

DAP-2610 Version 1.01

# Wireless AC1300 Wave 2 Dual-Band PoE Access Point

User Manual

**Business Class Networking** 

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# Product Overview Introduction

D-Link, an industry pioneer in wireless networking, introduces a solution for businesses seeking to deploy next generation 802.11ac LANs. D-Link unveils its new DAP-2610, designed specifically for environments with high traffic areas such as airports, coffee shops, shopping centers, sporting venues, and school campuses to provide secure and manageable dual band wireless network options for network administrators.

#### **Versatile Access Point**

The DAP-2610 Access Point allows network administrators to deploy a highly manageable and extremely robust dual band wireless network. For advanced installations, this new high-speed Access Point has integrated 802.3af Power over Ethernet (PoE) support, allowing installation of this device in areas where power outlets are not readily available. In addition to bridging 802.11ac and 802.11b/g/n wireless networks, the DAP-2610 can bridge to wired networks with its integrated Gigabit (10/100/1000Mbps) Ethernet port.

#### **Enhanced Performance**

The DAP-2610 delivers reliable wireless performance with maximum wireless signal rates of up to 1300Mbps. This, coupled with support for Wi-Fi Multimedia™ (WMM) Quality of Service features, makes it an ideal access point for audio, video, and voice applications.

#### Security

To help maintain a secure wireless network, the DAP-2610 provides the latest in wireless security technologies by supporting both Personal and Enterprise versions of WPA and WPA2 (802.11i) with support for RADIUS server back end. To further protect your wireless network, MAC Address Filtering, Wireless LAN segmentation, Disable SSID Broadcast, Rogue AP Detection, and Wireless Broadcast Scheduling are also included.

#### **Power Usage**

This device is an Energy Related Product (ErP) with High Network Availability (HiNA), and automatically switches to a power-saving Network Standby mode within 1 minute of no packets being transmitted. It can also be turned off through a power switch to save energy when it is not needed.

Network Standby: 2.62 watts
Switched Off: 0.19 watts

<sup>\*</sup> In Hong Kong, for operation within 5.15 ~ 5.35GHz frequency range, it is restricted to indoor environment.

<sup>\*</sup> Maximum wireless signal rate derived from IEEE Standard 802.11ac, 802.11a, 802.11a, and 802.11n specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate. Environmental conditions will adversely affect wireless signal range.

### **Features**

- Provide Ethernet to Wireless LAN bridge fully IEEE 802.3/u/ab compatible on the Ethernet side and fully interoperable with IEEE 802.11ac and b/g/n compliant equipment
- Compatible with IEEE 802.11b high rate standard to provide wireless 11Mbps data rate\*
- Compatible with IEEE 802.11g higher speed standard to provide wireless 54Mbps data rate\*
- Compatible with IEEE 802.11a higher speed standard to provide wireless 54Mbps data rate\*
- Compatible with IEEE 802.11n higher speed standard to provide wireless 300Mbps data rate\*
- Compatible with IEEE 802.11ac higher speed standard to provide wireless 900Mbps data rate\*
- Operation at 2.4~2.5GHz and 5.15~5.85GHz\*\* frequency band to meet worldwide regulations
- Supports IEEE 802.11ac and b/g/n wireless data encryption with 64/128-bit WEP for security
- Supports enhanced security WPA-PSK and WPA2-PSK, RADIUS client, and Cipher negotiation
- Allows auto fallback data rate for reliability, optimized throughput and transmission range
- Web-based configuration and management
- Supports 802.3af PoE
- Supports 802.3az
- Supports one Gigabit Ethernet port
- AP Mode, WDS Mode, WDS with AP, and Wireless Client Mode
- Supports SNMP v1,v2,v3
- Support Trap server (SNMP v1, v2c)
- Support Central WiFiManager
- Support AP Array and AP Array Setup Tool

<sup>\*</sup> Maximum wireless signal rate derived from IEEE Standard 802.11ac, 802.11g, 802.11a, and 802.11n specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate. Environmental conditions will adversely affect wireless signal range.

<sup>\*\*</sup>Please note that operating frequency ranges vary depending on the regulations of individual countries and jurisdictions. The DAP-2610 isn't supported in the 5.25~5.35GHz and 5.47 ~ 5.725GHz frequency ranges in some regions.

## **Package Contents**

- DAP-2610 Access Point
- Power Adapter
- Mounting Plate and Hardware
- Ethernet Cable

Note: Using a power supply with a different voltage rating than the one included with the DAP-2610 will cause damage and void the warranty for this product.

## **System Requirements**

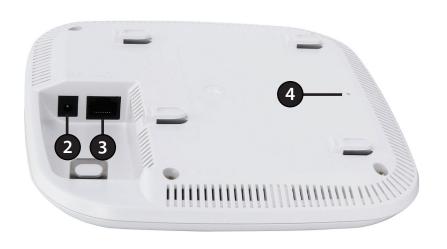
- Computers with Windows®, Macintosh®, or Linux-based operating systems with an installed Ethernet Adapter
- Internet Explorer 11, Safari 7, Firefox 28, or Google Chrome 33 and above (for web-based configuration)

## **Hardware Overview**

## **LEDs**

## **Connections**





		Solid Red	Indicates the access point has malfunctioned.
1	Power/Status	Blinking Red	This LED will blink during boot-up.
		Solid Green	Indicates that the DAP-2610 is working properly.

2	Power Receptor	Connect the supplied power adapter.
3	LAN (PoE) Port	Connect to a Power over Ethernet (PoE) switch or router via an Ethernet cable.
4	Reset Button	Press and hold for five seconds to reset the access point to the factory default settings. Press and hold for one second to reboot the access point.

# Basic Installation Hardware Setup

To power the access point, you can use one of the following 3 methods:

- Method 1 Use if you have a PoE switch or router.
- **Method 2** Use if you do not have a PoE switch or router and do not have a power outlet near the location of the access point.
- **Method 3** Use if you do not have a PoE switch or router and have a power outlet near the location of the access point.

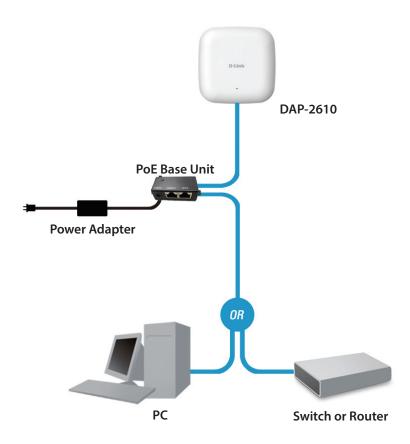
#### Method 1 - PoE with PoE Switch or Router

- 1. Connect one end of your Ethernet cable to the LAN (PoE) port on the access point.
- 2. Connect the other end into one port on a PoE switch or router.



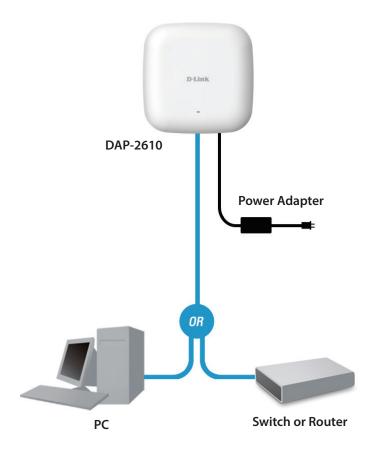
#### Method 2 - PoE without PoE Switch or Router

- 1. Connect one end of an Ethernet cable into the **Data In** port on the PoE base unit and the other end into one port on your switch, router, or computer.
- 2. Connect one end of an Ethernet cable into the P+Data Out port on the PoE base unit and the other end into the LAN (PoE) port on the Access Point.
- 3. Use the supplied power adapter. Connect the power adapter to the **Power In** receptor on the PoE adapter.
- 4. Connect the power cable to the power adapter and then connect the other end into a power outlet.



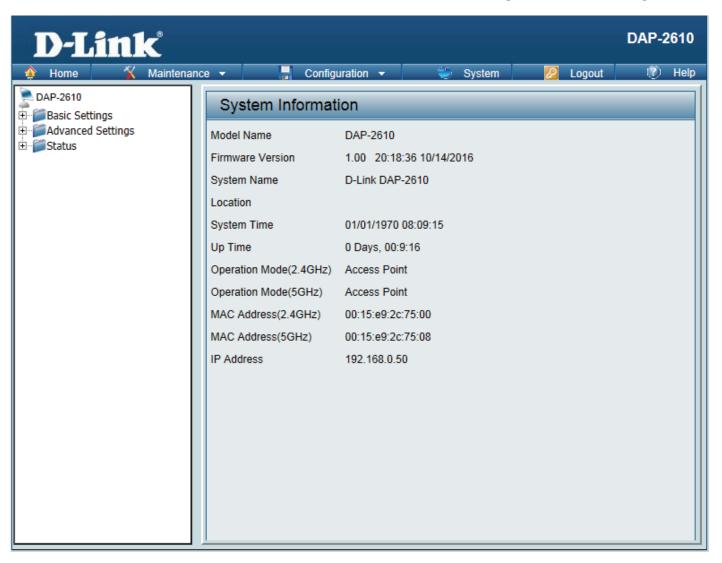
#### Method 3 - No PoE

- 1. Connect one end of your Ethernet cable into the LAN (PoE) port and then connect the other end to a switch, router, or computer.
- 2. Use the supplied power adapter. Connect the power adapter to the Power receptor on the Access Point.
- 3. Connect the power cable to the power adapter and then connect the other end into a power outlet.



## **Web User Interface**

The DAP-2610 supports an elaborate web user interface where the user can configure and monitor the device. Launch a web browser, type the IP address of the access point (Default setting is http://192.168.0.50 or https://192.168.0.50) and then press Enter to login. Most of the configurable settings are located in the left menu of the web GUI which contains section called **Basic Settings**, **Advanced Settings** and **Status**.



### Wireless

On the wireless settings page, you can setup the basic wireless configuration for the access point. The user can choose from 4 different wireless modes:

Access Point - Used to create a wireless LAN

WDS with AP - Used to connect multiple wireless networks while still functioning as a wireless access point

**WDS** - Used to connect multiple wireless networks

Wireless Client - Used when the access point needs to act as a wireless network adapter for an Ethernet enabled device

#### Access Point Mode

Wireless Band: Select either 2.4 GHz or 5 GHz from the drop-down

menu.

Mode: Select Access Point from the drop-down menu.

Network Name (SSID): Service Set Identifier (SSID) is the name designated

for a specific wireless local area network (WLAN). The SSID's factory default setting is **dlink**. The SSID can be easily changed to connect to an existing wireless network or to establish a new wireless network. The SSID can be up to 32 characters and

is case-sensitive.

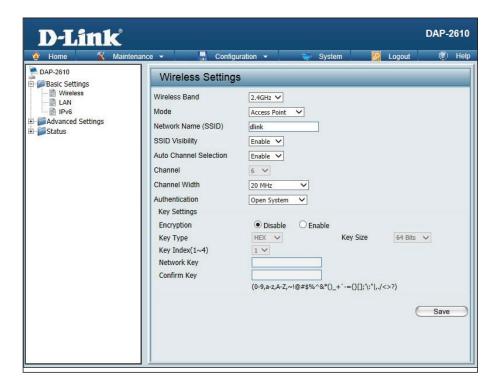
**SSID Visibility:** Select **Enable** to broadcast the SSID across the network, thus making it visible to all network users.

Select **Disable** to hide the SSID from the network.

Auto Channel Selection: This feature when enabled automatically selects

performance. The channel selection process only occurs when the AP is booting up. To manually select a channel, set this option to Disable and

the channel that provides the best wireless select a channel from the drop-down menu.



**Channel:** To change the channel, first toggle the *Auto Channel Selection* setting to **Disable**, and then use the drop-down menu to make the desired selection.

**Note:** The wireless adapters will automatically scan and match the wireless settings.

Channel Width: Allows you to select the channel width you would like to operate in. Select 20 MHz if you are not using any 802.11n wireless clients. Auto 20/40 MHz allows you to connect to both 802.11n and 802.11b/g or 802.11a wireless devices on your network.

Authentication: Use the drop-down menu to choose Open System, Shared Key, WPA-Personal, WPA-Enterprise, or 802.1x.

- Select **Open System** to communicate the key across the network (WEP).
- Select **Shared Key** to limit communication to only those devices that share the same WEP settings. If multi-SSID is enabled, this option is not available.
- Select WPA-Personal to secure your network using a password and dynamic key changes. No RADIUS server is required.
- Select **WPA-Enterprise** to secure your network with the inclusion of a RADIUS server.
- Select **802.1X** if your network is using port-based Network Access Control.

#### **WDS** with AP Mode

**Wireless Band:** Select either 2.4GHz or 5GHz from the drop-down

menu.

**Mode:** WDS with AP mode is selected from the drop-down

menu.

Network Name (SSID): Service Set Identifier (SSID) is the name designated

for a specific wireless local area network (WLAN). The SSID's factory default setting is dlink. The SSID can be easily changed to connect to an existing wireless network or to establish a new wireless

network.

SSID Visibility: Enable or Disable SSID visibility. Enabling this

feature broadcasts the SSID across the network,

thus making it visible to all network users.

Auto Channel Selection: Enabling this feature automatically selects

the channel that will provide the best wireless performance. This feature is not supported in WDS with AP mode. The channel selection process only

occurs when the AP is booting up.

**Channel:** All devices on the network must share the same

channel. To change the channel, use the drop-down menu to make the desired selection. (Note: The wireless adapters will automatically scan and match

the wireless settings.)

Channel Width: Allows you to select the channel width you would

like to operate in. Select 20 MHz if you are not using any 802.11n wireless clients. Auto 20/40 MHz allows you to connect to both 802.11n and 802.11b/g or

802.11a wireless devices on your network.



Remote AP MAC Address: Enter the MAC addresses of the APs on your network that will serve as bridges to wirelessly connect multiple networks.

**Site Survey:** Click on the **Scan** button to search for available wireless networks, then click on the available network that you want to connect with.

Authentication: Use the drop-down menu to choose Open System, Shared Key, or WPA-Personal.

- Select Open System to communicate the key across the network.
- Select Shared Key to limit communication to only those devices that share the same WEP settings. If multi-SSID is enabled, this option is not available.
- Select WPA-Personal to secure your network using a password and dynamic key changes. No RADIUS server is required.

#### **WDS Mode**

Wireless Band: Select either 2.4GHz or 5GHz from the drop-down

menu.

**Mode:** WDS is selected from the drop-down menu.

Network Name (SSID): Service Set Identifier (SSID) is the name designated

for a specific wireless local area network (WLAN). The SSID's factory default setting is **dlink**. The SSID can be easily changed to connect to an existing wireless network or to establish a new wireless network.

SSID Visibility: Enable or Disable SSID visibility. Enabling this

 $feature\,broad casts\,the\,SSID\,across\,the\,network, thus$ 

making it visible to all network users.

Auto Channel Selection: Enabling this feature automatically selects

the channel that will provide the best wireless performance. This feature is not supported in WDS

mode.

Channel: All devices on the network must share the same

 $channel. To \, change \, the \, channel, use \, the \, drop-down$ 

menu to make the desired selection.

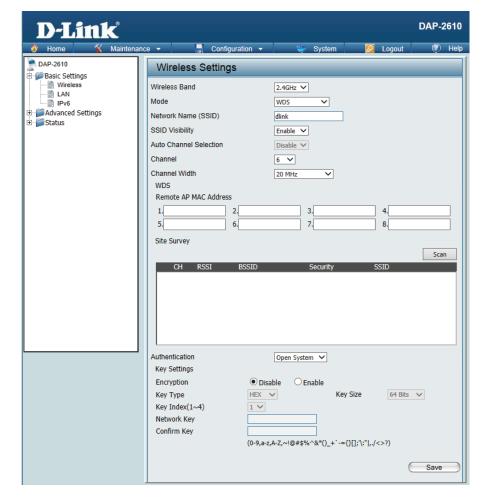
Channel Width: Use the drop-down menu to choose 20 MHz or

Auto 20/40 MHz.

**Remote AP MAC Address:** Enter the MAC addresses of the APs on your network

that will serve as bridges to wirelessly connect

multiple networks.



**Site Survey:** Click on the **Scan** button to search for available wireless networks, then click on the available network that you want to connect with.

Authentication: Use the drop-down menu to choose Open System, Shared Key, or WPA-Personal.

- Select Open System to communicate the key across the network.
- Select Shared Key to limit communication to only those devices that share the same WEP settings.
- Select WPA-Personal to secure your network using a password and dynamic key changes. No RADIUS server is required.

#### **Wireless Client Mode**

**Wireless Band:** Select either 2.4 GHz or 5 GHz from the drop-down menu.

Mode: Wireless Client is selected from the drop-down menu.

Network Name (SSID): Service Set Identifier (SSID) is the name designated

for a specific wireless local area network (WLAN). The SSID's factory default setting is dlink. The SSID can be easily changed to connect to an existing wireless

network.

**SSID Visibility:** This option is unavailable in Wireless Client mode.

**Auto Channel Selection:** Enabling this feature automatically selects the channel

that will provide the best wireless performance. This feature is not supported in Wireless Client mode.

**Channel:** The channel used will be displayed, and matches the

AP that the DAP-2610 is connected to when set to

Wireless Client mode.

Channel Width: Use the drop-down menu to choose 20 MHz or Auto

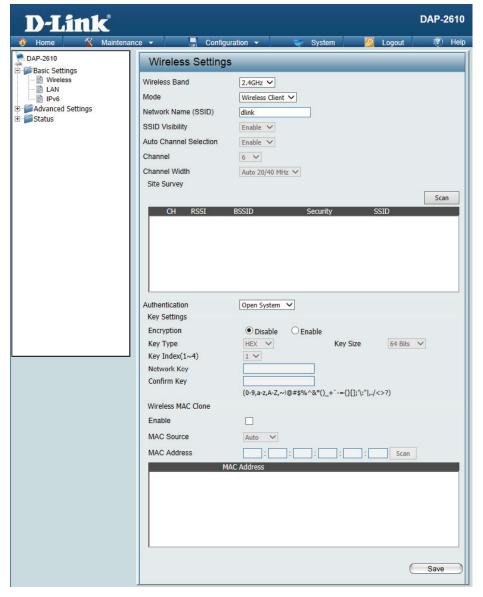
20/40 MHz.

**Site Survey:** Click on the **Scan** button to search for available

wireless networks, then click on the available network

that you want to connect with.

**Authentication:** Will be explained in the next topic.



### **Wireless Security**

Wireless security is a key concern for any wireless network installed. Unlike any other networking method wireless networks will broadcast it's presence for anyone to connect to it. Today, wireless security has advanced to a level where it is virtually impenetrable.

There are mainly two forms of wireless encryption and they are called Wired Equivalent Privacy (WEP) and Wi-Fi Protected Access (WPA). WEP was the first security method developed. It is a low level encryption but better than now encryption. WPA is the newest encryption standard and with the advanced WPA2 standard wireless networks have finally reach a point where the security is strong enough to give users the peace of mind when installing wireless networks.

#### Wired Equivalent Privacy (WEP)

WEP provides two variations called **Open System** and **Shared Key**.

**Open System** will send a request to the access point and if the key used matches the one configured on the access point, the access point will return a success message back to the wireless client. If the key does not match the one configured on the access point, the access point will deny the connection request from the wireless client.

Shared Key will send a request to the access point and if the key used matches the one configured on the access point, the access point will send a challenge to the client. The client will then again send a confirmation of the same key back to the access point where the access point will either return a successful or a

denial packet back to the wireless client.

**Encryption:** Use the radio button to disable or enable

encryption.

**Key Type\*:** Select HEX or ASCII.

Key Size: Select 64 Bits or 128 Bits.

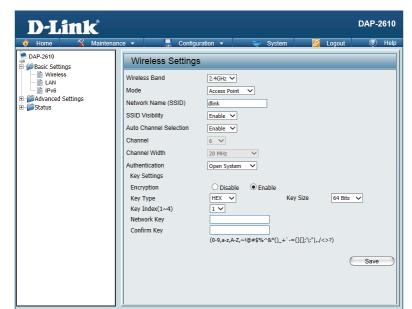
Key Index (1-4): Select the 1st through the 4th key to be the active

key.

**Key:** Input up to four keys for encryption. You will select

one of these keys in the Key Index drop-down

menu.



<sup>\*\*</sup>Hexadecimal (HEX) digits consist of the numbers 0-9 and the letters A-F.

<sup>\*</sup>ASCII (American Standard Code for Information Interchange) is a code that represents English letters using numbers ranging from 0-127.

#### Wi-Fi Protected Access (WPA / WPA2)

WPA was created by the Wi-Fi Alliance to address the limitations and weaknesses found in WEP. This protocol is mainly based on the 802.11i standard. There are also two variations found in WPA called WPA-Personal (PSK) and WPA-Enterprise (EAP).

WPA-EAP requires the user to install a Radius Server on the network for authentication. WPA-Personal does not require the user to install a Radius Server on the network.

Comparing WPA-PSK with WPA-EAP, WPA-PSK is seen as a weaker authentication but comparing WPA-PSK to WEP, WPA-PSK is far more secure than WEP. WPA-EAP is the highest level of wireless security a user can use for wireless today.

WPA2 is an upgrade of WPA. WPA2 yet again solves some possible security issues found in WPA. WPA2 has two variations called WPA2-Personal (PSK) and WPA2-Enterprise (EAP) which is the same as found with WPA.

WPA Mode: When WPA-Personal is selected for Authentication type, you must also select a WPA mode from the drop-down menu: AUTO (WPA or WPA2), WPA2 Only, or WPA Only. WPA and WPA2 use different algorithms. AUTO (WPA or WPA2) allows you to use both WPA and WPA2.

Cipher Type: When you select WPA-Personal, you must also select AUTO,

AES, or TKIP from the pull down menu.

**Group Key Update:** Select the interval during which the group key will be valid.

The default value of 1800 is recommended.

Pass Phrase: When you select WPA-Personal, please enter a Pass Phrase

in the corresponding field.



WPA Mode: When WPA-Enterprise is selected, you must also select a WPA mode from the drop-down menu: AUTO (WPA or WPA2), WPA2 Only, or WPA Only. WPA and WPA2 use different algorithms. AUTO (WPA or WPA2) allows you to use both WPA and

WPA2.

**Cipher Type:** When WPA-Enterprise is selected, you must also

select a cipher type from the drop-down menu:

Auto, AES, or TKIP.

**Group Key Update Interval:** Select the interval during which the group key

will be valid. 1800 is the recommended value as a lower interval may reduce data transfer rates.

Network Access Protection: Enable or disable Microsoft Network Access

Protection.

**RADIUS Server:** Enter the IP address of the RADIUS server.

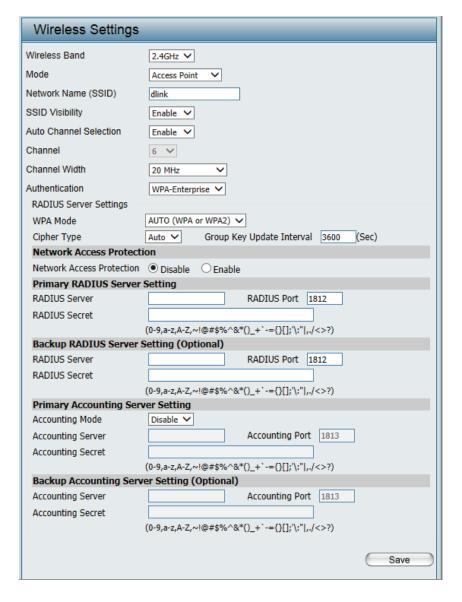
**RADIUS Port:** Enter the RADIUS port.

**RADIUS Secret:** Enter the RADIUS secret.

**Account Server:** Enter the IP address of the Account Server

**Account Port:** Enter the Account port

**Account Secret:** Enter the Account secret



#### LAN

LAN is short for Local Area Network. This is considered your internal network. These are the IP settings of the LAN interface for the DAP-2610. These settings may be referred to as private settings. You may change the LAN IP address if needed. The LAN IP address is private to your internal network and cannot be seen on the Internet.

Get IP From: Static IP (Manual) is chosen here. Choose this option if you do not have a DHCP server in your network, or if you wish to assign a static IP address to the DAP-2610. When Dynamic IP (DHCP) is selected, the other fields here will be grayed out. Please allow about 2 minutes for the DHCP client to be functional once this selection is made.

IP Address: The default IP address is 192.168.0.50. Assign a static IP address that is within the IP address range of your network.

**Subnet Mask:** Enter the subnet mask. All devices in the network must share the same subnet mask.

**Default Gateway:** Enter the IP address of the gateway/router in your network.

**DNS:** Enter a DNS server IP address. This is usually the local IP address of your gateway/router.



#### IPv6

Enable IPv6: Check to enable the IPv6

Get IP From: Auto is chosen here. Choose this option the

DAP-2610 can get IPv6 address automatically

or use Static to set IPv6 address manually.

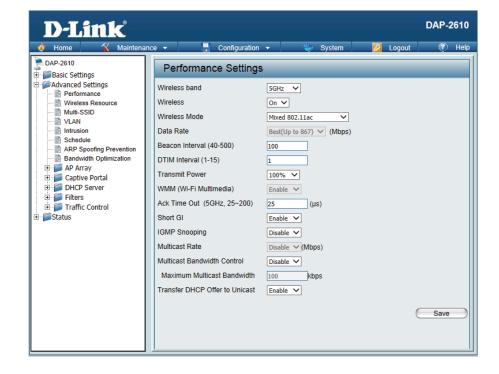
When Auto is selected, the other fields here will be grayed

out.

IP Address: Enter the LAN IPv6 address used here.

**Prefix:** Enter the LAN subnet prefix length value used here.

**Default Gateway:** Enter the LAN default gateway IPv6 address used here.



## **Advanced Settings**

In the Advanced Settings Section the user can configure advanced settings concerning Performance, Multiple SSID, VLAN, Security, Quality of Service, AP Array, Web Redirection, DHCP Server, Filters and Scheduling. The following pages will explain settings found in the Advanced Settings section in more detail.



#### **Performance**

On the Performance Settings page the users can configure more advanced settings concerning the wireless signal and hosting.

Wireless Band: Select either 2.4GHz or 5GHz.

Wireless: Use the drop-down menu to turn the wireless function On or Off.

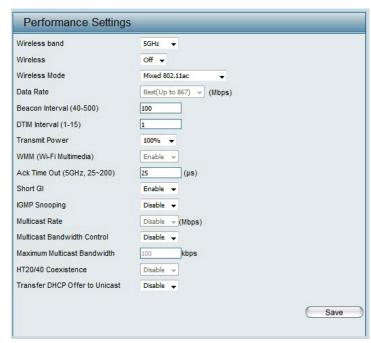
Wireless Mode: The different combination of clients that can be supported include Mixed 802.11n, 802.11g and 802.11b, Mixed 802.11g and 802.11b and 802.11n Only in the 2.4 GHz band and Mixed 802.11n, 802.11a, 802.11a only, and 802.11n Only in the 5 GHz band. Please note that when backwards compatibility is enabled for legacy (802.11a/g/b) clients, degradation of 802.11n (draft) wireless performance is

expected.

Data Rate\*: Indicate the base transfer rate of wireless adapters on the wireless LAN. The AP will adjust the base transfer rate depending on the base rate of the connected device. If there are obstacles or interference, the AP will step down the rate. This option is enabled in Mixed 802.11g and 802.11b mode (for 2.4 GHz) and 802.11a only mode (for 5 GHz). The choices available are Best (Up to 54), 54, 48, 36, 24, 18, 12, 9, 6, 11, 5.5, 2 or 1 for 2.4 GHz.

Beacon Interval (25-500): Beacons are packets sent by an access point to synchronize a wireless network. Specify a value in milliseconds. The default (100) is recommended. Setting a higher beacon interval can help to save the power of wireless clients, while setting a lower one can help a wireless client connect to an access point faster.

**DTM Interval (1-15):** Select a Delivery Traffic Indication Message setting between 1 and 15. 1 is the default setting. DTIM is a countdown informing clients of the next window for listening to broadcast and multicast messages.



Transmit Power: This setting determines the power level of the wireless transmission. Transmitting power can be adjusted to eliminate overlapping of wireless area coverage between two access points where interference is a major concern. For example, if wireless coverage is intended for half of the area, then select 50% as the option. Use the drop-down menu to select 100%, 50%, 25%, or 12.5%.

WMM (Wi-Fi Multimedia): WMM stands for Wi-Fi Multimedia. Enabling this feature will improve the user experience for audio and video applications over a Wi-Fi network.

Ack Time Out To effectively optimize throughput over long distance links enter a value for Acknowledgement Time Out between 25 and 200 (2.4 GHZ, 64~200): microseconds for 5 GHz or from 64 to 200 microseconds in the 2.4 GHz in the field provided.

Short GI: Select Enable or Disable. Enabling a short guard interval can increase throughput. However, be aware that it can also increase the error rate in some installations due to increased sensitivity to radio-frequency installations.

IGMP Snooping: Select Enable or Disable. Internet Group Management Protocol allows the AP to recognize IGMP gueries and reports sent between routers and an IGMP host (wireless STA). When IGMP snooping is enabled, the AP will forward multicast packets to an IGMP host based on IGMP messages passing through the AP.

Multicast Rate: Adjust the multicast packet data rate here. The multicast rate is supported in AP mode, (2.4 GHZ and 5 GHZ) and WDS with AP mode, including Multi-SSIDs.

Multicast Bandwidth Adjust the multicast packet data rate here. The multicast rate is supported in AP mode, and WDS with AP mode, including Multi-

Control: SSIDs

Maximum Multicast Set the multicast packets maximum bandwidth pass through rate from the Ethernet interface to the Access Point.

**Bandwidth:** 

HT20/40 Coexistence: Enable this option to reduce interference from other wireless networks in your area. If the channel width is operating at 40MHz and there is another wireless network's channel over-lapping and causing interference, the Access Point will automatically change to 20MHz.

Transfer DHCP Offer to Enable to transfer the DHCP Offer to Unicast from LAN to WLAN, suggest to enable this function if stations number is larger than 30.

**Unicast:** 

## Wireless Resource Control

The Wireless Resource Control window is used to configure the wireless connection settings so that the device can detect the better wireless connection in your environment.

Wireless band: Select 2.4GHz or 5GHz.

Use the drop-down menu to **Enable** the 5G Preferred **Band Steering:** 

> function. When the wireless clients support both 2.4GHz and 5GHz and the 2.4GHz signal is not strong

enough, the device will use 5G as higher priority.

Enter the time in seconds to specify the interval of **Band Steering Age:** 

updating information.

**Band Steering** Difference:

The 5G preferred difference value is equal to the number of 5GHz wireless client connections minus the number of 2.4GHz wireless client connections. If the number of 5GHz wireless client connections minus the number of 2.4GHz wireless client connections exceed this value, the extra 5GHz wireless client connections will be forced to connect to the 2.4GHz band and not the 5GHz band.

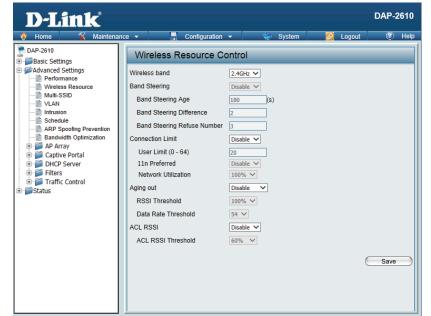
**Band Steering Refuse Number:** 

Enter the maximum 5G connection attempts allowed before the 5G preferred function will be disabled for the wireless station connection.

**Connection Limit:** 

Select **Enable** or **Disable**. This is an option for load balancing. This determines whether to limit the number of users accessing this device. The exact number is entered in the User Limit field below. This feature allows the user to share the wireless network traffic and the client using multiple APs. If this function is enabled and when the number of users exceeds this value, or the network utilization of this AP exceeds the percentage that has been specified, the DAP-2610 will not allow clients to associate with the AP.

**User Limit:** Set the maximum amount of users that are allowed access (zero to 64 users) to the device using the specified wireless band. The default setting is 20.



11n Preferred: Use the drop-down menu to **Enable** the 11n Preferred function. The wireless clients with 802.11n protocol will have

higher priority to connect to the device.

**Network Utilization:** Set the maximum utilization of this access point for service. The DAP-2610 will not allow any new clients to associate

with the AP if the utilization exceeds the value the user specifies. Select a utilization percentage between 100%, 80%, 60%, 40%, 20%, or 0%. When this network utilization threshold is reached, the device will pause one minute to allow net-

work congestion to dissipate.

Aging out: Use the drop-down menu to select the criteria of disconnecting the wireless clients. Available options are RSSI and Data

Rate.

**RSSI Threshold:** When **RSSI** is selected in the **Aging out** drop-down menu, select the percentage of RSSI here. When the RSSI of wireless

clients is lower than the specified percentage, the device disconnects the wireless clients.

Data Rate Threshold: When Data Rate is selected in the Aging out drop-down menu, select the threshold of data rate here. When the data

rate of wireless clients is lower than the specified number, the device disconnects the wireless clients.

ACL RSSI: Use the drop-down menu to **Enable** the function. When enabled, the device denies the connection request from the

wireless clients with the RSSI lower than the specified threshold below.

**ACL RSSI Threshold:** Set the ACL RSSI Threshold.

#### **Multi-SSID**

The device supports up to four multiple Service Set Identifiers. You can set the Primary SSID in the Basic > Wireless section. The SSID's factory default setting is dlink. The SSID can be easily changed to connect to an existing wireless network or to establish a new wireless network.

**Enable Multi-SSID:** Check to enable support for multiple SSIDs.

Band: Select 2.4GHz or 5GHz.

Index: You can select up to seven multi-SSIDs. With the Primary SSID, you have a total of eight multi-SSIDs.

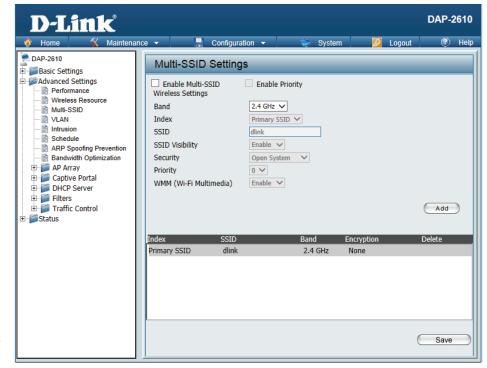
SSID: Service Set Identifier (SSID) is the name designated for a specific wireless local area network (WLAN). The SSID's factory default setting is **dlink**. The SSID can be easily changed to connect to an existing wireless network or to establish a new wireless network.

**SSID Visibility:** Enable or Disable SSID visibility. Enabling this feature broadcasts the SSID across the network, thus making it visible to all network users.

Security: The Multi-SSID security can be Open System, WPA-Personal, or WPA-Enterprise. For a detailed description of the Open System parameters please go to page 23. For a detailed description of the WPA-Personal parameters please go to page 24. For a detailed description of the WPA-Enterprise parameters please go to page 25.

**Priority:** Select the priority level of the SSID selected.

WMM (Wi-Fi WMM stands for Wi-Fi Multimedia. Enabling this feature Multimedia): will improve the user experience for audio and video applications over a Wi-Fi network.



**Encryption:** When you select Open System, toggle between Enable and Disable. If Enable is selected, the Key Type, Key Size, Key Index

(1~4), Key, and Confirm Keys must also be configured.

**Key Type:** Select HEX or ASCII.

Key Size: Select 64-bit or 128-bit.

**Key Index (1-4):** Select from the 1st to 4th key to be set as the active key.

Key: Input up to four keys for encryption. You will select one of these keys in the Key Index drop-down menu.

WPA Mode: When you select either WPA-Personal or WPA-Enterprise, you must also choose a WPA mode from the drop-down menu: AUTO

(WPA or WPA2), WPA2 Only, or WPA Only. WPA and WPA2 use different algorithms. AUTO (WPA or WPA2) allows you to use both

WPA and WPA2. In addition, you must configure Cipher Type, and Group Key Update Interval.

**Cipher Type:** Select Auto, AES, or TKIP from the drop-down menu.

Group Key Update Interval: Select the interval during which the group key will be valid. The default value of 1800 seconds is recommended.

Pass Phrase: When you select WPA-Personal, please enter a Pass Phrase in the corresponding field.

Confirm Pass Phrase: When you select WPA-Personal, please re-enter the Pass Phrase entered in the previous item in the corresponding field.

RADIUS Server: When you select WPA-Enterprise, enter the IP address of the RADIUS server. In addition, you must configure RADIUS Port and

**RADIUS Secret.** 

**RADIUS Port:** Enter the RADIUS port.

**RADIUS Secret:** Enter the RADIUS secret.

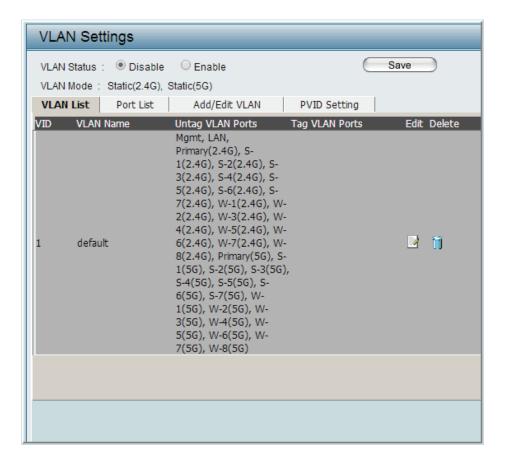
#### **VLAN**

#### **VLAN List**

The DAP-2610 supports VLANs. VLANs can be created with a Name and VID. Mgmt (TCP stack), LAN, Primary/Multiple SSID, and WDS connection can be assigned to VLANs as they are physical ports. Any packet which enters the DAP-2610 without a VLAN tag will have a VLAN tag inserted with a PVID. The VLAN List tab displays the current VLANs.

VLAN Status: Use the radio button to toggle to Enable. Next, go to the Add/Edit VLAN tab to add or modify an item on the VLAN List tab.

VLAN Mode: The current VLAN mode is displayed.



#### **Port List**

The Port List tab displays the current ports. If you want to configure the guest and internal networks on a Virtual LAN (VLAN), the switch and DHCP server you are using must also support VLANs. As a prerequisite step, configure a port on the switch for handling VLAN tagged packets as described in the IEEE 802.1Q standard.

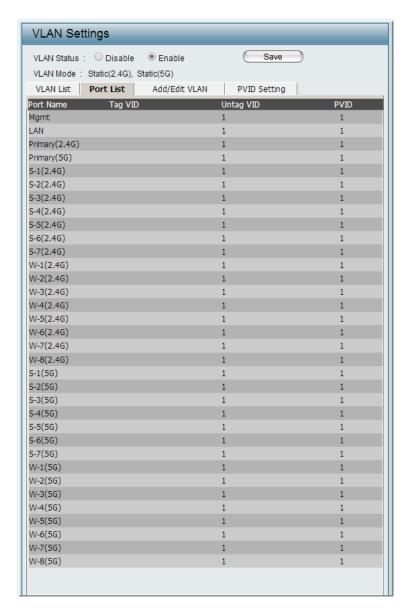
**VLAN Status:** Use the radio button to toggle to Enable. Next, go to the Add/Edit VLAN tab to add or modify an item on the VLAN List tab.

**Port Name:** The name of the port is displayed in this column.

Tag VID: The Tagged VID is displayed in this column.

Untag VID: The Untagged VID is displayed in this column.

**PVID:** The Port VLAN Identifier is displayed in this column.



#### Add/Edit VLAN

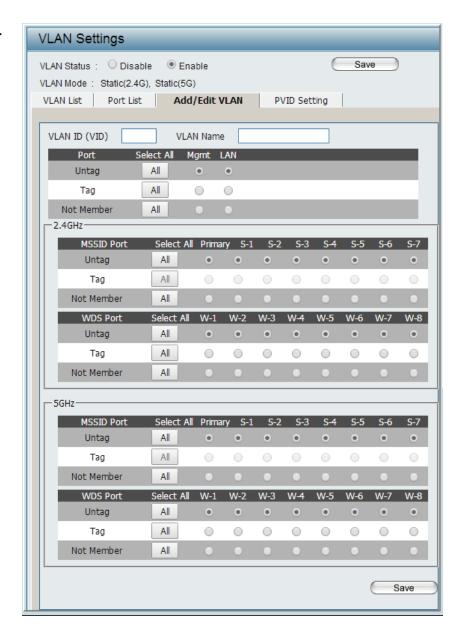
The Add/Edit VLAN tab is used to configure VLANs. Once you have made the desired changes, click the Save button to let your changes take effect.

**VLAN Status:** Use the radio button to toggle to Enable.

VLAN ID: Provide a number between 1 and 4094

for the Internal VLAN.

**VLAN Name:** Enter the VLAN to add or modify.



#### **PVID Settings**

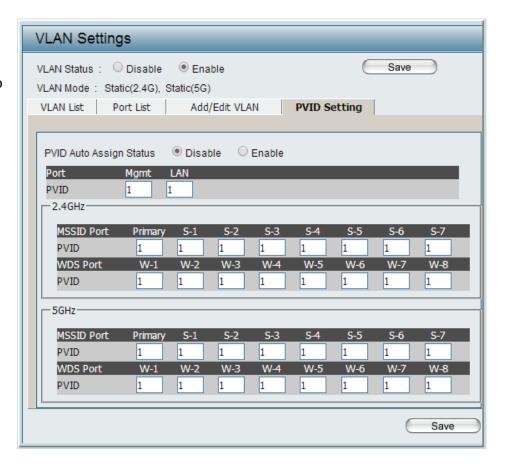
The PVID Setting tab is used to enable/disable the Port VLAN Identifier Auto Assign Status as well as to configure various types of PVID settings. Click the Save button to let your changes take effect.

**VLAN Status:** Use the radio button to toggle between

Enable and Disable.

PVID Auto Assign Status: Use the radio button to toggle PVID auto

assign status to Enable.



#### **Intrusion**

The Wireless Intrusion Protection window is used to set APs as All, Valid, Neighborhood, Rogue, and New. Click the Save button to let your changes take effect.

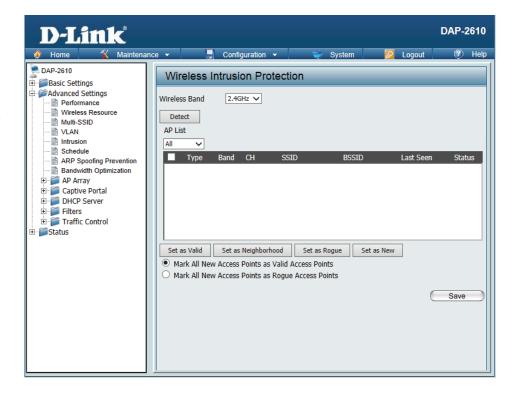
Wireless Band: Select 2.4GHz or 5GHz.

AP List: The choices include All, Valid, Neighbor,

Rogue, and New.

**Detect:** Click this button to initiate a scan of the

network.



#### Schedule

The Wireless Schedule Settings window is used to add and modify scheduling rules on the device. Click the Save button to let your changes take effect.

**Wireless Schedule:** Use the drop-down menu to enable the device's scheduling feature.

Name: Enter a name for the new scheduling rule in the field provided.

Index: Use the drop-down menu to select the desired SSID.

**SSID:** This read-only field indicates the current SSID in use. To create a new SSID, go to the Wireless Settings window (Basic Settings > Wireless).

Day(s): Toggle the radio button between All Week and Select Day(s). If the second option is selected, check the specific days you want the rule to be effective on.

All Day(s): Check this box to have your settings apply 24 hours a day.

**Start Time:** Enter the beginning hour and minute, using a 24-hour clock.

**End Time:** Enter the ending hour and minute, using a 24-hour clock.



#### **Internal RADIUS Server**

The DAP-2610 features a built-in RADIUS server. Once you have finished adding a RADIUS account, click the Save button to let your changes take effect. The newly-created account will appear in this RADIUS account List. The radio buttons allow the user to enable or disable the RADIUS account. Click the icon in the delete column to remove the RADIUS account. We suggest you limit the number of accounts below 30.

**User Name:** Enter a name to authenticate user access to the

internal RADIUS server.

Password: Enter a password to authenticate user access to the

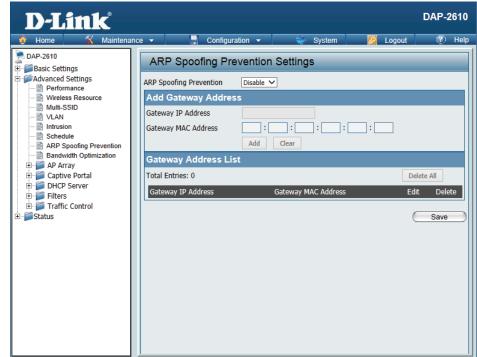
internal RADIUS server. The length of your password

should be 8~64.

Status: Toggle the drop-down menu between Enable and

Disable.

**RADIUS Account List:** Displays the list of users.



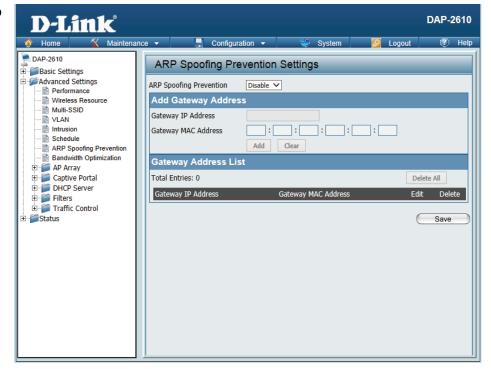
# **ARP Spoofing Prevention**

The ARP Spoofing Prevention feature allows users to add IP/MAC address mapping to prevent arp spoofing attack.

**ARP Spoofing Prevention:** This check box allows you to enable the arp spoofing prevention function.

Gateway IP Address: Enter a gateway IP address.

**Gateway MAC Address:** Enter a gateway MAC address.



## **Bandwidth Optimization**

The Bandwidth Optimization window allows the user to manage the bandwidth of the device and arrange the bandwidth for various wireless clients. When the Bandwidth Optimization ruile is finished, click the **Add** button. To discard the Add Bandwidth Optimization Rule settings, click the **Clear** button. Click the **Save** button to let your changes take effect.

Enable Bandwidth Use the drop-down menu to Enable the Bandwidth

**Optimization:** Optimization function.

**Downlink Bandwidth:** Enter the downlink bandwidth of the device in

Mbits per second.

**Uplink Bandwidth:** Enter the uplink bandwidth of the device in Mbits

per second.

Allocate average BW AP will distribute average bandwidth for each

for each station: client.

Allocate maximum BW Specify the maximum bandwidth for each for each station: connected client. Reserve certain bandwidth for

future clients.

Allocate different BW The weight of 11b/g/n and 11a/n client are for a/b/g/n stations: 10%/20%/70%; 20%/80%. AP will distribute

different bandwidth for 11a/b/g/n clients.

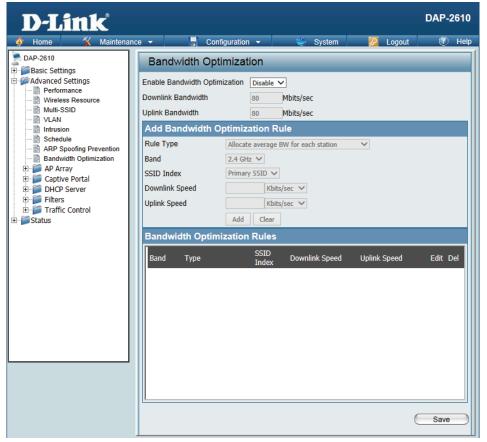
Allocate specific BW All clients share the total bandwidth.

for SSID:

Rule Type: Use the drop-down menu to select the type that is applied to the rule. Available options are:

Allocate average BW for each station, Allocate maximum BW for each station, Allocate different BW for 1a/b/g/n stations, and Allocte

specific BW for SSID.



Band: Use the drop-down menu to toggle the wireless band between 2.4GHz and 5GHz.

**SSID Index:** Use the drop-down menu to select the SSID for the specified wireless band.

**Downlink Speed:** Enter the limitation of the downloading speed in either Kbits/sec or Mbits/sec for the rule.

**Uplink Speed:** Enter the limitation of the uploading speed in either Kbits/sec or Mbits/sec for the rule.

## **AP Array**

#### **AP Array Scan**

The AP Array window is used to create up to 32 APs on a local network to be organized into a single group in order to increase ease of management. Click the **Save** button to let your changes take effect. Central WiFiManager and AP Array are mutually exclusive functions.

**Enable AP Array:** Select the check box to enable the AP array

function. The three modes that are available are **Master**, **Backup Master**, and **Slave**. APs in the same array will use the same configuration. The configuration will sync the Master AP to the Slave AP and the Backup Master AP when a Slave AP and

a Backup Master AP join the AP array.

AP Array Name: Enter an AP array name for the group here.

AP Array Password: Enter an AP array password for the group here.

This password must be the same on all the APs

in the group.

Scan AP Array List: Click this button to initiate a scan of all the

available APs currently on the network.

**Connection Status:** Display the AP array connection status.

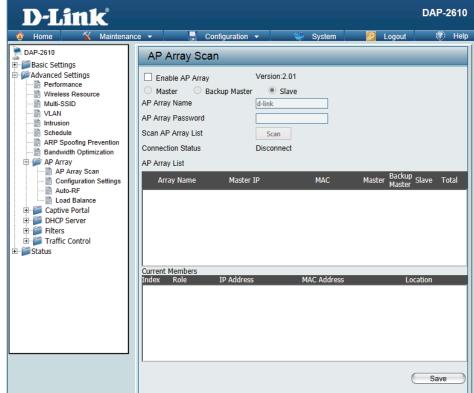
AP Array List: This table displays the current AP array status for

the following parameters: Array Name, Master IP, MAC, Master, Backup Master, Slave, and Total.

**Current Members:** This table displays all the current array members.

The DAP-2610 AP array feature supports up to

eight AP array members.



#### **Configuration Settings**

In the AP array configuration settings windows, users can specify which settings all the APs in the group will inherit from the master AP. Make the required selection in this window and click the **Save** button to accept the changes made.

Select to Enable or Disable the AP array configure feature here.
 Wireless Basic Settings:
 Select this option to specify the basic wireless settings that the APs in the group will inherit.

Wireless Advanced Select this option to specify the advanced wireless Settings: settings that the APs in the group will inherit.

Multiple SSID & VLAN: Select this option to specify the multiple SSIDs

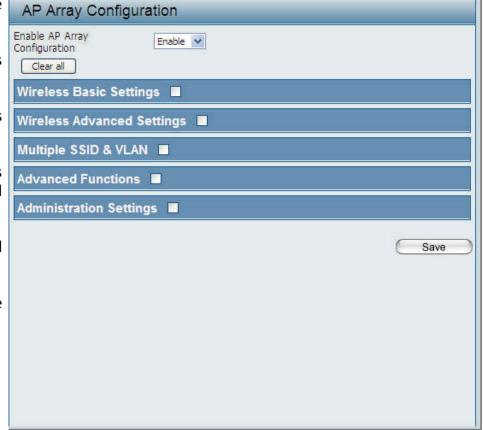
and VLAN settings that the APs in the group will

inherit.

Advanced Functions: Select this option to specify the other advanced

settings that the APs in the group will inherit.

**Administration** Select this option to specify the administrative **Settings:** settings that the APs in the group will inherit.



#### **Wireless Basic Settings**

Wireless Basic Settings

Network Name (SSID)

Auto Channel Selection

Network Name (SSID): Select this option to use the same SSID.

**SSID Visibility:** Select this option to enable SSID visibility.

**Auto Channel Selection:** Select this option to use auto channel selection.

Channel Width: Select this option to use the same channel width.

**Security:** Select this option to use the same wireless security

Captive Profile: Select this option to use the same captive profile settings

Band: Select this option to use the same wireless band.

#### **Wireless Advanced Settings**

Wireless: Select this option to use the same wireless Wireless Advanced Settings ☑

settings.

Wireless Mode: Select this option to use the same wireless mode.

Data Rate: Select this option to use the same data rate.

Beacon Interval: Select this option to use the same beacon interval.

**DTIM Interval:** Select this option to use the same DTIM interval.

**Transmit Power:** Select this option to use the same transmit power.

WMM (Wi-Fi Select this option to use the same WMM settings.

Multimedia):

Ack Time Out: Select this option to use the same ACK timeout value.

**Wireless ACL:** Select this option to use the same wireless ACL settings.

	Band	<b>∨</b>	Captive Profile	<u> </u>
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SSID Visibility

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**Short GI:** Select this option to use the same short GI settings.

**Link Integrity:** Select this option to use the same link integrity settings.

**Connection Limit:** Select this option to use the same connection limit value.

**IGMP Snooping::** Select this option to use the same IGMP snooping settings.

#### **Multiple SSID & VLAN**

SSID

Security

Captive Profile

Multiple SSID & VLAN ☑

**SSID:** Select this option to use the same multi-SSIDs.

**SSID Visibility:** Select this option to use the same SSID visible.

**Security:** Select this option to use the same wireless security

settings.

WMM: Select this option to use the same WMM settings.

**Captive Profile:** Select this option to use the same captive profile settings.

**VLAN:** Select this option to use the same VLAN settings.

#### **Advanced Functions**

Schedule Settings: Select this option to use the same schedule

settings.

QoS Settings: Select this option to use the same Quality of

Service settings.

**Log Settings:** Select this option to use the same log settings.

Time and Date Settings: Select this option to use the same time and date

settings.



SSID Visibility

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**ARP Spoofing** Select this option to use the same ARP spoofing prevention settings.

**Prevention:** 

**Bandwidth** Select this option to use the same bandwidth optimization settings.

**Optimization:** 

**Captive Portal:** Select this option to use the same captive portal settings.

**Auto RF:** Select this option to use the same auto-RF settings.

**Load Balance:** Select this option to use the same load balancing settings.

**DHCP Server Settings:** Select this option to use the same DHCP server settings.

#### **Administration Settings**

**System Name Settings:** Select this option to use the same system name.

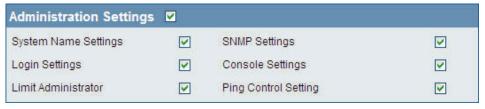
**SNMP Settings:** Select this option to use the same SNMP settings.

**Login Settings:** Select this option to use the same login settings.

**Console Settings:** Select this option to use the same console settings.

**Limit Administrator:** Select this option to use the same limit administrator settings.

**Ping Control Setting:** Select this option to use the same ping control settings.



#### **Auto-RF**

In this windows, users can view and configure the automatic radio frequency settings as well as configure the the auto-initiate period and threshold values. Click the **Save** button to accept the changes made.

**Enable:** Auto-RF: Select to **Enable** or **Disable** the auto-RF feature

here.

**Initiate Auto-RF:** Click the **Auto-RF Optimize** button to initiate the

auto-RF optimization feature.

**Auto-Initiate:** Select the **Enable** or **Disable** the auto-initiate

feature here.

Auto-Initiate Period: After enabling the auto-initiate option, the auto-

initiate period value can be entered here. This

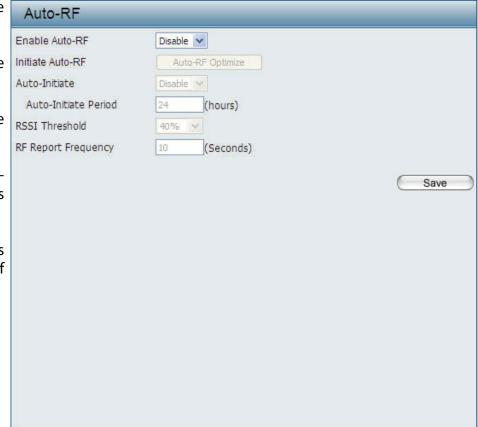
value must be between 1 and 24 hours.

**RSSI Threshold:** Select the RSSI threshold value here. This value is

listed in the drop-down menu in increments of

10% from **10%** to **100%**.

**RF Report Frequency:** Enter the RF report frequency value here.



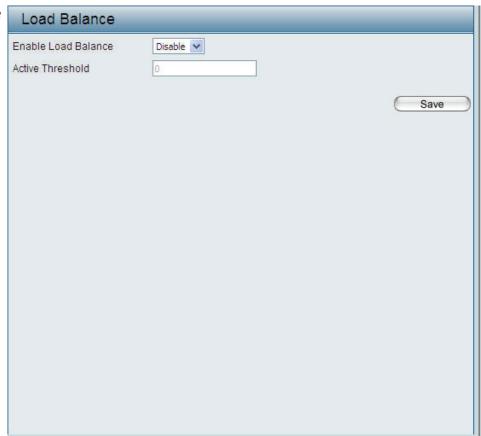
#### **Load Balance**

In this window, users can view and configure the AP array's load balancing settings. Click the Save button to accept the changes made.

**Enable Load Balance:** Select to **Enable** or **Disable** the load balance

feature here.

**Active Threshold:** Enter the active threshold value here.



## **Captive Portal**

#### **Authentication Settings-Web Redirection Only**

The Captive Portal is a built-in web authentication server. When a station connects to an AP, the web browser will be redirected to a web authentication page. In this window, user can view and configure the Captive Portal settings. After selecting Web Redirection Only as the Authentication Type, we can configure the redirection website URL that will be applied to each wireless client in this network.

**Session** Enter the session timeout value here. This value

timeout(1-1440): can be from 1 to 1440 minutes. By default, this

value is 60 minutes.

**Band:** Select 2.4GHz or 5GHz.

**SSID Index:** Select the SSID for this Authentication.

**Authentication Type:** Select the captive portal encryption type here.

Options to choose from are Web Redirection, Username/Password, Passcode, Remote RADIUS, LDAP and POP3. In this section we'll

discuss the Web Redirection option.

Web Redirection State: Default setting is Enable when select Web

Redirection Only.

**URL Path:** Select whether to use either HTTP or HTTPS

here. After selecting either http:// or https://, enter the URL of the website that will be used

in the space provided.

IPIF Status: Select to Enable or Disable the Captive Portal

with its IP interface feature here.

**VLAN Group:** Enter the VLAN Group ID here

Get IP From: Static IP (Manual) is chosen here. Choose this option if you do not have a DHCP server in your network, or if you wish to

assign a static IP address to the DAP-2610. When Dynamic IP (DHCP) is selected, the other fields here will be grayed out.

Please allow about 2 minutes for the DHCP client to be functional once this selection is made.



**IP Address:** Assign a static IP address that is within the IP address range of your network.

**Subnet Mask:** Enter the subnet mask. All devices in the network must share the same subnet mask.

**Gateway:** Enter the IP address of the gateway/router in your network.

**DNS**: Enter a DNS server IP address. This is usually the local IP address of your gateway/router.

#### **Authentication Settings-Username/Password**

The Captive Portal is a built-in web authentication server. When a station connects to an AP, the web browser will be redirected to a web authentication page. In this window, user can view and configure the Captive Portal settings. After selecting Username/Password as the Authentication Type, we can configure the Username/Password authentication that will be applied to each wireless client in this network.

**Session** Enter the session timeout value here. This value

timeout(1-1440): can be from 1 to 1440 minutes. By default, this

value is 60 minutes.

**Band:** Select 2.4GHz or 5GHz.

**SSID Index:** Select the SSID for this Authentication.

Authentication Type: Select the captive portal encryption type here.

Options to choose from are Web Redirection, Username/Password, Passcode, Remote RADIUS, LDAP and POP3. In this section we'll

discuss the Username/Password option.

Web Redirection State: Default is Disable or select Enable to enable the

website redirection feature.

URL Path: Select whether to use either HTTP or HTTPS

here. After selecting either http:// or https://, enter the URL of the website that will be used

in the space provided.

IPIF Status: Select to Enable or Disable the Captive Portal

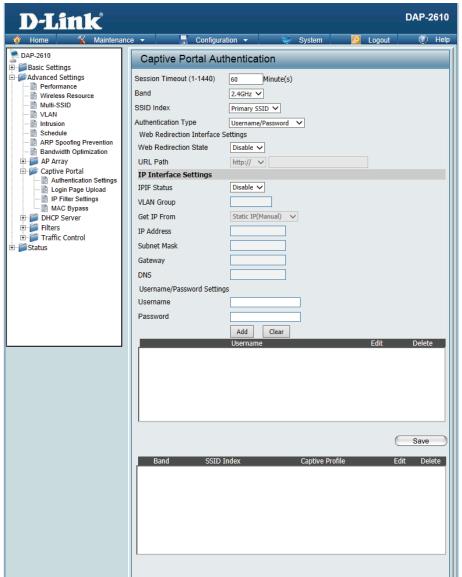
with its IP interface feature here.

**VLAN Group:** Enter the VLAN Group ID here

Get IP From: Static IP (Manual) is chosen here. Choose this

option if you do not have a DHCP server in your network, or if you wish to assign a static IP

address to the DAP-2610. When Dynamic



IP (DHCP) is selected, the other fields here will be grayed out. Please allow about 2 minutes for the DHCP client to be functional once this selection is made.

IP Address: Assign a static IP address that is within the IP address range of your network.

Subnet Mask: Enter the subnet mask. All devices in the network must share the same subnet mask.

**Gateway:** Enter the IP address of the gateway/router in your network.

**DNS**: Enter a DNS server IP address. This is usually the local IP address of your gateway/router.

**Username:** Enter the username for the new account here.

Password: Enter the password for the new account here.

#### **Authentication Settings- Passcode**

The Captive Portal is a built-in web authentication server. When a station connects to an AP, the web browser will be redirected to a web authentication page. In this window, user can view and configure the Captive Portal settings. After selecting Passcode as the Authentication Type, we can configure the Passcode authentication that will be applied to each wireless client in this network.

Session Enter the session timeout value here. This value

timeout(1-1440): can be from 1 to 1440 minutes. By default, this

value is 60 minutes.

**Band:** Select 2.4GHz or 5GHz.

**SSID Index:** Select the SSID for this Authentication.

**Authentication Type:** Select the captive portal encryption type here.

Options to choose from are Web Redirection, Username/Password, Passcode, Remote RADIUS, LDAP and POP3. In this section we'll

discuss the Passcode option.

Web Redirection State: Default is Disable or select Enable to enable the

website redirection feature.

**URL Path:** Select whether to use either HTTP or HTTPS

here. After selecting either http:// or https://, enter the URL of the website that will be used

in the space provided.

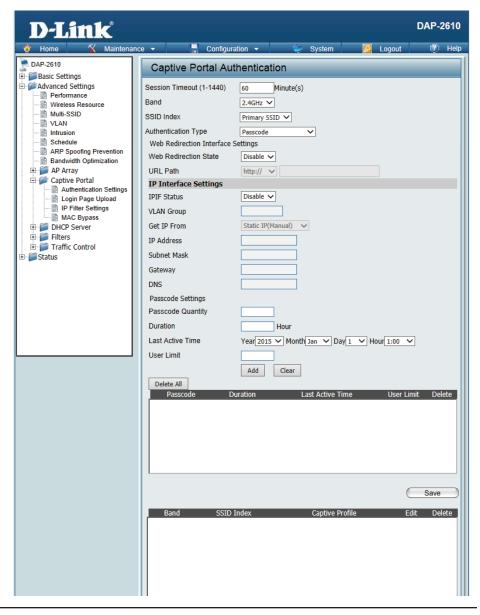
IPIF Status: Select to Enable or Disable the Captive Portal

with its IP interface feature here.

**VLAN Group:** Enter the VLAN Group ID here

Get IP From: Static IP (Manual) is chosen here. Choose this

option if you do not have a DHCP server in your network, or if you wish to assign a static IP address to the DAP-2610. When Dynamic IP (DHCP) is selected, the other fields here will be



grayed out. Please allow about 2 minutes for the DHCP client to be functional once this selection is made.

IP Address: Assign a static IP address that is within the IP address range of your network.

Subnet Mask: Enter the subnet mask. All devices in the network must share the same subnet mask.

**Gateway:** Enter the IP address of the gateway/router in your network.

**DNS**: Enter a DNS server IP address. This is usually the local IP address of your gateway/router.

Passcode Quantity: Enter the number of ticket that will be used here.

**Duration:** Enter the duration value, in hours, for this passcode.

Last Active Day: Select the last active date for this passcode here. Year, Month and Day selections can be made.

User Limit: Enter the maximum amount of users that can use this passcode at the same time

#### **Authentication Settings- Remote RADIUS**

The Captive Portal is a built-in web authentication server. When a station connects to an AP, the web browser will be redirected to a web authentication page. In this window, user can view and configure the Captive Portal settings. After selecting Remote RADIUS as the Authentication Type, we can configure the Remote RADIUS authentication that will be applied to each wireless client in this network.

**Session** Enter the session timeout value here. This value can

timeout(1-1440): be from 1 to 1440 minutes. By default, this value is 60

minutes.

Band: Select 2.4GHz or 5GHz.

**SSID Index:** Select the SSID for this Authentication.

**Authentication Type:** Select the captive portal encryption type here. Options

to choose from are Web Redirection, Username/Password, Passcode, Remote RADIUS, LDAP and POP3.

In this section we'll discuss the Remote RADIUS option.

Web Redirection State: Default is Disable or select Enable to enable the

website redirection feature.

**URL Path:** Select whether to use either HTTP or HTTPS here. After

selecting either http:// or https://, enter the URL of the

website that will be used in the space provided.

IPIF Status: Select to Enable or Disable the Captive Portal with its

IP interface feature here.

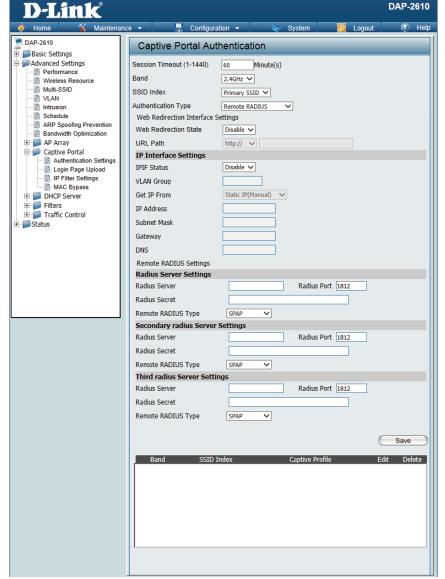
**VLAN Group:** Enter the VLAN Group ID here

**Get IP From:** Static IP (Manual) is chosen here. Choose this option if

you do not have a DHCP server in your network, or if you wish to assign a static IP address to the DAP-2610. When Dynamic IP (DHCP) is selected, the other fields here will be grayed out. Please allow about 2 minutes

for the DHCP client to be functional once this selection

is made.



**IP Address:** Assign a static IP address that is within the IP address range of your network.

Subnet Mask: Enter the subnet mask. All devices in the network must share the same subnet mask.

**Gateway:** Enter the IP address of the gateway/router in your network.

**DNS**: Enter a DNS server IP address. This is usually the local IP address of your gateway/router.

Radius Server: Enter the RADIUS server's IP address here

Radius Port: Enter the RADIUS server's port number here

Radius Port: Enter the RADIUS server's shared secret here

Remote Radius Type: Select the remote RADIUS server type here. Currently, only SPAP will be used.

#### **Authentication Settings-LDAP**

The Captive Portal is a built-in web authentication server. When a station connects to an AP, the web browser will be redirected to a web authentication page. In this window, user can view and configure the Captive Portal settings. After selecting LDAP as the Authentication Type, we can configure the LDAP authentication that will be applied to each wireless client in this network.

Session timeout (1-1440) Enter the session timeout value here. This value can

: be from 1 to 1440 minutes. By default, this value is

60 minutes.

Band: Select 2.4GHz or 5GHz.

**SSID Index:** Select the SSID for this Authentication.

**Authentication Type:** Select the captive portal encryption type here.

Options to choose from are Web Redirection, Username/Password, Passcode, Remote RADIUS, LDAP and POP3. In this section we'll discuss the LDAP

option.

Web Redirection State: Default is Disable or select Enable to enable the

website redirection feature.

**URL Path:** Select whether to use either HTTP or HTTPS here.

After selecting either http:// or https://, enter the URL of the website that will be used in the space provided.

IPIF Status: Select to Enable or Disable the Captive Portal with

its IP interface feature here.

**VLAN Group:** Enter the VLAN Group ID here

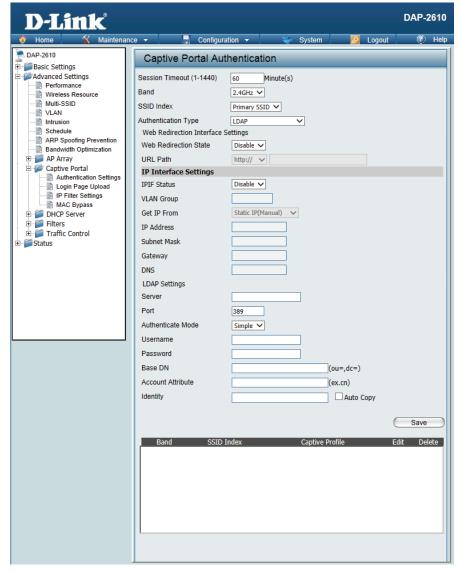
Get IP From: Static IP (Manual) is chosen here. Choose this option

if you do not have a DHCP server in your network, or if you wish to assign a static IP address to the DAP-2610. When Dynamic IP (DHCP) is selected, the other fields here will be grayed out. Please allow about 2 minutes for the DHCP client to be functional once

this selection is made.

IP Address: Assign a static IP address that is within the IP address

range of your network.



Enter the subnet mask. All devices in the network must share the same subnet mask. **Subnet Mask:** 

**Gateway:** Enter the IP address of the gateway/router in your network.

Enter a DNS server IP address. This is usually the local IP address of your gateway/router. DNS:

Enter the LDAP server's IP address or domain name here.

Enter the LDAP server's port number here.

Authenticate Mode: Select the authentication mode here. Options to choose from are Simple and TLS.

**Username:** Enter the LDAP server account's username here.

**Password:** Enter the LDAP server account's password here.

Enter the administrator's domain name here Base DN:

**Account Attribute:** 

Enter the LDAP account attribute string here. This string will be used to search for clients.

**Identity:** Enter the identity's full path string here. Alternatively, select the Auto Copy checkbox to automatically add the generic full

path of the web page in the identity field.

#### **Authentication Settings-POP3**

The Captive Portal is a built-in web authentication server. When a station connects to an AP, the web browser will be redirected to a web authentication page. In this window, user can view and configure the Captive Portal settings. After selecting POP3 as the Authentication Type, we can configure the POP3 authentication that will be applied to each wireless client in this network.

**Session** Enter the session timeout value here. This value

timeout(1-1440): can be from 1 to 1440 minutes. By default, this

value is 60 minutes.

**Band:** Select 2.4GHz or 5GHz.

**SSID Index:** Select the SSID for this Authentication.

**Authentication Type:** Select the captive portal encryption type here.

Options to choose from are Web Redirection, Username/Password, Passcode, Remote RADIUS, LDAP and POP3. In this section we'll

discuss the POP3 option.

**Web Redirection State:** Default is Disable or select Enable to enable the

website redirection feature.

**URL Path:** Select whether to use either HTTP or HTTPS

here. After selecting either http:// or https://, enter the URL of the website that will be used

in the space provided.

IPIF Status: Select to Enable or Disable the Captive Portal

with its IP interface feature here.

**VLAN Group:** Enter the VLAN Group ID here

Get IP From: Static IP (Manual) is chosen here. Choose this

option if you do not have a DHCP server in your network, or if you wish to assign a static IP address to the DAP-2610. When Dynamic IP



(DHCP) is selected, the other fields here will be grayed out. Please allow about 2 minutes for the DHCP client to be functional once this selection is made.

IP Address: Assign a static IP address that is within the IP address range of your network.

Subnet Mask: Enter the subnet mask. All devices in the network must share the same subnet mask.

**Gateway:** Enter the IP address of the gateway/router in your network.

**DNS**: Enter a DNS server IP address. This is usually the local IP address of your gateway/router.

Server: Enter the POP3 server's IP address or domain name here.

**Port:** Enter the POP server's port number here.

**Connection Type:** Select the connection type here. Options to choose from are None and SSL/TLS.

#### **Login Page Upload**

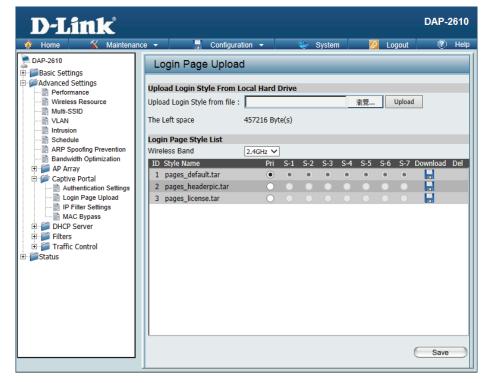
In this window, users can upload a custom login web page that will be used by the captive portal feature. Click the **Browse** button to navigate to the login style, located on the managing computer and then click the **Upload** button to initiate the upload.

From Local Hard Drive:

**Upload Login Style** In this field the path to the login style file, that will be uploaded, will be displayed. Alternatively, the path can be manually entered here.

Login Page Style List:

Select the wireless band and login style that will be used in each SSID here. Click Download button to download the template file for login page and Click Del button to delete the template file.



#### **IP Filter Settings**

Enter the IP address or network address that will be used in the IP filter rule. For example, an IP address like 192.168.70.66 or a network address like 192.168.70.0. This IP address or network will be inaccessible to wireless clients in this network.

Wireless Band: Wireless Band: Select 2.4GHz or 5GHz.

IP Address: IP Address: Enter the IP address or network

address

**Subnet Mask:** Subnet Mask: Enter the subnet mask of the IP

address or networks address

Upload IP Filter File: Upload IP Filter File: To upload a IP filter list file,

click Browse and navigate to the IP filter list file

saved on the computer, and then click Upload.

Download IP Filter File: Download IP Filter File: To download IP Filter list

file, click Download and to save the IP Filter list.



#### **MAC Bypass**

The DAP-2610 features a wireless MAC Bypass. Once a user is finished with these settings, click the Save button to let the changes take effect.

**Wireless Band:** Select the wireless band for MAC Bypass.

**SSID Index:** Select the SSID for MAC Bypass.

MAC Address: Enter each MAC address that you wish to

include in your bypass list, and click Add.

**MAC Address List:** When a MAC address is entered, it appears in

this list.

Highlight a MAC address and click the Delete

icon to remove it from this list.

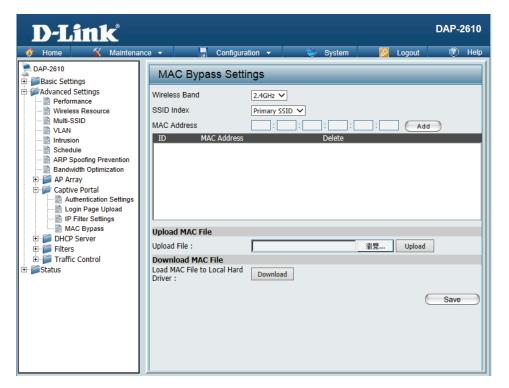
**Upload File:** To upload a MAC bypass list file, click Browse

and navigate to the MAC bypass list file saved

on the computer, and then click Upload.

**Load MAC File to Local** To download MAC bypass list file, click Download

**Hard Driver:** and to save the MAC bypass list.



#### **DHCP Server**

#### **Dynamic Pool Settings**

The DHCP address pool defines the range of the IP address that can be assigned to stations in the network. A Dynamic Pool allows wireless stations to receive an available IP with lease time control. If needed or required in the network, the DAP-2610 is capable of acting as a DHCP server.

Function Enable/Disable: Dynamic Host Configuration Protocol (DHCP) assigns dynamic IP addresses to devices on the network. This protocol simplifies network management and allows new wireless devices to receive IP addresses automatically without the need to manually assign new IP addresses. Select Enable to allow the DAP-2610 to function as a DHCP server.

IP Assigned From: Input the first IP address available for assignment on your network.

The Range of Pool (1-254): Enter the number of IP addresses available for assignment.

IP addresses are increments of the IP address specified in the

"IP Assigned From" field.

here.

Subnet Mask: All devices in the network must have the same subnet mask to communicate. Enter the subnet mask for the network

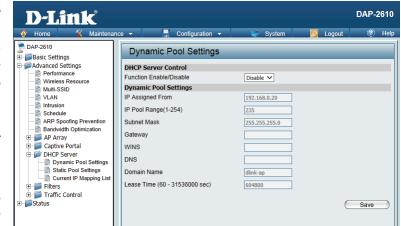
**Gateway:** Enter the IP address of the gateway on the network.

WINS: Specify the Windows Internet Naming Service (WINS) server address for the wireless network. WINS is a system that determines the IP address of a network computer that has a dynamically assigned IP address.

DNS: Enter the IP address of the Domain Name System (DNS) server. The DNS server translates domain names such as www.dlink.com into IP addresses.

**Domain Name:** Enter the domain name of the network, if applicable. (An example of a domain name is: www.dlink.com.)

Lease Time: The lease time is the period of time before the DHCP server will assign new IP addresses.



## **Static Pool Setting**

The DHCP address pool defines the range of IP addresses that can be assigned to stations on the network. A static pool allows specific wireless stations to receive a fixed IP without time control.

Function Enable/Disable: Dynamic Host Configuration Protocol (DHCP) assigns IP addresses to wireless devices on the network. This protocol simplifies network management and allows new wireless devices to receive IP addresses automatically without the need to manually assign IP addresses. Select Enable to allow the DAP-2610 to function as a DHCP server.

Assigned IP: Use the Static Pool Settings to assign the same IP address to a device every time you start up. The IP addresses assigned in the Static Pool list must NOT be in the same IP range as the Dynamic Pool. After you have assigned a static IP address to a device via its MAC address, click Apply; the device will appear in the Assigned Static Pool at the bottom of the screen. You can edit or delete the device in this list.

Assigned MAC Address: Enter the MAC address of the device requesting

association here.

Subnet Mask: Define the subnet mask of the IP address specified

in the "IP Assigned From" field.

**Gateway:** Specify the Gateway address for the wireless network.

WINS: Specify the Windows Internet Naming Service (WINS) server address for the wireless network. WINS is a system that determines the IP address of a network computer with a dynamically assigned IP address, if applicable.

**DNS:** Enter the DNS server address for your wireless network.

**Domain Name:** Specify the domain name for the network.

Enable 💌
255.255.255.0
dlink-ap
Save
IP Address Edit Delete

## **Current IP Mapping List**

This window displays information about the current assigned DHCP dynamic and static IP address pools. This information is available when you enable DHCP server on the AP and assign dynamic and static IP address pools.

**Current DHCP Dynamic** These are IP address pools the DHCP server has

**Profile:** assigned using the dynamic pool setting.

Binding MAC Address: The MAC address of a device on the network

that is assigned an IP address from the DHCP

dynamic pool.

Assigned IP Address: The current corresponding DHCP-assigned IP

address of the device.

Lease Time: The length of time that the dynamic IP address

will be valid.

Current DHCP Static Pools: These are the IP address pools of the DHCP

server assigned through the static pool settings.

**Binding MAC Address:** The MAC address of a device on the network

that is within the DHCP static IP address pool.

Assigned IP Address: The current corresponding DHCP-assigned

static IP address of the device.

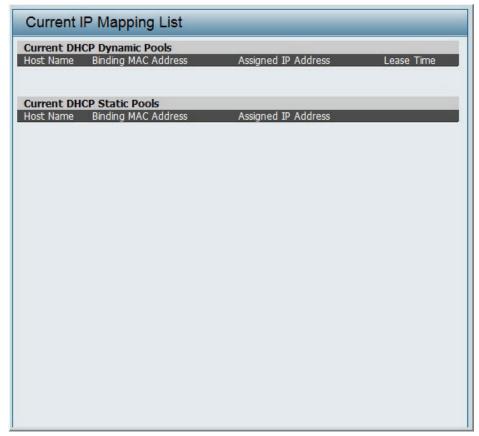
**Binding MAC Address:** The MAC address of a device on the network

that is assigned an IP address from the DHCP

dynamic pool.

Assigned IP Address: The current corresponding DHCP-assigned

static IP address of the device.



#### **Filters**

#### **Wireless MAC ACL**

This page allows the user to configure Wireless MAC ACL settings for access control.

Wireless Band: Displays the current wireless band rate.

Access Control List: Select **Disable** to disable the filters function.

Select **Accept** to accept only those devices with MAC addresses in the Access Control List. All other devices not on the list will be rejected.

Select **Reject** to reject the devices with MAC addresses on the Access Control List. All other devices not on the list will be accepted.

MAC Address: Enter each MAC address that you wish to include in

your filter list, and click Apply.

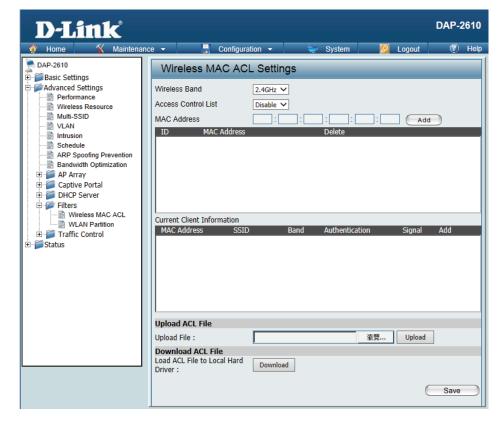
MAC Address List: When you enter a MAC address, it appears in this list.

Highlight a MAC address and click Delete to remove

it from this list.

**Current Client** This table displays information about all the current

**Information:** connected stations.



#### **WLAN Partition**

This page allows the user to configure a WLAN Partition.

Wireless Band: Displays the current wireless band.

**Link Integrity:** Select **Enable** or **Disable**. If the Ethernet

connection between the LAN and the AP is disconnected, enabling this feature will cause the wireless segment associated with the AP to

be disassociated from the AP.

Ethernet WLAN Access: The default is Enable. When disabled, all data

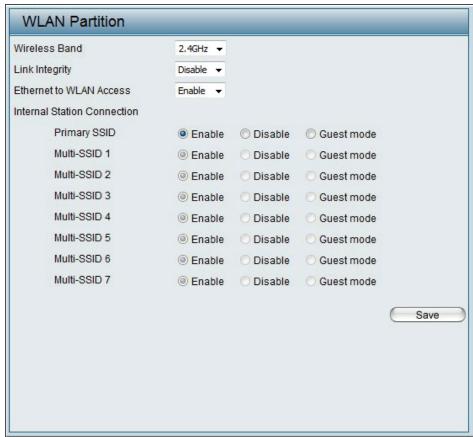
from the Ethernet to associated wireless devices will be blocked. Wireless devices can still send

data to the Ethernet.

**Internal Station Connection:** The default value is Enable, which allows stations

to intercommunicate by connecting to a target AP. When disabled, wireless stations cannot exchange data on the same Multi-SSID. In Guest mode, wireless stations cannot exchange data

with any station on your network.

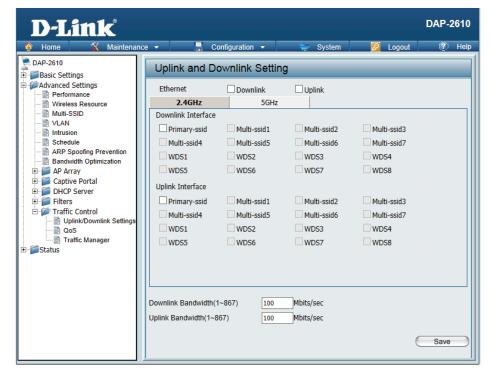


# Traffic Control Uplink/Downlink Setting

The uplink/downlink setting allows users to customize the downlink and uplink interfaces including specifying downlink/uplink bandwidth rates in Mbits per second. These values are also used in the QoS and Traffic Manager windows. Once the desired uplink and downlink settings are finished, click the **Save** button to let your changes take effect.

Downlink Bandwidth: The downlink bandwidth in Mbits per second.

**Uplink Bandwidth:** Uplink Bandwidth: The uplink bandwidth in Mbits per second.



## QoS

Quality of Service (QoS) enhances the experience of using a network by prioritizing the traffic of different applications. The DAP-2610 supports four priority levels. Once the desired QoS settings are finished, click the **Save** button to let your changes take effect.

Enable QoS: Check this box to allow QoS to prioritize traffic.

Use the drop-down menus to select the four levels of priority. Click the Save button when you are finished.

**Downlink Bandwidth:** Downlink Bandwidth: The downlink bandwidth in Mbits per second. This value is entered in the Uplink/Downlink Setting window.

**Uplink Bandwidth:** Uplink Bandwidth: The uplink bandwidth in Mbits per second. This value is entered in the Uplink/Downlink Setting window.



# **Traffic Manager**

The traffic manager feature allows users to create traffic management rules that specify how to deal with listed client traffic and specify downlink/ uplink speed for new traffic manager rules. Click the **Save** button to let your changes take effect.

**Traffic Manager:** Use the drop-down menu to **Enable** the traffic

manager feature.

Unlisted Client Traffic: Select Deny or Forward to determine how to

deal with unlisted client traffic.

**Downlink Bandwidth:** The downlink bandwidth in Mbits per second.

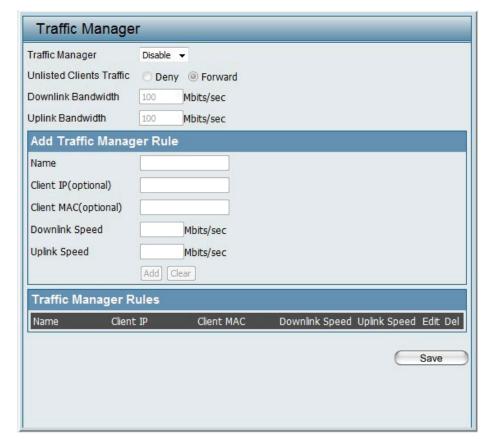
This value is entered in the Uplink/Downlink

Setting window.

Uplink Bandwidth: Uplink Bandwidth: The uplink bandwidth in

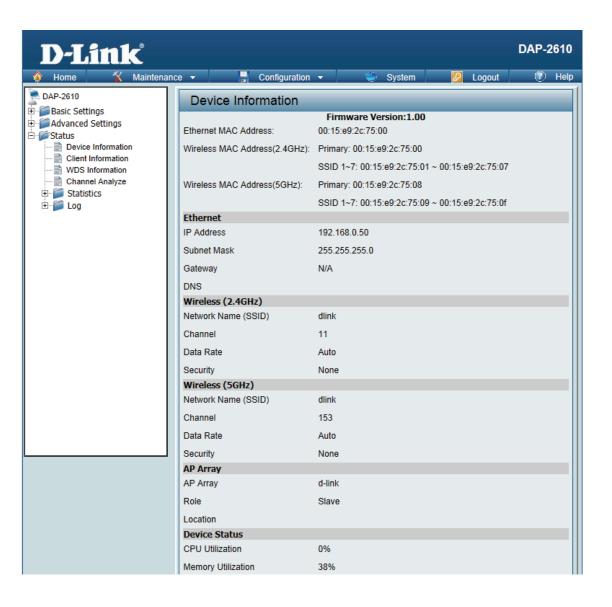
Mbits per second. This value is entered in the

Uplink/Downlink Setting window.



# **Status**

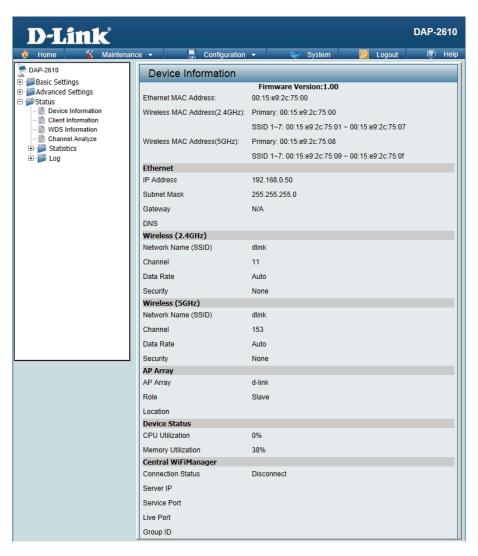
In the Status Section the user can monitor and view configuration settings of the access point. Here the user can also view statistics about client information, WDS information and more. The following pages will explain settings found in the Status section in more detail.



### **Device Information**

This page displays the current information like firmware version, Ethernet and wireless parameters, as well as the information regarding CPU and memory utilization.

Device Information: This read-only window displays the configuration settings of the DAP-2610, including the firmware version and the device's MAC address.



### **Client Information**

This page displays the associated clients SSID, MAC, band, authentication method, signal strength, and power saving mode for the DAP-2610 network.

Client Information: This window displays the wireless client

information for clients currently connected

to the DAP-2610.

**SSID:** Displays the SSID of the client.

MAC: Displays the MAC address of the client.

**Band:** Displays the wireless band that the client is

connected to.

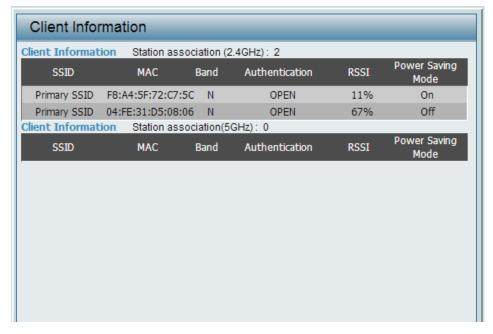
Authentication: Displays the type of authentication being

used.

**RSSI:** Displays the client's signal strength.

Power Saving Mode: Displays the status of the power saving

feature.



# **WDS Information Page**

This page displays the access points SSID, MAC, band, authentication method, signal strength, and status for the DAP-2610's Wireless Distribution System network.

**WDS Information:** This window displays the Wireless Distribution

System information for clients currently

connected to the DAP-2610.

Name: Displays the SSID of the client.

MAC: Displays the MAC address of the client.

Authentication: Displays the type of authentication being

used.

**Signal:** Displays the client's signal strength.

Status: Displays the status of the power saving

feature.



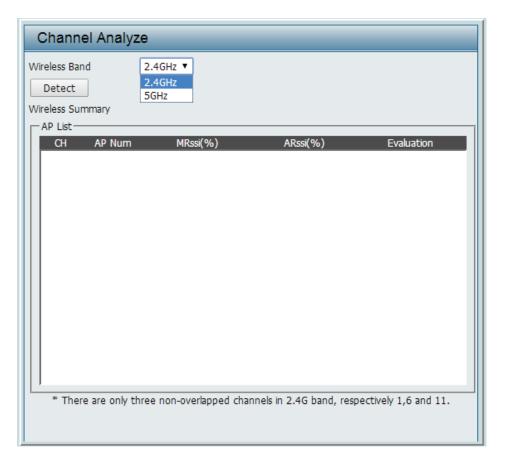
# **Channel Analyze**

Wireless Band: Select either 2.4Ghz or 5GHz.

**Detect:** Click the Detect button to scan.

AP List: This will list the transmitting channels and

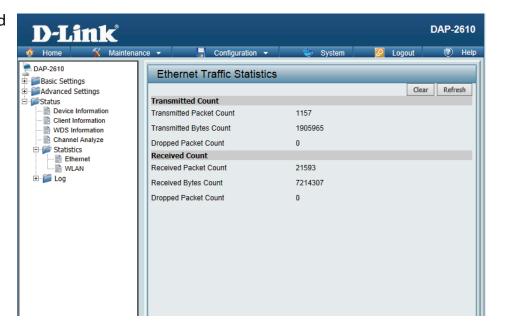
quality.



# Stats Page Ethernet Traffic Statistics

Displays wired interface network traffic information.

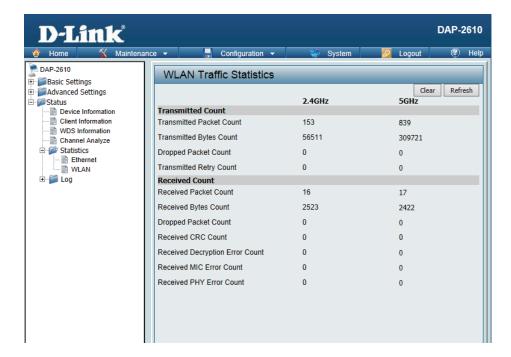
**Ethernet Traffic Statistics:** This page displays transmitted and received count statistics for packets and bytes.



### **WLAN Traffic Statistics**

Displays throughput, transmitted frame, received frame, and WEP frame error information for the AP network.

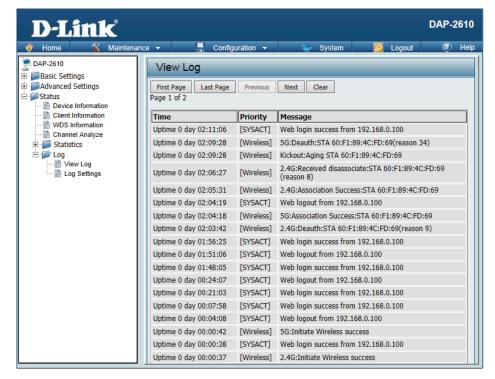
WLAN Traffic Statistics: This page displays wireless network statistics for data throughput, transmitted and received frames, and frame errors.



# Log **View Log**

The AP's embedded memory holds logs here. The log information includes but is not limited to the following items: cold start AP, upgrading firmware, client associate and disassociate with AP, and web login. The web page holds up to 500 logs.

**View Log:** The AP's embedded memory displays system and network messages including a time stamp and message type. The log information includes but is not limited to the following items: cold start AP, upgrading firmware, client associate and disassociate with AP, and web login. The web page holds up to 500 logs.



## **Log Settings**

Enter the log server's IP address to send the log to that server. Check or uncheck System Activity, Wireless Activity, or Notice to specify what kind of log type you want it to log.

**Log Server/IP Address:** Enter the IP address of the server you

would like to send the DAP-2610 log to.

**Log Type:** Check the box for the type of activity

you want to log. There are three types: System Activity, Wireless Activity, and

Notice.

**E-mail Notification:** 

Support Simple Mail Transfer Protocol for log schedule and periodical change key. It can not support Gmail SMTP port 465. Please set to Gmail SMTP port 25 or 587.

E-mail Log Schedule:

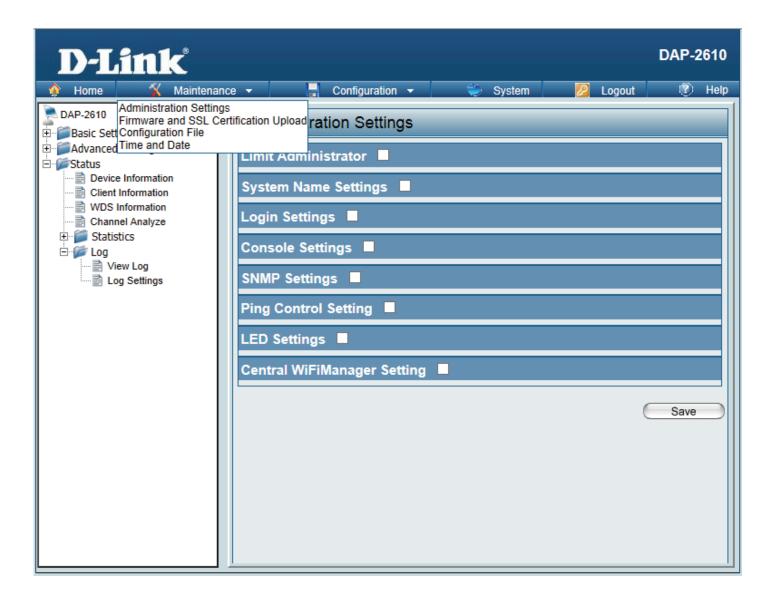
Use the drop-down menu to set the

e-mail log schedule.



# **Maintenance Section**

In the Status Section the user can monitor and view configuration settings of the access point. Here the user can also view statistics about client information, WDS information and more. The following pages will explain settings found in the maintenance section in more detail.



# **Administration Limit Administrator**

Check one or more of the five main categories to display the various hidden administrator parameters and settings displayed on the next five pages. Each of the five main categories display various hidden administrator parameters and settings.

Limit Administrator VLAN Check the box provided and the

ID: enter the specific VLAN ID that the administrator will be allowed to log in

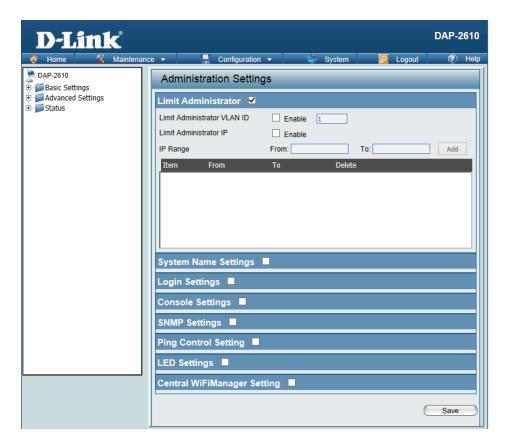
from.

**Limit Administrator IP:** Check to enable the Limit Administrator

IP address.

**IP Range:** Enter the IP address range that the

administrator will be allowed to log in from and then click the Add button.



## **System Name Settings**

Each of the five main categories display various hidden administrator parameters and settings.

**System Name:** The name of the device. The default

name is D-Link DAP-2610.

**Location:** The physical location of the device, e.g.

72nd Floor, D-Link HQ.



## **Login Settings**

Each of the five main categories display various hidden administrator parameters and settings.

**User Name:** Enter a user name. The default is admin.

Old Password: When changing your password, enter the

old password here.



New Password: When changing your password, enter the new password here. The password is case-sensitive. "A" is a different

character than "a." The length should be between 0 and 12 characters.

**Confirm Password:** Enter the new password a second time for confirmation purposes.

## **Console Settings**

Each of the five main categories display various hidden administrator parameters and settings.

Status: Status is enabled by default. Uncheck the

box to disable the console.

Console Protocol: Select the type of protocol you would

like to use, Telnet or SSH.

**Time-out:** Set to 1 Min, 3 Mins, 5 Mins, 10 Mins, 15 Mins or Never.



# **SNMP Settings**

Each of the five main categories display various hidden administrator parameters and settings.

Status: Check the box to enable the SNMP

functions. This is enabled by default.

**Public Community String:** Enter the public SNMP community string.

**Private Community String:** Enter the private SNMP community

string.



# **Administration**

# **Central WiFiManager Settings**

The Central WiFiManager section is used to create a set of APs on the Internet to be organized into a single group in order to increase ease of management. Central WiFiManager and AP Array are mutually exclusive functions.

**Enable Central** Select to enable or disable the Central **WiFiManager:** WiFiManager.



## Firmware and SSL Upload

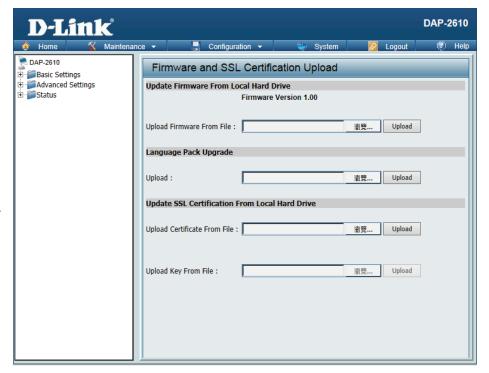
This page allows the user to perform a firmware upgrade. A Firmware upgrade is a function that upgrade the running software used by the access point. This is a useful feature that prevents future bugs and allows for new features to be added to this product. Please go to your local D-Link website to see if there is a newer version firmware available.

**Certification Upload:** 

Firmware and SSL You can upload files to the access point.

**Upload Firmware from** The current firmware version is displayed **Local Hard Drive:** above the file location field. After the latest firmware is downloaded, click on the "Choose File" button to locate the new firmware. Once the file is selected. click on the "Open" and "Upload" button to begin updating the firmware. Please don't turn the power off while upgrading.

**Upload SSL Certification** After you have downloaded a SSL from Local Hard Drive: certification to your local drive, click "Choose File." Select the certification and click "Open" and "Upload" to complete the upgrade.



# **Configuration File Upload**

This page allows the user to backup and recover the current configuration of the access point in case of a unit failure.

Configuration File Upload You can upload and download

and Download: configuration files of the access point.

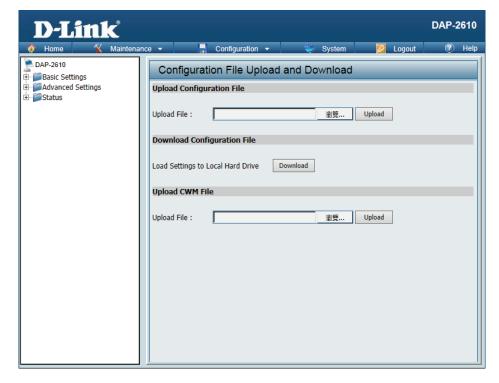
**Upload Configuration File:** 

Browse to the saved configuration file you have in local drive and click

"Open" and "Upload" to update the configuration.

**Download Configuration** 

Click "Download" to save the current File: configuration file to your local disk. Note that if you save one configuration file with the administrator's password now, after resetting your DAP-2610 and then updating to this saved configuration file, the password will be gone.



## **Time and Date Settings**

Enter the NTP server IP, choose the time zone, and enable or disable daylight saving time.

**Current Time:** Displays the current time and date settings.

**Enable NTP Server:** Check to enable the AP to get system time

from an NTP server from the Internet.

NTP Server: Enter the NTP server IP address.

Time Zone: Use the drop-down menu to select your

correct Time Zone.

**Enable Daylight** Check the box to enable Daylight Saving

Saving: Time.

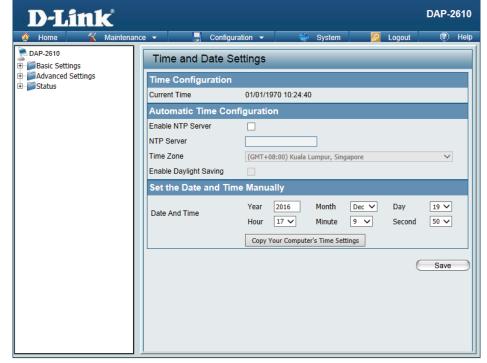
Daylight Saving Use the drop-down menu to select the

**Dates:** correct Daylight Saving offset.

**Set the Date and** A user can either manually set the time **Time Manually:** for the AP here, or click the Copy Your

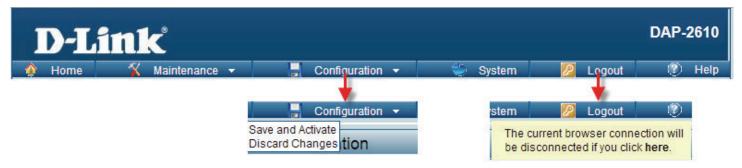
Computer's Time Settings button to copy the time from the computer in use (Make

sure that the computer's time is set correctly).



# **Configuration and System**

These options are the remaining option to choose from in the top menu. Configuration allows the user to save and activate or discard the configurations done. System allows the user to restart the unit, perform a factory reset or clear the language pack settings. Logout allows the user to safely log out from the access point's web configuration. Help allows the user to read more about the given options to configure without the need to consult the manual. The following pages will explain settings found in the configuration and system section in more detail.



# **System Settings**

On this page the user can restart the unit, perform a factory reset of the access point or clear the added language pack.

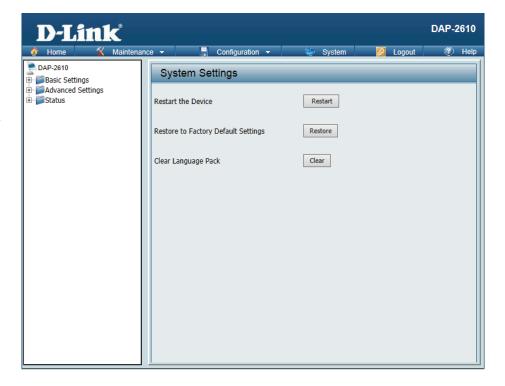
Restart the Device: Click Restart to restart the DAP-2610.

**Restore to Factory Default** Click Restore to restore the DAP-2610

**Settings:** back to factory default settings.

Clear Language Pack: Click to clear the current Language pack

running.



# Help

The help page is useful to view a brief description of a function available on the access point in case the manual is not present.

**Help:** Scroll down the Help page for topics and explanations.

#### **Basic Settings**

#### Wireless Settings

Allow you to change the wireless settings to fit an existing wireless network orto customize your wireless network.

#### Wireless Band

Operating frequency band. Choose 2.4GHz for visibility to legacy devices and for longer range. Choose 5GHz for least interference; interference can hurt performance. This AP will operate one band at a time.

#### Application

This option allows the user to choose for indoor or outdoor mode at the 5G Band.

#### Mode

Select a function mode to configure your wireless network. Function modes include AP, WDS (Wireless Distribution System) with AP, WDS and Wireless Client. Function modes are designed to support various wireless network topology and applications.

#### Network Name (SSID)

Also known as the Service Set Identifier, this is the name designated for a specific wireless local area network (WLAN). The factory default setting is "dlink". The SSID can be easily changed to connect to an existing wireless network or to establish a new wireless network.

#### SSID Visibility

Indicate whether or not the SSID of your wireless network will be broadcasted. The default value of SSID Visibility is set to "Enable," which allow wireless clients to detect the wireless network. By changing this setting to "Disable," wireless clients can no longer detect the wireless network and can only connect if they have the correct SSID entered.

#### **Auto Channel Selection**

If you check Auto Channel Scan, everytime when AP is booting up, the AP will automatically find the best channel to use. This is enabled by default.

#### Channe

Indicate the channel setting for the DAP-2553. By default, the AP is set to Auto Channel Scan. The Channel can be changed to fit the channel setting for an existing wireless network or to customize the wireless network.

#### Channel Widt

Allows you to select the channel width you would like to operate in. Select 20MHz if you are not using any 802.11n wireless clients. Auto 20/40MHz allows your to use both 802.11n and non-802.11n wireless devices in your network

#### Authentication

# **Knowledge Base**Wireless Basics

D-Link wireless products are based on industry standards to provide high-speed wireless connectivity that is easy to use within your home, business or public access wireless networks. D-Link wireless products provides you with access to the data you want, whenever and wherever you want it. Enjoy the freedom that wireless networking can bring to you.

WLAN use is not only increasing in both home and office environments, but in public areas as well, such as airports, coffee shops and universities. Innovative ways to utilize WLAN technology are allowing people to work and communicate more efficiently. Increased mobility and the absence of cabling and other types of fixed infrastructure have proven to be beneficial to many users.

Wireless adapter cards used on laptop and desktop systems support the same protocols as Ethernet adapter cards, allowing wireless users to use the same applications as those used on a wired network.

People use WLAN technology for many different purposes:

- **Mobility** productivity increases when people can have access to data in any location within the operating range of their WLAN. Management decisions based on real-time information can significantly improve the efficiency of a worker.
- Low implementation costs WLANs are easy to set up, manage, change and relocate. Networks that frequently change can benefit from WLAN's ease of implementation. WLANs can operate in locations where installation of wiring may be impractical.
- **Installation and network expansion** by avoiding the complications of troublesome cables, a WLAN system can be fast and easy during installation, especially since it can eliminate the need to pull cable through walls and ceilings. Wireless technology provides more versatility by extending the network beyond the home or office.
- **Inexpensive solution** wireless network devices are as competitively priced as conventional Ethernet network devices. The DAP-2610 saves money by providing users with multi-functionality configurable in four different modes.
- **Scalability** Configurations can be easily changed and range from Peer-to-Peer networks, suitable for a small number of users to larger Infrastructure networks to accommodate hundreds or thousands of users, depending on the number of wireless devices deployed.

# **Wireless Installation Considerations**

The D-Link Access Point lets you access your network using a wireless connection from virtually anywhere within the operating range of your wireless network. Keep in mind, however, that the number, thickness and location of walls, ceilings, or other objects that the wireless signals must pass through, may limit the range. Typical ranges vary depending on the types of materials and background RF (radio frequency) noise in your home or business. The key to maximizing wireless range is to follow these basic guidelines:

- 1. Keep the number of walls and ceilings between the access point and other network devices to a minimum. Each wall or ceiling can reduce your adapter's range from 3-90 feet (1-30 meters.) Position your devices so that the number of walls or ceilings is minimized.
- 2. Be aware of the direct line between network devices. A wall that is 1.5 feet thick (.5 meters), at a
- 3. 45-degree angle appears to be almost 3 feet (1 meter) thick. At a 2-degree angle it looks over 42 feet (14 meters) thick! Position devices so that the signal will travel straight through a wall or ceiling (instead of at an angle) for better reception.
- 4. Building Materials make a difference. A solid metal door or aluminum studs may have a negative effect on the range. Try to position access points, wireless routers, and computers so that the signal passes through drywall or open doorways. Materials and objects such as glass, steel, metal, walls with insulation, water (fish tanks), mirrors, file cabinets, brick, and concrete will degrade your wireless signal.
- 5. Keep your product away (at least 3-6 feet or 1-2 meters) from electrical devices or appliances that generate RF noise.
- 6. If you are using 2.4GHz cordless phones or X-10 (wireless products such as ceiling fans, lights, and home security systems), your wireless connection may degrade dramatically or drop completely. Make sure your 2.4GHz phone base is as far away from your wireless devices as possible. The base transmits a signal even if the phone in not in use.

**Troubleshooting** 

This chapter provides solutions to problems that can occur during the installation and operation of the DAP-2610. Read the following descriptions if you are having problems. (The examples below are illustrated in Windows® XP. If you have a different operating system, the screenshots on your computer will look similar to the following examples.)

## Why can't I access the web-based configuration utility?

When entering the IP address of the D-Link access point (192.168.0.50 for example), you are not connecting to a website on the Internet or have to be connected to the Internet. The device has the utility built-in to a ROM chip in the device itself. Your computer must be on the same IP subnet to connect to the web-based utility.

- Make sure you have an updated Java-enabled web browser. We recommend the following:
  - Internet Explorer 7.0 or higher, Chrome, Firefox, or Safari 4 or higher
- Verify physical connectivity by checking for solid link lights on the device. If you do not get a solid link light, try using a different cable or connect to a different port on the device if possible. If the computer is turned off, the link light may not be on.
- Disable any internet security software running on the computer. Software firewalls such as Zone Alarm, Black Ice, Sygate, Norton Personal Firewall, and Windows® firewall may block access to the configuration pages. Check the help files included with your firewall software for more information on disabling or configuring it.
- Configure your Internet settings:

Go to Start > Settings > Control Panel. Double-click the Internet Options Icon. From the Security tab, click the button to restore the settings to their defaults.

Click the Connection tab and set the dial-up option to Never Dial a Connection. Click the LAN Settings button. Make sure nothing is checked. Click OK. Go to the Advanced tab and click the button to restore these settings to their defaults. Click OK three times.

Close your web browser (if open) and open it.

- Access the web management. Open your web browser and enter the IP address of your D-Link access point in the address bar. This should open the login page for your the web management.
- If you still cannot access the configuration, unplug the power to the access point for 10 seconds and plug back in. Wait about 30 seconds and try accessing the configuration. If you have multiple computers, try connecting using a different computer.

## What can I do if I forgot my password?

If you forgot your password, you must reset your access point. Unfortunately, this process will change all your settings back to the factory defaults.

To reset the access point, locate the reset button (hole) on the rear panel of the unit. With the access point powered on, use a paperclip to hold the button down for 10 seconds. Release the button and the access point will go through its reboot process. Wait about 30 seconds to access the access point. The default IP address is 192.168.0.50. When logging in, the username is admin and leave the password box empty.

# How to check your IP address?

After you install your network adapter, by default, the TCP/IP settings should be set to obtain an IP address from a DHCP server (i.e. wireless router) automatically. To verify your IP address, please follow the steps below.

Click on Start > Run. In the run box type cmd and click OK.

At the prompt, type ipconfig and press Enter.

This will display the IP address, subnet mask, and the default gateway of your adapter.

If the address is 0.0.0.0, check your adapter installation, security settings, and the settings on your router. Some firewall software programs may block a DHCP request on newly installed adapters.

If you are connecting to a wireless network at a hotspot (e.g. hotel, coffee shop, airport), please contact an employee or administrator to verify their wireless network settings.

## How to statically assign an IP address?

If you are not using a DHCP capable gateway/router, or you need to assign a static IP address, please follow the steps below:

#### Step 1:

Windows® 2000: Click on Start > Settings > Control Panel > Network Connections

Windows XP: Click on Start > Control Panel > Network Connections Windows Vista®: Click on Start > Control Panel > Network and Internet > Network and Sharing Center > Manage network connections

#### Step 2:

Right-click on the Local Area Connection which represents your network adapter and select Properties.

#### Step 3:

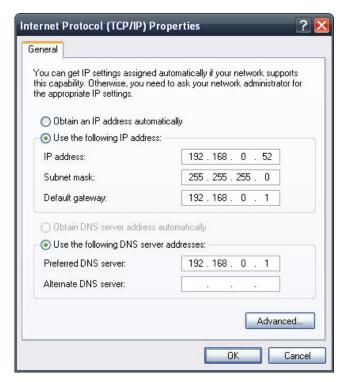
Highlight Internet Protocol (TCP/IP) and click Properties.

#### Step 4:

Click Use the following IP address and enter an IP address that is on the same subnet as your network or the LAN IP address on your router. Example: If the router's LAN IP address is 192.168.0.1, make your IP address 192.168.0.X where X is a number between 2 and 99. Make sure that the number you choose is not in use on the network. Set Default Gateway the same as the LAN IP address of your router (192.168.0.1). Set Primary DNS the same as the LAN IP address of your router (192.168.0.1). The Secondary DNS is not needed or you may enter a DNS server from your ISP.

#### Step 5:

Click OK twice to save your settings.



# **Technical Specifications**

#### **Standards**

- IEEE 802.11ac
- IEEE 802.11n
- IEEE 802.11q
- IEEE 802.11a
- IEEE 802.3
- IEEE 802.3u
- IEEE 802.3ab
- IEEE 802.3af
- IEEE 802.3x

#### **Network Management**

- Web Browser interface (HTTP, Secure HTTP (HTTPS))
- Central WiFiManager
- SNMP Support (Private MIB)
- Command Line Interface (Telnet, Secure SSH Telnet)

#### Security

- WPA™ Personal/Enterprise
- WPA2™ Personal/Enterprise
- WEP™ 64-/128-bit

#### **Wireless Frequency Range**

2.4 to 2.4835 GHz and 5.15 to 5.85 GHz\*\*

#### **Operating Voltage**

• 802.3af PoE or 12V/1A

#### **Antenna Type**

• 2 internal dual-band 3 dBi omni antennas

#### **LEDs**

Power/Status

#### **Temperature**

- Operating: 0°C to 40°C
- Storing: -20°C to 65°C

#### Humidity

- Operating: 10%~90% (non-condensing)
- Storing: 5%~95% (non-condensing)

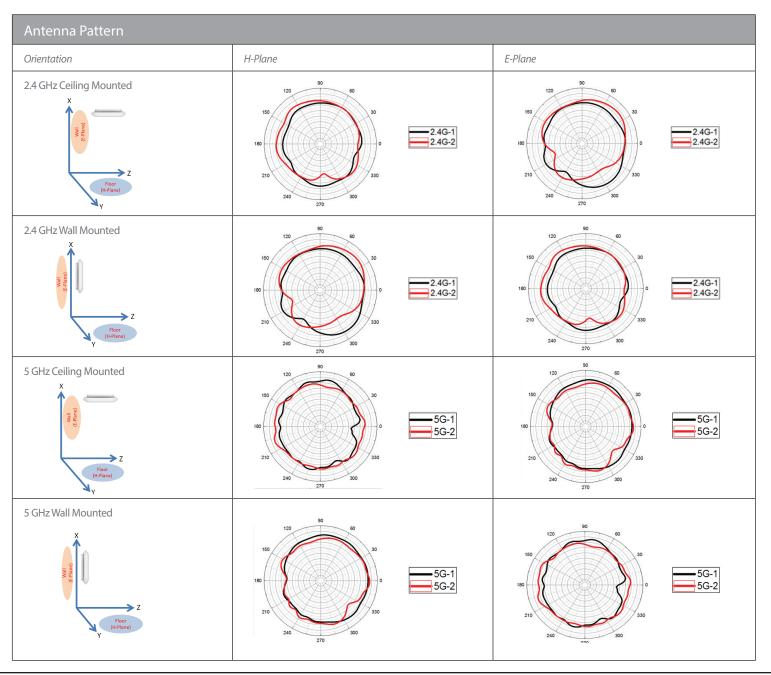
#### Certifications

- FCC Class B
- CE
- UL
- IC
- C-Tick
- Wi-Fi

#### **Dimensions**

- L = 170 mm
- W = 170 mm
- H = 28 mm

# **Antenna Pattern**



# Warranty

Subject to the terms and conditions set forth herein, D-Link Systems, Inc. ("D-Link") provides this Limited Warranty:

- Only to the person or entity that originally purchased the product from D-Link or its authorized reseller or distributor, and
- Only for products purchased and delivered within the fifty states of the United States, the District of Columbia, U.S. Possessions or Protectorates, U.S. Military Installations, or addresses with an APO or FPO.

#### **Limited Warranty:**

D-Link warrants that the hardware portion of the D-Link product described below ("Hardware") will be free from material defects in workmanship and materials under normal use from the date of original retail purchase of the product, for the period set forth below ("Warranty Period"), except as otherwise stated herein.

- Hardware (excluding power supplies and fans): One (1) year
- Power supplies and fans: One (1) year
- Spare parts and spare kits: Ninety (90) days

The customer's sole and exclusive remedy and the entire liability of D-Link and its suppliers under this Limited Warranty will be, at D-Link's option, to repair or replace the defective Hardware during the Warranty Period at no charge to the original owner or to refund the actual purchase price paid. Any repair or replacement will be rendered by D-Link at an Authorized D-Link Service Office. The replacement hardware need not be new or have an identical make, model or part. D-Link may, at its option, replace the defective Hardware or any part thereof with any reconditioned product that D-Link reasonably determines is substantially equivalent (or superior) in all material respects to the defective Hardware. Repaired or replacement hardware will be warranted for the remainder of the original Warranty Period or ninety (90) days, whichever is longer, and is subject to the same limitations and exclusions. If a material defect is incapable of correction, or if D-Link determines that it is not practical to repair or replace the defective Hardware, the actual price paid by the original purchaser for the defective Hardware will be refunded by D-Link upon return to D-Link of the defective Hardware. All Hardware or part thereof that is replaced by D-Link, or for which the purchase price is refunded, shall become the property of D-Link upon replacement or refund.

#### **Limited Software Warranty:**

D-Link warrants that the software portion of the product ("Software") will substantially conform to D-Link's then current functional specifications for the Software, as set forth in the applicable documentation, from the date of original retail purchase of the Software for a period of ninety (90) days ("Software Warranty Period"), provided that the Software is properly installed on approved hardware and operated as contemplated in its documentation. D-Link further warrants that, during the Software Warranty Period, the magnetic media on which D-Link delivers the Software will be free of physical defects. The customer's sole and exclusive remedy and the entire liability of D-Link and its suppliers under this Limited Warranty will be, at D-Link's option, to replace the non-conforming Software (or defective media) with software that substantially conforms to D-Link's functional specifications for the Software or to refund the portion of the actual purchase price paid that is attributable to the Software. Except as otherwise agreed by DLink in writing, the replacement Software is provided only to the original licensee, and is subject to the terms and conditions of the license granted by D-Link for the Software. Replacement Software will be warranted for the remainder of the original Warranty Period and is subject to the same limitations and exclusions. If a material non-conformance is incapable of correction, or if D-Link determines in its sole discretion that it is not practical to replace the non-conforming Software, the price paid by the original licensee for the non-conforming Software will be refunded by D-Link; provided that the non-conforming Software (and all copies thereof) is first returned to D-Link. The license granted respecting any Software for which a refund is given automatically terminates.

#### **Non-Applicability of Warranty:**

The Limited Warranty provided hereunder for Hardware and Software portions of D-Link's products will not be applied to and does not cover any refurbished product and any product purchased through the inventory clearance or liquidation sale or other sales in which D-Link, the sellers, or the liquidators expressly disclaim their warranty obligation pertaining to the product and in that case, the product is being sold "As-Is" without any warranty whatsoever including, without limitation, the Limited Warranty as described herein, notwithstanding anything stated herein to the contrary.

#### **Submitting A Claim:**

The customer shall return the product to the original purchase point based on its return policy. In case the return policy period has expired and the product is within warranty, the customer shall submit a claim to D-Link as outlined below:

- The customer must submit with the product as part of the claim a written description of the Hardware defect or Software nonconformance in sufficient detail to allow D-Link to confirm the same, along with proof of purchase of the product (such as a copy of the dated purchase invoice for the product) if the product is not registered.
- The customer must obtain a Case ID Number from D-Link Technical Support (USA 1-877-453-5465 or Canada 1-800-361-5265), who will attempt to assist the customer in resolving any suspected defects with the product. If the product is considered defective, the customer must obtain a Return Material Authorization ("RMA") number by completing the RMA form. Enter the assigned Case ID Number at https://rma.dlink.com/ (USA only) or https://rma.dlink.ca (Canada only).

- After an RMA number is issued, the defective product must be packaged securely in the original or other suitable shipping package
  to ensure that it will not be damaged in transit, and the RMA number must be prominently marked on the outside of the package.
  Do not include any manuals or accessories in the shipping package. D-Link will only replace the defective portion of the product
  and will not ship back any accessories.
- The customer is responsible for all in-bound shipping charges to D-Link. No Cash on Delivery ("COD") is allowed. Products sent COD will either be rejected by D-Link or become the property of D-Link. Products shall be fully insured by the customer and shipped to D-Link Systems, Inc.
- **USA residents** send to 17595 Mt. Herrmann, Fountain Valley, CA 92708. D-Link will not be held responsible for any packages that are lost in transit to D-Link. The repaired or replaced packages will be shipped to the customer via UPS Ground or any common carrier selected by D-Link. Return shipping charges shall be prepaid by D-Link if you use an address in the United States, otherwise we will ship the product to you freight collect. Expedited shipping is available upon request and provided shipping charges are prepaid by the customer. D-Link may reject or return any product that is not packaged and shipped in strict compliance with the foregoing requirements, or for which an RMA number is not visible from the outside of the package. The product owner agrees to pay D-Link's reasonable handling and return shipping charges for any product that is not packaged and shipped in accordance with the foregoing requirements, or that is determined by D-Link not to be defective or non-conforming.
- Canadian residents send to D-Link Networks, Inc., 2525 Meadowvale Boulevard Mississauga, Ontario, L5N 5S2 Canada. D-Link will not be held responsible for any packages that are lost in transit to D-Link. The repaired or replaced packages will be shipped to the customer via Purolator Canada or any common carrier selected by D-Link. Return shipping charges shall be prepaid by D-Link if you use an address in Canada, otherwise we will ship the product to you freight collect. Expedited shipping is available upon request and provided shipping charges are prepaid by the customer. D-Link may reject or return any product that is not packaged and shipped in strict compliance with the foregoing requirements, or for which an RMA number is not visible from the outside of the package. The product owner agrees to pay D-Link's reasonable handling and return shipping charges for any product that is not packaged and shipped in accordance with the foregoing requirements, or that is determined by D-Link not to be defective or non-conforming. RMA phone number: 1-800-361-5265 Hours of Operation: Monday-Friday, 9:00AM 9:00PM EST

#### What Is Not Covered:

The Limited Warranty provided herein by D-Link does not cover:

Products that, in D-Link's judgment, have been subjected to abuse, accident, alteration, modification, tampering, negligence, misuse, faulty installation, lack of reasonable care, repair or service in any way that is not contemplated in the documentation for the product, or if the model or serial number has been altered, tampered with, defaced or removed; Initial installation, installation and removal of the product for repair, and shipping costs; Operational adjustments covered in the operating manual for the product, and normal maintenance; Damage that occurs in shipment, due to act of God, failures due to power surge, and cosmetic damage; Any hardware, software, firmware or other products or services provided by anyone other than D-Link; and Products that have been purchased from inventory clearance or liquidation sales or other sales in which D-Link, the sellers, or the liquidators expressly disclaim their warranty obligation pertaining to the product.

While necessary maintenance or repairs on your Product can be performed by any company, we recommend that you use only an Authorized D-Link Service Office. Improper or incorrectly performed maintenance or repair voids this Limited Warranty.

#### **Disclaimer of Other Warranties:**

EXCEPT FOR THE LIMITED WARRANTY SPECIFIED HEREIN, THE PRODUCT IS PROVIDED "AS-IS" WITHOUT ANY WARRANTY OF ANY KIND WHATSOEVER INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.

IF ANY IMPLIED WARRANTY CANNOT BE DISCLAIMED IN ANY TERRITORY WHERE A PRODUCT IS SOLD, THE DURATION OF SUCH IMPLIED WARRANTY SHALL BE LIMITED TO THE DURATION OF THE APPLICABLE WARRANTY PERIOD SET FORTH ABOVE. EXCEPT AS EXPRESSLY COVERED UNDER THE LIMITED WARRANTY PROVIDED HEREIN, THE ENTIRE RISK AS TO THE QUALITY, SELECTION AND PERFORMANCE OF THE PRODUCT IS WITH THE PURCHASER OF THE PRODUCT.

#### **Limitation of Liability:**

TO THE MAXIMUM EXTENT PERMITTED BY LAW, D-LINK IS NOT LIABLE UNDER ANY CONTRACT, NEGLIGENCE, STRICT LIABILITY OR OTHER LEGAL OR EQUITABLE THEORY FOR ANY LOSS OF USE OF THE PRODUCT, INCONVENIENCE OR DAMAGES OF ANY CHARACTER, WHETHER DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL (INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF GOODWILL, LOSS OF REVENUE OR PROFIT, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, FAILURE OF OTHER EQUIPMENT OR COMPUTER PROGRAMS TO WHICH D-LINK'S PRODUCT IS CONNECTED WITH, LOSS OF INFORMATION OR DATA CONTAINED IN, STORED ON, OR INTEGRATED WITH ANY PRODUCT RETURNED TO D-LINK FOR WARRANTY SERVICE) RESULTING FROM THE USE OF THE PRODUCT, RELATING TO WARRANTY SERVICE, OR ARISING OUT OF ANY BREACH OF THIS LIMITED WARRANTY, EVEN IF D-LINK HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THE SOLE REMEDY FOR A BREACH OF THE FOREGOING LIMITED WARRANTY IS REPAIR, REPLACEMENT OR REFUND OF THE DEFECTIVE OR NONCONFORMING PRODUCT. THE MAXIMUM LIABILITY OF D-LINK UNDER THIS WARRANTY IS LIMITED TO THE PURCHASE PRICE OF THE PRODUCT COVERED BY THE WARRANTY. THE FOREGOING EXPRESS WRITTEN WARRANTIES AND REMEDIES ARE EXCLUSIVE AND ARE IN LIEU OF ANY OTHER WARRANTIES OR REMEDIES, EXPRESS, IMPLIED OR STATUTORY.

#### **Governing Law:**

This Limited Warranty shall be governed by the laws of the State of California. Some states do not allow exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the foregoing limitations and exclusions may not apply. This Limited Warranty provides specific legal rights and you may also have other rights which vary from state to state.

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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 the 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 of the following measures:

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

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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

802.11g operation of this product in the U.S.A. is firmware-limited to channels 1 through 11.

#### **IMPORTANT NOTE:**

**FCC Radiation Exposure Statement:** 

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

The availability of some specific channels and/or operational frequency bands are country dependent and are firmware programmed at the factory to match the intended destination. The firmware setting is not accessible by the end user.

For detailed warranty information applicable to products purchased outside the United States, please contact the corresponding local D-Link office.

This device and it's antennas(s) must not be co-located or operating in conjunction with any other antenna or transmitter except in accordance with FCC multi-transmitter product procedures.

#### **IC** statement:

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

#### **IMPORTANT NOTE:**

**Radiation Exposure Statement:** 

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This device has been designed to operate with an antenna having a maximum gain of 5.1dBi. Antenna having a higher gain is strictly prohibited per regulations of Industry Canada. The required antenna impedance is 50 ohms.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

For product available in the USA/Canada market, only channel 1~11 can be operated. Selection of other channels is not possible.

Pour les produits disponibles aux États-Unis / Canada du marché, seul le canal 1 à 11 peuvent être exploités. Sélection d'autres canaux n'est pas possible. This device and it's antennas(s) must not be co-located or operating in conjunction with any other antenna or transmitter except in accordance with IC multi-transmitter product procedures.

Cet appareil et son antenne (s) ne doit pas être co-localisés ou fonctionnement en association avec une autre antenne ou transmetteur.

The device for the band 5150-5250 MHz is only for indoor usage to reduce potential for harmful interference to co-channel mobile satellite systems.

les dispositifs fonctionnant dans la bande 5150-5250 MHz sont réservés uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux.

# Registration

Register your product online at www.onlineregister.com/dlink



Product registration is entirely voluntary and failure to complete or return this form will not diminish your warranty rights.

Version 1.01 March 29, 2017