

D-Link[®]



Manual

Version 1.0

DCS-G900

Wireless G Internet Camera

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Introduction

Congratulations on your purchase of the **DCS-G900 Wireless G Internet Camera**! The DCS-G900 is a versatile and unique solution for your small office or home. Unlike a PC Camera, the DCS-G900 is a stand-alone system with a built-in CPU and Web server that transmits high quality video images for monitoring. The DCS-G900 can be accessed remotely, and controlled from any PC/Notebook over the Intranet or Internet via a web browser. The simple installation procedure and intuitive web-based interface offer easy integration with your Ethernet/Fast Ethernet or 802.11g wireless network. The DCS-G900 also comes with remote monitoring capability for a complete and cost-effective home security solution.

Package Contents



- **D-Link DCS-G900 Wireless G Internet Camera**
- Printed Install Guide
- CD-ROM with Manual
- 5V 2.5A Power Supply
- Antenna
- Camera Stand
- Ethernet (CAT5-UTP/Straight-Through) Cable

System Requirements

- A wireless (802.11g or 802.11b) or Ethernet network.
- PC with 1.3GHz processor, 128MB RAM and 20GB of available hard disk space.
- Windows® XP/2000.
- A CD-ROM drive.

Features and Benefits

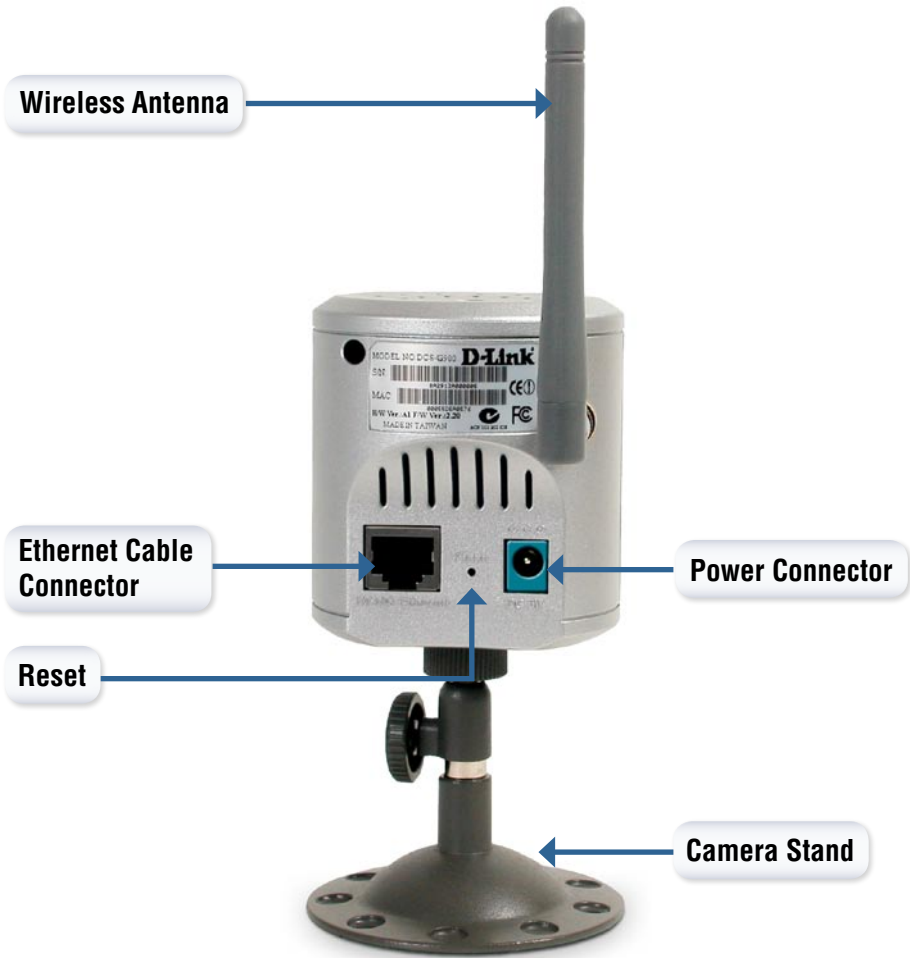
- **Simple to Use:** The DCS-G900 is a stand-alone system with a built-in CPU, requiring no special hardware or software such as PC frame grabber cards. The DCS-G900 supports both ActiveX mode for Internet Explorer and Java mode for Internet Explorer and Netscape Navigator™.
- **Supports a Variety of Platforms:** Supporting TCP/IP networking, HTTP, and other Internet related protocols. The DCS-G900 can also be integrated easily into other Internet/Intranet applications because of its standards-based features.
- **802.11g Wireless or Ethernet/Fast Ethernet Support:** The DCS-G900 offers both 802.11g wireless and Ethernet/Fast Ethernet connectivity, making the DCS-G900 easy to integrate into your existing network environment. The DCS-G900 works with a 10Mbps Ethernet based network or 100Mbps Fast Ethernet based network for traditional wired environments and works with 802.11g routers or access points for added flexibility. The Site Survey feature also allows you to view and connect to nearby wireless networks.
- **Web Configuration:** Using a standard Web browser, Administrators can configure and manage the Internet Camera directly from its own Web page via the Intranet or Internet. This means you can access your DCS-G900 at anytime from anywhere in the world!
- **Remote Monitoring Utility:** The IPView SE application adds enhanced features and functionality for the Internet Camera and allows administrators to configure and access the Internet Camera from a remote site via Intranet or Internet. Other features include image monitoring, recording images to a hard drive, viewing up to 4 cameras on one screen, and taking snapshots.
- **Broad Range of Applications:** With today's high-speed Internet services, the Internet Camera can provide the ideal solution for live video images over the Intranet and Internet for remote monitoring. The Internet Camera allows remote access from a Web browser for live image viewing and allows the administrator to manage and control the Internet Camera at anytime, from anywhere in the world. Many applications exist, including industrial and public monitoring of homes, offices, banks, hospitals, child-care centers, and amusement parks.

Hardware Overview

Front



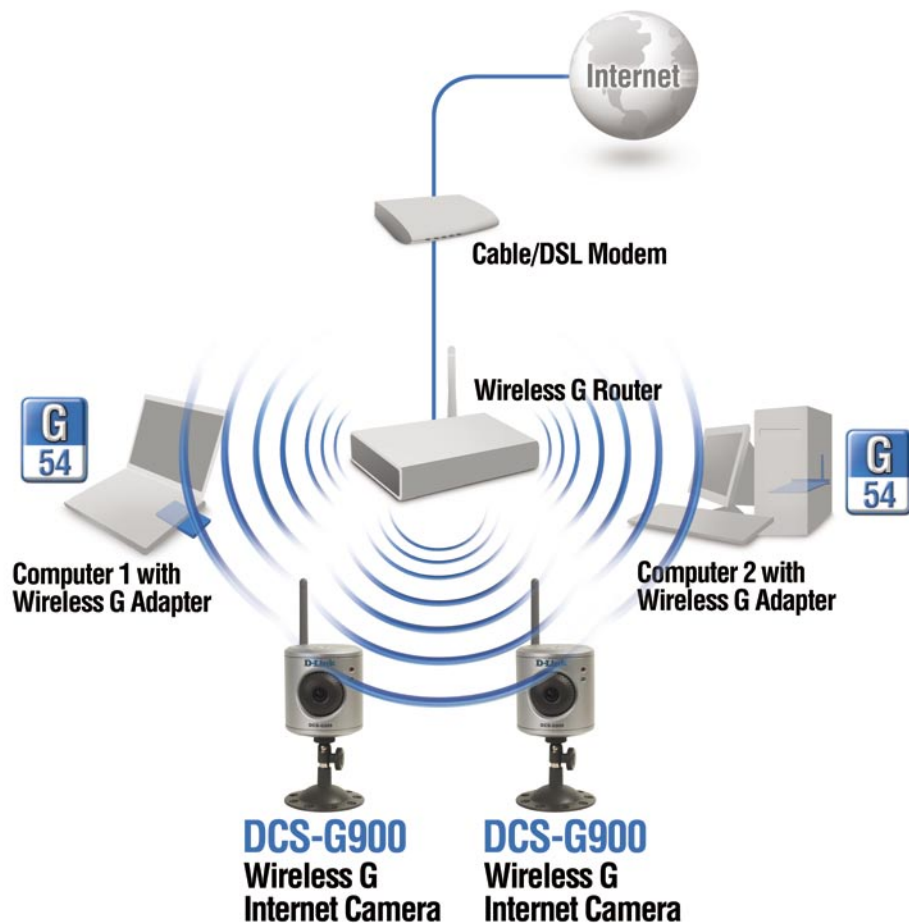
Rear



Getting Started

To begin using the DCS-G900 Wireless G Internet Camera, you will need:

- An existing network (including a wireless 802.11b or 802.11g router or a router/hub with an available Ethernet port).
- The DCS-G900 Wireless G Internet Camera connected to your router/hub.



Hardware Installation

Attach the Antenna

Locate the antenna included with your DCS-G900 and attach it to the antenna connector located on the back of the DCS-G900.

Note: It is required that an Ethernet cable is used during initial setup. Once your wireless configuration is set, you may disconnect the Ethernet cable and begin communicating wirelessly with your DCS-G900.



Attach the Swivel Stand

Locate the stand mount on the bottom panel of the DCS-G900 and screw on the swivel stand to the base of the DCS-G900.



Connect the Ethernet Cable

Connect the included Ethernet cable to the network cable connector located on the back panel of the DCS-G900 and attach it to the network. Network Connectivity is confirmed when the green LED Indicator on the DCS-G900, located below the Power LED, is illuminated.



Attach the External Power Supply

Attach the external power supply to the DC power input connector located on the rear panel of the DCS-G900 and connect it to your local power supply.

Note: Power source is confirmed when the red LED Power Indicator located to the right of the lens on the DCS-G900 is illuminated.



Security

To ensure the highest security and prevent unauthorized usage of the DCS-G900, the Administrator has the exclusive privilege to create all users. The DCS-G900 supports multi-level password protection/access that can be restricted by the Administrator for defined users who have a **User Name** and **User Password**.

The Administrator can release a public **User Name** and **Password** so that when remote users access the DCS-G900 they will be allowed to view the images transmitted by the DCS-G900.

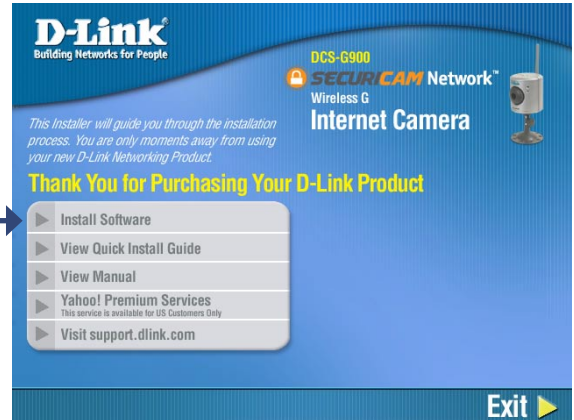
Note: When the DCS-G900 is used for the first time, it is highly recommended that the Administrator set the **Admin ID** and **Admin Password** to constrain user access to the DCS-G900 since the Default settings are Null String (no password). Once the ID and Password are defined, only the Administrator has access to the management of the DCS-G900. This procedure should be done as soon as possible since the security features of the DCS-G900 will not be enabled until the **Admin ID** and **Admin Password** is defined.

The DCS-G900 Setup Wizard

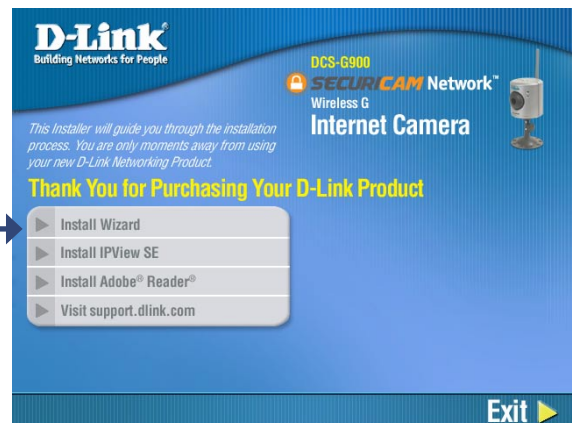
You are now ready to run the Setup Wizard, which will guide you quickly through the installation process.

Insert the **D-Link DCS-G900** Driver CD into your CD-ROM drive.

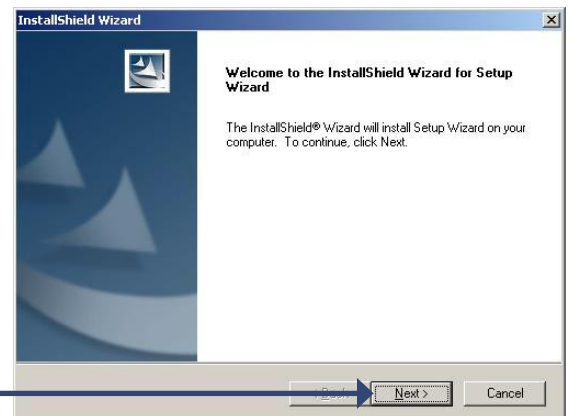
Click **Install Software**

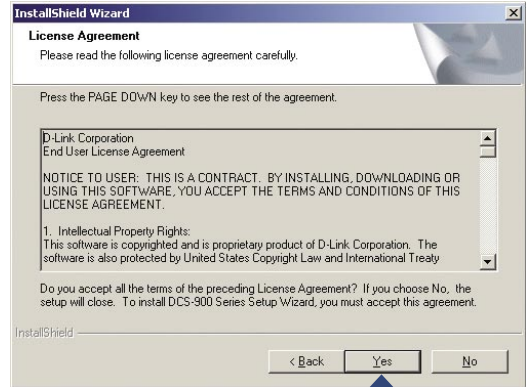


Click **Install Wizard**

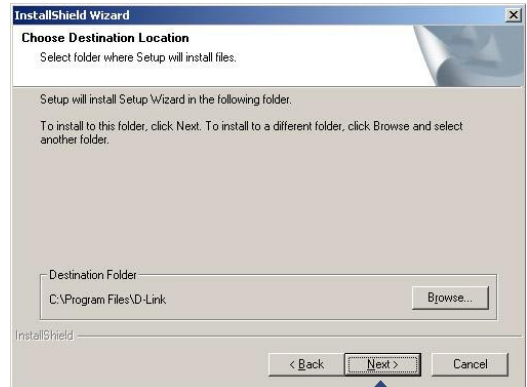


Click **Next**

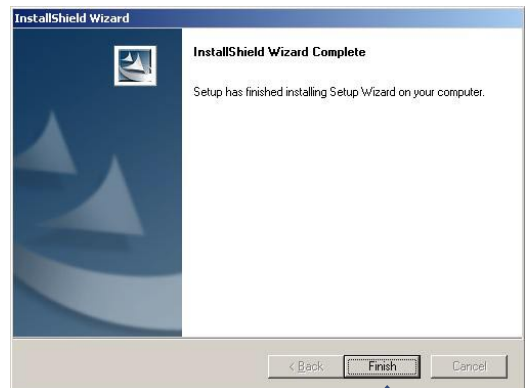




Click **Yes**



Click **Next**



Click **Finish**

To run the Setup Wizard, click on: **Start > Programs > D-Link Setup Wizard.**

Your camera's IP Address will be displayed here along with its corresponding MAC Address.

Click **Wizard**



You must change the **Admin ID** and **Password** immediately to protect your camera against unauthorized access. By default, the Admin ID and Password are blank. To change the Admin ID and Password, select both **Change** boxes and enter a **New ID** and **New Password**.

Click **Next**



Enter an **IP Address** and **Subnet Mask** for your camera if you want to change the current settings. Enter your **Gateway** and **DNS** settings. These settings must correspond with your network settings for you to access the camera. If you are unsure of what these settings should be, check with your network administrator.

Click **Next**



For **Connection Mode**, select either **Infrastructure** for use with a router, or **Adhoc** for a peer-to-peer connection. The **Network Name (SSID)**, **Wireless Channel**, **Security Mode**, and **Authentication** must correspond with your wireless network settings for the camera to work.



Click Next

Enter the **Encryption Mode**, **Key Format**, and **Encryption Keys** for your wireless network.



Click Next

If you need to make any changes, click **Back** to modify your settings. Otherwise, click **Restart** to save and apply your settings.



Click Restart

Your setup is now complete!

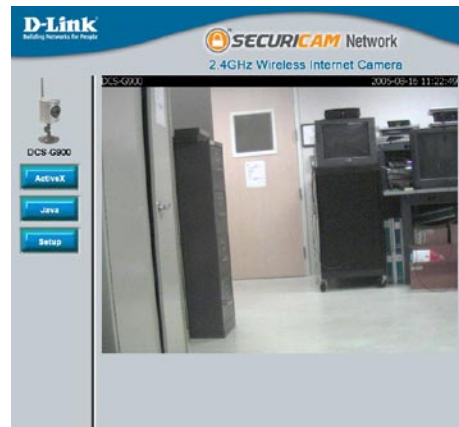
Click **Link** to launch your web browser and view your images.

Click **Link**



The Home screen of your camera can be accessed from the Setup Wizard using the **Link** button. You can also use your favorite Web browser, type “http://**address**” in the address box where **address** is the IP address that you assigned to the DCS-G900 from the previous section. Press **Enter**.

Click **ActiveX** or **Java** to view your video images.



- 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 for free from Sun's web site. (<http://www.java.com>)
- When you connect to the home page, you will be prompted to download ActiveX. If you want to use ActiveX to view your video images instead of Java, then you must download ActiveX.
- Please refer to the Manual located on the CD-ROM for additional information regarding all features and instructions related to the DCS-G900.

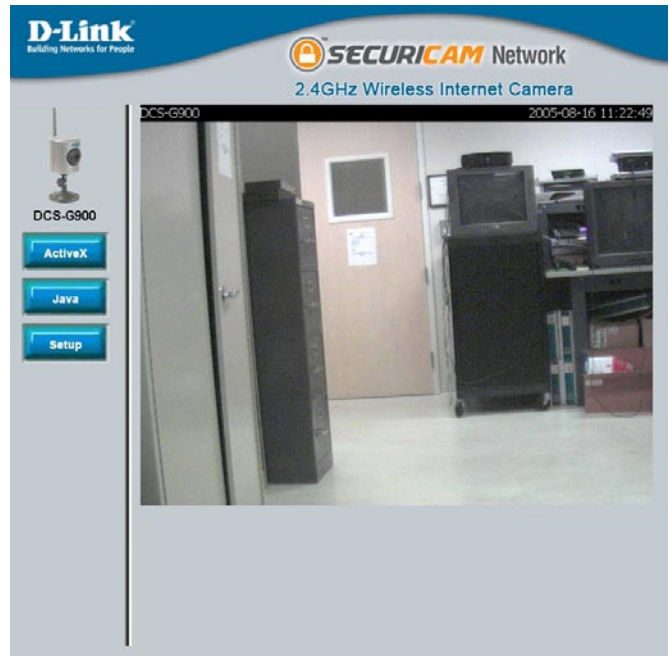
DCS-G900 Configuration

Home

ActiveX: For Windows® Users that do not have Java installed, please choose this option to view video streaming on the Home page.

Java: For Windows® users that have Java installed can also use this for viewing video. Mac users should also choose this mode to view video.

Setup: This will allow you to configure the DCS-G900.



Home > ActiveX

For Windows® Users that do not have Java installed, please choose this option to view video streaming on the Home page.



Home > Java

For Windows® users that have Java installed can also use this for viewing video. MAC users should also choose this mode to view video.



Home > Setup

After clicking the Setup button, you will be directed to **Advanced > System**, please see page 19 for more information.

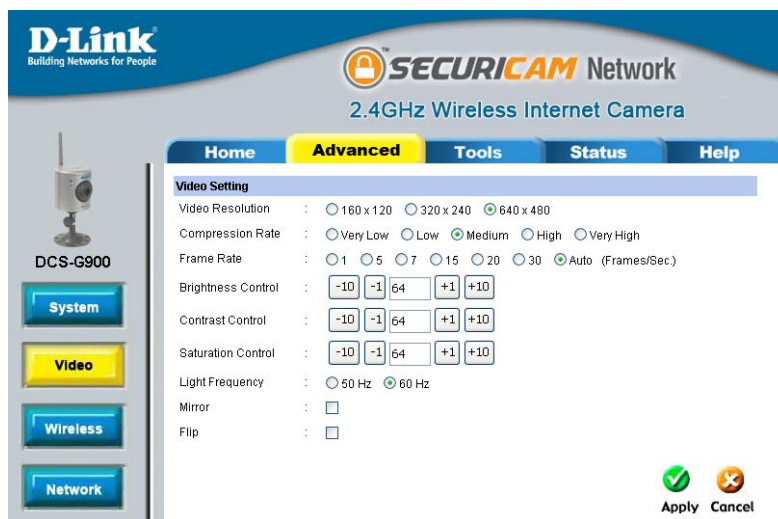
Advanced > System



System Setting

- Camera Name:** Provide the name of your camera.
- Location:** Enter information of where your camera is located.
- Admin:** The following fields are required for setting up the Administrator name and password:
- Admin ID:** Enter the Administrator's ID or name.
 - Admin Password:** Enter the Administrator's password.
 - Confirm Password:** Re-enter the Administrator's password for confirmation.
- LED Control:** You can set the LED in front of the DCS-G900 to on (**Normal**), off (**OFF**), or blink randomly (**Dummy**).

Advanced > Video



Video Setting

- Video Resolution:** There are three settings available to choose from **160x120**, **320x240** and **640x480**.
- Compression Rate:** Compression will be selectable from **very high**, **high**, **middle**, **low**, and **very low**.
- Frame Rate:** This is adjustable from **1**, **5**, **7**, **15**, **20**, **30**, and **Auto**. 30 frames a second is video quality and in theory any transition from frame-to-frame for frame rates above 15 fps is imperceptible to the eye.
- Brightness Control:** Allows you to adjust the brightness level. The default setting is 64.
- Contrast Control:** Allows you to adjust the contrast level. The default setting is 64.
- Saturation Control:** Allows you to adjust the saturation level. The default setting is 64.
- Light Frequency:** Adjust the light frequency to suit your area of operation. **50Hz** and **60Hz** are available to accommodate the different light frequencies found in USA (**60Hz**) and Europe (**50Hz**) for optimal image quality.
- Mirror:** Horizontally rotates the video.
- Flip:** Vertically rotates the video. Check this option if the camera is installed upside down.

Advanced > Wireless

Wireless Interface

- Connection Mode:** **Infrastructure** is a wireless connection using an access point as a transmission point of all wireless devices. **Ad-Hoc** is a wireless connection used without an access point. This basically connects the PC directly to the DCS-G900. This is done using the on-board wireless adapter on the DCS-G900 connected to a wireless adapter on the PC.
- SSID:** Service Set Identifier is an identifier for the wireless network name that other devices can recognize.
- Site Survey:** This page will allow you to select a wireless network that the DCS-G900 was able to detect upon booting up (see page 14).
- Wireless Channel:** The default wireless channel setting is channel 6. Select the channel that is the same as the other wireless devices on your network. For the U.S. region, there are up to 11 channels and anyone of them can be selected to achieve the best signal.

Advanced > Wireless *(continued)*

Transmission Rate:

This can be selected to restrict bandwidth usage of the DCS-G900 in a high traffic network so that the camera does not consume all the bandwidth. If too much bandwidth is being used in a network that cannot support it, excessive lag during video transmission may occur. Lowering the transmission rate will sometimes help.

Encryption

Disable:

Select this option to disable encryption on the DCS-G900.

WEP Encryption:

Wired Equivalent Privacy Encryption.

Length:

Choose between **64 bits** or **128 bits**.

Format:

Choose between **ASCII** or **HEX**.

Keys 1-4:

There are 4 key fields that you are able to input the security keys. This is in case you have more than 1 network that you can connect to. Instead of having to put in the encryption key every time you can select key 1, 2, 3, or 4. This is especially helpful for 128-bit HEX (52 characters!).

Encrypt Data Transmission Using:

This is where you can select which key you want to use.

Authentication Type:

In **Open** mode, anyone with the right SSID can connect to the camera, but in **Shared** mode the user will need to have the right encryption key to connect the camera thereby providing higher security

WPA-PSK:

Wi-Fi Protected Access with **Preshared Key**, the key field (bottom) needs to be filled out and will support up to 128-bit encryption.

Advanced Setting

Beacon Interval:

This represents the amount of time between beacon transmissions, in which the beacon interval tells the Router/Access Point on the network how long they can wait in low-power mode before waking up the IP camera.

Note: A beacon is a packet sent by the IP camera to inform the Router/Access Point of the IP camera's presence and readiness. The Router/Access Point and IP camera are all on the same network.

Advanced > Wireless (continued)

Preamble:

A preamble is a signal used in network communications to synchronize the transmission timing between two or more systems. Proper timing ensures that all systems are interpreting the start of the information transfer correctly. Part of the frame that is transmitted by an 802.11 station is called the preamble. The original 802.11 specification (which defined only 1 and 2Mbps operation), defined only a long preamble that uses a 128 bit sync field. When the **high rate**, i.e. 11Mbps, 802.11b standard was created, an optional short preamble using a 56 bit **sync** field was added. This was intended to improve the efficiency of the wireless network for more **real-time** applications such as streaming video. Selecting short preamble may improve video quality.

Advanced > Wireless > Site Survey

The screenshot shows the D-Link Securicam Network configuration interface. The main content area displays the 'On Site Wireless Networks' table, which lists detected wireless networks with their SSID, MAC address, Channel, Encryption type, and Signal strength percentage.

SSID	MAC	Channel	Encryption	Signal %
172000000	00:0F:3E:01:71:10	6	No	67
andca	00:11:35:36:8E:08	1	WPA-PSK	61
1717_2A_8388	00:0F:3E:04:12:00	1	WPA-PSK	61
SpokaneCollege	00:0F:3E:07:28:08	6	WPA-PSK	57
1717giga	00:11:35:32:07:0F	6	WEP	49
1717dca	00:11:35:36:12:00:00	6	No	49
1717dca	00:11:35:36:12:00:00	6	No	49
1717g	00:11:35:36:12:00:00	1	WPA-PSK	45
1717g	00:0F:3E:07:28:08	1	WEP	43
1717dca	00:11:35:36:12:00:00	1	No	41
1717_2A_8388	00:11:35:32:07:0F	11	No	38
1717dca	00:0F:3E:04:12:00	1	WEP	33
1717g	00:11:35:36:12:00:00	6	WEP	33
1717dca	00:11:35:36:12:00:00	6	No	29
1717dca	00:0F:3E:07:28:08	6	No	23
1717dca	00:0F:3E:07:28:08	11	WEP	20

Buttons at the bottom of the table: Rescan, Select, Exit.

This screen displays all available wireless networks, along with their **SSID**, **MAC**, **Channel**, **Encryption**, and **Signal Strength** information.

Advanced > Network



TCP/IP

IP Address Mode:

Fixed IP:

Manually provide a fixed IP Address for your connection.

IP Address:

Enter your IP Address, this is necessary for network identification.

Subnet Mask:

Provide a Subnet Mask, this will be used to determine if the destination is in the same subnet.

Default Gateway:

Enter your Default Gateway.

Dynamic IP (DHCP):

Dynamic Host Configuration Protocol is a networking protocol that will allow leasing of an IP address by the client from a server for a specified amount of time. This alleviates the task of the user from having to keep track of available IP Addresses on the network.

Advanced > Network (continued)**IP Address Mode
(continued):**

PPPoE: If you use the DCS-G900 to connect directly to the Internet you will need to put in the user name and password that was given to you when you initially set up your account with the Internet Service Provider.

DNS IP Address:

This is the IP Address of your ISP's Domain Name Server, if you are using a fixed IP Address you will need to know this, if not you will need to contact your ISP or your network administrator.

Dynamic DNS:

If you have set up the DDNS service you will need to put in your user name and password. This will allow the DDNS to track your IP Address even if it changes constantly. DDNS is disabled by default.

**Service
Provider:**

Select the service provider from the pull-down list.

Host Name:

Provide the host name for the service provider.

**User Name/
E-mail:**

Enter your user name and/or e-mail in this field.

**Password/
Key:**

Enter your password and/or key in this field

**Second HTTP
Port:**

Most ISPs do not open port 80 (a DCS-G900 default video transfer port) for their residential customers, the DCS-G900 has the ability to use a different port by enabling the second http port for its video transfer.

**Port
Number:**

If the second port is enabled, it will automatically disable the default port 80. Any unused ports can be used such as port 800, 801, etc. Remember that if the DCS-G900 is behind a router you would need to forward that port to the DCS-G900's IP Address. When accessing the camera you would need to type the camera's IP Address + the port number (http://xxx.xxx.xxx.xxx:port number, or http://192.168.0.20:800 for example). Please refer to "Installing the DCS-G900 Behind a Router" on page 39.

UPnP:

UPnP is short for Universal Plug and Play which is a networking architecture that provides compatibility among networking equipment, software, and peripherals. The DCS-G900 is an UPnP enabled internet camera, and this function will work with operating systems such as Windows® XP. If you do not want to use the UPnP functionality, it can be disabled by selecting **Disabled**. This function is enabled by default.

Advanced > User



User Access Control

Access Control: Enable this function to allow users same rights as the administrator.

Define Users

Add User: This will enable you to add users and allow or disallow e-mail upload to that user. You must click **Add** each time you add a user to the User List.

User Name: Add the User Name of the user.

User Password: Add the User Password of the user.

Delete User: Select a user from the pull-down list and click the **Delete** button.

User List: This list shows all of the users added, and their information of whether or not they can receive images by e-mail.

Advanced > Time



Date & Time Setting

Synchronized with Time Server:

The time will be based on the GMT setting, and will be synchronized every 10 minutes. This is also the default setting for the Internet Camera. Remember that the time set does not take into account the Daylight Savings time. Please take this into account and adjust your time zone accordingly.

IP Address: Enter the IP Address of the NTP server.

Protocol: NTP is a protocol designed to synchronize the clocks of computers over a network. NTP has the ability to continually keep a server or workstation's time in sync with Coordinated Universal Time.

Time Zone: Select the time zone that you are in. Bear in mind that this setting does not take into account Daylight savings. Selecting synchronize with computer time will automatically adjust for Daylight savings since this feature is built-in to the Windows® operating system.

Set Manually:

You will need to input the time manually. The top fields are for the dates and the lower fields are for the time.

Date: Enter the current date (follow the example).

Time: Enter the current time (follow the example).

Synchronized with Computer Time:

The DCS-G900 time will duplicate the time of your PC that is shown on the lower-right bottom (System Tray) of your Windows® screen. This option will also account for Daylight savings as soon as you click on **Apply**.

Advanced > Upload



FTP Server

- Host Address:** This is the IP address of the FTP server that you will be connecting to.
- Port Number:** Default is port 21. If changed, external FTP client program must change the server connection port accordingly.
- User Name:** Specifies the user name to access the external FTP server. If you are to upload snapshots to an FTP server you will need to fill in the Domain name or IP address of your external FTP server. The following user settings must be correctly configured for remote access.
- Password:** Specifies the password to access the external FTP server.
- Directory Path:** Specifies the destination folder in the external FTP server.
- Passive Mode:** Enabling passive mode will allow access to an external FTP server if your camera is behind a router protected by a firewall.

Advanced > Upload (continued)

Time Schedule

Enable upload image to FTP server: Checking this box will enable video upload to the FTP server you selected.

Always: Selecting this will allow snapshot upload to your FTP as soon as you click **Apply**.

Schedule: Selecting this will allow you to configure the times that you want the snapshots to be uploaded to your FTP server by the days, hours, minutes and seconds.

Video Frequency: User can select in frames per second (1, 2, 3 or auto, in auto this could go to 4). The user can also select how many seconds for each frame, this is configurable from 1 to 65535 seconds.

Base File Name: This will be the name that precedes the time, for example G9002005072116425101.jpg. This means that the camera took a snapshot in the year 2005, July 21 at 16th hour (4 o'clock), 42 minutes and 51 seconds and it is picture number one.

File: Select overwrite and there will only be a few images that are constantly refreshed depending on how many snapshots you choose to have sent. Select date/time suffix and the pictures will be named with a date and time also. An example of this can be seen above under the **Base file name** category. Select sequence number suffix up to 1024 and all the pictures will be numbered from 1-1024. The total amount of pictures can be configured up to 1024 pictures. Picture number 1025 will be 1 again.

Advanced > E-mail



E-mail Account

- SMTP Server Address:** This is the domain name or IP address of your external e-mail server.
- Sender e-mail Address:** This is the e-mail address of the person sending the camera snapshots.
- Receiver e-mail Address:** This is the e-mail address of recipient for the SMTP server.
- User Name:** If the SMTP server uses authentication you must put your user name here.
- Password:** This is the password that you use with your user name to connect to the SMTP server.



Advanced > E-mail *(continued)*

Time Schedule

Enable e-mail image to e-mail account:

Choosing always will start sending snapshots to the recipient's e-mail account right away. Choosing schedule will give you a choice as to when to start sending snapshots to the recipient's e-mail account by the day, as well as what time this should start and when to stop.

Interval:

The frequency of the snapshot interval can also be configured from 1 to 65535 seconds.

Tools > Test



Test FTP Server:

This will send a snapshot to the FTP server that you have configured in the **Upload** section. If you have configured the FTP correctly you will be able to see a test file in your FTP server.

Test E-mail Account:

This will send a snapshot to the e-mail account that you have configured in the **E-mail** section. If you have configured the SMTP account correctly you will be able to send a test file to the e-mail account of the recipient.

Tools > Reset



- Restart:** This will reboot the camera once you select **Apply**.
- Factory Reset:** Select **Apply** will reset the camera to all its default settings. The Installation Wizard may need to be used in order to find the camera again.

Tools > Firmware



- Firmware Update:** This will allow you to upgrade the firmware for the camera. Click **Browse** to find the path to the file of the firmware that you have previously saved by visiting <http://support.dlink.com/>.

Tools > Backup



Backup Device Configuration to File:

This will allow you to save the camera's configurations to your hard drive.

Restore Device Configuration from File:

This is particularly useful if you will be installing more than one camera; remember to make the IP Address unique to each camera, so there will not be two cameras with the same IP Address on the same network.

Status > System

The screenshot shows the D-Link Securicam Network configuration interface. The page title is "D-Link Building Networks for People" and "SECURICAM Network 2.4GHz Wireless Internet Camera". The navigation tabs are Home, Advanced, Tools, Status (selected), and Help. On the left, there is a camera icon labeled "DCS-G900" and four buttons: System (selected), Video, Wireless, and Network. The main content area displays the following information:

Device Status	
Camera Name	: DCS-G900
Location	:
Model	: DCS-G900
Firmware Version	: 1.00 (2005-08-16)
MAC Address	: 00 FF 11 11 66 88
IP Address	: 192.168.0.116

Ethernet Status	
Link	: No
Speed	: 0 bps
Duplex	: Half Duplex

A Refresh button is located at the bottom right of the page.

Displays information about the Device Status, such as Camera Name, Location, Model, Firmware Version, MAC Address, and IP Address.

Also displays information about the Ethernet Status, such as Link, Speed, and Duplex.

Status > Video


The screenshot shows the D-Link Securicam Network configuration interface. The page title is "D-Link Building Networks for People" and "SECURICAM Network 2.4GHz Wireless Internet Camera". The navigation tabs are Home, Advanced, Tools, Status (selected), and Help. On the left, there is a camera icon labeled "DCS-G900" and two buttons: System and Video (selected). The main content area displays the following information:

Video Status	
Video Resolution	: 640 X 480
Compression Rate	: Medium
Frame Rate	: Auto
Frame Size	: 28848 Bytes
Light Frequency	: 60 Hz

A Refresh button is located at the bottom right of the page.

Displays information about the Video Status, such as Video Resolution, Compression Rate, Frame Rate, Frame Size, and Light Frequency.

Status > Wireless



The screenshot shows the configuration interface for a D-Link Securicam Network 2.4GHz Wireless Internet Camera. The page is titled "D-Link Building Networks for People" and "SECURICAM Network 2.4GHz Wireless Internet Camera". The navigation menu includes Home, Advanced, Tools, Status (highlighted), and Help. On the left, there is a camera icon labeled "DCS-G900" and three buttons: System, Video, and Wireless (highlighted). The main content area displays the "Wireless Status" section with the following information:

Wireless Status	
Connection Mode	: Infrastructure
Link	: Yes
SSID	: pm524 (MAC : 00 0F A3 1A DC 1C)
Channel	: 6
Transmission Rate	: 54M bps
Encryption	: WEP

A Refresh button is located at the bottom right of the status section.

Displays information about the Wireless Status, such as Connection Mode, Link, SSID, Channel, transmission Rate, and Encryption.

Status > Network



The screenshot shows the configuration interface for a D-Link Securicam Network 2.4GHz Wireless Internet Camera. The page is titled "D-Link Building Networks for People" and "SECURICAM Network 2.4GHz Wireless Internet Camera". The navigation menu includes Home, Advanced, Tools, Status (highlighted), and Help. On the left, there is a camera icon labeled "DCS-G900" and five buttons: System, Video, Wireless, Network (highlighted), and User. The main content area displays the "Network Status" section with the following information:

Network Status	
IP Address	: 192.168.0.100
Subnet Mask	: 255.255.255.0
Default Gateway	: 192.168.0.1
DNS Address 1	: 0.0.0.0
DNS Address 2	: 0.0.0.0
Dynamic DNS	: Disable
Secondary HTTP Port	: Enable (Port: 81)
UPnP	: Enable (IP : 192.168.0.100)
FTP Server Test	: No test conducted
E-mail Test	: No test conducted

A Refresh button is located at the bottom right of the status section.

Displays information about the Network Status, such as IP Address, Subnet Mask, Default Gateway, DNS Address 1, DNS Address 2, Dynamic DNS, Secondary HTTP Port, UPnP, FTP Server Test, and E-mail Test.

Status > User



Displays information about Active Users, such as their IP Address, Name, DateTime, and Miniseconds/Packet.

Help



Click Help for easy access to information on specific fields.

Installing the DCS-G900 Behind a Router

Assigning and Opening the HTTP Port on the DCS-G900

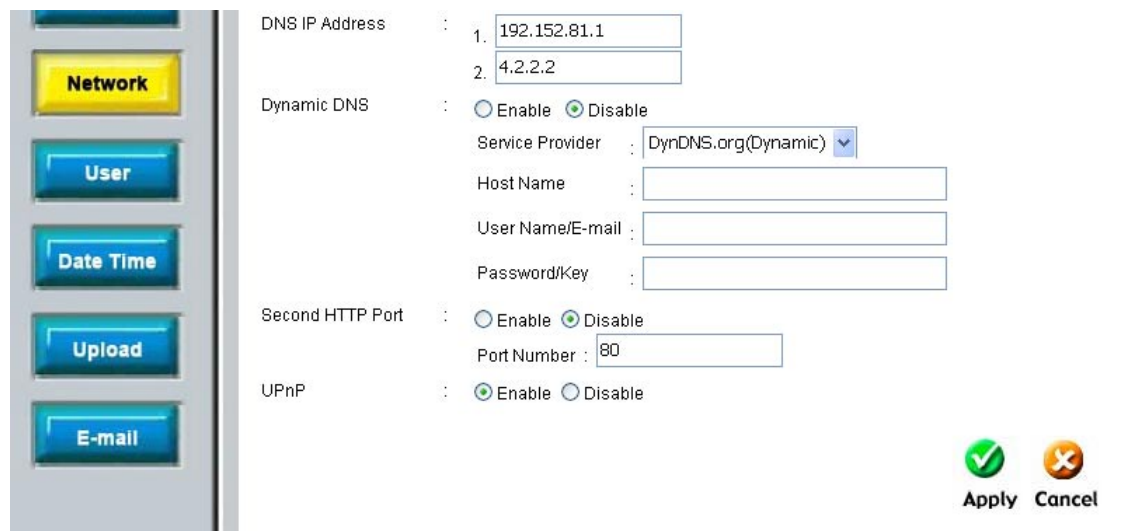
(For Installing Multiple Cameras)

Opening ports will allow users to view the camera via the Internet. The ports that are opened must be unique for each camera in order to successfully view the images remotely.

1) Open the HTTP Port

The HTTP Port option is used when multiple cameras are being installed behind a single public IP address and will be accessed remotely OR for using a port other than the default port for image viewing. For each additional camera that is installed, you must assign the appropriate Web server port for each camera to enable remote viewing.

By default, port 80 (Web server port) is open. If these ports are available for use, you DO NOT have to open a second port and can proceed to the next section. If port 80 is not available (for example, if you are already using port 80 to run a Web server or your ISP blocks access on port 80*) you MUST open a second port and designate a new Web server port (800, 801, 802,...etc). **IMPORTANT:** Be sure to take note of these settings since these same settings will be used to configure your router.



Network

User

Date Time

Upload

E-mail

DNS IP Address : 1. 192.152.81.1
2. 4.2.2.2

Dynamic DNS : Enable Disable
Service Provider : DynDNS.org(Dynamic)
Host Name :
User Name/E-mail :
Password/Key :

Second HTTP Port : Enable Disable
Port Number :

UPnP : Enable Disable

Apply Cancel

Note: Some ISPs block traffic on commonly used ports like port 80 to prevent consumers from putting a server on their network. Be sure to 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 Web server port the camera uses from 80 to something else, like 800. If you are behind a residential gateway, you will need to open a corresponding port on your gateway as well. Not all gateways are the same, please refer to your gateway's user's manual for specific instructions on how to forward ports.

Router Setup and Installation

The following steps generally apply to any router that you have on your network. The D-Link DI-624 is used as an example to clarify the configuration process. Your WAN IP Address information will be listed on following window.



Determine Your Router's WAN IP Address

Note: Because a dynamic WAN IP address 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. You can use DDNS to obtain an IP address, please refer to page 39 for more information.

Assigning and Opening Virtual Server Ports

2) Open Virtual Server Ports To Enable Remote Image Viewing

The Virtual Server Ports of your router must be opened for remote access to your camera. This is also referred to as port forwarding. Please proceed as follows:

- Select **Enabled** to enable virtual server settings.
- Select a camera name.
- Enter your camera's Local IP Address in the **Private IP** field.
- Select **TCP** under **Protocol Type**.
- If you are using the default camera port settings, enter **80** in to the **Public** and **Private Port** section.
- Schedule should be set to **Always** so that the camera images can be accessed at any time.
- In the **Virtual Servers List**, a check mark appearing before the camera name will indicate that the ports are enabled.
- Click **Apply** to save your settings.

Note: If you are installing multiple cameras, be sure to open ONE Web port per additional camera installed: port 81, 82, etc. for Web server.

D-Link
Building Networks for People

AirPlus Xtreme G™
High-Speed 2.4GHz Wireless Router

DI-624

Virtual Server

Virtual Server is used to allow Internet users access to LAN services.

Enabled Disabled

Name:

Private IP:

Protocol Type:

Private Port:

Public Port:

Schedule: Always

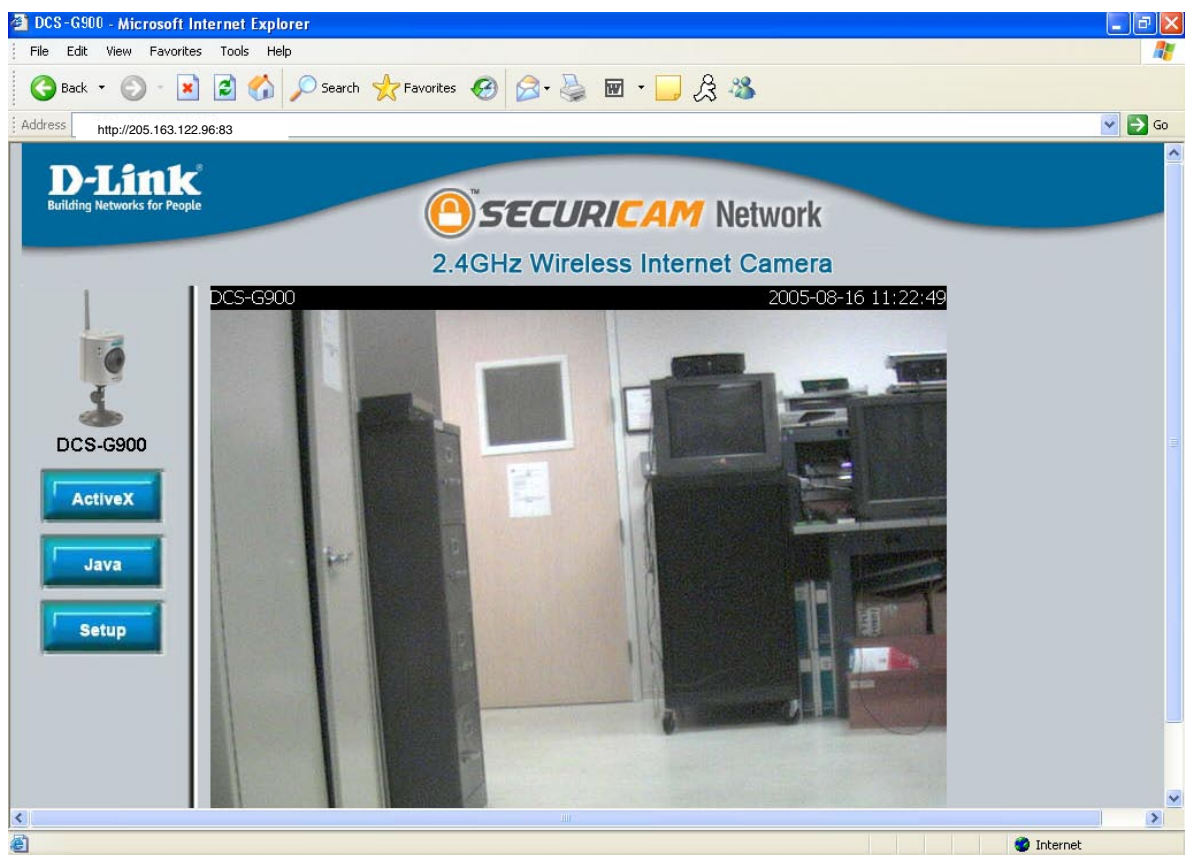
From time : AM to : AM
day to

Virtual Servers List

Name	Private IP	Protocol	Schedule

Viewing Your Camera

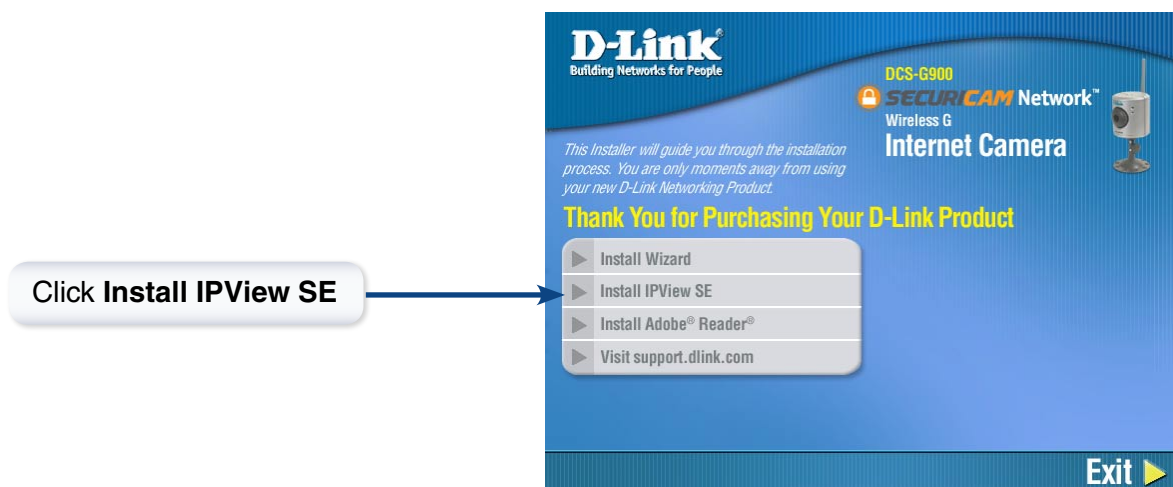
After all settings have been entered correctly, a user inside or outside your network will have access to the camera through a standard Web browser. To access from the Internet, simply type in the IP Address of the router given to you by your ISP, a colon, and the port number that you gave your camera. (Ex. <http://205.163.122.96:83>). To access from a computer on your local (home) network, simply enter the local IP Address of your camera (i.e. 192.168.0.35). If using a port other than port 80, you must enter the IP address followed by a colon and the assigned port number.



IPView SE Application Installation

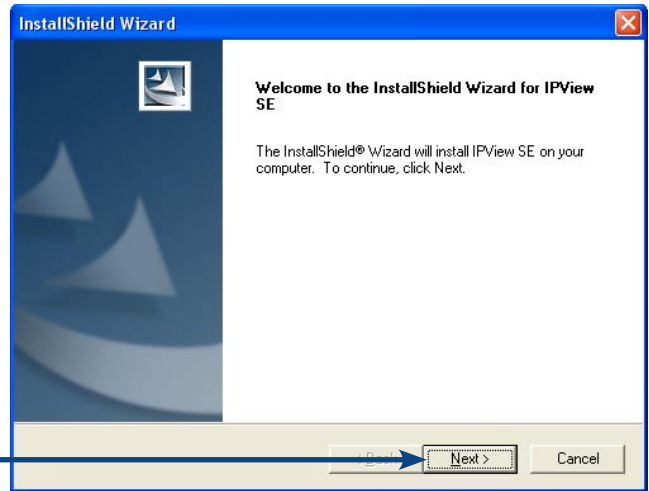
IPView SE software is included for administrators to manage up to 4 DCS-G900s remotely. Administrators can also record to hard drive and configure advanced settings for the DCS-G900. IPView SE is a complete software management tool for the DCS-G900 and includes all configurable settings available in the web configuration utility.

Insert the CD-ROM into the CD-ROM drive. A menu screen will appear as shown below.





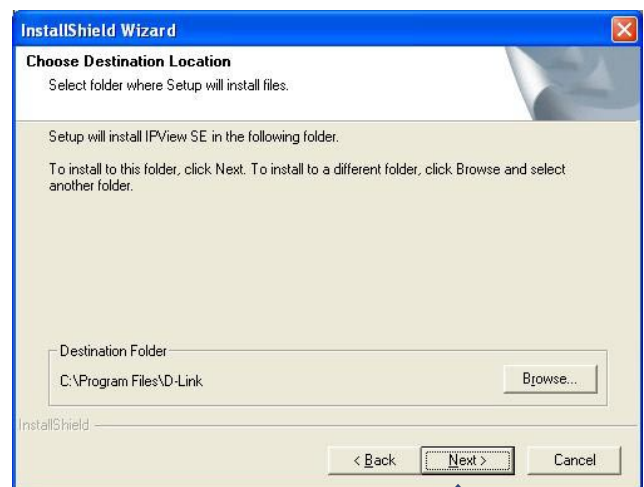
Click Next

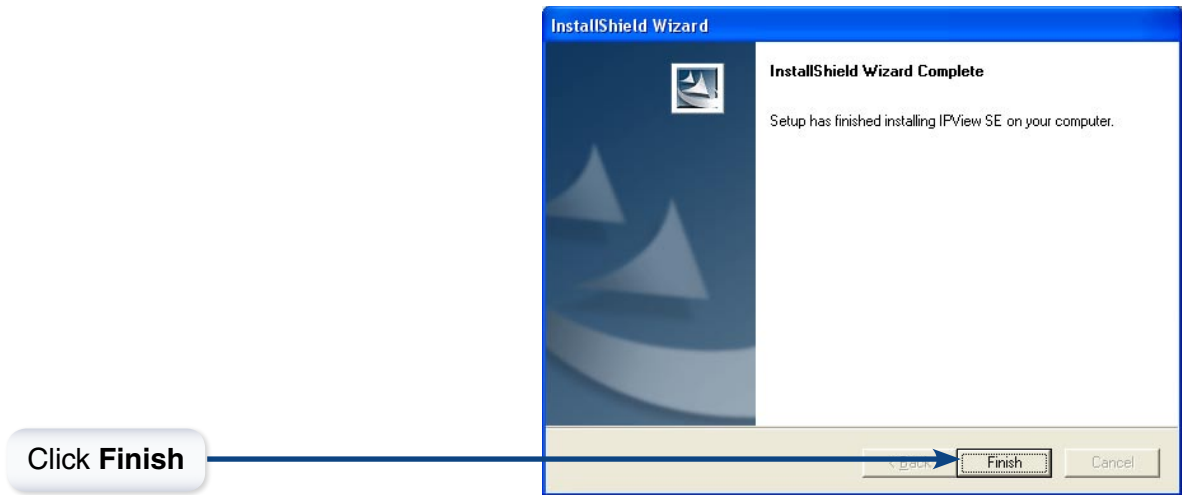


Click Yes



Click Next





After successfully installing the IPView SE, the application program for the DCS-G900 is automatically installed to \Programs\IPView SE Directory.

To start running the IPView SE click on Windows® Start > Programs > IPView SE > IPView SE.

Once the IPView SE application control panel is executed, the interface will appear:

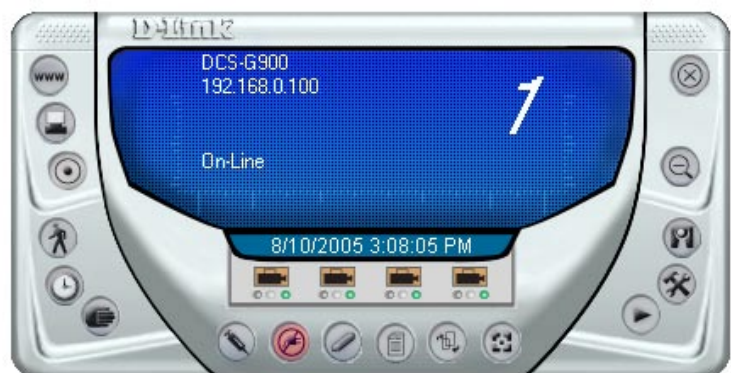


IPView SE


























This section describes the operation of the IPView SE application User Interface with detailed procedures for using the application.

IPView SE allows you to manage your cameras by enabling you to search, configure and preview all the DCS-G900s from one location.


It is designed with a user-friendly interface for ease of control and navigation.



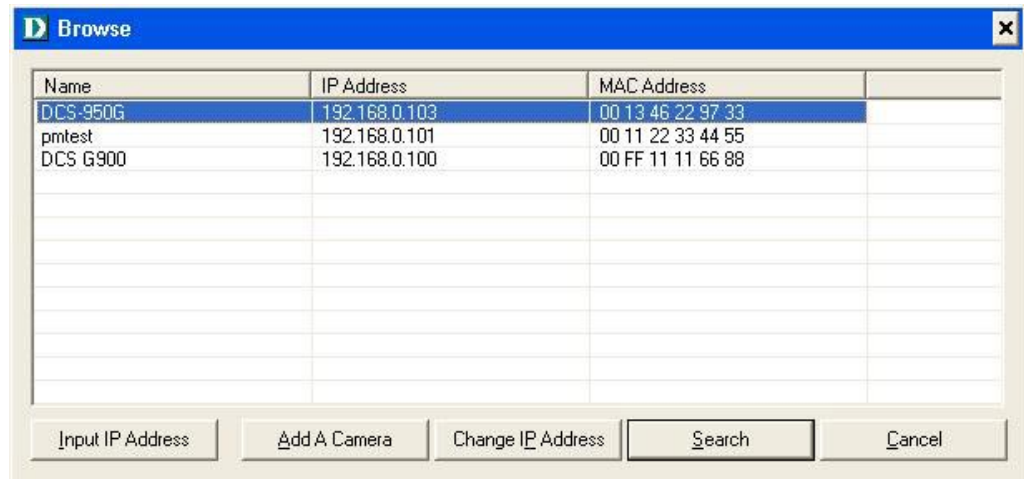
IPView SE Icon Description

	System Configure
	Connect/Disconnect
	Assign IP to a Camera
	Liberate Camera
	Camera's Extra Information
	Configure Camera from Web
	Motion Setting
	Manual Recording
	Schedule Recording
	Motion Recording
	Scan
	Combine
	Play
	Help/About
	Minimize
	Close
	Rotate
	Snapshot
	View/List
	Zoom
	Maximize
	Color Setting
	Always on Top
	Wake Up Control Panel
	Upgrade Firmware

Add a New Camera

To add a new camera select the **Camera** button  from the IPView SE. Make sure that the green lights are on when clicking the camera button.

A green light under the camera button means that there is already a camera connected.



Select the camera you would like to connect to and click **Add A Camera**. If the camera is not listed in this list, click the **Input IP Address** button. Enter the IP Address of the camera in the specified field and click **Add**. If the IP Address is entered incorrectly or if you have a bad network connection, a dialog box will appear to notify you of the error. To add cameras in IPView SE, check that you have your network configured correctly. To add a remote camera, you need to have Internet access.



If you are unsure of the IP Address of the camera, you can click on **Search** to search for all available cameras that are installed on your local area network.

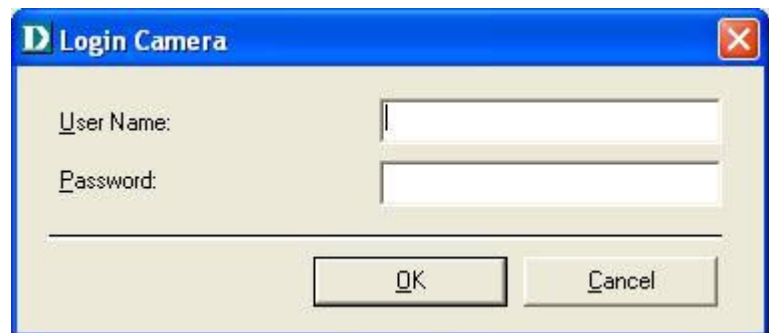
Note: Only cameras on your local area network can be located using **Search** in IPView SE. If you want to add a camera via the Internet, you must enter in a public IP Address. Please note that if your camera is behind a router, you will need to enter your router's WAN IP followed by a colon, then the port number that is assigned to your camera. As in example 10.10.10.80:800, where 10.10.10.80 is your router's WAN IP and :800 is the port that your camera is using.

Highlight the camera you wish to add and click on **Add**. The camera will automatically be added into the IPView SE list view. If you add the same camera more than once you will receive the following message (see below).




If the **Login Camera** dialog box appears, make sure to enter the correct **User Name** and **Password**. Click **OK**. The camera will be added into IPView SE. If the **User Name** and **Password** are entered incorrectly, the camera will not be added into IPView SE.

The Login Camera dialog box will appear only if you have already set the **Username** and **Password** during the Web Configuration setting.



How to Delete a Camera

Click the **Liberate Camera** button  on the IPView SE, while you are connected to the camera you would like deleted. The IPView SE camera button become available as soon as you click on the **Liberate Camera** button. The green light from under the camera button will become grey.



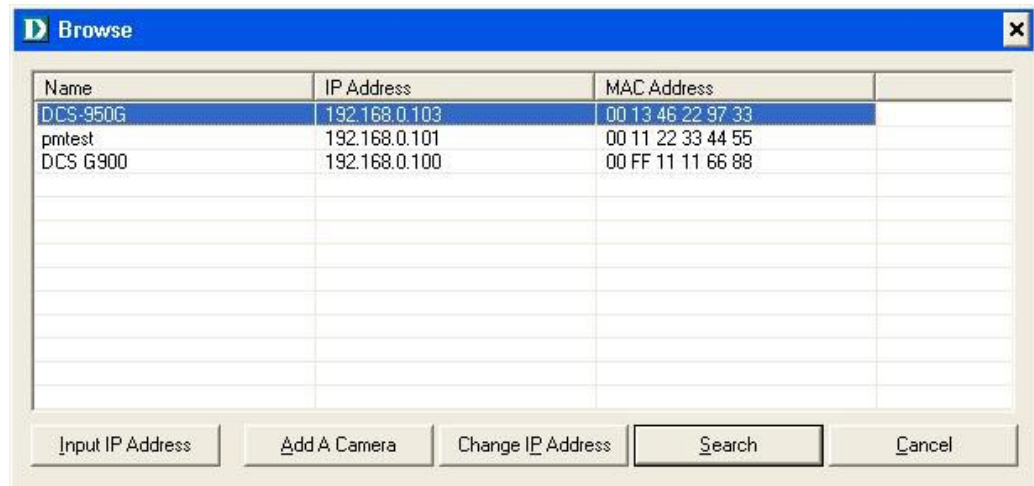
Before the camera is liberated you will be given the choice to confirm your request to remove the camera.


A grey light under the camera button means that this channel is available to add a camera.




How to Change the IP Address

To change a camera's IP Address, you must highlight the camera you wish to change. Click the **Change IP Address** button and the Change IP Address dialog box will appear. Select **Manually Assign IP** if you want to connect manually to the camera by providing the IP Address, Subnet Mask, and Default Gateway. Select **DHCP** if you do not wish to assign an IP address to your camera.



You may also click the **Assign IP to a Camera** button  on the IPView SE, which will bring up the Browse screen from above. Simply click the **Change IP Address** button and the Change IP Address dialog box will appear. Select **Manually Assign IP** if you want to connect manually to the camera by providing the IP Address, Subnet Mask, and Default Gateway. Select **DHCP** if you would like to connect to only cameras on your network.

How to Format the Camera View

Select the **Combine** button  on the IPView SE and you should see all four cameras combined (see image below).




A maximum of 4 cameras can be viewed simultaneously with IPView SE.




Select any of the four cameras for the View Mode format. If there is a green light next to the camera button that means that the IPView SE has a camera connected.

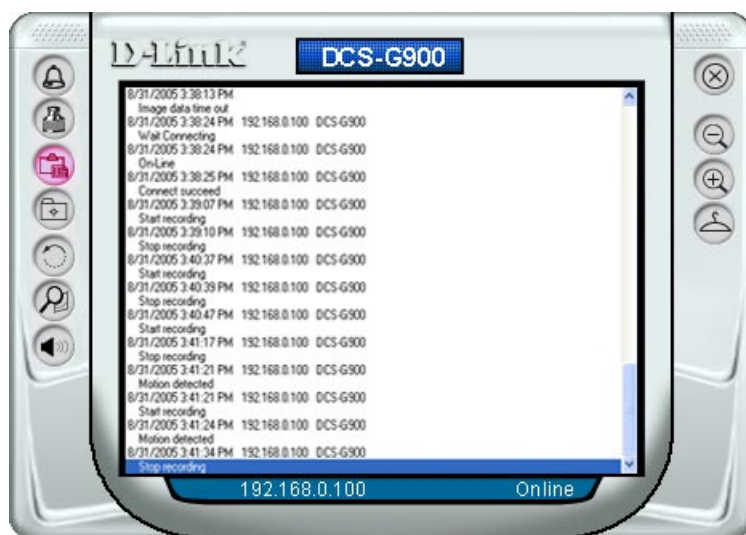
How to Rotate the Video View

In View Mode format, click on the **Rotate** button  and the image should rotate 90° to the left (see image below).




View/List


Click the **View/List** button . All the cameras and their properties, such as the camera name, IP Address, user name, and functional information, will be displayed in the View/List screen



Zoom

Click the **Zoom** button  to zoom in on the camera image. The options under zoom are Fit Window x1, x1.5, x2, x2.5, x3, x3.5, and x4.

Color Setting


Click the **Color Setting** button , to adjust the Brightness, Contrast, and Hue.




Wake Up Control Panel

Click the **Wake Up Control Panel** button  to open the control panel again when it is closed.


Always on Top

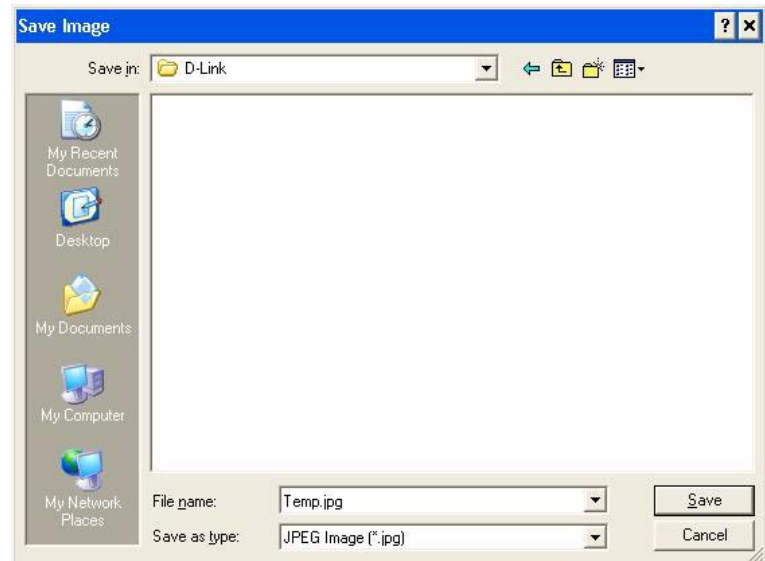
Click the **Always on Top** button  to have the display screen always appear on top.

Close

Click the **Close** button  to close the display screen of the camera.

How to take a Snap-Shot with the Camera

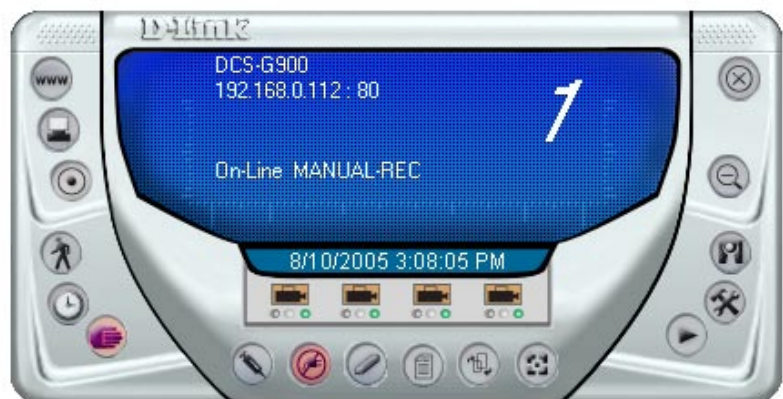
In View Mode format select the **Snapshot** button  located on the upper left corner of the screen. A Save Image dialog box will appear for you to save the snap shot picture.




How to Start Recording

To start recording with a camera, click the **Manual Recording** button . An AVI file will appear in your IPView SE folder.

Note: You must stop recording before changing any camera settings.



How to Stop Recording

To stop recording with a camera, click the **Manual Recording** button  again.


Camera Settings

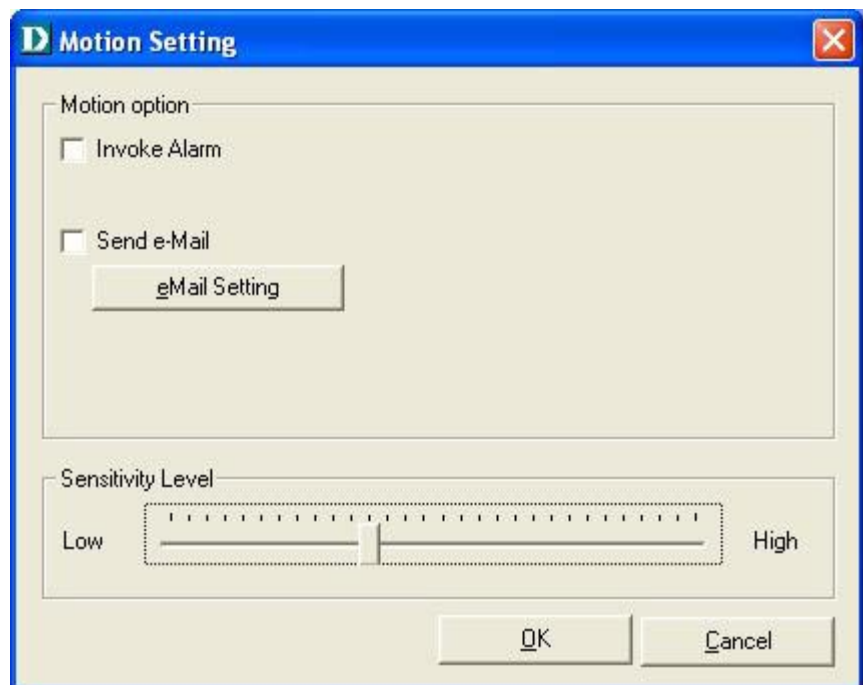
Once you have completed the initial configuration of the DCS-G900 using the Web-based interface, you can review or change your configuration using either the Web-based configuration utility or the Settings in the DCS-G900 IPView SE.

Configure Camera from Web


Click the **Configure Camera from Web** button  to start configuring your camera from the web again (see page 19).

Motion Setting

Click the **Motion Setting** button  to setup the options for motion recording. On this screen you can select to **Invoke Alarm** and/or **Send E-mail**. Click the **E-mail Setting** button to configure your E-mail. The **Sensitivity Level** can be adjusted between Low and High for motion recording.




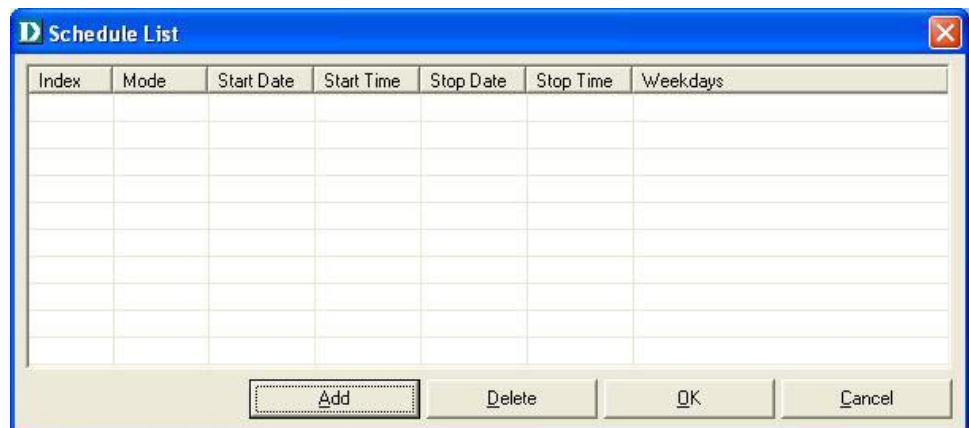
Manual Recording

Click the **Manual Recording** button  , to begin recording images from your camera.



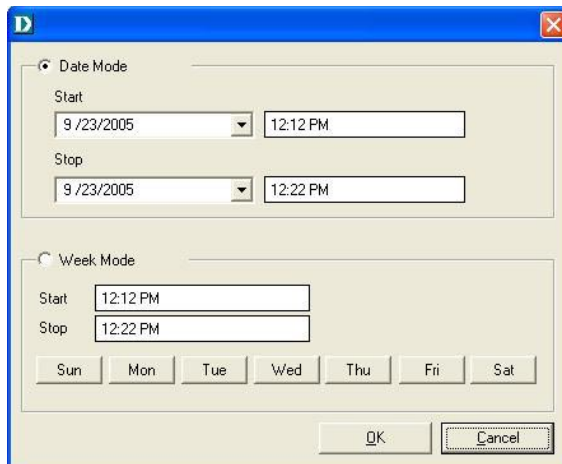
Schedule Recording

Click the **Schedule Recording** button  to record based on a specific time and date. Click **Add** to set the time and date for recording.





Schedule Recording *(continued)*

Select **Date Mode** and enter in the **Start** date/time, and **Stop** date/time. The camera will start to record according to the specified date and time period entered. Select **Week Mode** to specify which date to record during the time period.




Motion Recording

Clicking on the **Motion Recording** button  will record images upon motion detection. When this option is selected and the camera detects motion within the range of the viewing window, recording will be triggered. Recording will continue until no motion is detected. Click on the **Motion Setting** button  to set the sensitivity levels for motion recording (see page 55).

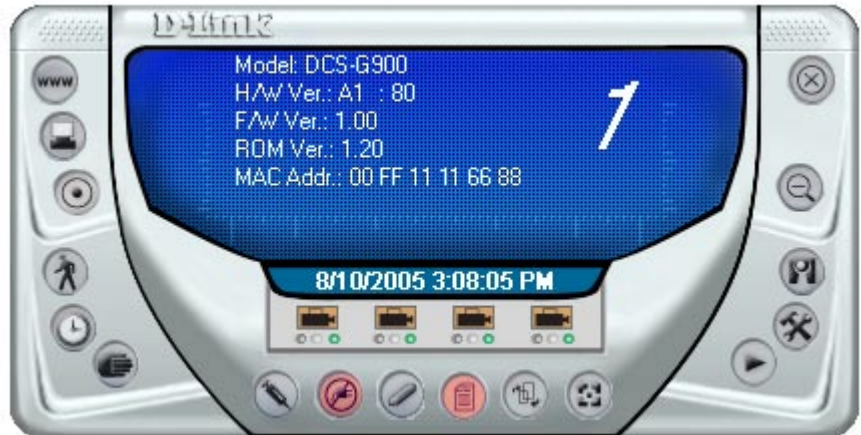


Scan

Click the **Scan** button  to display each camera one by one. When this option is selected the camera(s) will briefly display their images in the View Mode format.

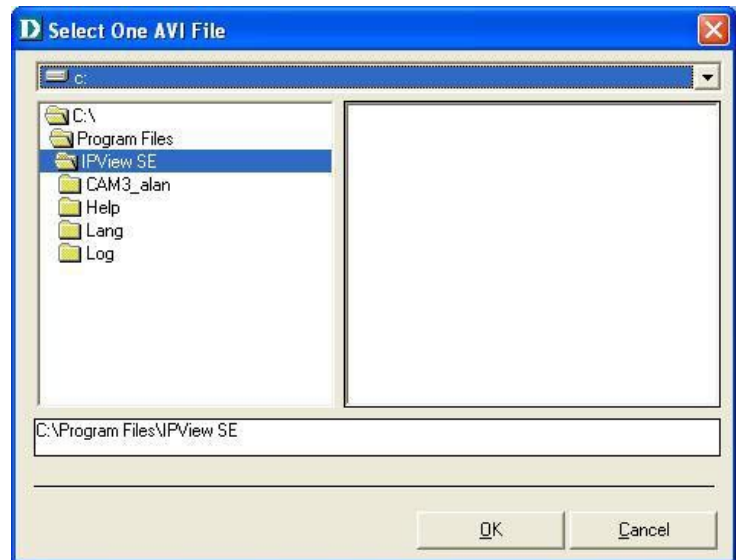
Camera's Extra Information

Click the **Camera's Extra Information** button  to view information about your camera.




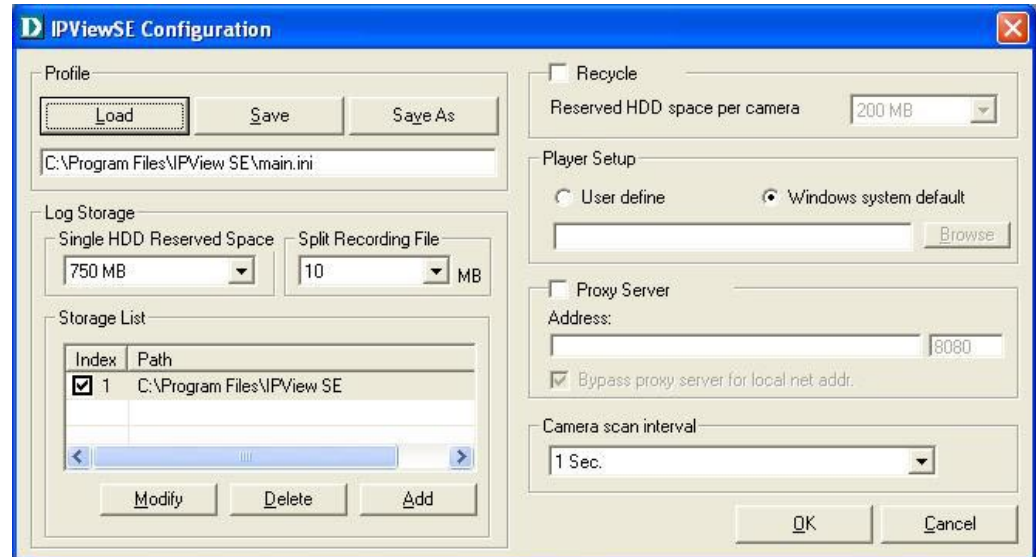
Play

Click the **Play** button  to playback video recorded from your camera.



System Configure

Click the **System Configure** button  on the IPView SE.



Profile: The DCS-G900 will not have a profile to load initially, you will have to select all of your cameras and then click the **Save** or **Save As** buttons to save your profile. Up to four cameras can be saved per configuration, there are no limits as to how many configurations can be saved. Click the **Load** button to load any of your configurations.

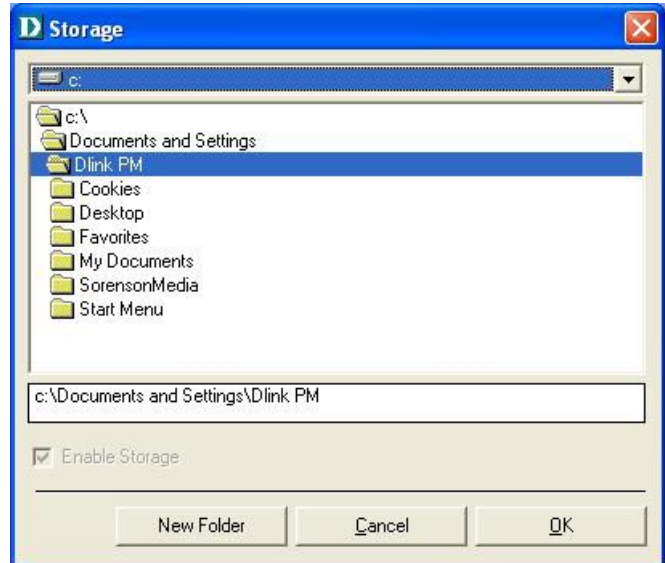


Log Storage: The **Single HDD Reserved Space** option permits reserved HDD space from 500 MB to 1000 MB.

The **Split Recording File** option is used to adjust the file size for recording the video images (the default setting is 10MB). If the recorded video files reach the file size, video images will be recorded into another file automatically.

By File Size - permits recording by file size from 10 MB to 50 MB.

Storage List: To add another storage, simply click the **Add** button. The following Storage dialog box will appear, allowing you to select a drive and to **Enable Storage** on that drive.



To modify the storage, click the **Modify** button. You should see the storage dialog box again.

To delete a storage, select the path and click the **Delete** button. If you try to delete the very last storage in the list, you will receive a warning message telling you to keep one storage at least.



**Recycle:**

The **Reserved HDD space per camera** option allows old video files to be overwritten and replaced by new recorded files. This field refers to the amount of space left on your drive before overwrite takes place. For instance if you select 1000 MB and your total hard drive space is 3000 MB, as soon as your drive reaches over a 1000 MB capacity your files will be overwritten. You can specify between 300MB to 10GB hard drive reserve space, depending on the free space available on your hard drive.

Note: Selecting the **Recycle** option will disable the Recording File Path Settings in the Recording menu.

Player Setup:

In this section you may choose between **Windows system default** or **User define** for the video player desired for playback of recorded video files. Selecting **User define** will allow you to Browse for your desired video player.


Proxy Server:

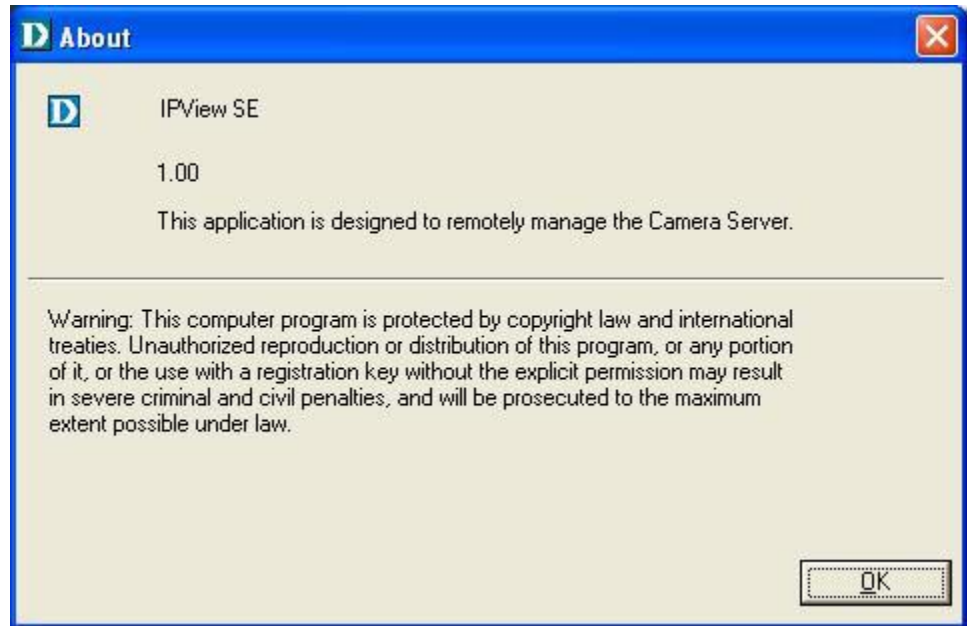
Select this option to enable Proxy Server support.

Camera scan interval:

It allows you to display for each camera one by one. The time interval for each camera can be from 1 Sec. to 20 Sec.

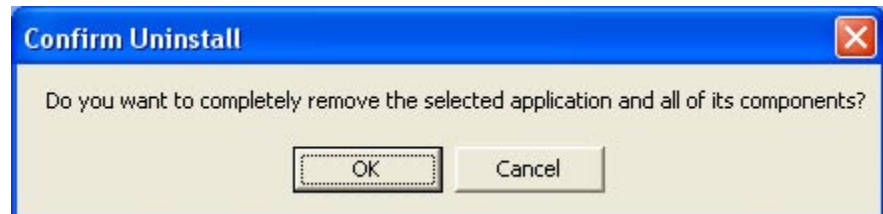
About

Click the **Help/About**  icon, and then select **About** for camera details such as software version.

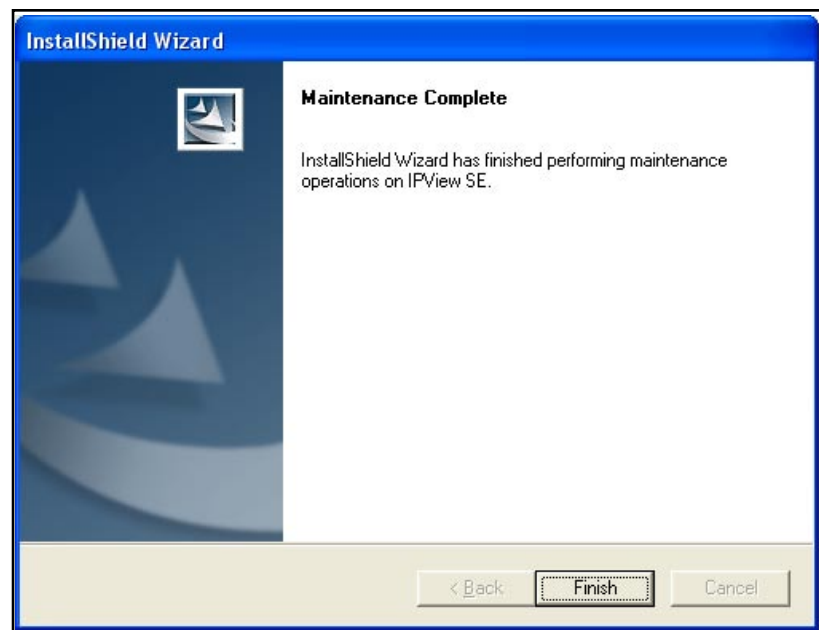


Uninstall IPView SE

Click on Windows® **Start Menu > Programs > IPView SE > Uninstall IPView SE**. A new prompt screen will be displayed like the one below confirming the removal. At the Confirm Uninstall dialog box, click **OK** to continue the process.



The InstallShield Wizard prompt will appear. Click **Finish** to complete the uninstallation procedure.



Frequently Asked Questions

Internet Camera Features

1 What is an Internet Camera?

The Internet Camera is a standalone system connecting directly to an Ethernet or Fast Ethernet network and supported by the wireless transmission based on the IEEE 802.11g standard. It is different from the conventional PC Camera, the Internet Camera is an all-in-one system with built-in CPU and web-based solutions providing a low cost solution that can transmit high quality video images for monitoring. The Internet Camera can be managed remotely, accessed and controlled from any PC/Notebook over the Intranet or Internet via a Web browser.

2 What is the maximum number of users that can be allowed to access DCS-G900 simultaneously?

The maximum number of users that can log onto the Internet Camera at the same time is 8. Please keep in mind the overall performance of the transmission speed will slow down when multiple users are logged on.

3 What algorithm is used to compress the digital image?

The Internet Camera utilizes Motion-JPEG image compression technology to provide high quality images. Motion-JPEG is a standard for image compression and can be applied to various web browser and application software without the need to install extra software.

4 Can I capture still images from the Internet Camera?

Yes you are able to capture still images with the snapshot function from the IPView SE application supplied with the Internet Camera CD-ROM.

5 Can the Internet Camera be used outdoors?

The Internet Camera is not weatherproof. It needs to be equipped with a weatherproof case to be used outdoors and it is not recommended.

6 What network cabling is required for the Internet Camera?

The Internet Camera uses Category 5 UTP Twisted-pair cable allowing 10 Base-T and 100 Base-T networking.

7 Can the Internet Camera be setup as a PC-cam on the computer?

No, the Internet Camera is used only on Ethernet and Fast Ethernet network or supported by wireless transmission. The D-Link DSB-C110, DSB-C310 can be used as a PC Camera (Webcam).

8 Can the Internet Camera be connected on the network if it consists of only private IP Addresses?

Yes, the Internet Camera can be connected to a LAN with private IP Addresses.

9 Can the Internet Camera be installed if a firewall exists on the network?

If a firewall exists on the network, port 80 is open for ordinary data communication. You will need to do port forwarding by opening a port to the camera. Please refer to your firewall's product manual for detailed instructions.

10 Why can't I access the Internet Camera from a Web browser?

The possible cause might be the IP Address for the Internet Camera is already being used by another device. To correct the possible problem, you need to first disconnect the Internet Camera from the network. Then run the PING utility (follow the instructions in the section titled "PING Your IP Address". If there is a reply, it indicates that there is another device on the network with the same IP address. You will need to run the Install Wizard again and change the IP address of the camera.

Other possible problems might be due to the network cable. Try replacing your network cable. Test the network interface of the product by connecting a local computer directly to the unit, utilizing a standard Crossover Cable, and run the PING utility. If the problem is not solved, the Internet Camera might be faulty.

Internet Camera Installation

11 Why does the Power LED not light up constantly?

The power supply used might be at fault. Confirm that you are using the provided power supply, which is DC 5V, for the Internet Camera. Also verify that the power supply is well connected, and/or the option to turn off the LED is enabled.

12 Why does the LAN LED not light up properly?

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 utilized by the Internet Camera is not functioning properly, such as hubs or switches. Confirm the power for the devices are well connected and functioning properly, and/or the option to turn off the LED is enabled.

13 Why does the Internet 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 Internet Camera to be accessible outside your local LAN. Refer to page 39 for more information about installing your camera behind a router.

Make sure that the Internet 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 Internet Camera to be accessed outside your local LAN.

14 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 Internet Camera into a more shaded area immediately as prolonged exposure to bright lights will damage the CMOS sensor.

16 Noisy images occur. How can I solve the problem?

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

17 The images are poor quality, how can I improve the image quality?

Make sure that your computers 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 Internet Camera image display is incorrect. Through the Web Configuration Video section of the web management you need to adjust the image related parameters for improved images such as: brightness, contrast, hue and light frequency. Please refer to the Web Configuration section for detailed information.

18 Why are no images available through the Web browser?

The 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 of lower than 5, then you will need to upgrade your Web browser software in order to view the streaming video transmitted by the Internet Camera.

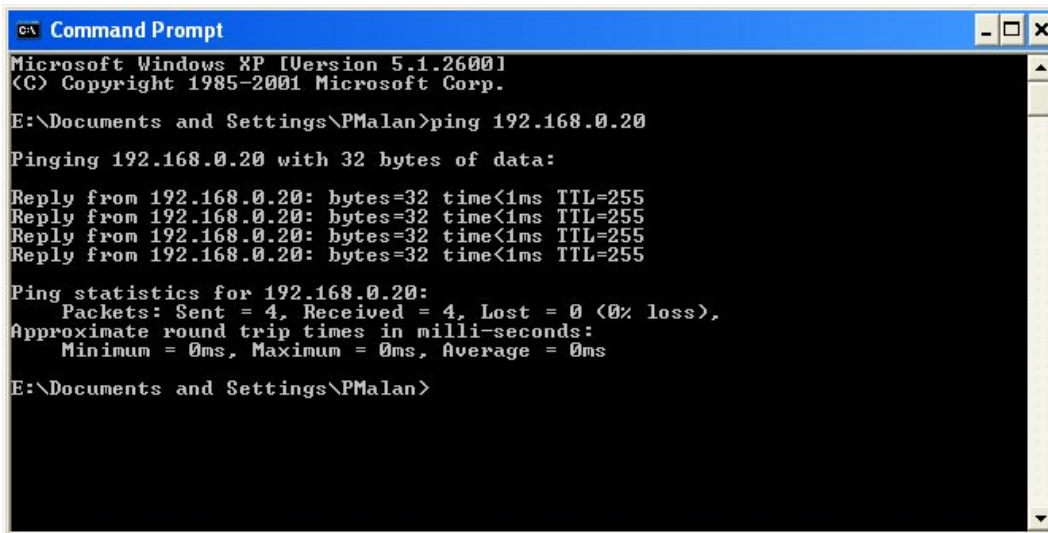
How to Ping Your IP Address

The PING (Packet Internet Groper) command can determine whether a specific IP Address is accessible by sending a packet to the specific address and waiting for a reply. It is a very useful tool to confirm if the IP Address conflicts with the Internet Camera over the network. Follow the step-by-step procedure below to utilize the PING command.

Start a DOS window Start>Program>Accessories>Command Prompt

Type ping x.x.x.x, where x.x.x.x is the IP Address of the Internet Camera.

A successful connection to the camera will be indicated by 4 reply statements (below).

A screenshot of a Windows Command Prompt window. The title bar reads "C:\ Command Prompt". The text inside the window shows the execution of a ping command to 192.168.0.20. The output shows four successful replies, each with a time of less than 1ms and a TTL of 255. Ping statistics show 4 packets sent, 4 received, and 0% loss.

```
C:\ Command Prompt
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

E:\Documents and Settings\PMalan>ping 192.168.0.20

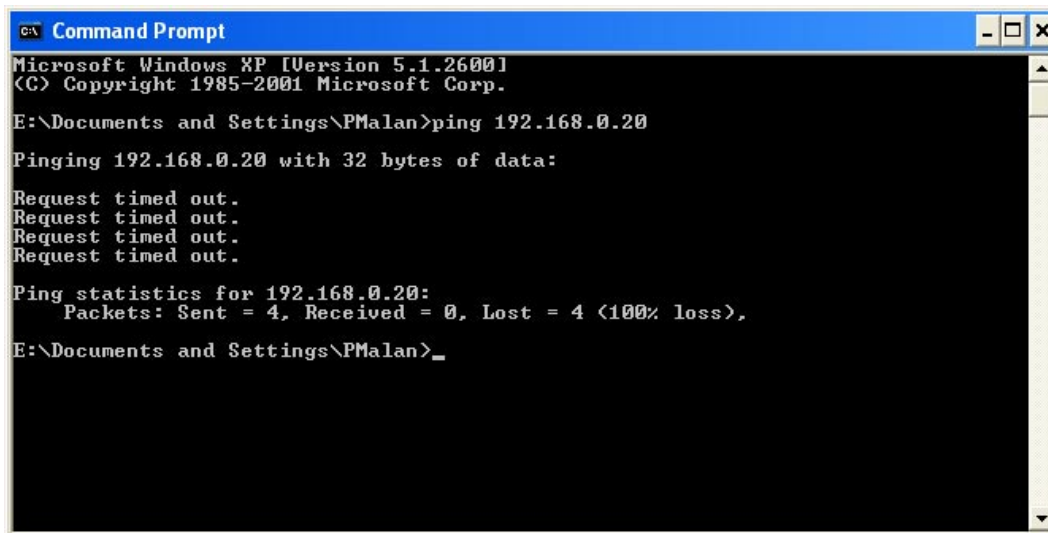
Pinging 192.168.0.20 with 32 bytes of data:

Reply from 192.168.0.20: bytes=32 time<1ms TTL=255
Reply from 192.168.0.20: bytes=32 time<1ms TTL=255
Reply from 192.168.0.20: bytes=32 time<1ms TTL=255
Reply from 192.168.0.20: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.0.20:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

E:\Documents and Settings\PMalan>
```

If you fail to connect to your camera you will see the following:

A screenshot of a Windows Command Prompt window. The title bar reads "C:\ Command Prompt". The text inside the window shows the execution of a ping command to 192.168.0.20. The output shows four "Request timed out" messages. Ping statistics show 4 packets sent, 0 received, and 100% loss.

```
C:\ Command Prompt
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

E:\Documents and Settings\PMalan>ping 192.168.0.20

Pinging 192.168.0.20 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.0.20:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

E:\Documents and Settings\PMalan>_
```

Check to see if you have entered your camera's IP Address correctly or reassign your camera's IP Address.

Technical Specifications

Network*

- TCP/IP (DHCP or Static IP Address)
- 802.11g Wireless (Supports up to 54Mbps transfer rate)
- 802.11b Wireless (Supports up to 11Mbps transfer rate)
- Wired LAN: 10/100Mbps

Web Access Requirements

- Any Java-Enabled or ActiveX compatible Web Browser, i.e. current versions of Microsoft Internet Explorer or Netscape Navigator™.

Media Streaming Protocol

- HTTP

Video Specification

- Resolution: 640 x 480
- Sensor: 1/4" color CMOS sensor
- Gain Control: 56dB
- Exposure: Automatic
- White Balance: Automatic
- Shutter: Electronics 1/60 ~ 1/15,000 sec
- Minimum Illumination: 2.5lux@F1.4
- Focal Length: 6.0mm
- Aperture: F=1.8

Image (Video Setting)

- Motion-JPEG compression
- Frame rate: QCIF@30fps, 25fps@CIF, 10fps@VGA
- Compression Rate Selection: 5 level (Very Low, Low, Medium, High, Very High)
- Video Resolution: 160x120, 320x240, 640x480

Web Configuration Requirements

- Internet Explorer 5.0 or above or Netscape 6.0 or above
- 266MHz processor
- 32MB memory (64MB recommended)
- VGA Card Resolution: 800 x 600 or above

Dimensions

- H x W x L: 5.31" x 2.59" x 2.59"

PC System Requirements

- Connection to 802.11g wireless or Ethernet network
- Windows® 2000 or XP
- 1.3GHz processor
- 128MB memory
- 20GB available hard disk space
- CD-ROM drive

Power Source:

- 5V, 2.5A

* Maximum wireless signal rate derived from IEEE Standard 802.11a and 802.11g specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate.

** Environmental conditions may adversely affect wireless signal range.



Power Consumption:

- 5W

Environmental specification

- Operating temperature: 5°C to 50°C
- Storage temperature: -25°C to 50°C
- Operating relative humidity: 5% to 95% non-condensing

Warranty:

- 1 Year

Appendix

Wireless Installation Considerations

The D-Link® DCS-G900 can be integrated into a wireless network from virtually anywhere within its operating range. However, the range can be limited by the number of walls, thickness of walls, and location of the walls that the wireless signal must pass through. 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:

- Keep the number of walls and ceilings between the DCS-G900 and other network devices to a minimum. Each wall or ceiling can reduce your DCS-G900's range from 3-90 feet (1-30 meters).
- Be aware of the direct line between network devices. A wall that is 1.5 feet thick (.5 meters), at a 45-degree angle appears to be almost 3 feet (1 meter) thick. At a 2-degree angle it looks over 42 feet (14 meters) thick! Position devices so that the signal will travel straight through a wall or ceiling (instead of at an angle) for better reception.
- Building materials can impede the wireless signal. A solid metal door or aluminum studs may have a negative effect on the range. Try to position wireless devices and computers with wireless adapters so that the signal passes through drywall or open doorways and not other materials.
- Keep your product away (at least 3-6 feet or 1-2 meters) from electrical devices or appliances that generate RF noise.
- You can also add a directional antenna to help with range and sensitivity issues.

Glossary

Networking

802.11b: A wireless networking standard that supports data encryption and up to 11Mbps bandwidth.

802.11g: A wireless networking standard that supports data encryption and up to 54Mbps bandwidth.

Ad-Hoc: This wireless networking mode means that two PC's are communicating in a Peer-to-Peer network, without a router or an access point.

Bandwidth: A measure of the rate at which data can be sent and received through the network. This value is usually given in bits per second (bps) or Megabits per second (Mbps).

DHCP (Dynamic Host Configuration Protocol): A protocol that network devices use to obtain an IP address, subnet mask, gateway, and DNS addresses automatically. A DHCP server can be a router, ISP server, or PC running Internet Connection Sharing software. If you are using a DHCP-capable device in your network, you will not need to assign a static IP address to your DCS-G900. However, if you do not have a DHCP-capable device in your network, you will need to assign a static IP address to your DCS-G900.

DNS (Domain Name System): A system used to translate computer names into IP addresses. For example, a DNS server would translate www.dlink.com into 64.7.210.132

Ethernet: The most commonly used wired network technology. Standard Ethernet supports up to 10Mbps. Fast Ethernet supports up to 100Mbps.

Gateway: This is the IP address of the device that connects you to another network such as a router. A router would be the gateway between your local area network and the Internet.

Infrastructure: This wireless networking mode is used by wireless networks with a router or an access point.

IP Address (Internet Protocol Address): An IP address consists of four groups of digits separated by periods. Each group of digits contain an 8-bit value as a number ranging from 0 to 255. Each computer must have it's own unique IP address. The IP addresses on your network must be within the same range. For example, if one PC or device has an IP address of 192.168.0.2, the other devices should have IP addresses that are sequential, like 192.168.0.3 and 192.168.0.4.

ISP (Internet Service Provider): A commercial organization that provides subscribers with access to the Internet.

Key: Encryption keys allow you to easily change wireless encryption settings to maintain a secure network. The DCS-G900 supports 64-bit and 128-bit keys.

Netmask: Commonly referred to as subnet mask, this is used to determine what subnet an IP address belongs to.

RJ-45: RJ-45 is the standard connector for Ethernet cabling. It looks like a phone cable connector, but is slightly larger. RJ-45 connectors have 8 pins, 4 of which are used for transmitting and receiving data.

SSID (Service Set Identifier): The name designated for a specific wireless local area network (WLAN). The SSID can be easily changed to connect to an existing wireless network.

Static IP: A static IP address is configured manually on the device that will be using it. A static IP address remains the same constantly and must be a unique address.

WEP (Wired Equivalent Privacy): A security protocol for wireless local area networks (WLAN) that is designed to provide the same level of security as a wired network. WEP provides security by encrypting the data sent over the WLAN. The DCS-G900 supports 64-bit and 128-bit encryption.

Wired: Devices networked via Ethernet cabling.

Wireless: Devices networked using radio frequencies instead of physical cabling.

WPA-PSK (Wi-Fi Protected Access with Pre-Shared Key): A security protocol for wireless local area networks that requires that the router and DCS-G900 have the same pre-shared key in order to establish a wireless connection.

Technical Support

Technical Support

You can find software updates and user documentation on the D-Link website.

D-Link provides free technical support for customers within the United States and within Canada for the duration of the warranty period on this product.

U.S. and Canadian customers can contact D-Link Technical Support through our website, or by phone.

Tech Support for customers within the United States:

D-Link Technical Support over the Telephone:

(877) 453-5465

24 hours a day, seven days a week.

D-Link Technical Support over the Internet:

<http://support.dlink.com>

e-mail: support@dlink.com

Tech Support for customers within Canada:

D-Link Technical Support over the Telephone:

(800) 361-5265

Monday to Friday 7:30am to 9:00pm EST

D-Link Technical Support over the Internet:

<http://support.dlink.ca>

e-mail: support@dlink.ca

Warranty

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

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

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

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

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

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

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

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

- The customer must submit with the product as part of the claim a written description of the Hardware defect or Software nonconformance in sufficient detail to allow D-Link to confirm the same, along with proof of purchase of the product (such as a copy of the dated purchase invoice for the product) if the product is not registered.
- The customer must obtain a Case ID Number from D-Link Technical Support at 1-877-453-5465, who will attempt to assist the customer in resolving any suspected defects with the product. If the product is considered defective, the customer must obtain a Return Material Authorization ("RMA") number by completing the RMA form and entering the assigned Case ID Number at <https://rma.dlink.com/>.
- After an RMA number is issued, the defective product must be packaged securely in the original or other suitable shipping package to ensure that it will not be damaged in transit, and the RMA number must be prominently marked on the outside of the package. Do not include any manuals or accessories in the shipping package. D-Link will only replace the defective portion of the product and will not ship back any accessories.
- The customer is responsible for all in-bound shipping charges to D-Link. No Cash on Delivery ("COD") is allowed. Products sent COD will either be rejected by D-Link or become the property of D-Link. Products shall be fully insured by the customer and shipped to D-Link Systems, Inc., 17595 Mt. Herrmann, Fountain Valley, CA 92708. D-Link will not be held responsible for any packages that are lost in transit to D-Link. The repaired or replaced packages will be shipped to the customer via UPS Ground or any common carrier selected by D-Link. Return shipping charges shall be prepaid by D-Link if you use an address in the United States, otherwise we will ship the product to you freight collect. Expedited shipping is available upon request and provided shipping charges are prepaid by the customer.

D-Link may reject or return any product that is not packaged and shipped in strict compliance with the foregoing requirements, or for which an RMA number is not visible from the outside of the package. The product owner agrees to pay D-Link's reasonable handling and return shipping charges for any product that is not packaged and shipped in accordance with the foregoing requirements, or that is determined by D-Link not to be defective or non-conforming.

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CE Mark Warning: This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

FCC Statement: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communication. 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.

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

Registration

**Register your product online at:
<http://support.dlink.com/register>**



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

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