D-Link®

User Manual

HD Wireless N Pan/Tilt Network Camera

DCS-5222LB1

Manual Overview

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Manual Revisions

Revision	Date	Description
1.0	11/311/2013	DCS-5222LB1 Revision B1 with firmware version 1.00

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Product Overview
Package Contents

DCS-5222LB1 Network Camera

Power Supply[1]

Camera Base and Mounting Kit
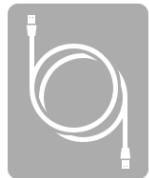
CD-ROM

CAT5 Ethernet Cable

[1] Using a power supply with a different voltage rating than the one included with the DCS-5222LB1 will cause damage and void the warranty for this product. If any of the above items are missing from your package, please contact your retailer.

System Requirements

Network Requirements	• 10/100 Ethernet network or an 802.11n/g/b wireless network

CD Setup Wizard Requirements	• An Internet connection
	• A router connected to your broadband modem
	
	Computer with the following:
	  • A PC with a wired connection to your router
	  • Windows® 8 (32/64bit), Windows® 7 (32/64bit), XP (32/64bit),Vista® (32/64bit), Mac OS®X 10.5 or above

Web-based Configuration Utility Requirements	**Browser Requirements:**
	  • Internet Explorer 8 or higher
	  • Firefox 12 or higher
	  • Safari 4 or higher
	  • Chrome 20 or higher
	
	Note: Make sure you have the latest version of Java installed.
	Visit www.java.com to download the latest version.

mydlink Website Requirements	• Broadband Internet connection
	• Computer with:
	  • Internet Explorer 7 or higher (ActiveX)
	  • Firefox 12 or higher
	  • Safari 4 or higher
	  • Chrome 20 or higher

Introduction

Congratulations on your purchase of the DCS-5222LB1 HD Wireless N Pan/Tilt Network Camera. The DCS-5222LB1 is a versatile solution for your small office or home. The DCS-5222LB1 is a complete system with a built-in CPU and web server that transmits high quality video images for security and surveillance. It can be accessed remotely, and controlled from any PC/Notebook over your local network or across the Internet via a web browser. The DCS-5222LB1 features 802.11n wireless connectivity, allowing the camera to be placed anywhere within range of your wireless network. The DCS-5222LB1 comes with remote monitoring and motion detection features for a complete and cost-effective home security solution.

Features

Simple to Use
The DCS-5222LB1 is a stand-alone system with a built-in CPU, requiring no special hardware or software such as PC frame grabber cards. The DCS-5222LB1 supports both ActiveX mode for Internet Explorer and Java mode for other browsers such as Firefox, Chrome, and Safari.

Supports a Variety of Platforms
The DCS-5222LB1 supports TCP/IP networking, HTTP, and other Internet related protocols. It can also be integrated easily into other Internet/Intranet applications because of its standards-based features.

Web Configuration
Using a standard web browser, administrators can configure and manage the network camera directly from its own web page via an Intranet or the Internet.

Broad Range of Applications
With today's high-speed Internet services, the DCS-5222LB1 network camera can provide an ideal solution for live video over the Internet and for remote monitoring. The DCS-5222LB1 allows remote access from a web browser for live image viewing and management of the network cameras anytime, from anywhere in the world. The network camera has a wide range of applications, including industrial and public monitoring of homes, offices, banks, hospitals, child-care centers, and amusement parks.

802.11n Wireless or Ethernet/Fast Ethernet Support
The DCS-5222LB1 offers wireless 802.11n and Ethernet/Fast Ethernet connectivity, making the DCS-5222LB1 easy to integrate into your existing network environment. The DCS-5222LB1 works with a 10Mbps Ethernet based network or 100Mbps Fast Ethernet based network for traditional wired environments, and works with 802.11n routers or access points for added flexibility. The Site Survey feature also allows you to view and connect to any available wireless networks.

Remote Monitoring Utility
The D-ViewCam application adds enhanced features and functionality for the network camera and allows administrators to configure and access the network camera from a remote site via Intranet or Internet. Other features include image monitoring, recording images to a hard drive, viewing up to 32 cameras on one screen, and taking snapshots. Note that D-ViewCam works on Windows® computers only.

IR LED for day and night functionality
The built-in infrared LEDs enables night time viewing of up to 16 feet (5 meters).

Hardware Overview
Front

1	**IR LEDs for night vision**	Used to illuminate the camera's field of view at night
2	**Focus Adjustment Ring**	Enables manual adjustment of the cameras focal length.
3	**Passive Infrared Sensor**	Passive Infrared (PIR) sensor for motion detection
4	**Light Sensor**	Detects light levels and adjusts IR-LEDS accordingly.
5	**Camera Lens**	Records video of the surrounding area
6	**Microphone**	Records audio from the surrounding area

Hardware Overview
LEDs

1	**Power & Link LED**	The LED will be solid red while the camera boots, performs a self test, and searches for a network connection. The LED will switch to solid green when a proper connection has been achieved. The LED will blink green during data transfer. .
2	**WPS Status LED**	Indicates the WPS (Wi-Fi Protected Setup) connection status of the camera

Hardware Overview
Back

1	**Ethernet Port**	Connect 10/100 Ethernet devices such as computers, switches, and hubs.
2	**Audio Out**	Connect headphones/speakers to provide audio out.
3	**Reset Button**	Press the reset button to return the device back to it's factory conditions.
4	**DI/DO**	Attach digital I/O devices such as alarms or motion sensors.
5	**Power Receptor**	Connects to the power adapter.

Hardware Overview
Left and Right Side

1	**Built in Speaker**	Use the built-in speaker to provide immediate feedback to triggered events.
2	**Antenna**	The external antenna increases the device's range of connectivity.
3	**WPS Button**	Use WPS (Wi-Fi Protected Setup) to easily create a secure connection to your network.
4	**microSD Slot**	Insert a microSD card to store recorded images and video.

Adjusting Camera Focus

To manually adjust the camera focus, rotate the focussing ring around the lens clockwise or anti-clockwise.

Installation

There are three ways to set up your camera:

- **Zero Configuration Setup**: If you have a mydlink-enabled router, this is the easiest way to set up your camera. Refer to page 11.
- **Camera Setup Wizard**: If you do not have a mydlink-enabled router, use the Camera Installation Wizard to guide you through setup and initial configuration of your camera. Refer to page 14.
- **Manual Hardware Installation**: This section shows you how to manually set up your camera, though in order to use the mydlink features of your camera, you will still need to run the Camera Installation Wizard. Refer to page 16.

Zero Configuration Setup

If you have a mydlink-enabled Cloud Router, you can take advantage of Zero Configuration. Zero Configuration automatically configures your camera's settings for you, and adds it 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-5222LB1 and automatically add the camera to your mydlink account. After the short time it takes to do this you can remotely access your camera from the www.mydlink.com website to manage and monitor your DCS-5222LB1

Connect the Ethernet Cable

Use the included Ethernet cable and plug it into the camera. Plug the other end into an available port on your router. If you wish to use your camera wirelessly, you will be able to remove the cable after Zero Configuration Setup is complete.
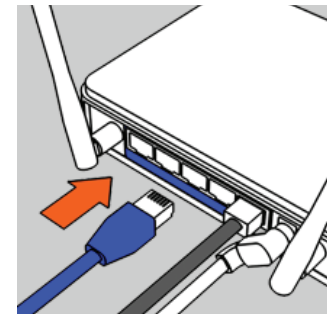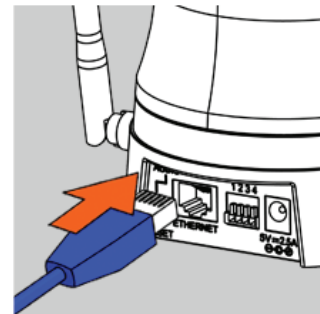
Attach the External Power Adapter

Connect the power adapter to the power connector on your camera, then plug the power adapter into a wall outlet.
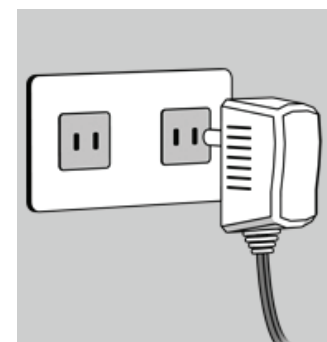
Check Your mydlink Account

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.

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.

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

If you wish to connect your camera to your router wirelessly, you can simply disconnect the Ethernet cable and move the camera to its intended location; your router's wireless settings have been automatically transferred to the camera, and no further configuration is required.

Your camera is now set up, and you can skip to "mydlink" on page 19 to learn more about the mydlink features of this camera, or to "Configuration" on page 21 for advanced configuration of your camera.
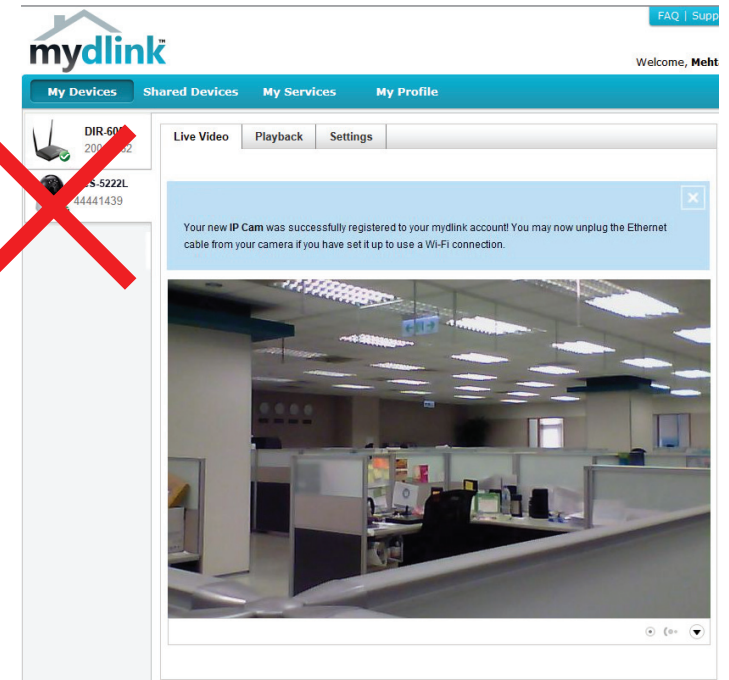
Camera Setup Wizard

If you do not have a mydlink-enabled Cloud Router, you can use the Camera Setup Wizard to guide you through the process of adding your camera to the mydlink service.

Windows Users

Insert the Installation CD-ROM into your computer's optical drive to start the autorun program. If the autorun program does not open, go to My Computer, browse to your CD drive, and double-click on the autorun.exe file. Once the wizard has started simply click **Set up your Cloud Camera** to go through the Setup Wizard, which will guide you step-by-step through the installation process from connecting your hardware to configuring your camera and registering it with your mydlink account.

Mac Users

Insert the Installation CD-ROM into your computer's optical drive. On the desktop, open your CD drive and double-click on the **SetupWizard** file.

After about 20-30 seconds, the Setup Wizard will open, which will guide you step-by-step through the installation process from connecting your hardware to configuring your camera and registering it with your mydlink account.
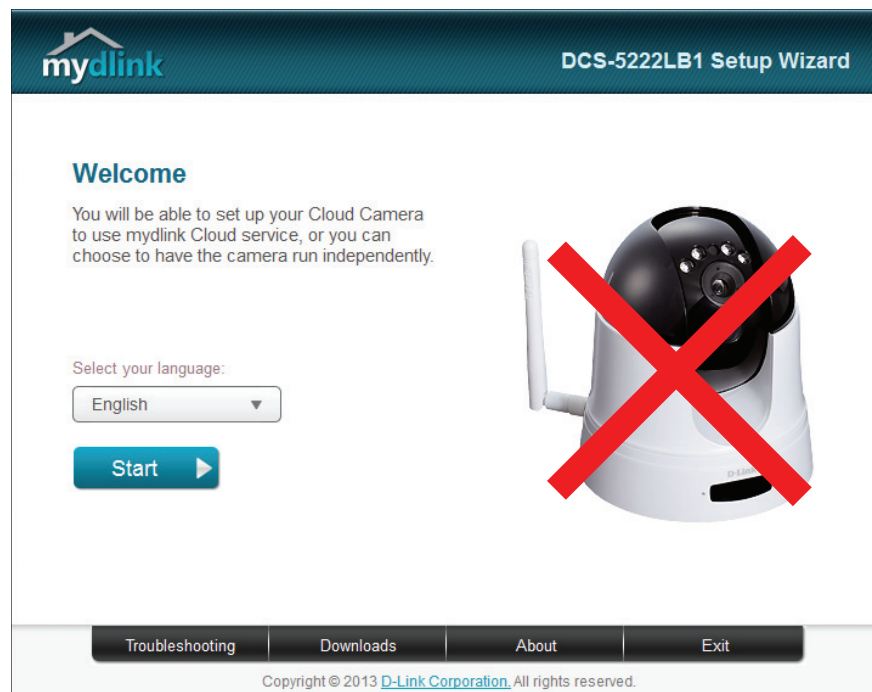
Manual Hardware Installation

If you wish to set up your camera without using the Camera Setup Wizard, please follow these steps.

Note: In order to use the mydlink features of this product, you will need to go through the Camera Setup Wizard or Zero Configuration Setup.
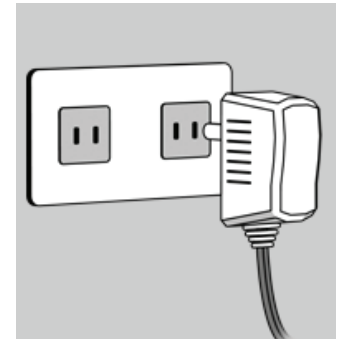
Connect the Ethernet Cable and Power Cable

Use the included Ethernet cable and plug it into the camera. Plug the other end into an available LAN port on your router. Plug the supplied power adapter into the back of the camera
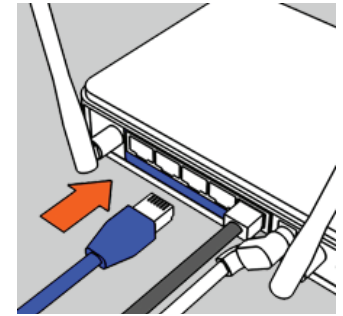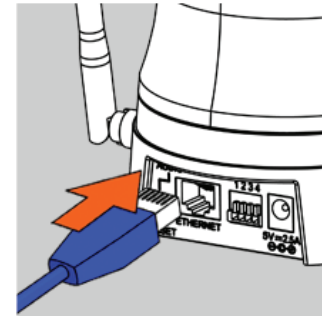
Plug in the External Power Adapter

Plug the power adapter into a wall outlet.

Configure Your Camera

Refer to "Configuration" on page 21 for information on how to configure your camera.

Optional: Use WPS to Connect Wirelessly

You can use WPS to connect your camera to your network wirelessly. For more information, refer to "WPS - Push Button Setup" on page 18. If your router does not support WPS, you will still be able to set up your camera's wireless settings in the camera's web interface.

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 in not in use.

WPS - Push Button Setup

Alternatively, you may create a connection to the camera using the Wi-Fi Protected Setup (WPS) feature.

To create a WPS connection:

Step 1
Press and hold the WPS button for three seconds. The blue WPS status LED above the button will blink.

Step 2
Press the WPS button on your router or access point within 120 seconds. The WPS button is usually on the front or side of your router. On some routers and access points, you may need to log in to the web interface and click on an on-screen button to activate the WPS feature. If you are not sure where the WPS button is on your router/AP, please refer to your router or AP's User Manual.

The DCS-5222LB1 will automatically create a wireless connection to your router or access point. While connecting, the green LED will flash and your camera will reboot.

WPS Button

mydlink

After registering your DCS-5222LB1 camera with a **mydlink** account in the Camera Setup 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.

Camera Status

Here, you can see the online status of each of your cameras. Your online status may be one of the following:

A green checkmark indicates that your camera is online and ready to use.

A yellow exclamation point indicates that your camera is online, but the camera password has changed. You will need to enter your new camera password to access your camera again.

A red X indicates that your camera is offline and currently cannot be accessed remotely.

If your camera is offline, try the following:
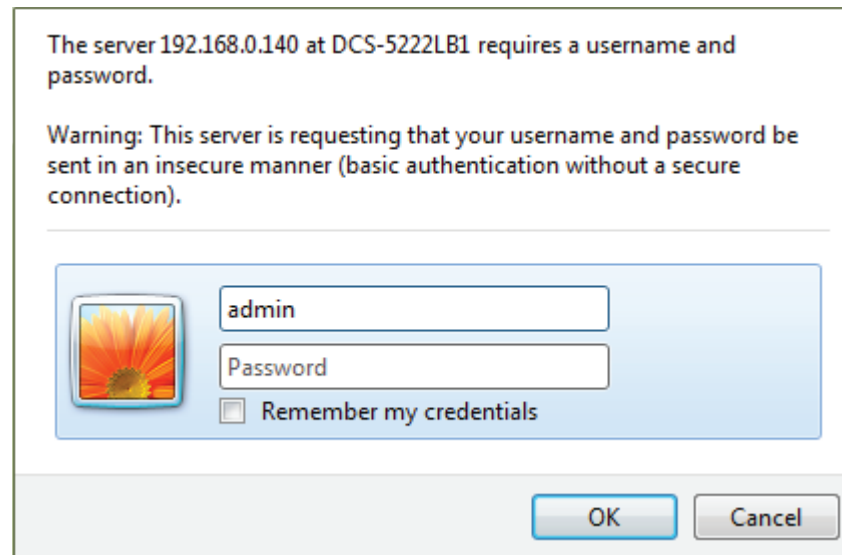- Check to make sure that the Internet connection to your camera is working properly.
- Try restarting your Internet router.
- Check your camera's cable connections and make sure they are secure.
- Check to make sure that the LED on your camera is lit solid green.

If you still cannot access your camera, reset your camera and run the Camera Installation Wizard again from the CD-ROM included in your package.

Configuration
Configuration Utility

After completing the Camera Installation Wizard, you are ready to use your camera. The camera's built-in Web configuration interface is designed to allow you to easily access and configure your DCS-5222LB1. At the end of the wizard, enter the IP address of your camera into a web browser, such as Internet Explorer®. To log in, use the User name **admin** and the password you created in the Installation Wizard. 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, or if you are using the camera on a closed network, the default IP is 192.168.0.20.

The server 192.168.0.140 at DCS-5222LB1 requires a username and password.

Warning: This server is requesting that your username and password be sent in an insecure manner (basic authentication without a secure connection).

admin

Password

☐ Remember my credentials

OK   Cancel

Live Video

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. Java can be downloaded free from Sun's web site (http://www.java.com).

A live feed from the camera is displayed upon logging into the camera's web interface.

P/T/Z Action Pad: Use the **Pan / Tilt / Zoom** action pad to control the camera's movement and zoom. The large arrow icons will move the camera up, down, left or right while the small arrow icons will move the camera position diagonally in the direction they are pointed. The **Home** button will move the camera to the preset "Home" position.

Pan: Press this button and the camera will pan from left-most position to the right-most position and then return to its original position.

Preset Sequence: Click this button to quickly move the camera to the desired patrol setup according to preset positions. Please refer to   42   PTZ   to create preset positions.
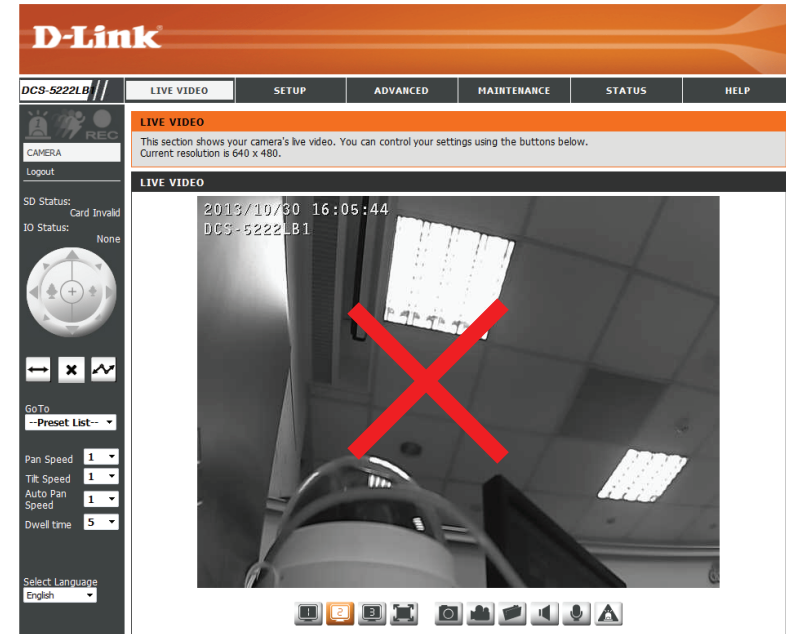
Stop: This will stop pan and patrol.

Go To: Select from the preset drop-down list to quickly move the camera to the desired preset position. Please refer to   42   PTZ   to create preset positions.

Pan/Tilt Speed: This setting can change the camera's pan/tilt speed.

Language Selection: Select the default language for the user interface.

The next page contains several icons which can be used to control the camera's main functions.

Icon	Button Name	Function
	Profile buttons	Use these buttons to switch between video profiles. Refer to 40 Audio and Video for more information on setting up profiles.
	Full Screen button	Displays the video at full screen.
	Snapshot button	Takes a snapshot of the image currently displayed on the screen and will save it to a file on the hard drive in a folder specified using the Storage folder button.
	Video recording button	Triggers the camera's recording function. This will record the video displayed on the screen and will save it to a file on the hard drive in a folder specified using the Storage folder button.
	Storage folder button	Sets the location to save snapshots and video recordings.
	Listen button	Sends the audio received from the camera's microphone through to the PC's speakers. Click again to turn off.
	Talk button	Sends audio from a microphone connected to your PC through to the speakers connected to the camera.
	Start Digital Input	
	Digital Input Indicator	This indicator will change color when a digital input signal is detected.
	Motion Trigger Indicator	This indicator will change color when a motion trigger event occurs if enabled.
	Recording Indicator	When a recording is in progress, this indicator will change color.
	Auto Pan	Starts the automatic panning function. The ROI will pan from back and forth within the FOV
	Stop	Stops automatic panning.
	Preset Path	Starts the camera's motion along the predefined path.

Setup
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 comfortable with adjusting the settings manually, you may skip the wizards and adjust the necessary 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 page "Internet Connection Setup Wizard" on page 25 for more details.

Manual Internet Connection Setup: If you would rather manually setup the camera internet connection, you can refer to 33 Network which provides more details on the information required.

Motion Detection Setup Wizard: You may choose to configure motion detection by using the Motion Detection Setup Wizard that includes step-by-step instructions. Please refer to page "Motion Detection Setup Wizard" on page 29 for more details.

Manual Motion Detection Setup: If you would rather manually setup the camera's motion detection features, you can refer to page "Motion Detection" on page 43 which provides more details on the information required.

INTERNET CONNECTION SETTINGS

In this section, you can setup the IP camera's wired network interface settings. If you are configuring this device for the first time, D-Link recommends that you click the Setup Wizard button, and follow the instructions on screen. If you wish to modify or configure the IP camera settings manually, click manual setup to enable the IP camera connection setup.

[Internet Connection Setup Wizard]   [Manual Internet Connection Setup]

IP CAMERA MOTION DETECTION SETTINGS

In this section, you can setup the IP camera's Motion Detection settings. If you are configuring this device for the first time, D-Link recommends that you click the Setup Wizard button, and follow the instructions on screen. If you wish to modify or configure the Motion Detection manually, click manual setup to enable the Motion Detection setup.

[Motion Detection Setup Wizard]   [Manual Motion Detection Setup]

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. **Note that this wizard will <u>not</u> register your camera with mydlink.com**.

Click **Next** to continue.

Select **Automatic IP Address** if you want your DHCP server (usually enabled on your router) to assign the camera its IP settings. If you want to manually assign the IP settings, select **Static IP Address** and enter the following details:

IP Address: Enter an IP address for your camera.

**Subnet Mask:** Enter the subnet mask of your network.

Default Gateway: Enter the default gateway address. This is usually the IP address of your router.

Primary DNS: Enter the primary DNS server's IP address. This is usually the IP address of your router.

Secondary DNS: Enter the secondary DNS server's IP address. This is optional.

If you are required to connect using PPPoE, select **Enabled** and enter the Username and Password for your PPPoE connection. Only select this option if your camera is directly connected to your broadband modem. If it is on a network with a router or gateway, do not select this option.
Click **Next** to continue.
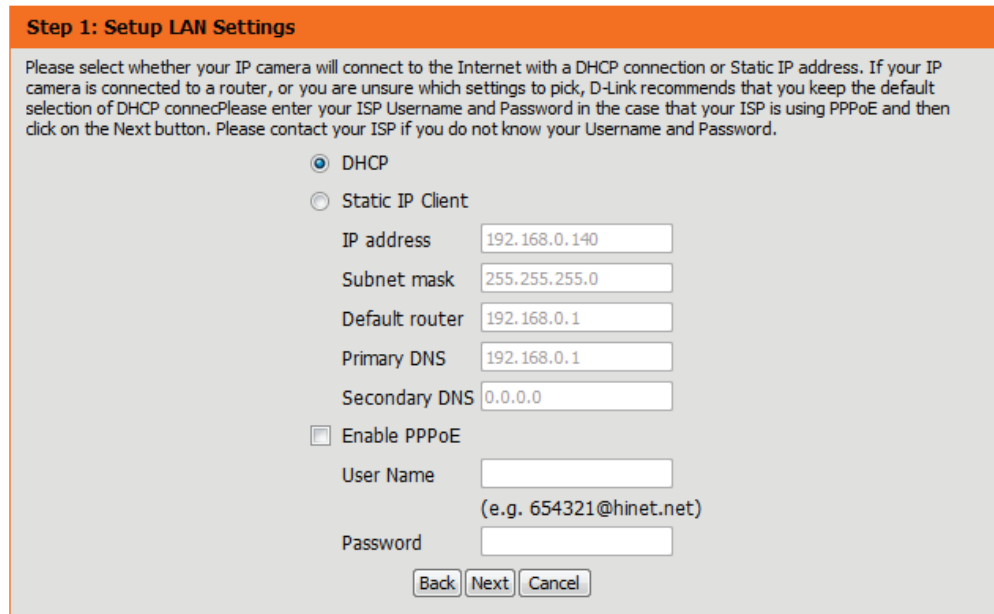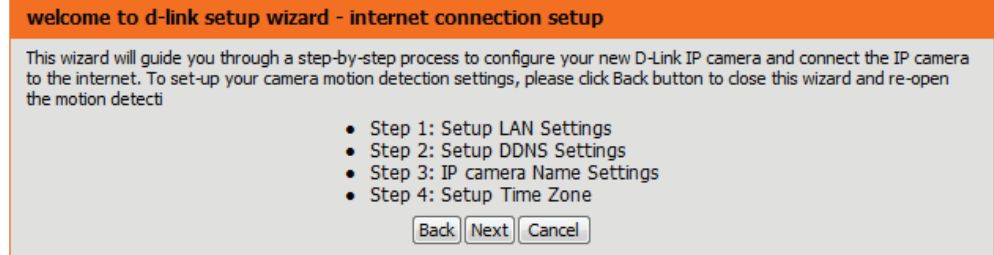
A Dynamic DNS account allows you to access your camera over the Internet when you have an IP address that changes each time you connect to the Internet. If you have a Dynamic DNS account, click **Enable** and enter the following details:

Enable: Click to enable the DDNS function.

DDNS: (Dynamic Domain Name Server) will hold a DNS host name and synchronize the public IP address of the modem when it has been modified. The username and password are required when using the DDNS service.

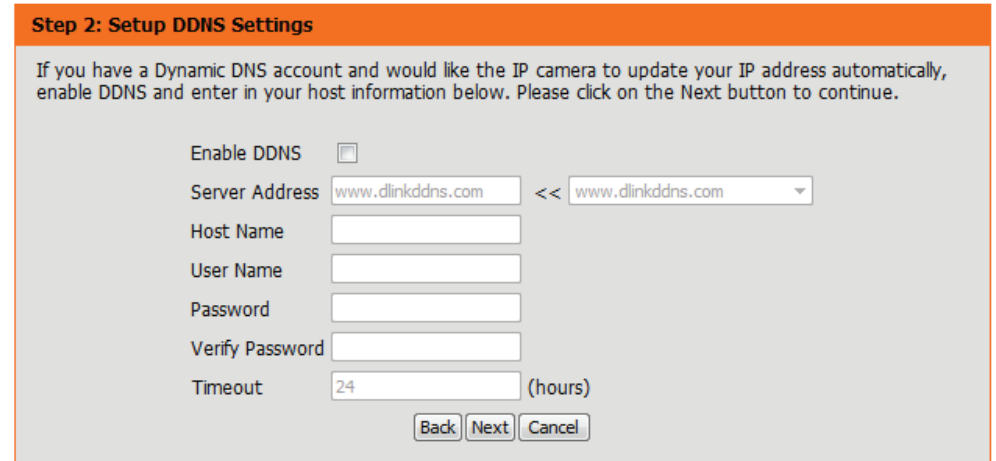**Server Address:** Select your Dynamic DNS Server from the drop down menu.

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.

Step 2: Setup DDNS Settings

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

Enable DDNS   ☐

Server Address   www.dlinkddns.com   <<   www.dlinkddns.com ▼

Host Name

User Name

Password

Verify Password

Timeout   24   (hours)

Back | Next | Cancel

Create a unique name for your camera. Click **Next** to continue.

> **Step 3: IP camera Name Settings**
>
> D-Link recommends that you rename your IP camera for easy accessibility. You can then identify and connect to your IP camera via this name. Please assign a name of your choice before clicking on the Next button.
>
> IP camera Name [DCS-5222LB1]
>
> [Back] [Next] [Cancel]

Select the time zone that the camera is geographically located in so that scheduled events occur at the correct time. If your time zone observes daylight saving, check the **Enable Daylight Saving** box and select **Auto Daylight Saving** to have DST set automatically or select **Set date and time manually** to enable the drop-down menu so that you can set the start and end time of daylight saving yourself.

Click **Next** to continue.

> **Step 4: Setup Time Zone**
>
> Please configure the correct time to ensure that all events are triggered, captured and scheduled at the correct time and day and then click on the Next button.
>
> Time Zone   (UTC+09:00) Irkutsk   ▼
> Enable Daylight Saving ☐
>
> [Back] [Next] [Cancel]

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

Step 5: Setup complete

Below is a summary of your IP camera settings. Click on the Back button to review or modify settings or click on the Apply button if all settings are correct. It is recommended to note down these settings in order to access your IP camera on the network or via your

IP Address	DHCP
IP camera Name	DCS-5222LB1
Time Zone	(UTC+09:00) Irkutsk
DDNS	Disable
PPPoE	Disable

[Back] [Apply] [Cancel]

Motion Detection Setup Wizard

This wizard will guide you through a step-by-step process to configure the motion detection feature of your new D-Link Camera

Click **Next** to continue.

Enabling the Video Motion option will allow your camera to use the motion detection feature. You may draw a finite motion area that will be used for monitoring in a selected area.

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

Enable PIR: When this option is selected, use PIR (passive infrared) to detect motion.

Sensitivity: Specifies the measurable difference that would indicate motion. Enter a value between 0 and 100.

Clear: Clears all motion detection areas from the picture.

Click **Next** to continue.
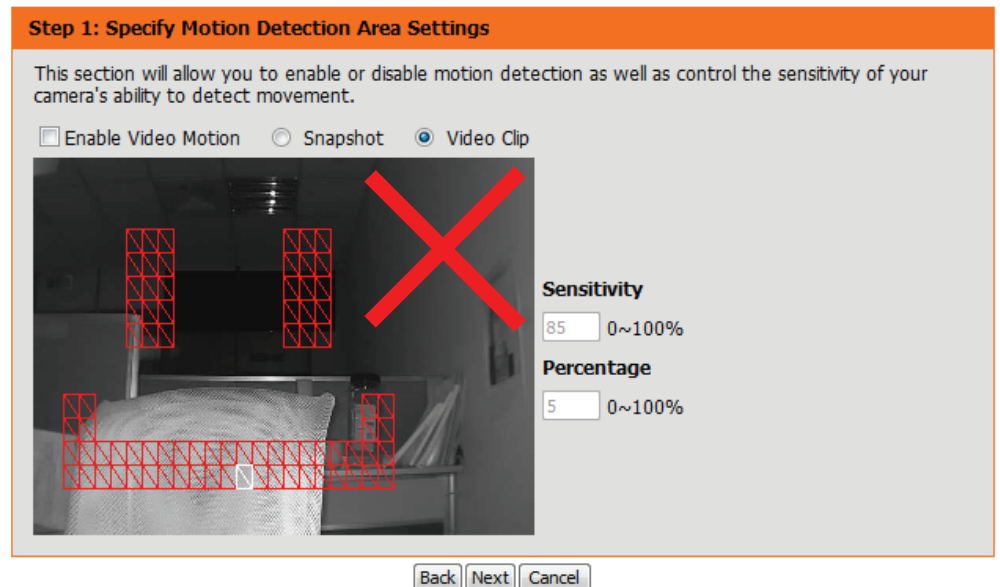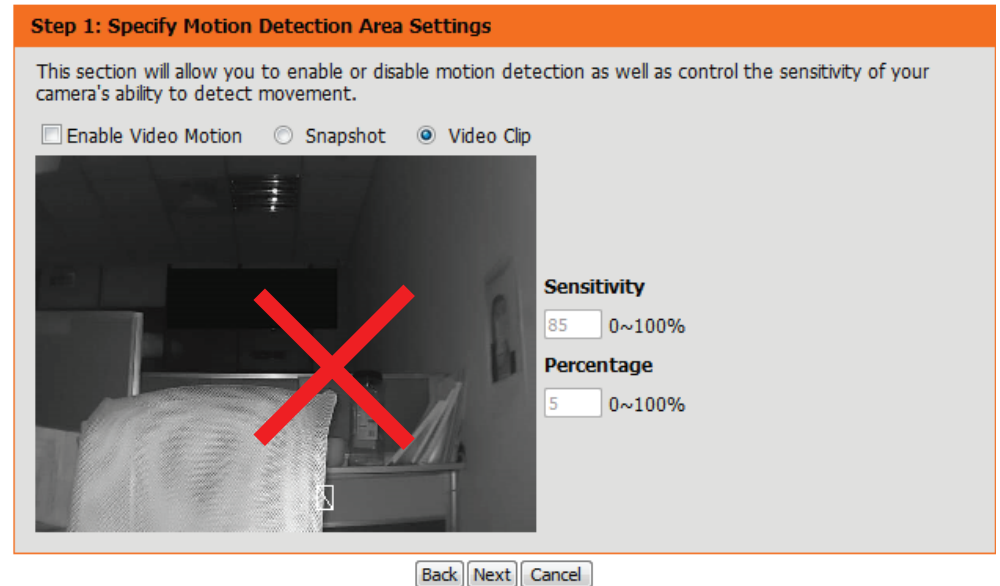
This step allows you to enable motion detection based on a customized schedule. Specify the day and hours. You may also choose to always record whenever motion is detected.

step 2: Motion Detection Schedule

This final step allows you to specify how you receive notification of camera events. Choose between an email notification or alternatively you can setup an FTP Notification. You will need your email account settings or FTP details. If you are unsure of th

☑ Sun ☑ Mon ☑ Tue ☑ Wed ☑ Thu ☑ Fri ☑ Sat

Time

◉ Always

○ From [00 ▾] [00 ▾] To [23 ▾] [59 ▾]

[Back] [Next] [Cancel]

Step 3

This step allows you to specify how you will receive event notifications from your camera. You may choose not to receive notifications, or to receive notifications via e-mail or FTP.

Please enter the relevant information for your e-mail or FTP account.

Click **Next** to continue.

Step 3: Alerts and Notification

This final step allows you to specify how you receive notification of camera events. Choose between an email notification or alternatively you can setup an FTP Notification. You will need your email account settings or FTP details. If you are unsure of th

○ Do not notify me

◉ Email

Sender email address	d@link.com
Recipient email address	d@link.com
Server address	mail.dlink.com
User name	hi
Password	••••••••
Port	25

○ FTP

Server address	
Port	21
User name	
Password	
Remote folder name	

[Back] [Next] [Cancel]

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

Step 4: Setup Complete

You have completed your IP camera setup. Please click the Back button if you want to review or modify your settings or click on the Apply button to save and apply your settings.

Motion Detection :	Disable
EVENT :	Video Clip
Schedule Day :	Sun ,Mon ,Tue ,Wed ,Thu ,Fri ,Sat ,
Schedule Time :	Always
Alerts and Notification :	Email

Back Apply Cancel

Network

Use this section to configure the network connections for your camera. All relevant information must be entered accurately. After making any changes, click the **Save Settings** button to save your changes.

DHCP: Select this connection if you have a DHCP server running on your network and would like your camera to obtain an IP address automatically.

If you choose DHCP, you do not need to fill out the IP address settings.

Static IP Address: You may obtain a static or fixed IP address and other network information from your network administrator for your camera. A static IP address may simplify access to your camera in the future.

IP Address: Enter the fixed IP address in this field.

Subnet Mask: This number is used to determine if the destination is in the same subnet. The default value is 255.255.255.0.

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

Primary DNS: The primary domain name server translates names to IP addresses.

Secondary DNS: The secondary DNS acts as a backup to the primary DNS.

Enable UPnP Presentation: Enabling this setting allows your camera to be configured as a UPnP device on your network.

Enable UPnP Port Forwarding: Enabling this setting allows the camera to add port forwarding entries into the router automatically on a UPnP capable network.

Enable PPPoE: Enable this setting if your network uses PPPoE.

User Name / Password: Enter the username and password for your PPPoE account. Re-enter your password in the Confirm Password field. You may obtain this information from your ISP.

HTTP Port: The default port number is 80.

Access Name for Stream 1~3: The default name is video#.mjpg, where # is the number of the stream.

HTTPS Port: You may use a PC with a secure browser to connect to the HTTPS port of the camera. The default port number is 443.

RTSP Port: The port number that you use for RTSP streaming to mobile devices, such as mobile phones or PDAs. The default port number is 554. You may specify

the address of a particular stream. For instance, live1.sdp can be accessed at rtsp://x.x.x.x/video1.sdp where the x.x.x.x represents the ip address of your camera.

Enable CoS: Enabling the Class of Service setting implements a best-effort policy without making any bandwidth reservations.

Enable QoS: Enabling QoS allows you to specify a traffic priority policy to ensure a consistent Quality of Service during busy periods. If the network camera is connected to a router that itself implements QoS, the router's settings will override the QoS settings of the camera.

Enable IPV6: Enable the IPV6 setting to use the IPV6 protocol. Enabling the option allows you to manually set up the address, specify an optional IP address, specify an optional router and an optional primary DNS.

Enable Multicast for stream The DCS-5222LB1 allows you to multicast each of the available streams via group address and specify the TTL value for each stream. Enter the port and TTL settings you wish to use if you do not want to use the defaults.

Wireless

To set up your Network camera's wireless network interface settings, enable **Wireless Settings** in this window first.

Enable: Check the box to enable wireless functionality or uncheck the box to disable wireless functionality.

Site Survey: Click the **Rescan** button to scan for available wireless networks. After scanning, select a wireless network from the drop-down box that you want to connect to.

Network Name: The name of the wireless network.

Wireless Mode: Use the drop-down box to select the mode of the wireless network you wish to connect to. **Infrastructure** is normally used to connect to an access point or router. **Ad-Hoc** is usually used to connect directly to another computer.

Channel: If you are using Ad Hoc mode, select the channel of the wireless network you wish to connect to, or select **Auto**.

Authentication: Select the type of authentication you are using on your wireless network (**Open**, **Shared (WEP)**, **WPA-PSK**, or **WPA-PSK2)**.

Encryption: If you are using **WPA-PSK** or **WPA-PSK2** authentication, you will need to specify whether your wireless network uses TKIP or AES encryption. If you use **Open** or **Shared** authentication, this setting will be automatically set.

Key: Enter the key or passphase to access a secure network.

After making any changes, click the **Save Settings** button to save your changes, or click the **Don't Save Settings** button to discard your changes.

Dynamic DNS

This section allows you to configure the DDNS setting for your camera. DDNS will allow all users to access your camera using a domain name instead of an IP address.

Enable DDNS: Click 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.

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

Verify Password: Enter your password again for verification.

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.

Status: Displays the connection status of your DDNS account.

DYNAMIC DNS SETTING

Enable DDNS	☐
Server Address	www.dlinkddns.com << www.dlinkddns.com ▼
Host Name	
User Name	
Password	
Verify Password	
Timeout	24 (hours)
Status	Inactive

Image Setup

This section allows you to adjust the image and sensor settings for your camera.

Enable Privacy Mask: The Privacy Mask setting allows you to specify 3 rectangular areas on the camera's image to be blocked/excluded from recordings and snapshots.

You may click and drag the mouse cursor over the camera image to draw a mask area. Right click on the camera image to bring up the following menu options:

Disable All: Disables all mask areas
Enable All: Enables all mask areas
Reset All: Clears all mask areas.

Mirror: This will flip the image horizontally.

Flip: This will flip the image vertically.

Power Line: Select the frequency used by your power lines to avoid interference or distortion.

White Balance: Use the drop-down menu to change the white balance settings to help balance colors in different lighting environments. You can choose from Auto, Outdoor, Indoor, Fluorescent, and Push Hold.

Exposure Mode: Changes the exposure mode. Use the drop-down box to set the camera for Indoor, Outdoor, or Night environments, or to Moving to capture moving objects. The Low Noise option will focus on creating a high-quality picture without noise. You can also create 3 different custom exposure modes. The Max Gain setting will allow you to control the maximum amount of gain to apply to brighten the picture.

Denoise: This setting controls the amount of noise reduction that will be applied to the picture.

Brightness: This adjusts the brightness of the camera image.

Contrast: This adjusts the contrast of the camera image, making a washed out image clearer or reducing the brightness in an over exposed image.

Saturation: This adjusts the color saturation. Saturation controls the strength of color in the image.

Sharpness: Specify a value from 0 to 8 to specify how much sharpening to apply to the image.

Mount type: Select the correct mounting type from either **Ceiling** or **Desktop** to ensure the PTZ controls respond accurately.

Note: **Mirror** and **Flip** can be used if you have mounted the DCS-5222LB1 on the ceiling.

Audio and Video

You may configure up to 3 video profiles with different settings for your camera. Hence, you may set up different profiles for your computer and mobile display. In addition, you may also configure the two-way audio settings for your camera. After making any changes, click the **Save** button to save your changes.There are three sensor output selections (VGA, XGA, and SXGA). Do not select SXGA if you want to turn on the motion detection feature.

Aspect ratio: Set the aspect ratio of the video to 4:3 standard or 16:9 widescreen.

Mode: Set the video codec to be used to JPEG, MPEG-4, or H.264.

Frame size / Frame size determines the total capture
View window resolution, and View window area determines the
area: Live Video viewing window size. If the Frame size is larger than the Live Video size, you can use the ePTZ controls to view the full area.

16:9   1280 x 800, 1280 x 720, 800 x 450, 640 x 360, 480 x 270, 320 x 176, 176 x 144

4:3   1024 x 768, 800 x 600, 640 x 480, 480 x 360, 320 x 240, 176 x 144

Note: If your view window area is the same as your frame size, you will not be able to use the ePTZ function.

Maximum A higher frame rate provides smoother motion
frame rate: for videos, and requires more bandwidth. Lower frame rates will result in stuttering motion, and requires less bandwidth.

Video Quality: This limits the maximum frame rate, which can be combined with the "Fixed quality" option to optimize the bandwidth utilization and video quality. If fixed bandwidth utilization is desired regardless of the video quality, choose "Constant bit rate" and select the desired bandwidth.

Constant bit rate: The bps will affect the bit rate of the video recorded by the camera. Higher bit rates result in higher video quality.

Fixed quality: Select the image quality level for the camera to try to maintain. High quality levels will result in increased bit rates.

Encoding: Choose between G.711, G.726 or AAC.

Audio in off: Selecting this checkbox will mute incoming audio.

Audio in gain level: This setting controls the amount of gain applied to incoming audio to increase its volume.

Audio out off: Selecting this checkbox will mute outgoing audio.

Audio out volume level: This setting controls the amount of gain applied to outgoing audio to increase its volume.

Note: Video Profile 3 is always set to MJPEG as the Encode Type to ensure that at least one of the Video Profiles are viewable by non-IE browsers. Video Profile 4 is for mobile devices only, and always uses H.264 as the Encode Type.

Note: Higher frame size, frame rate and bit rates will give you better video quality, but they will also require more network bandwidth. For best viewing results on a mobile phone, we suggest setting the frame rate to 5 fps and the bit rate to 20 Kbps. Similarly, select appropriate audio encoding for your bandwidth requirements.

After making any changes, click the **Save Settings** button to save your changes, or click the **Don't Save Settings** button to discard your changes.

PTZ

This section allows you to configure the pan and tilt operations of your camera. You can specify the lens location for the Home button, and specify up to 24 pre-set lens locations, allowing you to quickly view these pre-determined areas of the camera's range from the Live Video screen.

Pan Speed: Select the speed at which the camera will pan for a full cycle from the drop-down list. Select a value between 0 and 10, 0 being the slowest setting.

Tilt Speed: Select the speed at which the camera will tilt for a full cycle from the drop-down menu. Select a value between 0 and 10, 0 being the slowest.

Preset Name: Enter a name for your camera location and click **Add**.

Present List: To add a preset to the sequence, select it from the drop-down box at the bottom of this window, then click the Add button. The preset name will appear in the list.

You can rearrange your presets in the sequence by selecting a preset in the sequence, then clicking the arrow buttons to move it higher or lower in the current sequence.
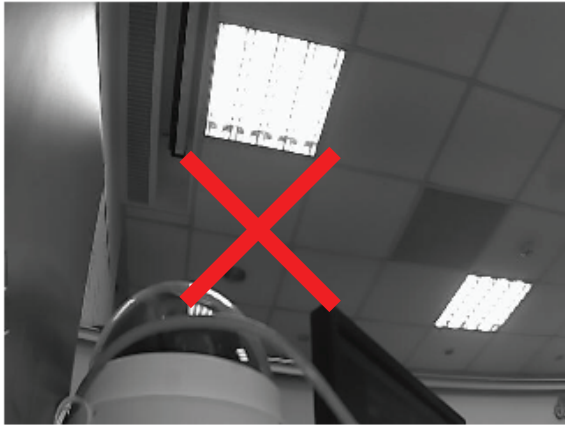
Clicking the trash can button will remove the currently selected preset from the sequence.

Choose as Home: Click to set the Home position with the default setting.

Auto Pan Speed: Select the speed at which the camera will pan from the drop-down menu. Select a value between 0 and 10, 0 being the slowest.

Click **Save** when finished.

Motion Detection

This option allows you to set up Motion Detection on your network camera.

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

Sensitivity: This setting adjusts how sensitive the camera will be to motion, where 100% will be the most sensitive setting and 0% will be the least sensitive setting.

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

Clear: Clicking this button will clear all motion detection zones.

After making any changes, click the **Save Settings** button to save your changes, or click the **Don't Save Settings** button to discard your changes.

Note: If the camera is set to SXGA mode in Audio and Video, Motion Detection is disabled.

The red grid on the right indicates an area that has been selected for motion detection. When motion is detected, the LIVE VIDEO page will display a blinking orange motion video icon like the one below.

No Motion   Motion

The motion notification will continue to blink as long as motion is detected. If no additional motion is detected, it will return to its original state after eight seconds.

Sound Detection

Enabling Sound Detection will allow your camera to use the built-in microphone to trigger events with audio. If this option is selected, the trigger by option under SD recording, Video Clip, or Snapshot should also be selected.

Enable Sound Detection: Check this box to enable the motion detection feature of your camera.

Detection Level: Specifies the measurable level that would indicate sound. Please enter a value between 50 and 90, the higher the number the more sensitive the camera will be to sound.
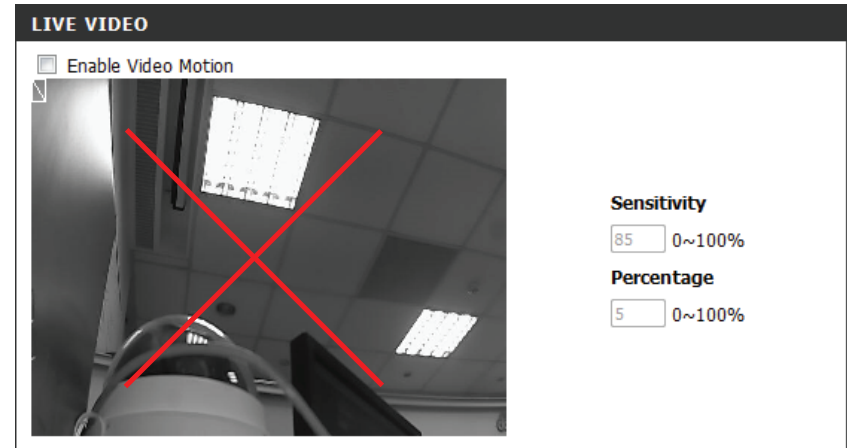
After making any changes, click the **Save Settings** button to save your changes, or click the **Don't Save Settings** button to discard your changes.
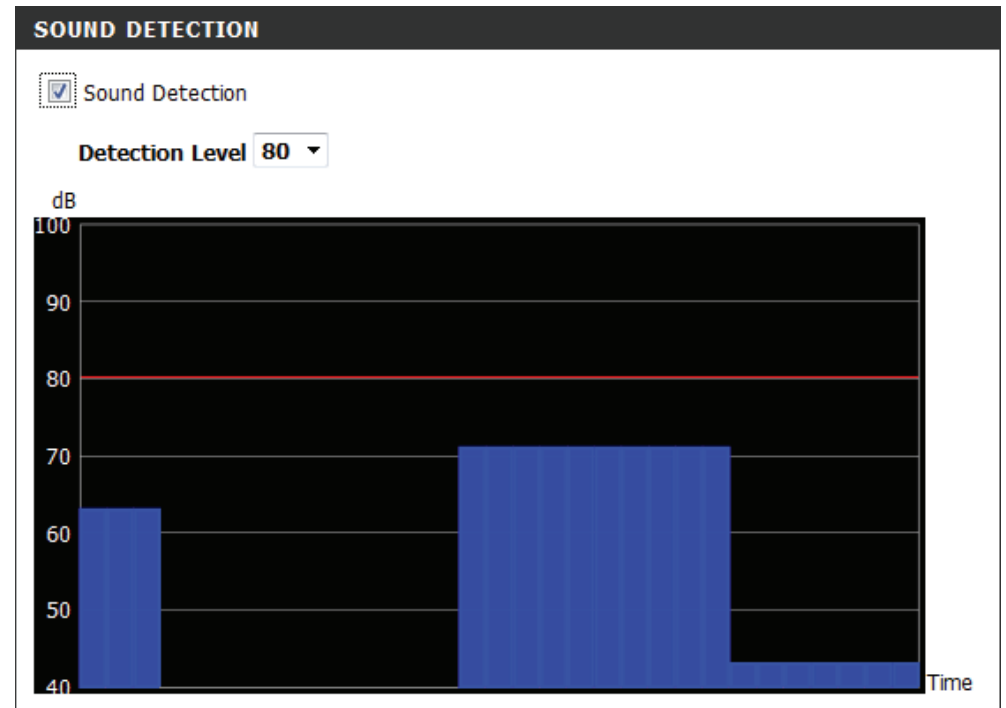
Time and Date

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.

Enable Daylight Saving: Check this if the camera is in a region where daylight saving is observed.

Auto Daylight Saving: This option will adjust Daylight Saving Time automatically.

Synchronize NTP Server: Network Time Protocol will synchronize your camera with an Internet time server. You can enter an IP address of a server or select from the drop-down menu.

Set the Date and Time Manually: Select this to set the time manually.

Copy your Computer's Time Settings: Click to synchronize the time information from your PC.

After making any changes, click the **Save Settings** button to save your changes, or click the **Don't Save Settings** button to discard your changes.

Event Setup

In a typical application, when motion is detected, the DCS-5222LB1 sends images to a FTP server or via e-mail as notifications. As shown in the illustration below, an event can be triggered by many sources, such as motion detection or external digital input devices. When an event is triggered, a specified action will be performed. You can configure the network camera to send snapshots or videos to your e-mail address or FTP site.
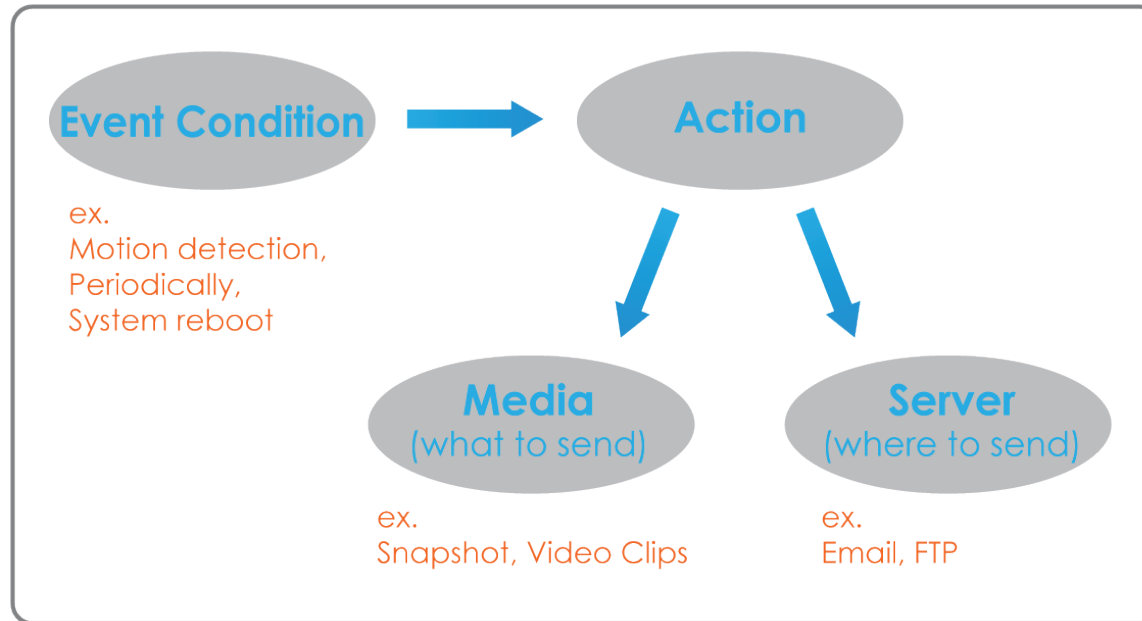
To start plotting an event, it is suggested to configure server and media columns first so that the network camera will know what action shall be performed when a trigger is activated.

The Event Setup page includes 4 different sections.

- Server
- Media
- Event
- Recording

1. To add a new item - "event, server or media," click **Add**. A screen will appear and allow you to update the fields accordingly.

2. To delete the selected item from the pull-down menu of event, server or media, click **Delete**.

3. Click on the item name to pop up a window for modifying.

SERVER		
Name	Type	Address/Location
Add ▼ Delete		

MEDIA		
Name	Type	Source
Add ▼ Delete		

EVENT
Name Status Sun Mon Tue Wed Thu Fri Sat Time Trigger
Add ▼ Delete

RECORDING
Name Status Sun Mon Tue Wed Thu Fri Sat Time Source Destination
Add ▼ Delete

Add Server

You can configure up to 5 servers to save snapshots and/or video to. After making any changes, click the **Save Settings** button to save your changes.

Server Name: Enter the unique name of your server.

E-mail: Enter the configuration for the target e-mail server account.

FTP: Enter the configuration for the target FTP server account.

Network Storage: Specify a network storage device. Only one network storage device is supported.

SD Card: Use the camera's onboard SD card storage.

SERVER TYPE

Server Name: [   ]

◉ Email
  Sender email address [   ]
  Recipient email address [   ]
  Server address [   ]
  User name [   ]
  Password [   ]
  Port [25]
  ☐ This server requires a secure connection (Start TLS)

○ FTP
  Server address [   ]
  Port [21]
  User name [   ]
  Password [   ]
  Remote folder name [   ]
  ☐ Passive mode

○ Network storage
  Network storage location [   ]
  (for example:\\my_nas\disk\folder)
  Workgroup [   ]
  User name [   ]
  Password [   ]
  Primary WINS server [   ]

○ SD Card

[Test] [Save Settings] [Don't Save Settings]

Add Media

There are three types of media, **Snapshot**, **Video Clip**, and **System Log**. After making any changes, click the **Save Settings** button to save your changes.

Media Name: Enter a unique name for media type you want to create.

Snapshot: Select this option to set the media type to snapshots.

Source: Set the video profile to use as the media source. Refer to Audio and Video on 40 Audio and Video for more information on video profiles.

Send pre-event image(s) [0~4]: Set the number of pre-event images to take. Pre-event images are images taken before the main event snapshot is taken.

Send post-event image(s) [0~7]: Set the number of post-event images to take. Post-event images are images taken after the main event snapshot is taken. You can set up to 7 post-event images to be taken.

File name prefix: The prefix name will be added on the file name.

Add date and time suffix to file name: Check it to add timing information as file name suffix.

Video clip: Select this option to set the media type to video clips

Source: Set the video profile to use as the media source. Refer to "Audio and Video" on page 51 for more information on video profiles.

Pre-event recording: This sets how many seconds to record before the main event video clip starts. You can record up to 3 seconds of pre-event video.

Maximum duration: Set the maximum length of video to record for your video clips.

Maximum file size: Set the maximum file size to record for your video clips.

File name prefix: This is the prefix that will be added to the file-name of saved video clips.

System log: Select this option to set the media type to system logs. This will save the event to the camera system log, but will not record any snapshots or video.

MEDIA TYPE

Media name: _____

◉ Snapshot
    Source: Profile1 ▼
    Send 1 ____ pre-event image(s) [0~3]
    Send 1 ____ post-event image(s) [0~7]
    File Name Prefix: _____
    ☐ Add date and time suffix to file name

○ Video Clip
    Source: Profile1 ▼
    Pre-event recording: ____ Second(s) [0~3]
    Maximum duration: ____ Second(s) [1~100]
    Maximum file size: ____ Kbytes [100~5000]
    File Name Prefix: _____

○ System log

[Save Settings] [Don't Save Settings]

Add Event

Create and schedule up to 2 events with their own settings here. After making any changes, click the **Save Settings** button to save your changes.

Event name: Enter a name for the event.

Enable this event: Select this box to activate this event.

Priority: Set the priority for this event. The event with higher priority will be executed first.

Delay: Select the delay time before checking the next event. It is being used for both events of motion detection and digital input trigger.

Trigger: Specify the input type that triggers the event.

Video Motion Detection: Motion is detected during live video monitoring. Select the windows that need to be monitored.

Periodic: The event is triggered in specified intervals. The trigger interval unit is in minutes.

Digital input: The external trigger input to the camera.

System Boot: Triggers an event when the system boots up.

Network Lost: Triggers an event when the network connection is lost.

Sound Detection: Triggers an event when an audio trigger is recorded.

Passive Infrared Sensor: Triggers an event when the PIR sensor is activated by moving infrared objects even in dark environment.

Time: Select Always or enter the time interval.

Trigger D/O: Select to trigger the digital output for a specific number of seconds when an event occurs.

EVENT

Event name: [   ]

☐ Enable this event

Priority: [normal ▾]

Delay for [10] seconds before detecting next event [For motion detection and digital input]

TRIGGER

◉ Video motion detection

○ Periodic

    Trigger every [1] minutes

○ Digital input

○ System boot

○ Network lost

○ Sound Detection

EVENT SCHEDULE

☑ Sun ☑ Mon ☑ Tue ☑ Wed ☑ Thu ☑ Fri ☑ Sat

Time

◉ Always

○ From [00 ▾][00 ▾] To [23 ▾][59 ▾]

ACTION

☐ Trigger D/O for [1] seconds

[Save Settings] [Don't Save Settings]

Add Recording

Here you can configure and schedule the recording settings. After making any changes, click the **Save Settings** button to save your changes.

Recording entry name: The unique name of the entry.

Enable this recording: Select this to enable the recording function.

Priority: Set the priority for this entry. The entry with a higher priority value will be executed first.

Source: The source of the stream.

Recording schedule: Scheduling the recording entry.

Recording settings: Configuring the setting for the recording.

Destination: Select the folder where the recording file will be stored.

Total cycling recording size: Please input a HDD volume between 1MB and 2TB for recording space. The recording data will replace the oldest record when the total recording size exceeds this value. For example, if each recording file is 6MB, and the total cyclical recording size is 600MB, then the camera will record 100 files in the specified location (folder) and then will delete the oldest file and create new file for cyclical recording.

Please note that if the free HDD space is not enough, the recording will stop. Before you set up this option please make sure your HDD has enough space, and it is better to not save other files in the same folder as recording files.

Size of each file for recording: If this is selected, files will be separated based on the file size you specify.

Time of each file for recording: If this is selected, files will be separated based on the maximum length you specify.

File Name Prefix: The prefix name will be added on the file name of the recording file(s).

SD Management

This page allows you to browse and manage the recorded files on an SD card which has been inserted into the camera.

Note: It is recommended to use the **Format SD Card** function when inserting an SD card for the first time.

Format SD Card: Click to automatically format the SD Card and create a folder for video. Formatting your SD Card will erase all data currently saved.

Delete: Click the checkbox in front of the Delete button to select files meant for deletion. The Delete button is used to delete the files which are selected.

Name: The name of file recording.

Size: The file's size.

Refresh: Click to refresh the page.

Files per page: Select the number of files to be displayed on a single page. The maximum is 100 files.

Pages: Show the current and total number of pages.

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 enable access to your camera.

Admin Password Setting: This section lets you change the admin password used to log into the camera and change settings. After installing the camera for the first time, it is highly recommended that you change the admin password for security purposes.

Enter the existing password, then enter your new password. Click **Save** to apply your new settings.

Add User Account: You may create user accounts to allow others to log into your camera to view the live camera feed. Users cannot change any settings.

Enter the User Name you wish to use for the new user account and then create a password for that account. Click Add to save your account.

User List: Select a user from the drop-down menu and click **Delete** to remove the user account from having access to the camera images.

Camera Name: Enter the name of your camera. This is useful if you have multiple cameras.

Enable OSD: This will enable the information bar On Screen Display (OSD) to appear when viewing video.

Label: This is the text label that will appear on the OSD.

ADMIN PASSWORD SETTING

New Password   63 characters maximum
Retype Password   Save

ADD USER ACCOUNT

User Name   20 users maximum
New Password   63 characters maximum
Retype Password
Add

USER LIST

User Name   -- User list -- ▼   Delete

DEVICE SETTING

IP camera Name   DCS-5222LB1   63 characters maximum
☑ Enable OSD
    Label   DCS-5222LB1   30 characters maximum
    Show time   ☑
    Save

Calibration Device   Calibration

Time Stamp: If checked, the current time will be displayed on the OSD.

Calibrate the Device: Clicking this button will calibrate the camera so that the P/T/Z apparatus functions correctly. The camera is automatically calibrated whenever it is powered on and initialized or reset. Should the camera's pan, tilt, and zoom functions begin to behave incorrectly, or if the device has been jarred or handled improperly, you may need to recalibrate the camera manually by pressing this button.

LED Light: This will turn the camera's front LED indicator on or off.

Privacy Mode: Select on/off or schedule the privacy mode for your camera to ensure privacy. When the privacy mode is turned on, the camera hides the lens by rolling it back into the unit.

After making any changes, click the **Save** button to save your changes.

System

This screen allows you to save and restore the camera's current configuration. You can also reset all settings to the factory default or reboot the device.

Save to Local Hard Drive: Click on the **Save Configuration** button to save the current configuration to your hard drive.

Load from Local Hard Drive: To load a saved configuration, click on the **Browse** button to select a configuration file from your hard drive. Then, click the **Load Configuration** button to load the new configuration.

Restore to Factory Defaults: Click this button to reset all settings to their factory defaults. If you select to reset your settings, you will need to set up your camera again.

Schedule Reboot: Select this option to schedule a time for the device to reboot.

Reboot Device: Clicking the **Reboot** button will reboot your device.

After making any changes, click the **Save** button to save your changes.

Firmware Upgrade

Your current firmware version and date will be displayed on this page. You can also upgrade your firmware with a new version.

To upgrade your firmware, go to **support.dlink.com** and download the latest firmware to your computer's hard drive.

Click on **Browse**, select the firmware file, then click the **Upload** button.

While the firmware is being upgraded, do not turn off your computer or camera, and do not disconnect your network connection from your computer or camera. Upgrading the firmware will not change any of your system settings, but it is recommended that you save your system configuration before doing a firmware upgrade.

Note: *It is recommended that you use a wired connection for your computer and camera when upgrading the firmware.*

FIRMWARE INFORMATION

Current Firmware Version:	1.00.01
Current Product Name:	DCS-5222LB1

FIRMWARE UPGRADE

File Path: [_____] [Browse...] [Upload]

Status
Device Info

This screen displays various information about your camera and its current settings.

DEVICE INFO

All of your network connection details are displayed on this page. The firmware version is also displayed here.

INFORMATION

IP camera Name	DCS-5222LB1
Time & Date	Wed Oct 30 16:08:40 2013
Firmware Version	1.00.01
MAC Address	0A:CA:CA:CA:76:46
IP Address	192.168.0.140
IP 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	Disable
DDNS	Disable
Agent Version	2.0.17-b36

Log

The log shows you a list of events that have happened recently. You can download the log by clicking the **Download** button, or you can empty the log by clicking the **Clear** button.

CURRENT LOG

1.	2013-10-30 16:04:33 admin LOGIN OK FROM 192.168.0.100
2.	2013-10-30 15:35:25 SYSTEM SET IR LIGHT ON
3.	2013-10-30 15:23:17 admin LOGIN OK FROM 192.168.0.100
4.	2013-10-29 11:38:39 DCS-5222LB1 ACQUIRE DHCP IP 192.168.0.140
5.	2013-10-29 11:38:35 NETWORK INTERFACE CHANGE TO ETHERNET
6.	2013-10-25 15:46:04 admin FROM 192.168.0.100 SET TIMEZONE (UTC+09:00) Irkutsk
7.	2013-10-25 15:46:04 admin FROM 192.168.0.100 SET NTP SERVER ntp1.dlink.com
8.	2013-10-25 15:45:14 admin LOGIN OK FROM 192.168.0.100
9.	2013-10-25 15:42:29 DCS-5222LB1 ACQUIRE DHCP IP 192.168.0.140
10.	2013-10-25 15:42:23 NETWORK RECONNECT
11.	2013-10-25 15:42:22 NETWORK LOSS
12.	2013-10-25 15:42:21 NETWORK INTERFACE CHANGE TO WLAN
13.	2013-10-25 15:42:02 DCS-5222LB1 ACQUIRE DHCP IP 192.168.0.140
14.	2013-10-25 15:41:57 NETWORK INTERFACE CHANGE TO ETHERNET
15.	2013-10-25 15:22:31 DCS-5222LB1 ACQUIRE DHCP IP 192.168.0.140
16.	2013-10-25 15:22:21 NETWORK RECONNECT
17.	2013-10-25 15:22:18 NETWORK LOSS
18.	2013-10-25 15:22:04 DCS-5222LB1 ACQUIRE DHCP IP 192.168.0.140
19.	2013-10-25 15:21:58 NETWORK RECONNECT
20.	2013-10-25 15:21:57 NETWORK LOSS

[First Page]   [Previous 20]   [Next 20]

[Clear]   [Download]

Help

Online help is available at any time by clicking on the Help tab.

HELP
- LIVE VIDEO
- SETUP
- MAINTENANCE
- ADVANCED
- STATUS

LIVE VIDEO
- Camera

SETUP
- Setup Wizard
- Network Setup
- Wireless Setup
- Dynamic DNS
- Image Setup
- Audio and Video
- Motion Detection
- Time and Date
- Event Setup
- SD Card

ADVANCED
- DI and DO
- ICR and IR
- HTTPS
- Access List

MAINTENANCE
- Admin
- System
- Firmware Upgrade

STATUS
- Device Info
- Log

Configuring the DCS-5222LB1 with a Router

D-Link's DCS-5222LB1 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-5222LB1 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. This step is only needed **if you do not** wish to take advantage of the built in mydlink functions.

Components Needed:
   • 1 DCS-5222LB1 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-5222LB1 for Use Behind a Router

Installing a DCS-5222LB1 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-5222LB1, follow the steps outlined in the Quick Installation Guide.

After you have completed the setup of the DCS-5222LB1 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. Assign a Local IP Address to Your Camera

Run the setup wizard from the CD included with the DCS-5222LB1. Follow the steps in the Quick Installation Guide to configure the DCS-5222LB1. The camera will be assigned a local IP Address that allows it to be recognized by the router. Write down this IP Address for future reference.

2. View the network camera Using Your Internet Explorer Web Browser

Open a Web browser. In the address bar, type in the IP Address that was assigned to the network camera. The DCS-5222LB1 Live Video Page appears with a window displaying live video from the camera.

Click on the **Setup** button on the left side. Scroll down the Network Setup page to find the ports used by HTTP and Streaming audio and video.

The **Setup > Network** page displays the port settings for your camera. If necessary, these ports can be changed if they are already in use by other devices (e.g. in a multiple camera environment).

Note: Both the HTTP port and RTSP port are required to be opened for the DCS-5222LB1.

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. Refer to the router's user manual for more information on router operation and configuration.

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 page 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.

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 Ports to Enable Remote Image Viewing (Port Forwarding)

The firewall security features built into the DIR-655 router prevent users from accessing the video from the DCS-5222LB1 over the Internet. The router connects to the Internet over a series of numbered ports. The ports normally used by the DCS-5222LB1 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, both (TCP and UDP) for RTSP and both (TCP and UDP) 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.

Repeat the previous steps adding the port 554 to both the Public and Private Port sections. A check mark appearing before the entry name will indicate that the ports are enabled.

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 8080. 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.

Troubleshooting

This chapter provides solutions to problems that can occur during the installation and operation of the DCS-5222LB1. 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 go through the Camera Installation Wizard included on the Installation CD that came in your package. You can also download the wizard from the following websites:

DCS-5222LB1: http://DCS-5222LB1.mydlink.com

After going through the wizard, you should see Remote Status: Enabled on the summary page.

If you see Remote Status: Disabled, make sure that:

...the front LED on your camera is lit solid green

...your Internet connection is working

...your router's LAN & WAN connections are working properly

...your router has UPnP enabled (if your router does not support UPnP, please refer to Appendix A)

...your router can get a public IP

...your router is upgraded to the latest firmware

...you have tried rebooting your router by unplugging it, then plugging it back in

After checking the above items, you can click the Retry button to refresh the summary screen to see if Remote Access has been enabled.

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 3 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   56   Admin   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.

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 a routers 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 environments.

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 6, then you will need to upgrade your Web browser software in order to view the streaming video transmitted by the network camera.

If you are using another browser such as Google's Chrome or Apple's Safari, you may need to install the appropriate plugin before the streaming video will work.

If you are using Java, you may need to update to the latest version of the Java application. Please visit Sun's website in order to obtain the newest version Java for your computer platform (http://www.java.com).

You browser may also have 3rd party applications blocked. Please make sure that the browser you are using does not have 3rd party plugin support disabled. You may need to refer to your particular browsers help function in order to turn this functionality on or off.

10. The PIR is not operating well, how can I improve the PIR quality?

-   For the Passive Infrared Sensor (PIR) to function properly it is required to have direct line of site to the object. When the room has many obstacles or the line of site is obstructed by glass, the PIR will not function properly.

-   When the environment temperature is too high, the PIR detection will slow down and should not be mistaken for a faulty PIR.

-   This network camera can only be installed indoors. Do not install this camera in a place where IR interference can be a problem. IR interference can be found close to glass doors or windows, where direct sunlight can cause interference or in the path of car headlights.

-   Do not install this camera next to or in front of an air conditioner outlet or vent.

-   Do not install this camera close to wireless devices with high frequencies as the PIR is easily affected by RF radiation.

- The PIR functions at best when detecting lateral movements. Radial movements cannot be detected as well as lateral movements.

- Do not install this camera directly under an extreme bright light. The PIR cannot fully suppress a bright white light.

- Any movements from an object with a normal body temperature, like humans or animals, can be
  detected. To avoid any malfunctions, install this camera at the proper height.

- To avoid any malfunctions, install this camera in an environment with an average temperature of 25°C. Only within
  a distance of 2.5 meters can smaller movements of an object, with the average adult human's height, be detected.
  Between a distance of 2.5 and 5 meters, a larger movement of an object is required for detection.

- Install this camera on a firm, static, anti-shock surface.

Networking Basics

Check your IP address

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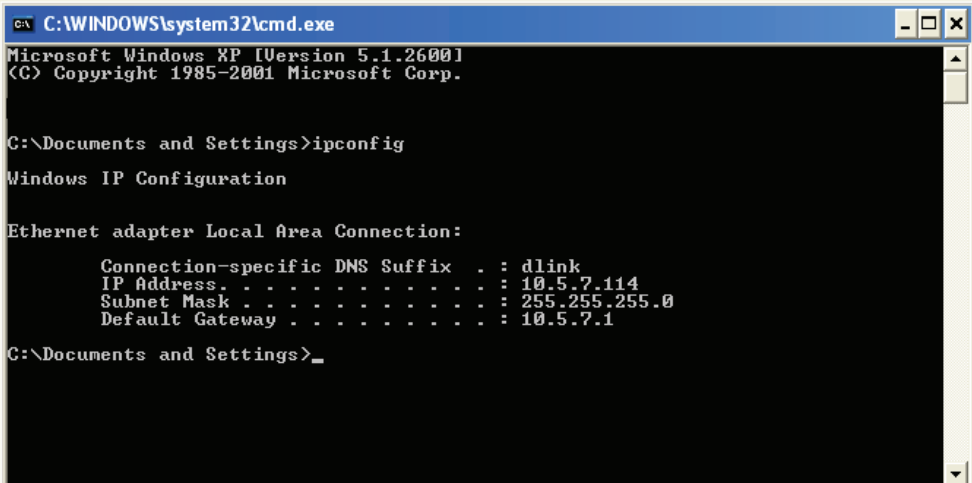
Click on **Start** > **Run**. In the run box type **cmd** and click **OK**. (Windows® 7/Vista® users type cmd in the Start Search box)

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.

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.

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**.

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 to the same as the LAN IP address of your router (192.168.0.1).

Set Primary DNS to 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.
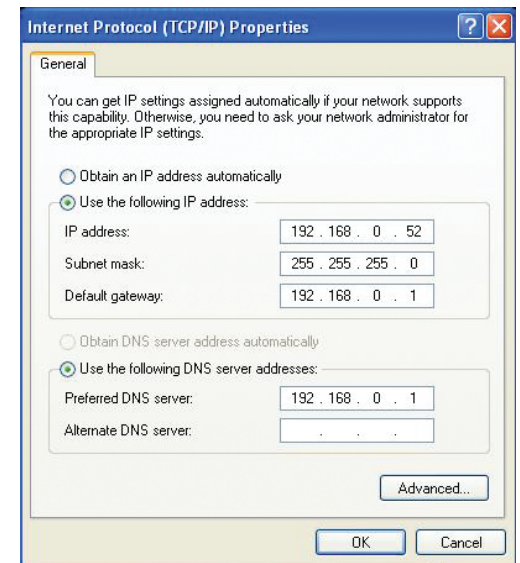
DI/DO Specifications

Pin 1   Pin 4

Pin 2   Pin 3
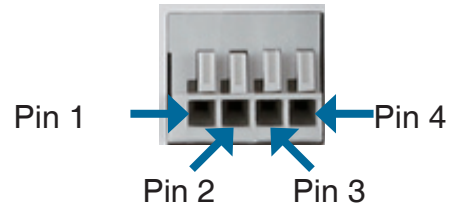
PIN	FUNCTION	NOTE
1	**Digital Out (DO)**	Uses an open-drain NFET transistor with the source connected to GND in camera. If used with an external relay, a diode must be connected in parallel with the load for protection against voltage transients. Max loading is 100 mA.
2	**DC5V OUTPUT**	DC 5 V Output / Max. 100 mA
3	**Digital In (DI)**	A switch from DI to GND, activated by setting NO. or NC.
4	**GND**	GND

Internal 5V Power
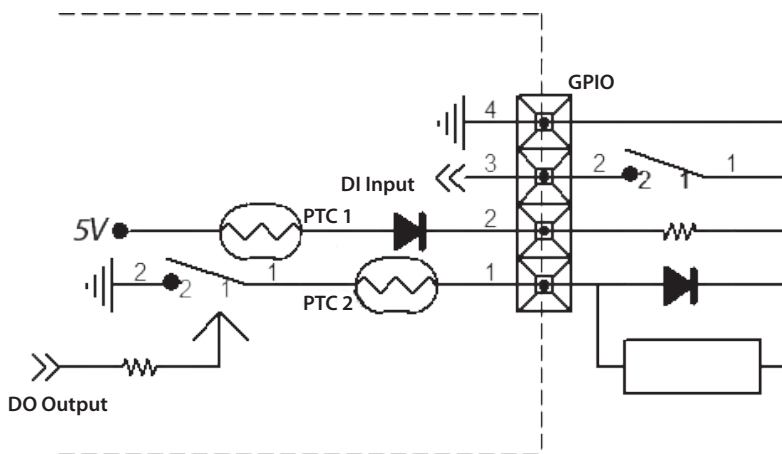
External 3~12V Power
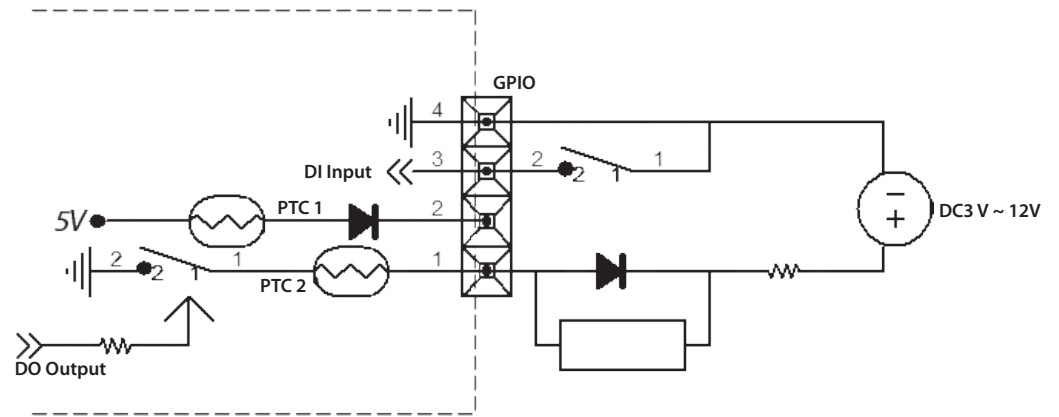
Technical Specifications

General Specifications		
Camera Specifications	• 1/4" Megapixel Progressive CMOS sensor • 5 meter IR illumination distance • Minimum illumination 0 lux with IR LED on • Built-in Infrared-Cut Removable (ICR) Filter module • Focal length 3.6 mm • Aperture: F2	• Exposure Time: 1/7.5 sec. to 1/10,000 sec. • Angle of view: • (H) 70° • (V) 53° • (D) 92° • Built-in Microphone
Video Features	• Configurable image size, quality, frame rate, and bit rate • Time stamp and text overlays	• Configurable motion detection windows • Configurable shutter speed, brightness, saturation, contrast, mirror, flip
Video Compression	• H.264/MPEG4/MJPEG format simultaneous compression	• H.264/MPEG4 multicast streaming • JPEG for still images
Video Resolution	• 16:9 (supports frame rates up to 30 fps) • 1280 x 720 • 800 x 450 • 640 x 360 • 480 x 270 • 320 x 176 at 30 fps	• Others (supports frame rates up to 30 fps) • 1024 x 768 • 800 x 600 • 640 x 480 • 480 x 360 • 320 x 240
Pan/Tilt/Zoom	• Pan Range: -170° to 170° • Tilt Range: -20° to 100° • Digital Zoom: 10x	• Manual Pan Speed: 5-80 ° per second • Manual Tilt Speed: 5-80 ° per second • Position Presets: 32 points
Audio Compression	• G.711 • G.726	• AAC
Network Protocol Support	• IPv4/IPv6 • ARP • TCP • UDP • ICMP • QoS • DHCP Client • NTP Client (D-Link) • DNS Client	• DDNS Client (D-Link) • SMTP Client • FTP Client • HTTP Server • PPPoE • RTP • RTSP • RTCP • 3GPP
Network Interface	• IEEE 802.11n	• 10/100 BASE-TX Fast Ethernet
External Device Interface	• MicroSD/SDHC Slot[3] • Audio Output	• DI/DO Port

Advanced Features

Remote Management	• Take snapshots/video clips and save to local hard drive via web browser	• Configuration accessible via web browser
Security	• Administrator and user group protected • Password authentication	• HTTP and RTSP digest encryption
Surveillance	• Record video continuously • Record video according to a weekly schedule • Record video when motion is detected	• Upload snapshots/video clips via e-mail • Upload snapshots/video clips via FTP
Mobile App Support	• mydlink Lite app for iOS and Android devices	

System Requirements

Operating System	• Microsoft Windows 8/7/Vista/XP SP3	
Compatible Browsers	• Microsoft Internet Explorer 8, Firefox 12, Chrome 20, Safari 4 or above, or other Java-enabled browser	
Supported Mobile Devices	• Mobile devices with a 3GPP player, such as Packet Video Player 3.0, QuickTime 6.5, or Real Player 10.5	• mydlink™ app requires a mobile device running iOS or Android

Physical

Dimensions	• 120 x 103.2 x 130 mm (4.72 x 4.06 x 5.11 inches)	
Weight	• 340 grams (0.75 lb)	
Power Input	• Input: 12 V/1.25 A, 50/60 Hz	
Temperature	• Operating: 0 to 40 °C (32 to 104 °F)	• Storage: -20 to 70 ºC (-4 to 158 ºF)
Humidity	• Operating: 20% to 80% non-condensing	
Certifications	• CE • FCC Class B	• C-Tick • CE LVD

[3] An SDHC Class 6 card or above is recommended. Card capacities of up to 32GB supported.

FCC Notices

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.

CAUTION: Change or modification not expressly approved by the party responsible
for compliance could void the user's authority to operate this equipment.

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 or more 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.

CAUTION:
Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.

RF exposure warning
This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. End-users and installers must be provide with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance."

Canada Notices

Industry Canada regulatory information

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

The user is cautioned that this device should be used only as specified within this manual to meet RF exposure requirements. Use of this device in a manner inconsistent with this manual could lead to excessive RF exposure conditions.

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

RF exposure warning
This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. End-users and installers must be provide with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance."

Cet équipement doit être installé et utilisé conformément aux instructions fournies et de l'antenne (s) utilisé pour cet émetteur doit être installé pour fournir une distance de séparation d'au moins 20 cm de toute personne et ne doit pas être co-localisés ou fonctionnant en conjonction avec une autre antenne ou transmetteur. Les utilisateurs finaux et installateurs doivent être fournir des instructions d'installation de l'antenne et des conditions de fonctionnement du transmetteur de la conformité sur l'exposition aux RF