

USER MANUAL

DCS-910/DCS-920

VERSION 1.3



D-Link[®]

SURVEILLANCE

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Package Contents

- DCS-910/920 Internet Camera
- CAT5 Ethernet Cable
- Power Adapter
- Antenna (available only for the DCS-920)
- Manual and Software on CD
- Quick Install Guide
- Camera Stand

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

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



System Requirements

- Computer with Windows® XP or Vista®
- PC with 1.3GHz or above; at least 128MB RAM
- Internet Explorer 6.0 or Netscape Navigator™ 7.0 and above
- Existing 10/100 Ethernet-based network or wireless 802.11b/g network

Introduction

Congratulations on your purchase of the DCS-910/920 Internet Camera! The DCS-910/920 is a versatile and unique solution for your small office or home. Unlike a PC Camera, the DCS-910/920 is a stand-alone system with a built-in CPU that transmits high quality video images for monitoring. The DCS-910/920 can be remotely accessed, and controlled using a Web browser over the Intranet or Internet. The simple installation procedure and intuitive Web-based interface offer easy integration with your Ethernet/Fast Ethernet or 802.11b/g wireless network. The DCS-910/920 also comes with remote monitoring capability for a complete and cost-effective home security solution.

Features

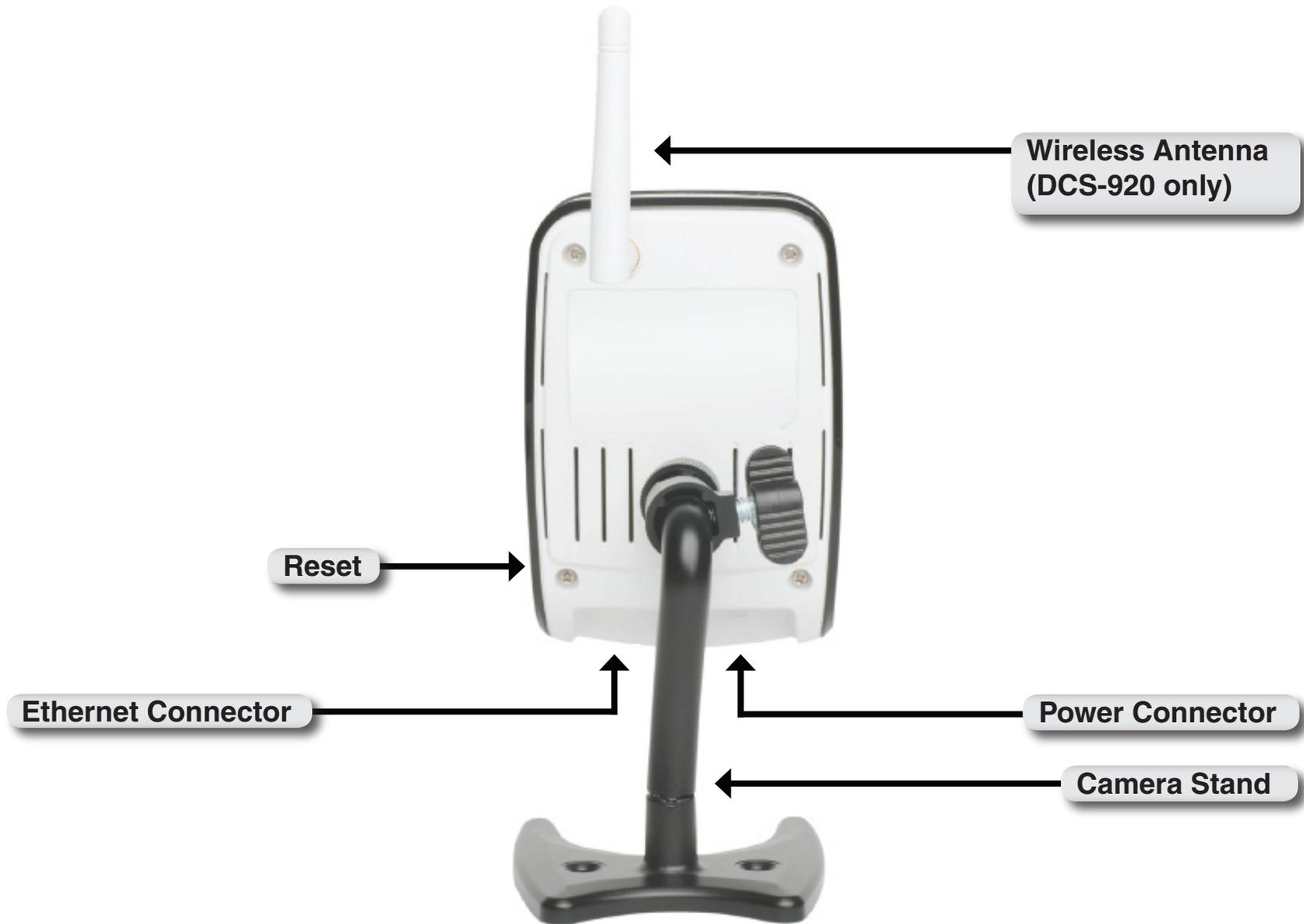
- **Simple to Use:** The DCS-910/920 is a stand-alone system with a built-in CPU, requiring no special hardware or software such as PC frame grabber cards. The DCS-910/920 supports both ActiveX mode for Internet Explorer and Java mode for Internet Explorer and Netscape Navigator™.
- **Supports a Variety of Platforms:** Supporting TCP/IP networking, HTTP, and other Internet related protocols. The DCS-910/920 can also be integrated easily into other Internet/Intranet applications because of its standards-based features.
- **802.11b/g Wireless or Ethernet/Fast Ethernet Support:** The DCS-910/920 offers wireless 802.11b/g* and Ethernet/Fast Ethernet connectivities, making the DCS-910/920 easy to integrate into your existing network environment. The DCS-910/920 works with a 10Mbps Ethernet based network or 100Mbps Fast Ethernet based network for traditional wired environments, and works with 802.11b/g routers or access points for added flexibility. The Site Survey feature also allows you to view and connect to any available wireless networks.
- **Web Configuration:** Using a standard Web browser, administrators can configure and manage the Internet Camera directly from its own Web page via Intranet or Internet. This means you can access your DCS-910/920 anytime, anywhere in the world!
- **Broad Range of Applications:** With today's high-speed Internet services, the Internet Camera can provide the ideal solution for delivering live video images over the Intranet and Internet for remote monitoring. The Internet Camera allows remote access using a Web browser for live image viewing, and allows the administrator to manage and control the Internet Camera anytime, anywhere in the world. Many applications exist, including industrial and public monitoring of homes, offices, banks, hospitals, child-care centers, and amusement parks.

Hardware Overview

Front View



Rear View



Hardware Installation

Attach the Antenna (DCS-920 only)

Locate the antenna included with your DCS-920 and attach it to the antenna connector located on the back of the DCS-920.

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-920.



Attach the Swivel Stand

Locate the stand mount on the back panel of the DCS-910/920 and screw on the swivel stand to the DCS-910/920.



Connect the Ethernet Cable

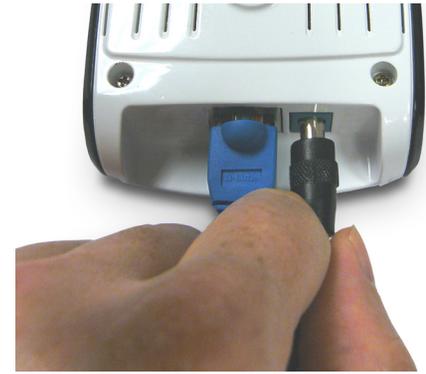
Connect the included Ethernet cable to the network cable connector located on the bottom panel of the DCS-910/920 and attach it to the network. Network Connectivity is confirmed when the green LED Indicator on the DCS-910/920, located below the Power LED, is illuminated.



Attach the External Power Supply

Attach the external power supply to the DC power input connector located on the bottom panel of the DCS-910/920 and connect it to your local power supply.

Note: Power source is confirmed when the red LED Power Indicator located below the lens on the DCS-910/920 is illuminated.



The Internet Camera comes with a camera stand with a swivel ball screw head that can be attached to the Internet Camera back panel socket cavity. Attach the camera stand to the Internet Camera and station it for your application. There are holes located in the base of the camera stand allowing the Internet Camera to be mounted to the ceiling, or any wall securely.



Socket for camera stand

Installation

Wireless Installation Considerations

The D-Link Wireless Internet 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 Internet 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 away (at least 3-6 feet or 1-2 meters) from electrical devices or appliances that generate RF noise.
5. If you are using 2.4GHz cordless phones or other radio frequency sources (such as microwave ovens), your wireless connection may degrade dramatically or drop completely. Make sure your 2.4GHz phone base is as far away from your wireless devices as possible. The base transmits a signal even if the phone is not in use.

Software Installation

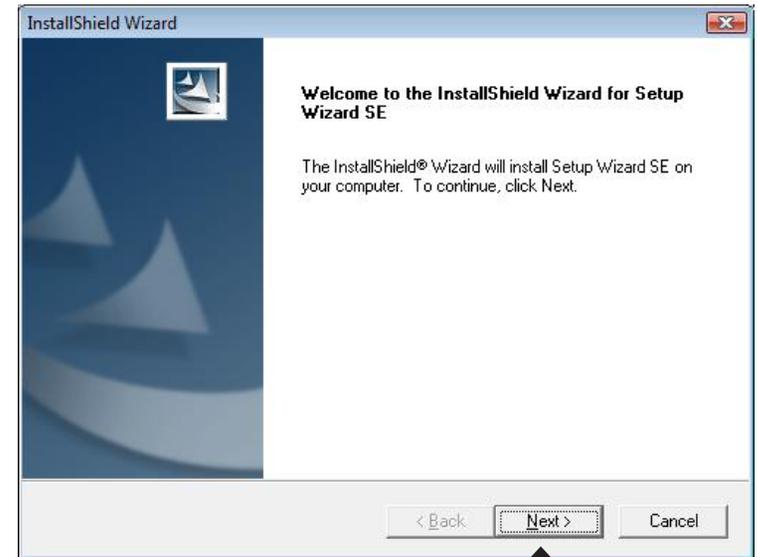
Turn on the computer and Insert the D-Link DCS-910/920 Driver CD in the CD-ROM drive. The following step-by-step instructions will be shown in Windows® XP. The similar steps and screens will be shown for other Windows operating systems.

Click **Setup Wizard**



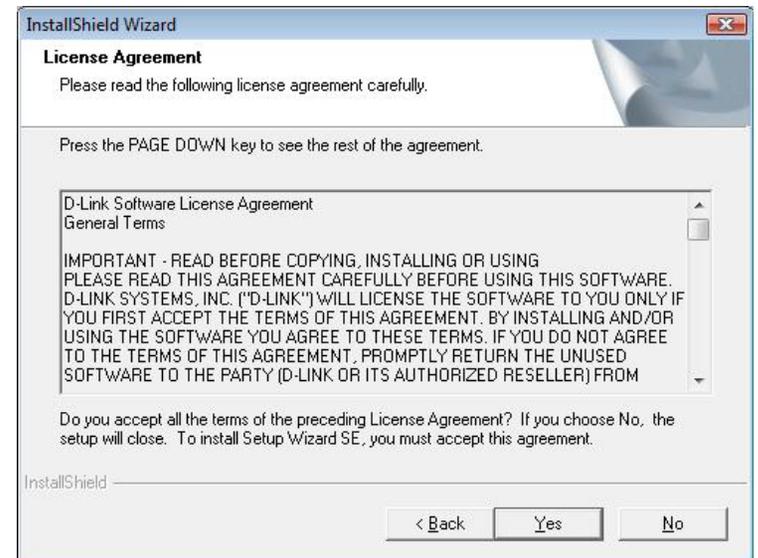
If the CD Autorun function does not automatically start on your computer, click Windows Start > Run. In the Run command box type "**D:\DCS910920.exe**", where D: represents the drive letter of your CD-ROM. If it does start, proceed to the next screen.

Click **Next** to continue.



Click **Next**

Click **Yes** to accept the License Agreement.

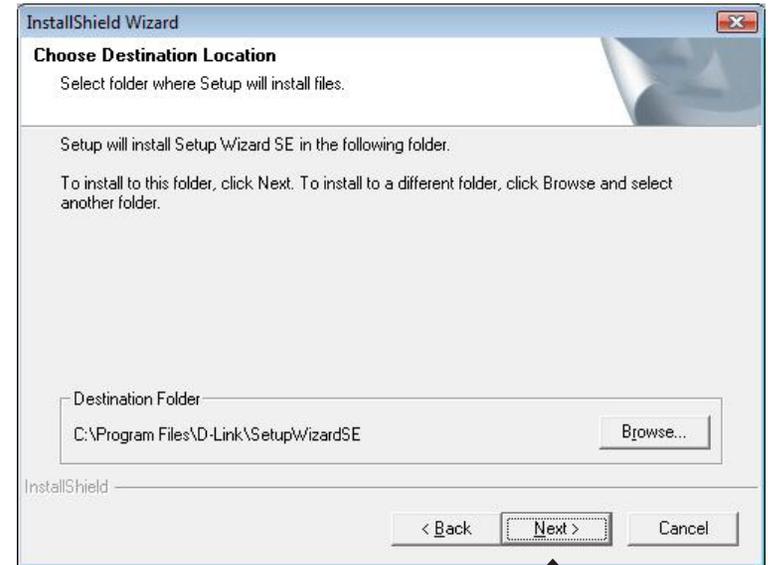


Click **Yes**

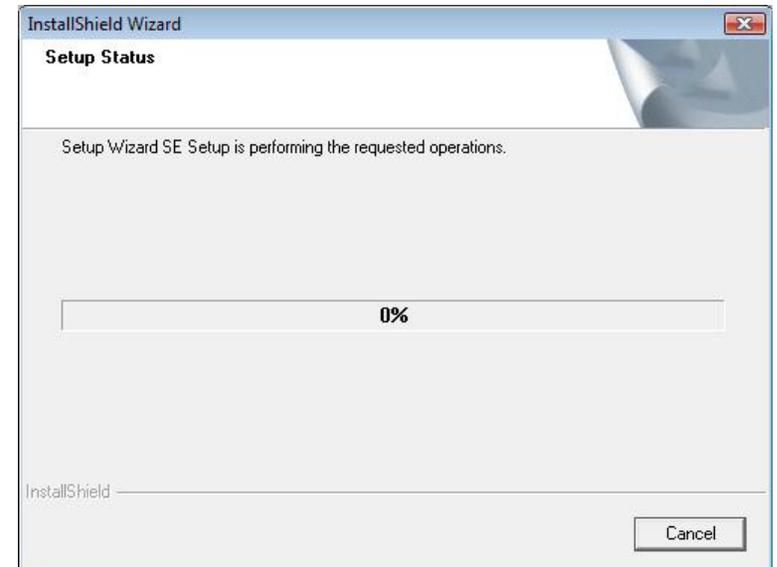
To start the installation click **Next**.

Note: *The installation may take several minutes to complete.*

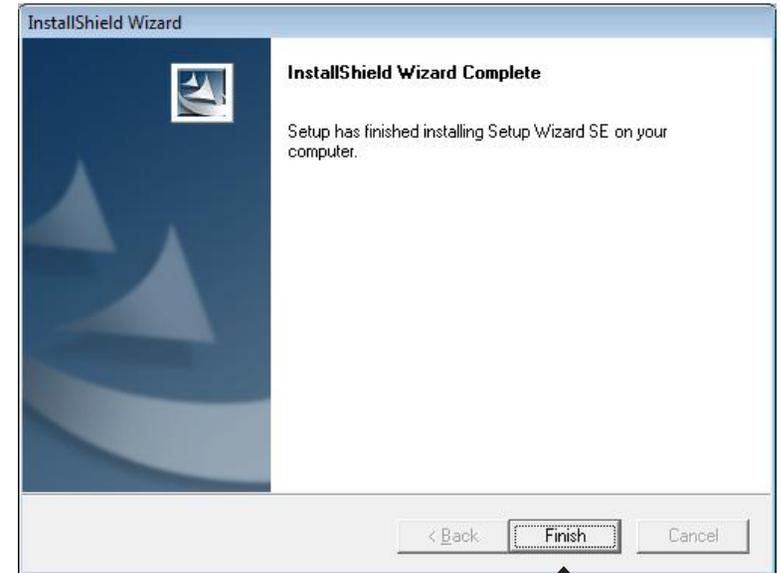
Click **Next**



Please wait while the Setup Wizard is being installed.



Click **Finish** to complete the installation.



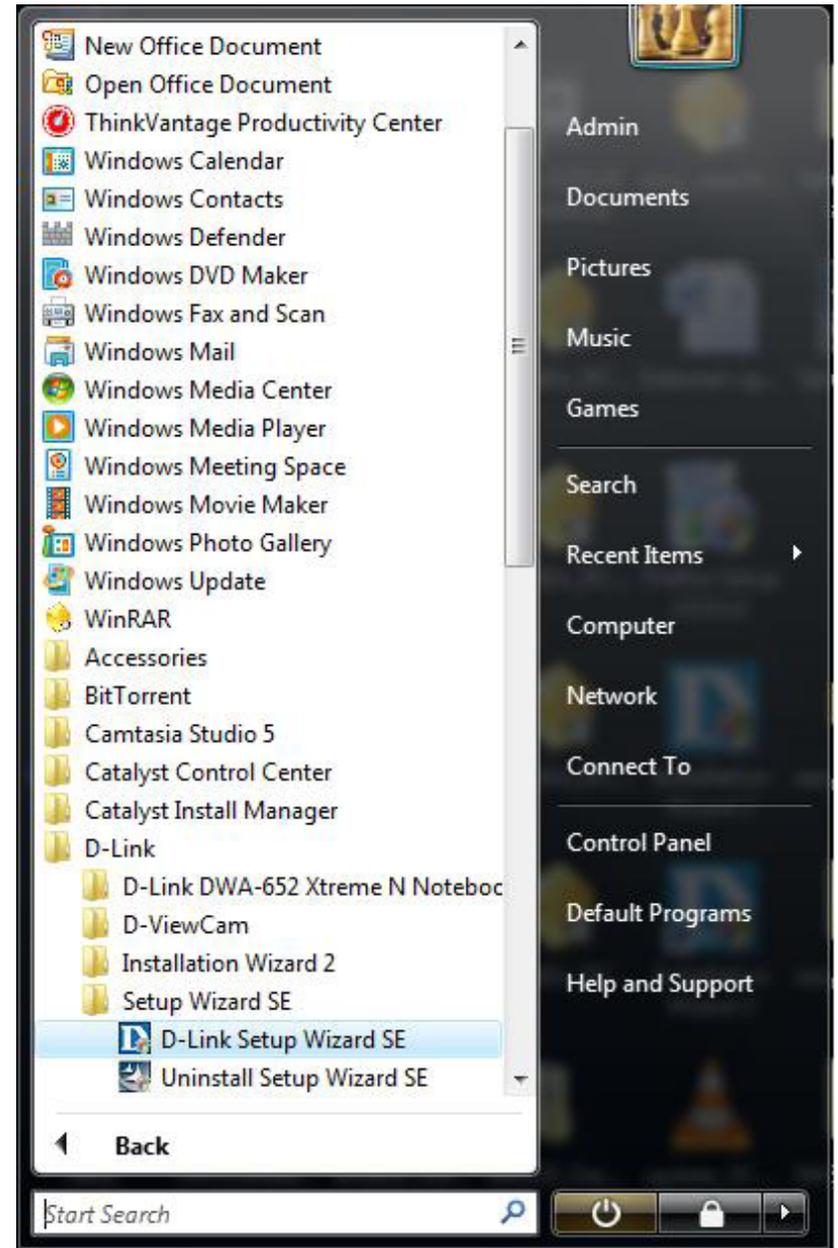
Click **Finish**



Click on the **D-Link Setup Wizard SE** icon that was created in your Windows Start menu.

The Setup Wizard will appear and display the MAC address of the DCS-910/920, and an IP Address (which may or may not be correct depending on what you have your DCS-910/920 connected to). If you have a DHCP server on your network, there will be a valid IP Address displayed here.

Note: A DHCP server is a device that supplies IP addresses to your network devices automatically.



Configuration

This section will show you how to configure your new D-Link Internet camera using the D-Link Setup Wizard SE.

Setup Wizard

The following options are available on the Installation Wizard screen:

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

The screenshot shows the D-Link Setup Wizard SE interface. The top header includes the D-Link logo and the SECURICAM Network logo. On the left side, there is a vertical sidebar with five buttons: Wizard, Search, Link, About, and Exit. The main content area displays a table with the following data:

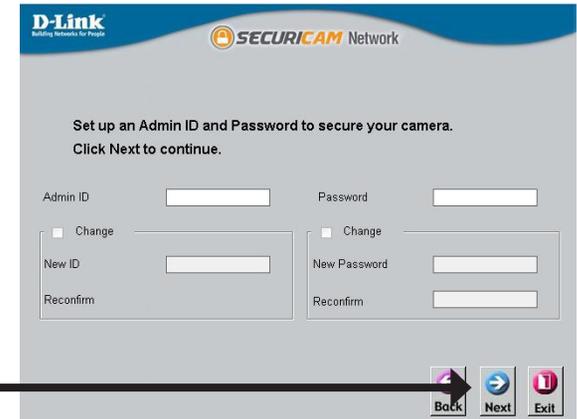
MAC Address	Current IP Address	Device Name
00.f.11.11.66.88	192.168.1.169	DCS-920

A callout box with the text "Your camera's IP Address will be displayed here along with its corresponding MAC Address." has an arrow pointing to the first row of the table. A button labeled "Click Wizard" has an arrow pointing to the "Wizard" button in the sidebar.

Enter the admin ID and password.

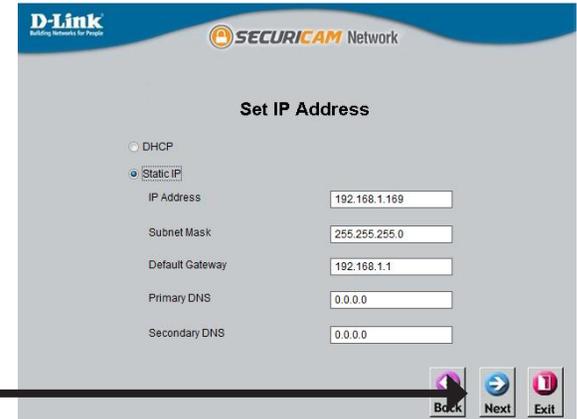
Note: The default Admin ID is **admin** with the password left blank.

Click **Next**



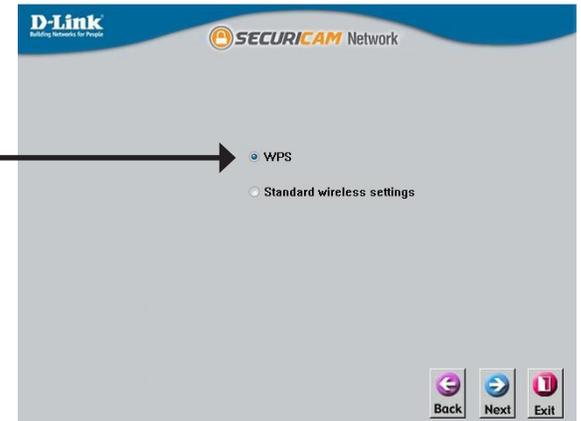
Select DHCP if you want to obtain a new IP address every time the camera boots up, or select static IP to use the same IP address at each boot up.

Click **Next**



The next screen that appears will allow you to use **WPS** or **Standard Wireless Settings** to connect to your router. If you want to use the **WPS - Push Button Option**, please continue to page 20.

Click **WPS**



Click **Next**

If you would like to connect your router with **Standard Wireless Settings**, please continue to page 21.

Select **Standard wireless settings**



Click **Next**

WPS - Push Button Setup

Note: Click **PUSH** or **Next** to continue.



Once your camera has finished WPS - Push Button Configuration setup, click **OK** and continue to the “Viewing Your Internet Camera” section on page 23.



Standard Wireless Settings

Enable wireless settings and enter your wireless network information. Select your wireless security settings, and click **Next**.

Note: *Wireless is available only for the DCS-920.*

Click **Next**

D-Link Building Networks for People
SECURICAM Network

Wireless Interface

Wireless Enable Disable

Connection mode
 Infrastructure
 Adhoc

Network Name (SSID) m-Lounge2

Wireless Channel 4

Security Mode WPA_PSK

Authentication
 Open
 Shared
 Both

Back Next Exit

Enter your wireless encryption key and click **Next**.

Note: *Wireless is available only for the DCS-920.*

Click **Next**

D-Link Building Networks for People
SECURICAM Network

Wireless Interface

Encryption Mode 64bits

Key Format Hex

Default Key WEP Key1

Key1

Key2

Key3

Key4

Pre-Shared Key PSK12345

Back Next Exit

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

Note: *Wireless is available only for the DCS-920.*

Click **Restart**

D-Link
Building Networks for People

SECURICAM Network

Admin ID	<input type="text" value="admin"/>	Wireless	<input type="text" value="Enable"/>
Password	<input type="text"/>	SSID	<input type="text" value="m-Lounge2"/>
IP Address	<input type="text" value="192.168.1.169"/>	Channel	<input type="text" value="6"/>
Subnet Mask	<input type="text" value="255.255.255.0"/>	WEP Key1	<input type="text"/>
Default Gateway	<input type="text" value="192.168.1.1"/>	WEP Key2	<input type="text"/>
Primary DNS	<input type="text" value="0.0.0.0"/>	WEP Key3	<input type="text"/>
Secondary DNS	<input type="text" value="0.0.0.0"/>	WEP Key4	<input type="text"/>
		Pre-Shared Key	<input type="text" value="PSK12345"/>

The Setup Wizard has completed. Click on 'Back' to modify your settings. Click 'Restart' to save your current settings and reboot the Internet Camera.

Viewing Your Internet Camera

Your setup is now completed!

Click **Link** to launch the Web page of your camera, and view the images using your Web browser.



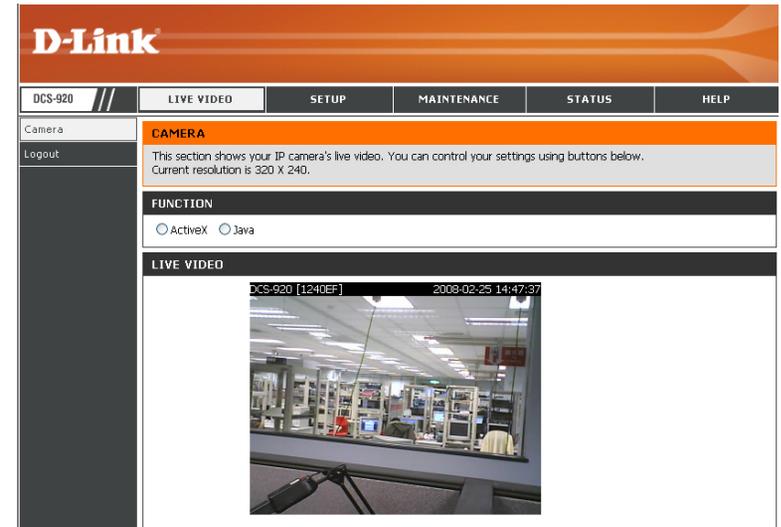
The Setup Wizard will automatically open your web browser to the IP address of the DCS-910/920, in this example it is: `http://192.198.0.102`. Your DCS-910/920 may have a different IP Address.

Enter **admin** as the default username and leave the password blank. Click **OK** to continue.



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

Click **ActiveX** or **Java radio button** to view live video.



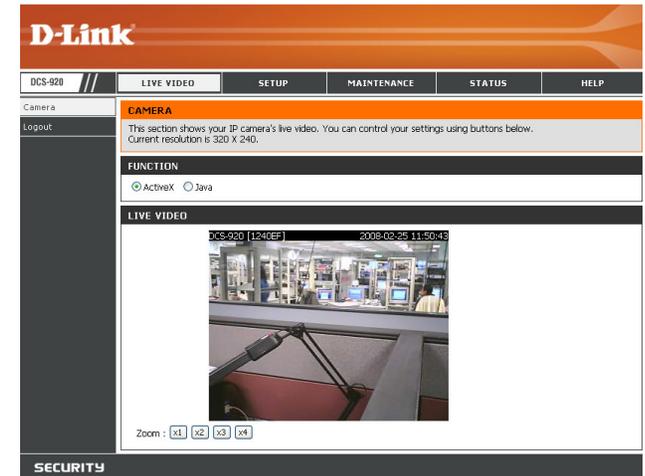
- Please make sure that you have the latest version of Java application installed on your computer to ensure proper operation when viewing the video in Java mode. The Java application can be downloaded at no cost from Sun's web site. (<http://www.java.com>)
- When you connect to the home page of your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

Configuration

Live Video

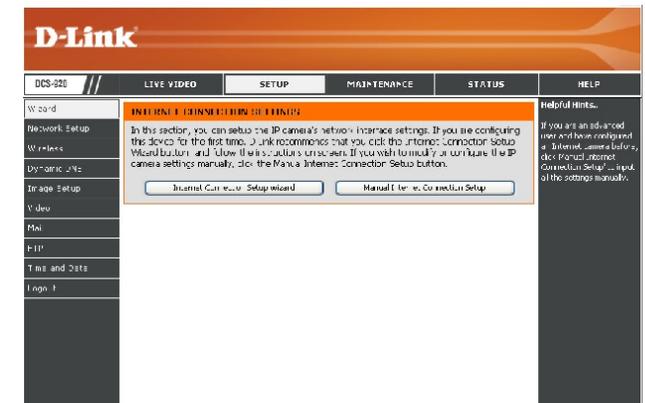
ActiveX: For Windows® Users that do not have Java installed, please choose this option to view video streaming on the Home page.

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



Setup > Wizard

You may choose to configure your network by using the **Internet Connection Setup Wizard** that includes step-by-step instructions. Otherwise, you may manually configure your connection using the **Manual Internet Connection 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.

Click **Next**

WELCOME TO D-LINK SETUP WIZARD - INTERNET CONNECTION SETUP

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.

- **Step 1:** Setup LAN Settings
- **Step 2:** Setup DDNS Settings
- **Step 3:** Server Name Settings
- **Step 4:** Setup Time Zone

Next Cancel

You may configure your camera using

- **DHCP Connection** (by default), where your DHCP server will automatically assign dynamic IP to your device.
 - **Static IP Address**, or
 - **PPPoE connection**, where your camera is directly connected to the Internet through a DSL modem.
- * Input the DNS information if you have chosen and assigned a Static IP Address for your camera.

Click **Next**

STEP 1: SETUP LAN SETTINGS

Please select whether your camera will connect to the Internet with a DHCP connection, Static IP address or PPPoE. If your camera is connected to a router, or you are unsure which settings to pick, D-Link recommends that you keep the default selection of DHCP connection. Otherwise, click on Static IP address to manually assign an IP address before clicking on the **Next** button.

DHCP Connection
 Static IP Address
 PPPoE

IP Address
 Subnet Mask
 Default Gateway

User ID
 Password

Primary DNS
 Secondary DNS

Next Cancel

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

Click **Next**

STEP 2: SETUP DDNS SETTINGS

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

Enable
 Disable

Server Address <<

Host Name

User Name or Key

Password or Key

Timeout hours

Enter a name for your camera.

Click **Next**

STEP 3: SERVER NAME SETTINGS

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

Camera Name

Configure the correct time to ensure that all events triggered, captured and scheduled at the right time.

Click **Next**

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.

Current Time 06 Mar 2008 4:28:27 P.M.

TimeZone Hours

This page displays your configured settings. Click **Apply** to save and activate the setting, or **Back** to change your settings.

Click **Apply**

STEP 5: SETUP COMPLETE

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

IP Address	10.4.4.4
IP Camera Name	DCS-920 [1240EF]
Time Zone	+8 Hours
DDNS	Disable

Network Setup

In this section, you can configure your network settings.

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

Static IP Client: You may obtain a static or fixed IP address and other network information from your network administrator for your camera. A static IP address will ease you for accessing your camera in the future.

IP Address: The fixed IP address

Subnet Mask: The default value is “255.255.255.0.” Used to determine if the destination is the same subnet.

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

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

PPPoE Settings: You may configure a Second HTTP port that will allow you to connect to the camera via a standard web browser. The port can be set to a number other than the default TCP ports 80. A corresponding port must be opened on the router. For example, if the port is changed to 1010, users must type in the web browser “http://192.168.0.100:1010” instead of “http://192.168.0.100”.

Port Settings: You may configure a Second HTTP port that will allow you to connect to the camera via a standard web browser. The port can be set to a number other than the default TCP ports 80. A corresponding port must be opened on the router. For example, if the port is changed to 1010, users must type in the web browser “http://192.168.0.100:1010” instead of “http://192.168.0.100”.

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

NETWORK SETUP

You can configure your LAN and Internet settings here.

LAN SETTINGS

DHCP Connection
 Static IP Address
 PPPoE

IP Address:
 User ID:

Subnet Mask:
 Password:

Default Gateway:

Primary DNS:

Secondary DNS:

PORT SETTINGS

Second HTTP Port: Enable Disable

Port Number:

UPnP SETTINGS

Enable Disable

Setup > Wireless

In this section, you can setup and configure the wireless settings on your camera.

Note: *Wireless is available only for the DCS-920.*

Wireless Interface

SSID: Service Set Identifier, an identifier for your wireless network.

Channel: The default setting is channel 6. Select the same channel that is using by other wireless devices within your network. When there is interference from the wireless networks that overlap with one another, you may change the channel to obtain maximum performance for your connection.

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, where your DCS-920 is directly connecting to your PC. This is done using the on-board wireless adapter on the DCS-920 connected to a wireless adapter on the PC.

Site Survey: This page will allow you to select a wireless network that the DCS-920 was able to detect upon booting up.

WPS: This option will allow you to run the Wi-Fi Protected Setup directly from your DCS-920 Web GUI.

Wireless Security Mode: For security, there are three choices; **None**, **WEP**, and **WPA-PSK / WPA2-PSK**. Select the same encryption method that is being used by your wireless device/ router.

WPA-PSK / WPA2PSK Settings: An appropriate **Preshared Key**, which is needed in order to connect to the wireless network..

Setup > DDNS

In this section, you can 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.

DYNAMIC DNS

The Dynamic DNS feature allows you to host a server (Web, FTP, Camera , etc...) using a domain name that you have purchased (www.whateveryournameis.com) from your broadband Internet Service Provider (ISP). Using a DDNS service, your friends can enter your host name to connect to your IP Camera regardless of your IP address.

DYNAMIC DNS SETTING

Enable
 Disable

Server Address <<

Host Name

User Name or Key

Password or Key

Timeout hours

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.

Enable: Click to enable the DDNS function.

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

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

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

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

Setup > Image Setup

In this section, you can configure the image settings for your camera.

IMAGE SETUP

In this section, you can configure the camera Anti Flicker, Flip Image, Mirror, Brightness Control, etc....

Save Settings Don't Save Settings

IMAGE SETTINGS

Enable Anti Flicker

Flip Image

Mirror

Brightness Control +0 ▾

Contrast Control +0 ▾

Saturation Control +0 ▾

Save Settings Don't Save Settings

Image Settings

Enable Antiflicker: Check to enable antiflicker.

Flip Image: Vertically rotates the video. If the camera is installed upside down, **Flip Image** and **Mirror** should both be checked.

Mirror: Horizontally rotates the video.

Brightness Control: Allows you to adjust the brightness level.

Contrast Control: Allows you to adjust the contrast level.

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

Setup > Video

In this section, you can configure the video settings for your camera.

VIDEO

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

VIDEO PROFILE

Encode Type	Resolution	FPS	Jpeg Quality
JPEG	320 x 240 <input type="button" value="v"/>	Auto <input type="button" value="v"/>	Medium <input type="button" value="v"/>

LIGHT FREQUENCY

50 Hz
 60 Hz

Video Configuration

Video Profile: This section allows you to change the **Encode Type**, **Resolution**, **FPS**, and **Quality**.

Encode Type: The compression format used when viewing your camera.

Resolution: Select the desired video resolution from three formats: 640x480, 320x240, and 160x120. The higher setting can obtain better quality. However, it will use more resource within your network.

FPS: Select the optimal setting depending on your network status. Please note that the higher setting can obtain better quality. However, it will use more resource within your network.

Quality: Select the desired image quality from five levels: Highest, High, Medium, Low, and Lowest.

Light Frequency: Select the proper frequency (50Hz or 60Hz) to reduce image flicker.

Setup > Mail

Email Account

In this section, you can configure the email notification settings for your camera.

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

Sender e-mail This is the e-mail address of the person sending the camera
Address: snapshots.

Receiver e-mail This is the e-mail address of recipient for the SMTP server.
Address:

User Name: If the SMTP server uses authentication, you must enter your user name here.

Password: This is the password that you use with your user name to connect to the SMTP server.

MAIL

This section allows you to setup and configure the email notification settings for your camera. If your details change or you are experiencing issues with alert notifications, you may need to modify these settings.

E-MAIL ACCOUNT

SMTP Server Address

Sender e-mail Address

Receiver e-mail Address

User Name

Password

TIME SCHEDULE

Enable emailing images to email account:

Always

Schedule

Day Mon Tue Wed Thu Fri Sat Sun

Time Period Start : (Example : 06:30:00)

Stop : (Example : 22:30:00)

Interval Seconds

TEST E-MAIL ACCOUNT

A test email will be sent to the e-mail account listed above.

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 allow you to schedule when to start and stop the sending of snapshots to the recipient's e-mail account.

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

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.

Setup > FTP FTP Server

In this section, you can configure a FTP server to receive the images.

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.

FTP

In this section, you may configure a FTP server to receive the images .

FTP SERVER

Host Name

Port (Default is 21)

Username

Password

Path

Passive Mode Yes No

TIME SCHEDULE

Enable uploading images to the FTP server

Always

Schedule

Day Mon Tue Wed Thu Fri Sat Sun

Time Period Start : (Example : 06:30:00)

Stop : (Example : 22:30:00)

Video Frequency 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 1040 1041 1042 1043 1044 1045 1046 1047 1048 1049 1050 1051 1052 1053 1054 1055 1056 1057 1058 1059 1060 1061 1062 1063 1064 1065 1066 1067 1068 1069 1070 1071 1072 1073 1074 1075 1076 1077 1078 1079 1080 1081 1082 1083 1084 1085 1086 1087 1088 1089 1090 1091 1092 1093 1094 1095 1096 1097 1098 1099 1100 1101 1102 1103 1104 1105 1106 1107 1108 1109 1110 1111 1112 1113 1114 1115 1116 1117 1118 1119 1120 1121 11

Time Schedule

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

Always: Selecting this option allows snapshots to be uploaded to your FTP as soon as you click **Apply**.

Schedule: Selecting this option allows you to configure the times that you want the snapshots to be uploaded to your FTP server.

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 DCS9202008072116425101.jpg. This means that the camera took a snapshot in the year 2008, 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.

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.

Setup > Time and Date

In this section, you can configure the settings of the internal system clocks for your camera.

Test FTP Server: Select the time zone for your region from the pull-down menu.

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

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

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

TIME AND DATE

The Time Configuration option allows you to configure, update, and maintain the internal system clock. From this section you can set the time zone that you are in, and set the NTP (Network Time Protocol) Server.

TIME CONFIGURATION

Current Time 06 Mar 2008 4:55:04 P.M.
 Time Zone Hours

AUTOMATIC TIME CONFIGURATION

Synchronize NTP Server
 NTP Server Used <<

SET THE DATE AND TIME MANUALLY

Year Month Day
 Hour Minute Second

Maintenance > Device Management

In this section, you can change the administrator's password and configure the server settings for your camera. You can also manage the user account(s) that access to your camera.

DEVICE MANAGEMENT

Here you can change the administrator's password and configure the server setting for your camera. You can also add, modify and/or delete the user account(s).

ADMIN PASSWORD SETTING

Old Password	<input type="text"/>
New Password	<input type="text"/>
Retype Password	<input type="text"/>
	<input type="button" value="Apply"/> <input type="button" value="Cancel"/>

SERVER SETTING

Camera Name	<input type="text" value="DCS-920 [1240EF]"/>
LED Control	<input checked="" type="radio"/> On <input type="radio"/> Off
User Access Control	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
	<input type="button" value="Apply"/> <input type="button" value="Cancel"/>

ADD USER ACCOUNT

User Name	<input type="text"/>
Password	<input type="text"/>
Retype Password	<input type="text"/>
	<input type="button" value="Add"/> <input type="button" value="Cancel"/>

USER LIST

no.	name	modify	delete

Maintenance > Backup and Restore

In this section, you can save and restore your configuration, restore the factory settings, and/or restart the camera.

BACKUP AND RESTORE

You can save and restore configuration, restore factory settings and restart the camera.

SYSTEM

Save To Local Hard Drive	<input type="button" value="Save Configuration"/>
Load From Local Hard Drive	<input type="text"/> <input type="button" value="Browse..."/>
	<input type="button" value="Restore Configuration From File"/>
Restore To Factory Default	<input type="button" value="Restore Factory Defaults"/>
Reboot The Device	<input type="button" value="Reboot the Device"/>

Maintenance > Firmware Upgrade

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

To upgrade the firmware on your DCS-910/920, please download and save the latest firmware version from the D-Link Support Page to your local hard drive. Locate the file on your local hard drive by using the **Browse** button. Then, open the file and click the “**Upload**” button to start the firmware upgrade.

FIRMWARE UPGRADE

A new firmware upgrade may be available for your camera. It is recommended to keep your camera firmware up-to-date to maintain and improve the functionality and performance of your internet camera. Click here [D-Link Support Page](#) to check for the latest firmware version available.

To upgrade the firmware on your IP camera, please download and save the latest firmware version from the D-Link Support Page to your local hard drive. Locate the file on your local hard drive by clicking the Browse button. Once you have found and opened the file using the browse button, click the **Upload** button to start the firmware upgrade.

FIRMWARE INFORMATION

Current Firmware Version : 1.00
Current Firmware Date : 2008-02-26

FIRMWARE UPGRADE

File Path :

Status > System

This section displays all the details information about your device and network settings.

DEVICE INFO

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

BASIC INFORMATION

Camera Name	DCS-920 [1240EF]
Time & Date	22 Feb 2008 5:01:41 P.M.
Firmware Version	1.00 (2008-01-25)
IP Address	10.4.4.4
Subnet Mask	255.0.0.0
Default Gateway	10.1.1.254
Primary DNS	0.0.0.0
Secondary DNS	0.0.0.0
DDNS	Disable
FTP Server Test	No test conducted
E-mail Test	No test conducted

WIRELESS STATUS

Connection Mode	Infrastructure
Link	No
SSID	default (MAC : 00 00 00 00 00 00)
Channel	6
Transmission Rate	54M bps
Encryption	No

Refresh

Wireless Security

This section will show you the different levels of security you can use to protect your data from intruders. The DCS-920 offers the following types of security:

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

What is WEP?

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

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

What is WPA?

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

The 2 major improvements over WEP:

- Improved data encryption through the Temporal Key Integrity Protocol (TKIP). TKIP scrambles the keys using a hashing algorithm and, by adding an integrity-checking feature, ensures that the keys haven't been tampered with. WPA2 is based on 802.11i and uses Advanced Encryption Standard instead of TKIP.
- User authentication, which is generally missing in WEP, through the extensible authentication protocol (EAP). WEP regulates access to a wireless network based on a computer's hardware-specific MAC address, which is relatively simple to be sniffed out and stolen. EAP is built on a more secure public-key encryption system to ensure that only authorized network users can access the network.

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

Using & Configuring the DCS-910/920

D-Link's DCS-910/920 is a versatile and cost effective Internet Camera for video monitoring. It can also serve as a powerful surveillance system in security applications. The DCS-910/920 can be used with any wired or 802.11b/g wireless router (applicable only for the DCS-920). This section explains how to view the camera from either the Internet or from inside your internal network.

Materials Needed:

- 1 DCS-910/920 Internet Camera
- 1 Ethernet Cable
- A Wired or Wireless router such as the D-Link DI-624 Wireless Router
- Ethernet based PC for system configuration

Setting Up the DCS-910/920 For Use Behind a Router

Installing a DCS-910/920 Internet Camera on your network is an easy 4–step procedure:

1. Assign a Local IP Address to Your Internet Camera
2. View the Internet 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

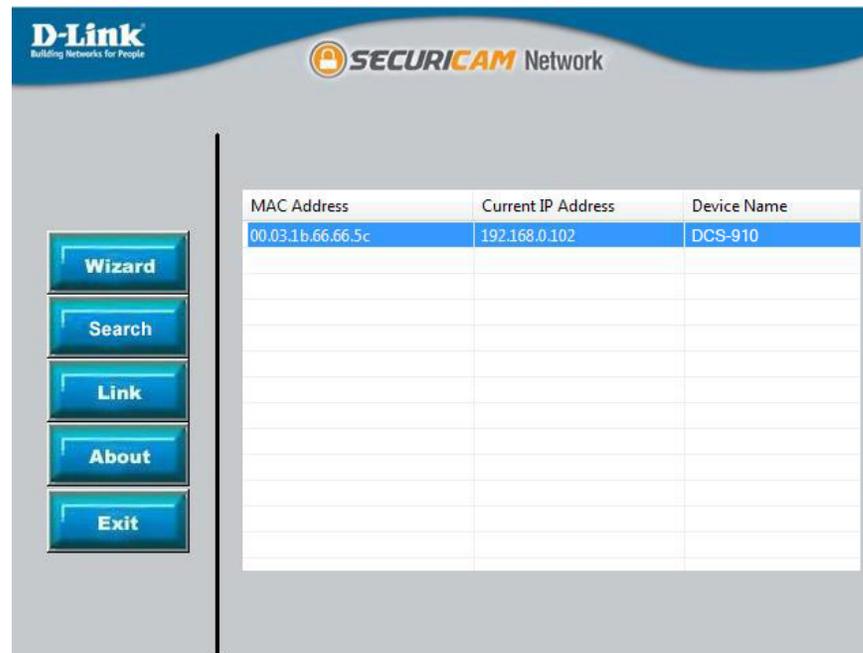
This section is designed to walk you through the setup process for installing your camera behind a router and enable remote video viewing. For the basic setup of the DCS-910/920, follow the steps outlined in the Quick Installation Guide.

After you have completed the setup of the DCS-910/920 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 Internet 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 program from the CD included with the DCS-910/920. Follow the steps in the Quick Installation Guide to configure the DCS-910/920. 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.

This is the IP Address assigned to your camera (192.168.0.120 is only an example). You will probably have a different IP Address.



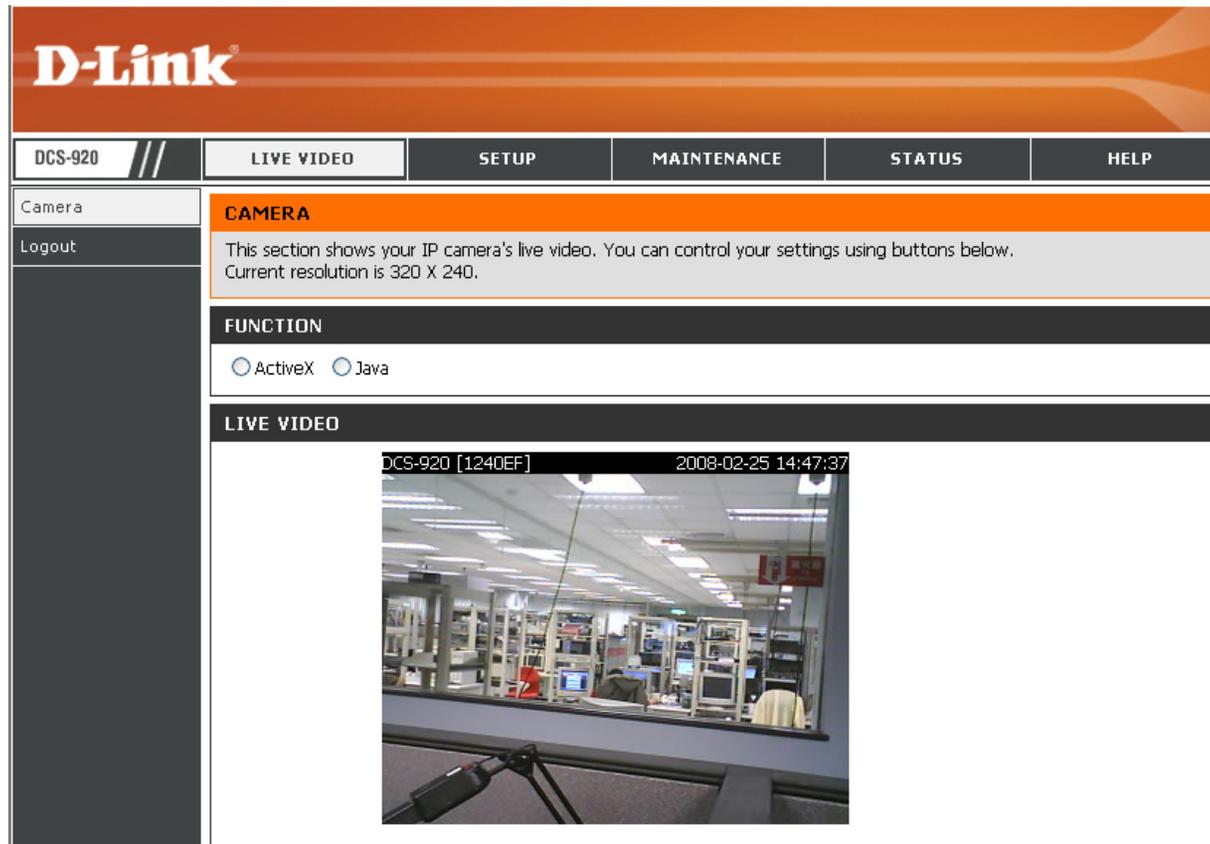
The screenshot shows the D-Link Securicam Network interface. On the left side, there is a vertical menu with five buttons: Wizard, Search, Link, About, and Exit. The main area displays a table with three columns: MAC Address, Current IP Address, and Device Name. The first row of the table is highlighted in blue and contains the following data: MAC Address: 00.03.1b.66.66.5c, Current IP Address: 192.168.0.120, and Device Name: DCS-910.

MAC Address	Current IP Address	Device Name
00.03.1b.66.66.5c	192.168.0.120	DCS-910

2. View the Internet Camera Using Your Internet Explorer Web Browser

Run your Internet Explorer Web browser. In the address bar, type in the IP Address that was assigned to the Internet Camera by the Installation Wizard program. The DCS-910/920 Home Page appears with a window displaying live video from the camera. You are able to view this screen from any PC running Internet Explorer on your LAN.

Click on the Configuration button on the left side of the display. Scroll to the bottom of the Network Configuration page to display the ports used by HTTP and Streaming video.



The screenshot displays the D-Link web interface for the DCS-920 camera. At the top, the D-Link logo is visible. Below it, a navigation bar contains tabs for DCS-920, LIVE VIDEO, SETUP, MAINTENANCE, STATUS, and HELP. The left sidebar includes links for Camera and Logout. The main content area is titled CAMERA and contains the following text: "This section shows your IP camera's live video. You can control your settings using buttons below. Current resolution is 320 X 240." Below this text is a FUNCTION section with radio buttons for ActiveX and Java. The LIVE VIDEO section features a video player window showing a live feed of a retail store interior. The video player has a title bar that reads "DCS-920 [1240EF] 2008-02-25 14:47:37".

Router Set-Up 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. Configure the initial settings of the DI-624 by following the steps outlined in the DI-624 Quick Installation Guide.

3. Access the Router with Your Web Browser

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

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

The screenshot shows the D-Link DI-624 web interface. The top navigation bar includes 'Home', 'Advanced', 'Tools', 'Status', and 'Help'. The 'Status' tab is selected, and the 'Device Information' section is expanded. The interface displays the following information:

- Device Information:** Firmware Version: 1.00, Tue, 24 Dec 2002
- LAN:**
 - MAC Address: 00-03-2F-FF-F0-85
 - IP Address: 192.168.0.1
 - Subnet Mask: 255.255.255.0
 - DHCP Server: Enabled
- WAN:**
 - MAC Address: 00-03-2F-FF-F0-86
 - Connection: DHCP Client Connected (with DHCP Release and DHCP Renew buttons)
 - IP Address: 10.80.1.94
 - Subnet Mask: 255.0.0.0
 - Default Gateway: 10.10.10.100
 - DNS: 10.10.10.41, 10.10.10.45, 192.152.81.1
- Wireless 802.11g:**
 - MAC Address: 00-60-B3-06-00-32
 - SSID: GiGi

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

4. Open Virtual Server Ports to Enable Remote Image Viewing

The firewall security features built into the DI-624 router prevent users from accessing the video from the DCS-910/920 over the Internet. The router connects to the Internet over a series of numbered ports. The ports normally used by the DCS-910/920 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 DI-624 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 example in step 2) in the Private IP field.
4. Select **TCP** for HTTP port and **both** (TCP and UDP) for the Video channel port.
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 above steps adding the port 80 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 800. Not all routers are the same, so refer to your user manual for specific instructions on how to open ports.

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

D-Link
Building Networks for People

AirPlus Xtreme G™
High-Speed 2.4GHz Wireless Router

DI-624

Virtual Server

Applications

Filters

Firewall

DMZ

Performance

Home Advanced Tools Status Help

Virtual Server

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

Enabled Disabled

Name: DCS-910/920 [Clear]

Private IP: 192.168.0.120

Protocol Type: Both

Private Port: 80

Public Port: 80

Schedule: Always

From time 00 : 00 AM to 00 : 00 AM day Sun to Sun

Virtual Servers List

Name	Private IP	Protocol	Schedule	Apply	Cancel	Help
<input type="checkbox"/> Virtual Server FTP	0.0.0.0	TCP 21/21	always			
<input type="checkbox"/> Virtual Server HTTP	0.0.0.0	TCP 80/80	always			
<input type="checkbox"/> Virtual Server HTTPS	0.0.0.0	TCP 443/443	always			
<input type="checkbox"/> Virtual Server DNS	0.0.0.0	UDP 53/53	always			

Troubleshooting

1. 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.

2. 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.

3. 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. For more information, please refer to the section 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.

4. 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.

5. 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.

6. 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.

7. 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.

Wireless Basics

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

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

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

What is Wireless?

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

Why D-Link Wireless?

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

How does wireless work?

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

Wireless Local Area Network (WLAN)

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

Who uses wireless?

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

Home

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

Small Office and Home Office

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

Where is wireless used?

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

Using a D-Link Cardbus Adapter with your laptop, you can access the hotspot to connect to Internet from remote locations like: Airports, Hotels, Coffee Shops, Libraries, Restaurants, and Convention Centers.

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

Tips

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

Centralize your router or Access Point

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

Eliminate Interference

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

Security

Don't let your next-door neighbors or intruders connect to your wireless network. Secure your wireless network by turning on the WPA or WEP security feature on the router. Refer to product manual for detail information on how to set it up.

Wireless Modes

There are basically two modes of networking:

- **Infrastructure** – All wireless clients will connect to an access point or wireless router.
- **Ad-Hoc** – Directly connecting to another computer, for peer-to-peer communication, using wireless network adapters on each computer, such as two or more DCS-920 wireless network Cardbus adapters.

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

An Ad-Hoc network contains only clients, such as laptops with wireless cardbus adapters. All the adapters must be in Ad-Hoc mode to communicate.

* Applicable only for the DCS-920

Networking Basics

Check your IP address

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

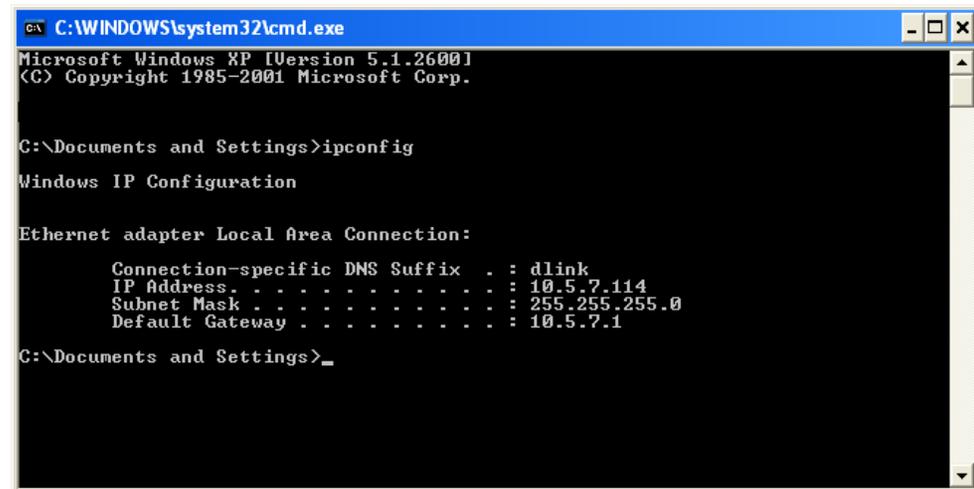
Click on **Start > Run**. In the run box type **cmd** and click **OK**.

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

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

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

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



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

C:\Documents and Settings>ipconfig

Windows IP Configuration

Ethernet adapter Local Area Connection:

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

C:\Documents and Settings>_
```

Statically Assign an IP address

If you are not using a DHCP capable gateway/router, or you need to assign a static IP address, please follow the steps below:

Step 1

Windows® Vista - Click on **Start > Control Panel > Network and Internet > Network and Sharing Center > Manage Network Connections**.

Windows XP - Click on **Start > Control Panel > Network Connections**.

Step 2

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

Step 3

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

Step 4

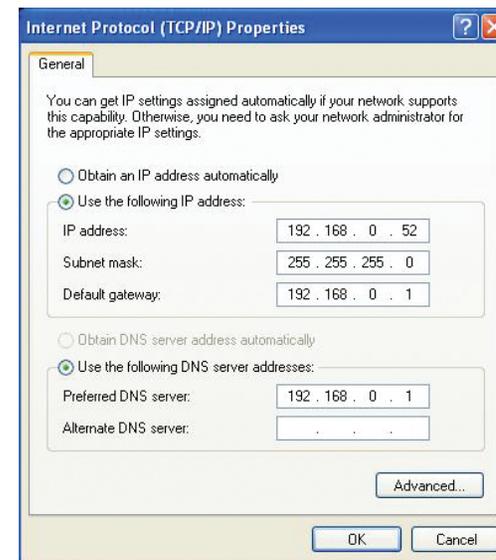
Click **Use the following IP address** and enter an IP address that is on the same subnet as your network or the LAN IP address on your router.

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

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

Step 5

Click OK twice to save your settings.



Technical Specifications

Network*

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

Web Access Requirements

- Any Java-Enabled or ActiveX compatible Web Browser, i.e. current versions of Microsoft Internet Explorer or Mozilla Firefox.

Media Streaming Protocol

- HTTP

Video Specification

- Resolution: 640 x 480
- Sensor: 1/4" color CMOS sensor
- Gain Control: 30 dB
- Exposure: Automatic
- White Balance: Automatic
- Shutter Electronics: 1/30 ~ 1/30,000 sec
- Minimum Illumination: 1 lux@F2.8
- Focal Length: 5.01mm lens
- Aperture: F2.8

Image (Video Setting)

- Motion-JPEG compression
- Frame rate: 30fps@160 x 120, 30fps@320 x 240, 15fps@640 x 480
- Compression Rate Selection: 5 level (Very Low, Low, Medium, High, Very High)
- Video Resolution: 160x120, 320x240, 640x480

Web Configuration Requirements

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

Dimensions

- 2.8" (Width) x 4.3" (Depth) x 1.5" (Height)

PC System Requirements

- Connection to 802.11b/g wireless or Ethernet network
- Windows® Vista 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.

** Applicable only for the DCS-920

*** Environmental conditions may adversely affect wireless signal range.

Power Consumption:

- DCS-910 (3.25W), DCS-920 (4.25W)

Environmental specification

- Operating temperature: 0°C to 40°C (32°F to 104°F)
- Storage temperature: -20°C to 70°C (-4°F to 158°F)
- Operating relative humidity: 20% to 80% non-condensing

Warranty:

- 1 Year

Contacting Technical Support

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

U.S. and Canadian customers can contact D-Link technical support through our Web site, or by phone.

Tech Support for customers within the United States:

Telephone:

(877) 453-5465

Internet:

<http://support.dlink.com>

Tech Support for customers within Canada:

Telephone:

(800) 361-5265

Internet:

<http://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 DLink 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 DLink 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. DLink 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.

What Is Not Covered:

The Limited Warranty provided herein by D-Link does not cover:

Products that, in D-Link’s judgment, have been subjected to abuse, accident, alteration, modification, tampering, negligence, misuse, faulty installation, lack of reasonable care, repair or service in any way that is not contemplated in the documentation for the product, or if the model or serial number has been altered, tampered with, defaced or removed; Initial installation, installation and removal of the product for repair, and shipping costs; Operational adjustments covered in the operating manual for the product, and normal maintenance; Damage that occurs in shipment, due to act of God, failures due to power surge, and cosmetic damage; Any hardware, software, firmware or other products or services provided by anyone other than D-Link; and Products that have been purchased from inventory clearance or liquidation sales or other sales in which D-Link, the sellers, or the liquidators expressly disclaim their warranty obligation pertaining to the product.

While necessary maintenance or repairs on your Product can be performed by any company, we recommend that you use only an Authorized D-Link Service Office. Improper or incorrectly performed maintenance or repair voids this Limited Warranty.

Disclaimer of Other Warranties:

EXCEPT FOR THE LIMITED WARRANTY SPECIFIED HEREIN, THE PRODUCT IS PROVIDED “AS-IS” WITHOUT ANY WARRANTY OF ANY KIND WHATSOEVER INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.

IF ANY IMPLIED WARRANTY CANNOT BE DISCLAIMED IN ANY TERRITORY WHERE A PRODUCT IS SOLD, THE DURATION OF SUCH IMPLIED WARRANTY SHALL BE LIMITED TO THE DURATION OF THE APPLICABLE WARRANTY PERIOD SET FORTH ABOVE. EXCEPT AS EXPRESSLY COVERED UNDER THE LIMITED WARRANTY PROVIDED HEREIN, THE ENTIRE RISK AS TO THE QUALITY, SELECTION AND PERFORMANCE OF THE PRODUCT IS WITH THE PURCHASER OF THE PRODUCT.

Limitation of Liability:

TO THE MAXIMUM EXTENT PERMITTED BY LAW, D-LINK IS NOT LIABLE UNDER ANY CONTRACT, NEGLIGENCE, STRICT LIABILITY OR OTHER LEGAL OR EQUITABLE THEORY FOR ANY LOSS OF USE OF THE PRODUCT, INCONVENIENCE OR DAMAGES OF ANY CHARACTER, WHETHER DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL (INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF GOODWILL, LOSS OF REVENUE OR PROFIT, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, FAILURE OF OTHER EQUIPMENT OR COMPUTER PROGRAMS TO WHICH D-LINK'S PRODUCT IS CONNECTED WITH, LOSS OF INFORMATION OR DATA CONTAINED IN, STORED ON, OR INTEGRATED WITH ANY PRODUCT RETURNED TO D-LINK FOR WARRANTY SERVICE) RESULTING FROM THE USE OF THE PRODUCT, RELATING TO WARRANTY SERVICE, OR ARISING OUT OF ANY BREACH OF THIS LIMITED WARRANTY, EVEN IF D-LINK HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THE SOLE REMEDY FOR A BREACH OF THE FOREGOING LIMITED WARRANTY IS REPAIR, REPLACEMENT OR REFUND OF THE DEFECTIVE OR NONCONFORMING PRODUCT. THE MAXIMUM LIABILITY OF D-LINK UNDER THIS WARRANTY IS LIMITED TO THE PURCHASE PRICE OF THE PRODUCT COVERED BY THE WARRANTY. THE FOREGOING EXPRESS WRITTEN WARRANTIES AND REMEDIES ARE EXCLUSIVE AND ARE IN LIEU OF ANY OTHER WARRANTIES OR REMEDIES, EXPRESS, IMPLIED OR STATUTORY.

Governing Law:

This Limited Warranty shall be governed by the laws of the State of California. Some states do not allow exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the foregoing limitations and exclusions may not apply. This Limited Warranty provides specific legal rights and you may also have other rights which vary from state to state.

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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



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

Version 1.3
March 9, 2010