

DWL-2700AP  
Release 2.00

# Outdoor AP/Bridge

Wireless G Outdoor AP/Bridge



# User Manual

Business Class Networking

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# Package Contents

- **D-Link AirPremier™ DWL-2700AP**  
802.11G Outdoor Wireless AP/Bridge
- Eight screws & one rubber ring
- Two rubber dipole antennas
- Manual on CD
- Quick Installation Guide
- 2 Mounting Kits
- PoE base unit
- Power adapter
- Power cord
- RF jumper cable
- Grounding wire
- Surge arrestor
- 30m Ethernet cable
- Console Cables



**Note:** Using a power supply with a different voltage than the one included with the DWL-2700AP will cause damage and void the warranty for this product.

If any of the above items are missing, please contact your reseller.

## Minimum System Requirements

- Computers with Windows®, Macintosh®, or Linux-based operating systems with an installed Ethernet Adapter
- Internet Explorer version 6.0 or Netscape Navigator™ version 7.0 and above

# Introduction

The **DWL-2700AP**, a reliable high-performance wireless outdoor solution, is an ideal addition to business networks seeking to extend wireless signal coverage. With the **DWL-2700AP**, bandwidth-intensive applications like graphics or multimedia will benefit significantly because large files are able to move across the network quickly.

The **DWL-2700AP** is capable of operating in one of 3 different modes to meet your wireless networking needs. The **DWL-2700AP** can operate as an access point, or in WDS (Wireless Distribution System) with AP, or in WDS mode.

Use less wiring, enjoy increased flexibility, save time and money with PoE (Power over Ethernet). With PoE, the **DWL-2700AP** shares power and data over the CAT5 cable, making the setup of your network less expensive and more convenient.

An ideal solution for quickly creating and extending a wireless local area network (WLAN) in offices or other workplaces, trade shows and special events, the **DWL-2700AP** provides data transfers at up to 54Mbps\* when used with other D-Link **Air Premier**® products (The 802.11g standard is backwards compatible with 802.11b devices).

WPA is offered in two flavors: **Enterprise** (used for corporations), and **Personal** (used for home users).

**WPA-Personal** and **WPA2-Personal** is directed at home users who do not have the server based equipment required for user authentication. The method of authentication is similar to WEP because you define a "Pre-Shared Key" on the wireless router/AP. Once the pre-shared key is confirmed and satisfied on both the client and access point, then access is granted. The encryption method used is referred to as the Temporal Key Integrity Protocol (TKIP), which offers per-packet dynamic hashing. It also includes an integrity checking feature which ensures that the packets were not tampered with during wireless transmission. **WPA2-Personal** is far superior to **WPA-Personal**, because the encryption of data is upgraded with the Advanced Encryption Standard (AES).

\*Maximum wireless signal rate derived from IEEE Standard 802.11g 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 factors may adversely affect wireless signal range.



## Introduction (continued)

**WPA-Enterprise** and **WPA2-Enterprise** is ideal for businesses that have existing security infrastructures in place. Management and security implementation can now be centralized on a server participating on the network. Utilizing 802.1x with a RADIUS (Remote Authentication Dial-in User Service) server, a network administrator can define a list of authorized users who can access the wireless LAN. When attempting to access a wireless LAN with either **WPA-Enterprise** or **WPA2-Enterprise** configured, the new client will be challenged with a username and password. If the new client is authorized by the administration, and enters the correct username and password, then access is granted. In a scenario where an employee leaves the company, the network administrator can remove the employee from the authorized list and not have to worry about the network being compromised by a former employee. **WPA2-Enterprise** is far superior to **WPA-Enterprise**, because the encryption of data is upgraded with the Advanced Encryption Standard (AES).

**802.1x: Authentication** which is a first line of defense against intrusion. In the authentication process, the Authentication Server verifies the identity of the client attempting to connect to the network. Unfamiliar clients would be denied access.

**EAP (Extensible Authentication Protocol)** is available through the Windows® XP Operating System. You will need to use the same type of EAP protocol on all the devices in your network when using the 802.1x feature.



# Features and Benefits

- **3 Different Operation modes** - Capable of operating in one of three different operation modes to meet your wireless networking requirements: Access Point; WDS with AP; or WDS.
- **Easy Installation with PoE (Power over Ethernet).**
- **Faster wireless networking** speeds up to 54Mbps\*.
- **Compatible with 802.11b and 802.11g Devices** that is fully compatible with the IEEE 802.11b and 802.11g standards, the **DWL-2700AP** can connect with existing 802.11b or 802.11g compliant wireless network adapter cards.
- **Compatible with the 802.11b standard** to provide a wireless data rate of up to 11Mbps - that means you can migrate your system to the 802.11g standard on your own schedule without sacrificing connectivity.
- **Better security with WPA** - The **DWL-2700AP** can securely connect wireless clients on the network using WPA (Wi-Fi Protected Access) providing a much higher level of security for your data and communications than has previously been available.
- **AP Manager Setup Wizard** - The new Setup Wizard makes network configuration quick and simple.
- **SNMP for Management** - The **DWL-2700AP** is not just fast but it also supports SNMP v.3 for a better network management. Superior wireless AP manager software is bundled with the **DWL-2700AP** for network configuration and firmware upgrade. Systems administrators can also setup the **DWL-2700AP** easily with the Web-based configuration. A D-Link D-View module will be downloadable for network administration and real-time network traffic monitoring with D-Link D-View software.
- Utilizes **OFDM** technology (**O**rthogonal **F**requency **D**ivision **M**ultiplexing).
- Operates in the 2.4GHz frequency range for an 802.11b and 802.11g network.
- **Web-based interface** for managing and configuring.

\*Maximum wireless signal rate derived from IEEE Standard 802.11g 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 factors may adversely affect wireless signal range.



# Wireless Basics

D-Link wireless products are based on industry standards to provide easy-to-use and compatible high-speed wireless connectivity within your home, business or public access wireless networks. D-Link wireless products will allow you to access the data you want, when and where you want it. You will be able to enjoy the freedom that wireless networking brings.

A Wireless Local Area Network (WLAN) is a computer network that transmits and receives data with radio signals instead of wires. WLANs are used increasingly in both home and office environments, and public areas such as airports, coffee shops and universities. Innovative ways to utilize WLAN technology are helping people to work and communicate more efficiently. Increased mobility and the absence of cabling and other fixed infrastructure have proven to be beneficial for many users.

Wireless users can use the same applications they use on a wired network. Wireless adapter cards used on laptop and desktop systems support the same protocols as Ethernet adapter cards.

*People use WLAN technology for many different purposes:*

**Mobility** - Productivity increases when people have access to data in any location within the operating range of the WLAN. Management decisions based on real-time information can significantly improve worker efficiency.

**Low Implementation Costs** - WLANs are easy to set up, manage, change and relocate. Networks that frequently change can benefit from WLANs ease of implementation. WLANs can operate in locations where installation of wiring may be impractical.

**Installation and Network Expansion** - Installing a WLAN system can be fast and easy and can eliminate the need to pull cable through walls and ceilings. Wireless technology allows the network to go where wires cannot go - even outside the home or office.

**Inexpensive Solution** - Wireless network devices are as competitively priced as conventional Ethernet network devices. The **DWL-2700AP** saves money by providing multi-functionality, configurable in one of three different modes.

**Scalability** - WLANs can be configured in a variety of ways to meet the needs of specific applications and installations. Configurations are 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 Basics (continued)

## Standards-based Technology

The **DWL-2700AP** Wireless Access Point utilizes the **802.11b** and the **802.11g** standards.

The IEEE **802.11g** standard is an extension of the **802.11b** standard. It increases the maximum wireless signal rate of up to 54Mbps\* within the 2.4GHz band, utilizing **OFDM technology**.

This means that in most environments, within the specified range of this device, you will be able to transfer large files quickly or even watch a movie in MPEG format over your network without noticeable delays. This technology works by transmitting high-speed digital data over a radio wave utilizing **OFDM (Orthogonal Frequency Division Multiplexing)** technology. **OFDM** works by splitting the radio signal into multiple smaller sub-signals that are then transmitted simultaneously at different frequencies to the receiver. **OFDM** reduces the amount of **crosstalk** (interference) in signal transmissions.

The D-Link **DWL-2700AP** will automatically sense the best possible connection speed to ensure the greatest speed and range possible.

The **DWL-2700AP** offers the most advanced network security features available today, including WPA and WPA2.

In addition to its compatibility with 802.11g devices, the **DWL-2700AP** is compatible with 802.11b devices. This means that if you have an existing 802.11b network, or a network with a mixture of 802.11g and 802.11b, the devices in that network will be compatible with the **DWL-2700AP**.

\*Maximum wireless signal rate derived from IEEE Standard 802.11g 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 factors may adversely affect wireless signal range.

# Wireless Basics (continued)

## Installation Considerations

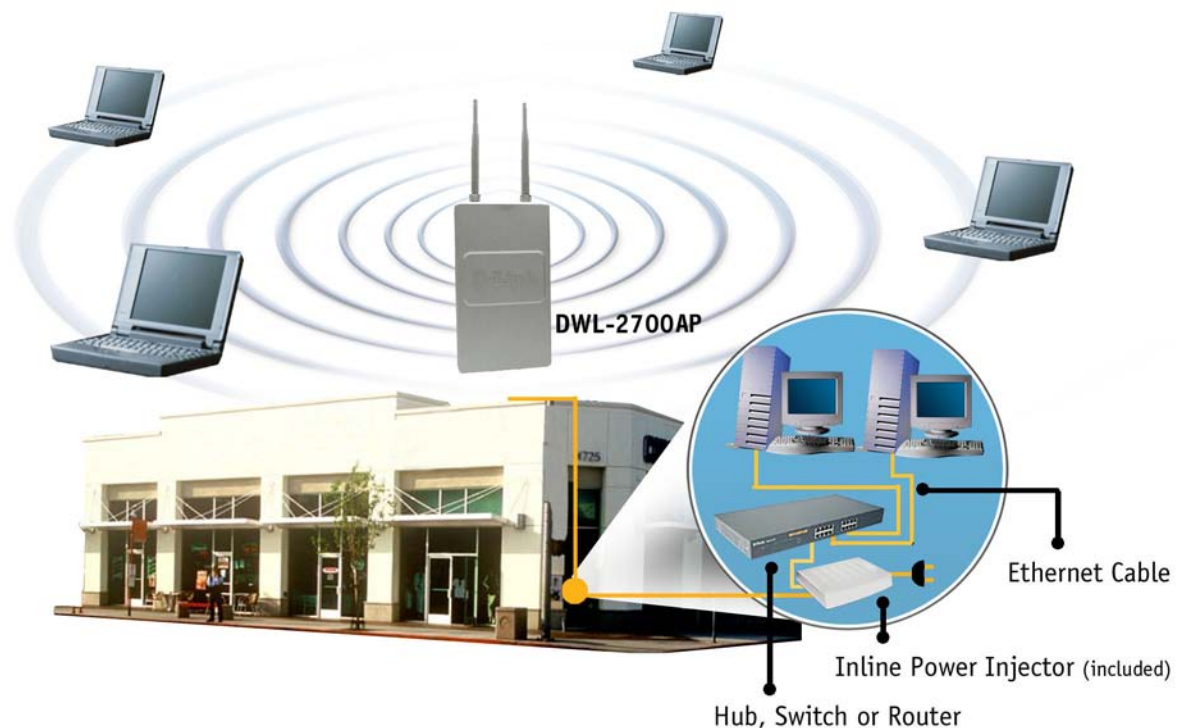
The D-Link *Air Premier*® **DWL-2700AP** lets you access your network, using a wireless connection, from virtually anywhere within its operating range. Keep in mind, however, that the number, thickness and location of walls, ceilings, or other objects that the wireless signals must pass through, may 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 **DWL-2700AP** and other network devices to a minimum - each wall or ceiling can reduce your **DWL-2700AP**'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 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.
- 3** Building materials can impede the wireless signal - a solid metal door or aluminum studs may have a negative effect on range. Try to position wireless devices and computers with wireless adapters so that the signal passes through drywall or open doorways and not other materials.
- 4** Keep your product away (at least 3-6 feet or 1-2 meters) from electrical devices or appliances that generate RF noise.

# Three Operational Modes

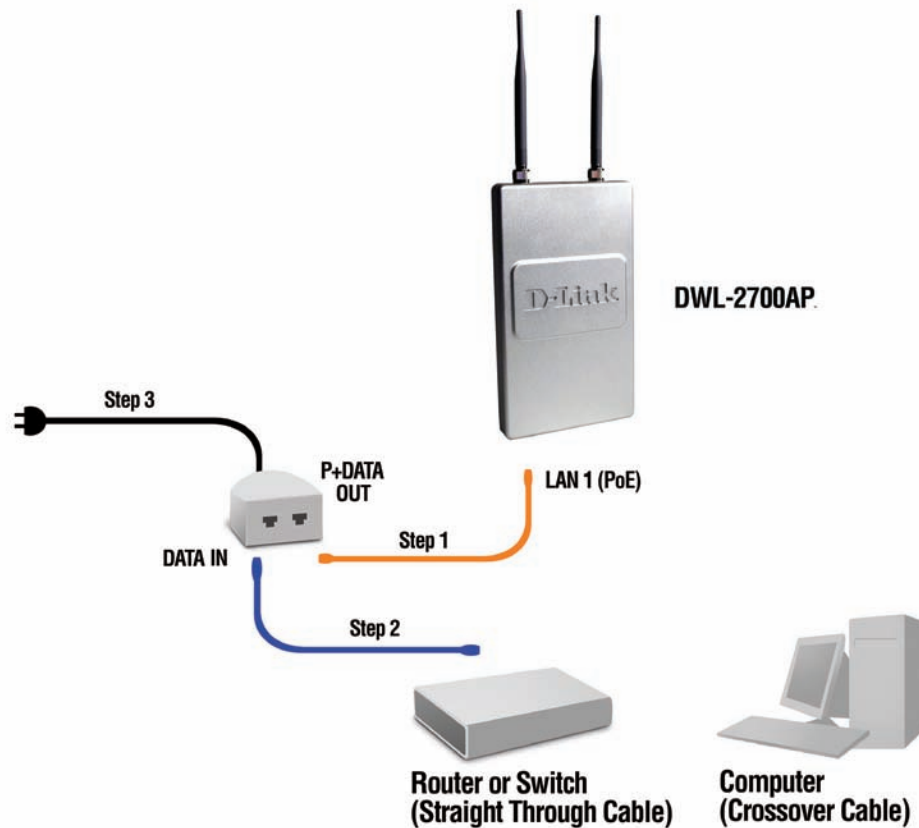
<b>Operation Mode</b> (Only supports 1 mode at a time)	<b>Function</b>
Access Point (AP)	Create a Wireless LAN
WDS with AP	Wireless Connect Multi Networks While Still Functioning as a Wireless AP
WDS	WDS

# Getting Started



- 1 You will need broadband Internet access.
- 2 Consult with your Cable or DSL provider for proper installation of the modem.
- 3 Connect the Cable or DSL modem to a Router.  
(See the printed *Hardware Installation Guide* included with your router.)
- 4 Connect the Ethernet Broadband Router to the PoE base unit.  
(See the printed *Hardware Installation Guide* included with the **DWL-2700AP**.)
- 5 Connect the **DWL-2700AP** to the PoE base unit.  
(See the printed *Hardware Installation Guide* included with the **DWL-2700AP**.)
- 6 If you are connecting a desktop computer to your network, install the D-Link DWL-G550 wireless PCI adapter into an available PCI slot on your desktop computer.
- 7 Install the drivers for the D-Link DWL-G680 wireless Cardbus adapter into a laptop computer.

## Connecting To a PoE (Power over Ethernet) Network



- Step 1:** Connect one end of an Ethernet cable (included with your package) to the **LAN port** on the **DWL-2700AP** and the other end of the Ethernet cable to the port labeled **P+DATA OUT** on the PoE base unit.
- Step 2:** Connect another Ethernet cable from the **DATA IN** port on the PoE base unit to your router/switch or to a PC.
- Step 3:** Attach the power adapter to the connector on the PoE base unit. Attach the power cord to the power adapter and into an electrical outlet.

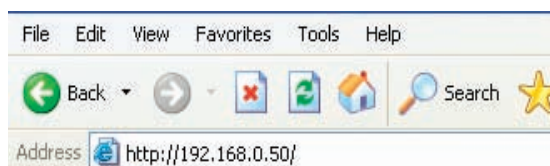
# Using the Configuration Menu

To configure the DWL-2700AP, use a computer which is connected to the DWL-2700AP with an Ethernet cable (see the *Network Layout* diagram).

First, disable the **Access the Internet using a proxy server** function. To disable this function, go to **Control Panel > Internet Options > Connections > LAN Settings** and uncheck the enable box.

Start your web browser program (Internet Explorer, Netscape Navigator™).

Type the IP address and http port of the DWL-2700AP in the address field (http://192.168.0.50) and press **Enter**. Make sure that the IP addresses of the DWL-2700AP and your computer are in the same subnet.



After the connection is established, you will see the user identification window as shown.

**Note:** If you have changed the default IP address assigned to the DWL-2700AP, make sure to enter the correct IP address.

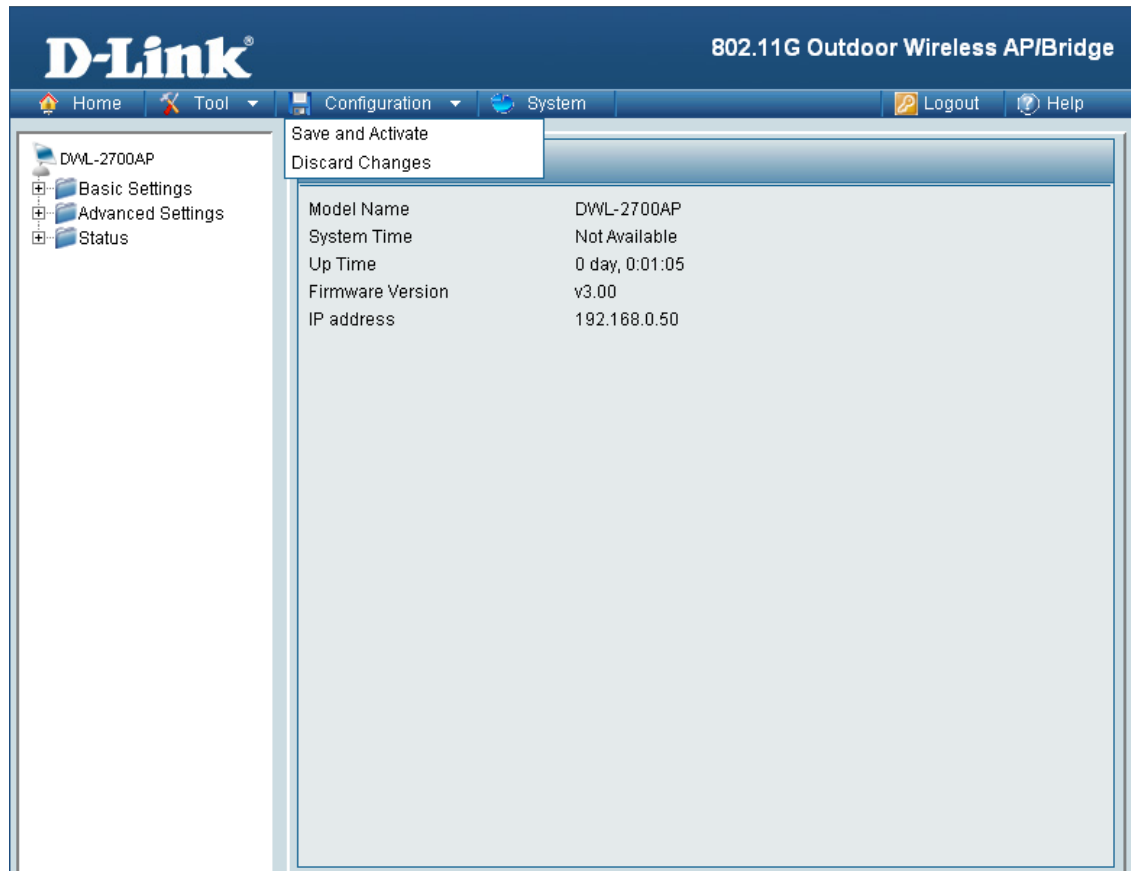
- Type **admin** in the **User Name** field
- Leave the **Password** field blank
- Click **OK**



**Note:** If you have changed the password, make sure to enter the correct password.



## Configuration > Save and Activate



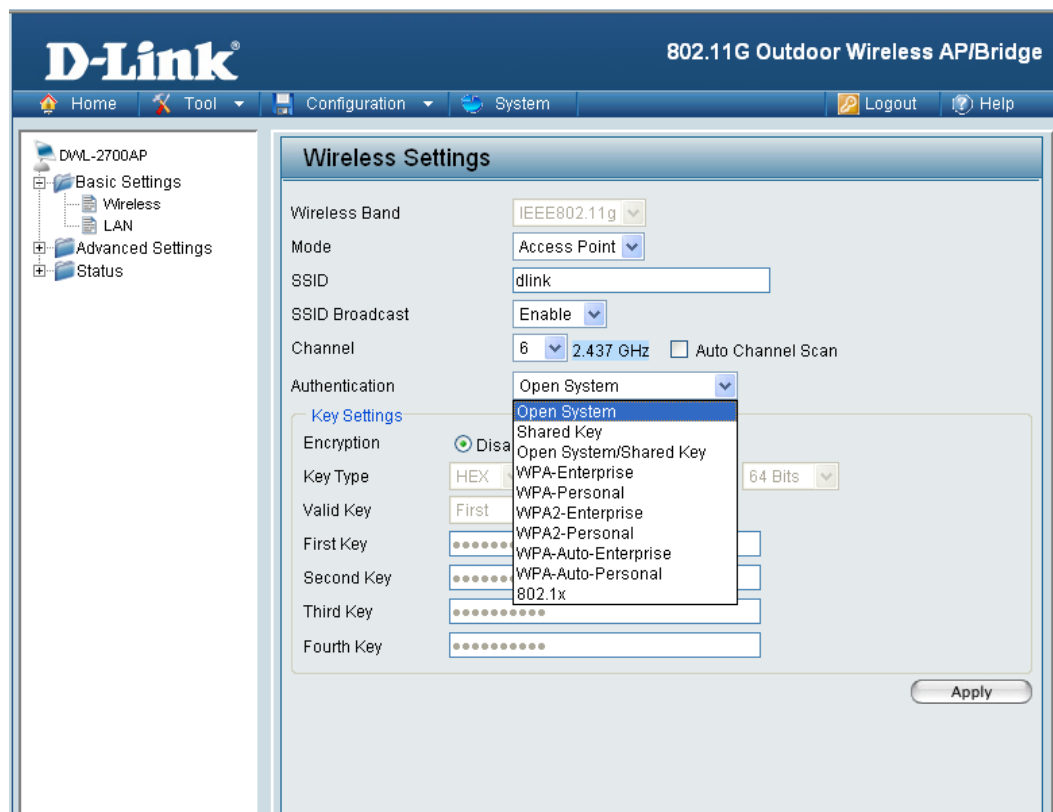
Clicking **Save and Activate** will save and activate all changes made to the configuration and reboot the system.

Clicking **Discard Changes** will discard all changes made to the configuration.



Click the Apply button to save changes made to the current page. Please note that you still must select Save and Activate under Configuration in order for changes to take effect.

## Home > Basic Settings > Wireless > Access Point



**Wireless Band:** IEEE 802.11g.

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

**SSID:** Service Set Identifier (SSID) is the name designated for a specific wireless local area network (WLAN). The SSID 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 Broadcast:** **Enable** or **Disable** SSID broadcast. Enabling this feature broadcasts the SSID across the network.

**Channel:** **Auto Channel Scan** is selected by default. All devices on the network must share the same channel.

**Radio Frequency:** The radio frequency will vary depending on the wireless channel that is chosen. The frequency in channel 6 is 2.437GHz.



## Home > Basic Settings > Wireless > Access Point (continued)

**Auto Channel Scan:** Select **Enable** or **Disable**. Enable this feature to auto-select the channel for best wireless performance.

**Authentication:** 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 **Open System/Shared Key** to allow either form of data encryption.

Select **WPA-Enterprise** to secure your network with the inclusion of a RADIUS server.

Select **WPA-Personal** to secure your network using a password and dynamic key changes (No RADIUS server required).

Select **WPA2-Enterprise** to secure your network with the inclusion of a RADIUS server and upgrade the encryption of data with the Advanced Encryption Standard (AES).

Select **WPA2-Personal** to secure your network using a password and dynamic key changes. No RADIUS server required and encryption of data is upgraded with the Advanced Encryption Standard (AES).

Select **WPA-Auto-Enterprise** to allow the client to either use **WPA-Enterprise** or **WPA2-Enterprise**.

Select **WPA-Auto-Personal** to allow the client to either use **WPA-Personal** or **WPA2-Personal**.

## Home > Basic Settings > Wireless > Access Point (WEP)

**Encryption:** Select **Disabled** or **Enabled**. (**Disabled** is selected here).

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

**Key Size:** Select **64-bit**, **128-bit**, or **152 bits**.

**Valid Key:** Select the **1st** through the **4th** key to be the active key.

**First through Fourth keys:** Input up to four keys for encryption. You will select one of these keys in the valid key field.

\* **Hexadecimal** digits consist of the numbers 0-9 and the letters A-F.

**ASCII** (American Standard Code for Information Interchange) is a code for representing English letters as numbers 0-127.

## Home > Basic Settings > Wireless > Access Point (802.1x)

**D-Link** 802.11G Outdoor Wireless AP/Bridge

Home Tool Configuration System Logout Help

DWL-2700AP

- Basic Settings
  - Wireless
  - LAN
- Advanced Settings
- Status

### Wireless Settings

Wireless Band: IEEE802.11g

Mode: Access Point

SSID: dlink

SSID Broadcast: Enable

Channel: 6 2.437 GHz  Auto Channel Scan

Authentication: 802.1x

**802.1x Settings**

Encryption:  Disable  Enable

WEP Key Type:  Static  Dynamic

Key Type: HEX Key Size: 64 Bits

Valid Key: First

First Key: .....

Second Key: .....

Third Key: .....

Fourth Key: .....

Cipher Type: WEP

RADIUS Server: .....

RADIUS Port: 1812

RADIUS Secret: .....

Apply

**Cipher Type:** WEP is selected.

**Group Key Update Interval:** Select the interval during which the group key will be valid. 1800 is the recommended value. A lower interval may reduce transfer data rate.

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

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

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

## Home > Basic Settings > Wireless > Access Point (WPA/WPA2-Enterprise/WPA-Auto-Enterprise)

The screenshot shows the D-Link configuration interface for the DWL-2700AP. The top navigation bar includes Home, Tool, Configuration, System, Logout, and Help. The left sidebar shows a tree view with Basic Settings (Wireless, LAN), Advanced Settings, and Status. The main content area is titled "Wireless Settings" and contains the following fields:

- Wireless Band: IEEE802.11g
- Mode: Access Point
- SSID: dlink
- SSID Broadcast: Enable
- Channel: 6 (2.437 GHz), with an unchecked checkbox for Auto Channel Scan
- Authentication: WPA-Enterprise
- RADIUS Server Settings** (sub-section):
  - Cipher Type: AUTO
  - Group Key Update Interval: 1800 Sec
  - RADIUS Server: (empty text box)
  - RADIUS Port: 1812
  - RADIUS Secret: (empty text box)

An "Apply" button is located at the bottom right of the configuration area.

**Cipher Type:** When you select **WPA-Enterprise**, **WPA2-Enterprise** or **WPA-Auto-Enterprise**, you must select **AUTO**, **AES**, or **TKIP** from the pull-down menu.

**Group Key Update Interval:** Select the interval during which the group key will be valid. 1800 is the recommended value. A lower interval may reduce transfer data rate.

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

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

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

## Home > Basic Settings > Wireless > Access Point (WPA/WPA2-Personal/WPA2-Auto-Personal)

**D-Link** 802.11G Outdoor Wireless AP/Bridge

Home Tool Configuration System Logout Help

DWL-2700AP

- Basic Settings
  - Wireless
  - LAN
- Advanced Settings
- Status

### Wireless Settings

Wireless Band: IEEE802.11g

Mode: Access Point

SSID: dlink

SSID Broadcast: Enable

Channel: 6 2.437 GHz  Auto Channel Scan

Authentication: WPA-Personal

**PassPhrase Settings**

Cipher Type: AUTO Group Key Update Interval: 1800 Sec

PassPhrase:

Apply

**Cipher Type:** When you select **WPA-Personal**, **WPA2-Personal**, or **WPA-Auto-Personal**, you must select **AUTO**, **AES**, or **TKIP** from the pull-down menu.

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

**PassPhrase:** Enter a passphrase. The passphrase is an alpha-numeric password between 8 and 63 characters long. The password can include symbols (!?\*&\_) and spaces. Make sure you enter this key exactly the same on all other wireless clients.



## Home > Basic Settings > Wireless > WDS with AP

In WDS with AP mode, the **DWL-2700AP** wirelessly connects multiple networks, while still functioning as a wireless AP. WDS (Wireless Distribution System) allows access points to communicate with one another wirelessly in a standardized way. It can also simplify the network infrastructure by reducing the amount of cabling required. Basically the access points will act as a client and an access point at the same time.

**Wireless Band:** IEEE 802.11g

**Mode:** **WDS with AP** is selected from the pull-down menu.

**SSID:** Service Set Identifier (SSID) is the name designated for a specific wireless local area network (WLAN). The SSID 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.

## Home > Basic Settings > Wireless > WDS with AP (continued)

<b>SSID Broadcast:</b>	Enable or Disable SSID broadcast. Enabling this feature broadcasts the SSID across the network.
<b>Channel:</b>	<b>6</b> is the default channel for IEEE 802.11g. All devices on the network must share the same channel.  <i><b>Note:</b> The wireless adapters will automatically scan and match the wireless setting.</i>
<b>Auto Channel Scan:</b>	This option is unavailable in WDS with AP mode.
<b>Remote AP MAC Address:</b>	Enter the MAC addresses of the APs in your network that will serve as bridges to wirelessly connect multiple networks.
<b>Scan:</b>	Click Scan to view available APs in your network that will serve as bridges.
<b>Authentication:</b>	Select <b>Open System</b> to communicate the key across the network. Select <b>Shared Key</b> to limit communication to only those devices that share the same WEP settings. Select <b>Open System/Shared Key</b> to allow either form of data encryption. Select <b>WPA-Personal, WPA2-Personal or WPA-Auto-Personal</b> to secure your network using a password and dynamic key changes (No RADIUS server required).

***Note:** WDS is not completely specified in WiFi or IEEE standards. Communication with other vendor's access points is not guaranteed.*

# Home > Basic Settings > Wireless > WDS with AP (WEP)



**Encryption:** Select **Disabled** or **Enabled**. (**Disabled** is selected here).

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

**Key Size:** Select **64-bit**, **128-bit**, or **152 bits**.

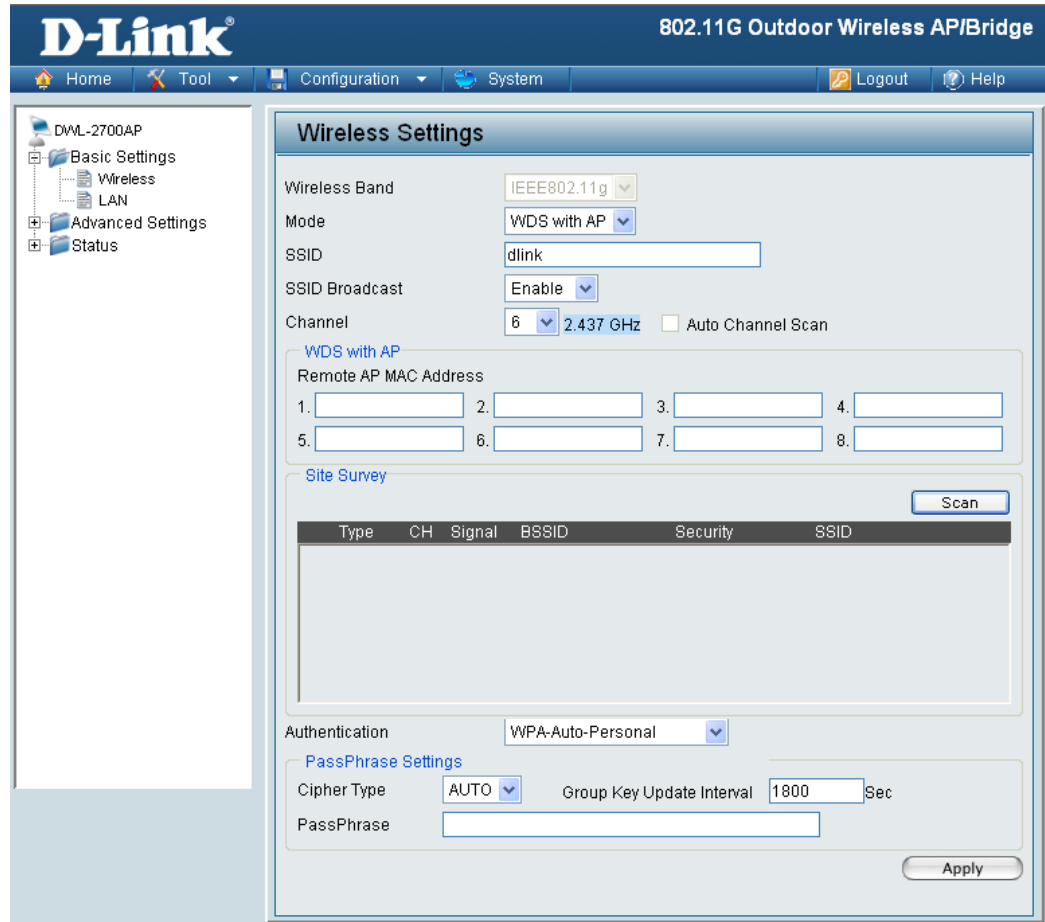
**Valid Key:** Select the **1st** through the **4th** key to be the active key.

**First through Fourth keys:** Input up to four keys for encryption. You will select one of these keys in the valid key field.

\* **Hexadecimal** digits consist of the numbers 0-9 and the letters A-F.

**ASCII** (American Standard Code for Information Interchange) is a code for representing English letters as numbers 0-127.

# Home > Basic Settings > Wireless > WDS with AP (WPA/WPA2-Personal / WPA-Auto-Personal)

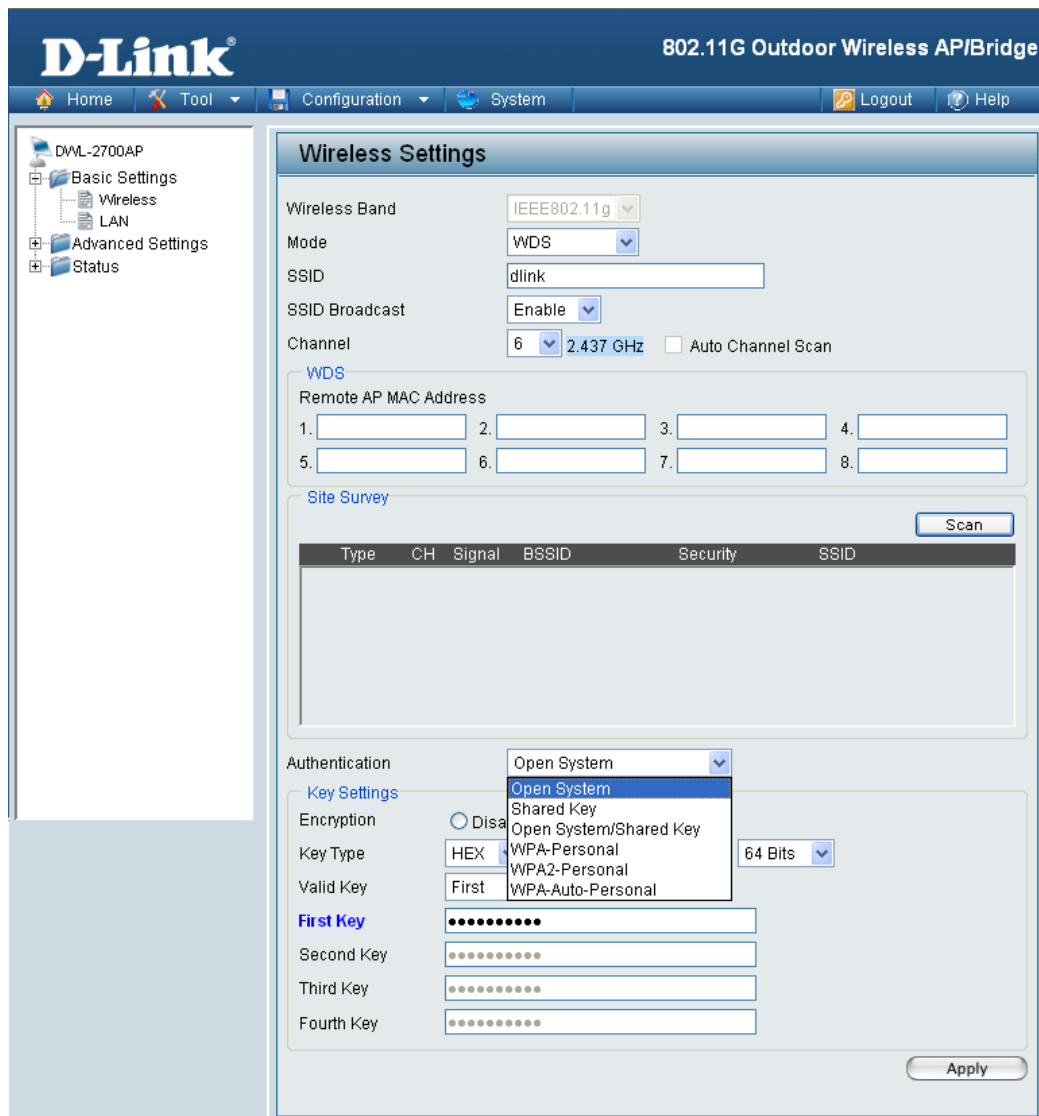


**Cipher Type:** When you select **WPA-Personal, WPA2-Personal or WPA-Auto-Personal** you must select **AUTO** or **AES** from the pull-down menu.

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

**PassPhrase:** Enter a passphrase. The passphrase is an alpha-numeric password between 8 and 63 characters long. The password can include symbols (!?\*&\_) and spaces. Make sure you enter this key exactly the same on all other wireless clients.

# Home > Basic Settings > Wireless > WDS



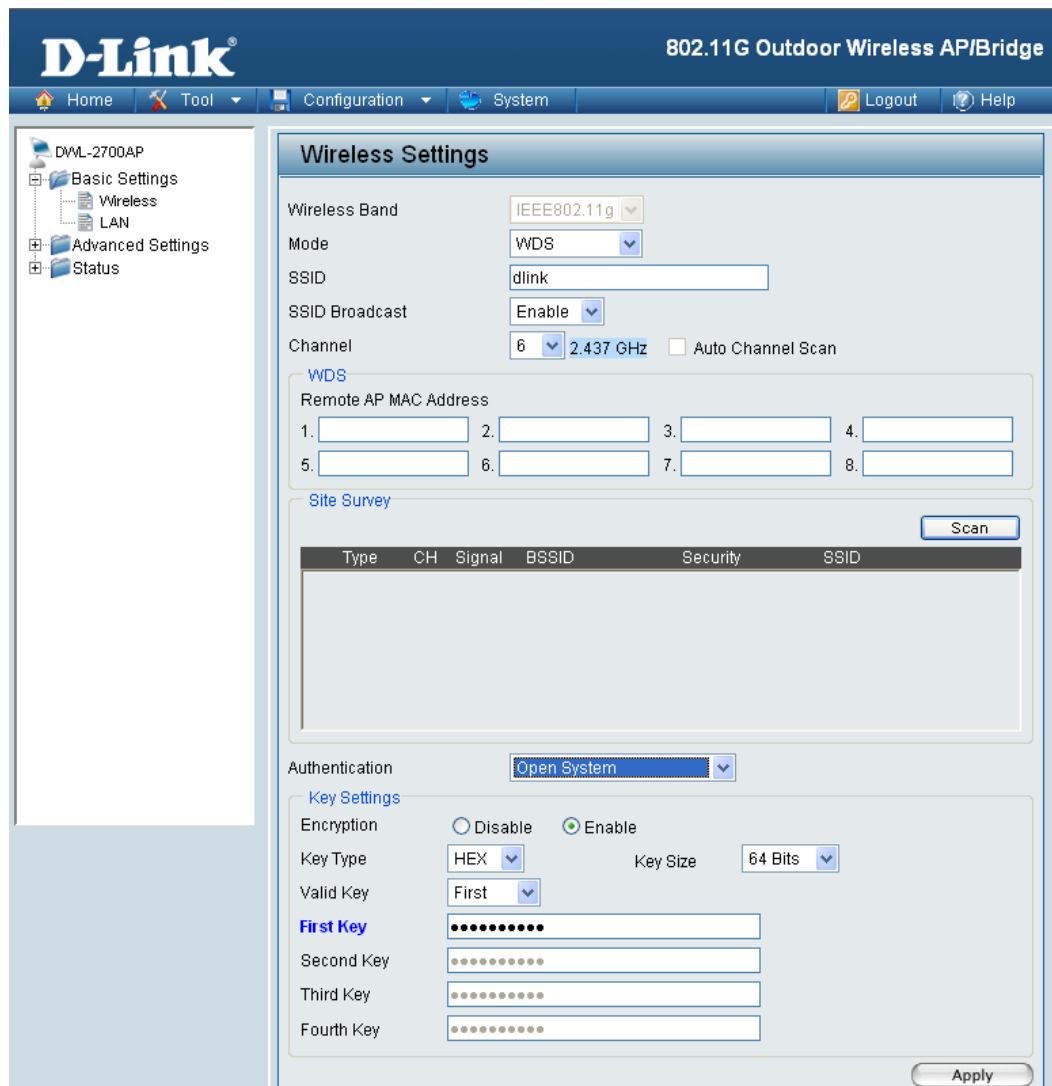
In WDS, the **DWL-2700AP** wirelessly connects multiple networks, without functioning as a wireless AP.

- Wireless Band:** IEEE 802.11g
- Mode:** **WDS** is selected from the pull-down menu.
- SSID:** Service Set Identifier (SSID) is the name designated for a specific wireless local area network (WLAN). The SSID factory default setting is default. The SSID can be easily changed to connect to an existing wireless network, or to establish a new wireless network.

## Home > Basic Settings > Wireless > WDS (continued)

<b>SSID Broadcast:</b>	Enable or Disable SSID broadcast. Enabling this feature broadcasts the SSID across the network.
<b>Channel:</b>	<b>6</b> is the default channel for IEEE 802.11g. All devices on the network must share the same channel.  <i><b>Note:</b> The wireless adapters will automatically scan and match the wireless setting.</i>
<b>Auto Channel Scan:</b>	This option is unavailable in WDS.
<b>Remote AP MAC Address:</b>	Enter the MAC addresses of the APs in your network that will serve as bridges to wirelessly connect multiple networks.
<b>Scan:</b>	Click <b>Scan</b> to view available APs in your network that will serve as bridges.
<b>Authentication:</b>	Select <b>Open System</b> to communicate the key across the network. Select <b>Shared Key</b> to limit communication to only those devices that share the same WEP settings. Select <b>Open System/Shared Key</b> to allow either form of data encryption. Select <b>WPA-Personal</b> , <b>WPA2-Personal</b> , or <b>WPA-Auto-Personal</b> to secure your network using a password and dynamic key changes (No RADIUS server required).

# Home > Basic Settings > Wireless > WDS (WEP)



**Encryption:** Select **Disabled** or **Enabled**. (**Disabled** is selected here).

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

**Key Size:** Select **64-bit**, **128-bit**, or **152 bits**.

**Valid Key:** Select the **1st** through the **4th** key to be the active key.

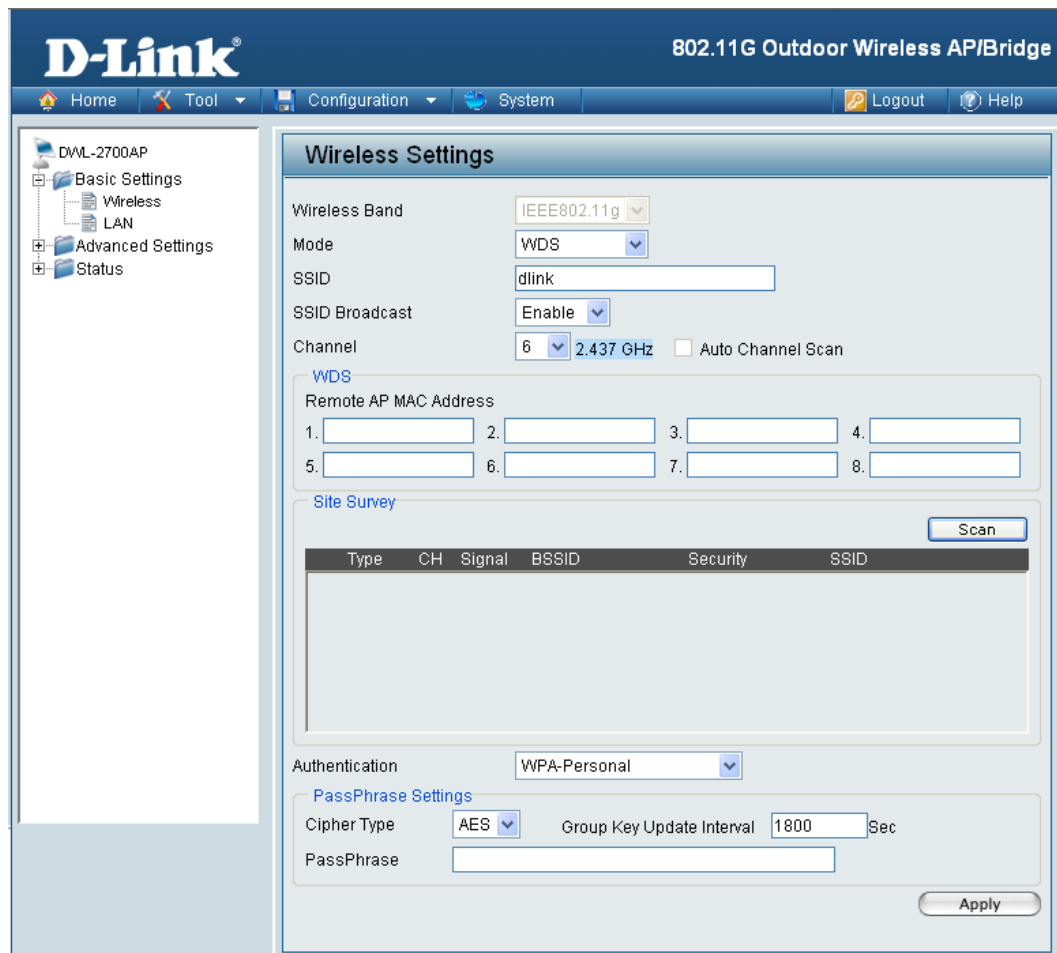
**First through Fourth keys:** Input up to four keys for encryption. You will select one of these keys in the valid key field.

\* **Hexadecimal** digits consist of the numbers 0-9 and the letters A-F.

**ASCII** (American Standard Code for Information Interchange) is a code for representing English letters as numbers 0-127.



# Home > Basic Settings > Wireless > WDS (WPA/WPA2-Personal / WPA-Auto-Personal)



**Cipher Type:** When you select **WPA-Personal, WPA2-Personal or WPA-Auto-Personal**, **AES** is selected as the Cipher Type.

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

**PassPhrase:** When you select **WPA-Personal, WPA2-Personal or WPA-Auto-Personal**, please enter a **PassPhrase** in the corresponding field.

**Home > Basic Settings > Wireless Modes**

AP Mode	Authentication Available
<b>Access Point</b>	<b>Open System</b> <b>Shared Key</b> <b>Open System/Shared Key</b> <b>802.1x</b> <b>WPA-Enterprise</b> <b>WPA-Personal</b> <b>WPA2-Enterprise</b> <b>WPA2-Personal</b> <b>WPA-Auto-Enterprise</b> <b>WPA-Auto-Personal</b>
<b>WDS with AP</b>	<b>Open System</b> <b>Shared Key</b> <b>Open System/Shared Key</b> <b>WPA-Personal</b> <b>WPA2-Personal</b> <b>WPA-Auto-Personal</b>
<b>WDS</b>	<b>Open System</b> <b>Shared Key</b> <b>Open System/Shared Key</b> <b>WPA2-Personal</b> <b>WPA-Personal</b> <b>WPA-Auto-Personal</b>

## Home > Basic Settings > LAN > Static

LAN is short for Local Area Network. This is considered your internal network. These are the IP settings of the LAN interface for the DWL-2700AP. 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 (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 DWL-2700AP.

**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.

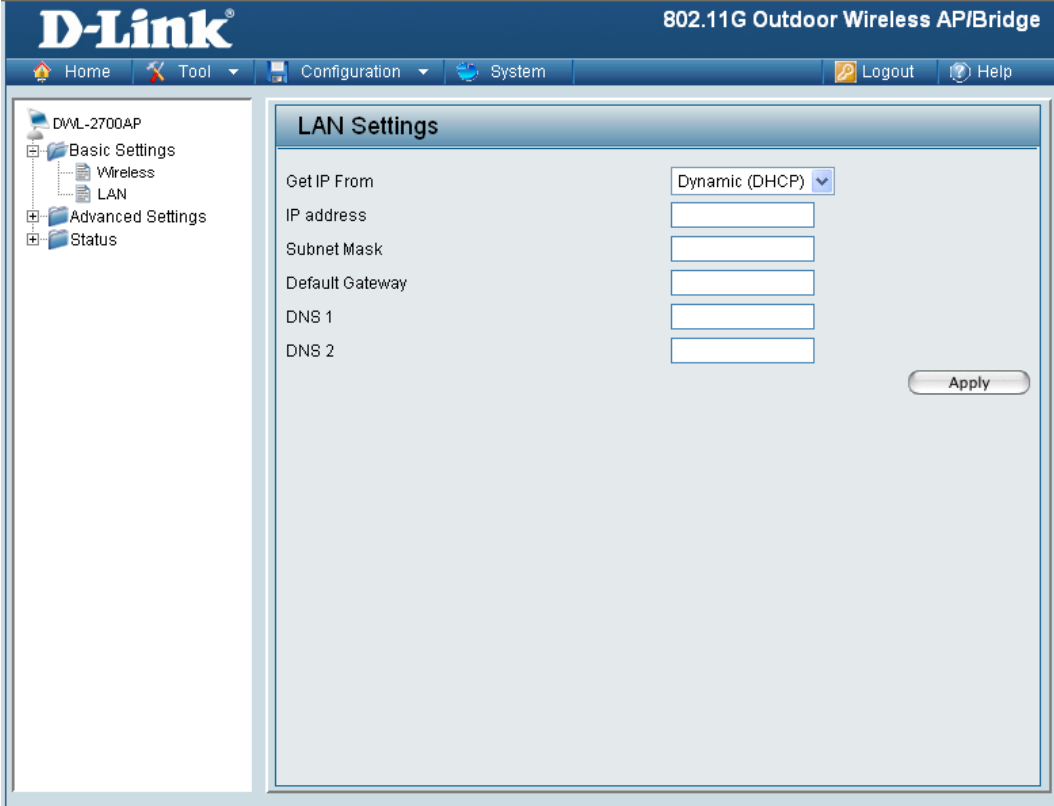
**Subnet Mask:** Enter the subnet mask. All devices in the network must share the same subnet mask..

**Default Gateway:** Enter the IP address of the gateway in your network. If there isn't a gateway in your network, please enter an IP address within the range of your network.

**DNS 1:** Enter your primary DNS IP address.

**DNS 2:** Enter your secondary DNS IP address.

## Home > Basic Settings > LAN > Dynamic



The screenshot shows the D-Link configuration web interface for a DWL-2700AP. The title bar indicates the device is a "802.11G Outdoor Wireless AP/Bridge". The navigation menu includes Home, Tool, Configuration, System, Logout, and Help. The left sidebar shows a tree view with categories: DWL-2700AP, Basic Settings (Wireless, LAN), Advanced Settings, and Status. The main content area is titled "LAN Settings" and contains the following fields:

- Get IP From: Dynamic (DHCP) (selected in a dropdown menu)
- IP address: [Empty text box]
- Subnet Mask: [Empty text box]
- Default Gateway: [Empty text box]
- DNS 1: [Empty text box]
- DNS 2: [Empty text box]

An "Apply" button is located at the bottom right of the configuration area.

**Get IP From:** Dynamic (DHCP) is chosen here. Choose Dynamic IP Address to obtain an IP Address automatically from a DHCP server in your network.

**IP Address:** This field is unavailable when DHCP is selected.

**Subnet Mask:** This field is unavailable when DHCP is selected.

**Default Gateway:** This field is unavailable when DHCP is selected.

**DNS 1:** This field is unavailable when DHCP is selected.

**DNS 2:** This field is unavailable when DHCP is selected.

## Home > Advanced Settings > Performance

The screenshot shows the D-Link configuration web interface for a DWL-2700AP. The title bar indicates '802.11G Outdoor Wireless AP/Bridge'. The navigation menu on the left includes 'Basic Settings', 'Advanced Settings', 'Filters', and 'Status'. The 'Advanced Settings' section is expanded to show 'Performance'. The main configuration area is titled 'Advanced Wireless Settings' and contains the following settings:

Setting	Value
Wireless Band	IEEE802.11g
Frequency	2.437 GHz
Channel	6
Data Rate	Auto
Beacon Interval (20 - 1000)	100
DTIM (1 - 255)	1
Fragment Length (256 - 2346)	2346
RTS Length (1 - 2346)	2346
Transmit Power	Full
Radio	On
WMM	Enable
Wireless B/G Mode	Mixed
Antenna Diversity	Diversity

An 'Apply' button is located at the bottom right of the configuration area.

**Wireless Band:** IEEE 802.11g.

**Frequency:** The frequency reflects the choice of the wireless channel. When IEEE 802.11g is chosen the frequency is 2.437GHz for channel 6.

**Channel:** The default channel for IEEE 802.11g is 6.

**Data Rate:** The **Data Rates** are Auto, 6Mbps, 9Mbps, 12Mbps, 18Mbps, 24Mbps, 36Mbps, 48Mbps, 54Mbps.

**Beacon Interval:** Beacons are packets sent by an access point to synchronize a network. Specify a beacon interval value. The default (100) is recommended.



## Home > Advanced Settings > Performance (continued)

**DTIM:** (*Delivery Traffic Indication Message*) - Select a setting between 1 and 255. **1** is the default setting. DTIM is a countdown informing clients of the next window for listening to broadcast and multicast messages.

**Fragment Length:** The fragmentation threshold, which is specified in bytes, determines whether packets will be fragmented. Packets exceeding the 2346 byte setting will be fragmented before transmission. 2346 is the default setting

**RTS Length:** This value should remain at its default setting of 2346. If you encounter inconsistent data flow, only minor modifications to the value range between 256 and 2346 are recommended

**Radio:** Select **ON** or **OFF**.

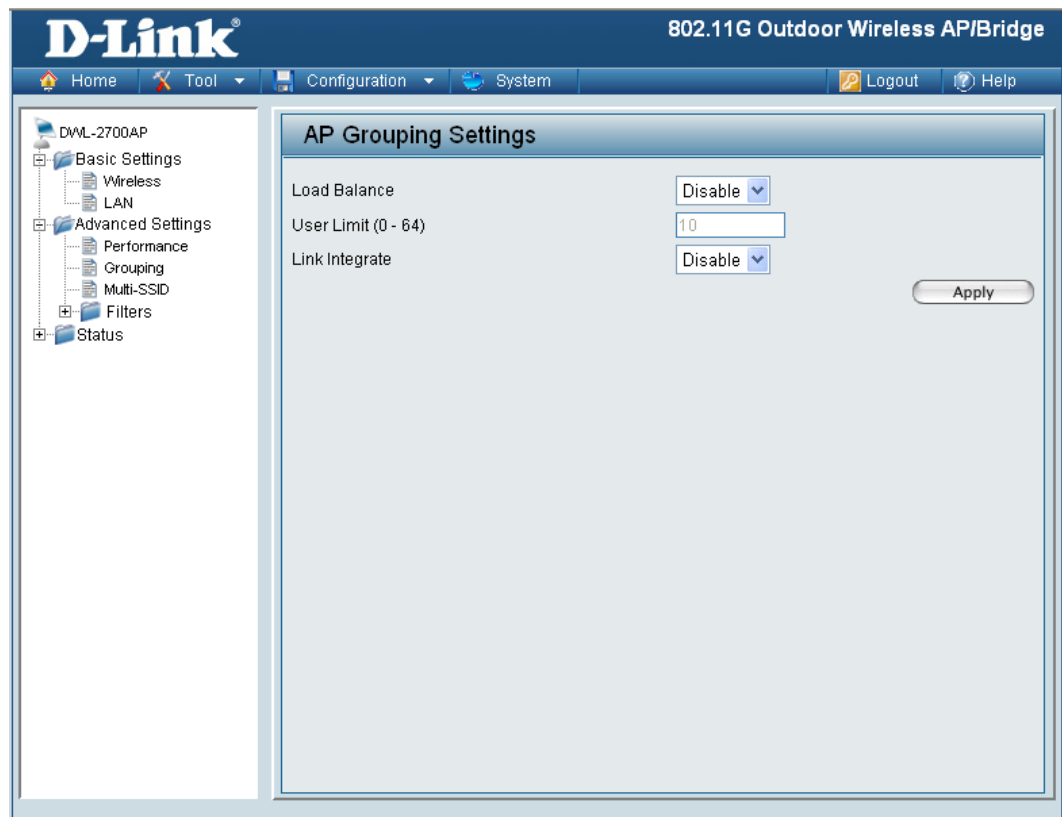
**WMM:** (Wi-Fi Multimedia) Improves the user experience for audio, video, and voice applications over a Wi-Fi network. This feature is enabled by default, uncheck to disable.

**Wireless B/G:** Select **Mixed** for both 802.11b and 802.11g, **11b** for 802.11b only, or **11g** for 802.11g only.

**Antenna Diversity:** Select **Diversity** to allow the DWL-2700AP to automatically switch to the antenna with the better RSSI value. Selecting **Left Antenna** will not allow the DWL-2700AP to switch antenna and the radio will use the left antenna (facing the AP) to transmit and receive packets. Selecting **Right Antenna** will not allow the DWL-2700AP to switch antenna and the radio will only use the right antenna (facing the AP) to transmit and receive packets.

\*Maximum wireless signal rate derived from IEEE Standard 802.11g 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 factors may adversely affect wireless signal range.

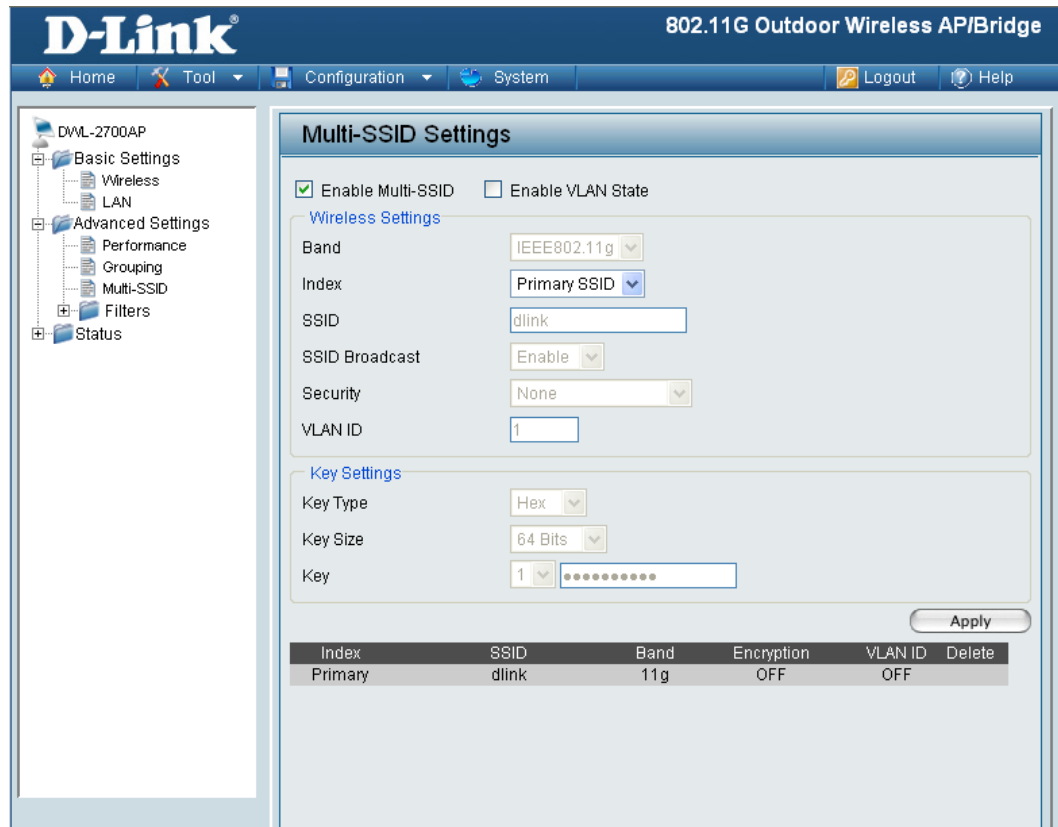
## Home > Advanced Settings > AP Grouping Settings



- Load Balance:** Load Balancing allows you to balance and share the wireless network traffic and clients using multiple DWL-2700APs. Select **Enable** or **Disable**.
- User Limit:** Sets the maximum amount of users allowed (0-64).
- Link Integrate:** If the Ethernet connection between the LAN and the DWL-2700AP is disconnected, the Link Integrate option will cause the wireless segment associated with the AP to be disconnected from the AP. Select **Enable** or **Disable**.



# Home > Advanced Settings > Multi-SSID Settings



- Enable Multi-SSID:** Check to enable Multi-SSID
- Enable VLAN State:** Check to enable VLANs.
- Band:** IEEE802.11g.
- Index:** Select the Index you want to configure, **Primary** or **Multi-SSID 1** through **Multi-SSID 7**. Primary SSID and security cannot be configured here, as those values follow the settings configured on the Home > Basic Settings > Wireless page.
- SSID:** Service Set Identifier (SSID) is the unique name designated for the Index being configured.

## Home > Advanced Settings > Multi-SSID (continued)

**SSID Broadcast:** Enabled by default, disabling SSID Broadcast will make the SSID invisible. Select **Enable** or **Disable**.

**Security:** The Security options available are **Open-System**, **Shared Key**, **WPA-Personal**, **WPA2-Personal**, or **WPA-Auto-Personal**.

**Note:** *Security Setting Limit:*

*When the Primary SSID is set to use one key index for WEP, you can use the 3 other key indexes for Guest SSIDs.*

*If the Primary SSID is set to WPA/WPA2-Personal, or WPA-Auto-Personal, you can only use WEP key index 1 and 4 for Guest SSIDs.*

**Key Type:** Select **HEX** or **ASCII**. (Only when Open System or Shared Key Security is selected.)

**Key Size:** Select **64-bit**, **128-bit** or **152-bit**. (Only when Open System or Shared Key is selected for Security.)

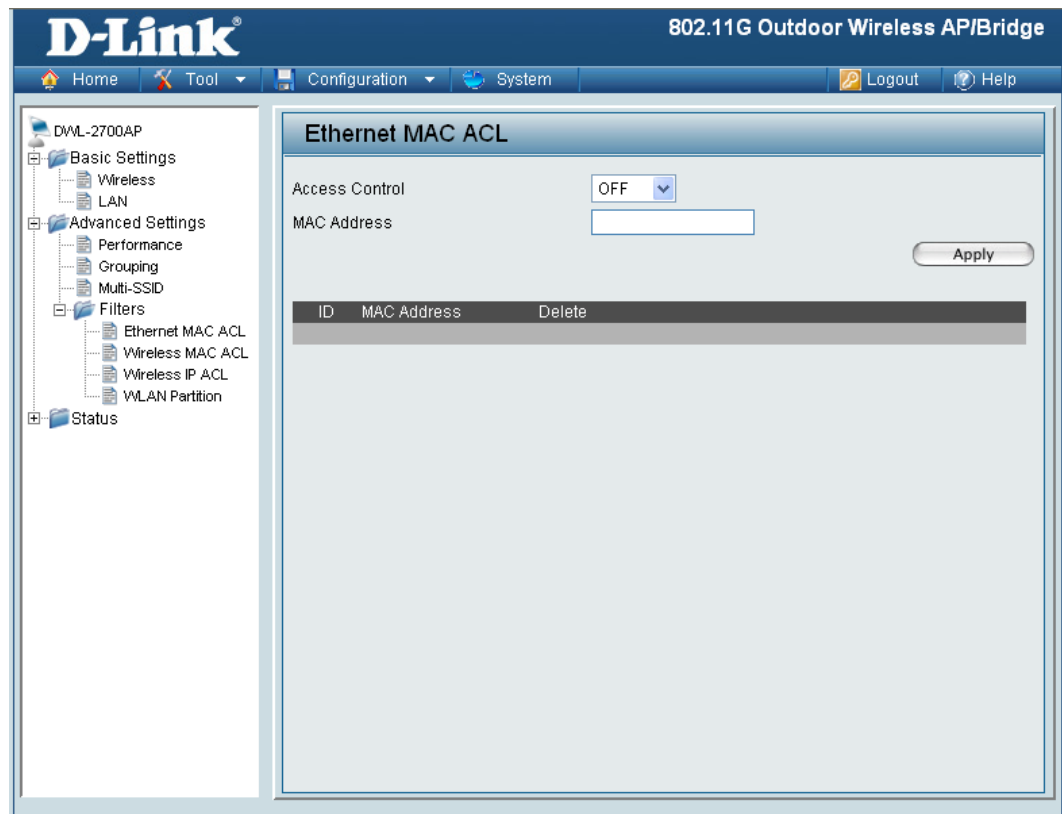
**Key:** Select from 1 of 4 Keys to be the active key. (Only when Open System or Shared Key is selected for Security.)

**Cipher Type:** When using WPA-Personal, WPA2-Personal, or WPA-Auto-Personal, you must select a cipher type. Available options are **Auto**, **AES**, or **TKIP**.

**Group Key Update Interval:** Select the interval during which the group key will remain valid. 1800 is the recommended value, as a lower value may reduce the transfer rate.

**PassPhrase:** The passphrase is an alpha-numeric password that must be between 8-63 characters long. The password can include symbols (!?\*\_) and spaces. Make sure to enter the passphrase exactly the same on all wireless clients.

## Home > Filters > Ethernet MAC ACL

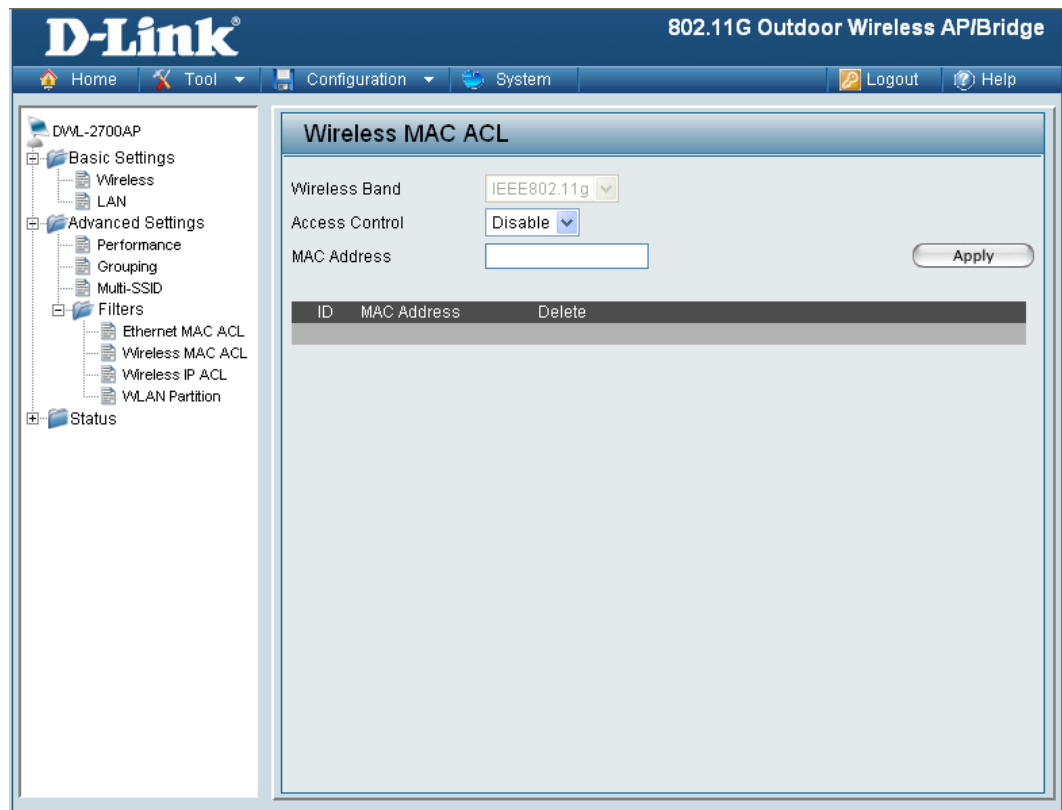


**Access Control:** Select **Off** to disable MAC address filtering. Select **Accept** to allow association between the DWL-2700AP and the MAC addresses listed. Select **Reject** to reject devices with the MAC address listed.

**MAC Address:** Enter the MAC address you want to include in the Access Control List and click **Apply**.

**MAC Address List:** MAC addresses added to the Access Control List will appear in this list. Click Delete next to a MAC address to remove it from the list.

## Home > Filters > Wireless MAC ACL



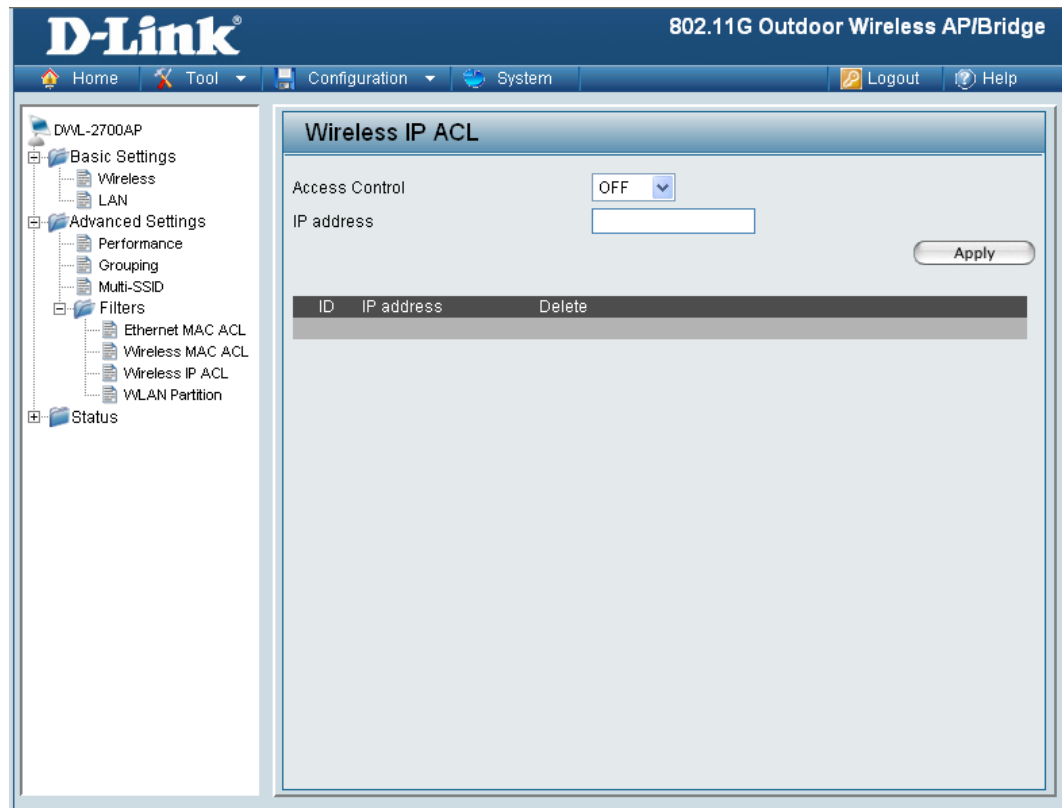
**Wireless Band:** IEEE 802.11g

**Access Control:** Select **Off** to disable MAC address filtering. Select **Accept** to allow association between the DWL-2700AP and the MAC addresses listed. Select **Reject** to reject devices with the MAC addresses listed.

**MAC Address:** Enter the MAC address you want to include in the Access Control List and click **Apply**.

**MAC Address List:** MAC addresses added to the Access Control List will appear in this list. Click Delete next to a MAC address to remove it from the list.

## Home > Filters > Wireless IP ACL

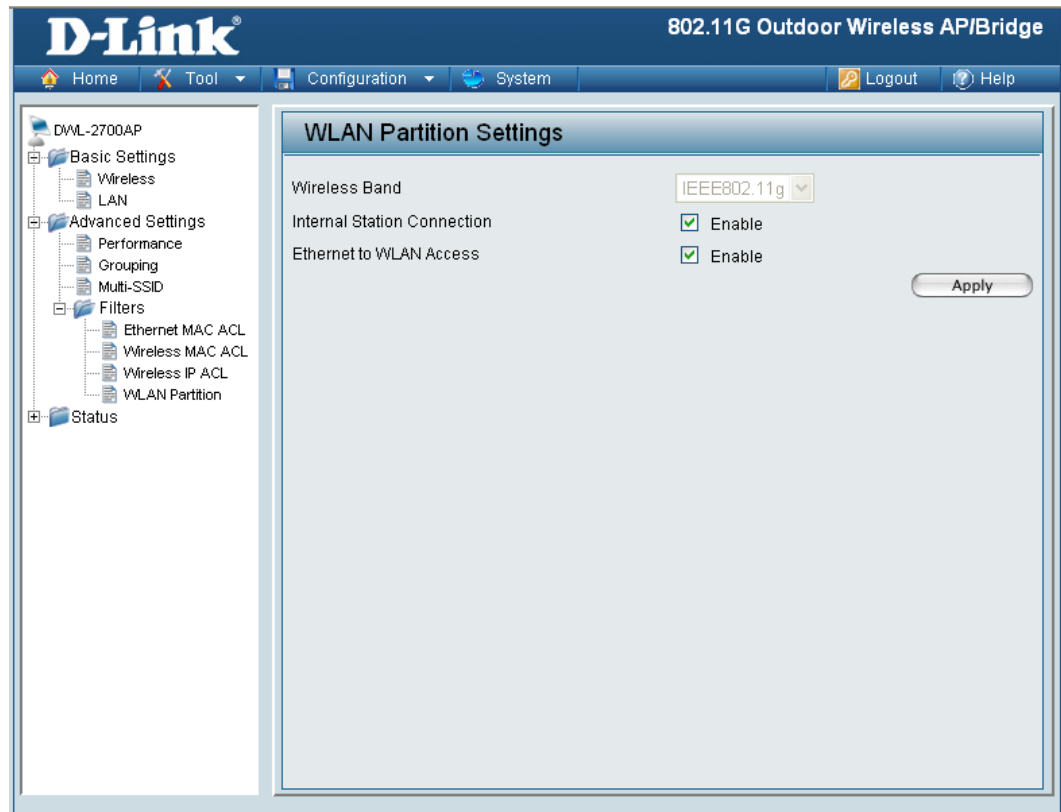


**Access Control:** Select **Off** to disable IP address filtering. Select **Accept** to allow association between the DWL-2700AP and the IP addresses listed. Select **Reject** to reject devices with the IP addresses listed.

**IP Address:** Enter the IP address you want to include in the Access Control List and click **Apply**.

**IP Address List:** IP addresses added to the Access Control List will appear in this list. Click Delete next to an IP address to remove it from the list.

## Home > Filters > WLAN Partition Settings

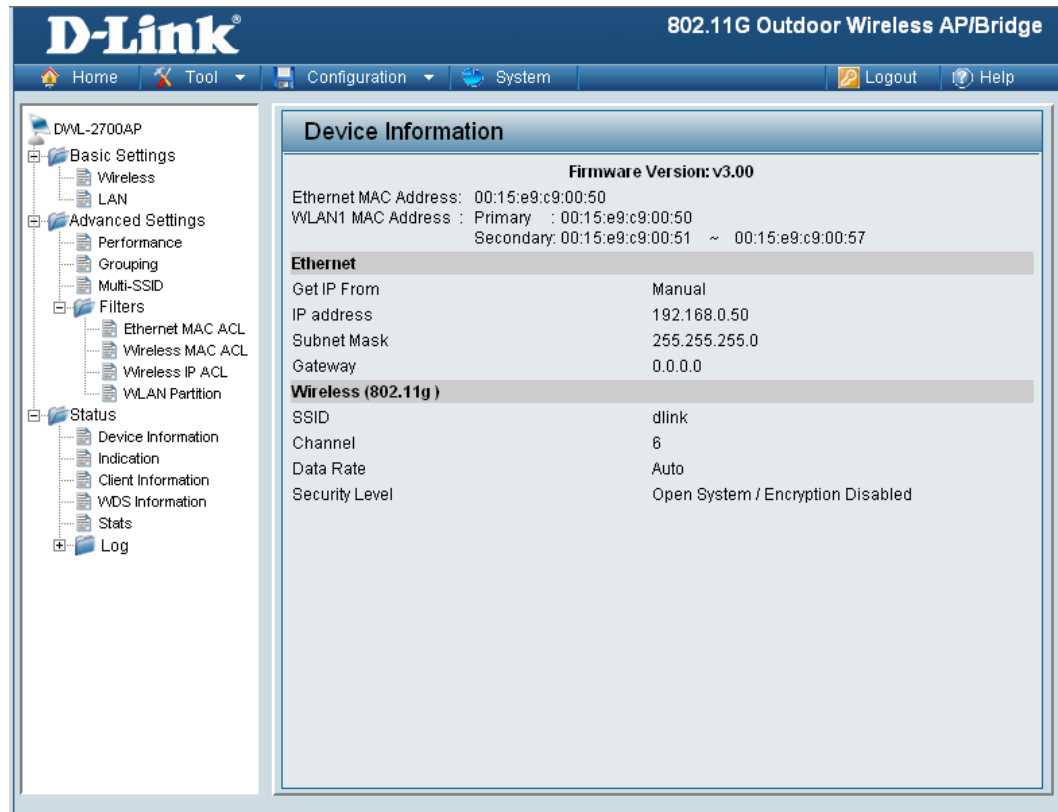


**Wireless Band:** IEEE 802.11g.

**Internal Station Connection:** Enabling this feature allows wireless clients to communicate with each other. If this feature is disabled, wireless stations on the selected band are not allowed to exchange data through the access point.

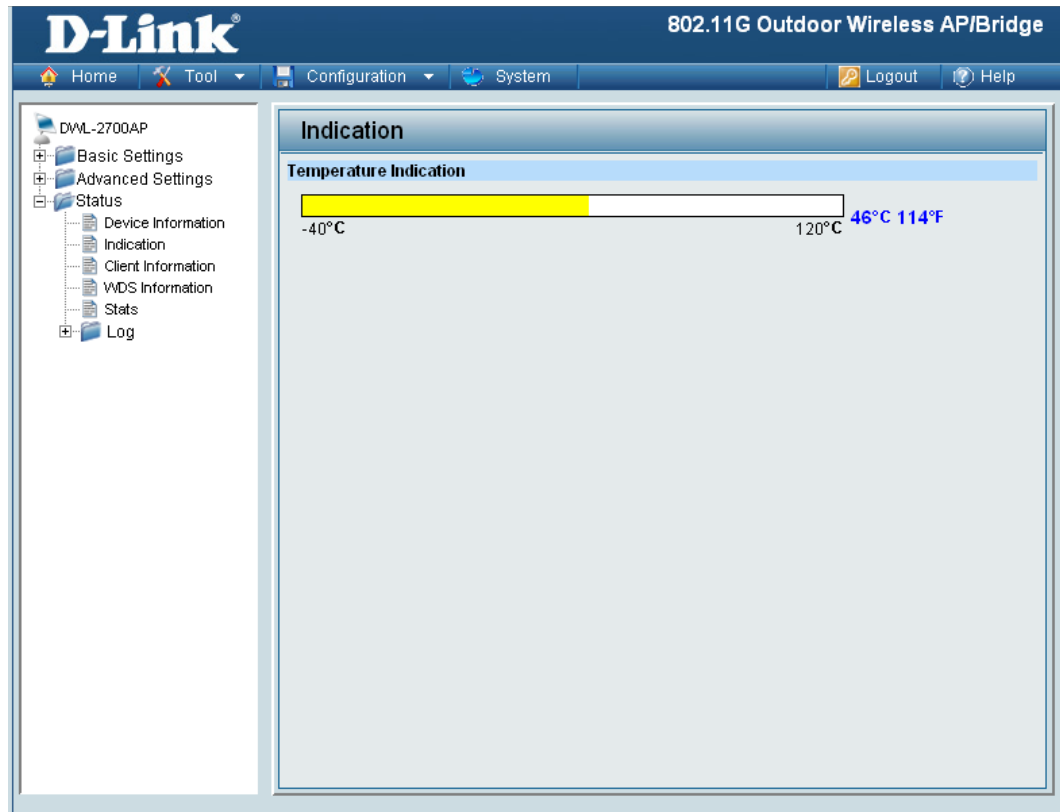
**Ethernet to WLAN Access:** Enabling this feature allows Ethernet devices on the LAN to communicate with wireless clients on the WLAN. If this feature is disabled, all data from Ethernet devices to wireless clients is blocked. Wireless devices can still send data to Ethernet devices.

# Home > Status > Device Information



**Device Information:** This window displays the configuration settings of the DWL-2700AP, including the firmware version and device MAC address.

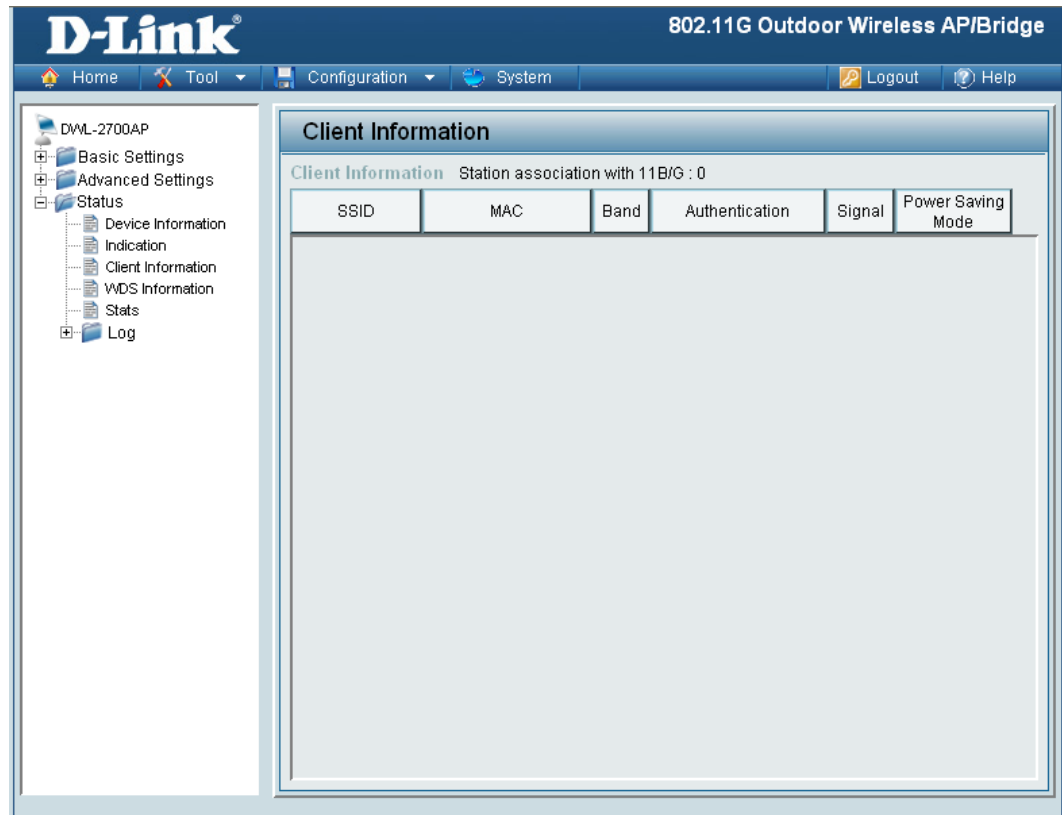
## Home > Status > Indication



**Temperature Indication:** This window displays the current operating temperature of the DWL-2700AP.



## Home > Status > Client Information



**Client Information:** The Client Information page provides information about the wireless clients connected to the DWL-2700AP.

The following information is available for each client communicating with the DWL-2700AP.

**MAC:** Displays the MAC address of the client.

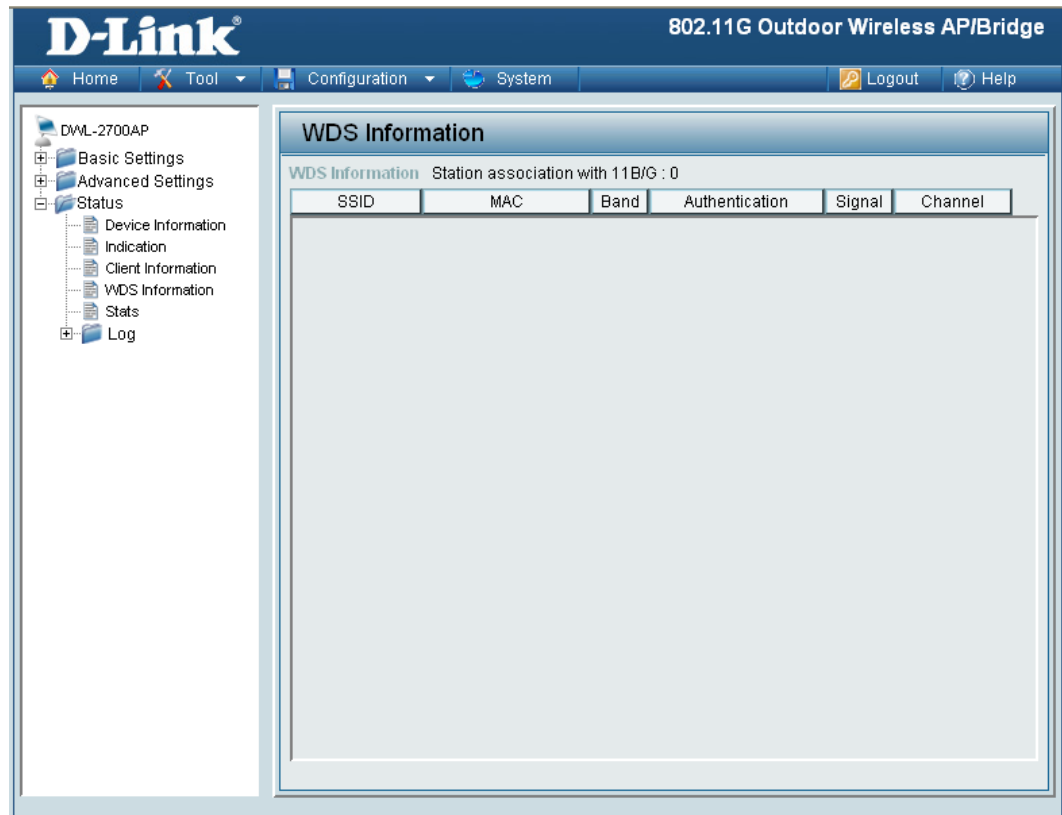
**Band:** Displays the wireless band the client is connected on.

**Authentication:** Displays the type of authentication being used.

**Signal:** Displays the strength of the clients signal.

**Power Saving Mode:** Displays the status of the power saving feature.

## Home > Status > WDS Information



**MAC:** Displays the MAC address of the client.

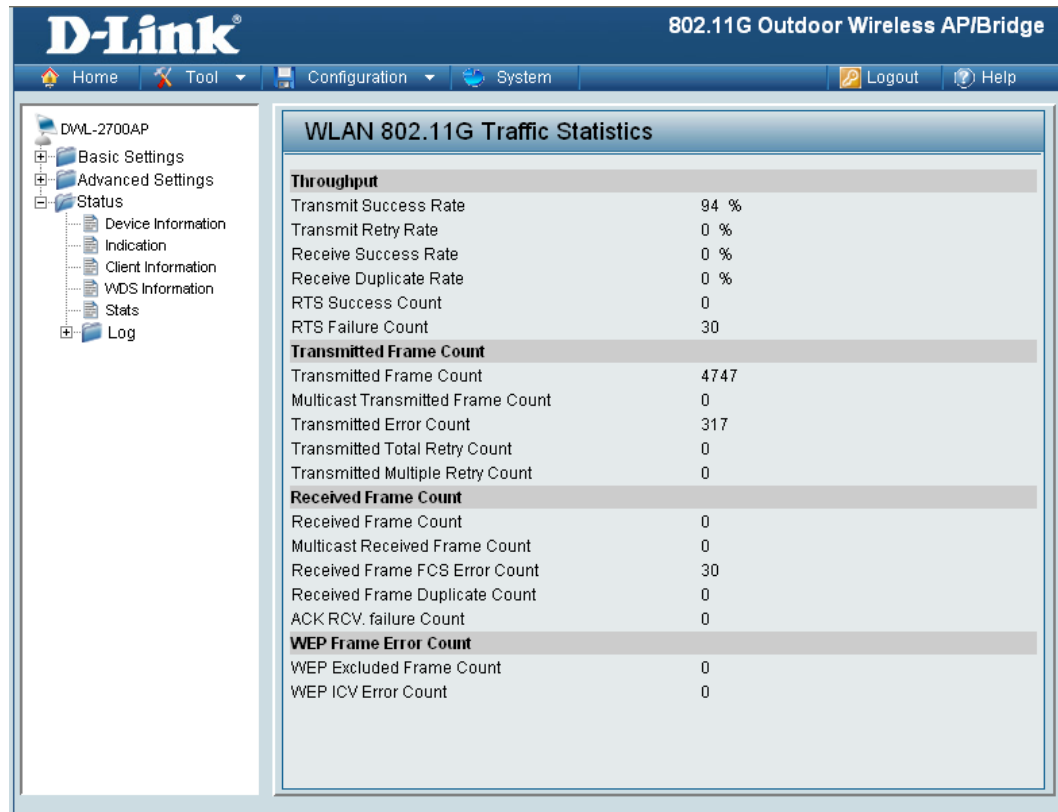
**Band:** Displays the wireless band the client is connected on.

**Authentication:** Displays the type of authentication being used.

**Signal:** Displays the strength of the clients signal.

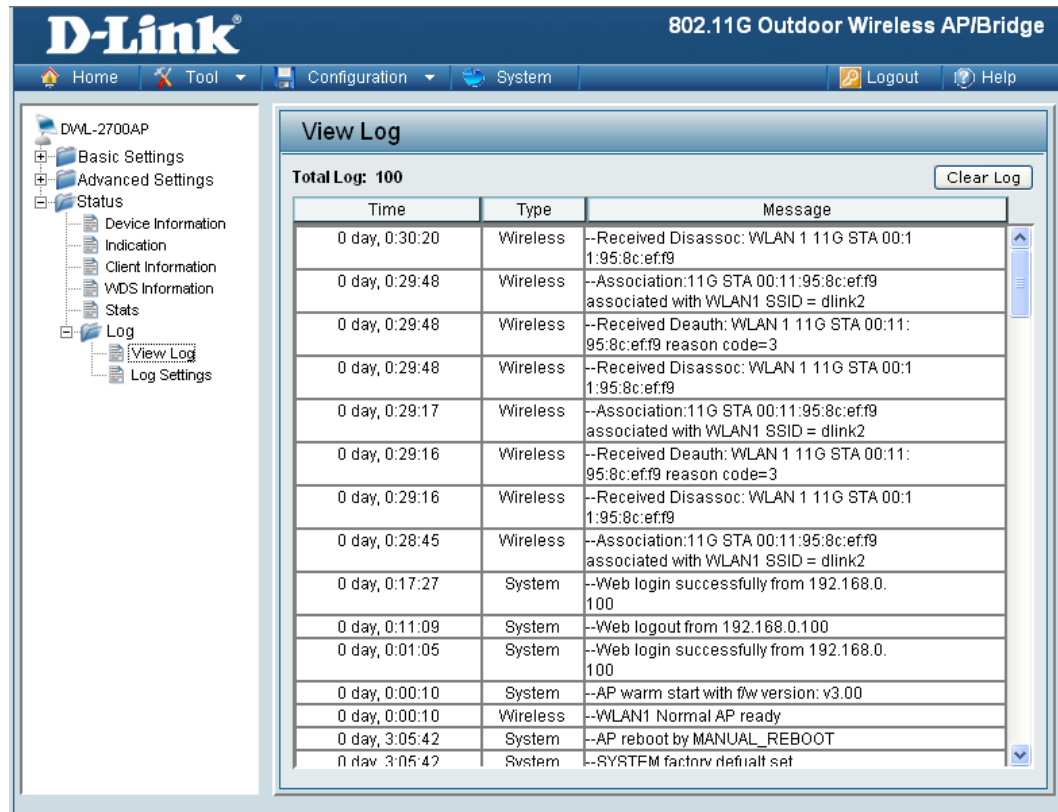
**Channel:** Displays the wireless channel being used.

# Home > Status > WLAN 802.11G Traffic Statistics



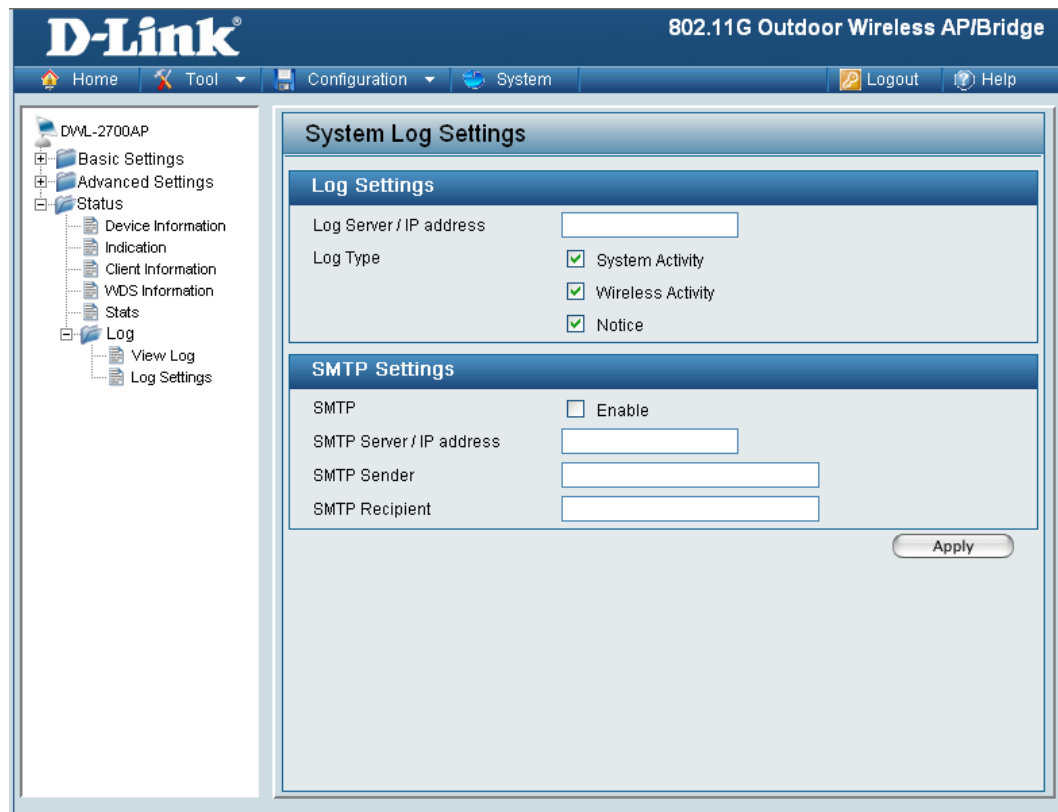
**WLAN 802.11g Traffic Statistics:** This page displays statistics for data throughput, transmitted and received frames, and WEP frame errors for the 802.11g wireless network.

# Home > Log > View Log



**View Log:** The log displays system and network messages including a time stamp and message type.

# Home > Log > System Log Settings



### Log Settings

**Log Server / IP Address:** Enter the IP address of the server you would like to send the DWL-2700APs log to.

**Log Type:** Check the box for the type of activity you want to log. There are three types: **System**, **Wireless** and **Notice**.

### SMTP Settings

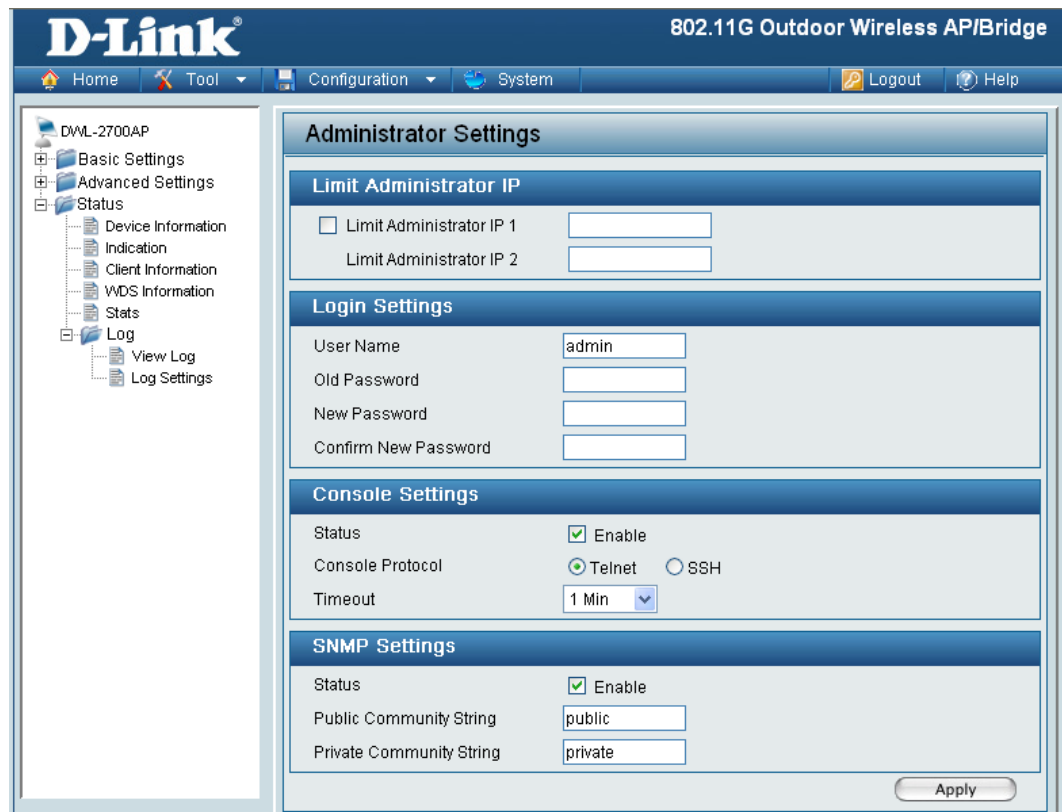
**SMTP:** Check the box to enable SMTP.

**SMTP Server / IP Address:** Enter the IP address of the SMTP server.

**SMTP Sender:** Enter the e-mail address of the SMTP sender.

**SMTP Recipient:** Enter the e-mail address of the SMTP recipient.

## Tool > Administrator Settings



### Limit Administrator IP

Check the box to enable the feature.

### Limit Administrator IP 1:

Enter the IP address that the administrator will be allowed to log in from.

### Limit Administrator IP 2:

Enter a secondary IP address that the administrator will be allowed to log in from.

### Login 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.

#### Confirm New Password:

Confirm your new password here.



## Tool > Administrator Settings (continued)

### Console 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**.

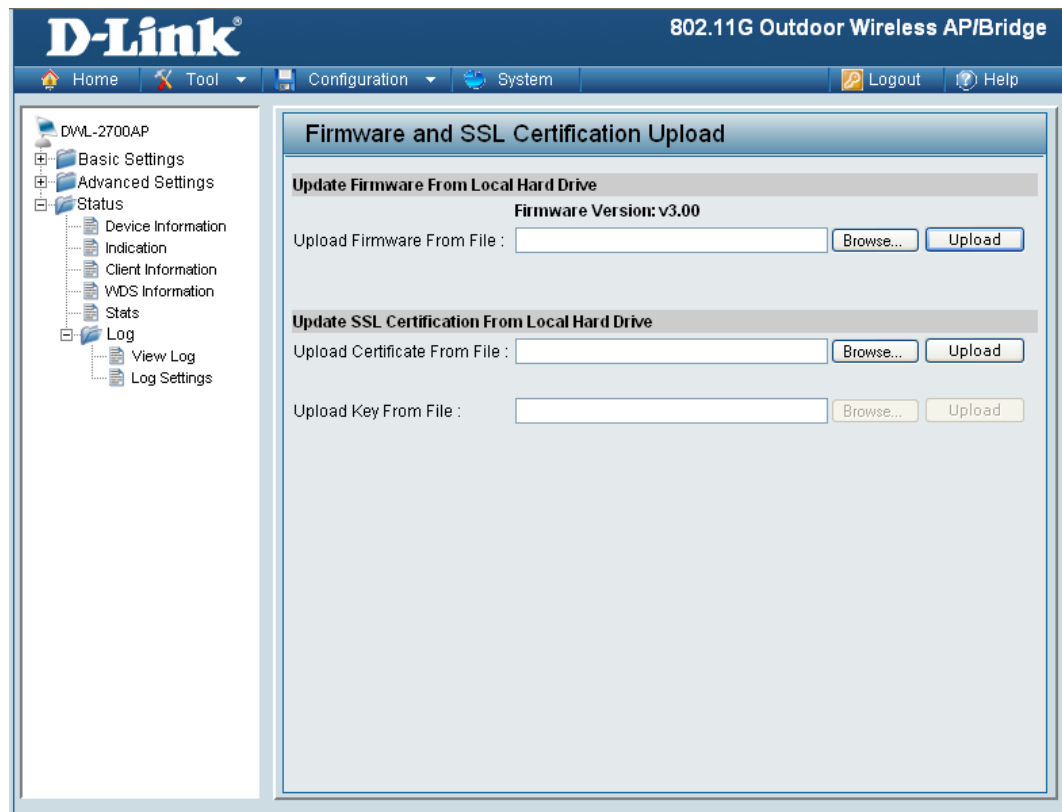
### SNMP Settings

**Status:** Status is Enabled by default. Uncheck the box to disable the SNMP functions.

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

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

## Tool > Firmware and SSL Certification Upload

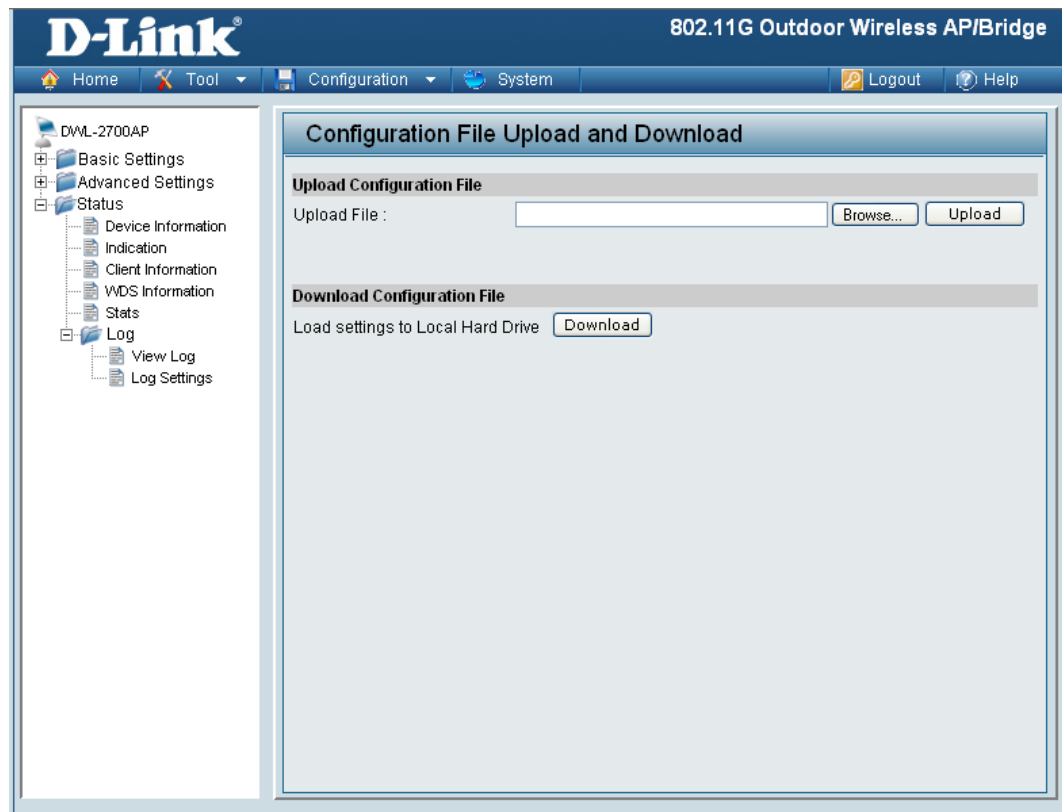


**Upload Firmware** After downloading the most recent version of firmware for the DWL-2700AP from <http://support.dlink.com> to your local computer, use the **Browse** button to locate the firmware file on your computer. Click **Upload** to update the firmware version.

**Upload SSL Certification:** Click **Browse** to locate the SSL Certification file on your local computer. After selecting and opening the file, click **Upload** to upload the file to the DWL-2700AP.



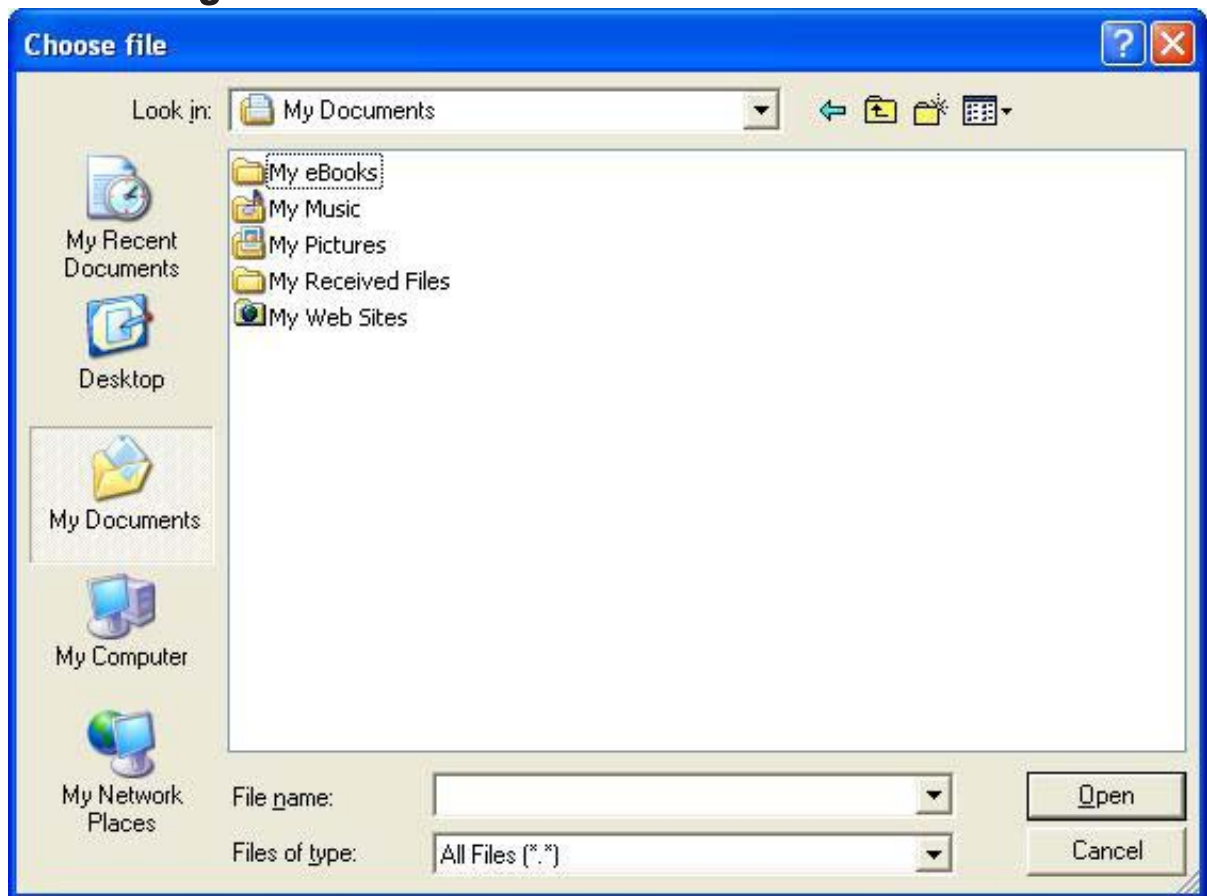
## Tool > Configuration File Upload and Download



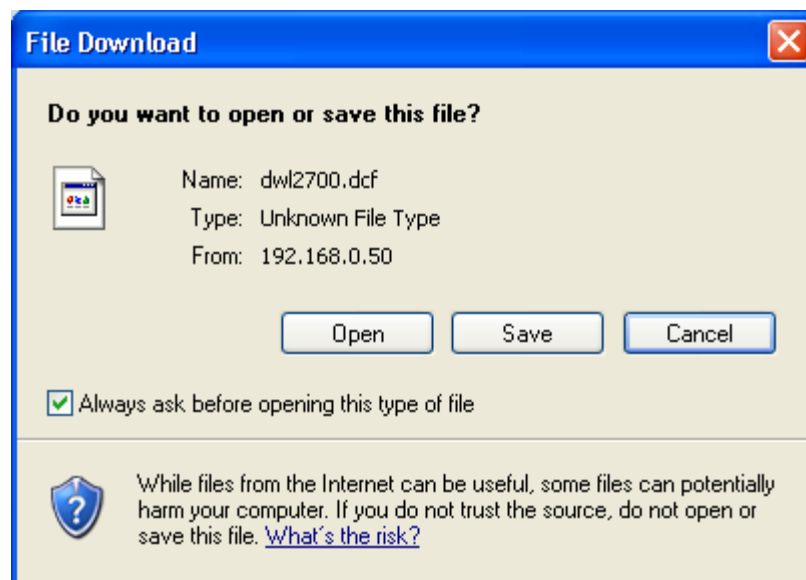
**Upload File:** Click **Browse** to locate a previously saved configuration file on your local computer. After selecting the file, click **Upload** to apply the configuration settings to the DWL-2700AP.

**Download Configuration File:** Click **Download** to save the current DWL-2700AP configuration to your local computer.

## Tool > Cfg File > Choose file

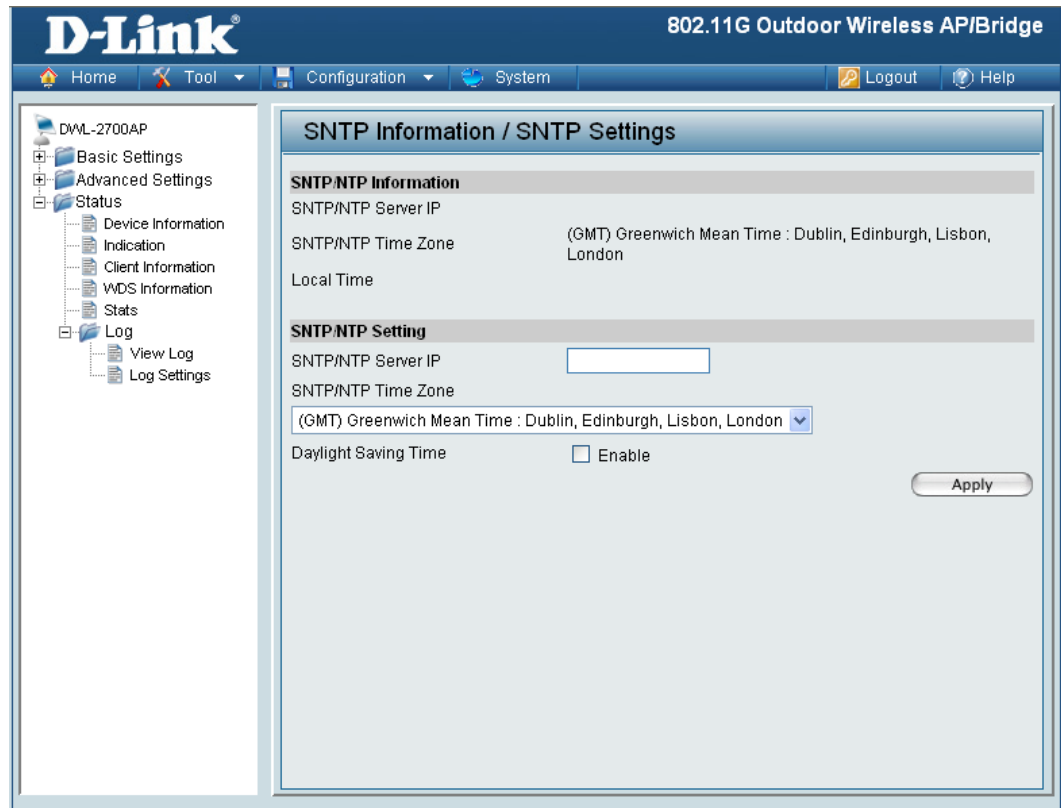


When you click **Browse** in the previous screen, the dialog box shown above appears. Select the file you wish to download and click **Open**.



When this dialog box appears, click **Save** and select a location to save the configuration file.

## Tool > SNTP



**SNTP/NTP Information:**

Displays the current SNTP/NTP settings.

**SNTP/NTP Server IP Address:**

Enter the SNTP/NTP server IP address.

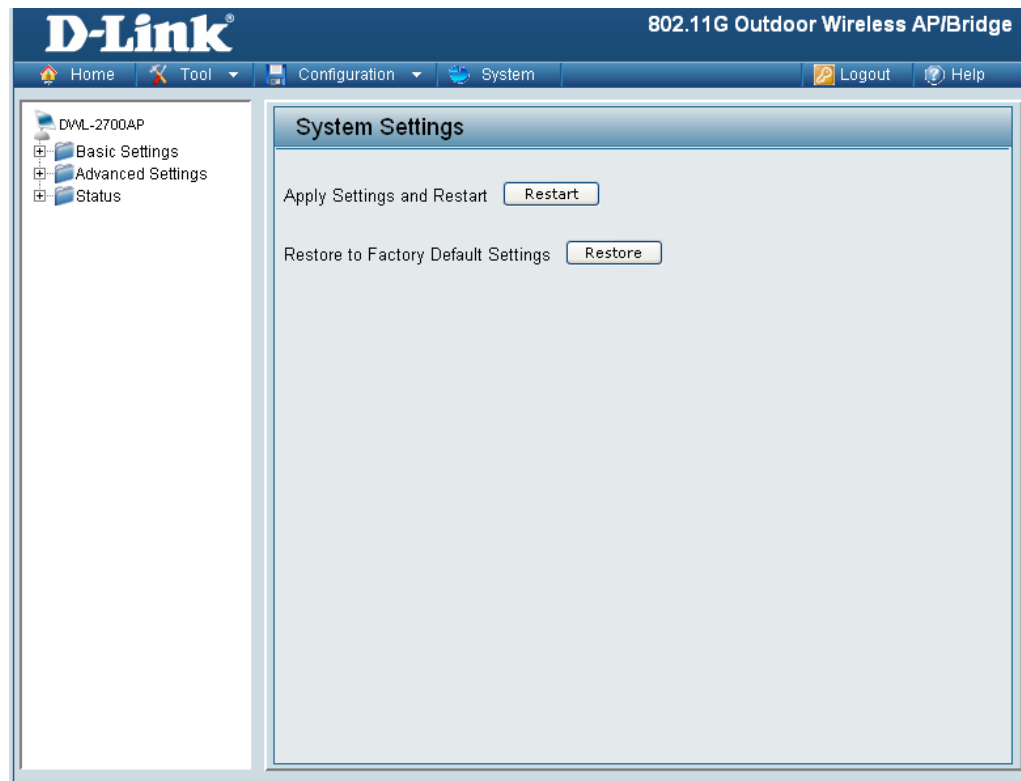
**SNTP/NTP Time Zone:**

Select your correct Time Zone.

**Daylight Saving Time:**

Check the box to **Enable** Daylight Saving Time.

## System > System Settings



Click **Restart** to restart the DWL-2700AP.

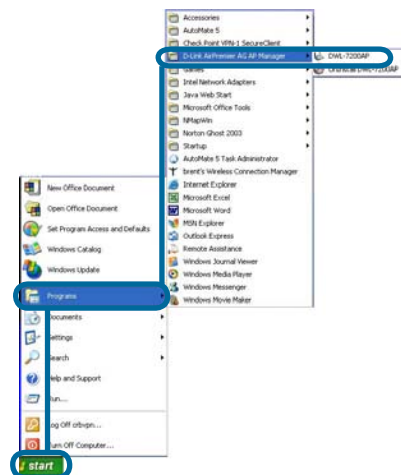
Click **Restore** to restore the DWL-2700AP back to factory default settings.

# Using the AP Manager

The **AP Manager** is a convenient tool to manage the configuration of your network from a central computer. With **AP Manager** there is no need to configure devices individually.

To launch the **AP Manager**:

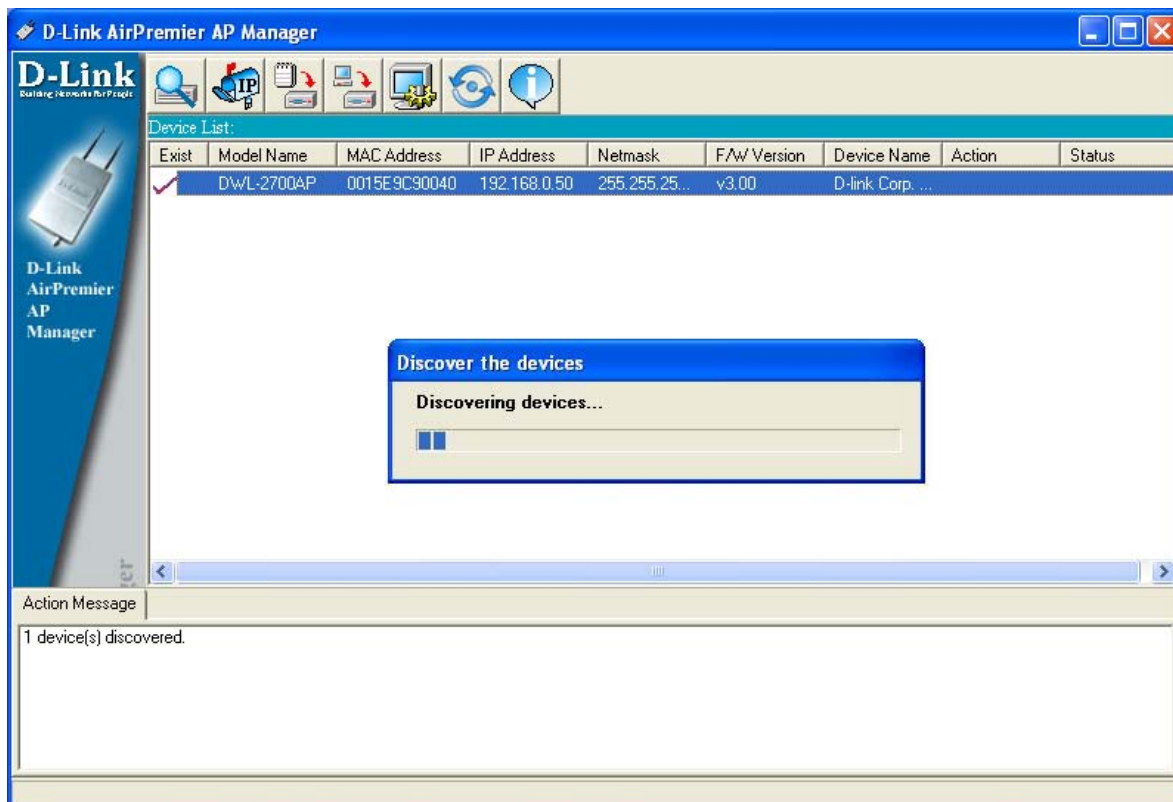
- Go to the **Start Menu**
- Select **Programs**
- Select **D-Link AirPremier AP Manager**
- Select **DWL-2700AP**



## Discovering Devices



Click on this button to **discover the devices** available on the network.



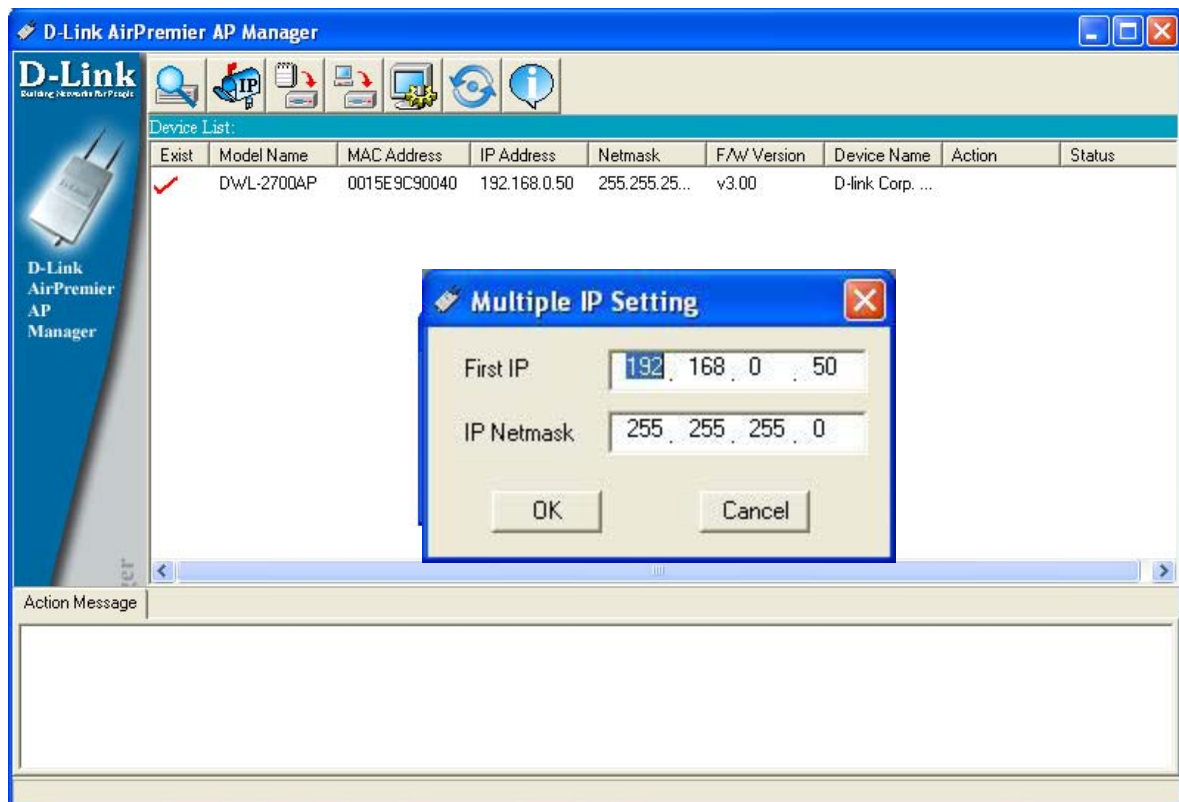
## Selecting Devices

The AP Manager allows you to configure multiple devices all at once. To select a single device, simply click on the device you want to select. To select multiple devices, hold down the **Ctrl** key while clicking on each additional device. To select an entire list, hold the **Shift** key, click on the first AP on the list and then click on the last AP on the list.

## IP Configuration



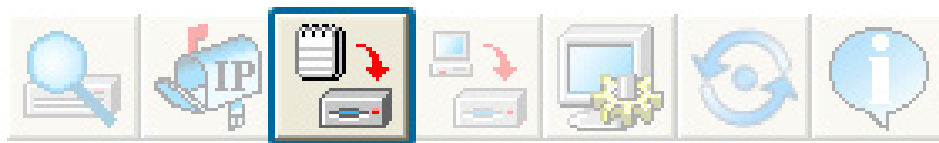
You can assign an IP address to an AP or assign IP addresses to multiple APs by clicking on this button after selecting the device(s).



Select the AP that you want to assign an IP address to and click the IP button. Enter the IP address and IP netmask for the selected device and click OK.

You can configure multiple APs with IP addresses all at once. Click on the IP button after you've selected all of the APs you want to assign an IP address. Enter the IP address you want to assign the first unit and the AP manager will automatically assign sequential IP addresses.

## Device Configuration



Click on this button to access the configuration properties of the selected device(s).

The device configuration window allows you to configure settings but does not actually apply the settings to the device unless you click the **Apply** button. You can also save and load configuration files from this window. When you load a configuration file, you must click **Apply** if you want the settings to be applied to the selected device(s).

You can configure a single device by highlighting one device in the list, or you can configure multiple devices by highlighting multiple devices before clicking on the Device Configuration icon pictured above. The examples in this section show single device configuration. When you select multiple devices for configuration the procedure will be similar.

### Check All

The Check All button will select all configurable options. Any setting that has a check mark next to it is applied to the device or saved to the configuration file.

### Clear Checks

The Clear Checks button deselects all configurable options. This feature is useful if you only want to change a few settings. Deselect all items and only check the items that you want to modify.

### Refresh

Refresh will revert to the actual device settings of the selected device(s).

### Apply

To save settings to the device, you must click the Apply button. Only settings that have a check mark next to them will be applied.

### Open

The open button is used to load a previously saved configuration file. After opening a configuration file, you must click the Apply button to save the settings to the selected device(s).

### Save

The save button allows you to save a configuration file of the selected device settings. Only settings that have a check mark next to them are saved. You cannot save a configuration file if you selected more than one device in the device list.

### Exit

The Exit button will close the device configuration window. Any settings that haven't been applied will be lost.

## Device Configuration > General

When selecting multiple devices for configuration, some options are unavailable for configuration by default as noted(\*) below:

**Device Name(\*):** This allows you to change the device name for the selected access point. You must place a check mark in the Device Name box to change the name. This option should only be configured when one access point is selected for configuration.

**IP address and Subnet Mask(\*):** If you've selected one device for configuration and you want to change the IP address of the device, check the IP Address box. You can then enter an IP address and Subnet Mask for the selected access point. This option should only be configurable when one access point is selected for configuration. To configure multiple devices with an IP address at one time, please reference the previous page.

**Gateway:** Enter the IP address of your gateway, typically your router address.





## Device Configuration > General (continued)

- Domain Name Server 1:** Enter the IP address of your primary Domain Name Server.
- Domain Name Server 2:** Enter the IP address of your secondary Domain Name Server.
- Load Balance:** This pull down selection enables or disabled load balancing. When Load Balance is enabled, it allows several DWL-2700APs to balance wireless network traffic and wireless clients. All the access points must have Load Balance enabled and have the same SSID. It is recommended that each access point be assigned non-overlapping wireless channels. (e.g. 1, 6, 11)
- User Limit:** Enter the number of load balancing users, from 0-64.
- Link Integrity:** This pull-down selection enables or disables Link Integrity. When Link Integrity is enabled, the wireless segment associated with the AP will be disconnected whenever the connection between the AP and the LAN is broken.

## Device Configuration > Wireless

The screenshot shows the 'Device Configuration' window with the 'Wireless' tab selected. The 'IEEE802.11g' section contains the following settings:

Setting	Value
<input checked="" type="checkbox"/> SSID	Accesspoint
<input type="checkbox"/> Channel	1
<input checked="" type="checkbox"/> Data Rate	Auto
<input checked="" type="checkbox"/> Tx Power	Full
<input checked="" type="checkbox"/> Beacon Interval (20~1000)	100
<input checked="" type="checkbox"/> Radio Wave	Enable
Antenna Diversity	Diversity
<input checked="" type="checkbox"/> DTIM (1~255)	1
<input checked="" type="checkbox"/> Fragment Length (256~2346)	2346
<input checked="" type="checkbox"/> RTS Interval(1~2346)	2346
<input checked="" type="checkbox"/> Auto Channel Scan	Enable
<input checked="" type="checkbox"/> SSID Broadcast	Enable
WMM	Enable
Wireless B/G Mode	Mixed

At the bottom of the window, there are buttons for: Check All, Clear Checks, Refresh, Apply, Open, Save, and Exit.

**SSID:** The Service Set (network) Identifier of your wireless network.

**Channel:** Allows you to select a channel. 6 is the default setting.

**Data Rate:** A pull-down menu to select the maximum wireless signal rate for the selected device(s).

**Tx Power:** A pull-down menu for selecting the transmit power of the selected device(s).

**Beacon Interval (20~1000):** Beacons are packets sent by an access point to synchronize a network. Specify the beacon value for the selected device(s) here. The default value of 100 is recommended.

**Radio Wave:** Allows you to enable or disable the wireless (802.11b/g) signal from being transmitted.

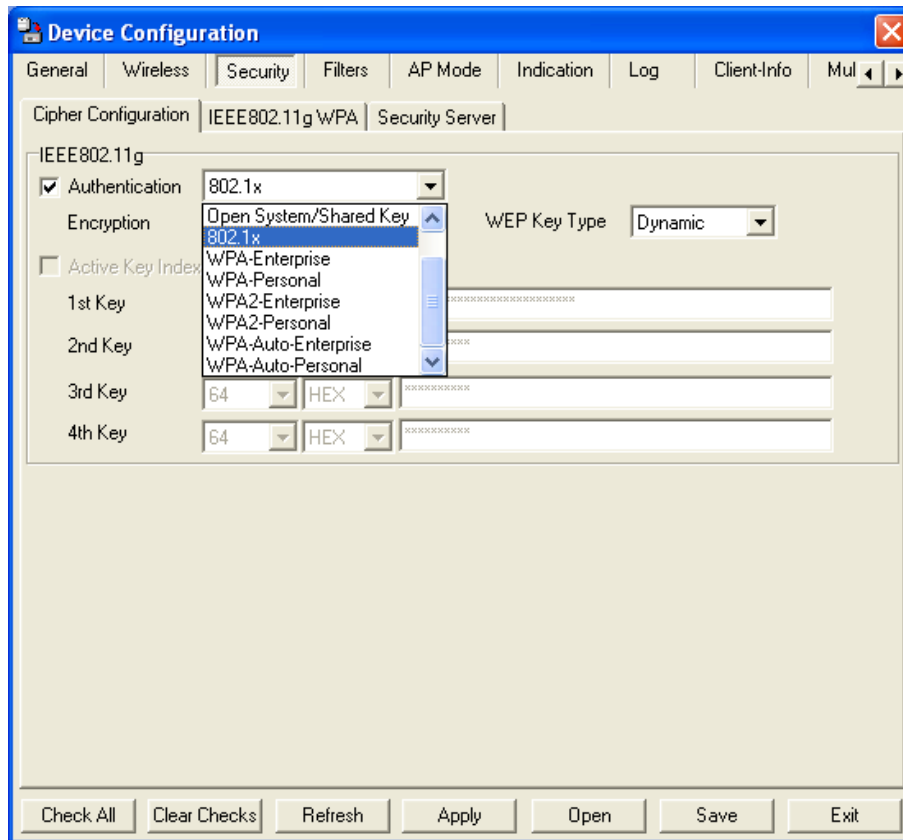
## Device Configuration > Wireless (continued)

- Antenna Diversity:** Select **Diversity** to allow the DWL-2700AP AP to automatically switch to the antenna with the better RSSI value. Selecting **Left Antenna** will not allow the DWL-2700AP to switch antenna and the radio will use the left antenna (facing the AP) to transmit and receive packets. Selecting **Right Antenna** will not allow the DWL-2700AP to switch antenna and the radio will only use the right antenna (facing the AP) to transmit and receive packets.
- DTIM (1~255):** DTIM (Delivery Traffic Indication Message) is a countdown informing clients of the next listening window for broadcast and multicast messages.
- Fragment Length (256~2346):** This sets the fragmentation threshold (specified in bytes). Packets exceeding the value set here will be fragmented. The default is 2346.
- RTS Length (256~2346):** The RTS value should not be changed unless you encounter inconsistent data flow. The default value is 2346.
- Autochannel Scan:** Enable this option to allow the access point to automatically scan for an available channel.
- SSID Broadcast:** Allows you to enable or disable the broadcasting of the SSID to network clients.
- Short Preamble:** If you are transferring large amounts of data on your wireless network, enable this option.
- SSID Broadcast:** Allows you to enable or disable the broadcasting of the SSID to network clients.
- WMM:** Select Enable or Disable to enable or disable WMM mode.
- Wireless B/G Mode:** Select the wireless mode from **B only**, **G only** or **Both**.

## Device Configuration > Wireless > Authentication Modes

AP Mode	Authentication Available
<p><b>Access Point</b></p>	<p>Open System                      Shared Key                      Open System/Shared Key                      802.1x                      WPA-Enterprise                      WPA-Personal                      WPA2-Enterprise                      WPA2-Personal                      WPA-Auto-Enterprise                      WPA-Auto-Personal</p>
<p><b>WDS with AP</b></p>	<p>Open System                      Shared Key                      Open System/Shared Key                      WPA-Personal                      WPA2-Personal                      WPA-Auto-Personal</p>
<p><b>WDS</b></p>	<p>Open System                      Shared Key                      Open System/Shared Key                      WPA-Personal                      WPA2-Personal                      WPA-Auto-Personal</p>

## Device Configuration > Security



The Security tab contains the WEP configuration settings on the initial page. If you select WPA as the authentication type, an additional tab will appear with the WPA configuration options based on your selection.

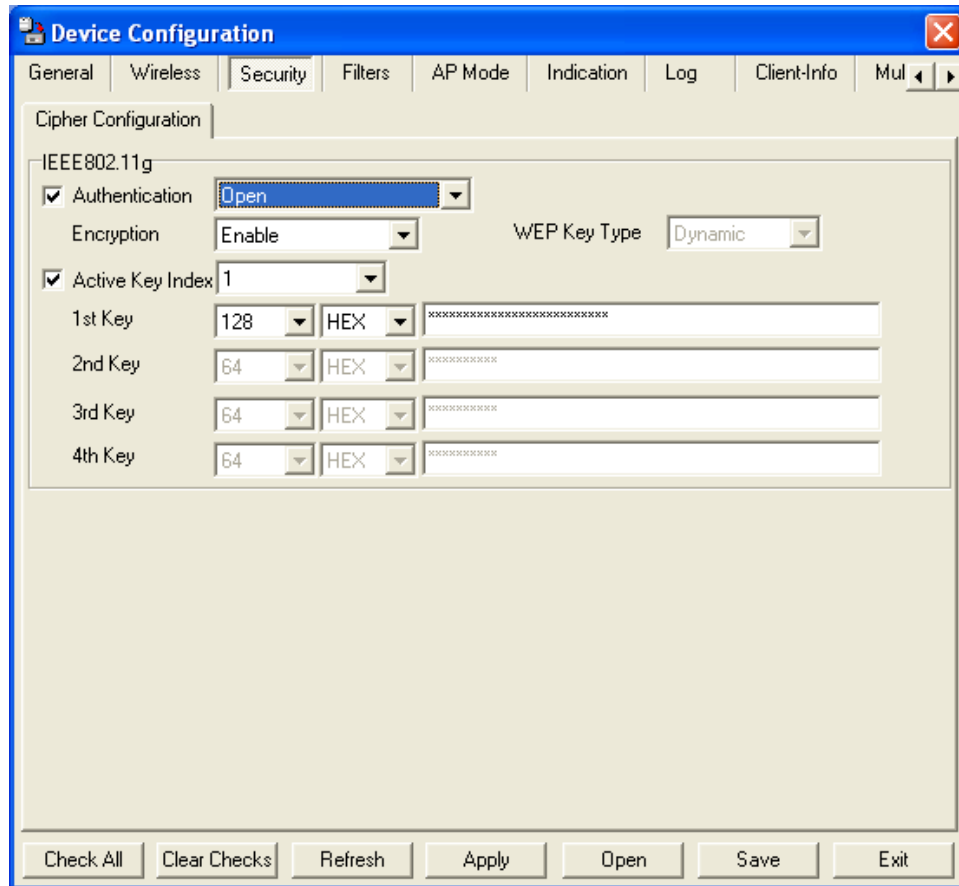
<b>Authentication Type:</b>	Select from the pull-down menu the type of authentication to be used on the selected device(s).
<b>Open:</b>	The key is communicated across the network.
<b>Shared:</b>	Limited to communication with devices that share the same WEP settings.
<b>Open System/Shared Key:</b>	The key is communicated and identical WEP settings are required.
<b>WPA-Enterprise WPA2-Enterprise WPA-Auto-Enterprise:</b>	Used to authenticate clients via a RADIUS server.
<b>WPA-Personal WPA2-Personal WPA-Auto Personal:</b>	Does not utilize a RADIUS server for authentication but uses a passphrase that is configured on the clients and access points.



## Device Configuration > Security (continued)

- RADIUS:** Built-in RADIUS server does not require outside server.
- Local User:** A type of 802.1x security that utilizes user login for security.
- WEP Key Type:** Select a key type, **Static** or **Dynamic**, when 802.1x encryption is selected.
- Encryption:** Enable or disable encryption on the selected device(s).
- Active Key Index:** Select which defined key is active on the selected device(s).
- Key Values:** Select the key size (64-bit, 128-bit, or 152-bit) and key type (HEX or ASCII) and then enter a string to use as the key. The key length is automatically adjusted based on the settings you choose.

## Device Configuration > Security > WEP



**Authentication Type:** Select from the pull-down menu the type of authentication to be used on the selected device(s).

**Open:** The key is communicated across the network.

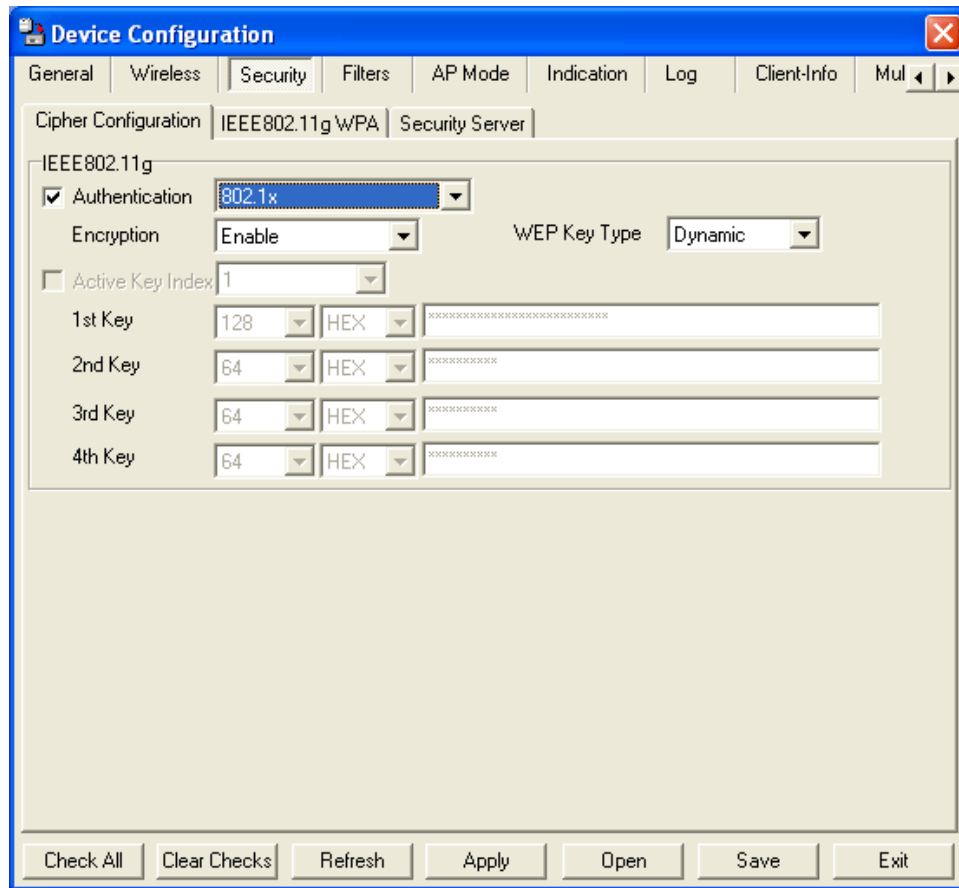
**Shared:** Limited to communication with devices that share the same WEP settings.

**Open System/Shared Key:** The key is communicated and identical WEP settings are required.

**Active Key Index:** Select which defined key is active on the selected device(s).

**Key Values:** Select the key size (64-bit, 128-bit, or 152-bit) and key type (HEX or ASCII) and then enter a string to use as the key. The key length is automatically adjusted based on the settings you choose.

## Device Configuration > Security > 802.1x



**Cipher Type:** WEP is used here.



## Device Configuration > Security > 802.1x (RADIUS)

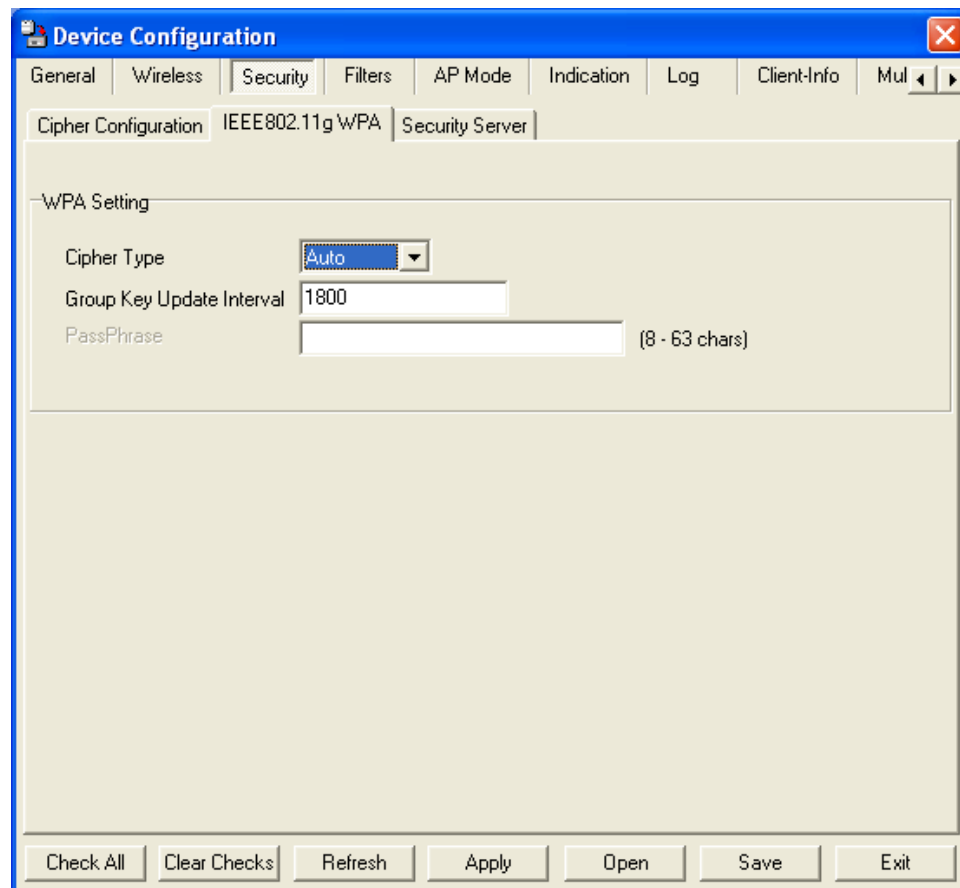
The screenshot shows the 'Device Configuration' window with the 'Security' tab selected. Under the 'Security Server' sub-tab, there are three input fields: 'RADIUS Server' (IP address), 'RADIUS Port (1-65535)' (with '1812' entered), and 'RADIUS Secret'. The bottom of the window has buttons for 'Check All', 'Clear Checks', 'Refresh', 'Apply', 'Open', 'Save', and 'Exit'.

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

**RADIUS Port:** Enter the port used on the RADIUS server (1812 is default).

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

## Device Configuration > Security > WPA-Enterprise WPA2-Enterprise/ WPA-Auto-Enterprise (Cipher)



The screenshot shows the 'Device Configuration' window with the 'Security' tab selected. The 'Cipher Configuration' section is active, showing 'IEEE802.11g WPA' and 'Security Server' options. The 'WPA Setting' section contains the following fields:

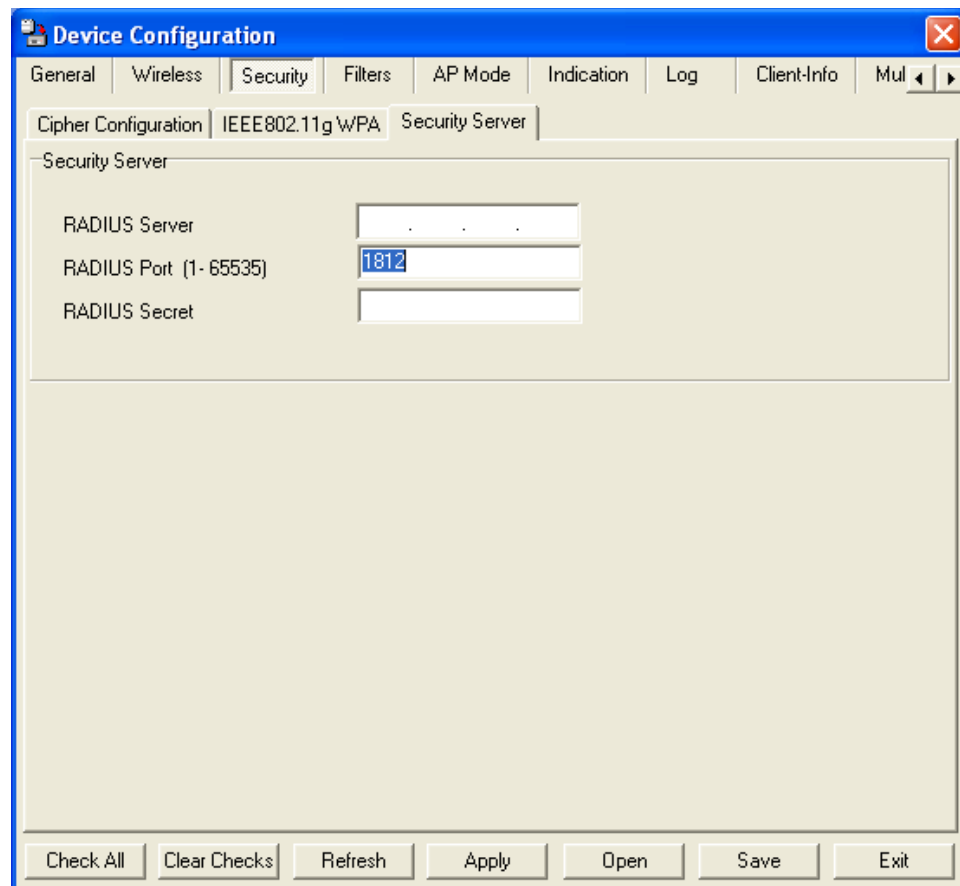
- Cipher Type:** A pull-down menu currently set to 'Auto'.
- Group Key Update Interval:** A text input field containing the value '1800'.
- PassPhrase:** A text input field with a placeholder '(8 - 63 chars)'.

At the bottom of the window, there are buttons for 'Check All', 'Clear Checks', 'Refresh', 'Apply', 'Open', 'Save', and 'Exit'.

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

**Group Key Update Interval:** Select the interval during which the group key will be valid. 1800 is the recommended setting. A lower interval may reduce transfer rates.

## Device Configuration > Security > WPA-Enterprise / WPA2-Enterprise/ WPA2-Auto-Enterprise (Server)



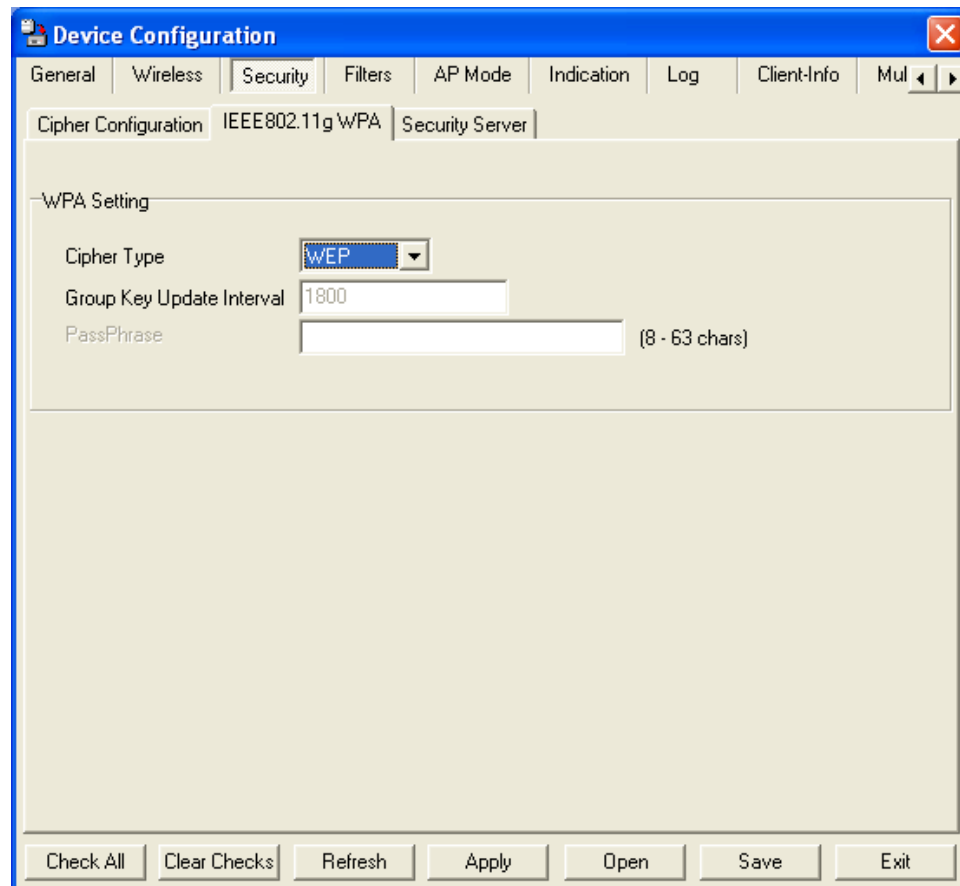
The screenshot shows the 'Device Configuration' window with the 'Security' tab selected. Under the 'Security Server' sub-tab, there are three input fields: 'RADIUS Server', 'RADIUS Port (1- 65535)', and 'RADIUS Secret'. The 'RADIUS Port' field contains the value '1812'. At the bottom of the window, there are buttons for 'Check All', 'Clear Checks', 'Refresh', 'Apply', 'Open', 'Save', and 'Exit'.

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

**RADIUS Port:** Enter the port used on the RADIUS server (1812 is default).

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

## Device Configuration > Security > WPA-Personal WPA2-Personal / WPA-Auto-Personal (Cipher)



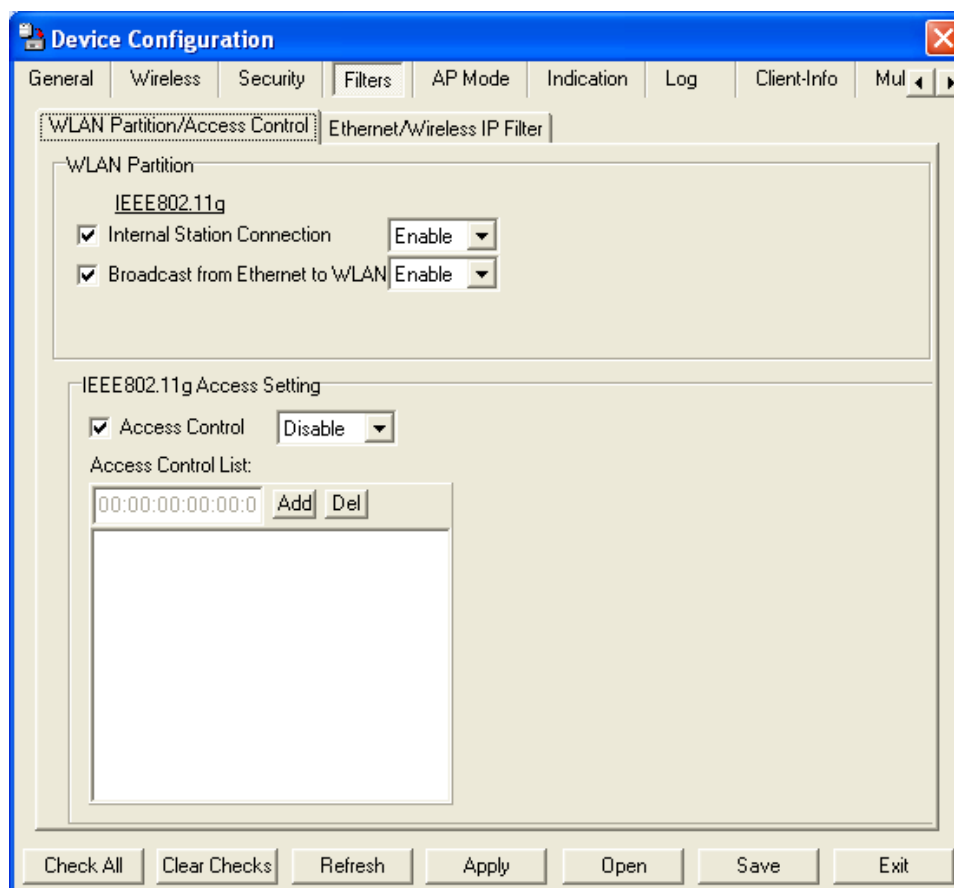
The screenshot shows the 'Device Configuration' window with the 'Security' tab selected. The 'Cipher Configuration' section is active, showing 'IEEE802.11g WPA' and 'Security Server' options. The 'WPA Setting' section includes a 'Cipher Type' dropdown menu set to 'WEP', a 'Group Key Update Interval' text box containing '1800', and a 'PassPhrase' text box with a '(8 - 63 chars)' label. At the bottom of the window are buttons for 'Check All', 'Clear Checks', 'Refresh', 'Apply', 'Open', 'Save', and 'Exit'.

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

**Group Key Update Interval:** Select the interval during which the group key will be valid. 1800 is the recommended setting. A lower interval may reduce transfer rates.

**PassPhrase:** Enter a PassPhrase between 8-63 characters in length.

## Device Configuration > Filters > WLAN Partition > Access Control



The following features are configurable in IEEE 802.11g:

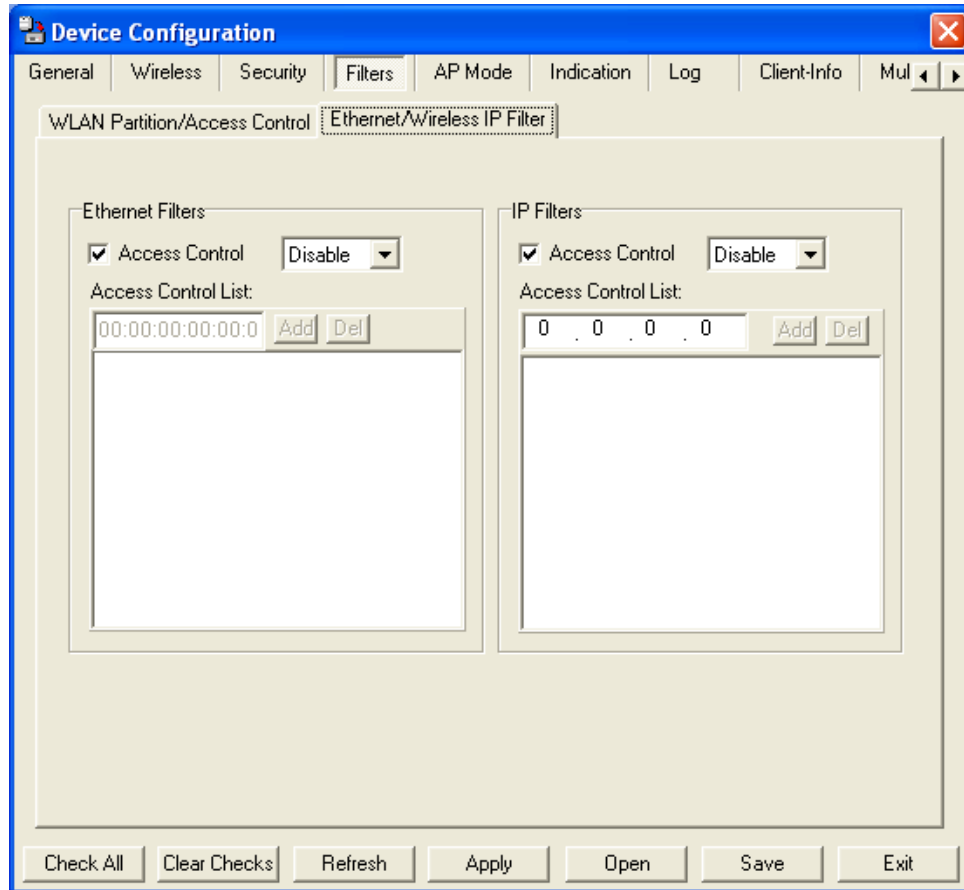
**Internal Station Connection:** Enabling this allows wireless clients to communicate with each other. When this option is disabled, wireless stations are not allowed to exchange data through the access point.

**Broadcast from Ethernet to WLAN:** Enabling this option allows Ethernet devices to communicate with wireless clients. When this option is disabled, all data from Ethernet to wireless clients is blocked. Wireless devices can still send data to the Ethernet devices when this is disabled.

**Access Control:** When disabled access control is not filtered based on the MAC address. If Accept or Reject is selected, then a box appears for entering MAC addresses. When **Accept** is selected, only devices with a MAC address in the list are granted access. When **Reject** is selected, devices in the list of MAC addresses are not granted access.

**Access Control List:** Add or Delete MAC addresses in the Access Control List.

## Device Configuration > Filters > Ethernet/Wireless IP Filters



### Ethernet Filters:

**Access Control:** When disabled access control is not filtered based on the MAC address. If **Accept** or **Reject** is selected, then a box appears for entering MAC addresses. When **Accept** is selected, only devices with a MAC address in the list are granted access. When **Reject** is selected, devices in the list of MAC addresses are not granted access.

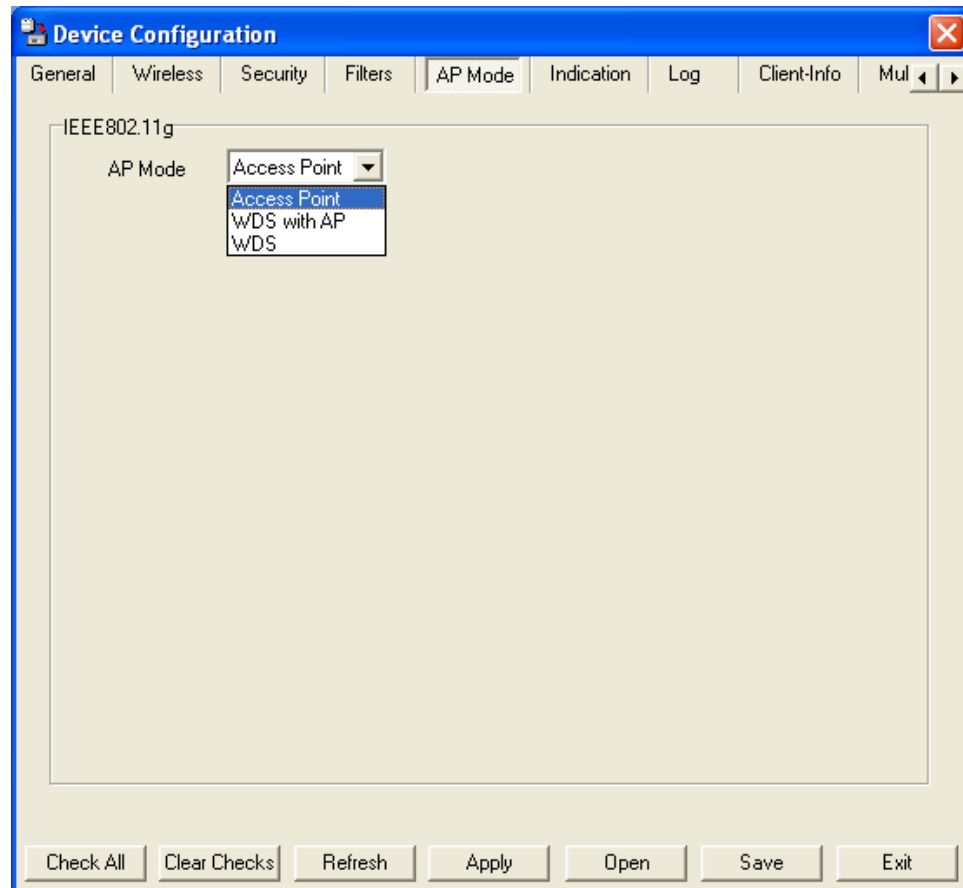
**Access Control List:** **Add** or **Delete** MAC addresses in the Access Control List.

### IP Filters:

**Access Control:** When disabled access control is not filtered based on the IP address. If **Accept** or **Reject** is selected, then a box appears for entering IP addresses. When **Accept** is selected, only devices with an IP address in the list are granted access. When **Reject** is selected, devices in the list of IP addresses are not granted access.

**Access Control List:** **Add** or **Delete** IP addresses in the Access Control List.

## Device Configuration > AP Mode



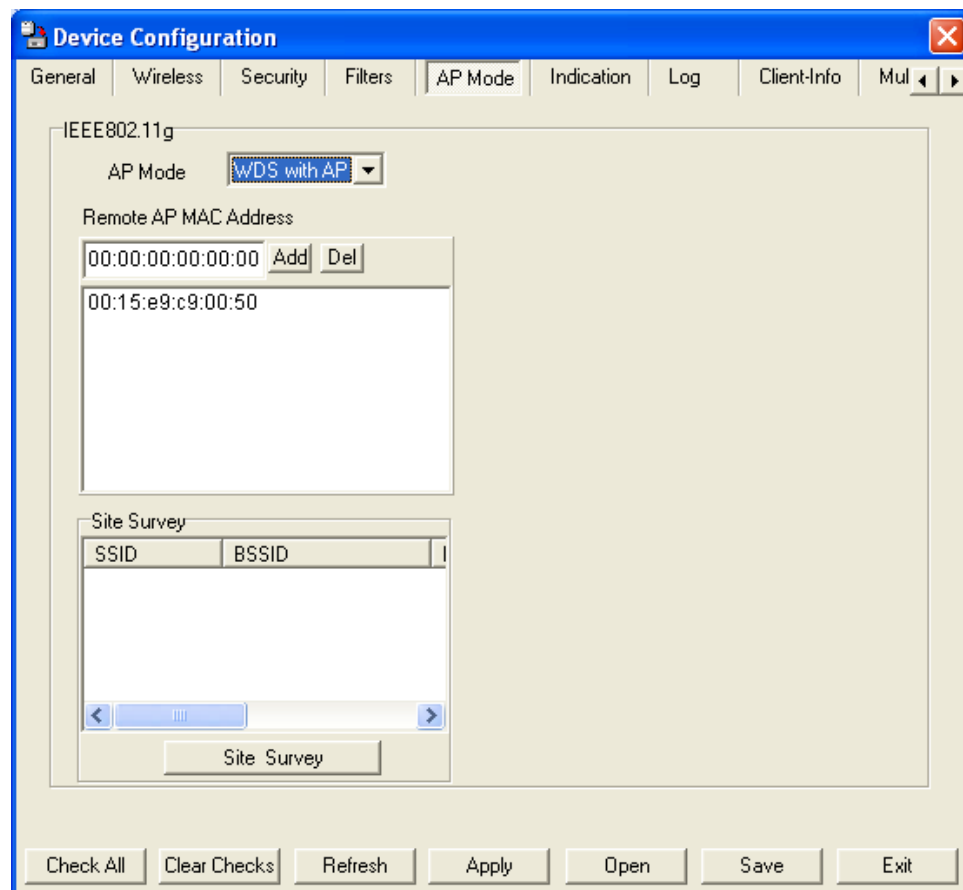
**Access Point:** There are 3 AP modes that are configurable in IEEE 802.11g:

- **Access Point**
- **WDS with AP**
- **WDS**

Access Point, the default setting used to create a wireless LAN, is displayed here.

Please see the following pages for an explanation of the other 2 AP modes.

## Device Configuration > AP Mode > WDS with AP

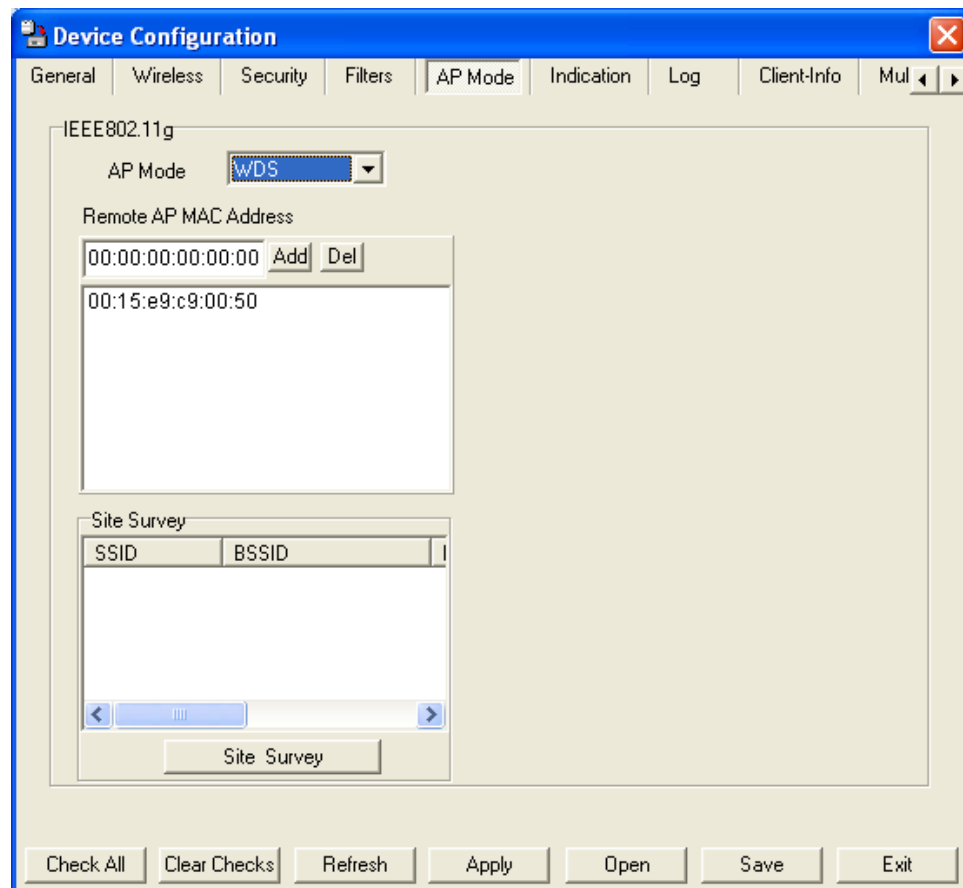


**WDS with AP:** Allows you to connect multiple wireless LANs together while acting as an access point at the same time. This only works with other DWL-2700APs. If enabled, you must enter the MAC address of the other DWL-2700AP(s) on your network.

**Site Survey:** Click **Site Survey** to view available APs in your network.



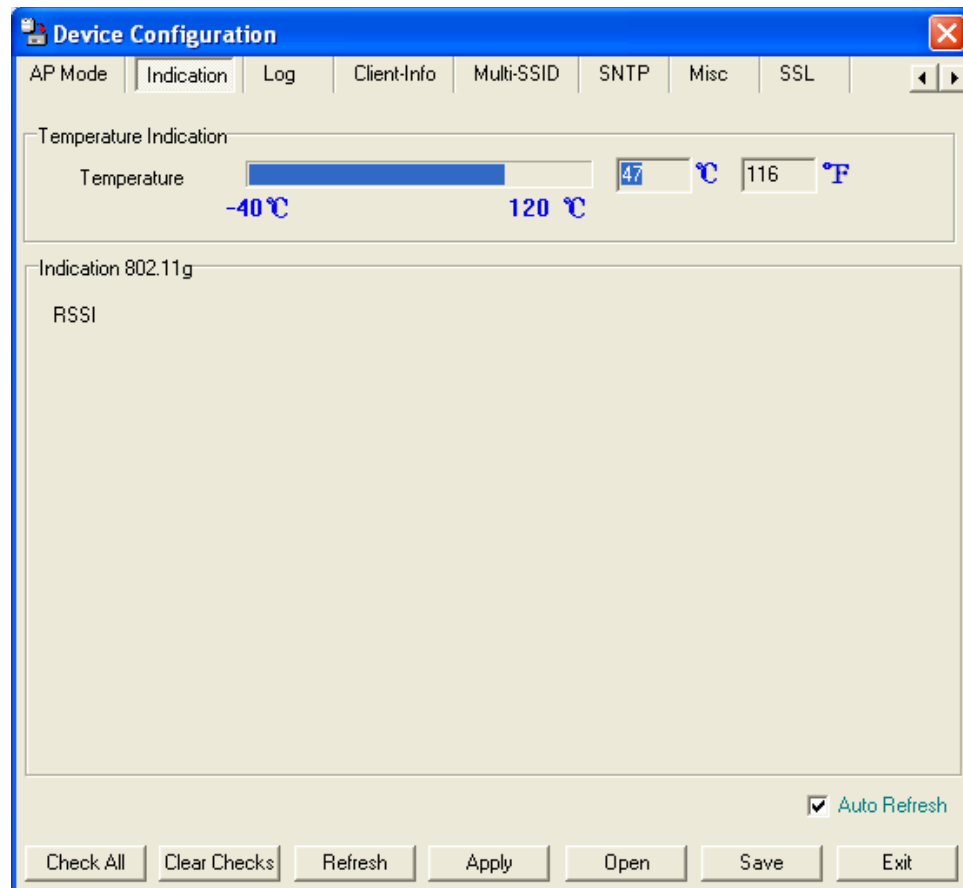
## Device Configuration > AP Mode > WDS



**WDS:** Allows you to connect multiple wireless LANs together. All other LANs must be using DWL-2700APs. When enabled, you must enter the MAC address of the other DWL-2700AP(s) on your network (you can enter up to eight addresses).

**Site Survey:** Click **Site Survey** to view available APs in your network.

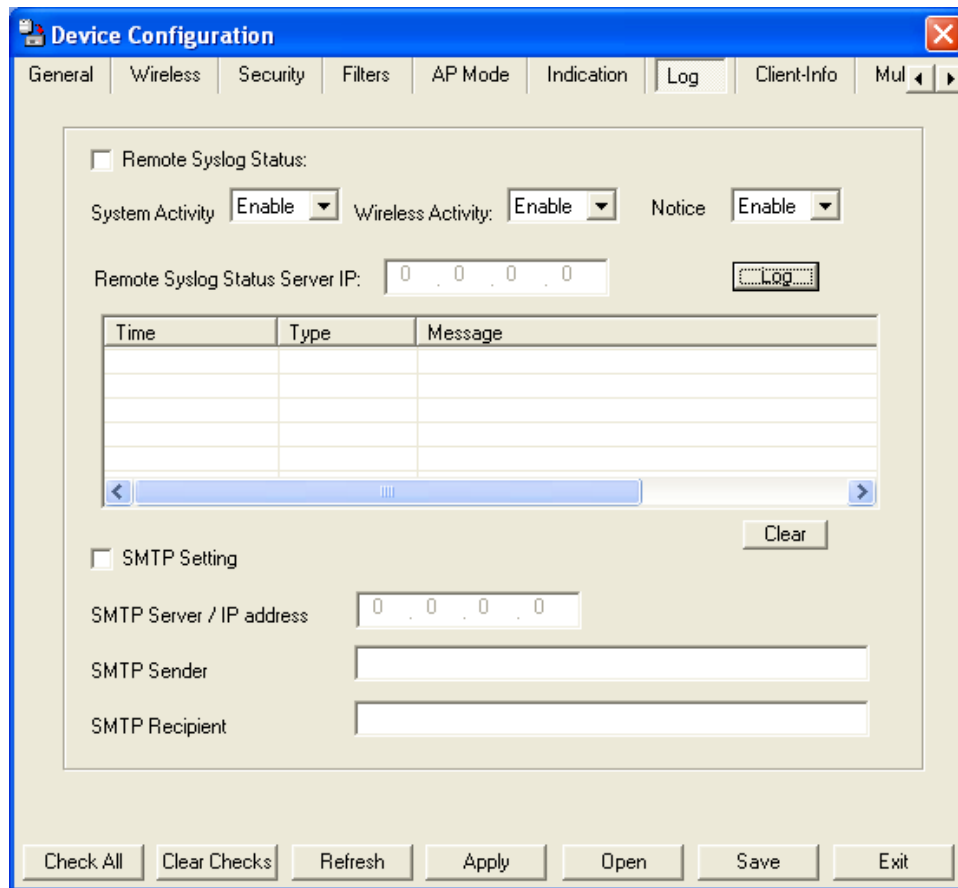
## Device Configuration > Indication



**Temperature:** Displays the current operating temperature of the DWL-2700AP.

**Auto Refresh:** Check this box to automatically refresh the Indication information.

## Device Configuration > Log



**Remote Syslog Status:** Check this box to enable syslog logging.

**Activity:** Enable or Disable the three types of logging activity, **System Activity**, **Wireless Activity**, and **Notice** messages.

**Remote Syslog Status Server IP:** Enter the IP address of the syslog server.

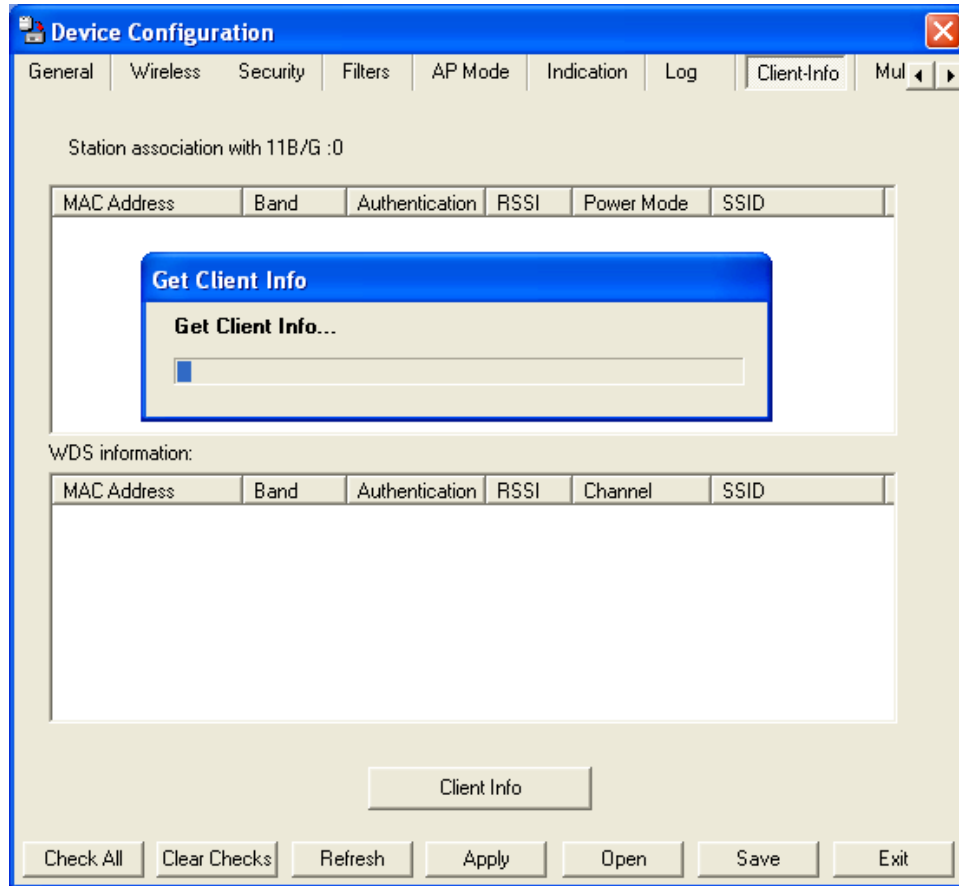
**SMTP Setting:** Check this box to enable SMTP.

**SMTP Server / IP Address:** Enter the IP address of the SMTP server.

**SMTP Sender:** Enter the SMTP Sender.

**SMTP Recipient:** Enter the SMTP Recipient.

## Device Configuration > Client-Info



**Client Information:** Select this option to obtain information on IEEE 802.11g clients. A client is a device on the network that is communicating with the DWL-2700AP.

The following information is available for each client that is communicating with the DWL-2700AP.

- MAC:** Displays the MAC address of the client.
- Band:** Displays the wireless band.
- Authentication:** Displays the type of authentication that is enabled.
- RSSI:** Receive Signal Strength Indicator indicates the strength of the signal.
- Power Saving Mode:** Displays the status of the power saving feature.