



# User Manual

## HD Ultra-Wide View Wi-Fi Camera

DCS-960L

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# Manual Overview

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## Manual Revision

Revision	Date	Description
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# Product Overview

## Package Contents

- DCS-960L HD Ultra-Wide View Wi-Fi Camera
- Power Adapter
- Mounting Kit
- Quick Install Guide
- Quick Install Card

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

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

**Note:** You can power this camera with a USB battery that supplies 5 V and at least 1.5 A of power.



## System Requirements

- 802.11ac/n/g/a router (a D-Link Cloud Router is recommended)
- A broadband Internet connection
- iPhone, iPad, Android, or Windows smartphone or tablet (please refer to the mobile app's store page to check whether your device is compatible)

# Introduction

Congratulations on your purchase of the DCS-960L HD Ultra-Wide View Wi-Fi Camera. The DCS-960L is a versatile and unique solution for your small office or home. Unlike a standard webcam, the DCS-960L is a complete system with a built-in CPU and web server that transmits high quality video images for security and surveillance. The IR LED provides around the clock surveillance regardless of the lighting conditions. The DCS-960L can be accessed remotely, and controlled from any PC/Notebook over your local network or through the Internet via a web browser. The simple installation and intuitive web-based interface offer easy integration with your Ethernet/Fast Ethernet or 802.11b/g/n/ac wireless network. The DCS-960L also comes with remote monitoring and motion/sound detection features for a complete and cost-effective home security solution.

# Features

## **Simple to Use**

The DCS-960L is a stand-alone system with a built-in CPU, requiring no special hardware or software such as PC frame grabber cards. The DCS-960L supports both ActiveX mode for Internet Explorer and Java mode for other browsers such as Firefox® and Safari®.

## **Supports a Variety of Platforms**

Supporting TCP/IP networking, HTTP, and other Internet related protocols. The DCS-960L can also be integrated easily into other Internet/Intranet applications because of its standards-based features.

## **Wireless AC Support**

The DCS-960L offers 802.11ac wireless, making the DCS-960L easy to integrate into your existing network environment. The DCS-960L also works 802.11n/g/b routers or access points for added flexibility. The Site Survey feature also allows you to view and connect to any available wireless networks.

## **Web Configuration**

Using a standard Web browser, administrators can configure and manage the Network Camera directly from its own Web page via Intranet or Internet. This means you can access your DCS-960L anytime, anywhere in the world.

## **Broad Range of Applications**

With today's high-speed Internet services, the Network Camera can provide the ideal solution for delivering live video images over the Intranet and Internet for remote monitoring. The Network Camera allows remote access using a Web browser for live image viewing, and allows the administrator to manage and control the Network Camera anytime, anywhere in the world. Many applications exist, including industrial and public monitoring of homes, offices, banks, hospitals, child-care centers, and amusement parks.

## **Comprehensive Day/Night Surveillance**

The built-in infrared LEDs enable night time viewing of up to 16 feet (5 meters), allowing you to keep watch over an area, even in complete darkness.

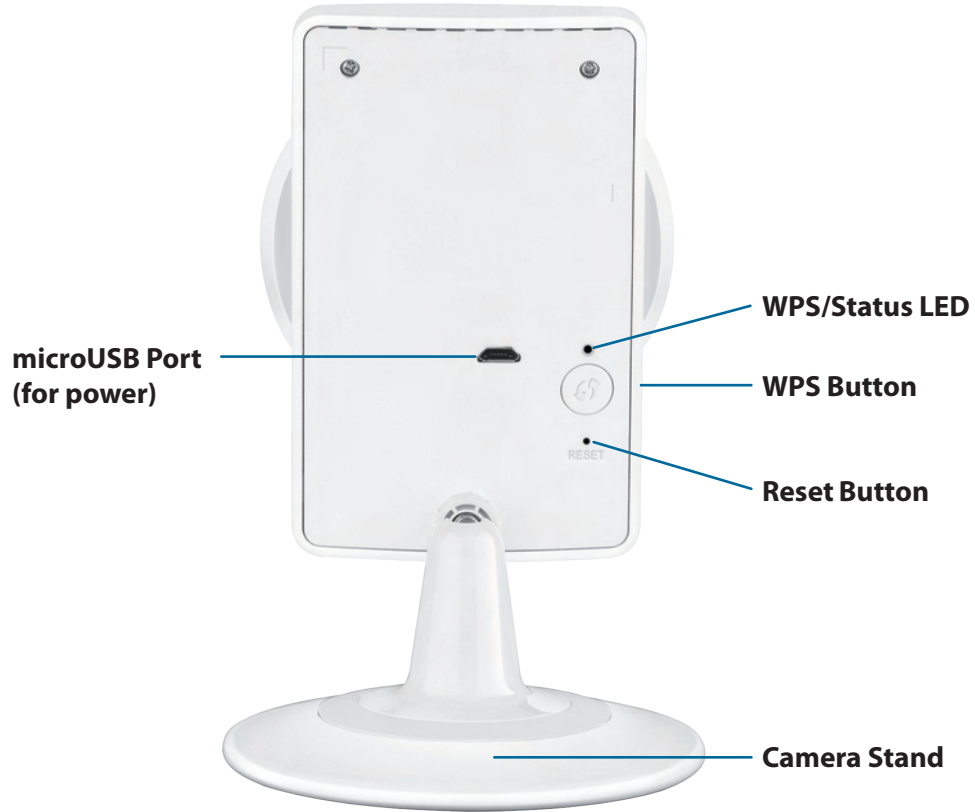
# Hardware Overview

## Front View





## Rear View



## Side View



# Installation

There are two ways to set up your camera:

**mydlink Lite Mobile App:** You can use the mydlink Lite mobile app to guide you through setup and initial configuration of your camera. Refer to **Mobile App Setup** on page 12.

**Zero Configuration Setup:** If you have a mydlink-enabled router (D-Link cloud router), this is the easiest way to set up your camera. Refer to **Zero Configuration Setup** on page 13.

# Wireless Installation Considerations

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

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

## Mobile App Setup

You can configure your camera through the mydlink Lite mobile app. On your mobile device, download mydlink Lite by searching for **mydlink Lite** in the iTunes App Store, Google Play, or the Windows Store.



Launch the mydlink Lite app and create a new account or sign in to your existing account. Follow the onscreen instructions to set up your camera.

When you are asked to scan a QR code, use the code on the Quick Install Card in your package, or on the label attached to your device.

Congratulations, your DCS-960L is now ready to use! Be sure to check the **mydlink.com** website periodically for the latest firmware updates to keep your product secure and up to date with the latest features.

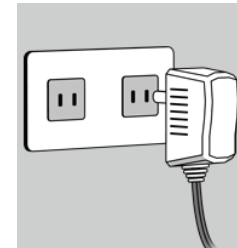
# Zero Configuration Setup

**If you have a mydlink-enabled Cloud Router**, you can take advantage of Zero Configuration Setup. Zero Configuration automatically configures your camera's settings for you, and adds the camera to your mydlink account automatically. This type of setup allows you to set up your camera by simply plugging it in and connecting it to your router.

Connect your camera to your mydlink-enabled Cloud Router and Zero Configuration will automatically configure your DCS-960L and add the camera to your mydlink account. After the short time it takes to do this you can remotely access your camera from the website (<http://www.mydlink.com>) to manage and monitor your DCS-960L.

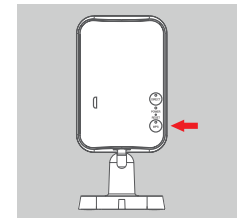
## Plug in the External Power Adapter

Connect the power adapter to the microUSB port on the back of the camera. Plug the power adapter in to a wall outlet.



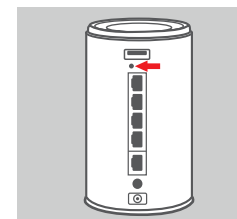
## Press the WPS button on your camera

Press and hold the WPS button for three seconds. The blue WPS status LED will start blinking.



## Press the WPS button on your Cloud Router

Press the WPS button on your router within 60 seconds. The WPS button is usually on the side or back of your Cloud Router. The DCS-960L will automatically create a secure wireless connection to your router and reboot. When it has successfully connected, the Power LED will be lit green and the Direct LED will be turned off.



## Check Your mydlink Account

From any computer with an Internet connection, open a web browser and login to your mydlink account. The mydlink page will check for new devices and display a **New device Found!** pop-up notification in the bottom-left corner. Click the notification to continue.

The screenshot shows the mydlink web interface for a DIR-605L router. The interface includes a navigation bar with 'My Devices', 'Shared Devices', 'My Services', and 'My Profile'. The main content area displays 'Router Status' and 'Settings' tabs. A 'New Device Found!' notification is visible in the bottom-left corner. The router status section shows the model name (DIR-605L), network name (SSID) 'Tosnet', internet IP (192.168.1.103), LAN IP (192.168.0.1), and 5 connected devices. Below this is a 'Connection List' table with columns for Device, Device Name, IP Address, MAC Address, and Block. The table lists five devices: CardboardBox, an unnamed device, HixGuy, another unnamed device, and a final unnamed device. A 'Suspect List' table is also present but empty.

Device	Device Name	IP Address	MAC Address	Block
	CardboardBox	192.168.0.110	00:28:20:02:FE:FA	<input type="checkbox"/>
	---	192.168.0.120	04:54:53:59:53:16	<input type="checkbox"/>
	HixGuy	192.168.0.100	00:14:92:E2:4D:C8	<input type="checkbox"/>
	---	192.168.0.121	28:E9:2C:DC:0A:BE	<input type="checkbox"/>
	---	192.168.0.101	F9:A2:25:AA:9C:C3	<input type="checkbox"/>

A summary and confirmation notification will appear with the automatically configured details. Make a note of the details and click **Yes** to add the camera to your account.

### Confirming New Device

Do you want to add this new device to your mydlink account?

**Device Name: DCS-960L**  
**mydlink Number: 44441252**  
**Network name (SSID): dddddd**  
**Admin Password: oic953XZ**

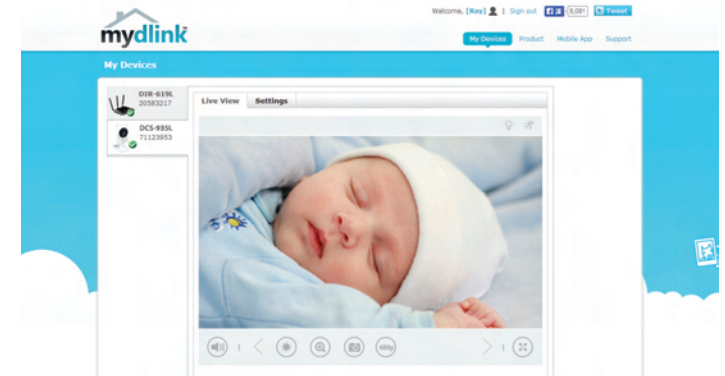
You can change these default settings by going to **Advanced Settings** after add it to your device list.

## Section 2 - Installation

Zero Configuration will navigate to the mydlink Live View tab for your camera where you will see a screen similar to the following.

Your camera is now set up, and you can skip to **mydlink** on page 18 to learn more about the mydlink features of this camera, or to **Configuration** on page 19 for advanced configuration of your camera.

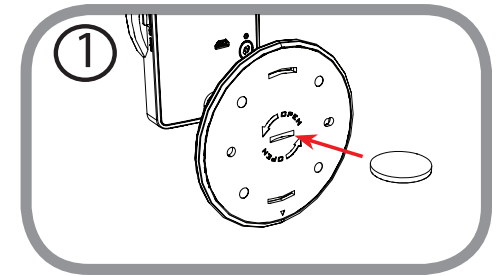
**Note:** If you see a white haze when viewing in night vision mode, the night vision light on the camera may be reflecting off a nearby surface. Try repositioning and aiming the camera.



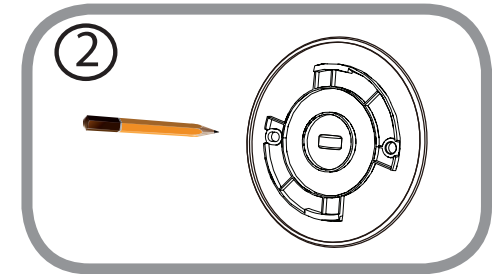
# Mounting the Camera

To mount your camera on a wall or ceiling, please follow the steps below. It is recommended that you configure the camera before mounting.

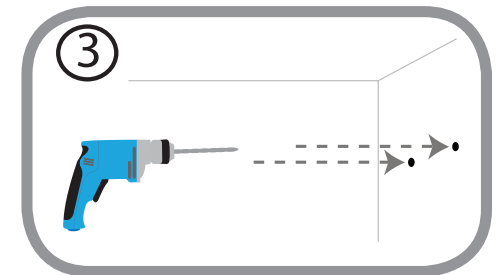
Turn the base plate on the bottom of the camera counterclockwise with a coin to remove it.



Place the base plate where you want to position the camera and use a pencil to mark the holes. Make sure the holes are lined up horizontally.



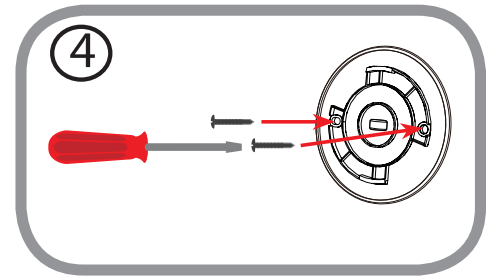
Depending on the material of the wall or ceiling, use proper tools to drill two holes 25mm deep with a 6mm drill bit where you marked. If the wall is made out of concrete, drill the holes first, then insert the plastic anchors to support the screws.



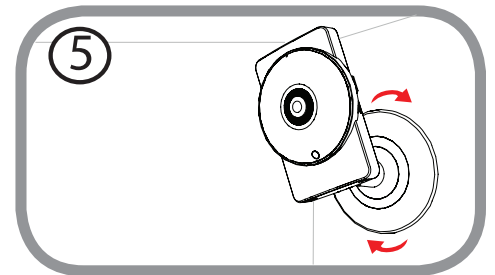


## Section 2 - Installation

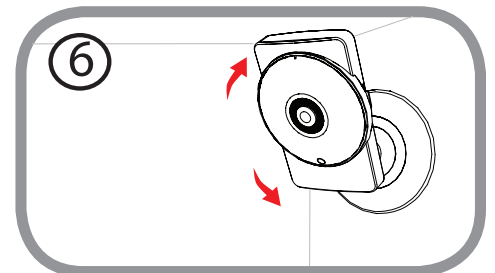
Place the base plate over the holes that are in the wall. Make sure to align the base plate holes with the holes in the wall. Use the supplied screws to attach the base plate to the surface of the wall. Do not overtighten screwheads as this may crack the mount.



Place the camera over the base plate and turn the camera clockwise to lock it in place.

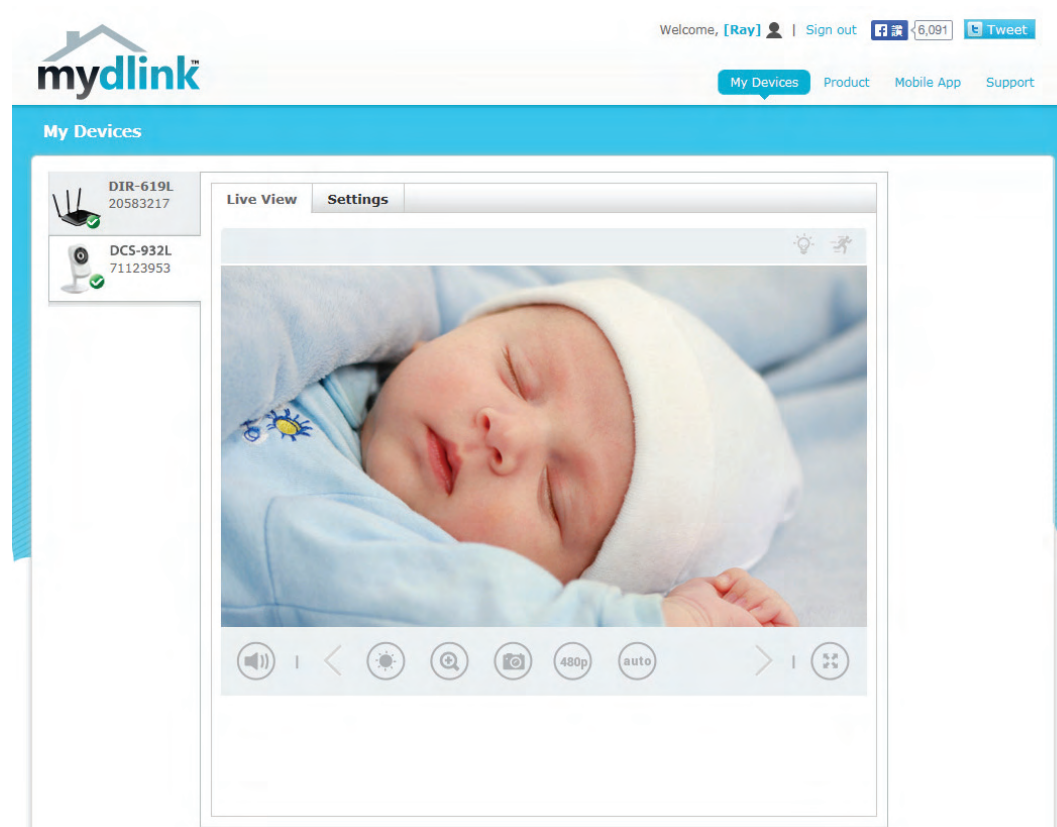


Adjust the angle of the camera as desired.



# mydlink

After registering your camera with a mydlink account in the Camera Installation Wizard, you will be able to remotely access your camera from the **www.mydlink.com** website. After signing in to your mydlink account, you will see a screen similar to the following:



For more details on using your camera with mydlink, go to the **Support** section of the mydlink website and check the **User Manual** section for your product to find the latest instruction guide for your camera's mydlink features.

# Configuration

## Accessing the Web Configuration Utility

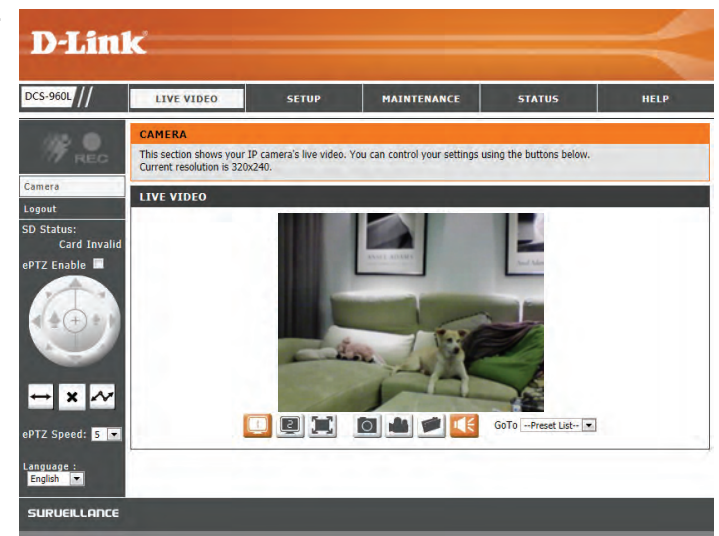
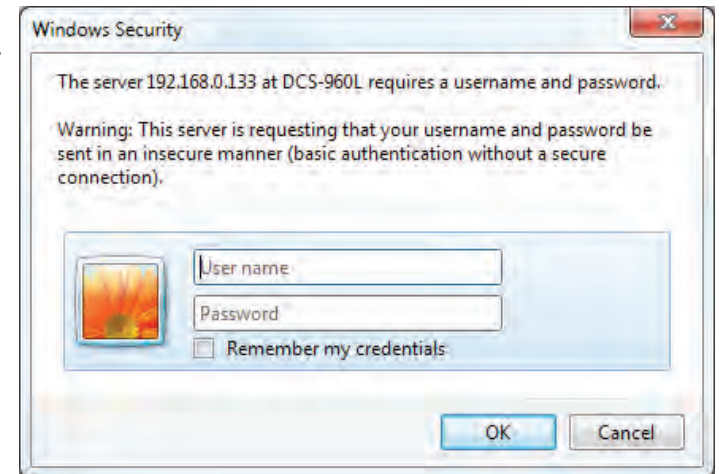
After installing and setting up your camera with the mydlink Home app, you are ready to use your camera. The camera's built-in Web configuration utility is designed to allow you to easily access and configure your DCS-960L.

To log in, use a web browser on your PC to go to the **www.mydlink.com** website and log in to your account. Select your camera, click on the **Settings** tab, then click on the **Advanced Settings** button. Use the User name **admin** and the password you created while setting up the camera. If you did not create a password, the default password is blank. After entering your password, click **OK**.

**Note:** If you are directly connecting your PC to the camera, the default IP is **10.255.255.1**

Please make sure that you have the latest version of Java application installed on your computer to ensure proper operation when viewing the video in Java mode. The Java application can be downloaded at no cost from Sun's web site (<http://www.java.com>).

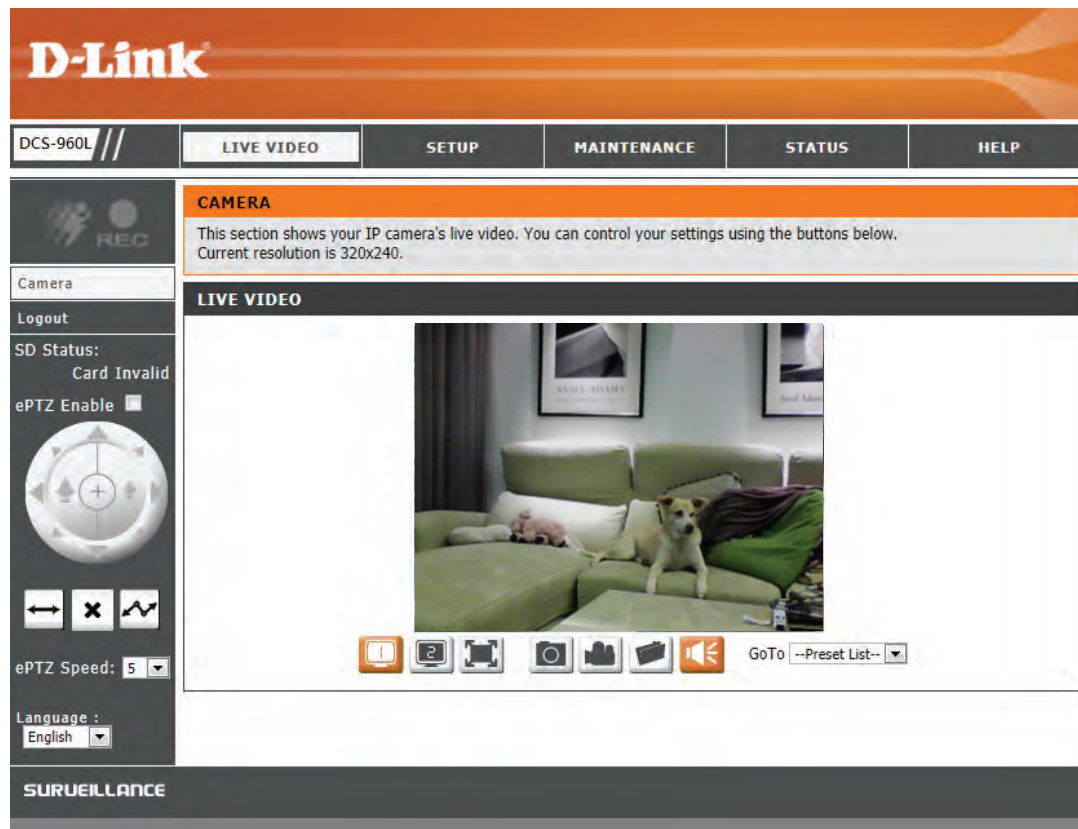
When you connect to the home page of your camera, you may be prompted to download ActiveX. If you want to use ActiveX to view your video images instead of Java, then you must download ActiveX.

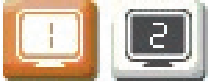











# Live Video

The Live Video page lets you view the live video stream from your camera.

Please make sure that you have the latest version of Java installed on your computer to ensure proper operation when viewing the video in Java mode. The Java application can be downloaded free from Sun's web site (<http://www.java.com>).



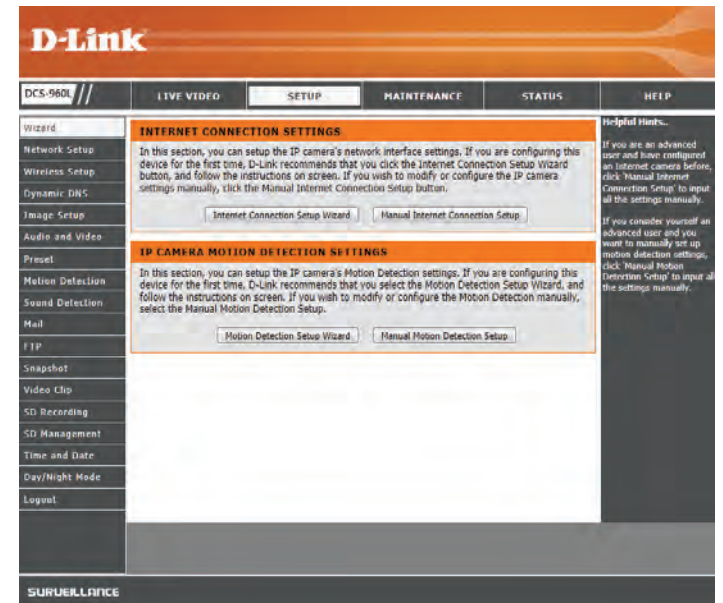
Icon	Button Name	Function
	Profile 1/2	Switches between video profiles. Refer to "Audio and Video" on page 31 for more information.
	Full Screen	Switches to a full screen view of the camera video.
	Snapshot	Takes a snapshot of the image currently displayed on the screen and saves it to the hard drive in the folder specified using the Storage folder button.
	Video recording	Triggers the camera's recording function. This will record the video displayed on the screen and saves it to the hard drive in the folder specified using the Storage folder button.
	Storage folder	Sets the storage folder for snapshots and video recordings.
	Listen	Sends the audio received from the camera's microphone through to the PC's speakers.
	IR LED On/Off	Turns the Infrared lights on or off.  (The icon only appears when you activate the manual IR option which can be found in the Day/Night Mode section of the Setup tab.)
Zoom in/out:   	Zoom buttons	Zooms in or out of the picture.

# Setup Wizard

This section allows you to begin setup wizards which will guide you through the process of getting your camera's various functions configured. If you are comfortable with adjusting the settings manually, you may skip the wizards and adjust settings manually as needed.

**Internet Connection Setup Wizard:** You may choose to configure your network by using the Internet Connection Setup Wizard that includes step-by-step instructions. Please refer to **Internet Connection Setup Wizard: Connection Setup Wizard** on page 23 for more details.

**Manual Internet Connection Setup:** If you would rather manually set up the camera's Internet connection, you can refer to **Network Setup** on page 26 which provides more details on the information required.



## Internet Connection Setup Wizard

This wizard will guide you through a step-by-step process to configure your new D-Link Camera and connect the camera to the Internet.

Click **Next** to continue.

Select how the camera will connect to the Internet.

**If your router is connected to a router, or you are unsure how your camera will connect to the Internet, select DHCP Connection.**

**If your ISP has assigned you a static IP, select Static IP Address and enter the following details:**

**IP Address:** Enter the IP address that the camera will use on your network. You may need to get this information from your ISP or network administrator.

**Subnet Mask:** The default value is "255.255.255.0." Used to determine if the destination is part of the same network segment.

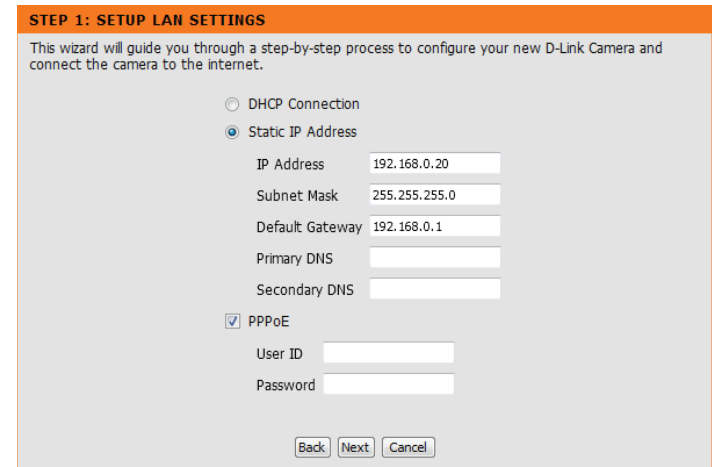
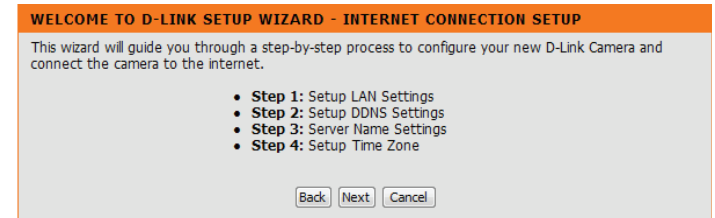
**Default Gateway:** The gateway used to forward data to destinations in a different subnet. Invalid gateway settings may cause the failure of transmissions to a different subnet.

**Primary DNS:** Primary domain name server that translates names to IP addresses.

**Secondary DNS:** Secondary domain name server to backup the Primary DNS.

**If you are required to connect using PPPoE, select PPPoE and enter the User ID and Password for your PPPoE connection.**

Click **Next** to continue.



## Section 3 - Configuration

A Dynamic DNS account allows you to access your camera over the Internet when you have an IP address that changes each time you connect to the Internet. If you have a Dynamic DNS account, click **DDNS Enable** and enter the following details:

**Server Address:** Select your Dynamic DNS Server from the drop-down menu.

**Host Name:** Enter the host name of the DDNS server.

**User Name:** Enter your username or e-mail address used to connect to the DDNS.

**Password:** Enter your password used to connect to the DDNS server.

**Timeout:** You can setup how often the camera notifies the DDNS server of its current global IP address by entering a whole number in hours.

Click **Next** to continue.

Enter a name for your camera. Click **Next** to continue.

Select the time zone that the camera is in so that scheduled events occur at the correct time.

Click **Next** to continue.

**STEP 2: SETUP DDNS SETTINGS**

If you have a Dynamic DNS account and would like your camera to update the IP address automatically, enable DDNS and enter your host information below. Click on the **Next** button to continue.

DDNS Enable

Server Address  <<  ▼

Host Name

User Name

Password

Timeout  hours

**STEP 3: SERVER NAME SETTINGS**

D-Link recommends that you rename your camera for easy accessibility. Please assign a name of your choice before clicking on the **Next** button.

Camera Name  10 characters maximum

**STEP 4: SETUP TIME ZONE**

Please select the camera's timezone and then click on the **Next** button.

Current Time 2014/01/01 00:08:28

Time Zone  ▼



## Section 3 - Configuration

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A summary of the options you selected is displayed for confirmation. If you are happy with the selected configuration, click **Next**. Otherwise, click **Back** to make the required changes.

### STEP 5: SETUP COMPLETE

Here is a summary of your camera settings. Click **Back** to modify the settings, or click **Apply** if all settings are correct. It is recommended you write down this information for future access or reference.

IP Address	DHCP Connection
IP Camera Name	DCS-935L
Time Zone	(GMT-12:00) International Date Line West
DDNS	Disable

# Network

This section allows you to configure your network settings.

**DHCP Connection:** Select this connection if you have a DHCP server running on your network and would like a dynamic IP address to be updated to your camera automatically.

**Static IP Address:** You may obtain a static or fixed IP address and other network information from your network administrator for your camera.

**IP Address:** Enter the IP address that the camera will use on your network. You may need to get this information from your ISP or network administrator.

**Subnet Mask:** Enter the subnet mask that your camera will use on the network. The default value is "255.255.255.0." This is used to determine if the destination is part of the same subnet.

**Default Gateway:** Enter the gateway your camera will use on the network. The gateway is used to forward frames to destinations in a different subnet. Invalid gateway settings may cause transmissions to a different subnet to fail.

**Primary DNS:** Enter the primary domain name server that translates names to IP addresses.

**Secondary DNS:** Enter the secondary domain name server used to back up the Primary DNS.

**PPPoE Settings:** If you are using a PPPoE connection, enable it and enter the User ID(username) and Password for your PPPoE account. You can get this information from your Internet service provider (ISP).

**D-Link**

DCS-960L // LIVE VIDEO SETUP MAINTENANCE STATUS HELP

**Word**  
 Network Setup  
 Wireless Setup  
 Dynamic DNS  
 Image Setup  
 Audio and Video  
 Preset  
 Motion Detection  
 Sound Detection  
 Mail  
 FTP  
 Snapshot  
 Video Clip  
 SD Recording  
 SD Management  
 Time and Date  
 Day/Night Mode  
 Logout

**NETWORK SETUP**  
 You can configure your LAN and Internet settings here.  
 Save Settings Don't Save Settings

**LAN SETTINGS**  
 DHCP Connection  
 Static IP Address  
 IP Address: 192.168.0.20  
 Subnet Mask: 255.255.255.0  
 Default Gateway: 192.168.0.1  
 Primary DNS:  
 Secondary DNS:  
 PPPoE  
 User ID:  
 Password:

**PORT SETTINGS**  
 HTTP Port: 80  
 RTSP Port: 884

**HTTPS SETTINGS**  
 HTTPS Enable:   
 HTTPS Port: 443

**UPnP SETTINGS**  
 UPnP Enable:   
 UPnP Port Forward:

**BONJOUR SETTINGS**  
 Bonjour Enable:   
 Bonjour Name:   
 (Characters you may use in a Bonjour Name: "upper or lower case letters", "numbers" and "hyphens")  
 Save Settings Don't Save Settings

**Helpful Hints...**  
 Select "DHCP Connection" if you are running a DHCP server on your network and would like an IP address assigned to your camera automatically. You may choose to manually enter a Static IP Address, and all the relevant network information or select PPPoE if you connect your DCS-960L directly to the Internet that uses a PPPoE service. If you choose PPPoE, you must enter the user ID and password that was given by your Internet Service Provider.  
 DNS (Domain Name System) server is an Internet service that translates domain names (e.g. www.dlink.com) into IP addresses (e.g. 192.168.0.20). The IP addresses can be obtained from your ISP.  
 Primary DNS: Primary domain name server that translates names to IP addresses.  
 Secondary DNS: Secondary domain name server to backup the primary one.  
 Port Settings - Most ISPs do not open port 80 (a DCS-960L default video transfer port) for their residential customers, the DCS-960L has the ability to use a different port by enabling the second http port for its video streaming. Any unused ports can be used such as port 800, 801, etc. Remember that if the DCS-960L is behind a router, you will need to forward that port to the DCS-960L's IP Address. When accessing the camera, you would need to type the camera's IP Address followed by the colon character and the port number (for example http://192.168.0.20:800).  
 UPnP Settings will allow you to configure your camera as an UPnP device in the network.  
 Bonjour provides a simple way of discovering various services on your camera.

**SURVEILLANCE**

**Port Settings:** You may configure which ports to use for HTTP and RTSP access to the camera.

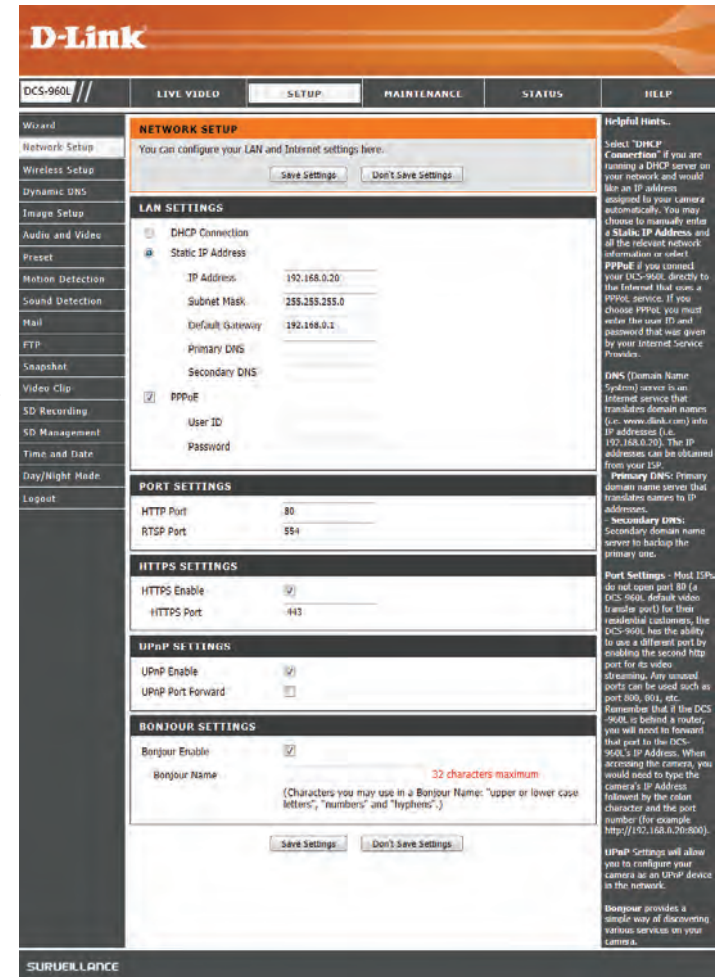
**HTTPS Settings:** You may enable and configure which ports to use for HTTPS access to the camera.

**UPnP Enable:** Enable this setting to configure your camera as an UPnP device in the network.

**UPnP Port Forward:** Enable this to allow your camera to use UPnP to configure port forwarding on your router. Set the HTTP, HTTPS, and RTSP ports you wish to use for UPnP port forwarding.

**Bonjour:** Checking the **Bonjour** box will allow the camera to be discoverable on the network and visible to Apple devices. Enter the name you want to use to identify your camera on the network.

Click **Save Settings** to save your changes.



# Wireless Setup

This section allows you to set up and configure the wireless settings on your camera.

**SSID:** Enter the network name (SSID) of the wireless network you want to connect to. You can also click the **Site Survey** button below to choose an available network and fill in settings automatically.

**Connection Mode:** This camera can connect to other devices through **Infrastructure** mode.

**Security Mode:** For security, you can choose **None** or **WPA-PSK / WPA2-PSK**. Select the same encryption method that is being used by your wireless device/ router.

**Cipher Type:** If you chose **WPA-PSK / WPA2-PSK**, **TKIP / AES** will be used for the cipher type.

**Key:** Enter the key (password) for your wireless network.

Click the **Save Settings** button to save your changes.



# Dynamic DNS

DDNS allows you to access your camera using a domain name instead of an IP address. To do this, you will need to have an account with one of the DDNS services listed in the drop-down box on this page.

**DDNS Enable:** Check this box to enable the DDNS function.

**Server Address:** Select your Dynamic DNS Server from the drop-down menu.

**Host Name:** Enter the host name of the DDNS server.

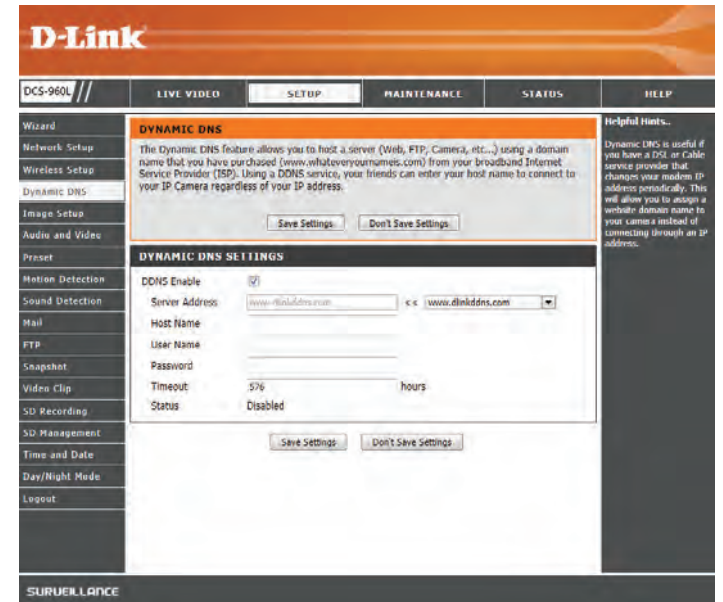
**User Name:** Enter your username or e-mail address used to connect to the DDNS server.

**Password:** Enter your password used to connect to the DDNS server.

**Timeout:** You can set up how often the camera notifies the DDNS server of its current global IP address by entering a whole number in hours.

**Status:** This shows the status of your DDNS updates.

Click the **Save Settings** button to save your changes.



# Image Setup

This section allows you to configure the image settings for your camera.

**Brightness:** Allows you to adjust the brightness level.

**Contrast:** Allows you to adjust the contrast level.

**Sharpness:** Allows you to adjust image sharpness.

**Mirror:** Horizontally flip the video.

**Frequency:** Adjusts the video output. By default this is set to **Off**, but you may override the setting by manually selecting either **50Hz** or **60Hz**.

**Saturation:** Allows you to adjust the saturation level.

**Hue:** Allows you to adjust the hue of the video.

**B/W:** Changes the images recorded on the camera to be in black and white.

**Flip:** Check this box to vertically flip the video. If the camera is installed upside down, Flip and Mirror should both be checked.

Click the **Save Settings** button to save your changes.

The screenshot shows the D-Link DCS-960L web interface. The top navigation bar includes 'LIVE VIDEO', 'SETUP', 'MAINTENANCE', 'STATUS', and 'HELP'. The 'SETUP' menu is expanded to show 'IMAGE SETUP'. The main content area is divided into three sections: 'IMAGE SETUP' (with a note that changes are reflected immediately), 'LIVE VIDEO' (showing a camera feed of a living room with a dog), and 'IMAGE SETTINGS'. The 'IMAGE SETTINGS' panel contains the following controls:

- Brightness: 50
- Contrast: 50
- Sharpness: 50
- Saturation: 50
- Hue: 50
- B/W:
- Mirror:
- Flip:
- Frequency: 60Hz

A 'Reset to Default' button is located at the bottom of the settings panel. On the right side of the interface, there is a 'Helpful Hints...' section with detailed explanations for each setting.

# Audio and Video

This section allows you to configure the audio and video settings for your camera.

**Encode Type:** Your camera has separate settings for the H.264 and MJPEG video streams.

**Resolution:** Select the desired video resolution from 1280x720, 800x600, 720x480, 640x480, and 320x240. Higher settings offer better quality, but will require more bandwidth to stream.

**Bit Rate/JPEG Quality:** Select the bitrate(H.264) or quality(MJPEG) for the video stream. Higher bitrates and quality will require more bandwidth.

**Frame Rate:** Select the frame rate(FPS) to use for the video stream. Higher settings offer better quality, but will require more bandwidth to stream.

**RTSP URL:** The URL used to connect to the camera when viewing from QuickTime or a mobile device.

**Microphone Enable:** Check this box to enable the camera's microphone.

**Volume:** Use this dropdown box to adjust the volume of the camera's audio.

Click **Save Settings** to save your changes.

**D-Link**

DCS-960L // LIVE VIDEO SETUP MAINTENANCE STATUS HELP

**AUDIO AND VIDEO**

In this section, you can configure the camera video quality, resolution, and frame rate.

**VIDEO PROFILE 1**

Mode: H.264

Frame size: 320x240

Maximum frame rate: 15

Video quality:  Constant bit rate: 1 Mbps  Fixed quality: High

RTSP URL: play1.sdp

**VIDEO PROFILE 2**

Mode: MJPEG

Frame size: 1280x720

Maximum frame rate: 5

Video quality:  Constant bit rate: 1 Mbps  Fixed quality: Medium

RTSP URL: play2.sdp

**AUDIO SETUP**

Microphone Enable:

Volume: 90

**Helpful Hints...**

**Frame size:** The options depend on display system used.

**Bit Rate:** (Kbps per second) - Select a fixed bandwidth for your camera operation. Higher value means a higher quality image, but consumes more network bandwidth.

**Frame Rate:** (Frames per second) - The higher the frame rate, the smoother the video will appear. Note that a higher frame rate setting also uses more bandwidth.

**Fixed quality:** Default value is Medium.

**Microphone:** Enable this feature to hear audio from the camera's microphone.

**SURVEILLANCE**

# Preset

**D-Link**

DCS-960L // LIVE VIDEO SETUP MAINTENANCE STATUS HELP

**PRESET CONTROL**  
 Using the Pan and Tilt controls, move the camera view to the required position. There are provides the tools for creating and saving Preset positions & Preset Sequence.

**PRESET POSITION**  
 2018/07/20 20:01:30 ePTZ Speed: 5  
 [Camera View] [PTZ Controls: Home, Up, Down, Left, Right]

**PRESET**  
 Input Preset Name: [Text Field] [Add] [Rename]  
 Preset Position: [Preset List] [GoTo] [Remove]

**PRESET SEQUENCE**  
 Preset Name: Dwell time [Up Arrow]

**Helpful Hints...**  
**Input Preset Name:** Using the Pan, Tilt and Zoom (PTZ) controls, move the camera view to the required position and simply by selecting the preset's name.  
**Add:** This camera position is then saved as a preset position in the camera.  
**GoTo:** for test the preset, the preset position.  
**Preset Sequence:** A preset sequence is an automated series of camera movements from one preset position to another. A guard tour can be set up to display the video stream from different preset positions in a pre-determined order, and for configurable time periods.  
**Add:** set up a new preset sequence, Modify to change, and Remove to remove an existing preset sequence.



# Motion Detection

Motion detection enables the camera to monitor the video feed for movement.

**Enable Video Motion:** Select this box to enable the motion detection feature of your camera.

**Sensitivity:** Specifies how sensitive motion detection will be from 0% to 100%. A low sensitivity setting means that there must be large changes between two images in order to detect motion, and a high sensitivity setting means that even small changes will cause motion to be detected.

Low sensitivities may be useful when monitoring an area that has flickering lights or a window to the outside in view. High sensitivities may be useful when monitoring an area that rarely changes, such as a storeroom or warehouse.

**Drawing Mode:** Select **Draw Motion Area** to select the area of the picture to monitor for movement to trigger recording or a snapshot. Use your mouse to click and drag on the area that you would like to monitor for motion. Select **Erase Motion Area** to clear a selected region and stop the camera from monitoring that area of the picture.

**Clear:** Clears all motion detection areas from the picture.

Click **Save Settings** to save your changes.



# Sound Detection

Motion detection enables the camera to monitor the environment for loud sounds. You may set the volume threshold used to determine whether sound was detected or not. If this option is selected, the trigger by option under **Video Clip**, or **Snapshot** should also be selected.

**Enable Sound Detection:** Select this box to enable the sound detection feature of your camera.

**Detection Level:** Specify the volume level that a sound must exceed in order to trigger the sound detection feature.

Click **Save Settings** to save your changes.

The screenshot shows the D-Link web interface for the DCS-960L camera. The top navigation bar includes 'LIVE VIDEO', 'SETUP', 'MAINTENANCE', 'STATUS', and 'HELP'. The left sidebar lists various configuration options, with 'Sound Detection' selected. The main content area is titled 'SOUND DETECTION' and contains the following settings:

- SOUND DETECTION:** In this section, you can configure the sound detection settings for your camera. Please note that your computer needs to have Java installed in order to view the sound dB/Time window. If you do not see the sound dB/Time window below, please visit <http://www.java.com> to download and install Java.
- SOUND DETECTION SETTINGS:**
  - Sound Detection:  Enable  Disable
  - Detection Level: 90 dB

A bar chart below the settings displays sound level data over time. The y-axis represents sound level in dB, ranging from 40 to 100. The x-axis represents time. A vertical pink line indicates the current detection threshold at 90 dB. The chart shows several peaks in sound level, with one peak reaching approximately 95 dB, which is above the detection threshold.

# Mail

This section allows you to configure your camera to send snapshots and video clips to an e-mail address. If you are not sure what settings to use, check with your e-mail service provider.

**SMTP Server Address:** This is the domain name or IP address of your external e-mail server.

**SMTP Server Port:** This is the port used by your external e-mail server.

**Sender e-mail Address:** This is the e-mail address listed as the sender for your notification e-mails.

**Receiver e-mail Address:** This is the e-mail address that your notification e-mails will be sent to.

**User Name:** If the SMTP server uses authentication, enter your user name.

**Password:** If the SMTP server uses authentication, enter your password.

**Use SSL-TLS/STARTTLS:** If your SMTP server requires SSL-TLS or STARTTLS, select it here.

For example, if you want to use Gmail with SSL-TLS for e-mail notifications, you can follow the setup procedure as below:

- Step 1** - Enter "smtp.gmail.com" in SMTP Server Address.
- Step 2** - Change the SMTP server port number from 25 to 465.
- Step 3** - Enter your gmail e-mail address in Sender E-mail Address.
- Step 4** - Enter the destination e-mail address in Receiver E-mail Address.
- Step 5** - Enter the user name required to access the SMTP server.
- Step 6** - Enter the password required to access the SMTP server.
- Step 7** - Select SSL-TLS and then click Save Settings.
- Step 8** - Click the Test button to send a test e-mail will be sent.

**Note:** You can also use **STARTTLS**, which will use SMTP server port number **587**. If you want to use a Yahoo SMTP server, the SMTP server address will be different between each registered region, and only SMTP port **465** is supported for **SSL-TLS**.

# FTP

This section allows you to configure your camera to send snapshots and video clips to an FTP server.

**Host Name:** Enter the IP address of the FTP server that you will be connecting to.

**Port:** Enter the port of the FTP server that you will be connecting to.

**User Name:** Enter the user name of your FTP server account.

**Password:** Enter the password of your FTP server account.

**Path:** Enter the destination path/folder to save files to on the FTP server.

**Passive Mode:** Enabling passive mode may help you reach your FTP server if your camera is behind a router protected by a firewall.

**Test FTP Server:** Clicking on the **Test** button will send a test JPEG snapshot to the FTP server specified above to make sure that your settings are correct.

The screenshot shows the D-Link web interface for the DCS-960L camera. The main content area is titled "FTP" and contains the following sections:

- FTP SERVER - SNAPSHOT:** Includes fields for Host Name, Port (21), User Name, Password, Path, Interval (300 seconds), and Passive Mode (Yes/No).
- TEST FTP SERVER - SNAPSHOT:** A section with a "Test" button and a note: "A JPEG file will be sent to the above FTP server for testing. (File name: test\_date\_time.jpg)".
- FTP SERVER - VIDEO CLIP:** Includes fields for Host Name, Port (21), User Name, Password, Path, Interval (300 seconds), and Passive Mode (Yes/No).
- TEST FTP SERVER - VIDEO CLIP:** A section with a "Test" button and a note: "A JPEG file will be sent to the above FTP server for testing. (File name: test\_date\_time.jpg)".

Buttons for "Save Settings" and "Don't Save Settings" are present at the top and bottom of the configuration sections. The left sidebar shows navigation options like "Wizard", "Network Setup", "Wireless Setup", etc. The right sidebar contains "Helpful Hints" with instructions on how to use the Host Name, Port, User Name, Password, and Passive Mode settings.

# Snapshot

The snapshot feature lets you send image snapshots via FTP or e-mail when a trigger is activated.

**Snapshot:** Check this box to enable the Snapshot function.

**Trigger By:** Select whether to record when triggered by **Motion** or **Sound**, according to a **Schedule** or **Always** record.

**Snapshot Type:** Select whether to take a single snapshot or to take 6 snapshots with a selectable interval between them.

**Target:** Select where you want the snapshot to be sent. It may be uploaded to an FTP or sent to an e-mail address.

Click **Save Settings** to save your changes.



# Video Clip

Video Clip allows you to send video clips via FTP or e-mail when a trigger is activated.

**Video Clip:** Check this box to enable the Video Clip function.

**Trigger By:** Select whether to record when triggered by **Motion** or **Sound**, according to a **Schedule** or **Always** record.

**Video Clip:** Here you can specify how much video to record before and after the event.

**Target:** Select where you want the video clip to be sent. It may be uploaded to an FTP or sent to an e-mail address.

Click **Save Settings** to save your changes.



# SD Recording

**D-Link**

DCS-960L // LIVE VIDEO SETUP MAINTENANCE STATUS HELP

**SD RECORDING**

Here you may configure and schedule the recording of your camera. You must select the checkbox of 'SD Recording' to turn on the feature.

Please note that there is no SD Card plugged into the camera or the SD Card is not writable. To format the SD Card in the camera, please disable SD Recording first and then go to the [SD Management](#) page.

---

**SD RECORDING**

SD Recording

Trigger by: **Always** (Configurable in [Audio and Video](#))

Source: **Profile 1**

Recording Type: **Pre-event recording**: 5 Seconds

Snapshot

Video

Recording Length: 5 minutes per file

SD Card:  Keep Free Space: 200 MB (Minimum is 200)

Cyclic

---

**Helpful Hints...**

SD Recording is the ability to record video or snapshots (per second) to local SD Card based on motion detection or in a specified time.

**Trigger by Motion**  
Begin SD recording after a motion is detected.  
**Schedule**  
SD recording in a specified time.  
**Always**  
Continuous SD recording.  
**Sound**  
Begin SD recording after sound is detected.

**Recording Type**  
You can set video profile, set pre-event recording, and post-event recording here when Trigger by is Motion. You can also select recording as Snapshot or Video.

**Recording Length**  
Set the time length of each recording video.

**SD Card**  
You can set how much free space to keep in SD card and if recording cyclically or not.

**Keep Free Space**  
Set the capacity of your local SD Card to prevent the system from becoming unstable.

**Cyclic**  
When this option is selected, it will cause the oldest folder to be deleted when the system requires storage space for new files.

**SURVEILLANCE**

# SD Management

The screenshot shows the D-Link web interface for the DCS-960L camera. The top navigation bar includes 'LIVE VIDEO', 'SETUP', 'MAINTENANCE', 'STATUS', and 'HELP'. The left sidebar contains various configuration options, with 'SD Management' selected. The main content area is titled 'SD MANAGEMENT' and contains the following information:

**SD MANAGEMENT**  
 Here you could browse and manage the files which stored in SD card.

**SD MANAGEMENT**  
 SD CARD: [DCS-960L /](#) SD Status: Ready  
 Files per Page: 5 [help](#) Pages: 1 of 1

Delete	Name	Size
	20150720	

Total :4002144 KB, Used :156 KB, Free :4001988 KB

The right sidebar contains 'Helpful Hints...' with the following text:

**SD Card**This can indicate the current path of SD Card.  
**SD Status**This can indicate the current SD Card status (whether it is inserted or detected).  
**Files per Page**The number of files per page.  
**Pages**You can select which page to display here.  
**Format SD Card**Click this button to automatically format the SD card and create folder for snapshot and video. To format SD Card, you need to disable SD Recording first.  
**Total**The total capability of SD Card.  
**Used**The used capability of SD Card.  
**Free**The free capability of SD Card.



# Time and Date

This section allows you to configure the settings of the internal system clock for your camera.

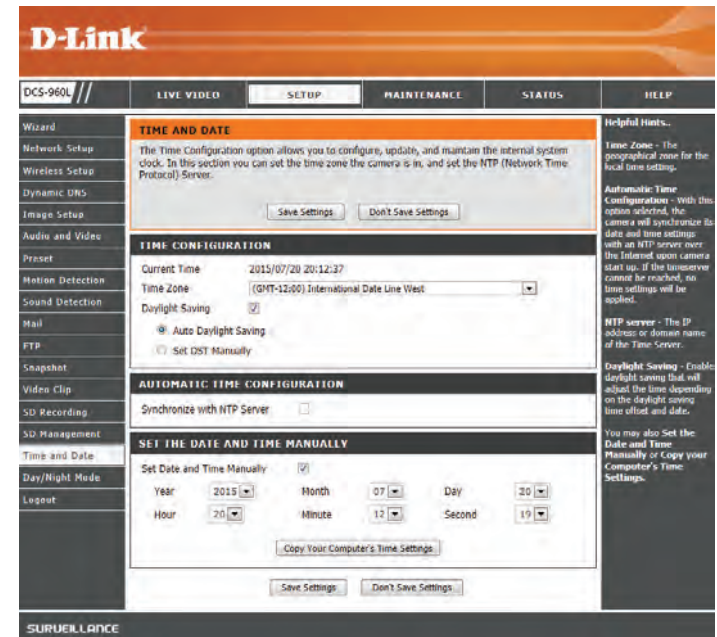
**Time Zone:** Select the time zone for your region from the drop-down menu.

**Daylight Saving:** If your region uses Daylight Saving time, you can enable it here. Select **Set DST Manually** if you want to manually set the offset and the period of time that the Daylight Saving correction should be used.

**Synchronize NTP Server:** Network Time Protocol will synchronize your camera with an Internet time server. Choose the one that is closest to your camera.

**Set the Date and Time Manually:** If **Synchronize NTP Server** is disabled, you can set the date and time manually. You can also click the **Copy Your Computer's Time Settings** button to automatically copy the date and time of the PC you are using.

Click **Save Settings** to save your changes.



# Day/Night Mode

This section allows you to configure when Day and Night modes are used. Day mode uses the infrared cut filter to provide a corrected color image for times where there is available lighting. Night mode moves the filter out of the way to use all available light, and turns on the IR LED illuminators to allow for clear black and white video in dark areas with little to no light.

**Auto:** This mode will automatically switch between Day and Night mode based on the amount of available lighting.

**Manual:** This mode allows you to manually switch between modes through the **Live Video** page.

**Always Day Mode:** This sets the camera to always use Day mode.

**Always Night Mode:** This sets the camera to always use Night mode.

**Day Mode Schedule:** This sets the camera to use Day mode during the times you specify, and will switch to Night mode outside the times you specify.



# Maintenance Admin

This section allows you to change the administrator's password and configure the server settings for your camera. You can also manage the user account(s) that are allowed to access to your camera.

**Admin Password:** To change the admin password used to log into the web interface, enter the old password, then enter the new password and retype it in the next text box, then click **Apply**.

**Camera Name:** Specify a name for your camera.

**LED Control:** Select **Normal** to enable the LED on the back of the device, or select **Off** to disable the LED. Turning this off may be useful if you do not want the camera to be noticeable.

**Snapshot URL Authentication:** Select **Enable** to allow access to the current camera snapshot via the web address indicated.

**OSD Time:** Select **Enable** to allow the current time to be added to the camera video, and select a color to use for the text.

**Add User Account:** You can create new users to provide viewing access for your camera's video. User accounts will only be able to access the **Live Video** section of the web configuration interface, but cannot access any other parts or change any settings.

To create a new user, enter a user name, password, and retype the password, then click **Add**. A maximum of 8 user accounts can be created.

**User List:** Displays the account names of authorized users. You can modify or delete an account by clicking on its modify or delete icon.

The screenshot shows the D-Link web interface for the DCS-960L camera. The 'MAINTENANCE' tab is selected. The 'ADMIN' section is active, displaying the following configuration options:

- ADMIN PASSWORD SETTING:** Fields for 'Old Password', 'New Password', and 'Retype Password', each with a 31-character maximum limit. 'Apply' and 'Cancel' buttons are present.
- SERVER SETTING:**
  - Camera Name: DCS-960L (10 characters maximum)
  - LED Control:  Normal,  Off
  - Snapshot URL Authentication:  Enable,  Disable (http://192.168.0.133/cgi-bin/mjpeg.cgi)
  - OSD Time:  Enable,  Disable
  - Color: white (dropdown menu)
- ADD USER ACCOUNT:** Fields for 'User Name', 'Password', and 'Retype Password', each with a 31-character maximum limit. 'Add' and 'Cancel' buttons are present. A note indicates '10 users maximum'.
- USER LIST:** A table with columns for 'no.', 'name', 'modify', and 'delete'.

# System

This section allows you to save and restore your configuration, restore the factory settings, and/or restart the camera.

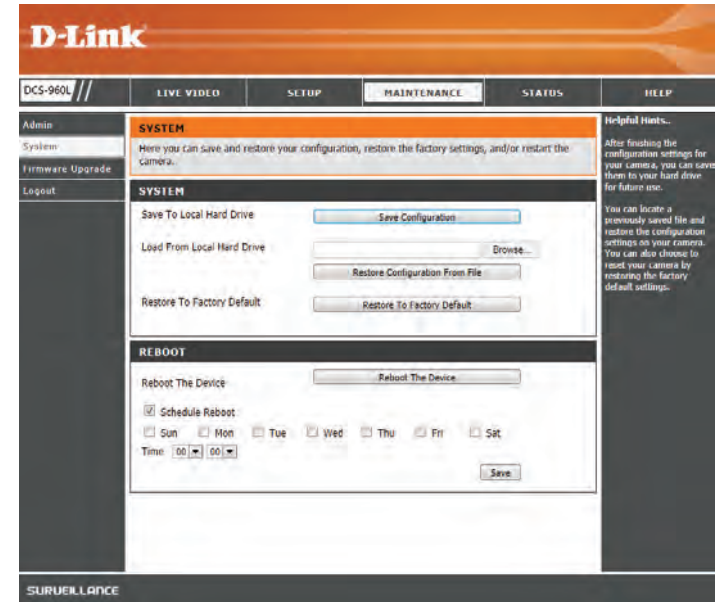
**Save To Local Hard Drive:** Click the **Save Configuration** button to save the current camera configuration to your local PC.

**Load From Local Hard Drive:** To load a previously saved configuration, click the **Browse...** button, select your saved configuration file, then click the **Restore Configuration From File** button.

**Restore To Factory Default:** Click the **Restore Factory Defaults** button to reset all settings back to the factory defaults. Please note that this will erase any changes you have made to the settings of the camera.

**Reboot The Device:** Click the **Reboot the Device** button to reboot the camera.

**Schedule Reboot:** You can schedule the camera to reboot according to a schedule. Select the days and time you want the camera to automatically reboot.



# Firmware Upgrade

Your current firmware version and date will be displayed on your screen. You may go to the D-Link Support Page to check for the latest firmware versions available.

To upgrade your firmware, please download and save the latest firmware version from the D-Link Support Page to your local hard drive. Locate the file on your local hard drive by using the **Browse...** button, then click the **Upload** button to start the firmware upgrade.



# Status

## Device Info

This section displays information about your camera and its current network and wireless status.

The screenshot shows the D-Link web interface for a DCS-960L camera. The top navigation bar includes 'DCS-960L //', 'LIVE VIDEO', 'SETUP', 'MAINTENANCE', 'STATUS', and 'HELP'. The 'STATUS' tab is selected, and the 'Device Info' sub-tab is active. The main content area is divided into two sections: 'BASIC INFORMATION' and 'WIRELESS STATUS'. A 'Refresh' button is located at the bottom of the content area. On the right side, there is a 'Helpful Hints...' section with a message about network connection details.

DEVICE INFO	
All of your network connection details are displayed on this page. The firmware version is also displayed here.	
BASIC INFORMATION	
Camera Name	DCS-960L
Time & Date	2015/07/20 20:13:42
Firmware Version	v1.00.05
Hardware Version	A
Agent Version	2.0.19-b40
MAC Address	00:FF:15:06:16:01
IP Address	192.168.0.133
Subnet Mask	255.255.255.0
Default Gateway	192.168.0.1
Primary DNS	192.168.0.1
Secondary DNS	0.0.0.0
PPPoE Status	Disable
DDNS	Disable
UPnP Port Forwarding	Disable
WIRELESS STATUS	
Connection Mode	Infrastructure
Link	No
SSID	dlink
Channel	6
Encryption	None

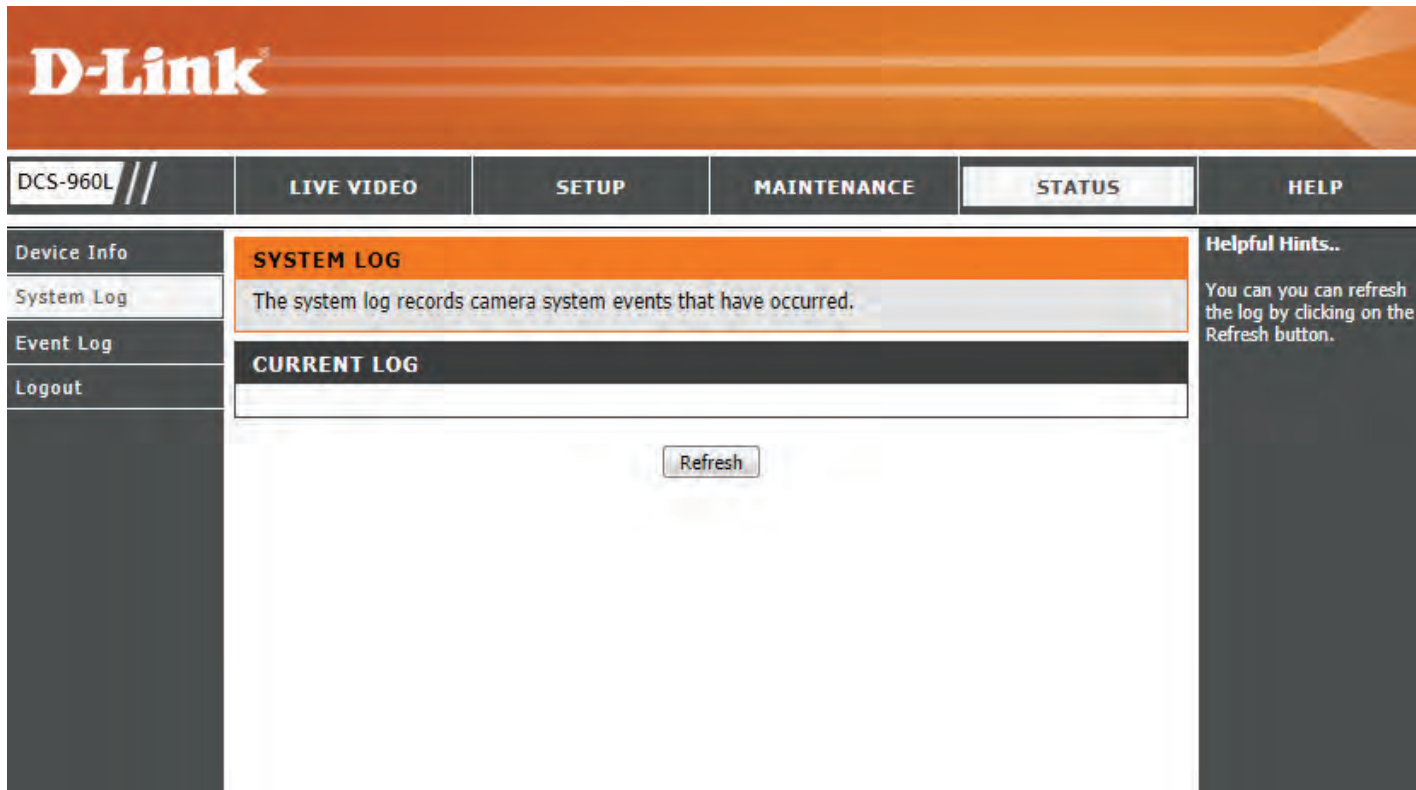
Helpful Hints...  
All of your network connection details are displayed on this page.

Refresh

SURVEILLANCE

# System Log

The system log records network events that have occurred.



# Event Log

The event log records camera events that have occurred.

The screenshot displays the D-Link web interface for the DCS-960L camera. At the top, the D-Link logo is visible. Below it is a navigation bar with tabs for 'DCS-960L //', 'LIVE VIDEO', 'SETUP', 'MAINTENANCE', 'STATUS' (which is highlighted), and 'HELP'. On the left side, there is a sidebar menu with options: 'Device Info', 'System Log', 'Event Log' (which is selected), and 'Logout'. The main content area is titled 'EVENT LOG' and contains the text: 'The event log records camera events that have occurred.' Below this, there is a section for 'CURRENT LOG' with a single entry: '2015/07/20 20:12:07 Storage recording trigger video by Schedule event'. A 'Refresh' button is located below the log entry. On the right side, there is a 'Helpful Hints..' section with the text: 'You can you can refresh the log by clicking on the Refresh button.'



# Wireless Security

This section will show you the different levels of security you can use to protect your data from intruders.

The DCS-960L offers the following types of security:

- WPA2-PSK (Pre-Shared Key)
- WPA-PSK (Pre-Shared Key)
- WEP (Wired Equivalent Privacy)

## What is WEP?

WEP stands for Wired Equivalent Privacy. It is based on the IEEE 802.11 standard and uses the RC4 encryption algorithm. WEP provides security by encrypting data over your wireless network so that it is protected as it is transmitted from one wireless device to another.

To gain access to a WEP network, you must know the key. The key is a string of characters that you create. When using WEP, you must determine the level of encryption. The type of encryption determines the key length. 128-bit encryption requires a longer key than 64-bit encryption. Keys are defined by entering in a string in HEX (hexadecimal - using characters 0-9, A-F) or ASCII (American Standard Code for Information Interchange – alphanumeric characters) format. ASCII format is provided so you can enter a string that is easier to remember. The ASCII string is converted to HEX for use over the network. Four keys can be defined so that you can change keys easily.

# What is WPA?

WPA, or 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, ensures that the keys haven't been tampered with. WPA2 is based on 802.11i and uses Advanced Encryption Standard instead of TKIP.

User authentication, which is generally missing in WEP, 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 more secure public-key encryption system to ensure that only authorized network users can 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.

# Configuring the DCS-960L with a Router

D-Link's DCS-960L is a versatile and cost effective Network Camera offering both video and audio monitoring. It can also serve as a powerful surveillance system in security applications. The DCS-960L can be used with any wired or 802.11n/g wireless router. This section explains how to view the camera from either the Internet or from inside your internal network.

Components Needed:

- 1 DCS-960L Network Camera
- 1 Ethernet Cable
- A Wired or Wireless router such as the D-Link DIR-655 Wireless Router
- Ethernet based PC for system configuration

## Setting up the DCS-960L for Use Behind a Router

Installing a DCS-960L Network Camera on your network is an easy 4–step procedure:

1. Assign a local IP address to your network camera.
2. View the network camera using your Internet Explorer web browser.
3. Access the router with your web browser.
4. Open virtual server ports to enable remote image viewing.

**Note:** *These are manual steps; however, if you decide to use the wizard, it will perform every step automatically.*

This section is designed to walk you through the setup process for installing your camera behind a router and enable remote video viewing. For the basic setup of the DCS-960L, follow the steps outlined in the Quick Installation Guide.

After you have completed the setup of the DCS-960L outlined in the Quick Installation Guide you will have an operating camera that has an assigned IP Address. Because you are using a router to share the Internet with one or more PCs, the IP Address assigned to the Network Camera will be a local IP Address. This allows viewing within your Local Area Network (LAN) until the router is configured to allow remote viewing of the camera over the Internet.

## 1. Find Your Camera's Local IP Address

Use the mydlink Home app to set up your DCS-960L. Use a web browser on your PC to go to the **www.mydlink.com** website and log in to your account. Select your camera, click on the **Settings** tab, then click on the **Advanced Settings** button. Use the User name **admin** and the password you created while setting up the camera. If you did not create a password, the default password is blank. After entering your password, click **OK**.

After logging into the configuration interface, click **Status** at the top, then find your IP Address and write it down.



The screenshot shows the D-Link configuration interface for a DCS-935L camera. The top navigation bar includes 'LIVE VIDEO', 'SETUP', 'MAINTENANCE', 'STATUS', and 'HELP'. The 'STATUS' tab is selected. On the left, a sidebar contains 'Device Info', 'System Log', 'Event Log', and 'Logout'. The main content area is titled 'DEVICE INFO' and contains a 'BASIC INFORMATION' section with the following details:

Camera Name	DCS-935L
Time & Date	2014/09/12 01:50:46
Firmware Version	v1.00 b25
Agent Version	2.0.18-b19
MAC Address	B0:C5:54:01:12:CC
IP Address	192.168.0.112
Subnet Mask	255.255.255.0
Default Gateway	192.168.0.1
Primary DNS	192.168.0.1
Secondary DNS	0.0.0.0
PPPoE Status	Enable
DDNS	Disable
UPnP Port Forwarding	Disable

A red arrow points to the 'IP Address' field, which displays '192.168.0.112'. To the right of the main content area, there is a 'Helpful Hints..' section with the text: 'All of your network connection details are displayed on this page.'

## 2. View the Network Camera

Click on the **Setup** button at the top of the screen. Scroll to the bottom of the Network Setup page to display the ports used by HTTP and Streaming audio and video. If necessary, these ports can be changed if they are already in use by other devices (e.g. in a multiple camera environment).

**Note:** The HTTP port is required to be opened for the DCS-960L.

**D-Link**

DCS-935L // LIVE VIDEO **SETUP** MAINTENANCE STATUS HELP

Wizard  
 Network Setup  
 Wireless Setup  
 Dynamic DNS  
 Image Setup  
 Audio and Video  
 Motion Detection  
 Sound Detection  
 Mail  
 FTP  
 Snapshot  
 Video Clip  
 Time and Date  
 Day/Night Mode  
 Logout

**NETWORK SETUP**  
 You can configure your LAN and Internet settings here.  
 Save Settings Don't Save Settings

**LAN SETTINGS**

DHCP Connection  
 Static IP Address

IP Address 192.168.0.20  
 Subnet Mask 255.255.255.0  
 Default Gateway 192.168.0.1  
 Primary DNS  
 Secondary DNS

PPPoE  
 User ID  
 Password

**PORT SETTINGS**

HTTP Port 80  
 RTSP Port 554

**HTTPS SETTINGS**

HTTPS Enable   
 HTTPS Port 443

**Helpful Hints..**

Select "DHCP Connection" if you are running a DHCP server on your network and would like an IP address assigned to your camera automatically. You may choose to manually enter a **Static IP Address** and all the relevant network information or select **PPPoE** if you connect your DCS-935L directly to the Internet that uses a PPPoE service. If you choose PPPoE you must enter the user ID and password that was given by your Internet Service Provider.

**DNS** (Domain Name System) server is an Internet service that translates domain names (i.e. www.dlink.com) into IP addresses (i.e. 192.168.0.20). The IP addresses can be obtained from your ISP.

- **Primary DNS:** Primary domain name server that translates names to IP addresses.  
 - **Secondary DNS:** Secondary domain name server to backup the primary one.

**Port Settings** - Most ISPs do not open port 80 (a DCS-935L default video transfer port) for their residential customers, the DCS-935L has the ability

## Router Set-Up and Installation

The following steps generally apply to any router that you have on your network. The D-Link DIR-655 is used as an example to clarify the configuration process. Configure the initial settings of the DIR-655 by following the steps outlined in the DIR-655 Quick Installation Guide.

### 3. Access the Router with Your Web Browser

If you have cable or DSL Internet service, you will most likely have a dynamically assigned WAN IP Address. 'Dynamic' means that your router's WAN IP address can change from time to time depending on your ISP. A dynamic WAN IP Address identifies your router on the public network and allows it to access the Internet. To find out what your router's WAN IP Address is, go to the Status menu on your router and locate the WAN information for your router (as shown on the next page). The WAN IP Address will be listed. This will be the address that you will need to type in your Web browser to view your camera over the Internet.

Your WAN IP Address will be listed on the router's **Status > Device Info** page.

The screenshot shows the D-Link web interface for a DCS-935L camera. The top navigation bar includes links for LIVE VIDEO, SETUP, MAINTENANCE, STATUS, and HELP. The main content area is divided into two sections: BASIC INFORMATION and WIRELESS STATUS. A sidebar on the left contains links for Device Info, System Log, Event Log, and Logout. A 'Helpful Hints...' section on the right provides additional information.

BASIC INFORMATION	
Camera Name	DCS-935L
Time & Date	2014/01/05 00:37:45
Firmware Version	v1.00 b10
Agent Version	83
MAC Address	00:1A:97:03:33:56
IP Address	192.168.0.142
Subnet Mask	255.255.255.0
Default Gateway	192.168.0.1
Primary DNS	192.168.0.1
Secondary DNS	0.0.0.0
PPPoE Status	Enable
DDNS	Disable
UPnP Port Forwarding	Disable

WIRELESS STATUS	
Connection Mode	Infrastructure
Link	Yes
SSID	Zzzzzzzzzzzzzz5
Channel	44
Encryption	WPA2-PSK

Note: Because a dynamic WAN IP can change from time to time depending on your ISP, you may want to obtain a Static IP address from your ISP. A Static IP address is a fixed IP address that will not change over time and will be more convenient for you to use to access your camera from a remote location. The Static IP Address will also allow you to access your camera attached to your router over the Internet.

### 4. Open Virtual Server Ports to Enable Remote Image Viewing

The firewall security features built into the DIR-655 router prevent users from accessing the video from the DCS-960L over the Internet. The router connects to the Internet over a series of numbered ports. The ports normally used by the DCS-960L are blocked from access over the Internet. Therefore, these ports need to be made accessible over the Internet. This is accomplished using the Virtual Server function on the DIR-655 router. The Virtual Server ports used by the camera must be opened through the router for remote access to your camera. Virtual Server is accessed by clicking on the **Advanced** tab of the router screen.

Follow these steps to configure your router's Virtual Server settings:

1. Click **Enabled**.
2. Enter a different name for each entry.
3. Enter your camera's local IP Address (e.g., 192.168.0.120) in the Private IP field.
4. Select TCP for HTTP port and TCP for 5556 - 5559 ports.
5. If you are using the default camera port settings, enter 80 into the Public and Private Port section, click **Apply**.
6. Scheduling should be set to Always so that the camera images can be accessed at any time.

Important: Some ISPs block access to port 80 and other commonly used Internet ports to conserve bandwidth. Check with your ISP so that you can open the appropriate ports accordingly. If your ISP does not pass traffic on port 80, you will need to change the port the camera uses from 80 to something else, such as 800. Not all routers are the same, so refer to your user manual for specific instructions on how to open ports.

Enter valid ports in the Virtual Server section of your router. Please make sure to check the box next to the camera name on the Virtual Server List to enable your settings.

**D-Link**

DIR-655 // SETUP **ADVANCED** TOOLS STATUS SUPPORT

**VIRTUAL SERVER**

The Virtual Server option allows you to define a single public port on your router for redirection to an internal LAN IP Address and Private LAN port if required. This feature is useful for hosting online services such as FTP or Web Servers.

Save Settings Don't Save Settings

**24--VIRTUAL SERVERS LIST**

	Name	IP Address	Port	Traffic Type	Schedule	Inbound Filter
<input checked="" type="checkbox"/>	DCS-930L	192.168.0.120	80	HTTP	Always	Allow All
<input type="checkbox"/>		0.0.0.0	0	Application Name	Always	Allow All
<input type="checkbox"/>		0.0.0.0	0	Computer Name	Always	Allow All
<input type="checkbox"/>		0.0.0.0	0	Application Name	Always	Allow All
<input type="checkbox"/>		0.0.0.0	0	Computer Name	Always	Allow All

**Helpful Hints...**

Check the **Application Name** drop down menu for a list of predefined server types. If you select one of the predefined server types, click the arrow button next to the drop down menu to fill out the corresponding field.

You can select a computer from the list of DHCP clients in the **Computer Name** drop down menu, or you can manually enter the IP address of the computer at which you would like to open the specified port.

Select a schedule for when the virtual server will be enabled. If you do not see the schedule you need in



# Troubleshooting

This chapter provides solutions to problems that can occur during the installation and operation of the DCS-960L.

Read the following descriptions if you are having problems. (The examples below are illustrated in Windows Vista® and XP. If you have a different operating system, the screenshots on your computer will look similar to the following examples.)

## **1. What is Remote Access? How do I enable it?**

Remote Access allows you to access your camera from any PC connected to the Internet through a web browser. This lets you view your camera feed and manage your camera's settings when you're away from home.

To enable Remote Access, simply use the mydlink Home mobile app to set up your camera and register it with mydlink.

## **2. What can I do if I forget my password?**

If you forget your password, you will need to perform a hard reset of your camera. This process will change all your settings back to the factory defaults.

To reset your camera, please use an unfolded paperclip to press and hold the RESET button for at least 10 seconds while your camera is plugged in.

## **3. Why does the LED not light up?**

The power supply might be faulty. Confirm that you are using the provided DC 5V power supply for this network camera. Verify that the power supply is correctly connected. If the camera is functioning normally, the LED may have been disabled. See LED Control in **Admin** on page 43 for information about how to enable the LED.

## **4. Why is the camera's network connection unreliable?**

There might be a problem with the network cable. To confirm that the cables are working, PING the address of a known device on the network. If the cabling is OK and your network is reachable, you should receive a reply similar to the following (...bytes = 32 time = 2 ms).

Another possible problem may be that the network device such as a hub or switch utilized by the Network Camera is not functioning properly. Please confirm the power for the devices are well connected and functioning properly.

## **5. Why does the Network Camera work locally but not remotely?**

This might be caused by the firewall protection. Check the Internet firewall with your system administrator. The firewall may need to have some settings changed in order for the Network Camera to be accessible outside your local LAN. For more information, please refer to the section about installing your camera behind a router.

Make sure that the Network Camera isn't conflicting with any Web server you may have running on your network.

The default router setting might be a possible reason. Check that the configuration of the router settings allow the Network Camera to be accessed outside your local LAN.

### **6. Why does a series of broad vertical white lines appear through out the image?**

It could be that the CMOS sensor (a square panel situated behind the lens that measures the light signals and changes it into a digital format so your computer can present it into an image that you are familiar with) has become overloaded when it has been exposed to bright lights such as direct exposure to sunlight or halogen lights. Reposition the Network Camera into a more shaded area immediately as prolonged exposure to bright lights will damage the CMOS sensor.

### **7. The camera is producing noisy images. How can I solve the problem?**

The video images might be noisy if the Network Camera is used in a very low light environment.

### **8. The images are poor quality, how can I improve the image quality?**

Make sure that your computer's display properties are set to at least 6-bit color. Using 16 or 256 colors on your computer will produce dithering artifacts in the image, making the image look as if it is of poor quality.

The configuration on the Network Camera image display is incorrect. The Web Configuration Video section of the Web management allows you to adjust the related-parameters for improved images such as: brightness, contrast, hue and light frequency. Please refer to the Web Configuration section for detailed information.

### **9. Why are no images available through the Web browser?**

ActiveX might be disabled. If you are viewing the images from Internet Explorer make sure ActiveX has been enabled in the Internet Options menu. You may also need to change the security settings on your browser to allow the ActiveX plug-in to be installed.

If you are using Internet Explorer with a version number lower than 7, then you will need to upgrade your Web browser software in order to view the streaming video transmitted by the Network Camera.

# 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 securely 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 to work and communicate more efficiently. Increased mobility and the absence of cabling and other fixed infrastructure have proven to be beneficial for many users.

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 WiFi technology is another way of connecting your computer to the network without using wires. WiFi 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 similar to how cordless phone work, through radio signals to 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 as seen in the picture, 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, college and high school campuses, airports, golf courses, and many other outdoor venues.

## 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

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

### Small Office and Home Office

- 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 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 away as possible from the router/access point. This would significantly reduce any interfere that the appliances might cause since they operate on same frequency.

#### **Security**

Don't let you next-door neighbors or intruders connect to your wireless network. Secure your wireless network by turning on the WPA or WEP security feature on the router. Refer to product manual for detail 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 DCS-960L wireless network Cardbus 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 cardbus 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.

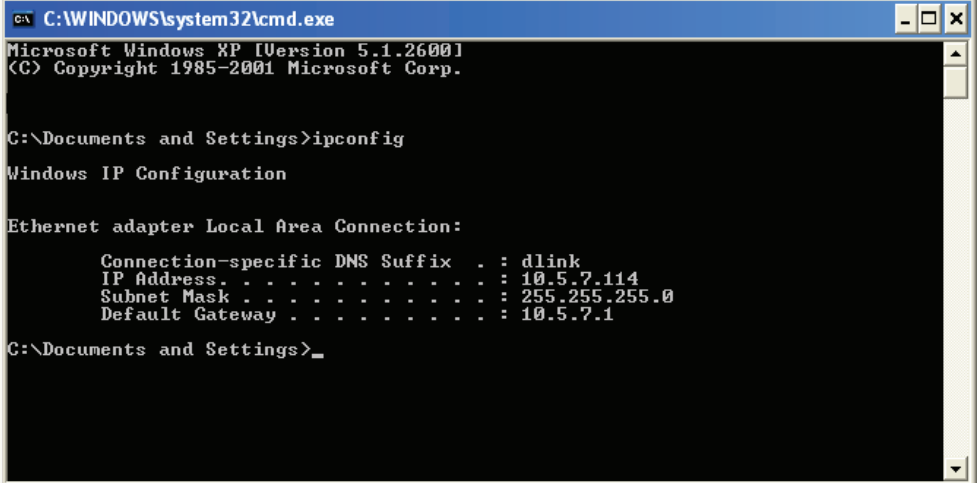
Click on **Start > Run**. In the run box type **cmd** and click **OK**.

At the prompt, type **ipconfig** and press **Enter**.

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

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

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



```
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® 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**.

### Step 2

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

### Step 3

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

### Step 4

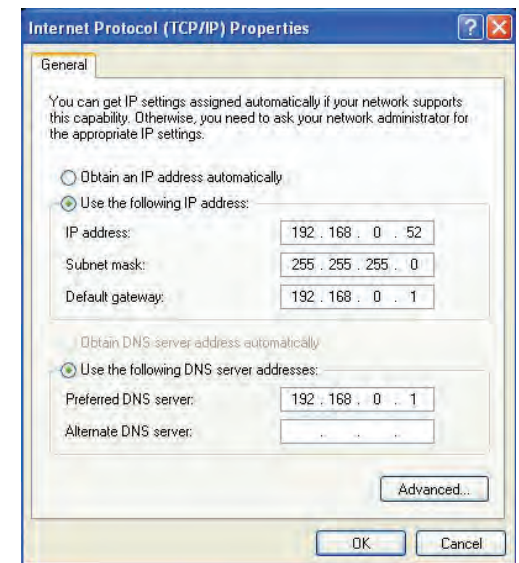
Click **Use the following IP address** and enter an IP address that is on the same subnet as your network or the LAN IP address on your router.

**Example:** If the router's LAN IP address is 192.168.0.1, make your IP address 192.168.0.X where X is a number between 2 and 99. Make sure that the number you choose is not in use on the network. Set Default Gateway the same as the LAN IP address of your router (192.168.0.1).

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

### Step 5

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



# Technical Specifications

Camera		
Camera Hardware Profile	<ul style="list-style-type: none"> <li>• 1/2.7" Megapixel progressive CMOS sensor</li> <li>• 5 meter IR illumination distance</li> <li>• Minimum illumination: 0 lux with IR LED on</li> <li>• Built-in Infrared-Cut Removable (ICR) Filter module</li> <li>• 8X digital zoom</li> <li>• Fixed length 1.72 mm</li> <li>• Aperture F2.0</li> </ul>	<ul style="list-style-type: none"> <li>• Angle of view                             <ul style="list-style-type: none"> <li>• (H) 180°</li> <li>• (V) 120°</li> <li>• (D) 180°</li> </ul> </li> <li>• Minimum object distance: 434 mm</li> <li>• Exposure Time: 1/30 to 1/22,320 sec.</li> <li>• Built-in Microphone</li> </ul>
Image Features	<ul style="list-style-type: none"> <li>• Configurable image size, quality, frame rate, and bit rate</li> <li>• Configurable brightness, contrast, sharpness, saturation, and hue</li> </ul>	<ul style="list-style-type: none"> <li>• Configurable motion detection windows</li> <li>• Time stamp and text overlays</li> </ul>
Video Compression	<ul style="list-style-type: none"> <li>• Simultaneous H.264/MJPEG format compression</li> </ul>	<ul style="list-style-type: none"> <li>• JPEG for still images</li> </ul>
Video Resolution	<ul style="list-style-type: none"> <li>• 1280 x 720, 800 x 600, 720 x 480, 640 x 480, 640 x 360, 320 x 240 at up to 30 fps</li> </ul>	
Audio Compression	<ul style="list-style-type: none"> <li>• G.711</li> </ul>	
Connectivity	<ul style="list-style-type: none"> <li>• 802.11ac/n/g wireless with WEP/WPA/WPA2 encryption</li> <li>• Operates on 2.4 GHz and 5 GHz bands</li> </ul>	<ul style="list-style-type: none"> <li>• Maximum data rate of 433 Mbps (PHY rate) <sup>1</sup></li> </ul>
Network		
Network Protocols	<ul style="list-style-type: none"> <li>• IPV4, ARP, TCP, UDP, ICMP</li> <li>• DHCP Client</li> <li>• NTP Client (D-Link)</li> <li>• DNS Client</li> <li>• DDNS Client (D-Link)</li> <li>• SMTP Client</li> <li>• FTP Client</li> </ul>	<ul style="list-style-type: none"> <li>• HTTP Server</li> <li>• PPPoE</li> <li>• RTP, RTSP, RTCP</li> <li>• UPnP Port Forwarding</li> <li>• HTTPS for configuration</li> <li>• Bonjour</li> </ul>
Security	<ul style="list-style-type: none"> <li>• Administrator and user group protection</li> <li>• Password authentication</li> </ul>	<ul style="list-style-type: none"> <li>• HTTP and RTSP digest encryption</li> </ul>
System Integration		
System Requirements for Web Interfaces	<ul style="list-style-type: none"> <li>• Operating system: Microsoft Windows 8/7/Vista/XP SP3 or Mac OS X 10.6 or higher</li> </ul>	<ul style="list-style-type: none"> <li>• Browser: Internet Explorer 7, Firefox 12, Safari 6 or higher</li> </ul>
Event Management	<ul style="list-style-type: none"> <li>• Motion detection</li> <li>• Sound level detection</li> </ul>	<ul style="list-style-type: none"> <li>• Event notification and uploading of snapshots/video clips via SMTP or FTP</li> </ul>
Remote Management	<ul style="list-style-type: none"> <li>• Configuration accessible via web browser</li> </ul>	
Mobile support	<ul style="list-style-type: none"> <li>• mydlink Lite app for iOS and Android</li> </ul>	<ul style="list-style-type: none"> <li>• mydlink+ app for iOS and Android</li> </ul>

## Appendix C - Technical Specifications

General	
Dimensions	• 137.5 x 95.8 x 95.8 mm (5.41 inches x 3.77 inches x 3.77 inches)
Weight	• 165.0 grams (5.8 ounces) ± 5%
Power	• 5 V DC, 1.2 A, 50/60 Hz
Power Consumption	• 3.5 watts maximum ± 5%
Temperature	• Operating: 0 to 40 °C (32 to 104 °F) • Storage: -20 to 70° C (-4 to 158 °F)
Humidity	• Operating: 20% to 80% non-condensing • Storage: 20% to 80% non-condensing
Certifications	• CE • CE LVD • FCC Class B • ICES • C-Tick
Dimensions Diagram	

<sup>1</sup> Maximum wireless signal rate derived from IEEE standard 802.11ac specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate. Environmental factors will adversely affect wireless signal range.

## **Federal Communication Commission Interference Statement**

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.

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.

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

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

### **Radiation Exposure Statement:**

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

The product is for indoor use only for all bands.

### **Industry Canada statement:**

This device complies with RSS-247 of the Industry Canada 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.

Ce dispositif est conforme à la norme CNR-247 d'Industrie Canada applicable aux appareils radio exempts de licence. Son fonctionnement est sujet aux deux conditions suivantes: (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

#### **Caution :**

- (i) the device for operation in the band 5150-5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems;
- (ii) the maximum antenna gain permitted for devices in the bands 5250-5350 MHz and 5470-5725 MHz shall be such that the equipment still complies with the e.i.r.p. limit;
- (iii) the maximum antenna gain permitted for devices in the band 5725-5850 MHz shall be such that the equipment still complies with the e.i.r.p. limits specified for point-to-point and non-point-to-point operation as appropriate; and
- (iv) the worst-case tilt angle(s) necessary to remain compliant with the e.i.r.p. elevation mask requirement set forth in Section 6.2.2(3) shall be clearly indicated.
- (v) Users should also be advised that high-power radars are allocated as primary users (i.e. priority users) of the bands 5250-5350 MHz and 5650-5850 MHz and that these radars could cause interference and/or damage to LE-LAN devices.

#### **Avertissement:**

Le guide d'utilisation des dispositifs pour réseaux locaux doit inclure des instructions précises sur les restrictions susmentionnées, notamment :

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

(ii) le gain maximal d'antenne permis pour les dispositifs utilisant les bandes de 5250 à 5350 MHz et de 5470 à 5725 MHz doit être conforme à la limite de la p.i.r.e;

(iii) le gain maximal d'antenne permis (pour les dispositifs utilisant la bande de 5725 à 5850 MHz) doit être conforme à la limite de la p.i.r.e. spécifiée pour l'exploitation point à point et l'exploitation non point à point, selon le cas;

(iv) les pires angles d'inclinaison nécessaires pour rester conforme à l'exigence de la p.i.r.e. applicable au masque d'élévation, et énoncée à la section 6.2.2 3), doivent être clairement indiqués.

(v) De plus, les utilisateurs devraient aussi être avisés que les utilisateurs de radars de haute puissance sont désignés utilisateurs principaux (c.-à-d., qu'ils ont la priorité) pour les bandes 5250-5350 MHz et 5650-5850 MHz et que ces radars pourraient causer du brouillage et/ou des dommages aux dispositifs LAN-EL.

**Radiation Exposure Statement:**

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

**Déclaration d'exposition aux radiations:**

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