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**Vivitar®**

**DVR-200**

User Manual



English

040507TP

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## **FCC STATEMENT**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation

**Note:** This equipment has been tested and found to comply with the limits for Class B digital devices, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Use of shielded cable is required to comply with Class B limits in Subpart B of Part 15 of the FCC rules. Do not make any changes or modifications to the equipment unless otherwise specified in the manual. If such changes or modifications should be made, you could be required to stop operation of the equipment.

## SAFETY PRECAUTIONS

- ▲ Do not use this DV camera if it is emitting smoke (or an unusual odor), becomes unusually hot to be touched, produces a peculiar noise, or exhibits any other abnormal conditions.
- ▲ Do not expose the DV camera to moisture and make sure no water gets into the DV camera.
- ▲ Do not touch the power plug during a thunderstorm if you are using the AC power adapter. This may cause an electrical shock.
- ▲ Do not use the DV camera if any foreign objects have entered the DV camera.
- ▲ Do not place the DV camera in an unstable location such as on a wobbly table or sloping surface.
- ▲ Do not insert or drop metallic or other foreign objects into the camera through access points such as the SD memory card slot.
- ▲ Do not attempt to modify this DV camera.
- ▲ Never operate this DV camera in any way while driving a vehicle.
- ▲ Do not cover or wrap the DV camera or the AC power adapter with a cloth or quilt. Always use the DV camera and its accessories in well-ventilated locations.
- ▲ Handle the DV camera carefully and do not bump the DV camera into any hard object.
- ▲ Do not move the DV camera while it is switched on. (If you are using the AC power adapter, unplug the adapter from the AC power outlet after you have switched off the camera.) Ensure that any connector cords or cables to other devices are disconnected before moving the DV camera.
- ▲ When leaving the DV camera unused for long periods, such as during a vacation, always unplug the DV camera from the power source (batteries or AC power adapter) for safety.
- ▲ Handling the USB and AV cables on this product may expose you to lead, a chemical known to the State of California to cause birth defects or other reproductive harm. **Wash hands after handling.**

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# INTRODUCTION

## Overview

Your new digital video camera is a miniature camcorder that will capture motion video as well as 2 megapixel still images.

Using the 1.5" TFT color image LCD monitor, you can record images and then review them in detail.

64MB internal (built-in) memory lets you capture and store video and images without the need for an additional memory card. However, you may wish to expand the memory capacity of your camera (up to 512 MB) by purchasing a Secure Digital (SD) memory card.

Video clips and images that you have captured can be transferred to your computer using the USB cable. A USB driver is required only for Windows 98 users. Windows Me/2000/XP users may simply plug their camera directly into a USB port on their PC and begin transferring images to your computer. If you have a memory card, you may also wish to purchase an SD card reader for your PC. A card reader makes downloads even faster and more efficient.

You can enhance and retouch your images and videos on your computer using the provided editing software, or other software you may already own.

You may share your images and videos with your friends via e-mail, in a report, or on a website. The possibilities are endless.

When shooting digital still images, an automatic flash sensor detects the shooting (lighting) conditions and determines whether the flash should be used for your digital still images. This feature helps ensure that your still images turn out right.

We truly hope you enjoy your new DV camera!

## Package contents

Carefully unpack your new DV camera and ensure that you have the following items. In the event that any item is missing or damaged, promptly contact Vivitar Customer Service.

- Digital video camera
- User's manual
- USB cable
- AV cable
- Camera strap
- Camera pouch
- Software CD-ROM

## Optional accessories

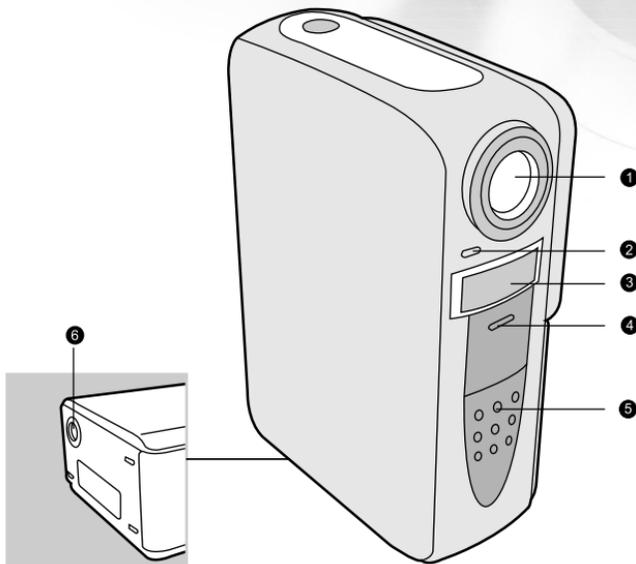
- SD memory card
- AC power adapter
- 2 x AA alkaline batteries

### Note:

- The product and accessories that come with your camera may be different from those described in this manual. This is due to the fact that different retailers often specify slightly different product inclusions and accessories to suit their market requirements, customer demographics, and geographical preferences. Products often vary between retailers especially with accessories such as batteries, chargers, AC adapters, memory cards, cables, carrying cases/pouches, and language support. Occasionally a retailer will specify a unique product color, appearance, and internal memory capacity. Contact your dealer for precise product definition and included accessories.
- For drivers, revisions to this manual, and manuals in other languages please updates, refer to our website.

# GETTING TO KNOW YOUR DIGITAL VIDEO CAMERA

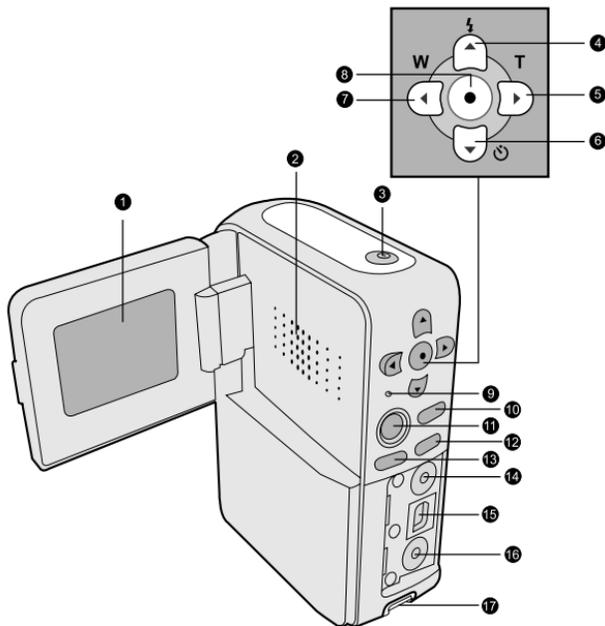
## Front view



1. Lens
2. Microphone
3. Flash
4. Self-timer LED
5. Battery/SD card cover
6. Tripod socket

## Rear view

1. LCD monitor
2. Speaker
3.  Power/Menu button
4.  Arrow (up)  
 Flash
5.  Arrow (right)  
T Zoom in
6.  Arrow (down)  
 Self-timer
7.  Arrow (left)  
W Zoom out
8. Record/ Stop
9. System LED indicator
10. OK OK  
 Digital zoom
11.  Still-Image shutter
12.  Delete
13.  Playback  
 Pause
14. AV OUT (Audio/Video Out) jack
15. USB connector
16. DC-in connector
17. Strap eyelet



## LCD information

These indicators are displayed when recording still-images or video clips:

1. Zoom state

2. Sound level

(applies to video only)

🔊 Low sound level

🔊 Mild sound level

🔊 Medium sound level

🔊 High sound level

🔊 Fully sound level

🔊 OFF Mute

3. Battery level

🔋 Full battery power

🔋 Fairly consumed

🔋 Nearly exhausted

🔋 Virtually no battery power

4. Memory Card indicator

5. Flash mode

🔦 Auto flash (Auto 1)

🔦 Auto flash (Auto 2)

🔦 Flash off

6. Self-timer indicator

(still images only)

7. White balance

Automatic (no icon)

☀ Daylight

🌑 Shade

⚡ Fluorescent-1

⚡ Fluorescent-2

💡 Lamp (incandescent)

8. EV compensation

9. Still-Image resolution

🖼 Large 1600 x 1200

🖼 Medium 800 x 600

10. Possible number of shots remaining

11. Still image mode icon

12. Image/ Video quality

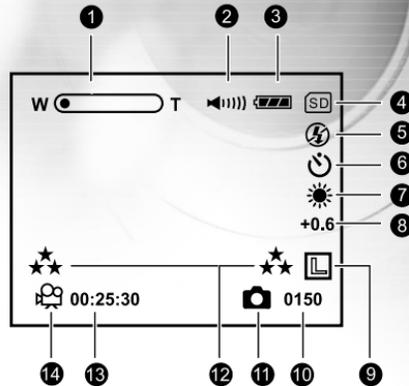
☆☆ Super fine

☆ Fine

★ Normal

13. Recordable movie time available

14. Record mode icon



These indicators are displayed when playing back video clips:

1. Folder number and video number

2. Sound level

🔊 Low sound level

🔊 Mild sound level

🔊 Medium sound level

🔊 High sound level

🔊 Fully sound level

🔊 OFF Mute

3. Battery level

🔋 Full battery power

🔋 Fairly consumed

🔋 Nearly exhausted

🔋 Virtually no battery power

4. Memory Card indicator (if present)

5. Pause / Play indicator

6. Counter

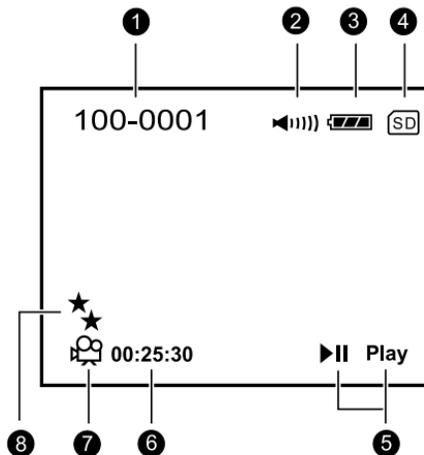
7. Movie icon

8. Video quality

★★ Super fine

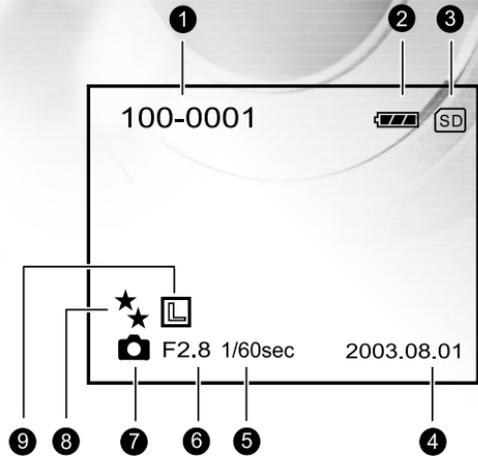
★ Fine

★ Normal



These indicators are displayed when playing back still images:

1. Folder number and image number
  2. Battery level
  3. Memory Card indicator (if present)
  4. Date (if date imprint is on)
  5. Exposure time for this image
  6. Aperture value for this image
  7. Still image icon
  8. Image quality
  9. Image size
- ★★ Super fine
  - ★ Fine
  - ★ Normal
  - 📄 Large 1600 x 1200
  - 📄 Medium 800 x 600



## LED indicators and audible tones

Indicator	Status	Description/Activity	Sound
LED indicator	Solid green	The camera is powering up	No
LED indicator	Solid green	The camera is powered and ready	Yes *(1)
LED indicator	Blinking red	Charging the flash	No
LED indicator	Blinking green	Image is being recorded to the memory card	No
LED indicator	Blinking green	USB communication/transfer in progress	No
LED indicator	Solid green	The camera is ready to record images (or movies)	Yes *(1)
Self-timer indicator	Blinking blue	The still-image self-timer function is activated	Yes *(1)
-	-	Error message	Yes *(3)
-	-	Valid button event	Yes *(1)

\*(1) The camera sounds one beep.

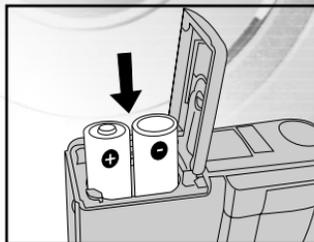
\*(3) The camera sounds three beeps.

## GETTING STARTED

You can use 2 AA size batteries (Alkaline, Ni-MH), one CR-V3 or an AC power adapter (optional accessory) to power your DV camera. Battery power is convenient for capturing images or video clips while an AC power adapter is useful when transferring images to your computer.

### Installing the batteries

1. Slide the battery cover downward (away from the lens).
2. Insert the batteries, noting correct polarity (+ or -).
3. Close the battery cover.

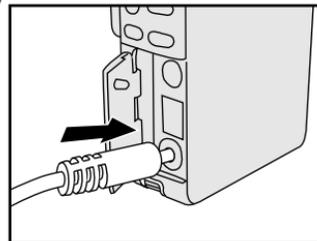


#### Note:

- If you will not be using the batteries for an extended period of time, remove them from the camera to prevent leakage or corrosion.
- Never use manganese batteries.
- Never use batteries of different type (together) or mix old and new batteries.
- Avoid using batteries in extremely cold environments as low temperatures can shorten the battery life and reduce camera performance. (Such damage is not covered under the warranty).

## Using an AC power adapter (optional accessory)

1. Connect one end of the AC power adapter to the jack labeled "DC IN".
2. Connect the other end to an electrical outlet.



### Note:

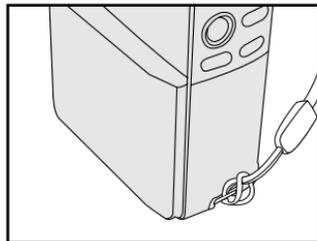
- Make sure to use only the AC power adapter specified for the camera. Damage caused by the use of an incorrect adapter is not covered under the warranty.
- Using an AC power adapter while transferring images to your computer prevents unexpected automatic power off of the camera.

## Attaching the hand strap

To prevent accidental dropping of the camera, always use the hand strap.

Attach the hand strap as follows:

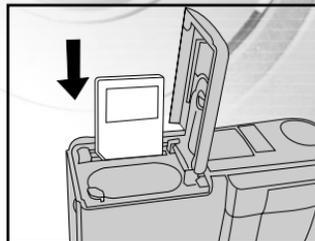
1. Thread the small loop of the hand strap through the strap eyelet on the camera.
2. Pull the large loop through the small loop until the strap is firmly secured.



## Inserting an SD memory card (optional accessory)

The camera comes with 64MB of internal memory, allowing you to record video clips and captured images. However, you may expand the memory capacity by using an optional Secure Digital (SD) memory card so you can store more images and video clips.

1. Slide the battery cover downward (away from the lens)
2. Insert the SD memory card pins-first, so that the label of the card faces the battery. When inserted in the correct orientation, the edge of the memory card should protrude only about 1/16<sup>th</sup> of an inch, well below the edge of the camera body.
3. Close the battery/memory card cover.

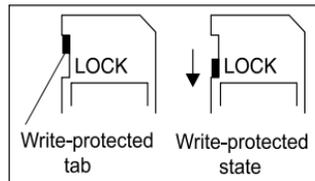


## To remove an SD memory card

1. Make sure the camera is off.
2. Open the SD/battery card cover.
3. Press lightly on the edge of the memory card and it will eject.

### Note:

- To prevent valuable data from being accidentally erased from an SD card, you can slide the write protect tab (on the side of the SD memory card) to "LOCK".
- To save, edit, or erase data on an SD memory card, you must unlock the card.



## Turning on your digital video camera

1. Swing the LCD panel away from the camera body.
2. Press and hold the power/menu button on the top to turn on your camera.  
Hold the power button for about two seconds.
  - To turn off your digital video camera, press again  power/menu button.  
Hold the power button for about four seconds.



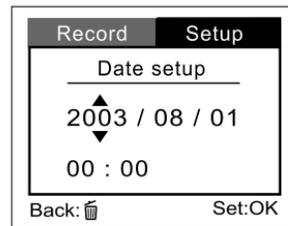
## Setting the date and time

The date and time setting screen will automatically appear when:

- The camera is powered-on for the first time;
- The camera is powered-on after the batteries have been removed for an extended period of time.

## To adjust the date or time at any other time:

1. With the camera ON, press the  power/menu button briefly.
2. Select Setup menu by using the  or  buttons.
3. Press the  button to enter the main menu.
4. Select Date setup by using the  or  buttons, and press the  button.
  - To increase the value for each option, press the  button.
  - To decrease the value for each option, press the  button.
  - Press the  button to move to the next field.
5. When all options are set, press the  button.
6. To exit the menu mode press the  power/menu button again.



# CAPTURING STILL IMAGES

## Basic settings

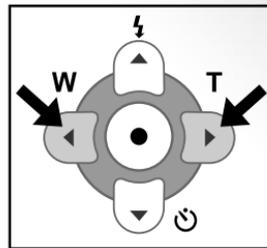
### Digital zoom (Preview)

Using the digital zoom, the image in the LCD display can be enlarged by pressing the (T) telephoto button so that the subject appears closer or appears further away by pressing the (W) wide-angle button.

#### Note

- although the image in the LCD may be zoomed up to 2.5x, the still-image will be captured at 1X (no zoom.)

1. Turn on your digital video camera.
2. Open the LCD monitor.
3. Press the (T) telephoto button to activate the zoom function.
  - Digital zoom's range is from 1x to 2.5x.
  - The digital zoom magnification appears on the LCD monitor.
4. Use the (T) telephoto button or (W) wide-angle button to adjust the zoom state.



#### Note:

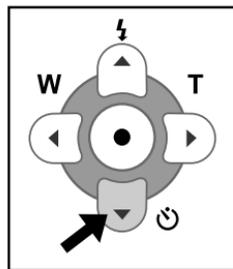
- It is not possible to capture a zoomed still-mage (Only videos use zoom for capture).

## Self-timer

Use the self-timer when taking group shots. The self-timer duration is 10 seconds. After the self-timer is set, the shutter automatically releases after 10 seconds.

The self-timer LED starts blinking slowly for 7 seconds and then rapidly for the last 3 seconds. The self-timer can be used for still-images, not videos.

1. Secure your camera on a tripod or place it on a stable surface.
2. Turn on your camera.
3. Compose the picture.
4. Press the  self-timer button.
  - The count down is displayed on the LCD monitor.
5. Press the  shutter button.
  - To cancel the self-timer photography at any time, press the self-timer again to disrupt the sequence.



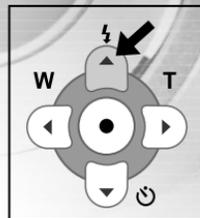
### Note:

- After an image is taken using the self-timer, the self-timer mode is turned off.
- If you wish to take another image using the self-timer, repeat these steps.

## flash

The flash is designed to function automatically when lighting conditions warrant the use of flash. You can capture an image using a suitable flash mode to your circumstances. The flash works only with still images and is disabled when capturing a video.

1. Turn on your camera.
2. Press the  button repeatedly until your desired flash mode appears on the LCD monitor.
3. Compose the picture and press the  shutter button.



The camera has three flash modes: Auto flash (Auto 1), Auto flash (Auto 2) and Flash off.

Flash Mode	Description
 Auto Flash (Auto 1)	The flash fires automatically according to the ambient lighting conditions. Use this mode for general photography.
 Auto Flash (Auto 2)	The flash fires automatically according to the ambient lighting conditions. Use this mode for close photography.
 Flash Off	The flash will not fire. Select this mode when taking images in a place where flash photography is prohibited, or when the distance to the subject is beyond the effective range of the flash.

## Image resolution and quality

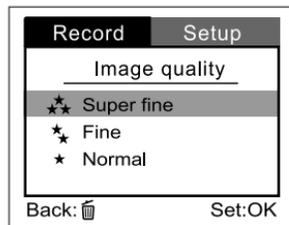
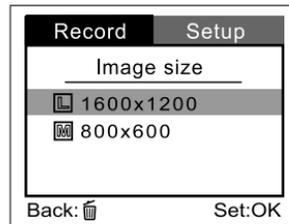
You can select resolution and compression settings for your still images. You may select still image resolution of either 1600x1200 and 800x600. Use 1600 x 1200 higher resolution if you prefer a larger print. However, this will also produce a larger file size.

You may also specify an image compression setting, selecting from Super Fine, Fine, and Normal. Higher quality images will yield better images, but require more memory space.

High resolution and quality settings are recommended for printed output and situations requiring the finest detail. Lower resolution and quality images take up less memory space and may be quite suitable for sharing images via e-mail, in a report, or on a web page.

To change image resolution and quality settings:

1. Press the  to display the menu options.
2. Select Record menu by using the  or  buttons.
3. Press the  button to enter the main menu.
4. Select Image size or Image quality by using the  or  buttons, and press the  button.
5. Change the settings with the  or  buttons and then press the  button.
6. Press the  again to exit from the menu mode.
7. Compose your picture.
8. Press the  button.



## Number of recordable images

The frame counter indicates the approximate number of images that can be stored in the internal memory (or SD memory card ) at the current image quality and resolution settings. The number of recordable images will vary depending on the recorded subject (scene complexity) and the capacity of the memory card.

Resolution	Quality	Compression ratio	64MB internal memory	64MB SD memory card
1600 x 1200 pixels 	Super fine	4:1	91	86
	Fine	8:1	136	129
	Normal	12:1	182	173
800 x 600 pixels 	Super fine	4:1	364	346
	Fine	8:1	546	519
	Normal	12:1	728	692

\* The above data shows the standard testing results. The actual capacity varies according to shooting conditions and settings.

# RECORD MODE

## Recording video clips

The digital video camera records MPEG-4 video at a resolution of 320x240 pixels at a frame rate of 25 fps.

1. Press the  power/menu button to turn on your camera.
2. To start recording a video clip by press the  record button.
  - The zoom state, the battery level, card indicator, the movie mode and the elapsed time will display on the LCD monitor when recording a video clip.
  - To stop recording, press the  record button again.



The table below indicates the approximate duration of recording time that you can record at each setting based on 64MB internal memory.

Resolution	Video Quality	Estimated Recording Time
320 x 240 pixels	☆☆ Super fine	Approx. 5 min.
	★ Fine	Approx. 12 min.
	★ Normal	Approx. 17 min.

### Note:

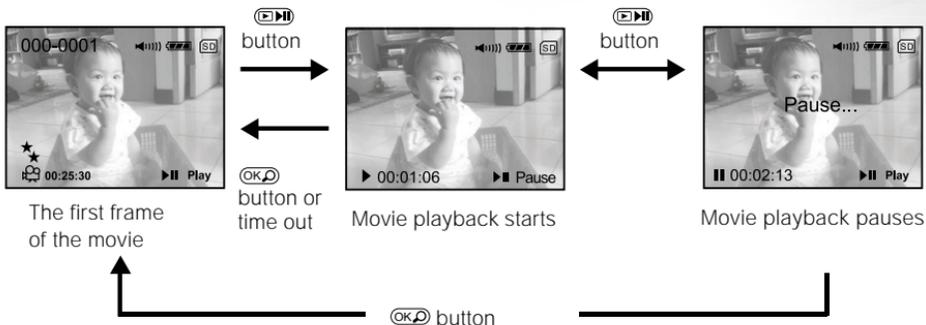
- In record mode, the digital zoom function can be used.
- In record mode, the self-timer cannot be activated.
- In record mode, the flash mode is automatically set to [Off].
- In record mode, the minimum illumination level is 110 lux.

## Viewing video clips

To view a recorded video clip, follow these steps:

1. Turn on your camera.
2. Press the  playback/ pause button.
3. Select the video clip you want to view by using the  or  buttons.
  - To pause playback at any time, press the  playback/ pause button again.
  - To stop playback, press the  button.

Pressing the  or the  button while playing a video clip will change the status as follows:



### Note:

- While viewing a recorded video clip, press the OK button to display thumbnail images.
- To play a video clip on your PC use Windows Multi-media Player 9.0. WMP version 8 (or earlier) will not play an MPEG-4 ASF video file. Please update to WMP 9 version from [www.microsoft.com](http://www.microsoft.com). Also note that Windows 98 Second edition, Me, 2000, or XP is required.
- To adjust the sound level, press the  button will increase the volume, press the  button to decrease the volume.

## PLAYBACK MODE

In the  playback mode, you can view, magnify, protect, and delete images. You can even run a slide show. Playback mode also provides a thumbnail image display, allowing you quickly search for the image or movie you want.

### Viewing images

1. Turn on your camera.
2. Press the  playback/ pause button.
3. Select the image you want to view by using the  or  buttons.
  - To view the previous image, press the  button.
  - To view the next image, press the  button.
  - The LCD monitor displays the detailed information such as image size, image quality, date, exposure time, aperture value, file and folder number.



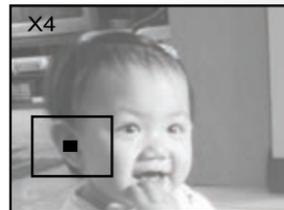
#### Note:

- You can also view your images on the TV screen. Connect one end of the A/V cable to the A/V OUT jack of the camera and the other end to the video input socket on your TV. Turn on both TV and DV camera and press the button to display images and videos on your TV screen.
- When connected to a TV the LCD monitor on your DV camera will automatically turn off to save power.
- You may specify the video-output standard (NTSC or PAL) in the setup menus.

## Zoom playback

While reviewing your still-images, you may enlarge (zoom -in) a selected portion of the image. This magnification allows you to view fine details.

1. Turn on your camera.
2. Press the  playback/ pause button.
  - The last image frame appears on the LCD monitor.
3. Use the ◀ or ▶ buttons to select the frame you want to enlarge.
4. Zoon-in by pressing the  button.
  - When the image is enlarged, you will see a red frame with a red box inside. The red frame indicates the entire image, while the red box shows the location of the currently enlarged area within the context of the entire image.
5. Use the ▲, ▼, ◀ or ▶ buttons to select the area to enlarge.
6. To display the regular size, press the  button.



### Note:

- Press the OK (zoom) button cycles the display: 1x -> 2x -> 4x -> Thumbnail-> 1x

## Displaying thumbnail images

This function allows you to view up to nine thumbnail images on the LCD monitor simultaneously so that you can quickly scan for a particular image.

1. Turn on your camera.
2. Press the  playback/ pause button.
  - The last image frame appears on the LCD monitor.
3. Press the  button.
  - Nine thumbnail images appear on the LCD monitor (assuming there are nine or more recorded images in the memory).
4. Use the , ,  or  buttons to move the cursor to select the image to be displayed at regular size.
5. Press the  button to display the selected image on the full screen.



### Note:

- While displaying thumbnail images, press the  delete button, the screen will display "Delete this ?" you may choose [Yes] or [No] by using the  /  buttons. To confirm your choice, press the  button.

## Slide show display

The slide show function enables you to play your images back automatically in sequential order as a slide show. This is a very useful and entertaining feature reviewing recorded images and for presentations.

1. Turn on your camera.
2. Press the  playback/ pause button.
3. Press the  power/menu button.
4. Select Slide show by using the  or  buttons, and press the  button.
5. Set the playback interval by using the  or  buttons and press the  button.
  - The slideshow starts displaying your images on the LCD monitor, one by one, at the specified interval.
  - To stop the slide show, press the  button.
  - To pause the slide show display, press the  playback/ pause button.
  - To resume the slide show, press the  playback/ pause button again.



### Note:

- You can adjust the slideshow display interval within the range of 1 to 9 seconds.

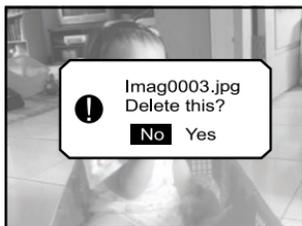
## Deleting video clips and images

Your still-images and video clips are stored in either internal memory, or on an SD memory card. Whenever a memory card is inserted, the camera will automatically use the card, exclusively, in preference to internal memory. If the card is removed, the camera will revert to using internal memory. It is possible to have images stored on both card and internal memory.

To delete a video clip or image that has been recorded in internal memory, do not insert a memory card in the camera.

### Delete one video clip/ image at a time

1. Turn on your camera.
2. Press the  playback/ pause button to view the recorded video clips/images.
3. Select an unwanted video clip/image by using the  or  buttons.
4. Press the  button.
5. "Delete this?" message appears on the image.
  - Use the  or  buttons to select [Yes], and then press the  button to confirm.
  - If you want to cancel the deletion, select [No].
6. Repeat the above steps to delete further video clips or images.
  - If all video clips/images are deleted, the  [No images!] message pops up.

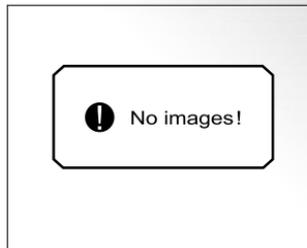


## Delete all video clips/images at once

1. Press the  playback/ pause button to view the recorded video clips/ images.
2. Press the  menu button.
3. Select Playback menu by using the  or  buttons.
4. Select "Delete all" by using the  or  buttons, and then press the  button.
5. Use the  or  buttons to select [Yes], then press the  button to confirm.

A progress bar displays, indicating the progress of deleting.

- If you want to cancel the deletion, then select [No].
- If all video clips/images are deleted, [  No images!] pops up.
- To return to the preview mode, press the  or  shutter/record buttons.

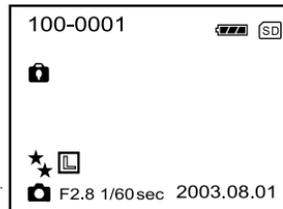


## Protecting video clips/images

You can protect video clips or images from accidental erasure by selecting the protection function in the Playback menu. To protect an image or video follow the steps:

### Protecting one video clip/image

2. Turn on your camera.
3. Press the  playback/ pause button, then press the menu button.
4. Select Protect by using the ▲ or ▼ buttons, and press the ► button.
5. Use the ▲ or ▼ buttons to select " One image " and then press the ► button.
  - To protect all images, select " All images " in this step.
6. Select " Lock " by using the ▲ or ▼ buttons and then press the  button.
  - If a video clip/image is protected, the protection icon will appear on the protected clip or image
  - To exit the playback menu, press the  or  shutter/record buttons.



### Removing protection from a video clip/image

1. Perform the steps above 1 to 4 in " Protecting one video clip/image ".
2. Select " UnLock " by pressing the ▲ or ▼ buttons and then press the  button to confirm.

# SYSTEM CONNECTIONS

## Installing the USB Driver on a Windows PC

The USB driver on the CD-ROM is exclusively for Windows 98 Second Edition. Windows 2000, Me, XP computers do not need to install the USB driver.

1. Insert the product CD-ROM into the CD-ROM drive. The welcome screen appears.
2. Click "Install USB Driver". Follow the on-screen instructions to complete the installation. After the USB driver installation is complete, restart your computer.



Connecting the Camera to Your Computer to download your images and movies clips:

1. Connect one end of the USB cable to an available USB port on your computer.
2. Connect the other end of the USB cable to the USB connector on the camera.
3. Turn the camera on. Your computers operating system will recognize the camera.
4. From the Windows desktop double click on "My Computer"
5. Look for a new "removable disk" icon. This "removable disk" is actually the memory (or memory card) in your camera. Typically, the camera will be assigned drive letter "e" or higher.
6. Double click on the removable disk and locate the DCIM folder.
7. Double click on the DCIM folder to open it to find more folders such as "100CAMEA". Your recorded images and video clips will be inside these folders.
8. Copy & Paste or Drag-N-Drop image and video files to a folder on your computer

### Note:

- When the camera is turned on and connected to your computer, it is considered to be a disk drive, just like a floppy disk or CD. You can download (transfer) images by copying them from the "removable disk" to your computer hard driver as described in the prior section.

Open the “removable disk” and subsequent folders by double clicking on them. Double click on the folder. Your images are inside these folder(s). Select the images that you want, then choose “Copy” from the “Edit” menu. Open the destination location (folder) and choose “Paste” from the “Edit” menu. You may also drag and drop image files from the camera to a desired location.

Note:

- Memory card users may prefer to use a memory card reader (highly recommended). Memory card readers offer advantages in terms of convenience, speed, and cost-savings. While connected to your computer the batteries in your camera will be continue to be used. A card reader, which has no batteries and uses USB power from your computer, will save considerably on batteries.

## Installing PhotoSuite

PhotoSuite is a very user-friendly image-editing program. With PhotoSuite, you can retouch, compose and organize your images. It contains a variety of templates, such as photo frames, birthday cards, calendars and more. Get your images ready and go explore this amazing program.

### To Install PhotoSuite

1. Insert the CD-ROM packaged with the camera into the CD-ROM drive.  
The welcome screen appears.
2. Click “Install PhotoSuite”. Follow the on-screen instructions to complete the installation.

Note:

- For information on how to use PhotoSuite to edit and retouch your recorded images, please refer to its online help.
- For Windows 2000/XP users, make sure to install and use the PhotoSuite while logged in as a user with an Administrator account.



## Installing PhotoVista

PhotoVista is an easy-to-use program that lets you create spectacular 360° panoramic images in a snap. When you view these panoramas, you get the experience of being totally immersed in a realistic environment. PhotoVista's powerful engine quickly and automatically stitches images together, and its intuitive interface will let even a novice get great results in minutes.

### To Install PhotoVista

1. Insert the CD-ROM packaged with the camera into the CD-ROM drive.  
The welcome screen appears.
2. Click "Install PhotoVista". Follow the on-screen instructions to complete the installation.



#### Note:

- For information on how to use PhotoVista to create spectacular 360° panoramic images, please refer to its online help.
- For Windows 2000/XP users, make sure to install and use the PhotoVista while logged in as a user with an Administrator account.
- For Windows XP users which OS version does not include Service Pack 1 or higher, be sure to link to <http://java.sun.com/getjava/download.html> first and download the Java Virtual Machine installation. For more detail information about Java, please refer to its on-line help at <http://java.sun.com/getjava/help.html>.  
Photovista system requirements: Windows 98/200/Me/XP (Service Pack 1 or higher)

## Installing WinDVD Creator SVCD

WinDVD Creator is an easy-use software to help you to edit recorded video clips and make your own DVDs. WinDVD Creator lets you easily transfer your recorded videos from a camcorder, add picture, music, titles, transitions between scenes, special effects or edit the length you prefer. This program also includes Automatic Scene Detection that automatically breaks up the video you transfer into both short clips and scenes.

### To Install WinDVD Creator SVCD

1. Insert the CD-ROM into the CD-ROM drive.
2. Click "Install WinDVD Creator SVCD". Follow the on-screen instructions to complete the installation.



### WinDVD Creator System requirements:

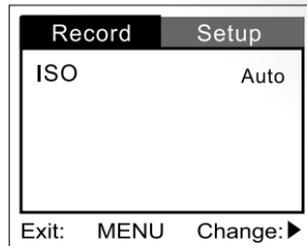
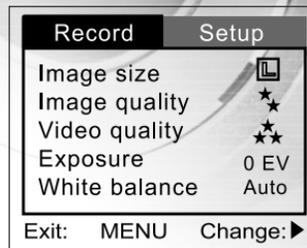
Computer Component	Minimum Requirement	Recommended
Processor	Celeron 800Mhz	Pentium III 600Mhz *For Direct DVD Support, requires P4 1.6GHz higher for real-time requirement
RAM	128 MB	256MB
Operating System	Windows 98SE / ME	2000 / XP
Sound	On board AC'97 Codec	Windows compatible sound card that supports 48KHz playback (PCI recommended)
Video	On board Windows compatible PCI graphic card (overlay support is recommended)	Windows compatible AGP or PCI graphic card (overlay support is recommended)
Hard Drive available spece	* 70 MB * 620MB for every hour of VCD quality MPEG-1 video * 2 GB for every hour of DVD quality MPEG-2 video	
CD or DVD burner	Required for VCD and DVD burning	
Video sources	DV cameras, camcorders.	

# Menu Options

## Record Menu

You can use the Record menu to select still-image size(resolution), image quality or video quality. You can also adjust exposure, white balance or ISO speed.

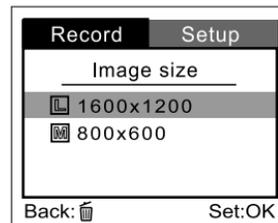
To access the Record menu, press the  button.



## Image size

Set the desired image size.

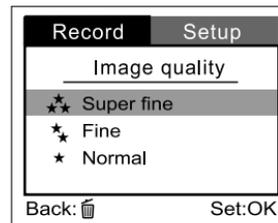
-  1600 x 1200
-  800 x 600



## Image quality

Set the still-image quality (compression ratio) at which the image is saved.

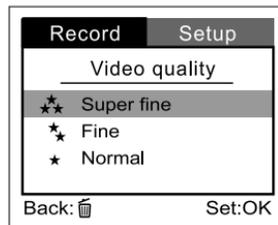
- ★★ Super fine
- ★ Fine
- ★ Normal



## Video quality

Set the video quality (compression ratio) at which the video clip is saved.

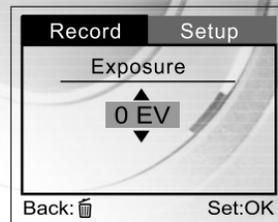
- ★★ Super fine
- ★ Fine
- ★ Normal



## Exposure

Your DV camera adjusts the exposure of each scene automatically. However, if the subject is very dark, or very bright, you may override the DV camera automatic exposure determination to make the subject brighter or darker. This is called EV compensation. The EV compensation of your DV camera can be adjusted from -1.8EV to +1.8EV in 0.3EV step.

To select the EV compensation you wish, first press the ► button. Increase or decrease the EV compensation and press the ▲ or ▼ buttons to confirm.



### Suggestions for using EV Compensation

Use Positive (+) Compensation for-

- Imaging printed text (black characters on white paper)
- Backlit portraits
- Very bright scenes (such as snowfields) and highly reflective subjects
- Shots made up predominantly of sky

Use Negative (-) Compensation for-

- Spot lighted subjects, particularly against dark backgrounds
- Imaging of printed text (white characters on black paper)
- Scenes with low reflectivity, such as shots of green or dark foliage

## White balance

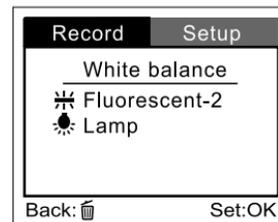
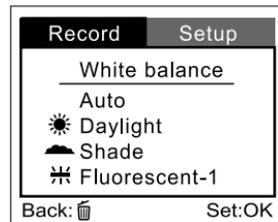
The human eye adapts to changes in light so that white objects still appear white even when the light changes. With DV camera, however, the color of the subject is influenced by the color of the light surrounding it. This color adjustment is called "white balance adjustment".

This setting allows you to set the white balance when taking photographs under specific lighting condition.

To set the white balance, first press the  button. Then choose the white balance you prefer by using the  or  buttons, then press  button to confirm.

Auto: Automatic adjustment

- [  ] Daylight: For recording outdoors on a bright day
- [  ] Shade: For recording outdoors on a cloudy day
- [  ] Fluorescent-1: Cool white flourescent (W3900-4500K)
- [  ] Fluorescent-2: Day white flourescent (W4600-5400K)
- [  ] Lamp: For recording under lamp light

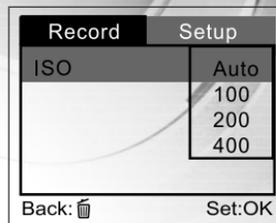


## ISO

You may specify the ISO to be used when an image is taken. A higher ISO sensitivity value increases the camera's sensitivity to light. However, higher ISO also introduces more noise (speckles) into the image. With a higher sensitivity selected, images can be taken with less light.

To set the ISO speed, first press the ► button. Then choose the ISO speed you prefer by using the ▲ or ▼ button, then press  button to confirm.

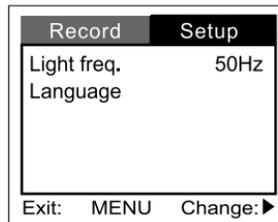
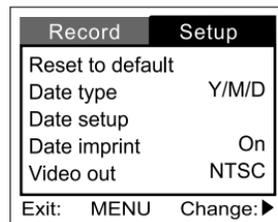
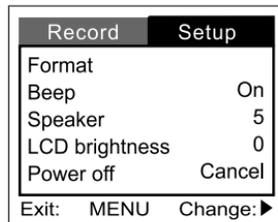
- [Auto] : Automatic ISO adjustment
- [100 ] : Sensitivity equivalent to ISO100
- [200 ] : Sensitivity equivalent to ISO200
- [400 ] : Sensitivity equivalent to ISO400



## Setup Menu

You can select your preferences and DV camera settings in Setup mode. Press the **Ⓞ** power button and navigate to the option you wish to configure by using the **▲** or **▼** buttons.

Setup menu items: Format, Beep, Speaker, LCD brightness, Power off, Reset to default, Date type, Date setup, Date imprint, Video out, Light freq. and Language.



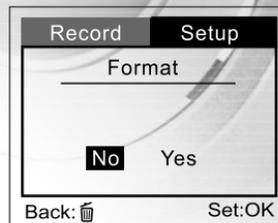
## Format

This option formats the internal memory (or SD memory card) and erases all stored images and data.

To perform the format function, first press the ► button. Then select [No] or [Yes] by using the ◀ or ▶ buttons, then press **OK** button to confirm. A progress bar displays the formatting progress.

[ No ] : Does not format the internal memory/SD card

[YES] : Formats the internal memory/SD card and erase all images

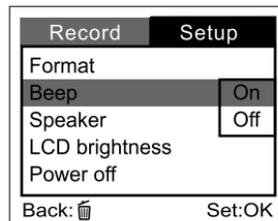


## Beep

The DV camera will make a sound (beep) each time you press a camera button if this function is enabled. Press the ► button. Select [On] or [Off] by using the ▲ or ▼ buttons, then press **OK** button to confirm.

[On] : Enable beeper

[Off] : Disable beeper



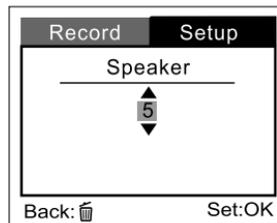
## Speaker Volume

You may adjust the volume of the speaker - used when movies are played back.

To set the sound level, first press the ► button.

Then increase or decrease the sound using the ▲ or ▼ buttons, then press  button to confirm.

The volume level can be adjusted from 0 to 5.



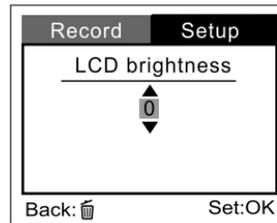
## LCD brightness

This option adjusts the brightness of the LCD monitor.

To adjust the LCD brightness, first press the ► button.

Then increase or decrease the LCD brightness by using the ▲ or ▼ buttons, then press  button to confirm.

The adjustment is from -5 to +5.



## Power off

If your DV camera is unused for a certain period of time while the camera is powered on, the DV camera will switch to an idle mode, and eventually turn itself off to conserve power.

Inactivity period (Batteries)	Inactivity period (AC Power Adapter)	Camera Status
60 seconds	60 seconds	Stay idle
3 minutes	30 minutes	Shut off

If the camera is idle, re-activate the camera by pressing any button. If the camera has powered-off then you must turn the camera on again by pressing the **Ⓟ** power button.

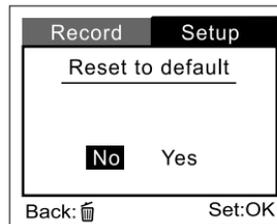
To change the power saving interval, first press the **▶** button. Then select the power-off interval you prefer by using the **▲** or **▼** buttons and then press **ⓄK** button to confirm.

Select from [3 Min], [5 Min], [10 Min], [30 Min], [Cancel]

## Reset to default

If you wish to restore all camera settings to their original settings, select this option and then press the **▶** button.

Then select [ No ] or [Yes] by using the **◀** or **▶** button and then press **ⓄK** button to confirm.



## Date type

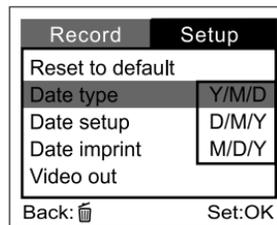
You can select the date type that is imprinted on your image.

To set the date type, first press the ► button. Then select the date type you prefer by using the ▲ or ▼ buttons and then press  button to confirm.

[Y/M/D] : Year/Month/Day

[D/M/Y] : Day/Month/Year

[M/D/Y] : Month/Day/Year



## Date setup

After removing the batteries from the camera, the date and time will return to the default setting. If this happens, you may reset the date and time.

For more information about the date setup, refer to "Setting the date and time".

## Date imprint

If you select the imprint feature, the date will be embedded into your images.

To enable this function, first press the ► button. Then select [On] or [Off] by using the ▲ or ▼ buttons and then press  button to confirm.

### Video out frequency

You can view your images on a TV or record them to a video tape. Remember to select the video output standard appropriate to your location.

To set this option, first press the ► button. Then using the ▲ or ▼ button to select your TV receiving system [NTSC] or [PAL] and then press **OK** button to confirm.

- [NTSC] : Select this format when located in the U.S.A., Canada, Japan, Korea, Taiwan, Central America or Mexico.
- [ PAL ] : Select this format when located in Australia, Belgium, China, Denmark, Finland, Germany, Great Britain, Holland, Italy, Kuwait, Malaysia, New Zealand, Singapore, Spain Sweden, Switzerland, Thailand or Norway.

### Light freq.

You may set the frequency of the camera sensor to work optimally with local lighting.

To set this option, first press the ► button. Then using the ▲ or ▼ button to select [50Hz] or [60Hz] and then press **OK** button to confirm.

### Language

This option allows you to select the operating language for the menus and the texts displayed on the LCD monitor.

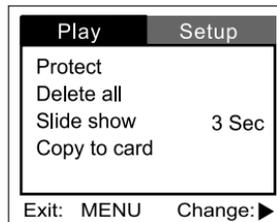
- The provided languages are [English], [Français], [Deutsch],[Español], [Portuguès], [Italiano], [日本語], [ 繁體中文 ], [ 简体中文 ]

## Playback menu

Use the Playback menu to transfer your recorded video clips/captured images to a memory card or to create an on-camera slide show displaying. You may also use the Playback menu to protect or delete all images from the camera's memory card or an internal memory.

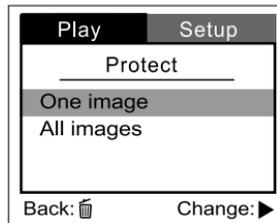
To access the Playback menu, press the  button first and then press the  button. Scroll through the menu options by using the  /  button.

Playback menu items: Protect, Delete all, Slide show and Copy to card.



### *Protect*

This feature prevents images from being deleted accidentally. Refer to section in this manual titled "Protecting video clips/images" for further detail.



## Delete all

Refer to section in this manual titled "Deleting video clips/ images"

## Slide show

Your camera can display your images sequentially as a slide show at a selected interval.

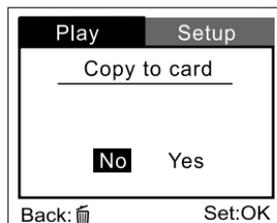
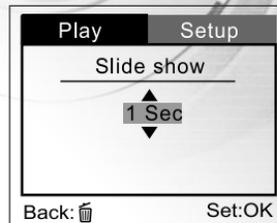
[1 Sec], [3 Sec], [5 Sec], [7 Sec], [9 Sec]

## Copy to card

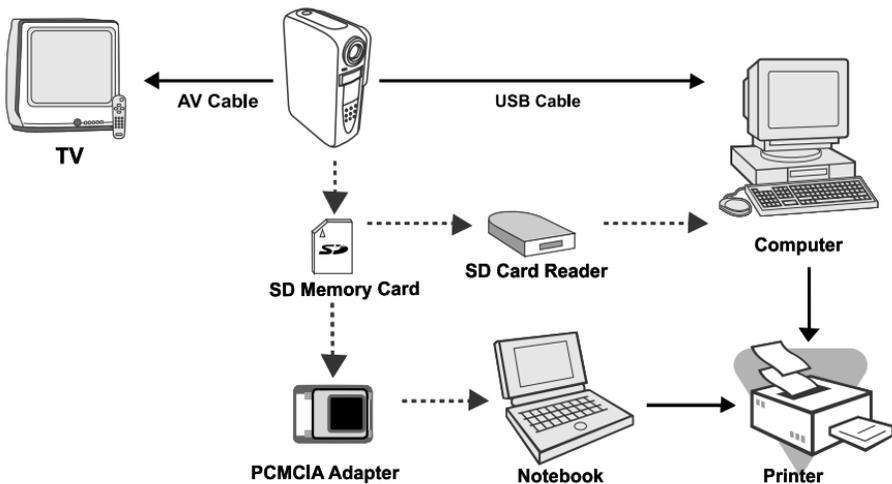
This feature allows you to copy your images from the camera's internal memory to a memory card. Of course, you can only do this if you have a memory card installed and some images in internal memory.

[ No ]: Does not copy the images

[Yes]: Copy all images to the memory card



# CONNECTING YOUR DIGITAL VIDEO CAMERA TO OTHER DEVICES



## CAMERA SPECIFICATIONS

Item	Description
Image sensor	1/2" CMOS
Effective pixels	2.0 Mega Pixels
Still image resolution	1600 x 1200; 800 x 600
Video image resolution	320 x 240
Image quality	Super fine , Fine, Normal
Recording media	64MB internal memory; SD memory card (optional)(up to 512 MB)
Lens	F-no:2.8, 5G All glass, Focus range: 1.4m-infinity
LCD monitor	High resolution(130k dots)1.5" LTPS color LCD
Self-timer	10-second delay
Digital zoom	Video mode: up to 2.5X/ Playback mode: 2X/4X
Exposure compensation	Automatic with Manual EV compensation: -1.8 ~ +1.8 EV (0.3 EV steps)
White balance	Automatic with presets for Daylight, Shade, Fluorescent 1, Fluorescent 2, Lamp
ISO	Automatic/ 100/ 200/ 400
Light frequency	50/ 60Hz
Video & Audio formats	MPEG 4 SP (video); IMA-ADPCM(Audio)
Supported standards	EXIF 2.1, DCF1.1, JPEG
Interface	DC IN jack, USB connector, VIDEO OUT jack (NTSC or PAL)
Power	2 x AA Alkaline batteries(optional), 2 x AA Ni-MH batteries(optional) CR-V3(optional), AC power adapter (3.0V/2.5A)(optional)
Software applications	For still-image:PhotoSuite & PhotoVista For video : WinDVD Creator SVCD Windows Media Player 9.0 (WMP*.ASF file)
Dimensions	90mm x 65mm x 31mm (3.5"x2.6"x1.2")
Weight	Approx 123g (4.4 ounces)(without batteries and the SD memory card)

\* Design and specifications are subject to change without notice.

# APPENDIX

## Error Messages

LCD MONITOR DISPLAY	MEANING
MEMORY ERROR	Internal memory access error
CARD ERROR	Optional SD card access error
MEMORY FULL	There is not enough memory space to store another image or video clip in the internal memory.
NO IMAGES	There are no images stored in the internal memory or on an optional SD card
USB ERROR	USB transmission error
CARD FULL	There is not enough space to store image or video clip on the SD card
LOW LIGHT	Poor lighting will diminish image quality
"LOW BATTERY" "AUTO" "6"	The battery power is nearly exhausted and is going to shutdown within 6 seconds. The screen will display a shut-down (count-down) timer (from 6 to 1).