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**D-Link**<sup>®</sup>

Version 1.00 | 10/06/2020



**User Manual**

**5G AC2600 Wi-Fi Router**

DWR-978

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# Preface

D-Link reserves the right to revise this publication and to make changes in the content hereof without obligation to notify any person or organization of such revisions or changes.

## Manual Revisions

Revision	Date	Description
1.00	October 06, 2020	• Initial release

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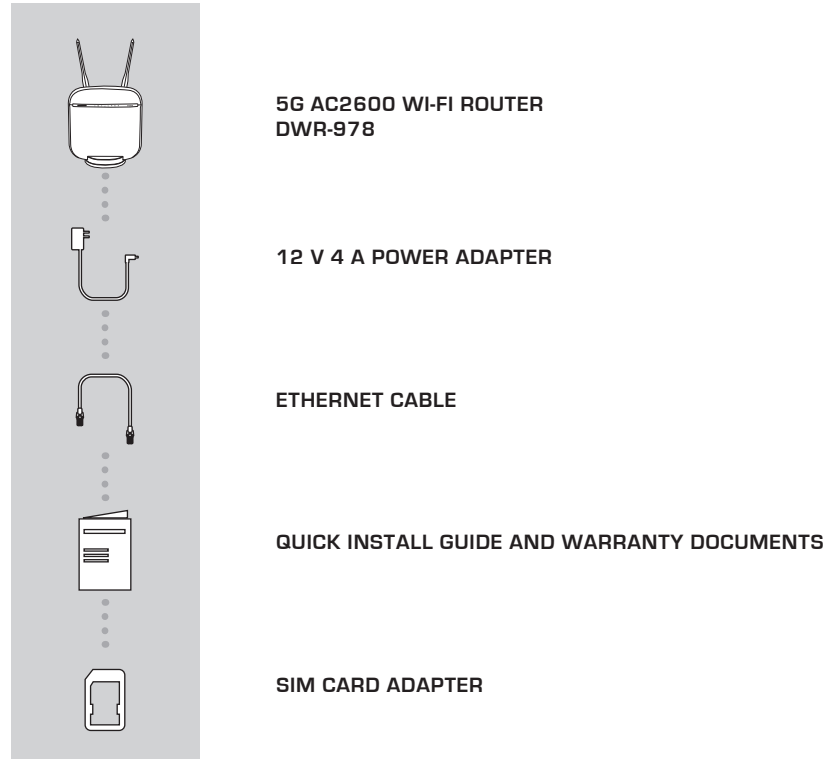
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# Package Contents



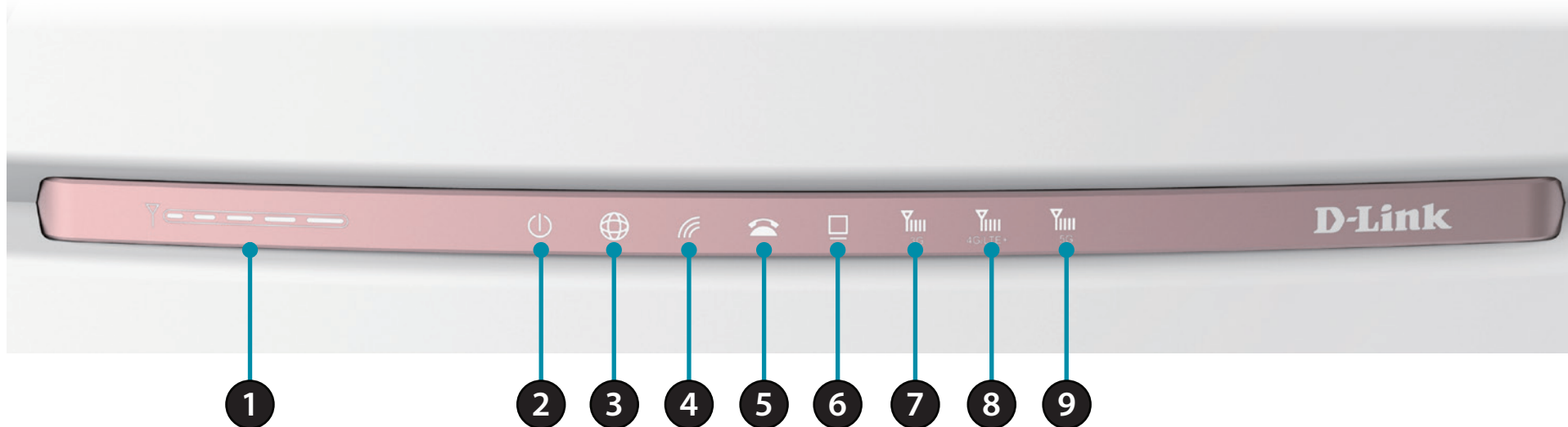
# System Requirements

- Computer or mobile device with 802.11ac/n/g wireless adapter
- Internet Explorer® 9, Firefox® 12, Chrome™ 20, or Safari 5
- Mini SIM card
- Subscription with a mobile Internet Service Provider

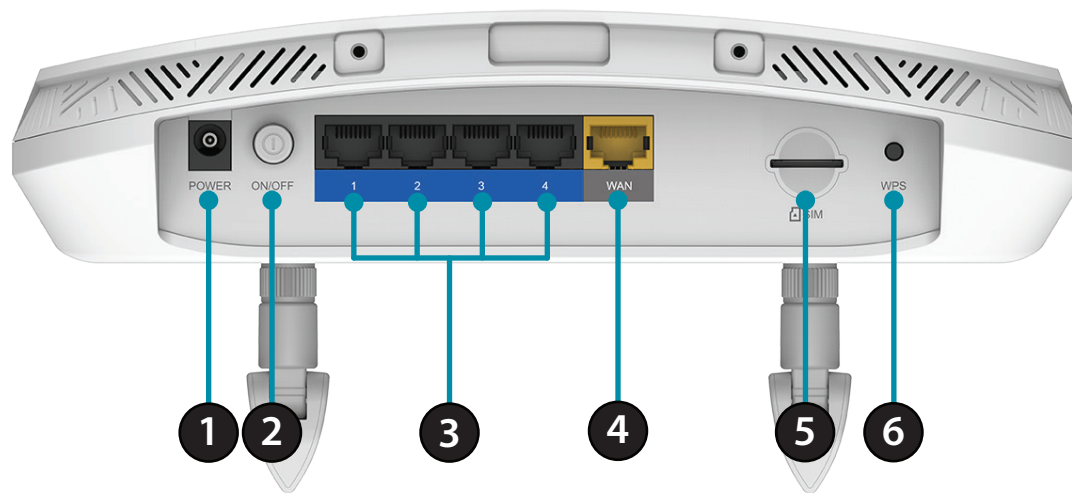
\* Subject to services and service terms available from your carrier.

# Hardware Overview

## Front View



1	<b>Signal Strength LED</b>	Indicates Wi-Fi signal strength with bars. More bars indicates a stronger signal.
2	<b>Power LED</b>	Will be lit green if the device is powered on and working. Turns red if there is an error.
3	<b>WAN</b>	Will be lit if an Ethernet WAN connection is established, and will blink when data is being transferred.
4	<b>Wi-Fi/WPS</b>	Will be lit if the wireless function is enabled, blinks when data is transferred or during WPS pairing.
5	<b>Phone</b>	Will be lit if the phone function is enabled, blinks when data is transferred.
6	<b>LAN</b>	Will be lit if an Ethernet LAN connection is established, and will blink when data is being transferred.
7	<b>3G</b>	Will be lit if a 3G connection established.
8	<b>4G/LTE+</b>	Will be lit if a 4G/LTE+ connection is established.
9	<b>5G</b>	Will be lit if a 5G connection is established.



1	<b>Power Connector</b>	Connects to the included power adapter.
2	<b>Power Button</b>	Turns the device on or off.
3	<b>Ethernet LAN Ports</b>	For connection to a network-enabled desktop or notebook computer.
4	<b>Ethernet WAN Port</b>	For connection to a DSL/cable modem or router.
5	<b>SIM card slot</b>	For mobile network connections.
6	<b>WPS Button</b>	For WPS pairing with wireless devices.

## Side View



<b>1</b>	<b>USB Port</b>	USB port 2.0 for media or external devices.
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# Installation

This section will guide you through the installation process. Placement of the router is very important. Do not place the router in an enclosed area such as a closet, cabinet, or in an attic or garage.

## Before You Begin

Ensure that your DWR-978 5G AC2600 Wi-Fi Router is disconnected and powered off before performing the steps below..

1. Verify that your SIM/UICC card is installed and has been activated by your carrier.

**Caution:** Always unplug/power down the router before installing or removing the SIM/UICC card. Never insert or remove the SIM/UICC card while the router is in use.

2. Attach the included antennas to the back of the router, screwing them in clockwise. Arrange them so that they point upward.
3. Connect the power adapter to the socket on the back panel of your DWR-978. Plug the other end of the power adapter into a wall outlet or power strip. Make sure the power button is in the "On" position.
  - a. The Power LED will light up to indicate that power is being supplied to the router and the router is turned on.
  - b. The LEDs on the front panel will flash on and off as the DWR-978 Mobile Router performs initialization and Internet connection processes.
  - c. After a few moments, if a connection has been established, the following LEDs will turn solid green: Power, Network, WiFi (if enabled), LAN (if connected), WAN (if connected), and Signal Strength.

**Note:** By default, the DWR-978 uses the mobile network as the sole Internet connection. If you wish to use your mobile connection as a backup to a wired connection, or you wish to use a wired connection exclusively, you must use the Optional Advanced Setup procedure.

4. Connect via Wi-Fi using the SSID and password printed on the bottom of the router, or through Ethernet via one of the LAN ports on the back of your DWR-978.

# Wireless Installation Considerations

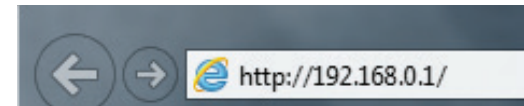
The DWR-978 can be accessed using a wireless connection from anywhere within the operating range of your wireless network. Keep in mind that the quantity, thickness, and location of walls, ceilings, or other objects that the wireless signals must pass through may limit the range of the wireless signal. Ranges vary depending on the types of materials and background RF (radio frequency) noise in your home or office. The key to maximizing the wireless range is to follow these basic guidelines:

1. Minimize the number of walls and ceilings between the D-Link router and other network devices. Each wall or ceiling can reduce your adapter's range from 3 to 90 feet (1 to 30 meters).
2. Be aware of the direct line between network devices. A wall that is 1.5 feet thick (0.5 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. Try to position access points, wireless routers, and computers so that the signal passes through open doorways and drywall. Materials such as glass, metal, brick, insulation, concrete, and water can affect wireless performance. Large objects such as fish tanks, mirrors, file cabinets, metal doors, and aluminum studs may also have a negative effect on range.
4. If you are using 2.4 GHz cordless phones, make sure that the 2.4 GHz phone base is as far away from your wireless device as possible. The base transmits a signal even if the phone is not in use. In some cases, cordless phones, X-10 wireless devices, and electronic equipment such as ceiling fans, fluorescent lights, and home security systems may dramatically degrade wireless connectivity.

# Configuration

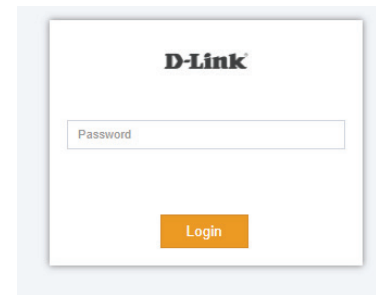
## Getting Started

To access the configuration utility, open a web browser such as Internet Explorer and enter the address of the router (**192.168.0.1** by default).



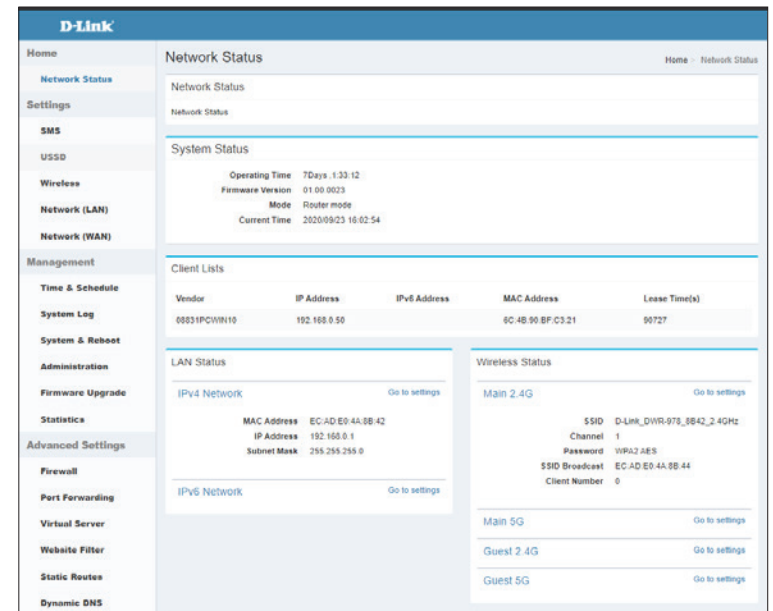
To log in to the configuration utility, the default password is left blank.

**Note:** If you get a **Page Cannot be Displayed** error, please refer to the **Troubleshooting** section for assistance.



Once you have successfully logged in, you will see the **Home** page. On this page you can view information about your Internet connection, the wireless/LAN status, and system information.

At the top of the page is a menu. Clicking on one of these icons will take you to the appropriate configuration section.



# Settings

## SMS Device

On the Short Messages Settings page you can organize, send and receive Short Message Service (SMS) messages by selecting between a Setup, Inbox and Drafts tab. These messages can either be saved to the router's internal memory or on the SIM/UICC card itself.

### Send Message

**Mobile:** Enter the mobile number to send the message to.

**Content:** Enter the content you wish to send.

Click **Send** to send your message.

### Inbox

**Mobile:** (Optional) Specify a password.

**Content:** (Optional) Should you have specified a password above, verify your password one more time.

**Time:** Specify number to dial.

Click **Submit** to save your settings, or **Cancel** to revert to your previous settings.

The screenshot displays the 'SMS Device' configuration page. At the top, there is a breadcrumb trail: 'Settings > SMS > Device'. Below this, the 'SMS Device' section includes a 'SMS Device Description' field. The 'Send Message' section contains two input fields: 'Mobile' and 'Content', followed by an orange 'Send' button. Below the 'Send Message' section is a table with columns for 'Mobile', 'Content', and 'Time'. The table is currently empty, displaying 'No data in table.' and 'Previous' and 'Next' navigation buttons. At the bottom of the page, there are 'Submit' and 'Cancel' buttons.

# SMS (U)SIM

## Send Message

**Mobile:** Enter the mobile number to send the message to.

**Content:** Enter the content you wish to send.

Click **Send** to send your message.

## Inbox

**Mobile:** (Optional) Specify a password.

**Content:** (Optional) Should you have specified a password above, verify your password one more time.

**Time:** Specify number to dial.

Click **Submit** to save your settings, or **Cancel** to revert to your previous settings.

The screenshot displays the 'SMS (U)SIM' configuration page. At the top, there is a breadcrumb trail: 'Settings > SMS > (U)SIM'. Below this, the page title is 'SMS (U)SIM', followed by a field for 'SMS (U)SIM Description'. The main section is titled 'Send Message' and contains two input fields: 'Mobile' and 'Content'. A blue 'Send' button is positioned below these fields. To the left, a sidebar menu lists 'Inbox', 'Outbox', and 'Drafts', each with a blue icon. The 'Inbox' section is currently active, showing a table with columns for 'Mobile', 'Content', and 'Time'. The table is empty, with the text 'No data in table.' centered below the headers. At the bottom right of the table, there are 'Previous' and 'Next' navigation buttons. Below the table, there are two buttons: a blue 'Submit' button and a white 'Cancel' button.

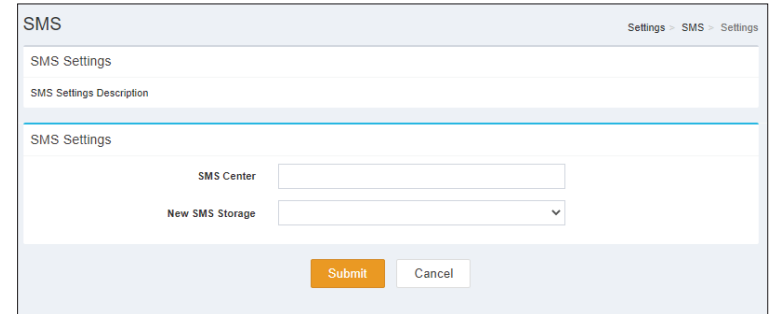
# SMS Settings

## SMS Settings

**SMS center:** Enter the name of the SMS center.

**New SMS Storage:** Select the new SMS storage.

Click **Submit** to save your settings, or **Cancel** to revert to your previous settings.



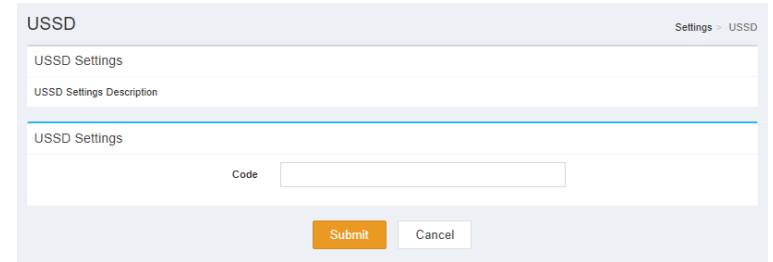
The screenshot shows a web interface for configuring SMS settings. At the top, there is a breadcrumb trail: "Settings > SMS > Settings". Below this, the page title is "SMS Settings". Underneath, there is a section labeled "SMS Settings Description". The main configuration area is titled "SMS Settings" and contains two input fields: "SMS Center" (a text box) and "New SMS Storage" (a dropdown menu). At the bottom of the form, there are two buttons: "Submit" (orange) and "Cancel" (white).

# USSD

## USSD Settings

**Code:** Enter USSD code.

Click **Submit** to save your settings, or **Cancel** to revert to your previous settings.



The screenshot shows a web interface for configuring USSD settings. At the top, the page is titled "USSD" with a breadcrumb "Settings > USSD". Below the title, there are two main sections. The first section, labeled "USSD Settings", contains a text input field for "USSD Settings Description". The second section, also labeled "USSD Settings", contains a text input field for "Code". At the bottom of the form, there are two buttons: "Submit" (orange) and "Cancel" (white).

# Main Wi-Fi

## Primary 2.4G Advanced Setting

**Status:** Indicates whether the connection is **Enabled** or **Disabled**.

**Wi-Fi Name (SSID):** Indicates the name of the connection.

**Password:** Indicates the password of the connection.

**Security Mode:** Indicates the Security Mode of the connection. By default **WPA/WPA2-Personal** is selected, you may also select **None**.

**802.11 Mode:** Indicates the wireless mode of the connection. By default **Mixed 802.11b/g/n** is selected, you may also select **Mixed 802.11g/n** or **802.11n only**.

**Wi-Fi Channel:** Select the Wi-Fi channel. By default **Auto** is selected, you can choose manually between channel **1-13**.

**Transmission Power:** Indicates the Transmission Power of the connection. By default **High** is selected, you may also select **Medium** or **Low**.

**Channel Width:** Indicates the Channel Width of the connection. By default **Auto** **20/40 MHz** is selected, you may also select **20 MHz**.

**Coexistence:** Indicates whether Coexistence is **Enabled** or **Disabled**.

**Visibility Status:** Indicates whether the Wi-Fi network is **Visible** or **Invisible**.

**Schedule:** Indicates whether the Wi-Fi network is part of a schedule. Click on **Schedule** to access the schedule menu "Schedule" on page 29.

The screenshot shows the 'Wireless' configuration page. At the top, there is a breadcrumb trail: 'Settings > Wireless > Main Wi-Fi'. Below this, there is a 'Wireless description' field. The main content is divided into two sections: 'Primary 2.4G' and 'Primary 5G'. Each section has a 'Status' checkbox (checked), a 'Wi-Fi Name (SSID)' text input field, and a 'Password' text input field. In the 'Primary 2.4G' section, the SSID is 'D-Link\_DWR-978\_8B42\_2.4GHz'. In the 'Primary 5G' section, the SSID is 'D-Link\_DWR-978\_8B42\_5GHz'. Each section also has an 'Advanced Setting...' link. At the bottom of the page, there are 'Submit' and 'Cancel' buttons.

This screenshot shows the 'Primary 2.4G' advanced settings page. It includes the following fields and options:

- Status:** Checked checkbox.
- Wi-Fi Name (SSID):** Text input field containing 'D-Link\_DWR-978\_8B42\_2.4GHz'.
- Password:** Text input field containing 'fcaaa63914'.
- Security Mode:** Dropdown menu set to 'WPA/WPA2-Personal'.
- 802.11 Mode:** Dropdown menu set to 'Mixed 802.11b/g/n'.
- Wi-Fi Channel:** Dropdown menu set to 'Auto'.
- Transmission Power:** Dropdown menu set to 'High'.
- Channel Width:** Dropdown menu set to 'Auto 20/40 MHz'.
- Coexistence:** Checked checkbox.
- Visibility Status:** Dropdown menu set to 'Visible'.
- Schedule:** Dropdown menu set to 'Always'.

An 'Advanced Setting...' link is located to the right of the Security Mode dropdown.

Click **Submit** to save your settings, or **Cancel** to revert to your previous settings.

## Primary 5G Advanced Setting

**Status:** Indicates whether the connection is **Enabled** or **Disabled**.

**Wi-Fi Name (SSID):** Indicates the name of the connection.

**Password:** Indicates the password of the connection.

**Security Mode:** Indicates the Security Mode of the connection. By default **WPA/WPA2-Personal** is selected, you may also select **None**.

**Wi-Fi Channel:** Select the Wi-Fi channel. By default **Auto** is selected, you can choose manually between channel **1-13**.

**Transmission Power:** Indicates the Transmission Power of the connection. By default **High** is selected, you may also select **Medium** or **Low**.

**Channel Width:** Indicates the Channel Width of the connection. By default **Auto** **20/40 MHz** is selected, you may also select **20 MHz**.

**Visibility Status:** Indicates whether the Wi-Fi network is **Visible** or **Invisible**.

**Schedule:** Indicates whether the Wi-Fi network is part of a schedule. Click on **Schedule** to access the schedule menu "Schedule" on page 29.

Click **Submit** to save your settings, or **Cancel** to revert to your previous settings.

Primary 5G

Status

Wi-Fi Name (SSID)

Password

Security Mode

Wi-Fi Channel

Transmission Power

Channel Width

Visibility Status

Schedule

Advanced Setting...

# Guest Wi-Fi

## Guest 2.4G/5G Advanced Setting

**Status:** Indicates whether the connection is **Enabled** or **Disabled**.

**Wi-Fi Name (SSID):** Indicates the name of the connection.

**Password:** Indicates the password of the connection.

**Security Mode:** Indicates the Security Mode of the connection. By default **WPA/WPA2-Personal** is selected, you may also select **None**.

**Visibility Status:** Indicates whether the Wi-Fi network is **Visible** or **Invisible**.

**Schedule:** Indicates whether the Wi-Fi network is part of a schedule. Click on **Schedule** to access the schedule menu "Schedule" on page 29.

Click **Submit** to save your settings, or **Cancel** to revert to your previous settings.

The screenshot displays the 'Wireless' configuration page for Guest Wi-Fi. It is divided into two main sections: 'Guest 2.4G' and 'Guest 5G'. Each section has a 'Status' toggle switch, a 'Wi-Fi Name (SSID)' text input field, and a 'Password' text input field. Below these fields are 'Advanced Setting...' links. At the bottom of the page, there are 'Submit' and 'Cancel' buttons. Below the main configuration area, there are three dropdown menus: 'Security Mode' (set to WPA/WPA2-Personal), 'Visibility Status' (set to Visible), and 'Schedule' (set to Always).

# Network (LAN)

## Network Settings

**LAN IP Address:** Enter the IP address you want to use for the router. The default IP address is 192.168.0.1. If you change the IP address, you will need to enter the new IP address in your browser to get into the configuration utility.

**Subnet Mask:** Enter the subnet mask of the router. The default subnet mask is 255.255.255.0

**Local Domain Name:** Enter the local domain name for your network. (Optional)

**Enable DNS Relay:** Disable to transfer the DNS server information from your ISP to your computers. If enabled, your computers will use the router for a DNS server.

Click **Submit** to save your settings, or **Cancel** to revert to your previous settings.

## DHCP Server

**Status:** Indicates whether DHCP server is **Enabled** or **Disabled**.

**DHCP IP Address Range:** Enter the DHCP IP Address Range of the router. The default is **192.168.0.50 - 192.168.0.199**.

**DHCP Lease Time:** The lease time determines the period that the host retains the assigned IP addresses before the IP addresses change.

**Always Broadcast:** Indicates whether Always Broadcast is **Enabled** or **Disabled**.

## Advanced Settings

**UPnP:** Indicates whether UPnP is **Enabled** or **Disabled**.

**IPv4 Multicast Streams:** Indicates whether IPv4 Multicast Streams is **Enabled** or **Disabled**.

**IPv6 Multicast Streams:** Indicates whether DHCP server is **Enabled** or **Disabled**.

# Network (WAN) IPv4

## Dual WAN Settings

**Dual WAN:** Indicates whether Dual WAN is **Enabled** or **Disabled**.

**Primary WAN:** Select connection type of the primary WAN.

**Secondary WAN:** Select connection type of the Secondary WAN.

**Fail Over:** Indicates whether Fail Over is **Enabled** or **Disabled**.

Click **Submit** to save your settings, or **Cancel** to revert to your previous settings.

The screenshot displays the 'Network (WAN) IPv4' configuration interface. It is divided into two main sections: 'Dual WAN Settings' and 'Network Settings'. The 'Dual WAN Settings' section includes a 'Dual WAN' checkbox (checked), 'Primary WAN' (set to LTE), 'Secondary WAN' (set to Ethernet WAN), and a 'Fail Over' checkbox (checked). The 'Network Settings' section includes 'Internet Connection' (two dropdowns, both set to LTE), 'Dial-Up Profile' (Auto-Detection), 'Prefer Service Type' (Auto Mode), 'PDP Type' (Auto), 'Pin Code' (empty), 'Reconnect Mode' (Auto), 'Primary DNS Server' (empty), 'Secondary DNS Server' (empty), 'Keep Alive' (Enabled), 'Ping IP Address' (8.8.8.8), and 'Ping Interval' (60). Both sections have 'Submit' and 'Cancel' buttons at the bottom.

## Network Settings

- Internet Connection:** Select the Internet Connection type of the IPv4 WAN.
- Dial-Up Profile:** Select the Dial-Up Profile to be **Auto-Detection** or **Manual**.
- PDP Type:** Select the PDP Type to be **Auto, IPv4** or **IPv6**.
- Pin Code:** Indicates the Pin Code of the connection.
- Reconnect Mode:** Select Reconnect Mode to be **Auto** or **Manual**.
- Primary DNS Server:** Enter the primary DNS IP address that will be assigned to DHCP clients.
- Secondary DNS Server:** Enter the secondary DNS IP address that will be assigned to DHCP clients.
- Keep Alive:** Indicates whether Keep Alive is **Enabled** or **Disabled**.
- Ping IP Address:** Enter Ping IP Address to ping test the connection.
- Ping Interval:** Indicates the Ping Interval.

Click **Submit** to save your settings, or **Cancel** to revert to your previous settings.

# Network (WAN) IPv6

## Local Connectivity Only IPv6 Advanced Setting

**Internet Connection:** Specify the type of IPv6 connection your ISP uses. Choose from **Local Connectivity Only, Static IPv6, Auto Configuration (Stateless/DHCPv6), PPPoE, 6rd.**

## IPv6 ULA Settings

**Enable ULA:** Indicates whether Enable ULA is **Enabled** or **Disabled**.

## Current IPv6 ULA Settings

**Current ULA Prefix:** Indicates the Current ULA Prefix.

**LAN IPv6 ULA:** Indicates the LAN IPv6 ULA.

Click **Submit** to save your settings, or **Cancel** to revert to your previous settings.

Network (WAN) Settings - Network (WAN) - IPv6

IPv6

IPv6 description

Internet Connection: Local Connectivity Only

Advanced Setting...

IPv6 ULA Settings

Enable ULA:

Current IPv6 ULA Settings

Current ULA Prefix	Not Available
LAN IPv6 ULA	Not Available

Submit Cancel

## Static IPv6 Advanced Setting

**Internet Connection:** Specify the type of IPv6 connection your ISP uses. Choose from **Local Connectivity Only, Static IPv6, Auto Configuration (Stateless/DHCPv6), PPPoE, 6rd.**

**Use Link-Local Address:** Indicates whether Use Link-Local Address is **Enabled** or **Disabled**.

**IPv6 Address:** If Use Link-Local Address is **Disabled**, enter the IPv6 Address.

**Subnet Prefix Length:** If Use Link-Local Address is **Disabled**, enter the Subnet Prefix Length.

**Default Gateway:** Enter the Default Gateway used by this connection.

## IPv6 DNS Settings

**Primary DNS Server:** Enter the primary DNS IP address that will be assigned to DHCP clients.

**Secondary DNS Server:** Enter the secondary DNS IP address that will be assigned to DHCP clients.

## LAN IPv6 Address Settings

**LAN IPv6 Address:** Specify the LAN IPv6 Address.

**LAN IPv6 Link-Local Address:** Indicates the LAN IPv6 Link-Local Address.

Network (WAN) Settings > Network (WAN) > IPv6

IPv6

IPv6 description

Internet Connection: Static IPv6

Use Link-Local Address:

IPv6 Address:

Subnet Prefix Length: 64

Default Gateway:

IPv6 DNS Settings

Primary DNS Server:

Secondary DNS Server:

LAN IPv6 Address Settings

LAN IPv6 Address:  /64

LAN IPv6 Link-Local Address: FE80::EAD:E0FF:FE4A:8B42

[Advanced Setting...](#)

Address Autoconfiguration Settings

Enable Automatic IPv6 Address Assignment:

Autoconfiguration Type: SLAAC+Stateless DHCP

Router Advertisement Lifetime: 60 minutes (1-150)

## Address Autoconfiguration Settings

**Enable Automatic IPv6 Address Assignment:** Indicates whether Enable Automatic IPv6 Address Assignment is **Enabled** or **Disabled**.

**Autoconfiguration Type:** Specify the Autoconfiguration Type. Choose from **SLAAC+RDNSS**, **SLAAC+Stateless DHCP** or **Stateful DHCPv6**.

**Router Advertisement Lifetime:** Specify the Router Advertisement Lifetime from **minutes (1-150)**.

Click **Submit** to save your settings, or **Cancel** to revert to your previous settings.

## Autoconfiguration (SLAAC/DHCPv6) Advanced Setting

**Internet Connection:** Specify the type of IPv6 connection your ISP uses. Choose from **Local Connectivity Only, Static IPv6, Auto Configuration (Stateless/DHCPv6), PPPoE, 6rd.**

### IPv6 DNS Settings

**DNS Type:** Specify the DNS Type. Choose from **Obtain a DNS server address automatically** or **Use the following DNS address.**

**Primary DNS Server:** Enter the primary DNS IP address that will be assigned to DHCP clients.

**Secondary DNS Server:** Enter the secondary DNS IP address that will be assigned to DHCP clients.

### LAN IPv6 Address Settings

**Enable DHCP-PD:** Indicates whether Use Link-Local Address is **Enabled** or **Disabled**.

**LAN IPv6 Link-Local Address:** Indicates the LAN IPv6 Link-Local Address.

The screenshot displays the 'Network (WAN) IPv6' configuration interface. It is organized into several sections:

- IPv6:** Includes an 'IPv6 description' field.
- Internet Connection:** A dropdown menu is set to 'Static IPv6'. Below it, 'Use Link-Local Address' is checked. There are input fields for 'IPv6 Address', 'Subnet Prefix Length' (set to 64), and 'Default Gateway'.
- IPv6 DNS Settings:** Contains input fields for 'Primary DNS Server' and 'Secondary DNS Server'.
- LAN IPv6 Address Settings:** Shows 'LAN IPv6 Address' and 'LAN IPv6 Link-Local Address' (FE80::E0AD:E0FF:FE4A:8B42). A '/64' suffix is visible next to the address field.
- Address Autoconfiguration Settings:** 'Enable Automatic IPv6 Address Assignment' is checked. 'Autoconfiguration Type' is set to 'SLAAC+Stateless DHCP'. 'Router Advertisement Lifetime' is set to 60 minutes (range 1-150).

At the bottom right, there are 'Submit' and 'Cancel' buttons.

## Address Autoconfiguration Settings

**Enable Automatic IPv6 Address Assignment:** Indicates whether Enable Automatic IPv6 Address Assignment is **Enabled** or **Disabled**.

**Enable Automatic DHCP-PD in LAN:** Indicates whether Enable Automatic DHCP-PD in LAN is **Enabled** or **Disabled**.

**Autoconfiguration Type:** Specify the Autoconfiguration Type. Choose from **SLAAC+RDNSS**, **SLAAC+Stateless DHCP** or **Stateful DHCPv6**.

**Router Advertisement Lifetime:** Specify the Router Advertisement Lifetime from **minutes (1-150)**.

Click **Submit** to save your settings, or **Cancel** to revert to your previous settings.

## PPPoE Advanced Setting

**Internet Connection:** Specify the type of IPv6 connection your ISP uses. Choose from **Local Connectivity Only, Static IPv6, Auto Configuration (Stateless/DHCPv6), PPPoE, 6rd.**

**PPPoE Session:** Select the PPPoE Session to create or edit.

**Username:** Specify the Username.

**Password:** Specify the Password.

**Address Mode:** Specify the Reconnect Mode. Choose from **Dynamic IP** or **Static IP.**

**Service Name:** Specify the Service Name.

**Reconnect Mode:** Specify the Reconnect Mode. Choose from **Always on** or **Manual.**

**MTU:** Specify the MTU in bytes.

## IPv6 DNS Settings

**DNS Type:** Specify the DNS Type. Choose from **Obtain a DNS server address automatically** or **Use the following DNS address.**

**Primary DNS Server:** Enter the primary DNS IP address that will be assigned to DHCP clients.

**Secondary DNS Server:** Enter the secondary DNS IP address that will be assigned to DHCP clients.

Network (WAN) Settings > Network (WAN) > IPv6

IPv6

IPv6 description

Internet Connection: PPPoE

PPPoE Session: Create a new session

Username:

Password:

Address Mode: Dynamic IP

Service Name:

Reconnect Mode: Always on

MTU: 1402 bytes

IPv6 DNS Settings

DNS Type: Obtain a DNS server address automatically

LAN IPv6 Address Settings

Enable DHCP-PD:

LAN IPv6 Link-Local Address: FE80::EAD:E0FF:FE4A:8B42

Advanced Setting...

Address Autoconfiguration Settings

Enable Automatic IPv6 Address Assignment:

Enable Automatic DHCP-PD in LAN:

Autoconfiguration Type: SLAAC+Stateless DHCP

Router Advertisement Lifetime: 60 minutes (1-150)

Submit Cancel

## LAN IPv6 Address Settings

**Enable DHCP-PD:** Indicates whether Use Link-Local Address is **Enabled** or **Disabled**.

**LAN IPv6 Link-Local Address:** Indicates the LAN IPv6 Link-Local Address.

## Address Autoconfiguration Settings

**Enable Automatic IPv6 Address Assignment:** Indicates whether Enable Automatic IPv6 Address Assignment is **Enabled** or **Disabled**.

**Enable Automatic DHCP-PD in LAN:** Indicates whether Enable Automatic DHCP-PD in LAN is **Enabled** or **Disabled**.

**Autoconfiguration Type:** Specify the Autoconfiguration Type. Choose from **SLAAC+RDNSS**, **SLAAC+Stateless DHCP** or **Stateful DHCPv6**.

**Router Advertisement Lifetime:** Specify the Router Advertisement Lifetime from **minutes (1-150)**.

Click **Submit** to save your settings, or **Cancel** to revert to your previous settings.

## 6rd Advanced Setting

**Internet Connection:** Specify the type of IPv6 connection your ISP uses. Choose from **Local Connectivity Only, Static IPv6, Auto Configuration (Stateless/DHCPv6), PPPoE, 6rd.**

**Assign IPv6 Prefix:** Indicates the Assign IPv6 Prefix.

## IPv6 DNS Settings

**DNS Type:** Specify the DNS Type. Choose from **Obtain a DNS server address automatically** or **Use the following DNS address.**

**Primary DNS Server:** Enter the primary DNS IP address that will be assigned to DHCP clients.

**Secondary DNS Server:** Enter the secondary DNS IP address that will be assigned to DHCP clients.

## LAN IPv6 Address Settings

**Enable DHCP-PD:** Indicates whether Use Link-Local Address is **Enabled** or **Disabled**.

**LAN IPv6 Link-Local Address:** Indicates the LAN IPv6 Link-Local Address.

The screenshot displays the 'Network (WAN) IPv6' configuration page. It includes the following sections and settings:

- IPv6 description:** A text input field.
- Internet Connection:** A dropdown menu set to '6rd'.
- Assign IPv6 Prefix:** A dropdown menu set to 'Not Available'.
- IPv6 DNS Settings:** Two text input fields for 'Primary DNS Server' and 'Secondary DNS Server'.
- 6RD Manual Configuration:**
  - 'Enable Hub and Spoke Mode' is checked.
  - '6rd Configuration' is set to '6rd DHCPv4 Option'.
- LAN IPv6 Address Settings:**
  - 'LAN IPv6 Address' is empty.
  - 'LAN IPv6 Link-Local Address' is set to 'FE80::EAD:E0FF:FE4A:8B42'.
  - 'Advanced Setting...' link is visible.
- Address Autoconfiguration Settings:**
  - 'Enable Automatic IPv6 Address Assignment' is checked.
  - 'Autoconfiguration Type' is set to 'SLAAC+Stateless DHCP'.
  - 'Router Advertisement Lifetime' is set to '00' minutes (1-150).

At the bottom, there are 'Submit' and 'Cancel' buttons.

## Address Autoconfiguration Settings

**Enable Automatic IPv6 Address Assignment:** Indicates whether Enable Automatic IPv6 Address Assignment is **Enabled** or **Disabled**.

**Autoconfiguration Type:** Specify the Autoconfiguration Type. Choose from **SLAAC+RDNSS**, **SLAAC+Stateless DHCP** or **Stateful DHCPv6**.

**Router Advertisement Lifetime:** Specify the Router Advertisement Lifetime from **minutes (1-150)**.

Click **Submit** to save your settings, or **Cancel** to revert to your previous settings.

# Management

## System Time

### Time Configuration

**Time Zone:** Specify Time Zone of your device.

**Time:** Specify Time of your device.

### Automatic Time Configuration

**Update Time Using an NTP Server:** Indicates whether Update Time Using an NTP Server is **Enabled** or **Disabled**.

**NTP Server:** Specify NTP Server of your device.

Click **Submit** to save your settings, or **Cancel** to revert to your previous settings.

The screenshot shows a web interface for configuring system time. The page title is "Time & Schedule" and the breadcrumb trail is "Management > Time & Schedule > System Time". The page is divided into three sections: "System Time", "Time Configuration", and "Automatic Time Configuration".

- System Time:** This section is currently empty.
- Time Configuration:** This section contains two fields: "Time Zone" with a dropdown menu set to "Asia/Taipei" and "Time" with a text input field containing "2020/09/24 11:10:54 AM".
- Automatic Time Configuration:** This section contains two fields: "Update Time Using an NTP Server" with a checked checkbox and "NTP Server" with a text input field containing "time.nist.gov".

At the bottom of the form, there are two buttons: "Submit" (orange) and "Cancel" (white).

# Schedule

**Name** Indicates the name of the schedule.

**Schedule:** Indicates the schedule.

**Edit:** When a schedule is selected, click this button to edit the schedule.

**Delete:** When a schedule is selected, click this button to delete the schedule.

Click **Save** to save your settings, or **Cancel** to revert to your previous settings.

## Create New Rule

**Name** Enter a name for your new schedule

**Schedule:** Drag and select the times that you wish to be included as part of the new schedule.

Click **Save** to save your settings, or **Cancel** to revert to your previous settings.

The screenshot shows the 'Time & Schedule' management page. At the top, there are navigation links: 'Management', 'Time & Schedule', and 'Schedule'. Below this, there are two input fields for 'Schedule'. A section titled 'Schedule: (Max Limit: 10)' contains a table with columns for 'Name', 'Schedule', 'Edit', and 'Delete'. The table is currently empty, displaying 'No data in table.' To the right of the table is an 'Add Rule' button. At the bottom of the section are 'Save' and 'Cancel' buttons.

The screenshot shows the 'Create New Rule' interface. It features a 'Name' input field at the top. Below it is a grid for selecting times. The grid has columns for the days of the week: Sun, Mon, Tue, Wed, Thu, Fri, and Sat. The rows represent hourly intervals from 00:00 to 24:00. The grid is currently empty. At the bottom of the interface are 'Done' and 'Cancel' buttons.

# System Log

**System Log:** Click this button to download the system log.

## SysLog Settings

**Enable Logging to Syslog Server:** Indicates whether Enable Logging to Syslog Server is **Enabled** or **Disabled**.

## E-mail Settings

**Enable E-mail Notification:** Indicates whether Enable E-mail Notification is **Enabled** or **Disabled**.

## E-mail Log When Full or On Schedule

**Send When Log Full:** Indicates whether Send When Log Full is **Enabled** or **Disabled**.

**Send on Schedule:** Indicates whether Send on Schedule is **Enabled** or **Disabled**.

Click **Submit** to save your settings, or **Cancel** to revert to your previous settings.

The screenshot shows the 'System Log' configuration page. At the top, there's a header 'System Log' and a breadcrumb 'Management > System Log'. Below the header, there's a 'System Log' section with a 'Check System Log' button. The main content area is divided into three sections: 'SysLog Settings' with 'Enable Logging to Syslog Server' (disabled), 'E-mail Settings' with 'Enable E-mail Notification' (disabled), and 'E-mail Log When Full or On Schedule' with 'Send When Log Full' (disabled) and 'Send on Schedule' (disabled). At the bottom right, there are 'Submit' and 'Cancel' buttons.

# System & Reboot

## System

**Factory Default:** Click this button to reset this device back to Factory Default.

**Save Configuration:** Click this button to Save Configuration

**Restore Configuration:** Click this button to select File to Restore Configuration

## Auto Reboot Configuration

**Reboot The Device:** Click this button to Reboot The Device

**Auto Reboot** Specify an Auto Reboot time of your device.

Click **Submit** to save your settings, or **Cancel** to revert to your previous settings.

# Administration

## Administration Advanced Settings

**Password:** Specify Administration Password of your device.

## Advanced Settings

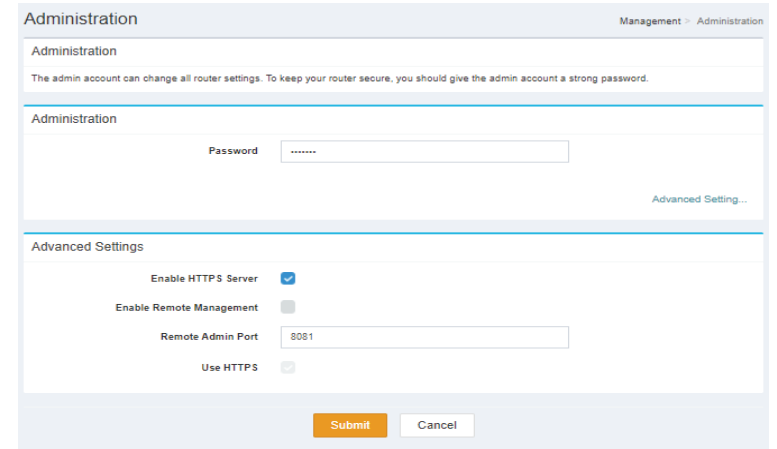
**Enable HTTPS Server:** Indicates whether Enable HTTPS Server is **Enabled** or **Disabled**.

**Enable Remote Management:** Indicates whether Enable Remote Management is **Enabled** or **Disabled**.

**Remote Admin Port:** Specify Remote Admin Port of your device

**Use HTTPS:** Indicates whether Use HTTPS is **Enabled** or **Disabled**.

Click **Submit** to save your settings, or **Cancel** to revert to your previous settings.



The screenshot shows the 'Administration' settings page. At the top, there is a breadcrumb trail: 'Management > Administration'. Below this, the 'Administration' section contains a text box for the password and a note: 'The admin account can change all router settings. To keep your router secure, you should give the admin account a strong password.' The 'Advanced Settings' section includes four options: 'Enable HTTPS Server' (checked), 'Enable Remote Management' (unchecked), 'Remote Admin Port' (set to 8081), and 'Use HTTPS' (unchecked). At the bottom right, there are 'Submit' and 'Cancel' buttons.

# Firmware Upgrade

## Firmware Over The Air

**Latest Firmware Version:** Indicates The Latest Firmware Version.

**Firmware Upgrade:** Click Check to begin the Firmware Over the Air (FOTA) upgrade process. Note that this requires an active Internet connection.

## Manual Firmware Upgrade

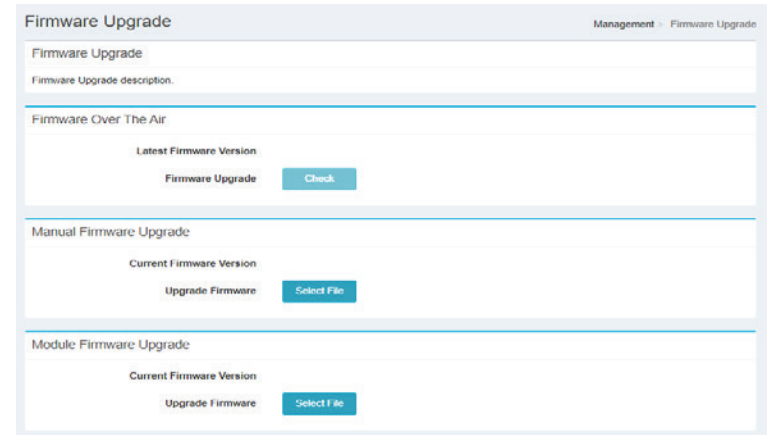
**Current Firmware Version:** Indicates the Current Firmware Version.

**Upgrade Firmware:** After you have downloaded a new firmware, click Select File to locate the firmware on your computer, then click Apply to start the firmware upgrade.

## Module Firmware Upgrade

**Current Firmware Version:** Indicates the Current Firmware Version.

**Upgrade Firmware:** After you have downloaded a new firmware, click Select File to locate the firmware on your computer, then click Apply to start the firmware upgrade.



# Statistics

## Internet/ LAN/ Wi-Fi 2.4GHz/ Wi-Fi 5GHz

**Sent** Displays the Sent Statistics of the connection.

**Received** Displays the Received Statistics of the connection.

**Total Packets:** Displays the Total Packets Statistics of the connection.

**Total KByte(s):** Displays the Total KByte(s) Statistics of the connection.

Click **Clear** to clear all Statistics.

Statistics Management > Statistics

Statistics

Internet			LAN		
	Total Packets	Total KByte(s)		Total Packets	Total KByte(s)
Sent	8,426,417	1,070,632	Sent	9,093,555	41,007,126
Received	38,094,778	43,259,435	Received	8,340,632	922,777

Wi-Fi 2.4GHz			Wi-Fi 5GHz		
	Total Packets	Total KByte(s)		Total Packets	Total KByte(s)
Sent	0	0	Sent	285,941	378,118
Received	0	0	Received	62,168	7,304

[Clear](#)

# Advanced Settings

## Firewall Settings

### DMZ Settings

**Enable DMZ:** Indicates whether Enable DMZ is **Enabled** or **Disabled**.

### Firewall Advanced Settings

**Enable SPI IPv4:** Indicates whether Enable SPI IPv4 is **Enabled** or **Disabled**.

**Enable Anti-spoof Checking:** Indicates whether Enable Anti-spoof Checking is **Enabled** or **Disabled**.

**IPv6 Simple Security:** Indicates whether IPv6 Simple Security is **Enabled** or **Disabled**.

**IPv6 Ingress Filtering:** Indicates whether IPv6 Ingress Filtering is **Enabled** or **Disabled**.

### Application Level Gateway (ALG) Configuration

**PPTP:** Indicates whether PPTP is **Enabled** or **Disabled**.

**IPSec (VPN):** Indicates whether IPSec (VPN) is **Enabled** or **Disabled**.

**RTSP:** Indicates whether RTSP is **Enabled** or **Disabled**.

**SIP:** Indicates whether SIP is **Enabled** or **Disabled**.

Click **Submit** to save your settings, or **Cancel** to revert to your previous settings.

Firewall

Advanced Settings > Firewall > Firewall Settings

Firewall Settings

Firewall Settings

DMZ Settings

Enable DMZ

Firewall Settings

Enable SPI IPv4

Enable Anti-spoof Checking

IPv6 Simple Security

IPv6 Ingress Filtering

Advanced Setting...

Application Level Gateway (ALG) Configuration

PPTP

IPSec (VPN)

RTSP

SIP

Submit Cancel

# IPv4 Rules

## Status

**Status:** Select **Turn IPv4 Filtering OFF**, **Turn IPv4 Filtering ON and ALLOW rules listed**, or **Turn IPv4 Filtering ON and DENY rules listed**.

## IPv4 Rules Table: (Max Limit: 24)

**Name** Indicates the name of the schedule.

**Schedule:** Indicates the schedule.

**Edit:** When a schedule is selected, click this button to edit the schedule.

**Delete:** When a schedule is selected, click this button to delete the schedule.

The screenshot shows the 'Firewall' configuration page, specifically the 'IPv4 Rules' section. The breadcrumb trail is 'Advanced Settings > Firewall > IPv4 Rules'. The page is divided into several sections:

- Firewall Settings:** A section for 'Firewall Settings description'.
- Status:** A dropdown menu currently set to 'Turn IPv4 Filtering OFF'.
- IPv4 Rules Table:** A table with a maximum limit of 24 rules. The table header has columns for 'Name', 'Schedule', 'Edit', and 'Delete'. The table body is currently empty, displaying 'No data in table.'.
- Buttons:** An 'Add Rule' button is located to the right of the table header. At the bottom of the page, there are 'Save' and 'Cancel' buttons.

## Create New Rule

**Name** Indicates the name of the New Rule.

**Source IP Address Range:** Indicates the source IP or IP range to which the rule will apply.

**Destination IP Address Range:** Indicates the Destination IP or IP range to which the rule will apply.

**Protocol & Port Range:** Indicates protocol types and port range affected by the filter.

**Schedule:** Indicates whether the Wi-Fi network is part of a schedule. Click on **Schedule** to access the schedule menu "Schedule" on page 29.

Click **Submit** to save your settings, or **Cancel** to revert to your previous settings.

The screenshot shows the 'Firewall' configuration page with the breadcrumb 'Advanced Settings > Firewall > IPv4 Rules'. Below the 'Firewall Settings' section, there is a 'Create New Rule' form. The form includes the following fields:

- Name:** A text input field.
- Source IP Address Range:** A dropdown menu with 'WAN' selected and an adjacent text input field.
- Destination IP Address Range:** A dropdown menu with 'LAN' selected and an adjacent text input field.
- Protocol & Port Range:** A dropdown menu with 'TCP' selected and an adjacent text input field.
- Schedule:** A dropdown menu with 'Always Enable' selected.

At the bottom of the form, there are two buttons: 'Done' (orange) and 'Cancel' (white).

# IPv6 Rules

## Status

**Status:** Select **Turn IPv6 Filtering OFF**, **Turn IPv6 Filtering ON and ALLOW rules listed**, or **Turn IPv6 Filtering ON and DENY rules listed**.

## IPv6 Rules Table: (Max Limit: 24)

**Name** Indicates the name of the schedule.

**Schedule:** Indicates the schedule.

**Edit:** When a schedule is selected, click this button to edit the schedule.

**Delete:** When a schedule is selected, click this button to delete the schedule.

Firewall Advanced Settings > Firewall > IPv6 Rules

Firewall Settings

Firewall Settings description

Status

Turn IPv6 Filtering OFF

IPv6 Rules Table: (Max Limit: 24) Add Rule

Name	Schedule	Edit	Delete
No data in table.			

Save Cancel

## Create New Rule

**Name** Indicates the name of the New Rule.

**Source IP Address Range:** Indicates the source IP or IP range to which the rule will apply.

**Destination IP Address Range:** Indicates the Destination IP or IP range to which the rule will apply.

**Protocol & Port Range:** Indicates protocol types and port range affected by the filter.

**Schedule:** Indicates whether the Wi-Fi network is part of a schedule. Click on **Schedule** to access the schedule menu "Schedule" on page 29.

Click **Submit** to save your settings, or **Cancel** to revert to your previous settings.

The screenshot shows the 'Firewall' configuration page with the 'Create New Rule' form. The breadcrumb trail is 'Advanced Settings > Firewall > IPv6 Rules'. The 'Firewall Settings' section includes a 'Firewall Settings description' field. The 'Create New Rule' form contains the following fields:

- Name:** A text input field.
- Source IP Address:** A dropdown menu with 'WAN' selected and an adjacent text input field.
- Destination IP Address:** A dropdown menu with 'LAN' selected and an adjacent text input field.
- Protocol & Port Range:** A dropdown menu with 'TCP' selected and an adjacent text input field.
- Schedule:** A dropdown menu with 'Always Enable' selected.

At the bottom of the form are two buttons: 'Done' (orange) and 'Cancel' (white).

# Port Forwarding

## Port Forwarding Table: (Max Limit: 24)

**Status:** Indicates the Status.

**Name:** Indicates the Name.

**Local IP:** Indicates the Local IP.

**TCP Port:** Indicates the TCP Port.

**UDP Port:** Indicates the UDP Port.

**Schedule:** Indicates the schedule.

**Edit:** When a schedule is selected, click this button to edit the schedule.

**Delete:** When a schedule is selected, click this button to delete the schedule.

Click **Save** to save your settings, or **Cancel** to revert to your previous settings.

The screenshot shows the 'Port Forwarding' configuration page. At the top right, it says 'Advanced Settings > Port Forwarding'. Below the title, there are two input fields for 'Port Forwarding'. A section titled 'Port Forwarding Table: (Max Limit: 24)' contains an 'Add Rule' button. Below this is a table with columns: Status, Name, Local IP, TCP Port, UDP Port, Schedule, Edit, and Delete. The table is currently empty, displaying 'No data in table.' At the bottom of the page, there are 'Save' and 'Cancel' buttons.

## Create New Rule

**Name** Indicates the name of the New Rule.

**Local IP:** Indicates the Local IP of the New Rule.

**TCP Port:** Indicates the TCP Port of the New Rule.

**UDP Port:** Indicates the UDP Port of the New Rule.

**Schedule:** Indicates whether the Wi-Fi network is part of a schedule. Click on **Schedule** to access the schedule menu “Schedule” on page 29.

Click **Done** to save your settings, or **Cancel** to revert to your previous settings.

The screenshot displays the 'Port Forwarding' configuration page. At the top right, it shows the breadcrumb 'Advanced Settings > Port Forwarding'. Below this, there is a header 'Port Forwarding' and a sub-header 'Port Forwarding'. The main section is titled 'Create New Rule'. It contains the following fields and controls:

- Status:** A checked checkbox.
- Name:** An empty text input field.
- Local IP:** A text input field containing 'LAN IP Address'.
- TCP Port:** A text input field containing '1-65535'.
- UDP Port:** A text input field containing '1-65535'.
- Schedule:** A dropdown menu currently set to 'Always Enable'.

At the bottom of the form, there are two buttons: an orange 'Done' button and a white 'Cancel' button.

# Virtual Server

## Virtual Server Table: (Max Limit: 24)

**Status:** Indicates the Status.

**Name:** Indicates the Name.

**Local IP:** Indicates the Local IP.

**Protocol:** Indicates the Protocol type.

**External Port:** Indicates the External Port.

**Internal Port:** Indicates the Internal Port.

**Schedule:** Indicates the schedule.

**Edit:** When a schedule is selected, click this button to edit the schedule.

**Delete:** When a schedule is selected, click this button to delete the schedule.

Click **Save** to save your settings, or **Cancel** to revert to your previous settings.

Virtual Server Advanced Settings - Virtual Server

Virtual Server

Virtual Server description

Virtual Server Table: (Max Limit: 24) Add Rule

Status	Name	Local IP	Protocol	External Port	Internal Port	Schedule	Edit	Delete
No data in table.								

Save Cancel

## Create New Rule

**Status:** Indicates the status of the New Rule

**Name:** Indicates the name and specify which Application Name of the New Rule

**Local IP:** Indicates the Local IP and specify which Computer Name of the New Rule

**Protocol:** Indicates the Protocol type of the New Rule.

**External Port:** Indicates the External Port of the New Rule.

**Internal Port:** Indicates the Internal Port of the New Rule.

**Schedule:** Indicates whether the Wi-Fi network is part of a schedule. Click on **Schedule** to access the schedule menu “Schedule” on page 29.

Click **Done** to save your settings, or **Cancel** to revert to your previous settings.

The screenshot shows the 'Virtual Server' configuration interface. At the top, there's a breadcrumb trail: 'Advanced Settings > Virtual Server'. Below that, the 'Virtual Server' section contains a 'Virtual Server description' field. The main area is titled 'Create New Rule' and contains several configuration options: 'Status' (checked), 'Name' (text input), '<< Application Name' (dropdown), 'Local IP' (text input), '<< Computer Name' (dropdown), 'Protocol' (dropdown set to 'TCP'), 'External Port' (text input), 'Internal Port' (text input), and 'Schedule' (dropdown set to 'Always Enable'). At the bottom right, there are 'Done' and 'Cancel' buttons.

# Website Filter

## Status

**Status:** Select **DENY clients access to ONLY these sites** or **ALLOW clients access to ONLY these sites**.

## Website Filter Table: (Max Limit: 24)

**Website URL/ Domain:** Indicates the Website URL/Domain.

**Delete:** Delete the selected Website URL/Domain.

**Add Rule:** Specify the website to be filtered.

Click **Save** to save your settings, or **Cancel** to revert to your previous settings.

Website Filter Advanced Settings > Website Filter

Website Filter

Website Filter description

Status

DENY clients access to ONLY these sites

Website Filter Table: (Max Limit: 24)

Website URL/Domain	Delete
No data in table.	

Add Rule

Save Cancel

# Static Routes IPv4

## Static Routes Table: (Max Limit: 24)

**Status:** Indicates the Status.

**Name:** Indicates the name.

**Destination Network:** Indicates the Destination Network.

**Mask:** Indicates the Mask.

**Gateway:** Indicates the Gateway.

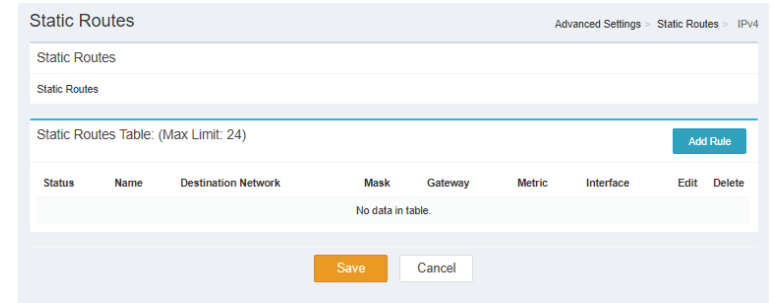
**Metric:** Indicates the Metric.

**Interface:** Indicates the Interface.

**Edit:** Delete the selected Static Route.

**Delete:** Delete the selected Static Route.

Click **Save** to save your settings, or **Cancel** to revert to your previous settings.



The screenshot shows a web interface for configuring static routes. At the top right, there is a breadcrumb trail: "Advanced Settings > Static Routes > IPv4". Below this, the page title "Static Routes" is displayed. A search bar labeled "Static Routes" is present. The main content area features a table titled "Static Routes Table: (Max Limit: 24)" with an "Add Rule" button on the right. The table has columns for "Status", "Name", "Destination Network", "Mask", "Gateway", "Metric", "Interface", "Edit", and "Delete". The table is currently empty, with the text "No data in table." centered below the header. At the bottom of the interface, there are "Save" and "Cancel" buttons.

## Create New Rule

**Status:** Indicates the status of the New Rule

**Name** Indicates the name and specify which Application Name of the New Rule

**Destination Network** Indicates the Destination Network of the New Rule

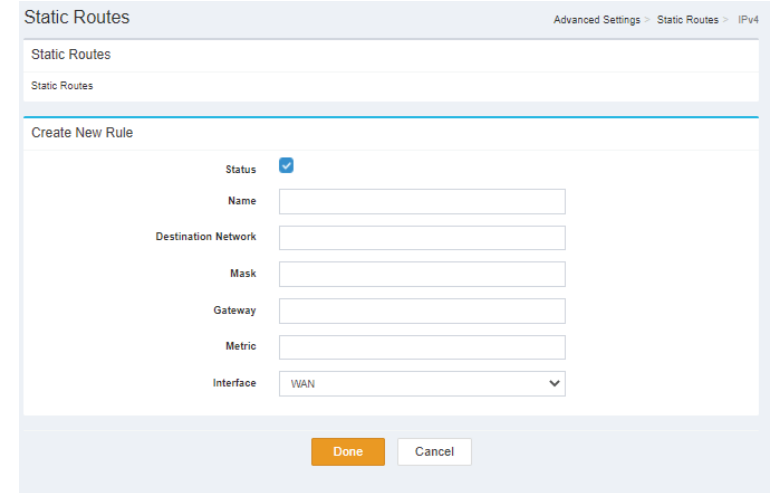
**Mask:** Indicates the Mask of the New Rule.

**Gateway:** Indicates the Gateway of the New Rule.

**Metric:** Indicates the Metric of the New Rule.

**Interface:** Indicates the Interface of the New Rule.

Click **Done** to save your settings, or **Cancel** to revert to your previous settings.



The screenshot shows the 'Static Routes' configuration page. At the top, there is a breadcrumb trail: 'Advanced Settings > Static Routes > IPv4'. Below this, the page title is 'Static Routes'. The main content area is titled 'Create New Rule' and contains the following fields:

- Status:** A checkbox that is checked.
- Name:** An empty text input field.
- Destination Network:** An empty text input field.
- Mask:** An empty text input field.
- Gateway:** An empty text input field.
- Metric:** An empty text input field.
- Interface:** A dropdown menu with 'WAN' selected.

At the bottom of the form, there are two buttons: 'Done' (orange) and 'Cancel' (white).

# Static Routes IPv6

## Static Routes Table: (Max Limit: 24)

**Status:** Indicates the Status.

**Name:** Indicates the name.

**Destination Network:** Indicates the Destination Network.

**Mask:** Indicates the Mask.

**Gateway:** Indicates the Gateway.

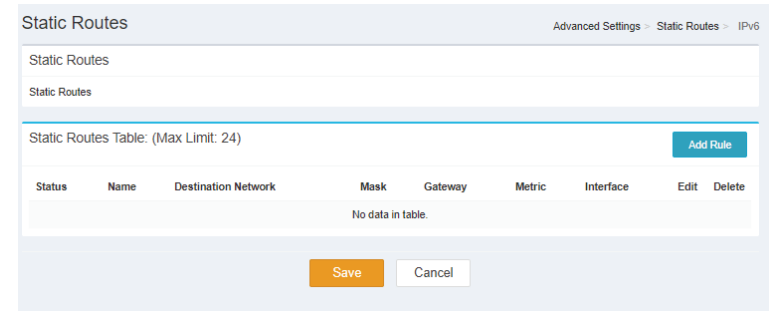
**Metric:** Indicates the Metric.

**Interface:** Indicates the Interface.

**Edit:** Delete the selected Static Route.

**Delete:** Delete the selected Static Route.

Click **Save** to save your settings, or **Cancel** to revert to your previous settings.



## Create New Rule

**Status:** Indicates the status of the New Rule

**Name** Indicates the name and specify which Application Name of the New Rule

**Destination Network** Indicates the Destination Network of the New Rule

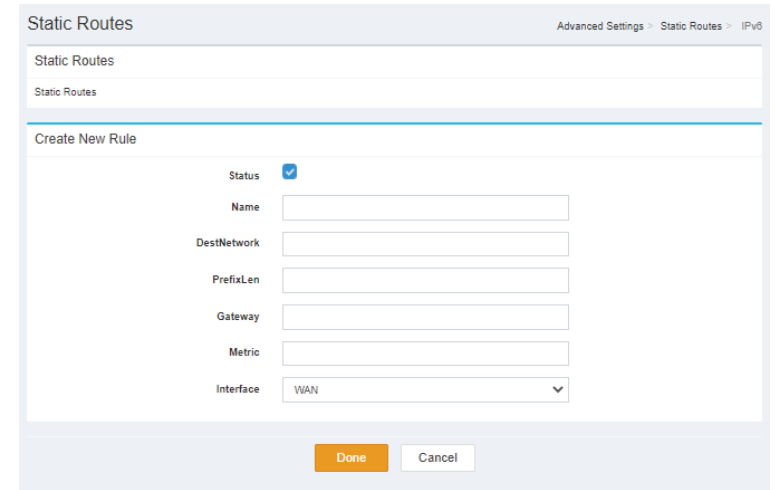
**PrefixLen** Indicates the PrefixLen of the New Rule.

**Gateway:** Indicates the Gateway of the New Rule.

**Metric:** Indicates the Metric of the New Rule.

**Interface:** Indicates the Interface of the New Rule.

Click **Done** to save your settings, or **Cancel** to revert to your previous settings.



The screenshot shows the 'Static Routes' configuration page. At the top right, there is a breadcrumb trail: 'Advanced Settings > Static Routes > IPv6'. Below this, the page title is 'Static Routes'. The main content area is titled 'Create New Rule' and contains the following fields:

- Status:** A checkbox that is checked.
- Name:** An empty text input field.
- DestNetwork:** An empty text input field.
- PrefixLen:** An empty text input field.
- Gateway:** An empty text input field.
- Metric:** An empty text input field.
- Interface:** A dropdown menu with 'WAN' selected.

At the bottom right of the form, there are two buttons: 'Done' (orange) and 'Cancel' (white).

# Dynamic DNS

## Dynamic DNS

**Enable Dynamic DNS:** Indicates whether Enable Dynamic DNS is **Enabled** or **Disabled**.

**Status:** Indicates the status.

## IPv6 Dynamic DNS Table: (Max Limit: 10)

**Status:** Indicates the Status.

**Host Name:** Indicates the Host Name.

**IPv6 Address:** Indicates the IPv6 Address.

**Edit:** Delete the selected IPv6 Dynamic DNS.

**Delete:** Delete the selected IPv6 Dynamic DNS.

Click **Save** to save your settings, or **Cancel** to revert to your previous settings.

Dynamic DNS Advanced Settings > Dynamic DNS

Dynamic DNS

Dynamic DNS description

---

Dynamic DNS

Enable Dynamic DNS

Status Disconnected

---

IPv6 Dynamic DNS Table: (Max Limit: 10) Add Rule

Status	Host Name	IPv6 Address	Edit	Delete
No data in table.				

Save Cancel

## Create New Rule

**Status:** Indicates the status of the New Rule.

**Host Name:** Indicates the Host Name of the New Rule.

**IPv6 Address:** Indicates the IPv6 Address and specify which Computer Name of the New Rule.

Click **Done** to save your settings, or **Cancel** to revert to your previous settings.

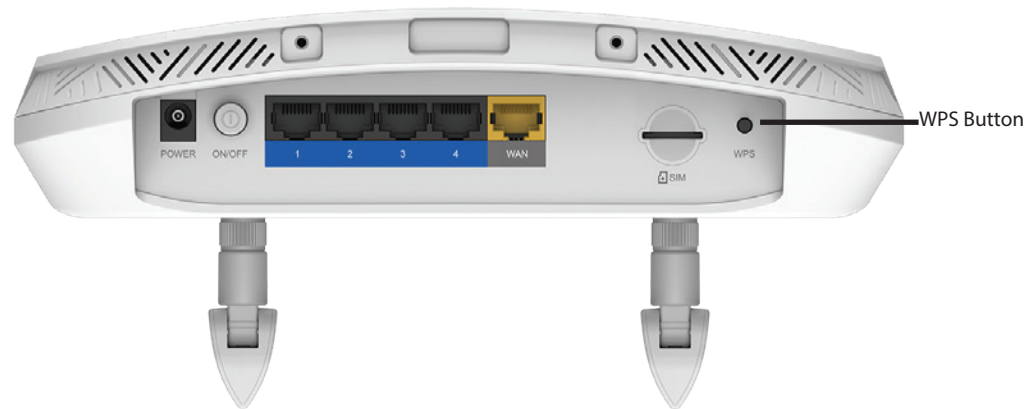
The screenshot shows the 'Dynamic DNS' configuration page. At the top right, it says 'Advanced Settings - Dynamic DNS'. Below the title, there are two input fields: 'Dynamic DNS' and 'Dynamic DNS description'. A horizontal line separates this from the main configuration area. In this area, there is a section for 'Dynamic DNS' with a toggle switch for 'Enable Dynamic DNS' (currently off) and a status indicator showing 'Status Disconnected'. Below this is a table titled 'IPv6 Dynamic DNS Table: (Max Limit: 10)' with an 'Add Rule' button. The table has columns for 'Status', 'Host Name', 'IPv6 Address', 'Edit', and 'Delete'. The table is currently empty, displaying 'No data in table.' At the bottom of the page, there are 'Save' and 'Cancel' buttons.

# Connect a Wireless Client to your Router

## WPS Button

The easiest way to connect your wireless devices to the router is with WPS (Wi-Fi Protected Setup). Most wireless devices such as wireless adapters, media players, Blu-ray DVD players, wireless printers and cameras will have a WPS button (or a software utility with WPS) that you can press to connect to the DWR-978 router. Please refer to your user manual for the wireless device you want to connect to make sure you understand how to enable WPS. Once you know, follow the steps below:

**Step 1** - Press the WPS button on the DWR-978 for about 6 seconds. The WLAN LED on the front will start to blink.



**Step 2** - Within 2 minutes, press the WPS button on your wireless client (or launch the software utility and start the WPS process).

**Step 3** - Allow up to 1 minute for your connection to be configured. Once the Internet light stops blinking, you will be connected and your wireless connection will be encrypted with WPA2.

# Connecting to a Wireless Network

## Windows® 10

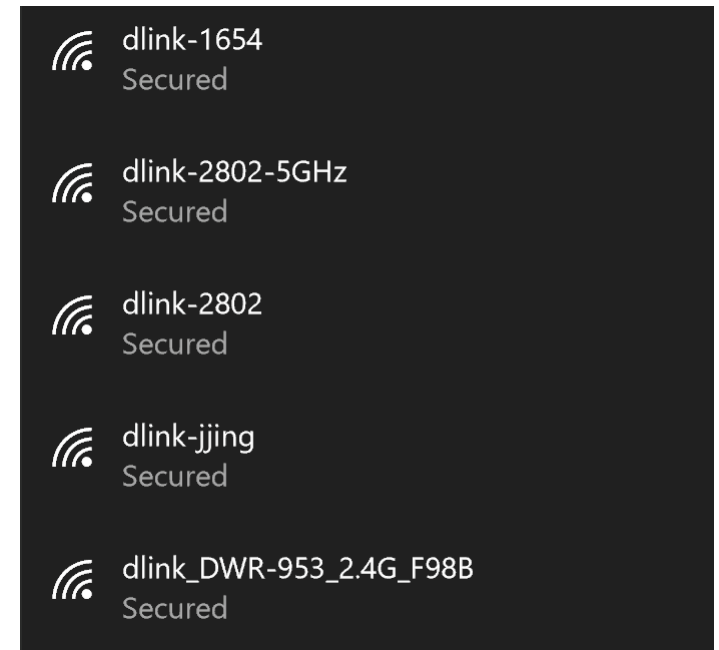
To connect to a wireless network using Windows 10, you will need to know the wireless network name (SSID) and Wi-Fi password (security key) of the device you are connecting to.

To join an existing network, locate the wireless network icon in the taskbar, next to the time display and click on it.



Wireless Icon

Clicking on this icon will display a list of wireless networks which are within range of your computer. Select the desired network by clicking on its SSID.



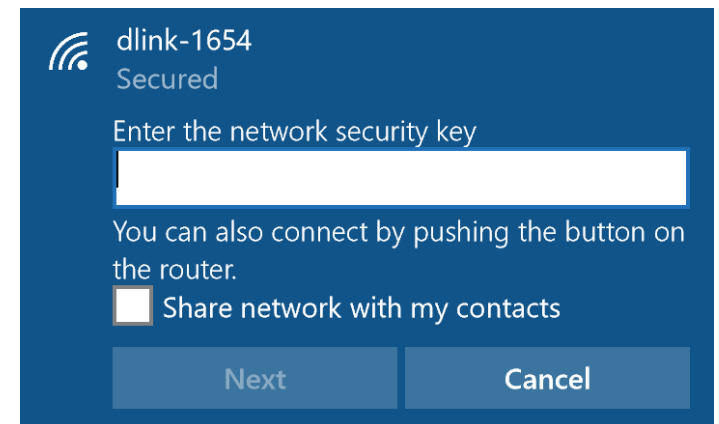
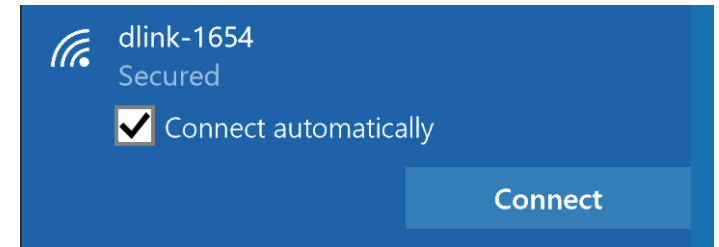
To connect to the network, click **Connect**.

To automatically connect when your device is in range, click the **Connect Automatically** check box. Your computer will now automatically connect to this wireless network whenever it is detected.

You will then be prompted to enter the Wi-Fi password (network security key) for the wireless network. Enter the password into the box and click **Next** to connect to the network.

You can also use Wi-Fi Protected Setup (WPS) to connect to the wireless network. Press the WPS button on your device and you will be automatically connected.

It may take 20-30 seconds to connect to the wireless network. If the connection fails, please verify that the security settings are correct. The key or passphrase must be exactly the same as the one on the wireless router.



# Windows® 8

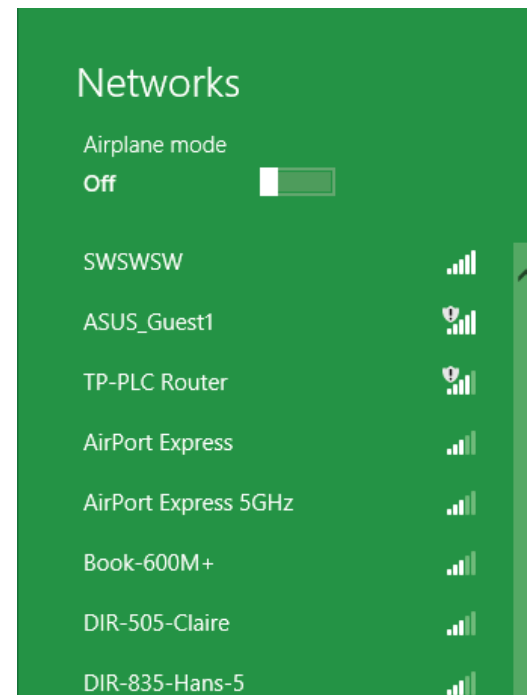
## WPA/WPA2

It is recommended that you enable wireless security (WPA/WPA2) on your wireless router or access point before configuring your wireless adapter. If you are joining an existing network, you will need to know the security key (Wi-Fi password) being used.

To join an existing network, locate the wireless network icon in the taskbar next to the time display.



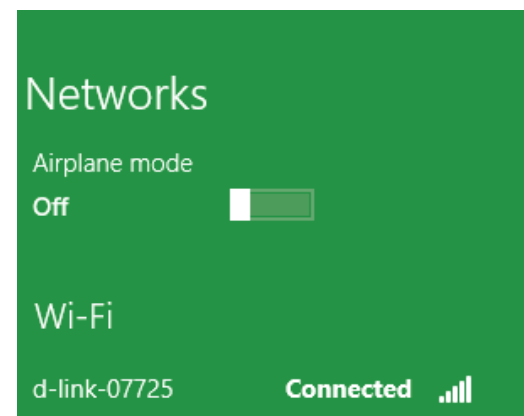
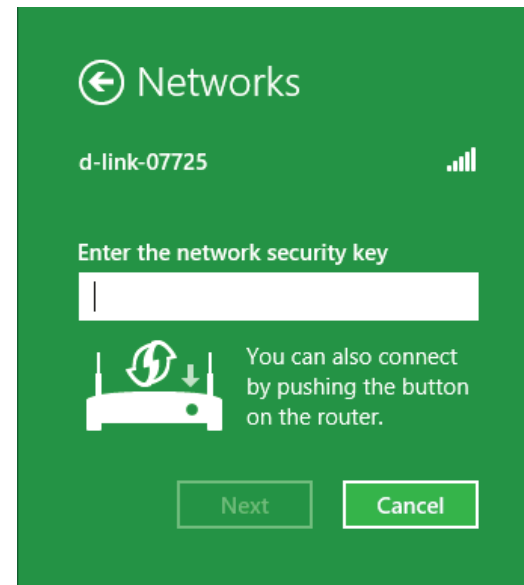
Clicking on this icon will display a list of wireless networks that are within connecting proximity of your computer. Select the desired network by clicking on the network name.



You will then be prompted to enter the network security key (Wi-Fi password) for the wireless network. Enter the password into the box and click **Next**.

If you wish to use Wi-Fi Protected Setup (WPS) to connect to the router, you can also press the WPS button on your router during this step to enable the WPS function.

When you have established a successful connection to a wireless network, the word **Connected** will appear next to the name of the network to which you are connected to.

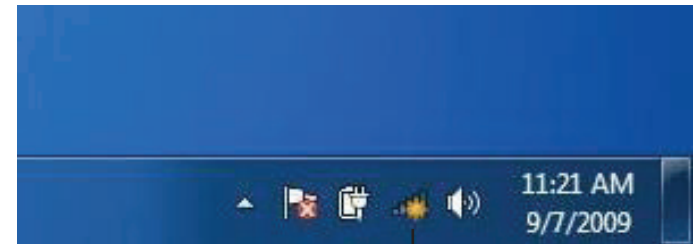


# Windows® 7

## WPA/WPA2

It is recommended that you enable wireless security (WPA/WPA2) on your wireless router or access point before configuring your wireless adapter. If you are joining an existing network, you will need to know the security key or passphrase being used.

1. Click on the wireless icon in your system tray (lower-right corner).



Wireless Icon

2. The utility will display any available wireless networks in your area.

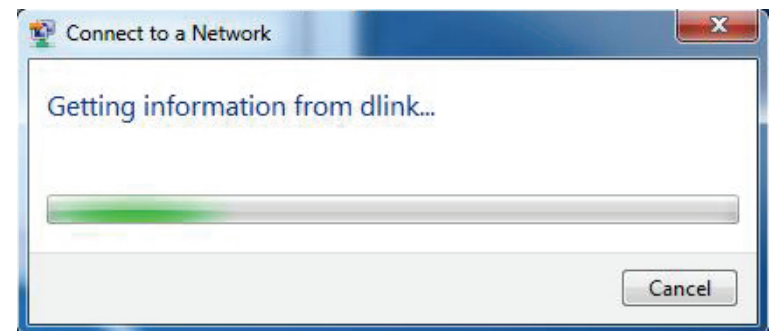


3. Highlight the wireless connection with Wi-Fi name (SSID) you would like to connect to and click the **Connect** button.

If you get a good signal but cannot access the Internet, check your TCP/IP settings for your wireless adapter. Refer to **Networking Basics** on page 78 for more information.

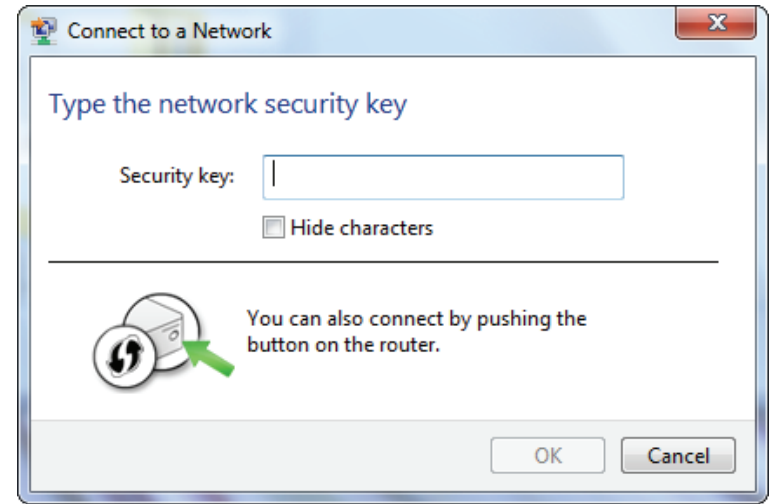


4. The following window appears while your computer tries to connect to the router.



5. Enter the same security key or passphrase (Wi-Fi password) that is on your router and click **Connect**. You can also connect by pushing the WPS button on the router.

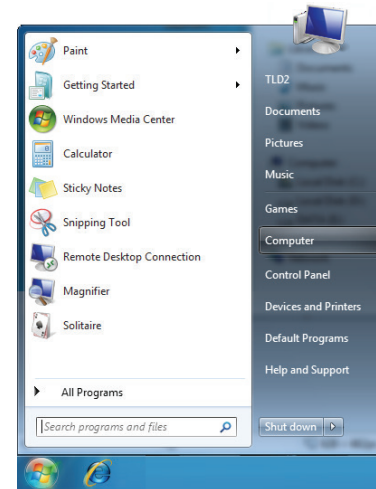
It may take 20-30 seconds to connect to the wireless network. If the connection fails, please verify that the security settings are correct. The key or passphrase must be exactly the same as the one on the wireless router.



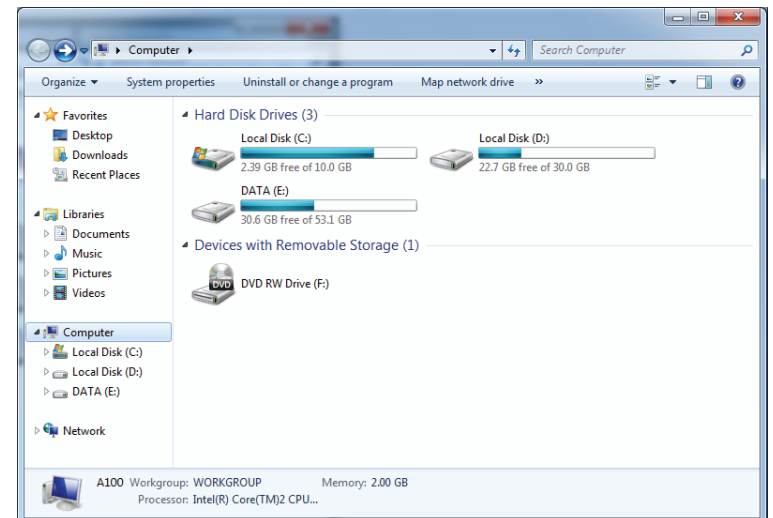
# WPS

The WPS feature of the DWR-978 can be configured using Windows® 7. Carry out the following steps to use Windows® 7 to configure the WPS feature:

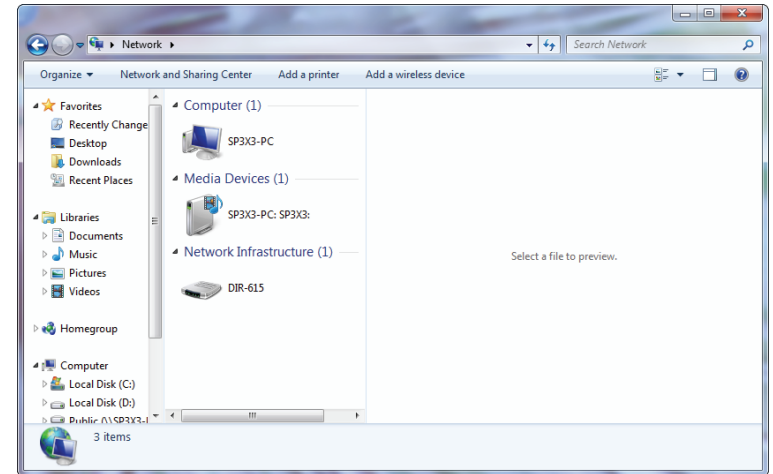
1. Click the **Start** button and select **Computer** from the Start menu.



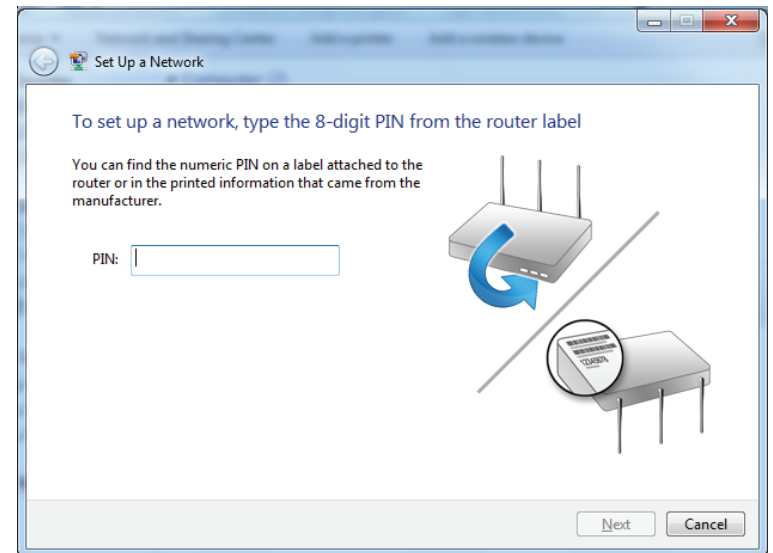
2. Click **Network** on the left side.



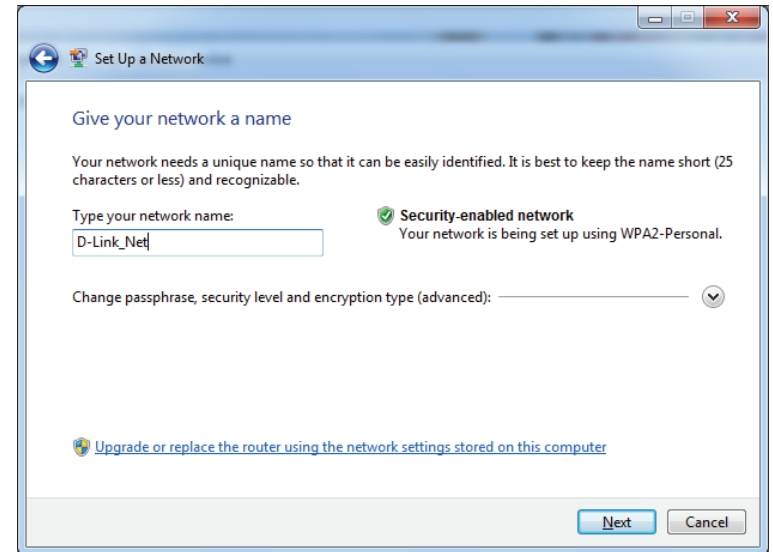
3. Double-click the DWR-978.




4. Input the WPS PIN number (on the router label) in the **Setup > Wireless Setup** menu in the Router's Web UI) and click **Next**.

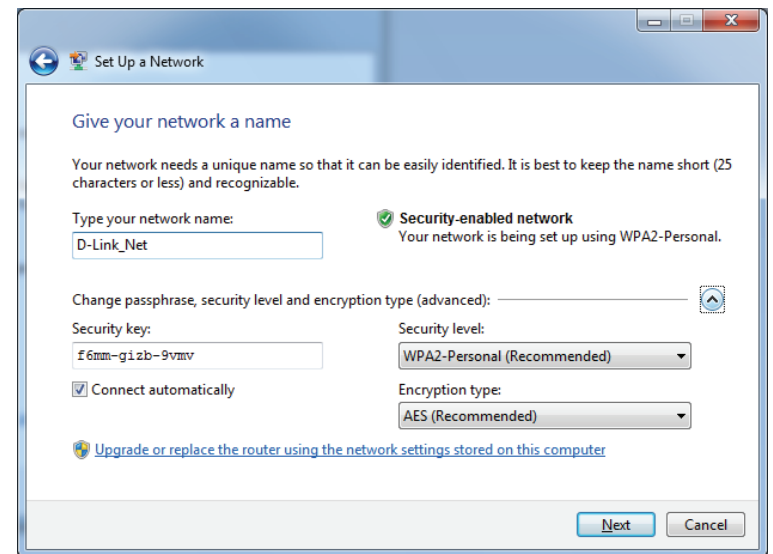


5. Type a name to identify the network.



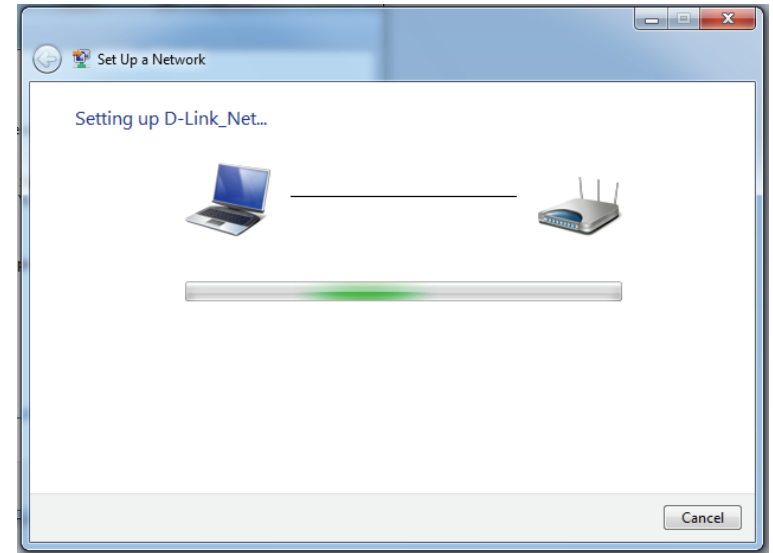
6. To configure advanced settings, click the  icon.

Click **Next** to continue.



7. The following window appears while the router is being configured.

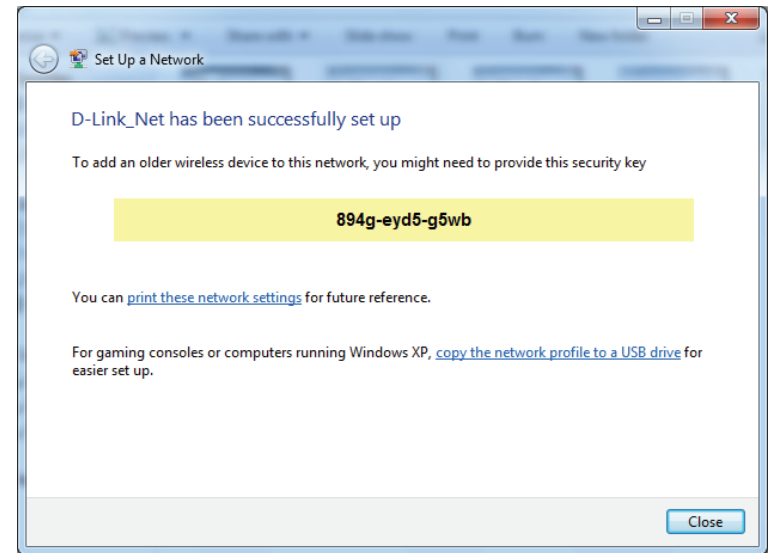
Wait for the configuration to complete.



8. The following window informs you that WPS on the router has been set up successfully.

Make a note of the security key as you may need to provide this security key if adding an older wireless device to the network in the future.

9. Click **Close** to complete WPS setup.



# Windows Vista®

Windows Vista® users may use the built-in wireless utility. If you are using another company's wireless utility, please refer to the user manual of your wireless adapter for help connecting to a wireless network. Most wireless utilities will have a "site survey" option similar to the Windows Vista® utility as seen below.

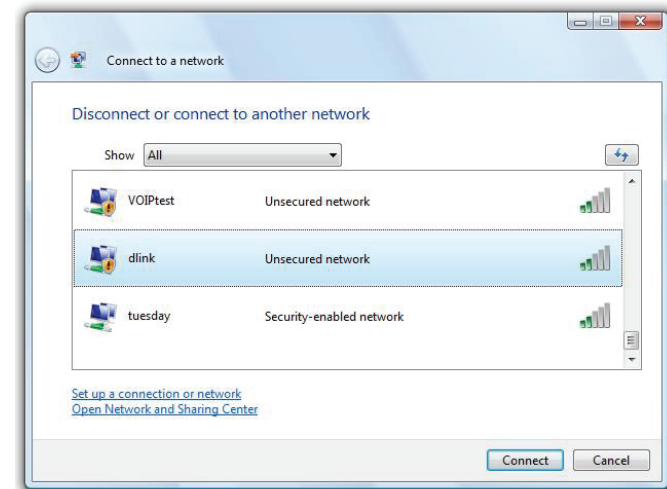
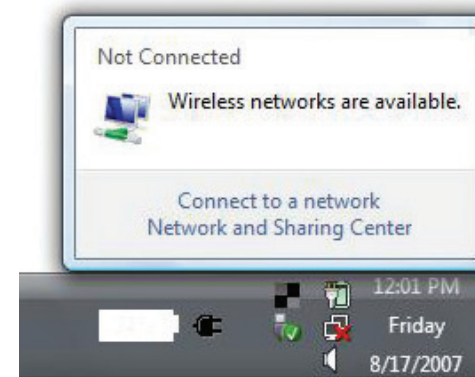
If you receive the **Wireless Networks Detected** bubble, click on the center of the bubble to access the utility.

or

Right-click on the wireless computer icon in your system tray (lower-right corner next to the time). Select **Connect to a network**.

The utility will display any available wireless networks in your area. Click on a network (displayed using the SSID) and click the **Connect** button.

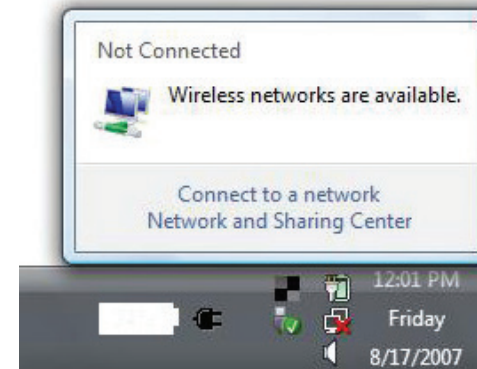
If you get a good signal but cannot access the Internet, check you TCP/IP settings for your wireless adapter. Refer to the **Networking Basics** section in this manual for more information.



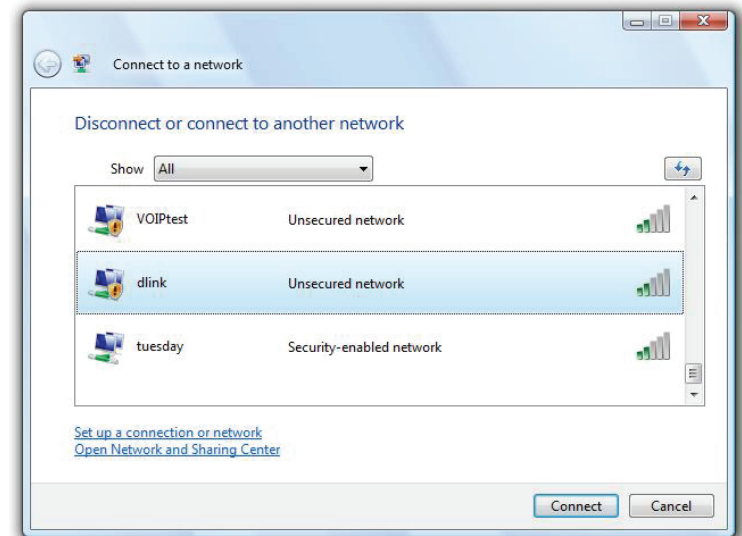
## WPA/WPA2

It is recommended that you enable wireless security (WPA/WPA2) on your wireless router or access point before configuring your wireless adapter. If you are joining an existing network, you will need to know the security key or passphrase being used.

1. Open the Windows Vista® Wireless Utility by right-clicking on the wireless computer icon in your system tray (lower right corner of screen). Select **Connect to a network**.

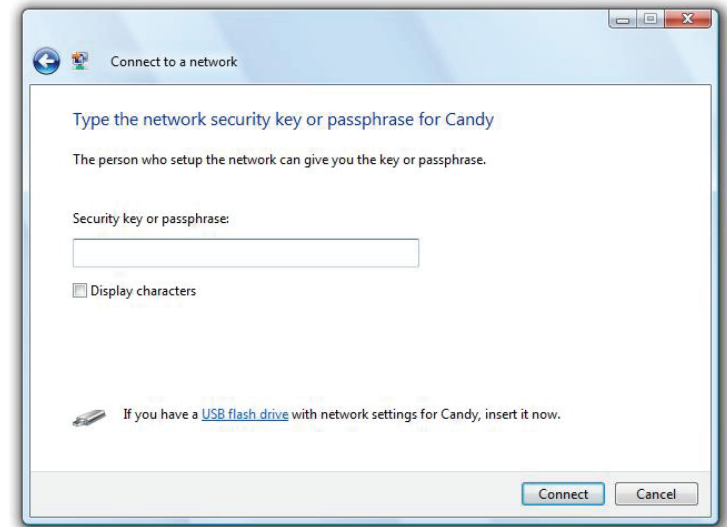


2. Highlight the Wi-Fi name (SSID) you would like to connect to and click **Connect**.



3. Enter the same security key or passphrase (Wi-Fi password) that is on your router and click **Connect**.

It may take 20-30 seconds to connect to the wireless network. If the connection fails, please verify that the security settings are correct. The key or passphrase must be exactly the same as the one on the wireless router.



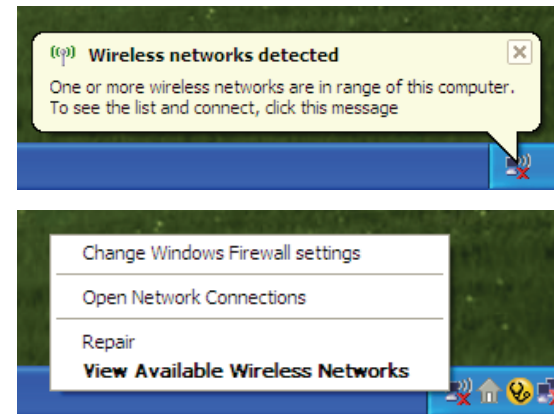
# Windows® XP

Windows® XP users may use the built-in wireless utility (Zero Configuration Utility). The following instructions are for Service Pack 2 users. If you are using another company's utility, please refer to the user manual of your wireless adapter for help with connecting to a wireless network. Most utilities will have a "site survey" option similar to the Windows® XP utility as seen below.

If you receive the **Wireless Networks Detected** bubble, click on the center of the bubble to access the utility.

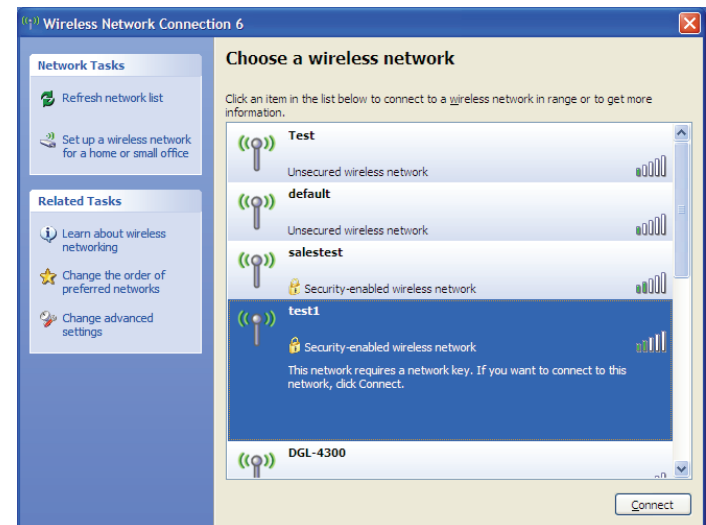
or

Right-click on the wireless computer icon in your system tray (lower-right corner next to the time). Select **View Available Wireless Networks**.



The utility will display any available wireless networks in your area. Click on a Wi-Fi network (displayed using the SSID) and click the **Connect** button.

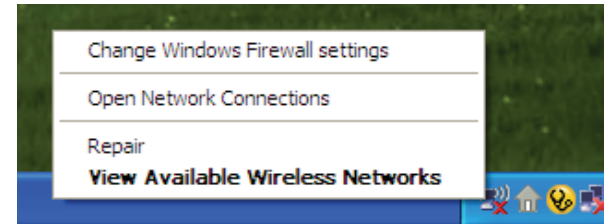
If you get a good signal but cannot access the Internet, check you TCP/IP settings for your wireless adapter. Refer to the **Networking Basics** section in this manual for more information.



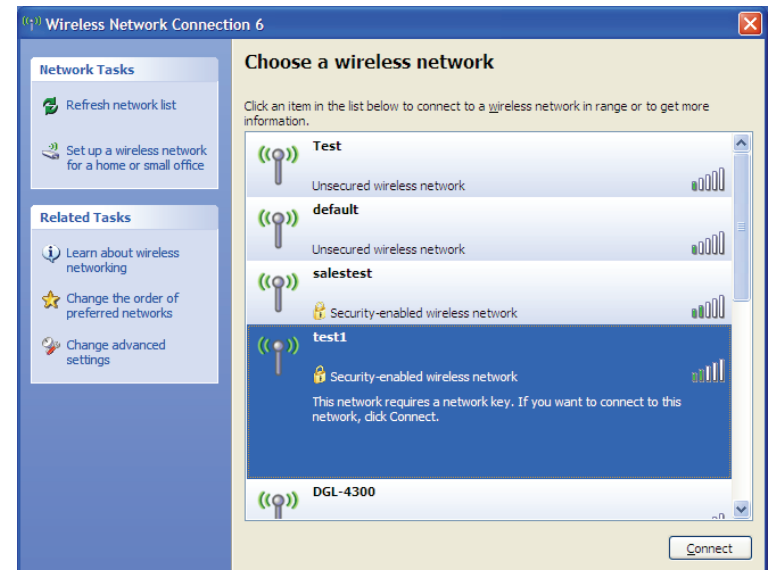
## WPA/WPA2

It is recommended to enable WPA on your wireless router or access point before configuring your wireless adapter. If you are joining an existing network, you will need to know the WPA key being used.

1. Open the Windows® XP Wireless Utility by right-clicking on the wireless computer icon in your system tray (lower-right corner of screen). Select **View Available Wireless Networks**.

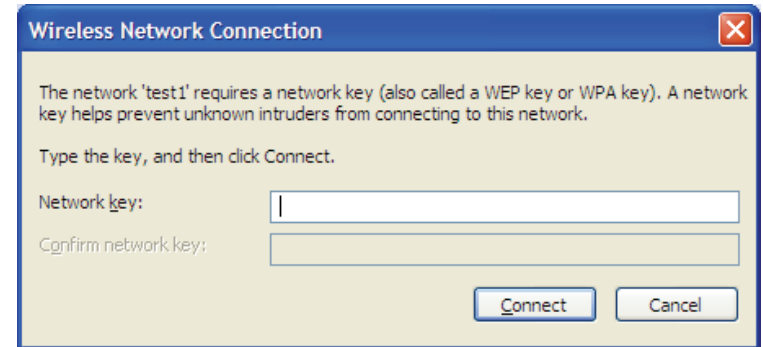


2. Highlight the Wi-Fi network (SSID) you would like to connect to and click **Connect**.



3. The **Wireless Network Connection** box will appear. Enter the WPA-PSK Wi-Fi password and click **Connect**.

It may take 20-30 seconds to connect to the wireless network. If the connection fails, please verify that the WPA-PSK settings are correct. The Wi-Fi password must be exactly the same as on the wireless router.



# Troubleshooting

This chapter provides solutions to problems that can occur during the installation and operation of the DWR-978. 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 these examples.

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

When entering the IP address of the D-Link router (**192.168.0.1** for example), you are not connecting to a website, nor do you 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:
  - Microsoft Internet Explorer® 7 or higher
  - Mozilla Firefox 3.5 or higher
  - Google™ Chrome 8 or higher
  - Apple 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 ZoneAlarm, BlackICE, Sygate, Norton Personal Firewall, and Windows® XP 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 router in the address bar. This should open the login page for your web management.
- If you still cannot access the configuration, unplug the power to the router 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.

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

If you forgot your password, you must reset your router. This process will change all your settings back to the factory defaults.

To reset the router, locate the reset button (hole) on the rear panel of the unit. With the router powered on, use a paperclip to hold the button down for 10 seconds. Release the button and the router will go through its reboot process. Wait about 30 seconds to access the router. The default IP address is **192.168.0.1**. When logging in, leave the password box empty.

### 3. Why can't I connect to certain sites or send and receive emails when connecting through my router?

If you are having a problem sending or receiving email, or connecting to secure sites such as eBay, banking sites, and Hotmail, we suggest lowering the MTU in increments of ten (Ex. 1492, 1482, 1472, etc).

To find the proper MTU Size, you'll have to do a special ping of the destination you're trying to go to. A destination could be another computer, or a URL.

- Click on **Start** and then click **Run**.
- Windows® 95, 98, and Me users type in **command** (Windows® NT, 2000, XP, Vista®, and 7 users type in **cmd**) and press **Enter** (or click **OK**).
- Once the window opens, you'll need to do a special ping. Use the following syntax:

**ping [url] [-f] [-l] [MTU value]**

Example: **ping yahoo.com -f -l 1472**

```
C:\>ping yahoo.com -f -l 1482
Pinging yahoo.com [66.94.234.13] with 1482 bytes of data:
Packet needs to be fragmented but DF set.
Packet needs to be fragmented but DF set.
Packet needs to be fragmented but DF set.
Packet needs to be fragmented but DF set.
Ping statistics for 66.94.234.13:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\>ping yahoo.com -f -l 1472
Pinging yahoo.com [66.94.234.13] with 1472 bytes of data:
Reply from 66.94.234.13: bytes=1472 time=93ms TTL=52
Reply from 66.94.234.13: bytes=1472 time=109ms TTL=52
Reply from 66.94.234.13: bytes=1472 time=125ms TTL=52
Reply from 66.94.234.13: bytes=1472 time=203ms TTL=52
Ping statistics for 66.94.234.13:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 93ms, Maximum = 203ms, Average = 132ms
C:\>
```

You should start at 1472 and work your way down by 10 each time. Once you get a reply, go up by 2 until you get a fragmented packet. Take that value and add 28 to the value to account for the various TCP/IP headers. For example, let's say that 1452 was the proper value, the actual MTU size would be 1480, which is the optimum for the network we're working with ( $1452+28=1480$ ).

Once you find your MTU, you can now configure your router with the proper MTU size.

To change the MTU rate on your router follow the steps below:

- Navigate to the configuration page.
- To change the MTU, enter the number in the MTU field and click **Apply** to save your settings.
- Test your email. If changing the MTU does not resolve the problem, continue changing the MTU in increments of ten.

# 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. Strictly adhering to the IEEE standard, the D-Link wireless family of 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 delivers.

A wireless local area network (WLAN) is a cellular computer network that transmits and receives data with radio signals instead of wires. Wireless LANs 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 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.

Under many circumstances, it may be desirable for mobile network devices to link to a conventional Ethernet LAN in order to use servers, printers or an Internet connection supplied through the wired LAN. A wireless router is a device used to provide this link.

## **What is Wireless?**

Wireless or Wi-Fi technology is another way of connecting your computer to the network without using wires. Wi-Fi uses radio frequency to connect wirelessly so you have the freedom to connect computers anywhere in your home or office network.

## **Why D-Link Wireless?**

D-Link is the worldwide leader and award winning designer, developer, and manufacturer of networking products. D-Link delivers the performance you need at a price you can afford. D-Link has all the products you need to build your network.

## **How does wireless work?**

Wireless works similarly to how cordless phones work, through radio signals that transmit data from one point A to point B. But wireless technology has restrictions as to how you can access the network. You must be within the wireless network range area to be able to connect your computer. There are two different types of wireless networks: Wireless Local Area Network (WLAN), and Wireless Personal Area Network (WPAN).

### **Wireless Local Area Network (WLAN)**

In a wireless local area network, a device called an Access Point (AP) connects computers to the network. The access point has a small antenna attached to it, which allows it to transmit data back and forth over radio signals. With an indoor access point the signal can travel up to 300 feet. With an outdoor access point the signal can reach out up to 30 miles to serve places like manufacturing plants, industrial locations, university and high school campuses, airports, golf courses, and many other outdoor venues.

## **Wireless Personal Area Network (WPAN)**

Bluetooth is the industry standard wireless technology used for WPAN. Bluetooth devices in WPAN operate in a range up to 30 feet away.

Compared to WLAN, the speed and wireless operation range are both less than WLAN, but in return it doesn't use nearly as much power. This makes it ideal for personal devices, such as mobile phones, PDAs, headphones, laptops, speakers, and other devices that operate on batteries.

## **Who uses wireless?**

Wireless technology has become so popular in recent years that almost everyone is using it, whether it's for home, office, business, D-Link has a wireless solution for it.

### **Home Uses/Benefits**

- Gives everyone at home broadband access
- Surf the web, check email, instant message, etc.
- Gets rid of the cables around the house
- Simple and easy to use

### **Small Office and Home Office Uses/Benefits**

- Stay on top of everything at home as you would at office
- Remotely access your office network from home
- Share Internet connection and printer with multiple computers
- No need to dedicate office space

## **Where is wireless used?**

Wireless technology is expanding everywhere, not just at home or office. People like the freedom of mobility and it's becoming so popular that more and more public facilities now provide wireless access to attract people. The wireless connection in public places is usually called "hotspots".

Using a D-Link CardBus Adapter with your laptop, you can access the hotspot to connect to the Internet from remote locations like: airports, hotels, coffee shops, libraries restaurants, and convention centers.

Wireless network is easy to setup, but if you're installing it for the first time it could be quite a task not knowing where to start. That's why we've put together a few setup steps and tips to help you through the process of setting up a wireless network.

## **Tips**

Here are a few things to keep in mind, when you install a wireless network.

### **Centralize your router or access point**

Make sure you place the router/access point in a centralized location within your network for the best performance. Try to place the router/access point as high as possible in the room, so the signal gets dispersed throughout your home. If you have a two-story home, you may need a repeater to boost the signal to extend the range.

### **Eliminate interference**

Place home appliances such as cordless telephones, microwaves, and televisions as far away as possible from the router/access point. This would significantly reduce any interference that the appliances might cause since they operate on same frequency.

## Security

Turn on WPA2 encryption on the router to help protect your wireless network from unwanted access by people close to your network, such as neighbors or intruders. Refer to the product manual for detailed information on how to set it up.

# Wireless Modes

There are basically two modes of networking:

- **Infrastructure** – All wireless clients will connect to an access point or wireless router.
- **Ad hoc** – Directly connecting to another computer for peer-to-peer communication using wireless network adapters on each computer, such as two or more wireless network adapters.

An Infrastructure network contains an access point or wireless router. All the wireless devices, or clients, will connect to the wireless router or access point.

An ad hoc network contains only clients, such as laptops with wireless adapters. All the adapters must be in ad hoc mode to communicate.

# Networking Basics

## Check your IP address

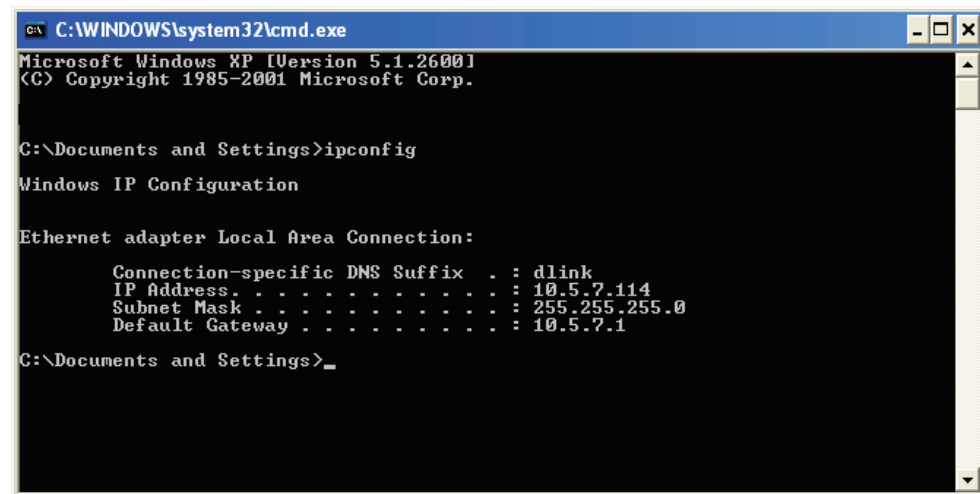
After you install your new D-Link adapter, by default, the TCP/IP settings should be set to obtain an IP address from a DHCP server (i.e. wireless router) automatically. To verify your IP address, please follow the steps below.

Click on **Start > Run**. In the run box type **cmd** and click **OK**. (Windows® 10/7/Vista® users type **cmd** in the **Start Search** box.)

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.



```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings>ipconfig

Windows IP Configuration

Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix  . : dlink
    IP Address . . . . . : 10.5.7.114
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 10.5.7.1

C:\Documents and Settings>_
```

## 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® 7 - Click on **Start > Control Panel > Network and Internet > Network and Sharing Center.**
  - Windows Vista® - Click on **Start > Control Panel > Network and Internet > Network and Sharing Center > Manage Network Connections.**
  - Windows® XP - Click on **Start > Control Panel > Network Connections.**
  - Windows® 2000 - From the desktop, right-click **My Network Places > Properties.**

**Step 2**  
Right-click on the **Local Area Connection** which represents your network adapter and select **Properties.**

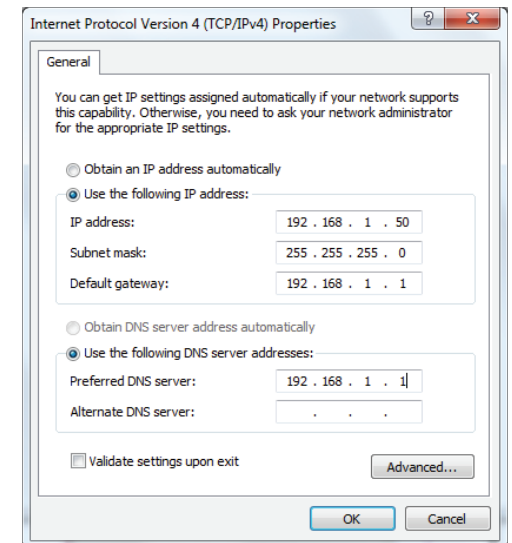
**Step 3**  
Highlight **Internet Protocol Version 4 (TCP/IPv4)** and click **Properties.**

**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 192.168.1.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 the Default Gateway the same as the LAN IP address of your router (I.E. 192.168.0.1).

Set Primary DNS the same as the LAN IP address of your router (192.168.0.1). The Alternate DNS is not needed or you may enter a DNS server from your ISP.

**Step 5**  
Click **OK** twice to save your settings.



## Wireless Security

This section will show you the different levels of security you can use to help protect your data from intruders. The DWR-978 offers the following types of security:

- WPA2 (Wi-Fi Protected Access 2)
- WPA (Wi-Fi Protected Access)
- WPA2-PSK (Pre-Shared Key)
- WPA-PSK (Pre-Shared Key)

### What is WPA?

WPA (Wi-Fi Protected Access), is a Wi-Fi standard that was designed to improve the security features of WEP (Wired Equivalent Privacy).

The 2 major improvements over WEP:

- Improved data encryption through the Temporal Key Integrity Protocol (TKIP). TKIP scrambles the keys using a hashing algorithm and by adding an integrity-checking feature. WPA2 is based on 802.11i and uses Advanced Encryption Standard (AES) instead of TKIP.
- User authentication, which is generally missing in WEP, which is incorporated through the extensible authentication protocol (EAP). WEP regulates access to a wireless network based on a computer's hardware-specific MAC address, which is relatively simple to be sniffed out and stolen. EAP is built on a stronger public-key encryption system so that only authorized network users should be able to access the network.

WPA-PSK/WPA2-PSK uses a passphrase or key to authenticate your wireless connection. The key is an alpha-numeric password between 8 and 63 characters long. The password can include symbols (!?\*&\_) and spaces. This key must be the exact same key entered on your wireless router or access point. This is the technique typically used on home networks.

WPA/WPA2 incorporates user authentication through the Extensible Authentication Protocol (EAP). EAP is built on an even stronger key encryption system to make it much more difficult for unauthorized network users to access the network. EAP is often used in corporate or university environments.

# Technical Specifications

General	
Device Interfaces	4 x 10/100/1000 Gigabit Ethernet LAN Ports, 1 x 10/100/1000 Mbps Gigabit Ethernet WAN port, 1 x USB 2.0 Port, 1 x LTE SIM/USIM Slot, 1 x Reset Button, 1 x WPS Button, 1 x Power Port
LED	Power, WAN, WLAN, Phone, LAN, 3G, 4G, LTE 5GNR
Antenna Type	2 x 2.4G WLAN Internal Antenna, 2 x 5G WLAN Internal Antenna, 2 x 2 LTE External Antenna, 2 x 2 LTE Internal Antenna
Wi-Fi Data Rate	2.4 GHz Up to 1732Mbps, 5 GHz Up to 800Mbps
Wireless IEEE Standard	IEEE 802.11 ac/n/g/b/k/v/r
Data Signal Rate	5G NR/LTE to GE LAN max data rate up to 900Mbps, 5G NR/LTE to 2.4G WLAN max data rate up to 500Mbps, 5G NR/LTE to 5Ghz WLAN max data rate up to 600Mbps, 2.4Ghz WLAN to GE LAN max up to 600Mbps, 5Ghz WLAN to GE LAN max up to 1Gbps
WAN Interface	DHCP, Static IP, PPPoE (PPPoE Pass-through), PPTP, L2TP, IPsec (VPN Pass-through), DS-Lite, Support Dual Access PPPoE, L2TP, PPTP for Russia, Support 802.1p & 802.1p VLAN tagging and Priority bit, Concurrent session: 32000
Functionality	
Security Protocol	WEP (128bits), 802.11i 128-bit TKIP/AES
Firewall	DoS , Stateful Packet Inspection , Anti-spoofing Checking, IP/MAC Address Filtering , DMZ
Mesh	D-Link EasyMesh
QoS	D-Link Intelligent QoS Technology
SpeedTest	Ookla SpeedTest
Software	
Device Management	Mobile app (iOS and Android), Web UI
Physical	
Hardware version	A1
Size	234.5 x 245 x 55.25 mm (9.23 x 9.64 x 2.18 in)
Weight	920 g (2.03 lbs)
Power Input	12 V 4 A
Operating Temperature	0 to 40 °C (32 to 104 °F)
Storage Temperature	-10 to 70 °C (14 to 158 °F)
Operating Humidity	10% to 90% non-condensing
Storage Humidity	5% to 95% non-condensing
Certifications	CE , FCC , PTCRB, EMC, Safety , RoHS

Bandwidth	
5G NR Sub6Ghz	n1, n2, n3, n5, n7, n8, n12, n20, n28, n41, n66, n71,n77,n78, n79
LTE Cat20 FDD	B1, B2, B3, B4, B5, B7, B8, B12, B13, B14, B17, B18, B19, B20, B25, B26, B28, B29, B30, B32, B66, B71
LTE Cat20 TDD	B34, B38, B39, B40, B41, B42, B43, B46, B48
WCDMA	B1, B2, B3/9, B4, B5/6/19, B8

<sup>1</sup>Mobile broadband speeds will vary and are dependent on a range of factors including network configuration, network capacity, signal strength, and the conditions of your mobile broadband subscription. <sup>2</sup>Maximum wireless signal rate derived from IEEE Standard 802.11 specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, as well as network overhead, can lower actual data throughput rate. Environmental factors will adversely affect wireless signal range. <sup>3</sup>Requires subscription with a mobile Internet service provider (not included).

# Regulatory Information

## **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.

## **Non-modification Statement:**

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

## **Caution:**

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.

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

## **Note:**

The country code selection is for non-USA models only and is not available to all USA models. Per FCC regulations, all WiFi product marketed in the USA must be fixed to USA operational channels only.

**Important Notice:**

**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 20 cm between the radiator and your body.