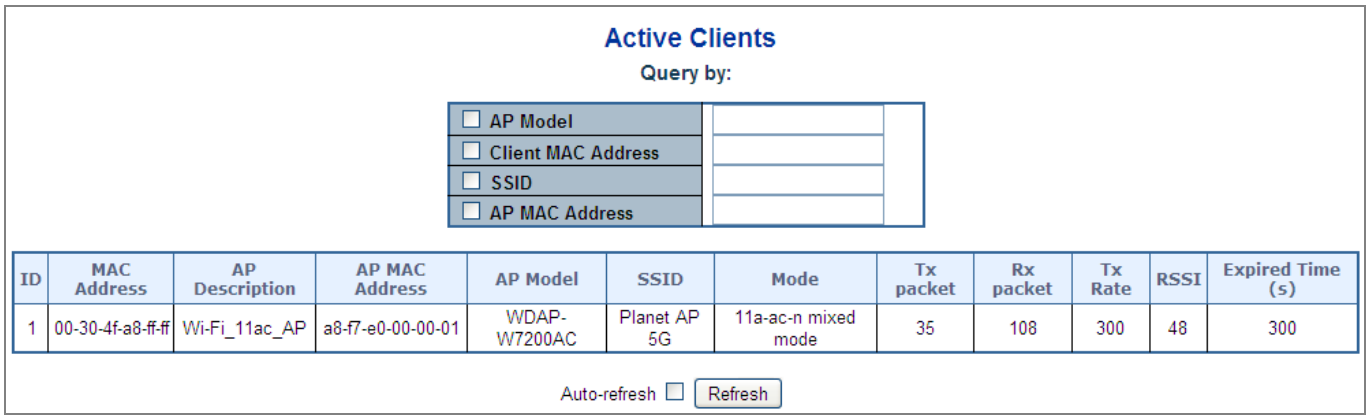

Figure 5-6 AP Monitoring/AP Status – Active Clients

The page includes the following fields:

Object	Description
Query by	Use one and multiple filtering rules to query the AP and click “Refresh” to execute the query. **AP Model:** Check this option and filter the AP list by the AP model that user specifies. **Client MAC Address:** Check this option and filter the list by the Client MAC address that user specifies. **SSID:** Check this option and filter the list by the SSID name that user specifies. **AP MAC Address:** Check this option and filter the list by the AP MAC address that user specifies.
ID	This field represents the numerical order of device.
MAC Address	The MAC address of the wireless interface
AP Description	The device description of the AP This field can be modified through the “Setting” hyperlink under the sub-item “General Setting”.
AP MAC Address	The MAC address of the AP
AP Model	The model name of the AP
SSID	The SSID name of the wireless interface
Mode	The frequency band of the wireless interface
Tx Packet	The packets sent to this client.

Rx Packet	The packets received by this client.
Tx Rate	The transmit rate of this client.
RSSI	The RSSI value (signal strength) received by this client.
Expiry Time (s)	The Expiry Time of the client.
Auto-refresh	Check this option to let the system refresh the AP list every 15 seconds automatically.
Refresh	Click "Refresh" to query or update the current list.

5.6 Rogue AP List

Go to "**AP Monitoring/AP Status-> Rogue AP List-> 2.4G**" to check current 2.4GHz rogue APs in the environment.

Go to "**AP Monitoring/AP Status-> Rogue AP List-> 5G**" to check current 5GHz rogue APs in the environment.

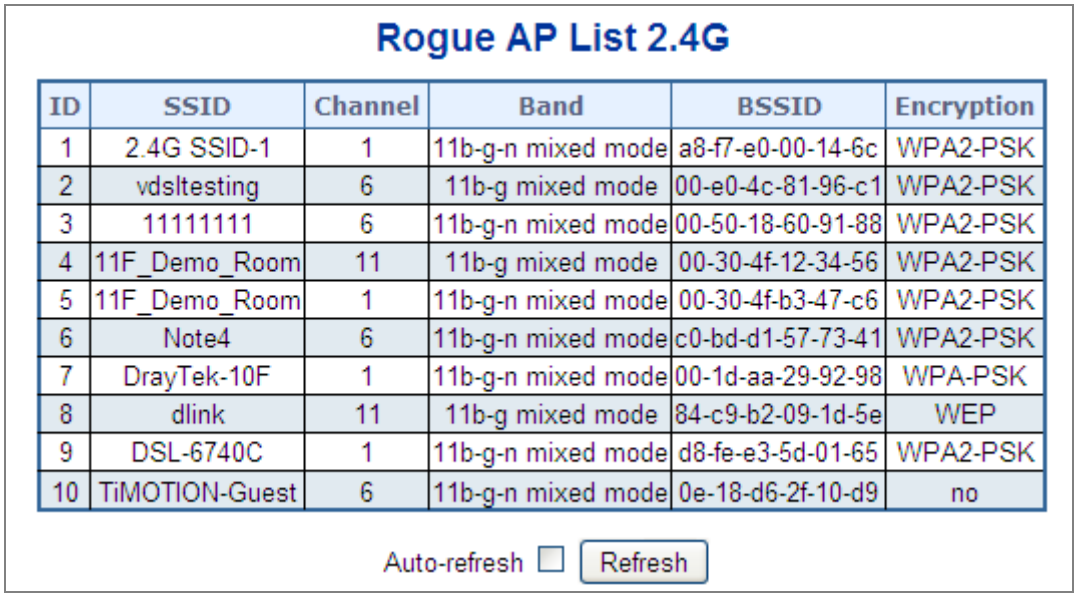

Figure 5-7 AP Monitoring/AP Status – Rogue AP List

The page includes the following fields:

Object	Description
ID	This field represents the numerical order of device.
SSID	The SSID name of the rouge AP
Channel	The channel of the rouge AP
Band	The frequency band of the rouge AP

BSSID	The BSSID of the rouge AP
Encryption	The encryption of the rouge AP
Auto-refresh	Check this option to let the system refresh the AP list every 15 seconds automatically.
Refresh	Click "Refresh" to query or update the current list.

Chapter 6. AP Maintenance

In the AP Maintenance section, there are five sub menus which make you able to upload the new firmware, reboot, load factory default and locate the position of single or multiple APs at once.

Figure 6-1 Menu – AP Maintenance

6.1 TFTP setting

Go to "**AP Maintenance-> TFTP setting**" to configure TFTP server for firmware upgrade.

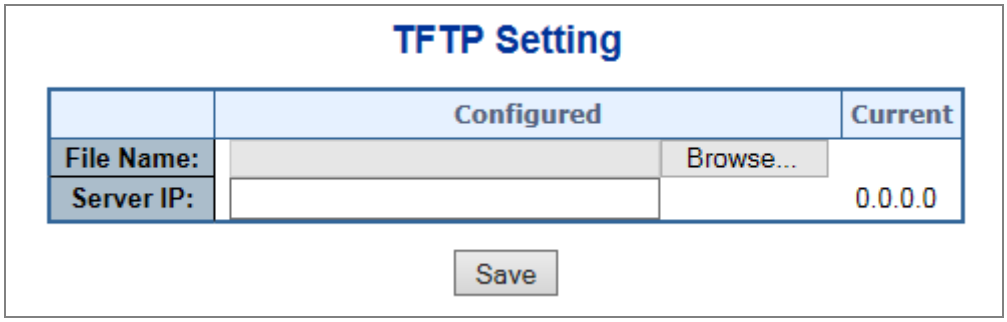

Figure 6-2 AP Maintenance - TFTP setting

The page includes the following fields:

Object	Description
File Name	The file name of the AP's firmware.
Server IP	The IP address of the TFTP Server.
Browse…	Click "Browse…" to specify the firmware file. ※ The firmware file must exist in the directory that TFTP server configured.
Current	This field shows the current firmware file name and the TFTP server's IP address.
Save	Click "Save" to save the setting.

Example of TFTP Setting and Firmware Upgrade

※ In this example, we use TFTPD32 free TFTP tool.

Step 1. Copy firmware file to the directory of the TFTP tool.

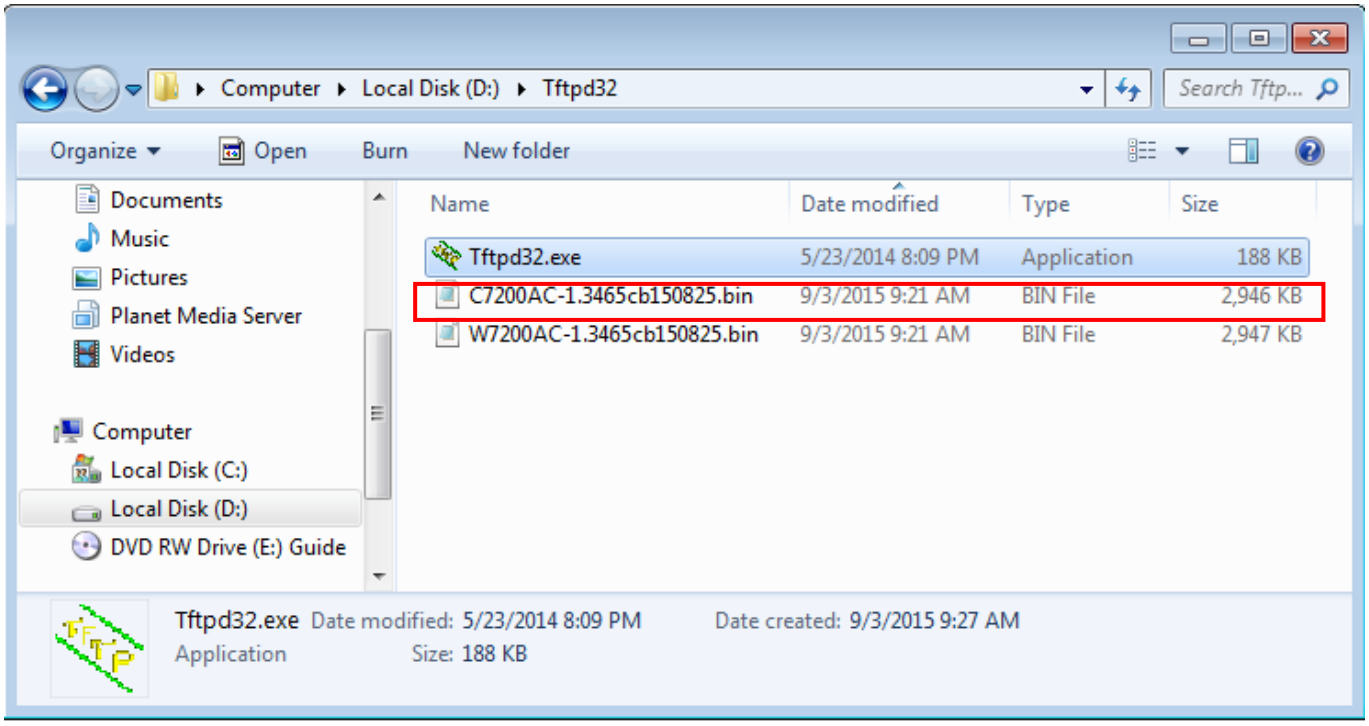

Figure 6-3 TFTP Server Setting – copy firmware to the server

Step 2. Execute the TFTP server (Tfpd32.exe) in the local PC and locate the current directory to the folder of firmware file. Then, configure the local PC's IP address (IP address of the TFTP server).

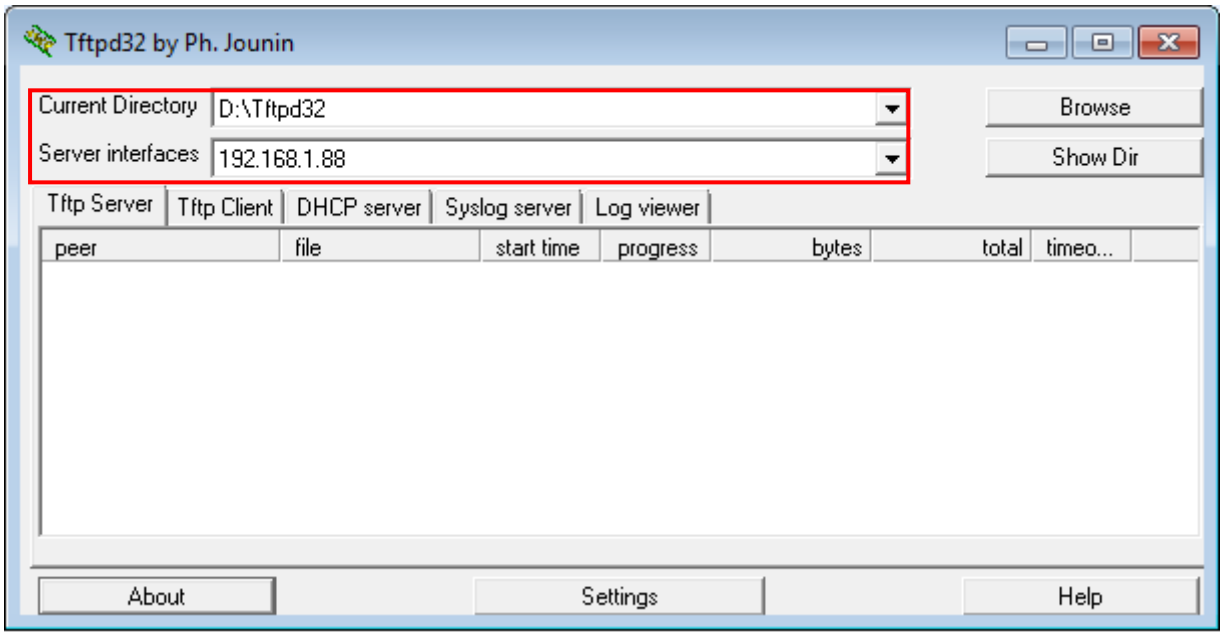

Figure 6-4 TFTP Server Setting – set directory and IP

Step 3. In the AP Controller, go to the "**AP Maintenance-> TFTP setting**" page. Click "**Browse…**" to locate the firmware file that is already existed in the TFTP server's directory. Then, enter the IP address of the TFTP server.

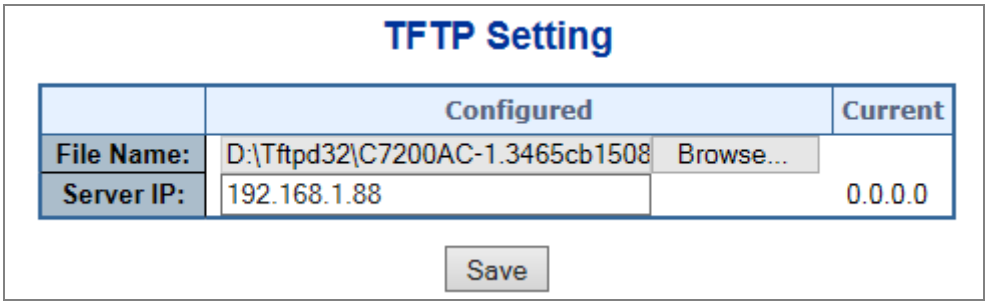

Figure 6-5 TFTP Server Setting – locate firmware and configure TFTP server IP

Step 4. Click "Save" to finish the TFTP Setting.

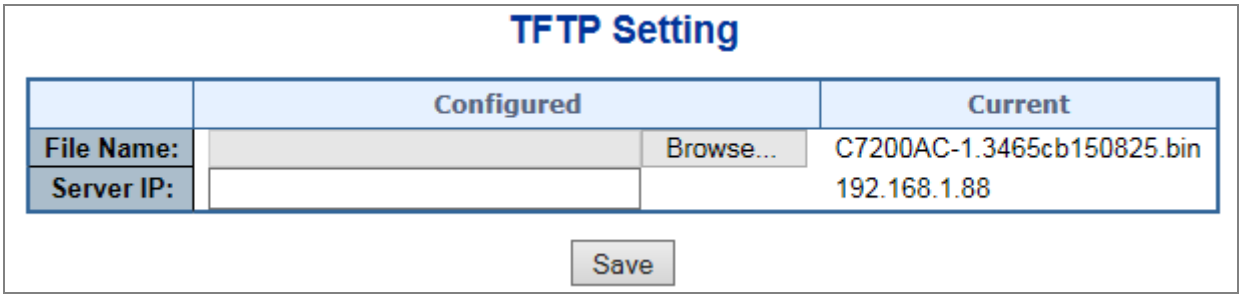

Figure 6-6 TFTP Server Setting – finish

Step 5. Go to "**AP Maintenance-> Firmware Upgrade**" to configure the firmware upgrade of the managed AP. Select the AP and click "**Apply**" to upgrade the firmware.

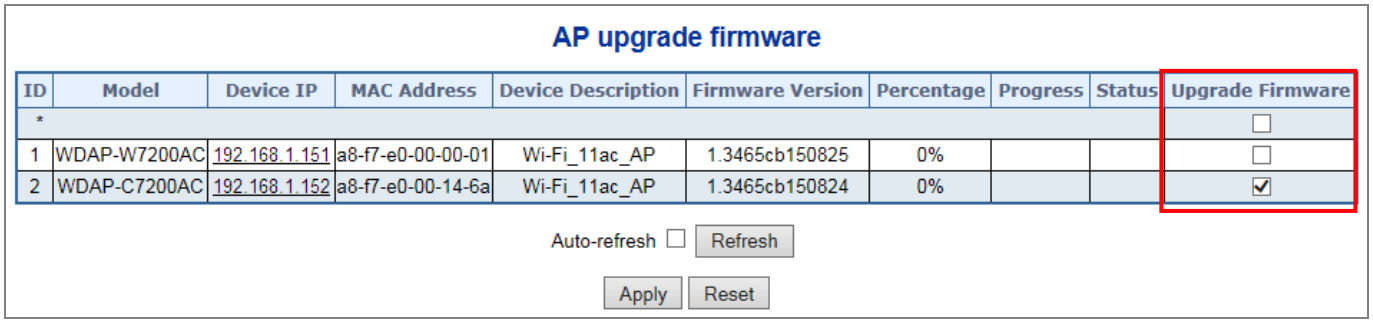

Figure 6-7 Firmware Upgrade – select the AP

Step 6. Now, the upgrade procedure is beginning and you can observe the upgrade status through the percentage and status fields.

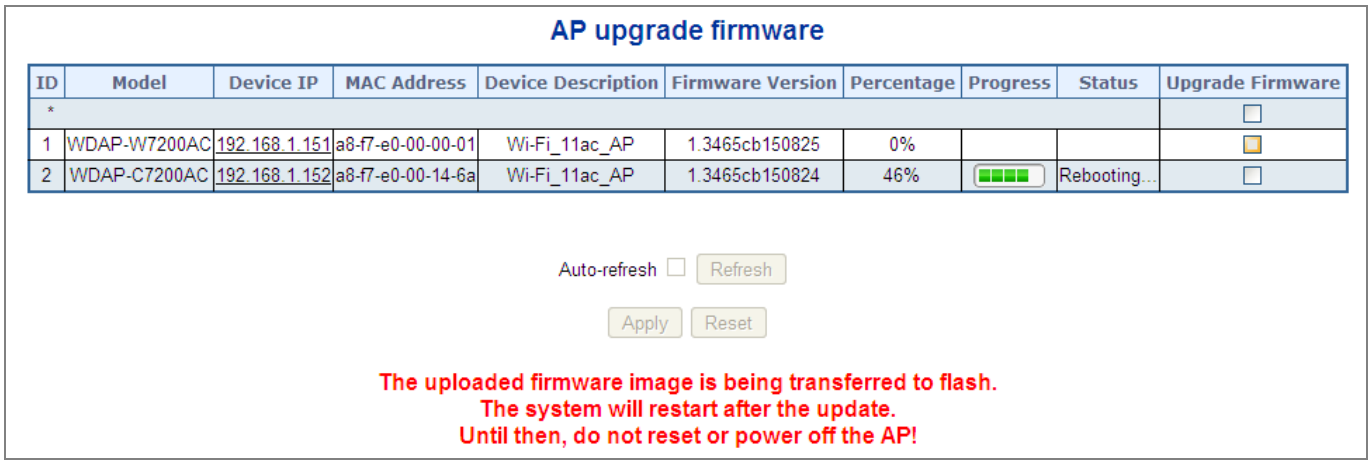

Figure 6-8 Firmware Upgrade – start to upgrade

6.2 Firmware Upgrade

Go to "**AP Maintenance-> Firmware Upgrade**" to configure the firmware upgrade of the managed AP in the list. Check the "**Upgrade Firmware**" option to select the AP to upgrade the new firmware and then click "**Apply**" to start firmware upgrade procedure.

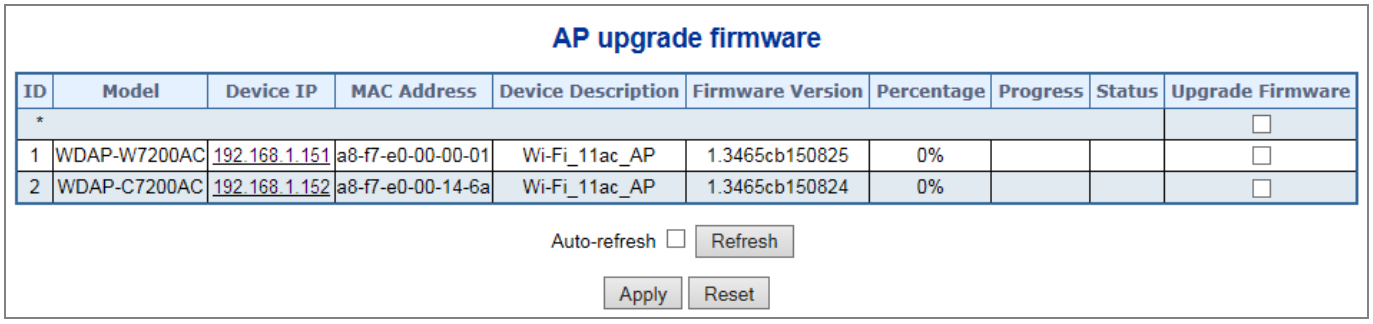

Figure 6-9 AP Maintenance – Firmware Upgrade

The page includes the following fields:

Object	Description
ID	This field represents the numerical order of device.
Model	The model name of the AP
Device IP	The IP address of the AP On the Device List page, the IP address is a hyperlink which enables the user to link to the AP's Web configuration page directly.
MAC Address	The MAC address of the AP
Device Description	The device description of the AP
Firmware Version	The current firmware version of the AP
Percentage	This field displays the percentage of upgrade progress.
Progress	This field indicates the progress of upgrade procedure. This icon indicates the upgrade is in progress. This icon indicates the upgrade is successful. This icon indicates the upgrade failed.
Status	This field indicates the status of upgrade procedure.
Upgrade Firmware	Check this option to select the device for firmware upgrade.
Auto Refresh	Check this option to let the system automatically refresh the list every 15 seconds.
Refresh	Click this button to refresh the list manually.
Apply	Click this button to apply the settings and start to upgrade firmware.

Reset	Click “Reset” to erase all settings to default values.

For the example of firmware upgrade, please refer to the “**Example of TFTP Setting and Firmware Upgrade**”

6.3 Group Firmware Upgrade

Go to “**AP Maintenance-> Group Firmware Upgrade**” to configure the firmware upgrade for the AP group. Select the group from the drop-down list and click “**Apply**” to start firmware upgrade procedure for the selected group.

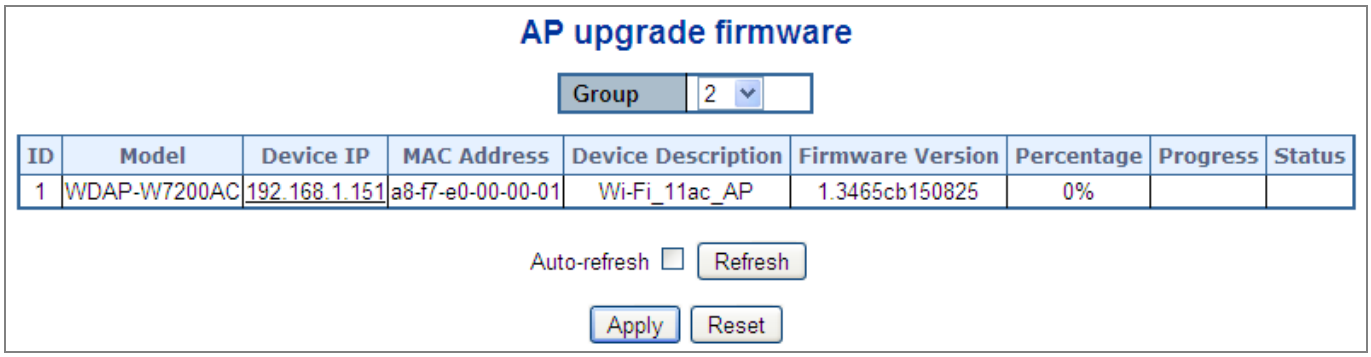

Figure 6-10 AP Maintenance – Group Firmware Upgrade

The page includes the following fields:

Object	Description	
ID	This field represents the numerical order of device.	
Model	The model name of the AP	
Device IP	The IP address of the AP On the Device List page, the IP address is a hyperlink which enables the user to link to the AP’s Web configuration page directly.	
MAC Address	The MAC address of the AP	
Device Description	The device description of the AP	
Firmware Version	The current firmware version of the AP	
Percentage	This field displays the percentage of upgrade progress.	
Progress	This field indicates the progress of upgrade procedure.	
		This icon indicates the upgrade is in progress.
		This icon indicates the upgrade is successful.

		This icon indicates the upgrade failed.
Status	This field indicates the status of upgrade procedure.	
Auto Refresh	Check this option to let the system automatically refresh the list every 15 seconds.	
Refresh	Click this button to refresh the list manually.	
Apply	Click this button to apply the settings and start to upgrade firmware.	
Reset	Click “Reset” to erase all settings to default values.	

6.4 Reset AP

Go to “**AP Maintenance-> Reset AP**” to reboot or reset the AP to factory default.

In the Reset field, select the action from the drop-down list and click “**Apply**” to start the procedure.

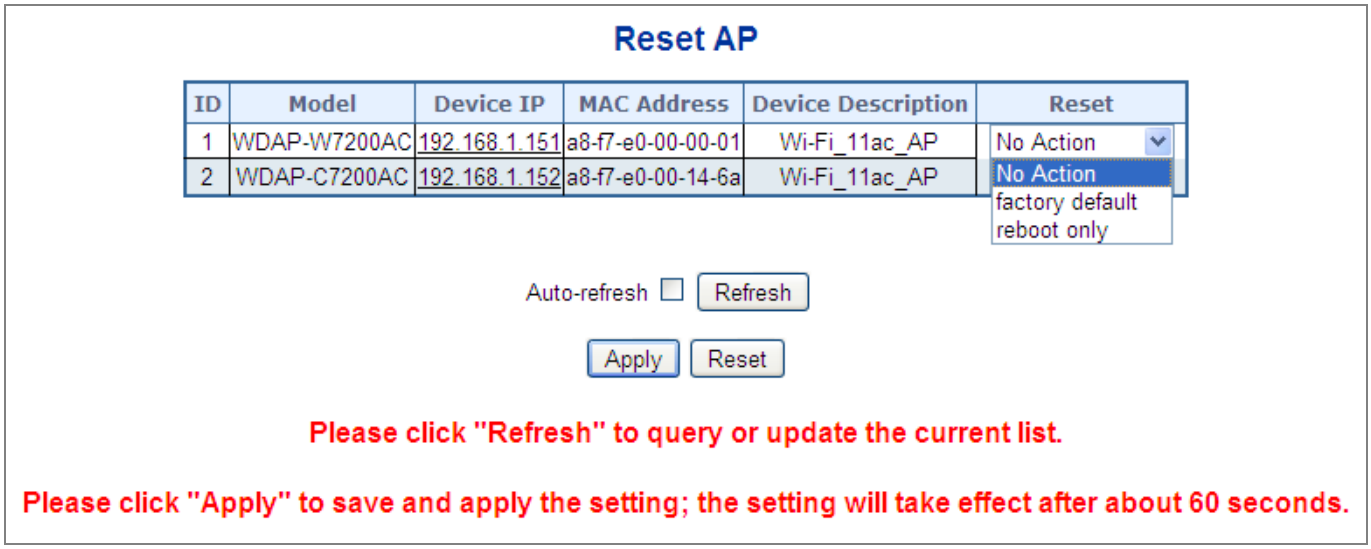

Figure 6-11 AP Maintenance – Reset AP

The page includes the following fields:

Object	Description
ID	This field represents the numerical order of device.
Model	The model name of the AP
Device IP	The IP address of the AP On the Device List page, the IP address is a hyperlink which enables the user to link to the AP’s Web configuration page directly.

MAC Address	The MAC address of the AP
Device Description	The device description of the AP
Reset	**No Action:** Choosing this will not do any action to the AP. **Factory default:** Choose this to reset the AP to factory default. **Reboot only:** Choose this to reboot the AP.
Auto Refresh	Check this option to let the system automatically refresh the list every 15 seconds.
Refresh	Click this button to refresh the list manually.
Apply	Click this button to apply the settings and start to upgrade firmware.
Reset	Click “Reset” to erase all settings to default values.

6.5 LED Control

Go to “**AP Maintenance-> LED Control**” to turn on/off the LED or locate the position of the AP.

In the Position LED field, select the action from the drop-down list and click “**Apply**” to start the procedure.

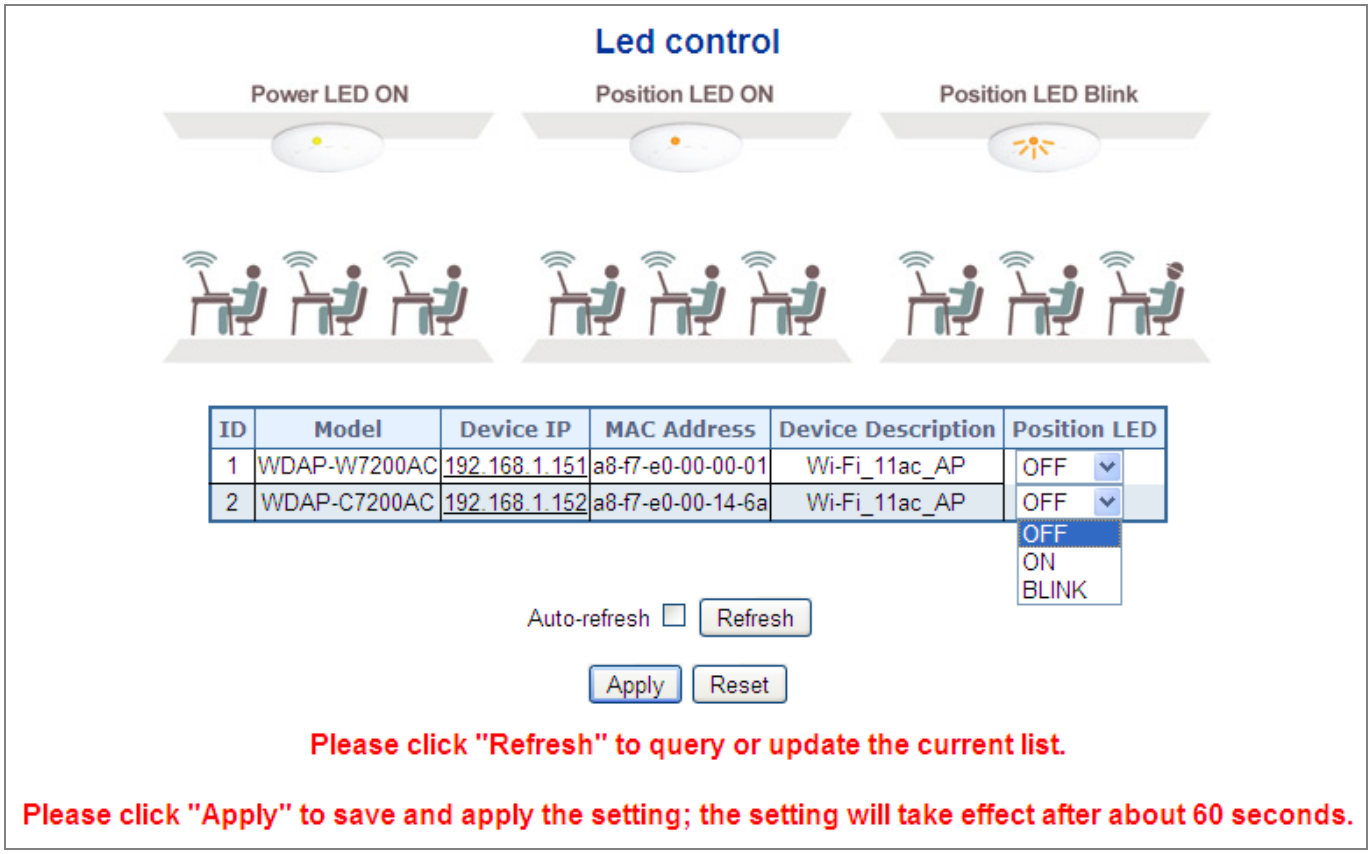

Figure 6-12 AP Maintenance – LED Control

The page includes the following fields:

Object	Description
ID	This field represents the numerical order of device.
Model	The model name of the AP
Device IP	The IP address of the AP On the Device List page, the IP address is a hyperlink which enables the user to link to the AP's Web configuration page directly.
MAC Address	The MAC address of the AP
Device Description	The device description of the AP
Position LED	User can turn on or let the position LED blink to locate the AP's position. **Off:** Choose this to turn off the LED. **On:** Choose this to turn on the LED. **Blink:** Choose this to let the LED blink.
Auto Refresh	Check this option to let the system automatically refresh the list every 15 seconds.
Refresh	Click this button to refresh the list manually.
Apply	Click this button to apply the settings and start to upgrade firmware.
Reset	Click "Reset" to erase all settings to default values.