



DVC-1100



i2eye™
(Patent Pending)

AirPlus Wireless Network
Wireless Broadband VideoPhone
Manual

v1.03

D-Link®
Building Networks for People

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Introduction

Imagine having high-quality, low-cost videoconferencing from a standalone, easy to use communication appliance that supports your existing wireless network. The **D-Link i2eye™ DVC-1100 Wireless Broadband VideoPhone** accomplishes this. **D-Link i2eye** introduces the world of videoconferencing over the Internet, to bring you and your family, friends and colleagues together, in real time, anytime! The previously complicated process of conducting a video conference is simplified with the **i2eye DVC-1100**. Since the **DVC-1100** is a standalone device, you do not need a computer to video conference over the Internet. The **i2eye DVC-1100** is such a revolutionary leap in technology that D-Link calls it a VideoPhone. Connect a television for viewing, an optional standard telephone for privacy, connect wirelessly to your broadband Internet connection and you are ready to use your **i2eye DVC-1100 Wireless VideoPhone**.

Using advanced video compression technology, the **i2eye DVC-1100 Wireless VideoPhone** maximizes the image and audio quality within the available bandwidth. It is an ideal solution for consumers and small businesses with high-speed broadband Internet access. There is no delay in waiting for a PC to boot up before using your **i2eye DVC-1100 Wireless VideoPhone**, and you don't have to be a computer expert. Using the Internet, in place of conventional dial-up phone lines, maximizes your existing broadband investment. The remote control included with the **i2eye DVC-1100** makes it easy to answer an incoming videoconference call or dial out to start your own videoconference. The built-in caller ID provides privacy protection. You know who is calling before you answer and the audio or video can be turned off whenever desired.

This manual provides the instructions to install and use your **D-Link i2eye DVC-1100 Wireless Broadband VideoPhone** and will help to make your Wireless VideoPhone experience go as smoothly as possible.

Package Contents



- D-Link i2eye™ DVC-1100 Wireless Broadband VideoPhone
- Power Adapter
- Instruction Manual
- Quick Installation Guide
- Remote Control with Batteries
- Standard Composite RCA Audio / Video Cable
- Cat 5 RJ-45 Ethernet Cable
- Wireless Antenna

Note: Using a power supply with a different voltage than the one included with the DVC-1100 will cause damage and void the warranty for this product.

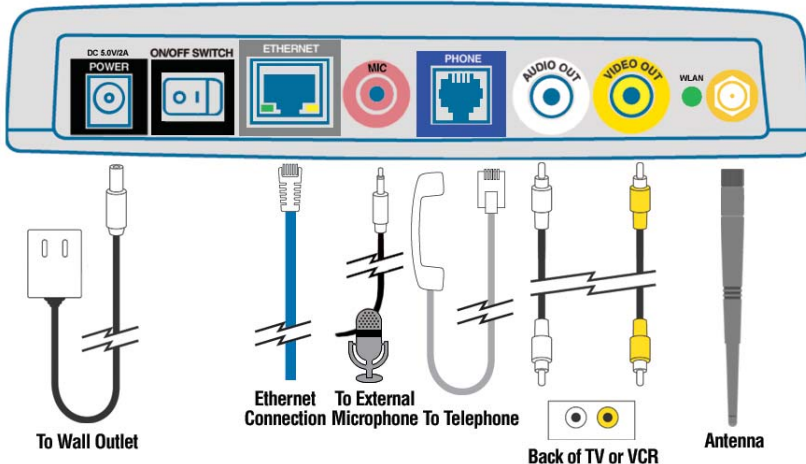
System Requirements

- Connection to broadband Internet (Cable modem, DSL modem, wireless network or Ethernet network)
- Television with standard composite audio and video inputs (white and yellow RCA jacks) or with a RF modulator to enable a TV without AV jacks to be connected using the antenna terminal
- **Optional (but recommended):** Standard telephone attached directly to the DVC-1100
- **Optional:** An external microphone can be connected to the pink **Mic** port on the rear of the device for improved audio quality when a group of people are involved in the **DVC-1100** call
- **Optional:** You can connect the **DVC-1100** to a PC equipped with a videocapture device that allows input of standard composite video (using RCA Jacks)

Features & Benefits

- Standalone operation - No computer needed
- Supports enhanced 802.11b wireless networks up to 22 Mbps
- Uses broadband cable/DSL or network connections for high-quality video
- H.323 Internet videoconferencing standard compliant
- Uses the D-Link Directory Service for ease of use dialing
- Easy to use
- Easy Setup Wizard
- Picture-in-Picture view or full-screen view
- Remote control included
- Flexible calling formats for worldwide use
- Speed Dialing
- Built-in Caller ID
- Answer incoming calls using telephone or remote control
- Auto mapping of IP Address
- Advanced video and audio privacy protection
- Video and / or audio mute
- Adjustable tilt and focus lens
- Up to 30 frames per second
- High quality 352 x 288 resolution
- Automatic detection of system upgrades
- 1 Year Warranty

Connections



The connection diagram above also appears on the bottom of the DVC-1100 to assist you in setting up your VideoPhone.

LEDs

LED stands for **L**ight-**E**mitting **D**iode. The **i2eye™ DVC-1100** has the following LEDs for monitoring its operation.



LED	Front LED Location
Power	A green light indicates the DVC-1100 is ON
Status	This LED turns on briefly at power up. It is then off during normal operation
Call Monitor	Steady red light indicates video is being sent and a call is in progress



LED	Back LED Location and Activity
Activity	Steady or blinking green light indicates the DVC-1100 is transmitting data
Link Status	Steady yellow light indicates the network connection is good
WLAN	Wireless LAN, green light indicates activity on the wireless network

Getting Started

BEFORE YOU BEGIN!

Read the section on using the DVC-1100 with routers, gateways or broadband modems starting on page 47 in this manual if you are using the DVC-1100 VideoPhone with a router, gateway or broadband modem.

The DVC-1100 needs to be setup before use. You can use the **Quick Installation Guide** (included with the DVC-1100) to perform the hardware installation. Each cable (video, audio, Ethernet and AC power) supplied for the DVC-1100 has a different color on the end that connects to the DVC-1100. Plug the cables into the matching color coded connector on the back of DVC-1100. You can also plug an optional telephone and/or external microphone into the DVC-1100. If you are using the DVC-1100 wirelessly, screw the included antenna into the antenna connector on the back of the DVC-1100. To help you with these connections, there is an illustration on the bottom of the unit.

There is an easy to use **Setup Wizard** built-in to the DVC-1100 to accomplish the setup. You will need to enter your name, a videophone number, wireless network settings and your Internet connection information in order to use your VideoPhone.

Using the Remote Control

By using the remote control included with the DVC-1100, you can answer an incoming call, start a call by dialing the other videophone's number or select a number to call from the Speed Dial list.

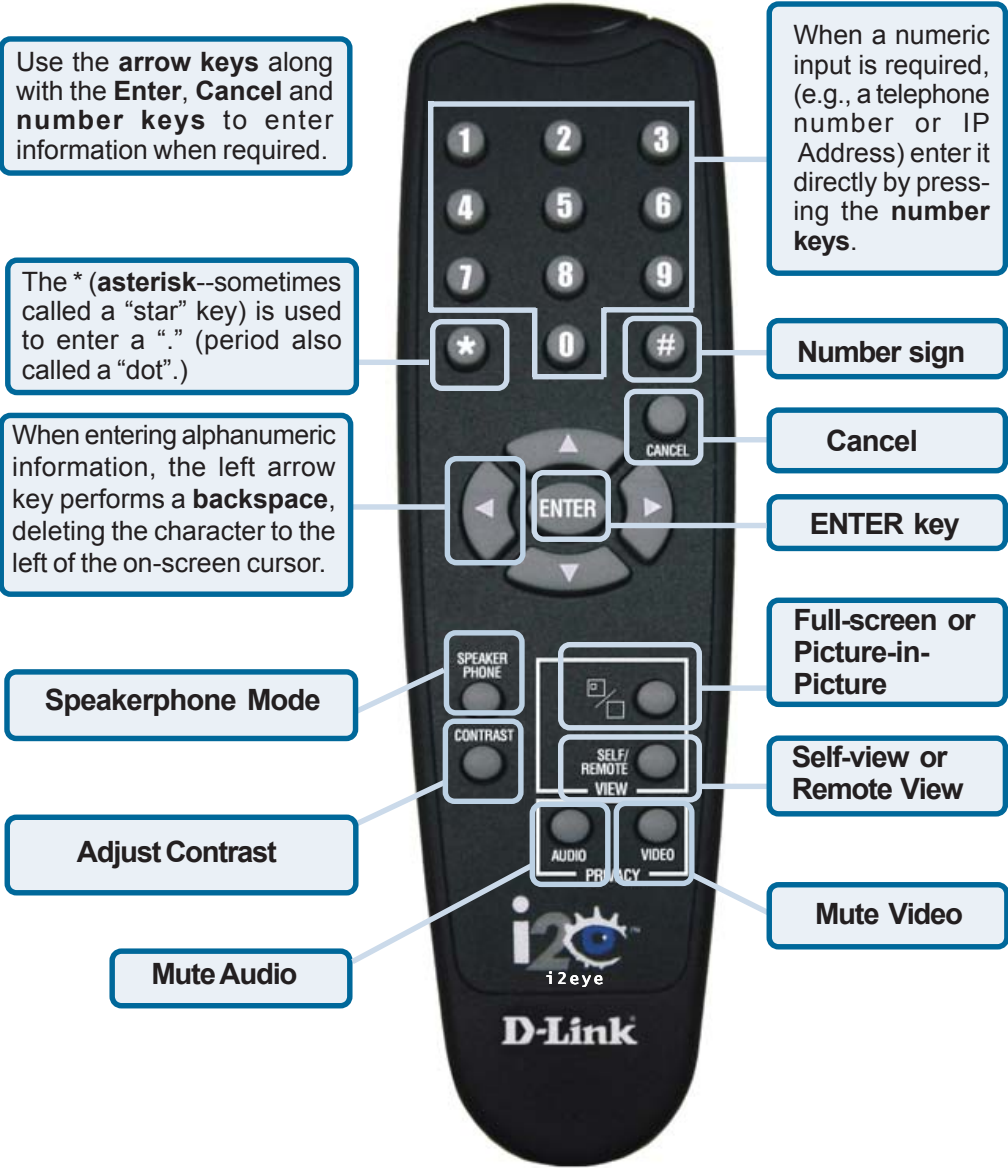
Information for the Setup Wizard is entered by using the remote control. The remote is used to enter numbers, letters, special characters and to make selections from an on-screen keyboard. The on-screen keyboard is activated by pressing ENTER on the remote control whenever the on-screen cursor is located in a field where text is required.

You will use the arrow keys on the remote control along with the ENTER, CANCEL and number keys to enter information in the Setup Wizard screens.

Where a numeric input is required, such as a telephone number or IP address, enter it directly by pressing the number keys. The * (asterisk--sometimes called a "star" key) is used to enter a "." (period also called a "dot".)

When you are entering numbers or letters, the left arrow key performs a back-space, deleting the character to the left of the cursor. The following page contains a breakdown of the features of the remote control.

Remote Control Layout



Using the On-Screen Keyboard

The DVC-1100 uses a keyboard that appears on-screen to enter text into the **Setup Wizard** screens. When the cursor is located in a setup screen that requires characters to be entered, press the ENTER key to bring up the on-screen keyboard.

The keyboard will only appear if the cursor is located in an area of the screen that allows text or numbers to be entered.

To enter text, use the arrow keys on the remote control to move the cursor to the required character. Press the **ENTER** key on the remote control to put the character on the screen. Continue entering characters until you have “typed” the characters that are needed.



When you are finished entering text and numbers, move the cursor to highlight **OK** on the screen and press **ENTER**; or alternatively you can press the **CANCEL** key on the remote to remove the keyboard from the screen, leaving what you typed on the screen.

The keyboard allows entering any of the following:

- Numbers 0 through 9
- Upper case Letters A through Z and lower case letters a through z
- Special characters: period (.), dash (-), colon (:), at sign (@), space, backspace (to delete a character to the left), Clear (CLR) to clear the entered text, comma (,) , and a slash (/)

When you are entering letters, the first letter entered is automatically entered as UPPER case. The bottom left “arrow” on the screen is a Shift key. This allows you to change from UPPER to lower case and UPPER case shift lock. The keyboard features “wraparound” capability. If you press repeatedly on the left or right arrow keys, the cursor will wraparound to the letter on the opposite end of the row to speed up moving around the keyboard.

Using the Setup Wizard

The following descriptions of the **Setup Wizard** screens will help you understand the purpose and procedures for providing the required information.

Welcome Screen

The first screen that displays on the initial startup is the **Welcome Screen**. This screen explains what information is needed to complete the setup and also explains how to use the remote control to navigate through the **Setup Wizard**. Press **ENTER** on the remote control to continue to the next screen.



Personal Information Screen

Enter your **Name**, **Country code**, **Area code** and **Phone number**.

Note: The Country code for the United States and Canada is "1". See the Appendix of the DVC-1100 manual for Country codes of other countries.

The image shows a screen titled "Personal Information". It contains four input fields: "Name:" with a long text box, "Country code:" with a short text box, "Area code:" with a short text box, and "Phone #:" with a medium-length text box. At the bottom, there are two buttons: "Previous" and "Next".

After the information is entered highlight the **NEXT** button and press **ENTER** on the remote control to continue.

The Phone number you enter is one you create for family, friends and others to call you over the Internet from another DVC-1100 VideoPhone. You can use your regular phone number or make up a new one. Only your name will be displayed at the other end of the video call. Your phone number will not be visible to anyone else.

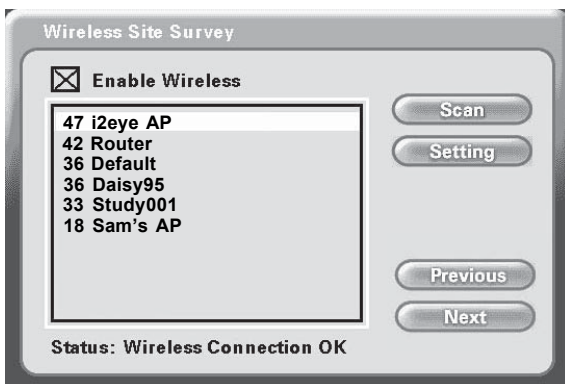
Using the Setup Wizard (continued)

Wireless Site Survey Screen

To use your DVC-1100 wirelessly, it is necessary to find an available wireless network. The **Wireless Site Survey** screen makes this simple. Upon starting, the DVC-1100 performed a “site survey” looking for wireless network devices the DVC-1100 can connect to. These discovered wireless devices are displayed by their SSID name on the **Wireless Site Survey** screen. On a home network, you may have just one entry. In a business, there may be numerous wireless devices listed.

The **Enable Wireless** checkbox is checked by default. This allows the DVC-1100 to be used wirelessly. If an Ethernet network cable is used instead, uncheck this checkbox and press **Next** to continue setup for a wired network as described on page 15.

To setup for wireless operation, use the remote control up/down arrow button to select the SSID of the device you will connect the DVC-1100 to. Typically, this will be a wireless router or access point.



Press **ENTER** on the remote to select this SSID and the **Wireless Settings** screen will appear (described on the following page).

Note: The number to the left of the SSID indicates the signal strength of the available access point on the wireless network.

If necessary, you can press the **Scan** button to perform an updated wireless site survey scan. The DVC-1100 will update the SSID list.

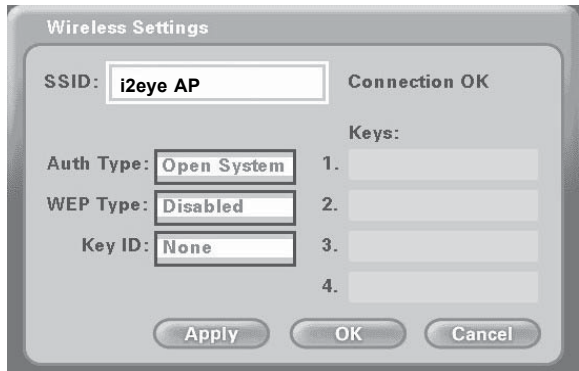
To access the **Wireless Settings** screen without selecting a SSID, press the **Settings** button.

Press the **Next** button to proceed to the **Wireless Settings** screen (if you are using the DVC-1100 wirelessly) or the **Network Address** screen (if you are using an Ethernet cable.)

Using the Setup Wizard (continued)

Wireless Settings Screen

The **Wireless Settings** screen shows the SSID of the selected wireless device the DVC-1100 will attach to and allows setting the DVC-1100 for WEP encryption. The DVC-1100 has WEP encryption disabled by default.



The image shows a 'Wireless Settings' dialog box. It has a title bar 'Wireless Settings'. Inside, there's a 'SSID:' label followed by a text box containing 'i2eye AP'. To the right of this is a 'Connection OK' label. Below the SSID box are three more labels: 'Auth Type:', 'WEP Type:', and 'Key ID:'. Each has a corresponding dropdown menu. 'Auth Type' is set to 'Open System', 'WEP Type' is set to 'Disabled', and 'Key ID' is set to 'None'. To the right of these is a 'Keys:' label followed by four numbered slots (1., 2., 3., 4.), each with a text box. At the bottom are three buttons: 'Apply', 'OK', and 'Cancel'.

Encryption will make your wireless network more secure, but may slow down the network due to the increased traffic caused by the encryption.

SSID

The SSID name selected on the **Wireless Site Survey** screen appears here. It can be entered/edited using the on-screen keyboard. This may be necessary if a SSID does not appear in the **Wireless Site Survey** screen because SSID broadcast feature is disabled on the wireless router or access point.

Auth Type

Press the down arrow on the remote to select the authentication type (**Auth Type**). Select one of the authentication types by pressing **Enter**. The authentication type must match the type used by the wireless network if encryption is enabled.

Open System: Communicates the key across the network.

Shared Key: Allows communication only with devices with identical encryption settings.

WEP (Wired Equivalent Privacy) is an industry standard encryption technology used by 802.11b wireless devices. See “WEP” in the Glossary for more details.

Using the Setup Wizard (continued)

Wireless Settings Screen (continued)

WEP Type

Press the down arrow on the remote to select the **WEP Type**. Select one of the WEP Types by pressing **Enter**. The **WEP Type** must match the type used by the wireless network if encryption is enabled.

Disabled: No WEP encryption (Default)

64-bit

128-bit

256-bit

Key ID

Press the down arrow on the remote to select the **Key ID**.

You can enter up to four encryption keys that is used to encrypt data passed wirelessly over the network. Only one of the keys are used for encryption.

You can enter a key for use, enter up to three other keys for later use and easily change from one key to another by changing the **Key ID** that controls which key is in use.

Keys

Enter encryption keys in the four boxes by using the remote control number pad or the on-screen keyboard. To connect to an encrypted wireless device, the key you enter in the DVC-1100 must match the key of the wireless device. These keys are entered in hexadecimal format, meaning you can use the numbers 0 through 9 and the letters A through F. The key must be entered as a specific number of characters to be accepted as detailed below:

A 64-bit encryption key must be exactly 10 characters in length. (Example: **12345678FA** is a valid string of 10 characters for 64-bit encryption.)

A 128-bit encryption key must be exactly 16 characters in length. (Example: **456FBCDF12340012** is a valid string of 16 characters for 128-bit encryption.)

Using the Setup Wizard (continued)

Wireless Settings Screen (continued)

A 256-bit encryption key must be exactly 58 characters in length. The box for entering a key will scroll to allow entering numbers that do not fit in the box. (Example: **12345678901234567890123456789012345678901234567890FFAAABBE** is a valid string of 58 characters for 256-bit encryption.)

Only one key needs to be entered. Press the down arrow after entering the first key to enter a second key. Enter another key or press the down arrow to navigate down the screen. Continue for all four **Key** boxes. When you have entered all the keys needed, press the down arrow and press the **Apply** button.

The DVC-1100 will attempt to connect to the selected SSID, using the settings on the **Wireless Settings** screen. If the connection fails (probably due to a wireless network settings incompatibility) the message **Connection Failed** appears. You will need to determine what wireless network settings are causing the failed wireless connection. See the **Troubleshooting** section on page 58 for help.

If the **Connection OK** message appears, the DVC-1100 has successfully connected to the selected SSID.

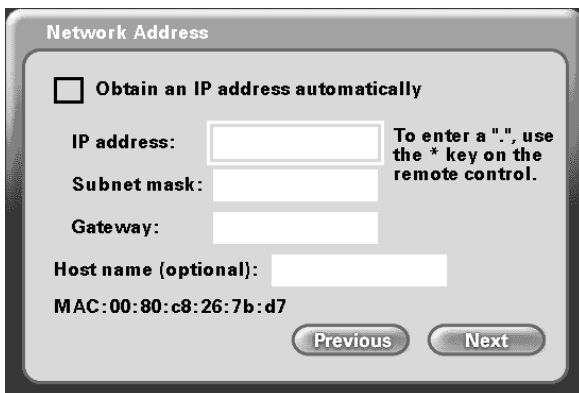
Press the **OK** button to save any changes and return to the **Wireless Site Survey** screen.

Press **Next** on the **Wireless Site Survey** screen to continue.

Using the Setup Wizard (continued)

Network Address Screen

The **Network Address** screen asks for information that is needed to connect a DVC-1100 call over the Internet. Most home users with a cable or DSL modem can leave the checkbox checked to obtain an IP address automatically.



The screenshot shows a window titled "Network Address". It contains a checkbox labeled "Obtain an IP address automatically". Below this are input fields for "IP address:", "Subnet mask:", and "Gateway:". To the right of these fields is a note: "To enter a '.', use the * key on the remote control." Below the gateway field is a field for "Host name (optional):". At the bottom left, the MAC address is displayed as "MAC: 00:80:c8:26:7b:d7". At the bottom right are two buttons: "Previous" and "Next".

If you know you cannot be assigned an IP Address automatically through a DHCP server then uncheck the checkbox and enter your **IP Address**, **Subnet mask** and **Gateway**.

Obtain an IP Address automatically (Default)

The application will attempt to obtain the IP address from the DHCP server. When this is checked, the other settings on this screen are automatically grayed. Also, if this setting is checked, you will skip the **DNS screen**, described on the next page, as the DNS will be set automatically.

IP Address, Subnet mask, Gateway

If necessary, enter each of these settings for the DVC-1100. You will be able to obtain the IP address, subnet mask and gateway address from your router configuration settings, ISP or network administrator.

Host name (optional):

Your Internet Service provider may require you to provide a host name to connect to the Internet. If this is required you can enter it here. Today, this is rarely required on a broadband connection and this setting is optional.

MAC: xx:xx:xx:xx:xx:xx

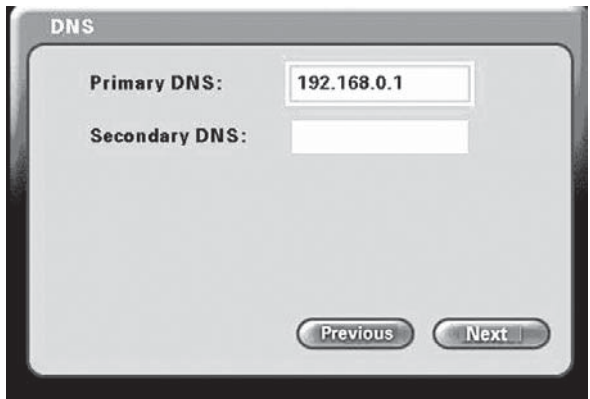
MAC (Media Access Control) is a unique identifier for the Ethernet hardware of your DVC-1100. If you need to know the MAC address of your DVC-1100, it can be found on this screen.

Press **Next** to continue.

Using the Setup Wizard (continued)

DNS (Domain Naming System) Screen

If you entered an IP address in the **Network Address** screen (described on the previous page) you will see the screen for setting DNS server addresses. The DNS screen asks for information regarding the Domain Name System (DNS) server.



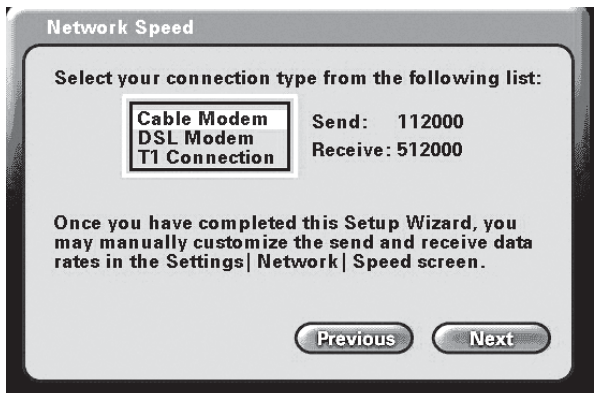
You should be able to get both of these settings from your router configuration settings, ISP or your network administrator. Only the primary DNS server address is required, though it is best to have both the primary and secondary addresses.

Press **Next** to continue.

The Domain Name System (DNS) translates Internet domain names (for example www.dlink.com, which is easy for humans to use and remember) to IP Addresses, which are what computers use to find each other on the Internet.

Network Speed Screen

The **Network Speed** screen asks you to select the type of broadband Internet connection you use. Each choice has default *send* and *receive* speeds defined for you. If you need to change these settings after completing the **Setup Wizard**, this can be done by selecting the **Settings > Network > Speed** screen.



Press **Next** to continue.

Using the Setup Wizard (continued)

System Restart

A message appears asking to restart the DVC-1100 to complete the setup. Press the **Yes** button to accomplish a restart.



Congratulations! You are now ready to make and receive i2eye VideoPhone calls.

Using a Telephone with the DVC-1100

Although optional, it is recommended that you connect a standard telephone to the DVC-1100 VideoPhone.

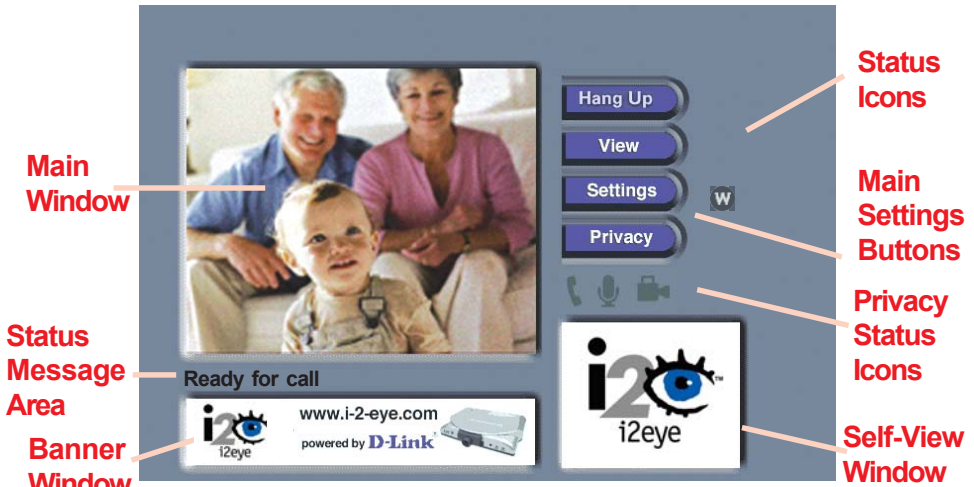
The telephone that you use for the DVC-1100 VideoPhone will not be connected to your phone wall jack. You will use the telephone as a means of conducting and receiving calls over the Internet only.

The telephone handset is used to place video calls over the Internet, similar to how you would with a regular phone call. You dial a VideoPhone number to reach a party on the other end of the VideoPhone call. You can speak through the telephone, listen to the other party in privacy, and even switch to the **Speakerphone Mode** on the DVC-1100 to share the audio with others. This can all be controlled by the remote control. When the phone is picked up, the built-in and external microphones are muted. When you receive a VideoPhone call, the telephone rings.

You can use a cordless phone, a telephone with a speakerphone to replace the built-in microphone to share the call with others and even use a phone recorder to allow recording of an audio message when someone calls your VideoPhone and you are not available.

The DVC-1100 supports dialing methods throughout the world. Please refer to page 24 for details on how to dial local video calls, calls outside of your Area code and calls outside of your Country code.

Using the DVC-1100



Layout of the i2eye Main Screen

After the DVC-1100 VideoPhone is setup by using the **Setup Wizard**, you will see the above **Main Screen** each time you turn on the VideoPhone.





There is a larger **Main Window** that displays the self-view until a call is connected.

Once you have connected to another VideoPhone the main window displays the party you are calling. The smaller **Self-View Window** then displays the self-view.


To switch the images that are in the **Main Window** and **Self-View Window**, press the **Self/Remote** button on the remote control.


Status Icons



The Status Icons appear only briefly at startup. The DVC-1100 uses these icons to indicate its status. The icons display on the top right side of the **Main Screen**. This is a list of the status icons:



	Looking for i2eye updates
	Obtaining the Public IP Address (Router's Address)
	DVC-1100 is registering with the Directory Service
	Connecting to a Wireless network



Using the DVC-1100 (continued)

If a Status Icon is displayed, this indicates the operation the icon represents is not complete. The i2eye Update status icon  appears at startup. While the icon appears, the DVC-1100 is quickly determining if auto-update is enabled. If it is enabled, the DVC-1100 will determine if an update exists. When this is complete, the icon disappears.

If the DVC-1100 cannot connect to the update server, the operation was unsuccessful and the icon will show as:  Typically, this means the DVC-1100 is not connected to the Internet.

The Public IP Status Icon,  appears at startup when the DVC-1100 attempts to connect to the Internet and determine the Public IP address of your Internet connection. If this operation is unsuccessful and the icon shows as:  the DVC-1100 cannot be used over the Internet. It can be used on an internal network as an internal videoconferencing system.

The **Directory Service** Status Icon  is displayed at startup, showing the DVC-1100 is registering with the i2eye Directory Service to allow phone number dialing. If the Directory Service cannot be reached, the  icon appears. This means you cannot use telephone numbers call other VideoPhones, but you can still make VideoPhone calls by inputting the IP address of the phone that you are calling. (See **Entering IP Addresses** on page 26.)







The Wireless Status Icon  appears at startup while the i2eye attempts to connect to the selected wireless network. If the DVC-1100 cannot connect to the selected wireless network, the  icon appears, indicating a wireless configuration problem exists.

For help, see the **Troubleshooting** section starting on page 53 if any of the Status Icons show an unsuccessful operation has occurred.

Using the DVC-1100 (continued)

Privacy Status Icons

Privacy Status Icons appear on the Main Screen.
Please see page 18 for an illustration.

- | | | | |
|-----------------------|---|--|---|
| Audio |  | If you select Audio Privacy in the Privacy Settings window, the other party will not hear you and the audio icon will appear with a slash through it. |  |
| Video |  | If you select Video Privacy in the Privacy Settings window, the other party will not see you and the video icon will appear with a slash through it. |  |
| Do Not Disturb |  | If you select Do Not Disturb in the Privacy Settings window, your VideoPhone will not ring if dialed and the other party will receive a message that you are not taking calls. |  |

Answering an Incoming VideoPhone call

Just like a regular phone call, picking up the telephone handset will answer the DVC-1100 VideoPhone. You may also use the remote control to answer by pressing the ENTER key when the “**Answer**” button on the screen is highlighted in a dialog box.

If the telephone attached to your DVC-1100 is a cordless model, press TALK on your phone to accept the call.

Placing a Manually Dialed VideoPhone Call with a Telephone Handset

- 1** Pick up the telephone handset.
- The DVC-1100 VideoPhone senses the phone is off the hook and a prompt appears on the screen asking you to either enter a phone number or press # key to select the **Speed Dial List**.
- Enter the phone number into the DVC-1100 similar to the way you would if you were using a regular phone. See **Entering Phone Numbers** on page 24 for help on completing a videocall.
- The DVC-1100 rings while you wait for your call to be answered by the party on the other end of the call.
- When the other party answers, the VideoPhone call is connected. 20

Using the DVC-1100 (continued)

Placing a Speed-dial VideoPhone Call with the Telephone Handset

To add a VideoPhone number or IP address as a Speed Dial entry, please see page 29.

- 1 Pick up the telephone handset.
- 2 The DVC-1100 VideoPhone senses the telephone is off the hook and a prompt appears on the screen asking you to either enter a phone number or press # key to select the **Speed Dial List**.
- 3 The **Speed Dial List** appears, displaying the speed dial number assigned to the party you want to call. Press the speed dial number on the handset.
- 4 The DVC-1100 VideoPhone rings while you wait for your call to be answered by the party on the other end of the call.
- 5 When the other party answers, the VideoPhone call is connected.

If the other party has activated their video privacy, you will not see them; but you will be able to hear them. If they have activated audio privacy, you can see them; but not hear them. If you have activated your video privacy, the other party will not see you and if you activated audio privacy, the other party will not hear you.

Placing a Manually Dialed VideoPhone Call Using the Remote

- 1 From the DVC-1100 VideoPhone Main Menu, select **DIAL**. The **Manual Dial** screen appears.
- 2 Navigate with the arrow keys on the remote control to the **Manual Dial** button and press ENTER.
- 3 You can enter a phone number if you and the party you are calling are connected to the i2eye Directory Service, or you can enter an **IP address** (See page 26 for an example of an IP address). If you are not connected to the i2eye Directory Service, the phone number box will be grayed out on your screen.
- 4 Enter the phone number or IP address and select **Dial**.
- 5 You will hear ringing while you wait for your call to be accepted.

Using the DVC-1100 (continued)

Placing a Speed-dial VideoPhone Call with the Remote

To add a VideoPhone number or IP address as a Speed Dial entry, please see page 29.

- 1 From the Main Menu, select **DIAL**. In the **Dial** screen the **Speed Dial List** box is highlighted and the first speed dial entry is selected.
- 2 Navigate with the arrow keys to select the speed dial number assigned to the party you want to call and press ENTER.
- 3 The DVC-1100 VideoPhone rings while you wait for your call to be answered by the party on the other end of the call.
- 4 When the other party answers, the VideoPhone call is connected.

When you dial another VideoPhone, the other party must answer within 10 rings (one minute) or the call will be dropped and you will receive an "Incomplete Call" message.

Speakerphone Mode

The DVC-1100 has a **Speakerphone Mode** if the call needs to be shared with more than one person, or when it is desirable to talk without using the telephone handset. In Speakerphone Mode, the speaker on the television and either the built-in microphone in the DVC-1100 or an external microphone are used.

When a call is answered using the remote control, or a call is placed using the remote control, the DVC-1100 VideoPhone is automatically in Speakerphone Mode.

Switching From a Speakerphone Call to a Private Call

If you are sharing a VideoPhone call with a group using the Speakerphone Mode and wish to conduct a private conversation, pick up the telephone handset and turn down the audio on the television. The others in the group will not be able to hear the conversation.

If Speakerphone Mode is not enabled by pressing the 'Speakerphone' button on the remote control, hanging up the handset will end the video call.

Using the DVC-1100 (continued)

Switching From a Private Call to a Speakerphone Call

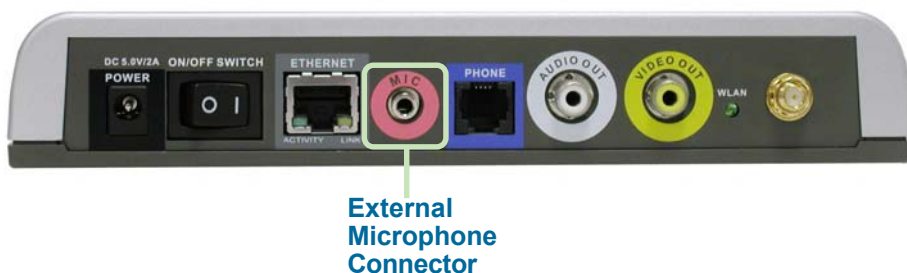
If a VideoPhone call is in progress using a telephone handset, Speakerphone Mode can be enabled:

- 1 Press the **Speakerphone** button on the DVC-1100 remote control.
- 2 When the dialog appears on the video display telling you to hang up the phone, go ahead and hang up the phone.
- 3 Speakerphone Mode is now active.

When in Speakerphone Mode with the built-in microphone, you should face the DVC-1100 VideoPhone unit when you speak so the microphone will pick up all your words. Speak louder as you move further from the microphone. The recommended distance from the microphone in Speakerphone Mode is 6 to 8 feet. The volume of the built-in microphone can be adjusted from the Settings>Mic Vol Screen (see page 45.)

Using an External Microphone for Speakerphone Calls

To enhance the audio in a group videoconference, an external microphone can be plugged into the external microphone connector on the back of the **DVC-1100**. When an external microphone is used, the built-in microphone on the front of the DVC-1100 is disabled.



Using the DVC-1100 (continued)

Entering Phone Numbers

The DVC-1100 can connect with other DVC-1100 VideoPhones throughout the world. During the setup of the DVC-1100, you entered a **Country code** into the **Personal Information** screen, along with an **Area code** and a **Phone number**. To make calling a VideoPhone similar to using a regular telephone, you enter VideoPhone numbers in a format similar to your local telephone system.

Videocalls can be made using the remote control from the Manual Dial screen or from an attached telephone. When using a telephone, the Country code and Area code must be dialed along with the Phone number on all calls.

After entering the number into the **Phone number** box when using the remote control to make a call, click on the **Dial** button to begin the VideoPhone call.

Calling a VideoPhone with the Same Country & Area Codes

In the **Manual Dial** screen, the Country code and Area code you entered for your VideoPhone are set as the default entries. To complete a call to another VideoPhone with the same Country and Area codes (i.e., a local video call), simply enter the Phone number of the party you are calling.

Example: The VideoPhone you are calling has the local VideoPhone number of 555-1212, you would leave the default Country and Area code boxes and enter phone number **5551212**. To make this call with a telephone handset, you would dial **12125551212** (Country code+Area code+phone number.)



Manual Dial

Enter a country code: 1

area code: 212

phone number: 5551212

OR

Enter an IP address:

Dial Cancel

Using the DVC-1100 (continued)

Calling a VideoPhone with a Different Area Code

To complete a call to another VideoPhone with the same Country code, but a different Area code (i.e., “a long-distance” call), enter the Area code and Phone number of the party you are calling. (Remember: The DVC-1100 uses the Internet for completing calls and not long-distance phone lines!)

Example: The VideoPhone you are calling has an Area code of 949 and a phone number of 555-1212, you would leave the default Country code box, enter **949** into the Area code box and then enter Phone number **5551212**. From a telephone handset you would dial **19495551212** to complete this call.



The screenshot shows a 'Manual Dial' window with the following fields and values:

Field	Value
Enter a country code:	1
area code:	949
phone number:	5551212
OR	
Enter an IP address:	

At the bottom are 'Dial' and 'Cancel' buttons.

Calling a VideoPhone with a Different Country Code

To complete a call to another VideoPhone with a different Country code (i.e., an “international call”), you need to enter the Country code, Area code and Phone number of the other party.

Example: The VideoPhone you are calling has a Country code of 886, an Area code of 2 and a phone number of 5555-1212, you would enter **886** into the Country code box, **2** into the Area code box and then enter Phone number **55551212**. From a telephone handset, you dial **886255551212** to complete this call.



The screenshot shows a 'Manual Dial' window with the following fields and values:

Field	Value
Enter a country code:	886
area code:	2
phone number:	55551212
OR	
Enter an IP address:	

At the bottom are 'Dial' and 'Cancel' buttons.

Using the DVC-1100 (continued)

Entering IP Addresses

Calling a VideoPhone or H.323 Device with an IP Address

If you are unable to Dial another DVC-1100 by using its Phone number, you can complete a call by entering the IP Address of the VideoPhone you want to call. This will require obtaining the IP Address for the device you want to call.

To complete a call to another VideoPhone or any other compatible H.323-compliant videoconferencing device, ignore the Country code, Area code and Phone number boxes in the Manual Dial screen. Use the remote control to move the cursor to the **Enter an IP Address** box.

Example: The VideoPhone or other device you are calling has an IP Address of 205.104.32.20, you would use the remote control to enter:

205 and then press the * key to enter a period

104 and then press the * key to enter a period

32 and then press the * key to enter a period

20 and then press the * key to enter a period.

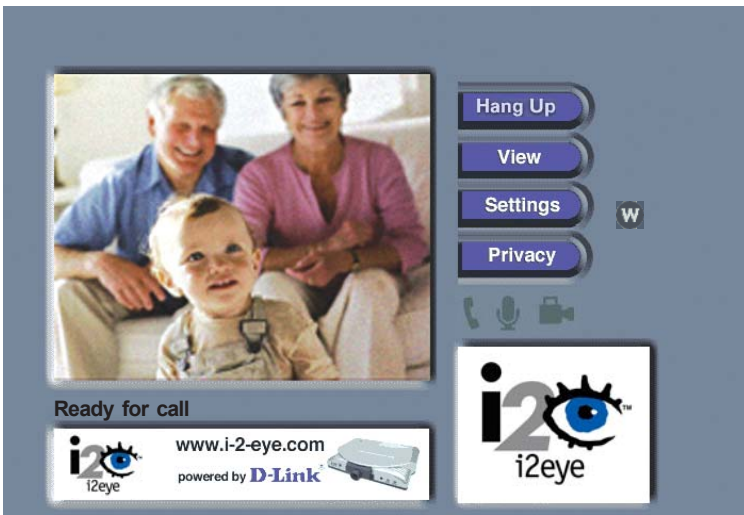
Then click the **Dial** button to complete this call.



The DVC-1100 supports domain name lookup. This means you can use the domain name of a website as the IP address, if a VideoPhone is connected to this website. For example, you can avoid entering an IP address number and instead use the on-screen keyboard to dial an address such as: www.myvideophone.com

Using the Configuration Menu

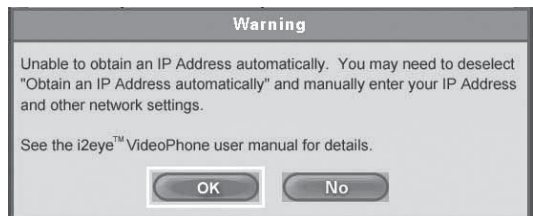
Main Screen



After starting the DVC-1100 VideoPhone, the Main Screen is displayed. The self-view image should be displaying in the larger window. The following buttons reside on the main screen:

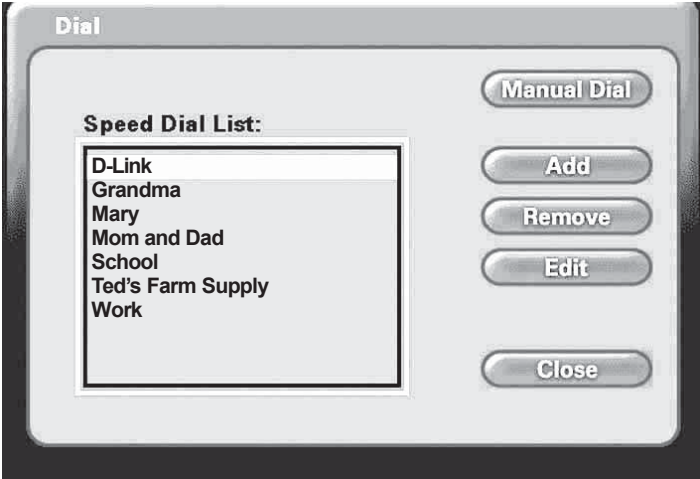
- Dial** Set up a speed dial list and choose from several methods of placing a call to other VideoPhones. You can make a call by entering an i2eye VideoPhone number, by entering an IP address, or select an entry on the speed dial list.
- View** Allows you to specify what is seen on the main application screen. Choose full screen view or the default view, as well as Internet connection status.
- Settings** Change settings relating to video calls, personal information and network information.
- Privacy** Select from several methods of audio and video privacy.

*If this warning screen appears, click **OK** and you will be shown the IP address configuration screen. Manually input the IP Address. Please see #19 in the Troubleshooting Section in this manual for more information.*



Using the Configuration Menu (continued)

Main Screen > Dial



The Dial screen contains the **Speed Dial List** as well as buttons to manage the Speed Dial List and make manual VideoPhone calls

Speed Dial List This list contains up to 50 Speed Dial entries. Click the **Add** button to add to this list. A name is dialed by highlighting the item and pressing the ENTER button on the remote. After 10 entries are created, the Speed Dial List will scroll to display entries 11 through 50.

Manual Dial Allows the manual dialing of another user by telephone number or IP Address. When you click **Manual Dial** in the screen above, the window below will appear. To enter the phone number or IP Address, use the remote's number pad or the on-screen keyboard.



Click **Dial** to start the VideoPhone call.

Using the Configuration Menu (continued)

Main Screen > Dial (continued)

Add

To add a **Speed Dial** entry, enter a name and a number (or an IP address) using the remote's number pad or the on-screen keyboard.



The screenshot shows a dialog box titled "Add Speed Dial". It contains the following fields and options:

- Name:** A text field containing "John Smith".
- Enter a country code:** A text field containing "1".
- area code:** A text field containing "949".
- phone number:** A text field containing "555-1212".
- OR**: A separator text.
- Enter an IP address:** An empty text field.
- Buttons:** "OK" and "Cancel" buttons at the bottom right.

Click **OK** to complete the addition of a **Speed Dial** entry.

Remove

Removes a selected entry from the **Speed Dial** List.

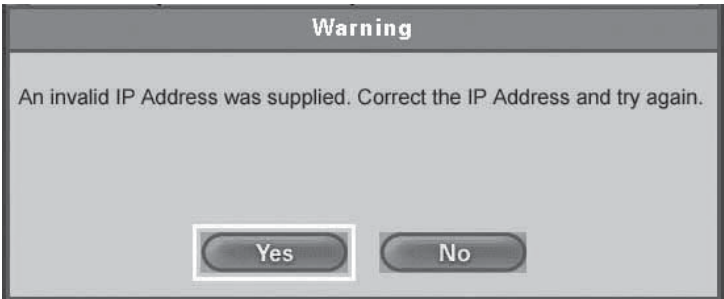
Edit

Allows the modification of either the name or number (or IP address) of a selected **Speed Dial** entry.

Close

Closes the **Dial** screen, saving the current entries in the **Speed Dial** List.

If this Warning screen appears, an invalid IP address has been entered. Please correct the IP Address and try again.

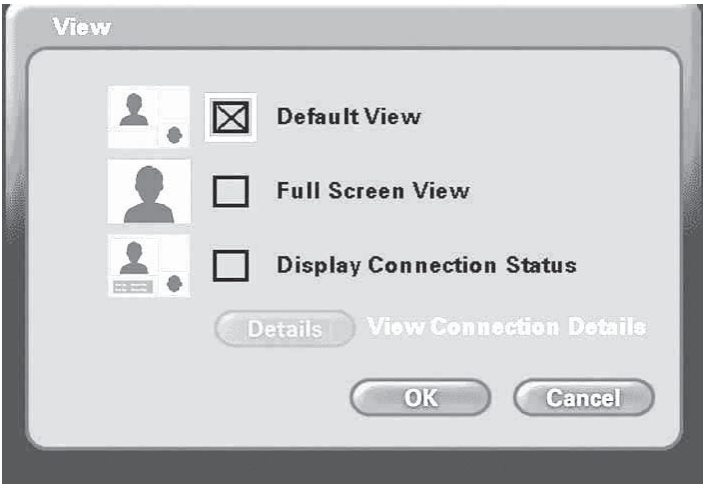


The screenshot shows a dialog box titled "Warning". It contains the following text and buttons:

- Text:** "An invalid IP Address was supplied. Correct the IP Address and try again."
- Buttons:** "Yes" and "No" buttons at the bottom.

Using the Configuration Menu (continued)

Main Screen > View



The View screen allows the user to modify what the **Main Screen** may look like.

Default View



This is the standard view showing both the larger main view window and the smaller self-view window.

Full Screen View



The main video window is seen in this view. When no call is in progress, the self-view will display. Once a call is connected, the remote caller's video will display as well as a self-view picture-in-picture.

Display Connection Status



This view is the same as the default view with the addition of connection status information appearing in the lower left corner of the main screen.

Details (Button) View Connection Details

Click this button to view the connection details. Items such as video and audio formats and call rates will be displayed. The connection details can be viewed only while the DVC-1100 VideoPhone is on a call.

Using the Configuration Menu (continued)

Main Screen > Settings



The **Settings** screen contains six buttons that allow the DVC-1100 to be customized in different ways. Each of these settings are detailed starting on the next page.

General

Controls settings that adjust the way you view, listen and use the DVC-1100 VideoPhone.

Personal Information

Contains information about the user and allows editing of user information.

Network

The Network Settings screen has six buttons that allow you to setup your network address, DNS address, public IP Address, transmit and receive network speeds, a PING network diagnostic tool and wireless settings.

Update

DVC-1100 will look for system updates each time it starts up. This setting allows you to search for an update manually.

Video

Adjustments to the video display settings can be made.

Mic Vol

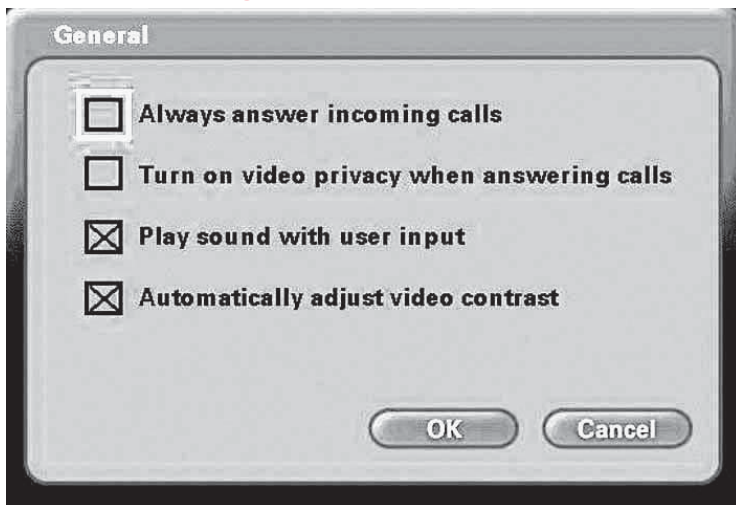
Used for adjusting the volume of the built-in microphone on your DVC-1100.

Close

Closes the Settings Screen and returns you to the Main screen.

Using the Configuration Menu (continued)

Main Screen > Settings > General



Always answer incoming calls

Selecting this checkbox allows the DVC-1100 to automatically accept any incoming call. You will hear two short beeps if a call is received with auto-answer enabled. If this checkbox is not selected and a call is received, a dialog box appears asking if you want to accept the incoming call.

Turn on video privacy when answering calls

When this checkbox is selected, Video Privacy will be turned on whenever a call is received. This blocks a caller from seeing the you until you turn off video privacy.

Play sound with user input

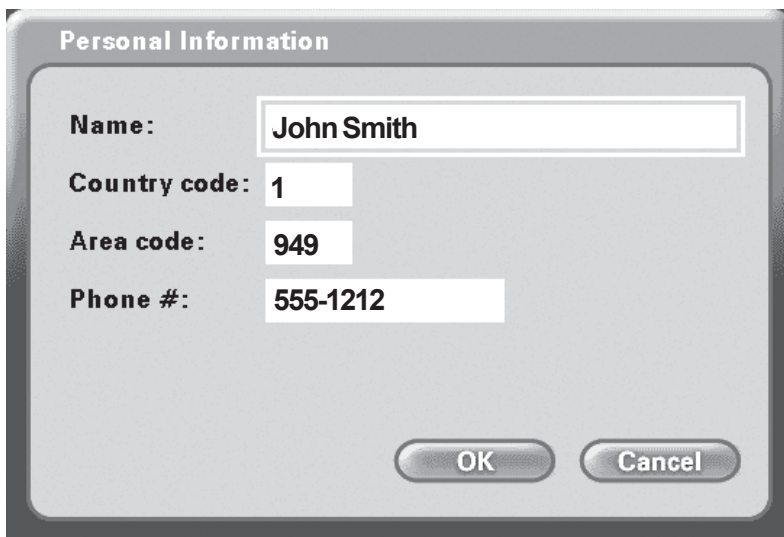
Select this checkbox to hear a beep with each function pressed on the remote control. You will hear no sound when using the remote control if this is not selected.

Automatically adjust video contrast

Selecting this checkbox causes an automatic adjustment of the video contrast every 30 seconds. When this is selected the **Video** button on the **Settings** screen is unavailable and the video settings cannot be adjusted (see page 44). The **Contrast button** on the remote control triggers a manual adjustment of the video contrast regardless of the selection state of the checkbox.

Using the Configuration Menu (continued)

Main Screen >Settings > Personal Information



Personal Information

Name: John Smith

Country code: 1

Area code: 949

Phone #: 555-1212

OK Cancel

Name

Enter your name here. When a call is placed from your VideoPhone, the name you enter will be displayed as a Caller ID on the remote end of the call. Unless the VideoPhone you call has auto-answer turned on, the party you wish to call will decide whether or not to accept your call based on this name.

Country Code

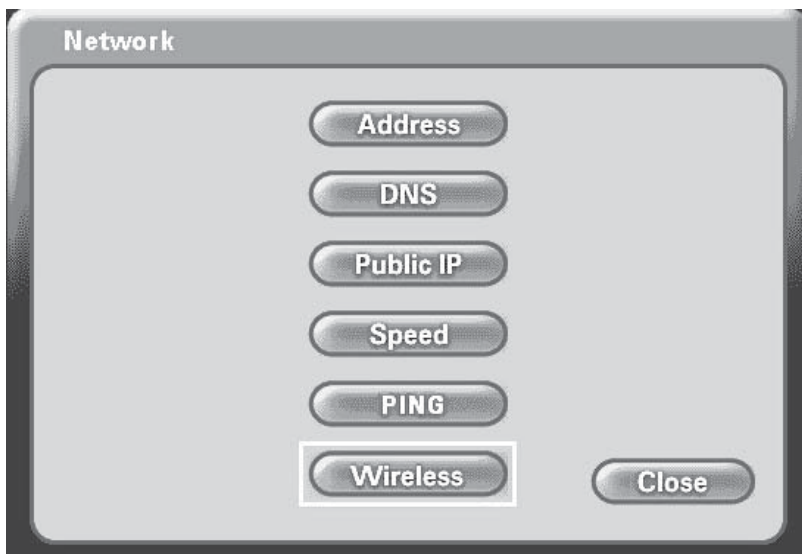
Each country is assigned a Country code for making video calls between countries, similar to the regular international telephone system. The Country code for the United States and Canada is "1". Other Country codes are listed on page 71. Enter your Country code here (up to 3 digits).

Area Code & Phone

The Phone number is one you create for friends, family, and others to call you. This is not associated with your home phone, though you may wish to use your home phone number to make remembering the number easier. Or you may make up a new one. This phone number will not be visible to any other users. The DVC-1100 can support global phone number formats. (up to 4 digit area codes and up to 9 digit phone numbers are supported).

Using the Configuration Menu (continued)

Main Screen > Settings > Network



Address

Controls how the DVC-1100 obtains an IP address.

DNS

Allows you to enter a primary and secondary DNS address.

Public IP

This screen controls how a public IP address is obtained. If the Public IP button is “grayed out”, it means that your DVC-1100 is in the process of searching for a public IP address. If this lasts for more than 30 seconds, the DVC-1100 will most likely not find a public IP address. Please see #16 in the **Troubleshooting** section in this manual for more information.

Speed

Allows for setting transmit and receive speeds that best match your current connection.

PING

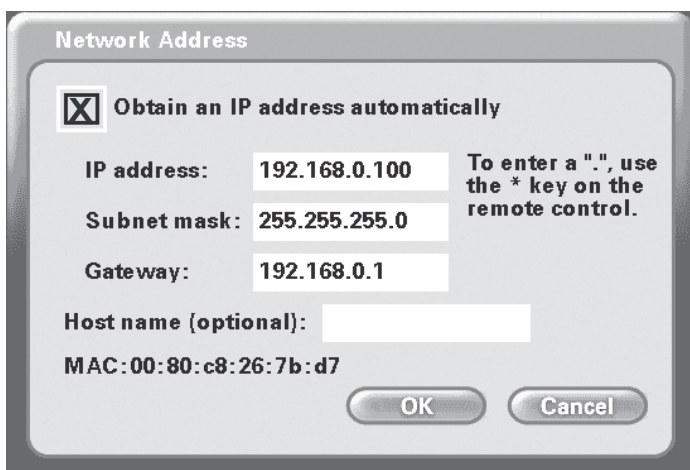
The PING network utility allows you to test the network connection of the DVC-1100 by “pinging” an IP address.

Wireless

Allows Wireless mode to be enabled and the wireless settings to be accessed.

Using the Configuration Menu (continued)

Main Screen > Settings > Network > Address



The screenshot shows a 'Network Address' configuration window. At the top, there is a checkbox labeled 'Obtain an IP address automatically' which is checked. Below this, there are four input fields: 'IP address' with the value '192.168.0.100', 'Subnet mask' with '255.255.255.0', 'Gateway' with '192.168.0.1', and 'Host name (optional)' which is empty. Below these fields, the MAC address is displayed as 'MAC:00:80:c8:26:7b:d7'. To the right of the input fields, a note states: 'To enter a ".", use the * key on the remote control.' At the bottom right, there are two buttons: 'OK' and 'Cancel'.

Obtain an IP Address automatically

The DVC-1100 VideoPhone will attempt to obtain the IP Address from the DHCP server. When this is checked (the default), the other settings on this screen are automatically grayed.

IP Address, Subnet mask & Gateway

These are all Internet settings that need to be provided by your router configuration settings, ISP or network administrator. These will be grayed if the checkbox (above) is checked.

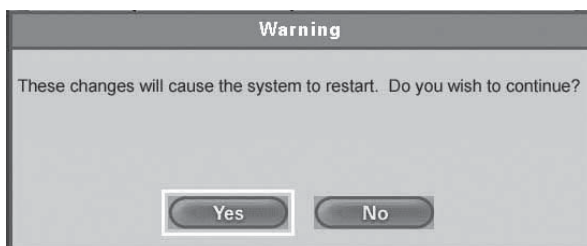
Host name (optional)

Used for reporting the host name to the router/home gateway in the DHCP table. This is rarely used and is optional.

MAC:xx:xx:xx:xx:xx:xx

MAC (Media Access Control) is a unique identifier for the Ethernet hardware of your DVC-1100. If you need to know the MAC address of your DVC-1100, it can be found on this screen.

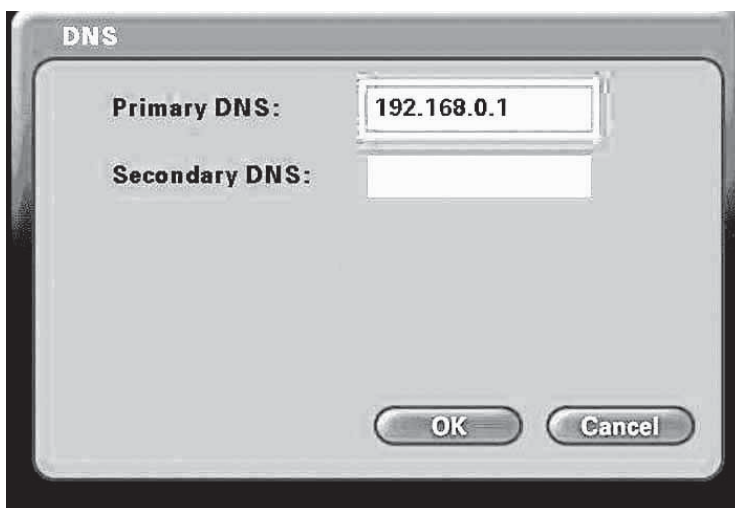
*When this screen appears, Click **OK** to save the changes and restart the system.*



The screenshot shows a 'Warning' dialog box. The title bar says 'Warning'. The main text inside the box reads: 'These changes will cause the system to restart. Do you wish to continue?'. At the bottom, there are two buttons: 'Yes' and 'No'.

Using the Configuration Menu (continued)

Main Screen > Settings > Network > DNS



DNS

Primary DNS: 192.168.0.1

Secondary DNS:

OK Cancel

Primary DNS

Enter the Primary Internet DNS (Domain Name System). These are Internet server addresses that you should be able to obtain from your router configuration settings, ISP or network administrator.

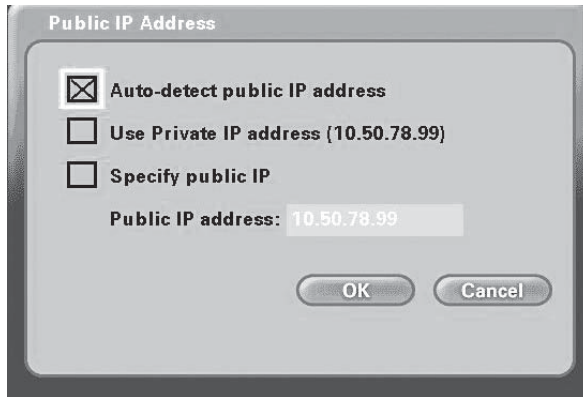
Secondary DNS

Enter the Secondary DNS address if you have one. Though both primary and secondary DNS addresses are preferred, only the primary address is required.

The Domain Name System (DNS) translates Internet domain names (for example www.dlink.com which is easy for people to use and remember) to IP addresses, which are what computers use to find each other on the Internet.

Using the Configuration Menu (continued)

Main Screen > Settings > Network > Public IP Address



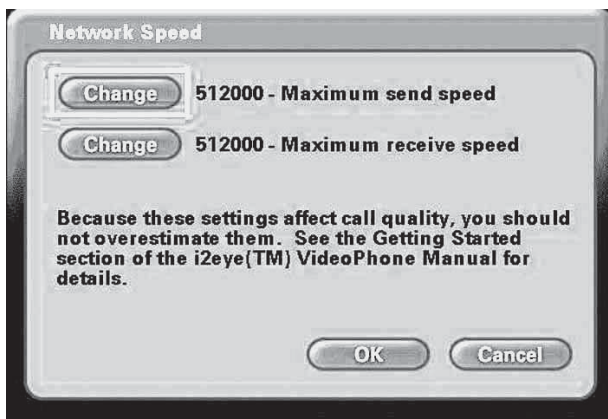
This screen allows you to view or edit the VideoPhone’s public IP address.

If you are sharing a broadband connection with another device (such as a PC), you typically will need a router to accomplish the sharing of the connection. Your router will usually have a Network Address Translation (NAT) mode installed. The NAT affects the IP address of the DVC-1100 and any other devices sharing your Internet Connection. See the Glossary on page 67 for a description of a NAT.

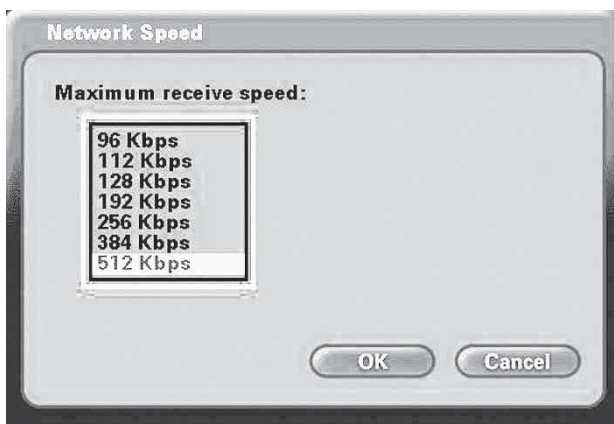
- | | |
|--------------------------------------|---|
| Auto-detect public IP address | This is the default and recommended setting. If the DVC-1100 is behind a NAT router, and you leave this checkbox selected, the VideoPhone will automatically use your public IP address for placing and receiving calls. On the majority of Cable and DSL broadband systems, leaving this checked will result in simplified installation and use. |
| Use Private IP address | (Optional) Select this checkbox if you want to use your VideoPhone ONLY within a private network (LAN). If you select Use Private IP address , the VideoPhone will not be able to place or receive calls outside the private network and the Status Icons on the Main Screen will appear with an “X” to indicate the DVC-1100 is not connected to the public Internet. |
| Specify public IP | (Optional) Select this checkbox if you want to manually change the DVC-1100 VideoPhone’s public IP address. |
| Public IP address | Using the number pad on the remote or the on-screen keyboard, enter the public IP address. (Only available for editing when Specify public IP is selected.) |

Using the Configuration Menu (continued)

Main Screen > Settings > Network > Network Speed



The **Network Speed** screen offers you the option of selecting the speed that is the best match for your current network or connection.

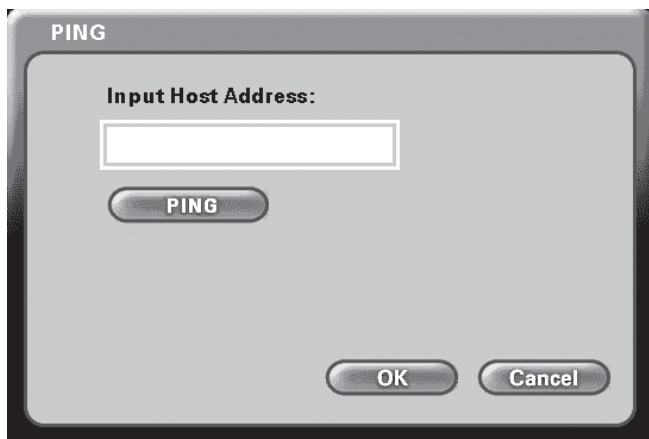


Change the settings by selecting the send or receive **Change** button and select the value desired by moving the selection up or down in the list box.

Overestimating these settings may affect the call quality and is not recommended. Contact your ISP, network administrator, or look in your modem manual for correct values. The send and receive settings can be different speeds. Typically Cable and DSL modems receive at a higher speed and send at a lower speed.

Using the Configuration Menu (continued)

Main Screen > Settings > Network > PING



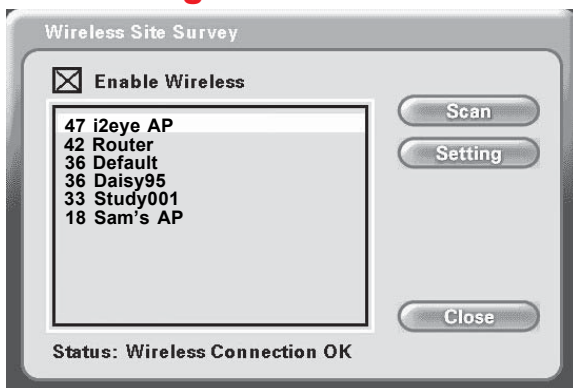
PING is a network or Internet utility, used to test a network or Internet connection. If you are having problems establishing a connection to another VideoPhone after the setup of the DVC-1100, you can use the PING function to test if your Internet connection is working correctly.

To use the PING function, from the remote control enter a known IP Address on your network or on the Internet into the **Input Host Address** box. Press the **PING** button. If the IP address is valid, and the connection is made successfully, a "*Pass. Host is Reachable*" message is received. If you enter a valid IP Address and the PING utility fails to reach the host, you will receive a "*Fail. Host is not Reachable.*" message. This indicates that a possible problem with your Internet connection exists.

Press **OK** after you are done to return to the **Network Settings** screen.

Using the Configuration Menu (continued)

Main Screen > Settings > Network > Wireless Site Survey



Upon startup, the DVC-1100 performs a “site survey” looking for available wireless networks. Any discovered wireless devices are displayed by their SSID name. On a home network, you may have just one entry. In a business, there may be numerous wireless devices listed. The number to the left of a SSID indicates the signal strength of the available access point on the wireless network.

The DVC-1100 also displays the result of the SSID that is currently selected. A **Connection OK** message appears if the connection is successful. If the connection fails the message **Connection Failed** appears. See the **Troubleshooting** section starting on page 53 for help.

Enable Wireless

The checkbox is checked by default, allowing the DVC-1100 to be used wirelessly. If an Ethernet network cable is used to connect to a network instead, uncheck this checkbox and press **Close** to return to the **Network Settings** screen.

Scan

Press to update the SSID list of wireless devices.

Settings

Press the **Settings** button to access the **Wireless Settings** screen to edit the SSID name and to set wireless encryption settings.

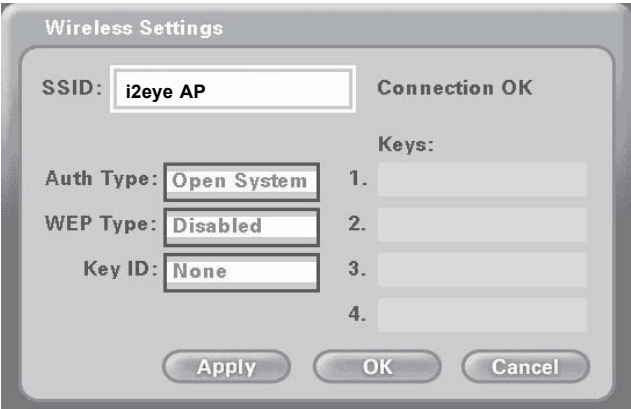
Close

Press to return to the **Network Settings** screen.

Use the remote control up/down arrow buttons to select the SSID of the device you will connect the DVC-1100 to. Press **ENTER** on the remote to select this SSID and the **Wireless Settings** screen will appear (see next page.)

Using the Configuration Menu (continued)

Main Screen > Settings > Network > Wireless Site Survey > Wireless Settings



The Wireless Settings screen controls the following wireless connection and encryption settings on the DVC-1100:

SSID

The name of the selected wireless device from the **Wireless Site Survey** screen. This name can be entered or edited using the on-screen keyboard (e.g., if the SSID broadcast feature on a wireless device was disabled and the SSID did not appear on the **Wireless Site Survey** screen). The connection status for the selected SSID device is displayed next to the SSID (**Connection OK** or **Connection Failed**).

Auth Type

Select one of the following authentication modes:
Open Key: Communicates the key across the network.
Shared Key: Allows communication only with devices with identical encryption settings.

WEP Type

The WEP Encryption key can be set to 64, 128 or 256 bit-length. The **WEP Type** must match the WEP encryption bit-length on the wireless network.

Using the Configuration Menu (continued)

Main Screen > Settings > Network > Wireless Site Survey > Wireless Settings (continued)

Key ID

Selects which of the four keys, listed to the right on the screen, is the active encryption key. You can enter up to four encryption keys that are used to encrypt data passed wirelessly over the network. Only one of the keys are used for encryption. You can enter a key for use, enter up to three other keys for later use and easily change from one key to another by changing the **Key ID** that controls which key is in use.

Keys

The four numbered boxes are used to enter from one to four encryption keys. To connect to an encrypted wireless device, the key you enter in the DVC-1100 must match the key of the wireless device.

Details on Entering Encryption Keys

Keys are entered in hexadecimal format, meaning you can use the numbers 0 through 9 and the letters A through F. The key must be entered as a specific number of characters to be accepted as a valid key. See page 13 for additional details on entering encryption keys.

Only one key needs to be entered. Press the down arrow after entering the first key to continue to the next box. When you have entered all the keys desired, press the down arrow and press the **Apply** button.

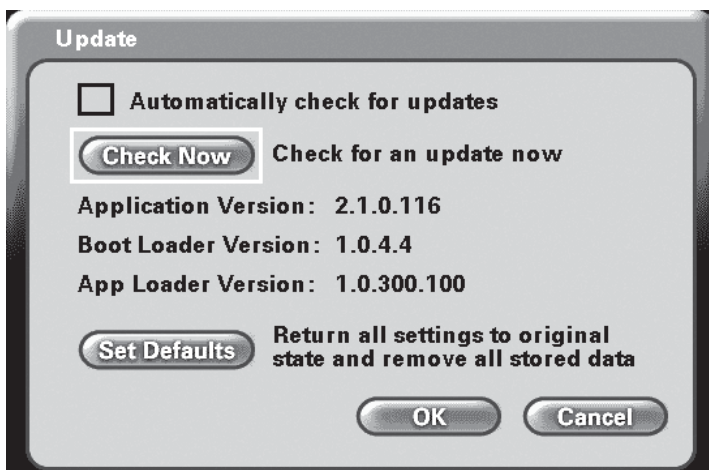
The DVC-1100 will attempt to connect to the selected SSID, using the settings on the **Wireless Settings** screen. If the connection fails (probably due to a wireless network settings incompatibility), the message **Connection Failed** appears. You will need to determine what wireless network settings are causing the failed wireless connection. See the **Troubleshooting** section on page 58 for help.

If the **Connection OK** message appears, the DVC-1100 has successfully connected to the selected SSID.

Press the **OK** button to save any changes and return to the **Wireless Site Survey** screen (see page 40).

Using the Configuration Menu (continued)

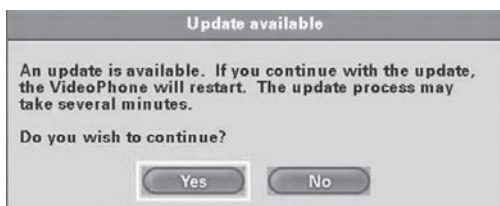
Main Screen > Settings > Update



The Update screen has several functions:

- ❶ Click the box to automatically check for updates of the DVC-1100 VideoPhone. It is recommended this checkbox is checked to allow updates to be found.
- ❷ Check for an update right now.
- ❸ Displays the current version information.
- ❹ **Set Defaults** will restore all settings to factory defaults. This will also erase all speed dial entries that have been added.

If you select **Check Now for an Update** then the DVC-1100 will check for an update. If an update is found the following message will appear.



Clicking **YES** will begin an update of the firmware in the DVC-1100. A restart of the DVC-1100 is required after the update is complete.

Using the Configuration Menu (continued)

Main Screen > Settings > Video



You can fine tune the video display from the **Video Settings** screen. Control over the following settings is available:

- Color **Saturation**
- Image **Brightness**
- Image **Contrast**
- Video **AGC Gain**

To adjust any of the four video controls:

1. Use the up/down remote control arrow keys to select which control needs adjustment.
2. Press the right arrow to increase the setting and the left arrow to decrease the setting.

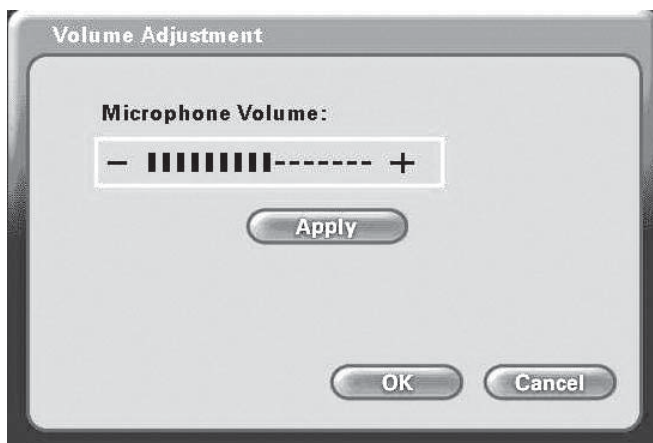
Note: You are changing the **Video Settings** for the local **Self-view** only. You cannot change the settings of a remote VideoPhone you are on a call with.

Press **OK** after you are done to return to the **Settings** screen.

If the **Video** button is grayed out on the **Settings** screen, the **Automatically adjust video contrast** has been activated on the **Settings>General** screen. The **Automatically adjust video contrast** checkbox needs to be unchecked to allow access to the **Video Settings**. The default setting is unchecked, allowing access to the **Video Settings**.

Using the Configuration Menu (continued)

Main Screen > Settings > Mic Vol



You can adjust the volume of the built-in microphone from the **Volume Adjustment** screen. This adjustment will control how the party on the other end of the VideoPhone connection hears you.

To adjust the volume, press the right arrow on the remote control to increase the setting and the left arrow to decrease the setting. The slider bar will indicate the volume level.

Click the **Apply** button to save the change.

Press **OK** after you are done to return to the **Settings** screen.

Note: A high microphone volume may cause audible feedback, resulting in an echo that can affect how clearly the other party hears you.

Using the Configuration Menu (continued)

Main Screen > Privacy



Audio Privacy

Audio Privacy prevents the audio on your side from being sent to the remote caller. No one on the other end of the VideoPhone call will be able to hear you if this setting is checked, although they can see you.

Video Privacy

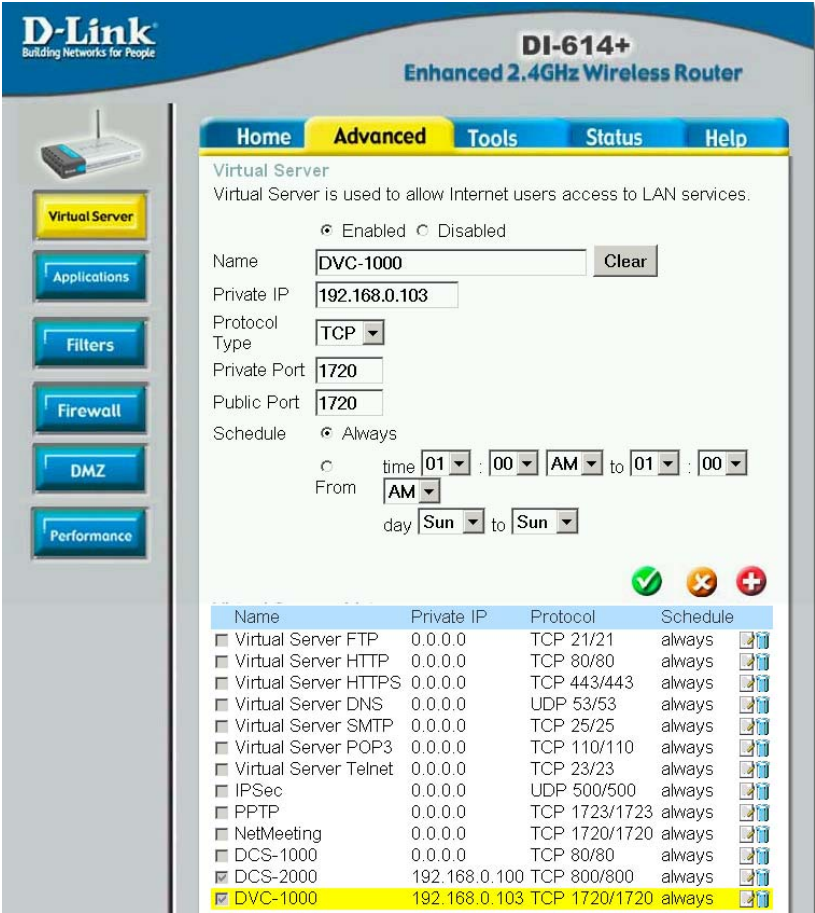
Video Privacy keeps your video from being sent to the remote caller. The person on the other end of the videoconference call will not be able to see you if this setting is checked.

Do Not Disturb

This setting will keep a caller from being able to connect to your VideoPhone. When a caller tries to connect with you, they will receive a message indicating that you are unavailable.

Using the DVC-1100 with D-Link Routers

Most D-Link routers now support a feature that allows for easy one-click configuration of the **DVC-1100**. You will not need to manually configure the ports. Upgrading your router to the latest firmware might be necessary to support this feature. If you have other routers or you are having difficulty with the **DVC-1100**, please read the information on pages 48 through page 52 to learn how to open ports on routers.



To complete the configuration that allows the **DVC-1100** to work with your D-Link router, the D-Link DI-614+ router is shown above. In the DI-614+ configuration utility, go to the **Advanced>Virtual Server** screen and check the **DVC-1000** box from the list on the page. No other configuration is needed, with supported D-Link routers, to use the **DVC-1100**.

Using the DVC-1100 with Routers, Gateways or Broadband Modems

Opening Ports on Your Routers and Gateways

The firewall security features built into most routers and gateways may prevent users from accessing the video and audio of their DVC-1100.

A router connects to the Internet through a series of numbered ports. The ports used by the DVC-1100 are often blocked from access over the Internet by the firewall features of the router.

You may be able to connect to another VideoPhone, but not receive any video or audio. This is a typical scenario of a firewall blocking the ports needed by the DVC-1100 to send audio and video.

If this is the case, you need to open the ports on your router to the Internet to allow access to the DVC-1100.

The port numbers used by the DVC-1100 are:

1720
15328
15329
15330
15331
15332
15333

The router or gateway that you are using may be different from the D-Link DI-614+ wireless router example shown on the following pages. However, the general procedure for opening ports will be similar. (If you do not have a D-Link router, look for *Virtual Server*, *Firewall Rules*, *Port Forwarding*, *Advanced* or *Firewall* in your router's configuration utility.)

In the example that follows, we begin by opening the DI-614+ Web configuration utility and going to **Advanced > Virtual Server**.

Follow the steps on the next 2 pages to open the ports on your router for successful operation of the DVC-1100.

Using the DVC-1100 with Routers, Gateways or Broadband Modems (continued)

Opening Ports on Your Routers and Gateways (continued)

How to open ports on a router

Virtual Server

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

A ☒ Enabled ☐ Disabled

B Name:

C Private IP:

D Protocol Type:

E Private Port:

E Public Port:

F Schedule: ☒ Always

☐ From time: : AM to : AM

day: to

G

Name	Private IP	Protocol	Schedule
<input type="checkbox"/> i2eye	192.168.0.101	TCP 1720/1720	always
<input type="checkbox"/> i2eye	192.168.0.101	IP (O) 15328/15328	always
<input type="checkbox"/> i2eye	192.168.0.101	IP (O) 15329/15329	always

A total of 7 ports must be opened for the DVC-1100 to work with most routers or firewalls. To open these ports, please do the following:

- A.** Click **Enabled**
- B.** Give the Virtual Server a **Name** (such as i2eye)
- C.** Under **Private IP**, enter the IP Address obtained from the DVC-1100

(How to obtain an IP Address from the DVC-1100: Turn the DVC-1100 ON. Using the remote control highlight the Settings button on the Main Screen. Navigate to Settings>Network>Network Address >IP Address)

- D.** Under **Protocol Type**, choose **Both** (TCP and UDP)
- E.** Under **Private Port** and **Public Port**, enter **15328**
- F.** Under **Schedule**, click **Always**
- G.** Click **Apply** to save this entry

Using the DVC-1100 with Routers, Gateways or Broadband Modems (continued)

Opening Ports on Your Routers and Gateways (continued)

You have now completed the entering of one port to be opened. You will need to open six more ports.

Repeat steps **A** through **G** five more times for each one of the following five ports: **15329**, **15330**, **15331**, **15332** and **15333**.

The last port will be opened slightly differently:

- Repeat steps **A** through **C** on the previous page.
- Choose **TCP** as the Protocol Type
- Enter **1720** as the Private Port and Public Port
- Under Schedule, Click Always
- Click Apply to complete

You have now completed the opening of the 7 ports. Your DVC-1100 is ready to use with your router or gateway!

(Important: Not all routers and gateways are the same; please refer to your user manual for specific instructions on opening ports.)

Using the DVC-1100 with Routers, Gateways, or Broadband Modems (continued)

From the following sections, choose the heading that best applies to your equipment or networking configuration.

Network With Multiple Public IP Addresses

A Public IP Address is visible on the Internet. (Most commonly found in business environments.)

Recommended Procedure: If there is an available public IP address, simply enter the IP address, subnet mask, and gateway into the applicable fields in the **Network Settings** screen. If the network has a DHCP server, select the checkbox under the **Network Settings** that says, “Automatically obtain IP address.” (The network administrator will be able to tell you whether or not the network has a DHCP server.)

Potential Issues: Some firewalls are configured in a way that could potentially restrict H.323 data flow. Most current corporate firewalls are H.323 compliant. If this is the case, configuring the firewall is accomplished by simply opening the necessary H.323 ports into the network:

Port 1720 (TCP)
Ports 15328 – 15333 (UDP & TCP)

If your particular firewall does not have this option, consult the firewall’s documentation on how to open specific ports needed for H.323 communications.

Broadband Modem and One PC

(This is the most common scenario found in a home or home office that currently has one PC connected to its broadband modem.)

Recommended Procedure: Request from your ISP an additional public IP address. With a second public IP address, the VideoPhone will be visible to the outside world just as the existing PC. The ISP can either assign a static IP address or allow you to dynamically request the IP address via DHCP. Follow the instructions in *Broadband Modem Only* section, below, depending on what your ISP requires.

Because most broadband modems have only one Ethernet port, it will be necessary to install a hub or switch between the modem and the rest of the network. Using an Ethernet cable, connect the modem’s Ethernet port to the applicable uplink port on the hub. Once that is done, you can plug the PC and DVC-1100 VideoPhone into any other available port.

Using the DVC-1100 with Routers, Gateways, or Broadband Modems (continued)

Broadband Modem, Multiple PCs and a Hub

Commonly found in small offices, home offices, or homes with more than one PC where multiple public IP addresses are available.

In order to install the DVC-1100 VideoPhone as another device behind a hub assign an available public IP address to the VideoPhone.

Refer to the *Broadband Modem Only* section, below, for detailed installation instructions.

Broadband Modem, Multiple PCs and a Router

Commonly found in small offices, home offices, or homes with more than one PC where only one public IP address is available.

Refer to the *Using the DVC-1100 with Routers, Gateways or Broadband Modems* section starting on page 48 for detailed installation instructions.

Broadband Modem Only

This section applies only in the instance that the broadband connection is used exclusively with the DVC-1100 VideoPhone and there are no PCs or other devices connected to the broadband modem. Broadband cable modems allow this type of installation.

Recommended Procedure: Many ISPs act as DHCP servers and dynamically assign a public IP address whenever the modem requests one. If your ISP has a DHCP server, select the checkbox under the network settings that says, “Automatically obtain IP address.” By choosing this option, you are not required to know the IP address, gateway, subnet mask, or DNS numbers. They will all be filled in automatically.

If DHCP is not an option, all of the networking values will have to be manually entered. Simply enter the public IP address, subnet Mask, gateway, and DNS numbers given to you by the ISP into the appropriate network settings fields.

Potential Issues: In order for the DVC-1100 VideoPhone to function properly over the Internet, there must exist a public IP address for the world to see. If your ISP is acting as a NAT and assigning private IP addresses, you will have to request a public IP address in order for your VideoPhone to be able to receive calls.

Troubleshooting

1. Cannot make a call using a phone number.

Check that you did not misdial the number.

Remember to dial a country code and area code for all calls when using a telephone handset to make video calls.

The VideoPhone is not connected to the Internet.

The VideoPhone is not registered with the Directory Service. It may take the VideoPhone up to 10 minutes to register. Verify all network settings, including DNS.

Far side of the call is not registered with the Directory Service. If you are calling someone who has an videoconference endpoint besides a DVC-1100 VideoPhone, you will have to make direct IP calls to them. If the far side has a DVC-1100 VideoPhone and you cannot connect to them via the Directory Service, they are probably not registered.

2. Cannot make direct IP calls.

VideoPhone is not connected to the Internet. See the Internet Connection section (starting with #19) in this Troubleshooting Guide.

The person you are trying to call is unreachable. Ensure the IP address of the person you are trying to call is correct.

3. Telephone or television produces an off-hook signal.

Telephone is off the hook. Hang up the phone.

4. Telephone or television produces a fast busy signal.

Person you are trying to call is not registered with the directory service. Call the person using direct IP or wait until the person is registered with the directory service.

Person you are trying to call is in a call or has rejected your call. Try your call at a later time.

Troubleshooting (continued)

5. Picking up the phone displays a window with speed dial list or brings up a message about no entries in the speed dial list.

VideoPhone is not registered with the Directory Service.

Sometimes it takes the VideoPhone up to ten minutes to register.

Verify all network settings, including DNS.

6. Telephone doesn't ring with an incoming call.

VideoPhone is set for Auto-Answer. If the VideoPhone is set up for Auto-Answer then the phone will not ring with an incoming call. Fix by turning off Auto-Answer via the **Settings>General** menu.

Telephone is not properly plugged in. Ensure that the phone is properly plugged into the VideoPhone. If the telephone is not self-powered, ensure that it is properly plugged into a power supply. Consult your telephone user manual for reference.

Telephone ringer is off. Make sure the ringer on the phone is turned on. Consult your telephone user manual for reference.

7. VideoPhone freezes-up while answering a call.

VideoPhone is not functioning properly behind a firewall.

See next section, "No video in a call" solution.

8. Poor video in a call.

Camera out of focus. The far site should focus their camera by twisting the knob on the VideoPhone until the image is in focus.

Incorrect Network Speeds. See # 23 *Incorrect Network Speeds* in this Troubleshooting Guide.

Excessive motion in the picture you are receiving. A background with less motion provides a better, smoother video picture.

Troubleshooting (continued)

9. No video in a call.

Video cables are not plugged in correctly. Ensure that your video cables are correctly plugged into the TV. Make sure that the TV is set for video input. Consult your TV manual for reference.

Incorrect network speeds. See #23 *Incorrect Network Speeds* Section in this Troubleshooting Guide.

VideoPhone is not functioning properly behind a firewall.

Place the IP address of the VideoPhone in the DMZ of the firewall. Consult your router's documentation or your network administrator for help on doing this.

Port forward the appropriate ports to the VideoPhone. The VideoPhone needs ports 1720 (TCP) and ports 15328-15333 (TCP and UDP) open to function properly. See the section *Using the DVC-1100 with Routers, Gateways or Broadband Modems* on page 48, or consult your router's documentation or your network administrator for help on doing this.

VideoPhone is not functioning properly behind NAT.

Go to **Settings>Network>Public IP**. Press Enter on the remote when the cursor is over "Auto detect public IP Address." If the VideoPhone is unable to detect the public IP Address, it should be entered manually using "Use specific IP Address." The VideoPhone's public IP Address is given to you by either your ISP or network administrator.

10. Video freezes during a call.

Far side muted their video. If the far side mutes their video you will not be able to see him or her.

Network is congested. Give the VideoPhone a couple of minutes to try to recover, or disconnect the call and try again at a later time.

Troubleshooting (continued)

11. No audio in call.

Audio cables are not plugged in correctly. Ensure that your audio cables are correctly plugged into the TV. Make sure that the TV is set for video input. Check the volume level on the TV. Consult your TV manual for reference.

Telephone is not setup properly. Plug the telephone into the back of the VideoPhone. If the telephone is powered (cordless) make sure that it is plugged into a power supply. Consult your telephone user manual for reference.

Port forward the appropriate ports to the VideoPhone. The VideoPhone needs ports 1720 (TCP) and ports 15328-15333 (TCP and UDP) open to function properly. See the section *Using the DVC-1100 with Routers, Gateways or Broadband Modems* on page 48, or consult your router's documentation or your network administrator for help on doing this.

VideoPhone is not functioning properly behind NAT. Go to the **Settings>Network>Public IP** screen. Select "Auto detect public IP Address." If the VideoPhone is unable to detect the public IP Address, it should be entered manually using "Use specific IP Address." The public IP Address is given to you by either your ISP or your network administrator.

Incorrect network speeds. See the *#23 Incorrect Network Speeds* section in this Troubleshooting Guide

Volume is adjusted incorrectly. You can adjust the volume on the TV as you would when watching a television show. You might also be able to adjust the volume on your telephone. Consult your TV and/or telephone user guide for support.

12. Audio stops during a call.

Far side muted their audio. If the far side mutes their audio you will not be able to hear him or her.

Network is congested. Give the VideoPhone a couple of minutes to try to recover, or disconnect the call and try again at a later time.

Troubleshooting (continued)

13. Audio has an echo.

Far side television is too loud. The far side television volume needs to be turned down.

14. Excessive delay during a conversation.

Incorrect network speed settings (too fast). Decrease the send/receive speeds from the **Settings>Network>Speed** screen and attempt the call again.

15. Error displays on Main Screen.

Unable to find the Update Server.

No connection to the Internet.

Local setting may be incorrect.

Firewall not allowing FTP out.

In the above cases, consult your router manual/network administrator.

Update Server is temporarily unavailable.

If the Update Status Icon is the only one showing as “failed”, you will not be prevented from making and receiving videocalls.

16. Error displays on main screen.

VideoPhone cannot obtain public IP Address (Router’s address).

See “VideoPhone cannot obtain IP Address automatically” section, #19 below.

17. Error displays on main screen.

VideoPhone could not register with the Directory Service.

Sometimes it takes the VideoPhone up to ten minutes to register. Verify all network settings, including DNS. Check your network settings. If this is the only Status Icon showing as “failed”, you will not be able dial a VideoPhone number to make a call. It will be necessary to dial using an IP address.

Troubleshooting (continued)

18. Error message displays on main screen.

VideoPhone could connect to the selected wireless network.

Check the status of other wireless devices on the network. Confirm the wireless router and any access points are configured and operating normally.

Wireless settings do not match wireless network settings.

Check the wireless settings for the network wireless router or access point. Confirm the SSID, authentication type, key length match. Make sure encryption is enabled or disabled on all wireless devices.

Move the VideoPhone closer to the selected wireless device. The wireless range to the router or access point may be a problem. Also, see #25 *Wireless Network Hints and Tips* below.

19. VideoPhone cannot obtain IP Address automatically

Not properly connected to a DHCP server. Check connection to LAN, by verifying a link light on the back of the VideoPhone. Make sure that the router is setup for DHCP. Consult either your router's user manual for reference or your network administrator.

IP Address is not accessible to the VideoPhone.

Need to statically assign an IP Address, subnet mask, gateway and DNS values. If the VideoPhone is on a private network consult your router's user manual or network administrator.

Broadband Modem not enabled to assign more than one private IP (This is common in DSL environments)

Reset modem. Once booted, connect the VideoPhone and allow the DHCP function to assign an IP (be sure both the **Obtain an IP address automatically** checkbox on the Network Address screen and the **Auto-detect Public IP** checkbox on the Public IP Address screen are checked.

20. Public IP button is not enabled.

VideoPhone hasn't been able to detect IP Address yet.

The VideoPhone can take up to ten minutes to auto detect the public IP Address. Be sure you wait long enough. Also check the DNS settings in the **Network>DNS** screen.

Troubleshooting (continued)

21. VideoPhone reports packet loss.

Incorrect Network Speeds. See Incorrect Network Speeds section in this **Troubleshooting Guide**.

Network line is congested. If the packet loss is from one to six percent it will probably be due to network congestion. The VideoPhone will be able to recover.

22. VideoPhone is not connected to the Internet.

Ethernet cable is not properly plugged into the VideoPhone. Ensure that the RJ-45 cable is properly plugged into the back of the VideoPhone. A steady green light on the Ethernet port indicates a valid link has been made.

Invalid DNS entries. The VideoPhone requires at least one valid DNS entry. Consult your ISP or network administrator for the DNS IP Addresses.

Invalid IP, subnet mask and/or gateway. All three of these values have to be correct for the VideoPhone to function properly. Recheck all of these values. Consult your ISP or network administrator for these values.

23. Incorrect network speeds.

Incorrect entries for network speed. Consult your ISP or network administrator to verify the correct send and receive speeds for your VideoPhone.

Incorrect entries for network speed. While in a call, turn on **Connection Status** from the **View** menu. If the VideoPhone is reporting packet loss, decrease your receive speed until the VideoPhone reports zero percent packet loss. If you are not reading any packet loss, increase your download speed, to the point where you do not report packet loss. The far side might need to increase their upload speed to be greater than or equal to your download speed.

Troubleshooting (continued)

24. VideoPhone does not boot up.

Video is not being displayed on television.

Ensure that the video and audio cables are plugged in correctly to both the VideoPhone and television. The television should be set for video input. Consult your television user manual for support.

The VideoPhone doesn't have power or is not turned on.

Ensure that the AC adapter is plugged into an outlet and the other end is plugged into the VideoPhone. The switch on the back of the VideoPhone must be set to 1 to power on.

Not enough time given to finish booting.

The boot up process could take several minutes. Be sure you wait long enough. If the VideoPhone still doesn't boot up, turn it off for one to two minutes and then turn it back on.

25. Wireless Network Hints and Tips

A wireless network lets you place your **DVC-1100** nearly anywhere you want. However, keep in mind, that range is limited by the number of walls, ceilings, or other objects that the wireless signals must pass through. Typical ranges vary depending on the types of materials and background RF noise in your home or business. The key to maximizing range is to follow these basic principles:

1. Keep the number of walls and ceilings to a minimum - Each wall or ceiling can rob your D-Link Air Wireless product of 3-90 ft. of range. Position your Access Points, Residential Gateways, and computers so that the number of walls or ceilings is minimized.
2. Be aware of the direct line between Access Points, Residential Gateways, and Computers - A wall that is 1.5 feet thick, at a 45 degree angle, appears to be almost 3 feet thick. At a 2-degree angle it looks over 42 feet thick! Try to make sure that the Access Point and Adapters are positioned so that the signal will travel straight through a wall or ceiling for better reception.
3. Building Materials make a difference - A solid metal door or aluminum studs may have a negative effect on range. Try to position Access Points, Residential Gateways, and Computers so that the signal passes through drywall or open doorways and not other materials.

Troubleshooting (continued)

4. Make sure that the antenna is positioned for best reception by using the software signal strength tools included with your product.
5. Keep your product away (at least 3-6 feet) from electrical devices that generate RF noise, like microwaves, Monitors, electric motors, etc.
6. If you are using 2.4GHz cordless phones or X-10 (wireless products such as ceiling fans, lights, and home security systems), your wireless connection will degrade dramatically or drop completely.
7. For the average home, range should not be a problem. If you experience low or no signal strength in areas of your home that you wish to access, consider positioning the Access Point in a location directly between the Residential Gateways.
8. If you would like to extend your wireless range, you may purchase a DWL-800AP+, DWL-900AP+ or DWL-1000AP+ to extend the wireless network. For questions on wireless repeaters please contact sales at 1800-326-1688 There are wireless booster antennas available online, unfortunately D-Link is unable to support/warranty that.

For more troubleshooting information on D-Link wireless devices, please visit <http://support.dlink.com> and search the FAQ section.

Frequently Asked Questions

1 What is D-Link's i2eye?

i2eye (TM) is a breakthrough communications video appliance that provides IP videoconferencing and connects to any standard television. Simple to install and use, the small unit sits on top of the television and contains a video camera that can stream up to 30 frames per second over the Internet to friends, family and business associates.

2 When connecting my DVC-1100 behind a router or firewall, what ports do I need to open?

The VideoPhone needs ports 1720 (TCP) and ports 15328-15333 (TCP and UDP) open to function properly. See the section *Using the DVC-1100 with Routers, Gateways or Broadband Modems* on page 48, or consult your router's documentation or your network administrator for help on doing this. See page 47 when connecting to a D-Link router.

3 I've seen videophones that connect using the phone line, and the picture is always small and choppy. How is i2eye different?

i2eye connects over high-speed broadband, and it delivers up to 30 frames per second. Videophones using a slow analog *plain old telephone* line can't deliver smooth video pictures over their small LCD display. They show what appears to be a series of still pictures rather than full motion video

4 What is the D-Link Directory Service?

The D-Link Directory Service is a D-Link hosted server which allows you to register a "phone number" with your DVC-1100 VideoPhone. When someone with a DVC-1100 dials this "phone number", your DVC-1100 will ring and you will be able to accept a call. In the same manner you can call others by dialing their "phone number". This allows you to contact another DVC-1100 without knowing its IP address. Any DVC-1100 connected to a broadband modem will have the capability of using the Directory Service.

5 Can I use the DVC-1100 with a computer and monitor instead of a TV?

Yes. The DVC-1100 can be used with a computer and monitor instead of a TV. However, you will need a TV Tuner / Video Capture device or a video card that accepts video input from an RCA jack.

Frequently Asked Question (continued)

6 How large will the image be?

As large as the TV screen. The DVC-1100 supports three screen formats. The first is a picture-in-picture mode that has the incoming video covering about half the television screen and the outbound video in a smaller window. The second is full screen mode. This mode displays the incoming video across the entire television screen. The third is connection status mode. This mode displays the picture-in-picture mode and gives you an idea of the upload and download speed.

7 Can I use the DVC-1100 with a non-D-Link directory service?

No. The DVC-1100 is designed to automatically connect to the D-Link Directory Service. This is a free service and is available to anyone with a DVC-1100. The Directory Service allows for calling another DVC-1100 VideoPhone by using a phone number instead of using an IP Address.

8 Do I need a PC to use i2eye?

i2eye is a complete standalone system that handles all the communications, so you don't need a PC. Just connect it to the TV and broadband connection and go. You can also use it with any PC with video input capabilities.

9 How easy is i2eye to setup?

Very easy. When users first turn on i2eye they will be walked through a Setup Wizard that is designed to get the VideoPhone up and working quickly. The wizard asks for the information needed to connect to a broadband Internet connection. Once the information is sent, i2eye will connect to the D-Link i2eye server. The server will assign an "Internet telephone number" to the device. It will not be necessary to work with cumbersome IP addresses when you want to communicate using the i2eye.

Frequently Asked Question (continued)

11 What devices can I connect to with the DVC-1100?

With the DVC-1100 you can connect to any hardware or software that is H.323 compatible. If you are not sure if your hardware or software is H.323 compatible, please contact the manufacturer/developer. If you are using a PC with a Windows operating system, you can use Microsoft NetMeeting with any webcam to connect to the DVC-1100. NetMeeting is a common H.323-compatible videoconferencing software application.

12 What standards drive i2eye?

i2eye is based on the H.323 industry standard video streaming over IP protocol. This ensures that any H.323 compliant device will communicate together seamlessly. i2eye is a broadband appliance that draws from D-Link's seventeen years of experience as a leading Ethernet manufacturer. The DVC-1100 wireless broadband VideoPhone uses the 802.11b standard to connect to a wireless network.

13 Do I have to take every call?

i2eye's configuration menu provides settings for three types of privacy: **Audio Privacy**, **Video Privacy**, and **Do Not Disturb**, so you are in control.

When the Audio Privacy is activated, incoming callers will be able to see video from your end, but not hear you. When the Video Privacy is activated, incoming callers will be able to hear audio from your end, but not see you. When Do Not Disturb is activated, incoming callers will receive a message indicating that you are not available. If you do not answer a call within 10 rings (one minute), the call will terminate and the caller will receive an "Incomplete Call" message.

Glossary of Terms

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

Authentication: The process of verifying a user on a network is who they say they are and preventing unauthorized users from network access.

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).

CIF (Common Intermediate Format): An intermediate video format. When DVC-1100 video is transmitted over a network, the sizes will be CIF, QCIF, or SQCIF. The VideoPhone will default to CIF. CIF resolution is 352 x 288.

Data Encryption: Encoding network traffic so users without proper decryption rights cannot properly decode the data.

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. See Static IP address.

Directory Service: A service that allows users to make videoconferencing calls with telephone numbers. It does this by correlating telephone numbers to actual public IP addresses.

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.

DSL (Digital Subscribers Line): A technology that delivers digital information at a high speed through a user's telephone line. The most common DSL is ADSL (Asymmetrical Digital Subscribers Line) where the download speed is usually much higher than the upload speed.

Ethernet: The port on the back of the DVC-1100 VideoPhone that is used to send and receive data over a network.

Glossary of Terms (continued)

Far side: The remote connection of the videoconference. Your connection is the Local Connection.

Firewall: A security mechanism placed between networks, which restricts certain types of data to devices behind the firewall.

H.323: Standard defining videoconferencing over the Internet.

Home Gateway: A term commonly interchanged with router. Also called a residential gateway.

IP Address (Internet Protocol Address): An IP Address is a number that identifies a computer connected to the Internet. Every computer that is connected to the Internet must have a unique IP Address. An IP Address consists of four sections separated by periods. Each section contains an 8-bit value represented as a number ranging from 0 to 255.

Public IP Address: An IP Address that is not behind a NAT router. This IP Address is visible from the Internet.

Private IP Address: An IP Address that is behind a NAT, which is not visible to the Internet. The preferred ranges for private IP Address are either 192.168.x.x or 10.0.0.x.

Dynamic IP Address: An IP Address for a particular network device (PC, VideoPhone, router) that is dynamically assigned by a router or ISP and will not remain the same from session to session. See DHCP.

Static IP Address: An IP Address for a particular network device (PC, VideoPhone, router) that doesn't change. See DHCP.

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

Keys (Encryption): Encryption keys allow you to easily change wireless encryption settings to maintain a secure network. The encryption key can be of various lengths (e.g., 64, 128 or 256-bit).

Glossary of Terms (continued)

LAN (Local Area Network): A network that is designed to span small distances. These are most commonly used in small buildings, businesses and homes with multiple PCs. See WAN.

NAT (Network Address Translation): A technology that allows multiple network devices to share the same IP Address. NAT devices forward all incoming and outgoing information to the correct network devices. Most NAT devices have firewall capabilities.

QCIF (Quarter Common Intermediate Format): An intermediate video format. QCIF resolution is 176x144. The DVC-1100 VideoPhone will send QCIF-sized video only if the remote endpoint cannot decode CIF.

QoS (Quality of Service): Allows guaranteed bandwidth and packet delivery between network devices over a network.

Router: A device that attaches two or more network devices and forwards data accordingly. Most consumer type routers act as DHCP servers, NATs and simple firewalls.

DMZ (Demilitarized Zone): Devices set up to be in the router's DMZ will see all network traffic.

Port Forwarding: The router will forward public-side incoming information to a specified device on the private side. The router will forward only the data that is received on the specified ports. This is usually set through the advanced settings in the router's web interface. Also known as **Virtual Server** or **Firewall Rules**.

Ports: A port is a specified path in which data travels. Each type of data that is transmitted over the Internet travels down a specified port. A router will forward information from one port to another, and a firewall will open only a specified number of ports.

SQCIF (Subquarter Common Intermediate Format): An intermediate video format. SQCIF resolution is 128x96. The DVC-1100 VideoPhone will send SQCIF-sized video only if the remote endpoint cannot decode CIF or QCIF.

Glossary of Terms (continued)

SLIC (Subscriber-Line Interface Circuit): Provides a phone's analog dial tone, busy tone, dual-tone multiple-frequency (DTMF) generation and decoding, caller ID and ring-signaling functions. The SLIC allows the DVC-1100 to work with a standard telephone without connecting to the phone system.

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

TCP (Transmission Control Protocol): An Internet protocol used by the DVC-1100 VideoPhone in addition to UDP.

UDP (User Datagram Protocol): The Internet protocol most commonly used by the DVC-1100 VideoPhone to send and receive audio and video data.

WAN (Wide Area Network): A network that is designed to span large distances. See LAN.

WEP: (Wired Equivalent Protocol): A wireless security protocol for Wireless Local Area Networks (WLAN). WEP provides security by encrypting the data that is sent over the WLAN. The DVC-1100 supports 3 levels of encryption: 64, 128 and 256-Bit encryption. WEP is **disabled** by default. The WEP setting can be changed to fit an existing wireless network or to customize your wireless network.

WLAN (Wireless Local Area Network): A network without wires, connecting users and devices over a small distance. (See WAN and LAN.)

Technical Specifications

Internal Processor

ARM-9 ASIC Communications Processor

Standards Compliant

ITU H.323 (IP communications)

Video: H.263

Audio: G.711, G.723

Data Rates/Frame Rates

96 Kbps—512 Kbps

Up to 30fps

Video

Up to 30fps CIF (352 x 288 pixels), QCIF (176 x 144)

Picture-In-Picture (PIP)

Automatic contrast control

DVC-1100 Robust Video

Audio

Telephone interface- Full Duplex Audio

Echo cancellation

Voice only to and from Voice over IP endpoints

DVC-1100 Robust Audio

Half-duplex speakerphone

Input/Output

Power

Audio Out

Video Out

10BaseT Ethernet (RJ-45)

SLIC for telephone

External Microphone

802.11b antenna

Camera

Manual tilt

Manual focus

Technical Specifications (continued)

LED Indicators

- Power
- Status
- Video monitor
- WLAN activity
- Network link and transmit

Dialing Capabilities

- Speed dial list allows up to 50 entries
- Manual dialing with telephone handset using Directory Service
- Manual dialing with direct IP entry

Remote Software Update

- Software update, automatic or manual

Network

- Standard: IEEE 802.3
- IP-based network including Ethernet, Cable, DSL, or T-1
- DHCP compliant or fixed IP with subnet mask, DNS and gateway

Wireless

- Standard: IEEE 802.11b
- Data rate: 1, 2, 5.5 & 11 Mbps
- WEP Encryption: 64-bit, 128-bit & 256-bit
- Wireless Frequency: 2.4 GHz

Physical

- Height x Depth x Width
- 1.50" (38mm) x 7.48" (190mm) x 8.07" (205mm)
- Weight:
- 17 oz. (.48 kg)

Electrical

- Power supply:
- Auto-switching 2 Amp; 5.0 Volt output

Patent Pending

List of Country Codes

Code	Country	Code	Country
93	Afghanistan	253	Djibouti
355	Albania	767	Dominica
213	Algeria	809	Dominican Republic
684	American Samoa	593	Ecuador
376	Andorra	20	Egypt
244	Angola	503	El Salvador
809	Anguilla	240	Equatorial Guinea
268	Antigua	291	Eritrea
54	Argentina	372	Estonia
374	Armenia	251	Ethiopia
297	Aruba	500	Falkland Islands
247	Ascension Island	679	Fiji
61	Australia	358	Finland
43	Austria	33	France
994	Azerbaijan	596	French Antilles
242	Bahamas	594	French Guiana
973	Bahrain	241	Gabon
880	Bangladesh	220	Gambia
246	Barbados	995	Georgia
375	Belarus	49	Germany
32	Belgium	233	Ghana
501	Belize	350	Gibraltar
229	Benin	30	Greece
809	Bermuda	299	Greenland
975	Bhutan	473	Grenada
591	Bolivia	671	Guam
387	Bosnia and Hercegovina	502	Guatemala
267	Botswana	224	Guinea
55	Brazil	245	Guinea-Bissau
284	British Virgin Islands	592	Guyana
673	Brunei	509	Haiti
359	Bulgaria	504	Honduras
257	Burundi	852	Hong Kong
855	Cambodia	36	Hungary
237	Cameroon	354	Iceland
1	Canada	91	India
238	Cape Verdi	62	Indonesia
345	Cayman Islands	98	Iran
236	Central African Republic	964	Iraq
235	Chad	353	Ireland
56	Chile	972	Israel
86	China	39	Italy
57	Colombia	225	Ivory Coast
269	Comoros and Mayotte	876	Jamaica
242	Congo	81	Japan
682	Cook Islands	962	Jordan
506	Costa Rica	7	Kazakhstan
385	Croatia	254	Kenya
53	Cuba	965	Kuwait
357	Cyprus	856	Laos
420	Czech Republic	371	Latvia
45	Denmark	961	Lebanon
246	Diego Garcia	266	Lesotho

List of Country Codes (Continued)

Code	Country	Code	Country
231	Liberia	670	Saipan
218	Libya	378	San Marino
423	Liechtenstein	239	Sao Tome and Principe
370	Lithuania	966	Saudi Arabia
352	Luxembourg	221	Senegal
853	Macao	381	Serbia and Montenegro
389	Macedonia	248	Seychelles
261	Madagascar	232	Sierra Leone
265	Malawi	65	Singapore
60	Malaysia	421	Slovakia
960	Maldives	386	Slovenia
223	Mali	677	Solomon Islands
356	Malta	252	Somalia
692	Marshall Islands	27	South Africa
222	Mauritania	82	South Korea
230	Mauritius	34	Spain
52	Mexico	94	Sri Lanka
373	Moldova	290	St. Helena
33	Monaco	869	St. Kitts/Nevis
976	Mongolia	249	Sudan
473	Montserrat	597	Suriname
212	Morocco	268	Swaziland
258	Mozambique	46	Sweden
95	Myanmar (Burma)	41	Switzerland
264	Namibia	963	Syria
674	Nauru	886	Taiwan
977	Nepal	7	Tajikistan
31	Netherlands	255	Tanzania
599	Netherlands Antilles	66	Thailand
869	Nevis	228	Togo (Togolese Republic)
687	New Caledonia	690	Tokelau
64	New Zealand	676	Tonga
505	Nicaragua	216	Tunisia
227	Niger	90	Turkey
234	Nigeria	688	Tuvalu (Ellice Islands)
683	Niue	256	Uganda
850	North Korea	380	Ukraine
967	North Yemen	971	United Arab Emirates
47	Norway	44	United Kingdom
968	Oman	598	Uruguay
92	Pakistan	1	USA
680	Palau	7	Uzbekistan
507	Panama	678	New Hebrides
675	Papua New Guinea	39	Vatican City
595	Paraguay	58	Venezuela
51	Peru	84	Viet Nam
63	Philippines	681	Wallis and Futuna
48	Poland	685	Western Samoa
351	Portugal	381	Yemen
974	Qatar	243	Zaire
40	Romania	260	Zambia
7	Russia	263	Zimbabwe
250	Rwanda		

Contacting Technical Support

Technical Support

You can find the most recent software and user documentation on the **i2eye** website.

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

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:

D-Link i2eye Technical Support over the Telephone:

(800) 93-i2EYE

24 hours a day, seven days a week

D-Link Technical Support over the Internet:

<http://www.i-2-eye.com>

email: support@i-2-eye.com

Tech Support for customers within Canada:

D-Link Technical Support over the Telephone:

(800) 361-5265

Monday to Friday 8:30am to 9:00pm EST

D-Link Technical Support over the Internet:

<http://support.dlink.ca>

email: support@dlink.ca

Subject to the terms and conditions set forth herein, D-Link Systems, Inc. ("D-Link") provides this Limited warranty for its product only to the person or entity that originally purchased the product from:

- D-Link or its authorized reseller or distributor and
- 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, addresses with an APO or FPO.

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

1-Year Limited Warranty for the Product(s) is defined as follows:

- Hardware (excluding power supplies and fans) One (1) Year
- Power Supplies and Fans One (1) Year
- Spare parts and spare kits Ninety (90) days

D-Link's sole obligation shall be to repair or replace the defective Hardware during the Warranty Period at no charge to the original owner or to refund at D-Link's sole discretion. Such 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 in its sole discretion 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 from the date of original retail purchase. If a material defect is incapable of correction, or if D-Link determines in its sole discretion that it is not practical to repair or replace the defective Hardware, the 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 ("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 Warranty Period, the magnetic media on which D-Link delivers the Software will be free of physical defects. D-Link's sole obligation shall be 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 at D-Link's sole discretion. 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. Software will be warranted for the remainder of the original Warranty Period from the date of original retail purchase. 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 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.

- The original product owner must obtain a Return Material Authorization ("RMA") number from the Authorized D-Link Service Office and, if requested, provide written proof of purchase of the product (such as a copy of the dated purchase invoice for the product) before the warranty service is provided.
- 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, with shipping charges prepaid. Expedited shipping is available if shipping charges are prepaid by the customer and upon request.

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: This limited warranty provided by D-Link does not cover: Products, if 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; 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. Repair by anyone other than D-Link or an Authorized D-Link Service Office will void this 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 NON-INFRINGEMENT. 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 NINETY (90) DAYS. 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 NON-CONFORMING 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 the product owner 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 outside the United States, please contact corresponding local D-Link office.

Register online your D-Link product at <http://support.dlink.com/register/>

(02/28/2003)