



Gateway®



DV-S20
digital MPEG 4
camcorder
user's guide

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Introducing Your Gateway Digital MPEG4 Camcorder

This section provides basic information about your Gateway Digital MPEG4 Camcorder.

Read this section to learn about:

- Features
- Warnings and safeguards
- Package contents
- Controls and connections

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Features

- MPEG4-compressed format
- 2.1 mega pixel CMOS sensor and 2.5 digital zoom
- 320 × 240 QVGA video
1600 × 1200 resolution still images
- Three quality settings — Super fine, fine, and normal
- 1.5-inch color LTPS LCD display that swivels 270 degrees
- Auto flash
- Accurate color processing
- 64 MB internal memory to capture and store images
- Accepts external SD memory cards (up to 512 MB)
- AV connection to your TV or VCR
- USB connection to download images to your computer
- Video editing, creating, and sharing software
- Photo editing, printing, and sharing software

Important Safeguards

Warning



Risk of electric shock - Do not open

To reduce the risk of electric shock, do not modify your camcorder or open the case. There are no user-serviceable parts inside. Opening the case voids the warranty.

Have your camcorder repaired by qualified service personnel only.

Warnings and precautions

- Disconnect all cables before moving your camcorder. Moving your camcorder with its cables attached may damage the cables and cause fire or electric shock danger.
- Do not expose your camcorder to rain or moisture.
- Do not drop your camcorder.
- Do not try to operate your camcorder while driving a vehicle.
- Keep your camcorder away from excessive dust, high temperatures, moisture, or direct sunlight.

- Disconnect your camcorder and remove the batteries when not used for a long period of time.
- Do not use any other batteries than ones specified for your camcorder.
- Never use different types of batteries together (alkaline and Ni-MH) or mix old and new batteries.
- Disconnect your camcorder and remove the batteries if your camcorder acts in any way abnormal while following normal operating instructions.
- Do not place your camcorder on an unstable cart, stand, or table. Your camcorder may fall, causing serious damage.
- Never place your camcorder near or over a radiator or heat source.

Package contents

Along with your camcorder, the packaging box contains the following items:

Camcorder strap



Two AA batteries



USB cable



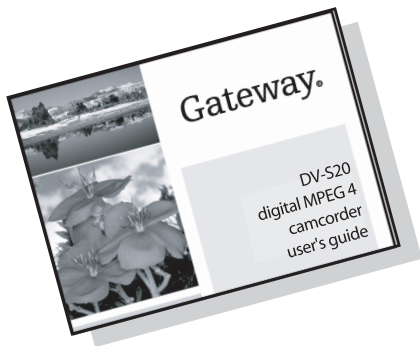
AV cable



Software



User's guide



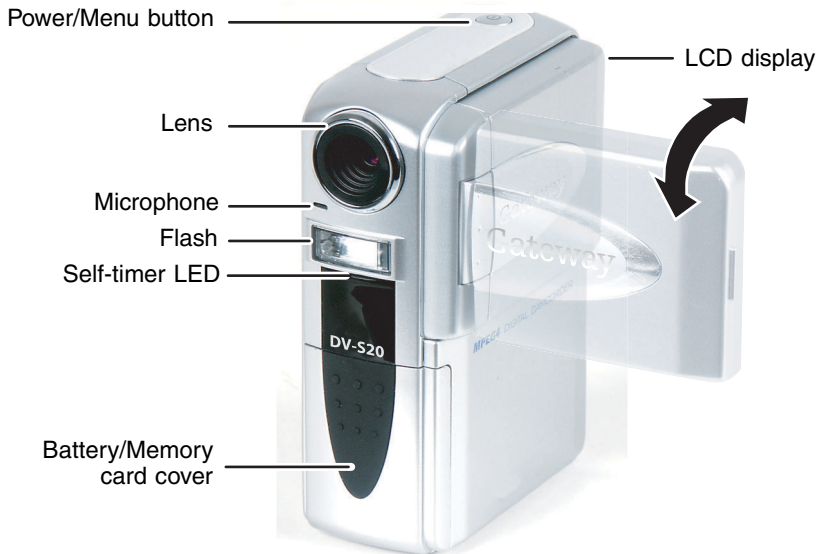
Accessories

You can purchase these optional accessories for your camcorder:

- Accessory kit:
 - AC adapter
 - Battery charger and rechargeable batteries
 - Carrying pouch
 - Tripod
- SD memory cards
- SD memory card reader

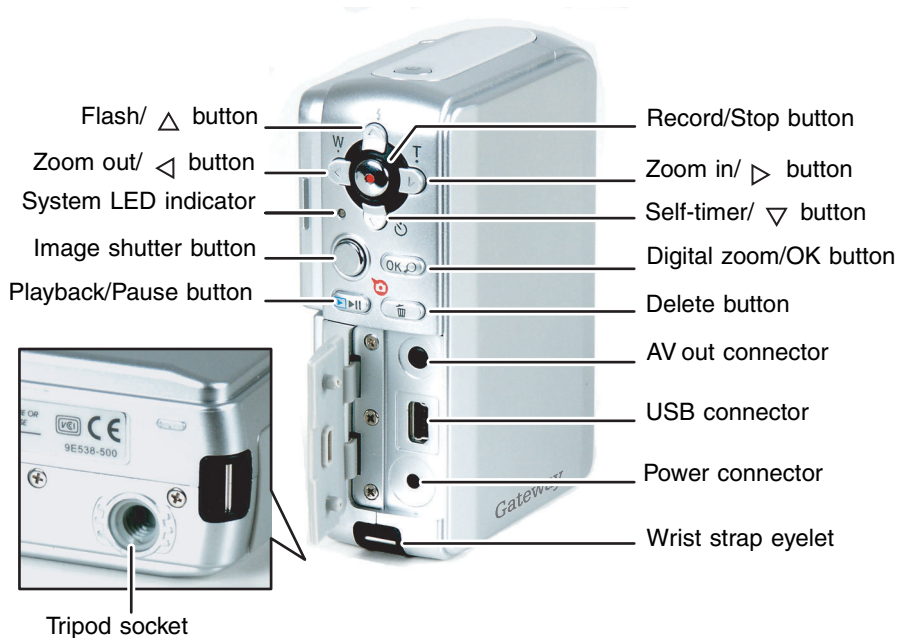
Contact Gateway for these and other accessories.




Front



Item	Description
Power/Menu button (top)	Turns your camcorder on and off and enters the OSD (on-screen display). For more information, see “Using the OSD” on page 21.
Lens	Lets light into your camcorder to capture images.
Microphone	Records audio.
Flash	Activates when lighting conditions are dark.
Self-timer LED	Blinks blue when in self-timer mode.
Battery/Memory card cover	Open to install batteries and optional SD memory cards.
LCD display	Open to view images you are recording. You can also view images previously recorded using playback mode. The LCD swivels 270 degrees.

Back



Item	Description
Flash/  button	Manually activates flash mode. For additional information, see “Using the flash” on page 33. OSD active: Moves up through menu options.
Zoom out/  button	Reduces the zoom level. OSD active: Enters a menu and moves to the next item field.
System LED indicator	Displays system status. For additional information, see “LED indicators and audible beeps” on page 50.
Image shutter button	Takes still photographs with your camcorder.
Playback/Pause button	Activates playback mode. Press this button again to pause recording or playback. For additional information, see “Viewing images” on page 36.
Record/Stop button	Starts and stops image recording.
Zoom in/  button	Enlarges the zoom level. OSD active: Enters a menu and moves to the next item field.

Item	Description
Self-timer/ ▽ button	<p>Activates the self-timer. For additional information, see “Using the self-timer” on page 35.</p> <p>OSD active: Moves down through menu options.</p>
Digital Zoom/OK button	<p>Activates digital zoom. For additional information, see “Using the digital zoom” on page 34.</p> <p>OSD active: Saves menu changes.</p>
Delete button	Deletes any images that you do not want to keep.
AV out connector	Plug the AV cable in here to send still images or video to an external device, such as a TV or VCR.
USB connector	Plug the USB cable in here to transfer still images or video to your computer.
Power connector	Plug the optional AC power adapter in here. The power adapter does not charge batteries.
Wrist strap eyelet	Attach the wrist strap for your camcorder here.
Tripod socket (bottom)	Attach a tripod here to stabilize your camcorder during filming.

Getting Started

Read this section to learn how to:

- Connect the wrist strap
- Install the batteries
- Install an optional SD memory card
- Turn on your camcorder
- Set the date and time
- Use the OSD (on screen display) menus

Connecting the wrist strap



To connect the wrist strap:

- 1 Find the wrist strap that came with your camcorder.
- 2 Thread the small looped end of the wrist strap through the wrist strap eyelet on your camcorder.



- 3 Pull the large looped end of the wrist strap through the small loop until the strap is secure.

Installing the batteries

To supply power to your camcorder, use either two AA size batteries (alkaline or Ni-MH) or use an AC power adapter (optional).

Warning



Never use different types of batteries together (alkaline and Ni-MH) or mix old and new batteries.

Tips & Tricks



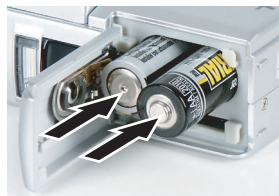
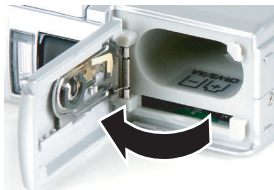
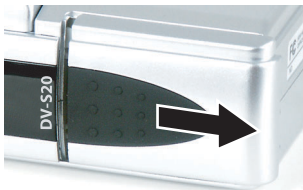
Use rechargeable batteries. See “Accessories” on page 8.

To save battery power, an optional AC power adapter is useful for transferring still images or video to your computer, TV, or VCR.



To install the batteries:

- 1 Slide open the battery cover.
- 2 Insert the two AA batteries into your camcorder. Make sure that you match the + and – on the batteries with the + and – symbols inside the battery compartment.



- 3 Close the battery cover.

Warning



To protect your camcorder from battery leakage or corrosion, remove the batteries if you will not be using your camcorder for an extended period of time.

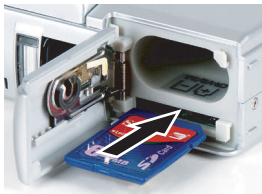
Installing an optional SD memory card

Your camcorder comes with 64 MB of internal memory to record video and still images. However, you can also expand the memory capacity of your camcorder using optional SD memory cards. Your camcorder uses the SD memory card first, then uses internal memory.



To install an SD memory card:

- 1 Slide open the SD memory card cover.
- 2 Insert the SD memory card. The SD memory card is keyed and will only fit in the slot one way.

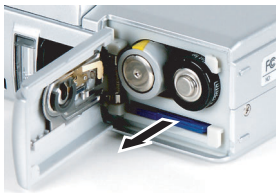


- 3 Close the SD memory card cover.



To remove an SD memory card:

- 1 Make sure that your camcorder is turned off.
- 2 Slide open the SD memory card cover.
- 3 Press in gently on the visible edge of the SD memory card to eject it.



Tips & Tricks



To prevent valuable data from being accidentally erased, slide the write protect tab (on the side of the SD memory card) to "LOCK."

Turning on your camcorder



To turn on your camcorder:

- Press and hold the **Power/Menu** button on the top of your camcorder for two seconds.

Setting the date and time

The date and time setting screen automatically appears:

- The first time you turn on your camcorder.
- When you replace the batteries.

Go to “Using the OSD” on page 21 for more information on making changes to OSD menus.

Using the OSD

Your camcorder features an on-screen display (OSD) that lets you adjust and save date/time, image resolution, and other settings. Your camcorder saves changes you make to the settings, even if you turn it off.



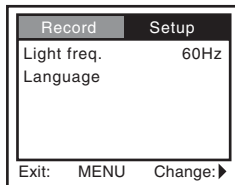
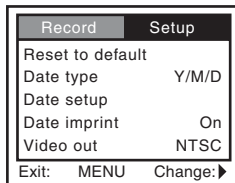
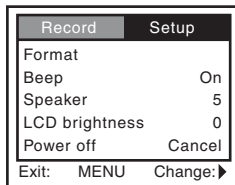
To access the OSD:

- 1 Turn on your camcorder.
- 2 Open the LCD display on your camcorder 90 degrees.
- 3 Press the **Power/Menu** button on your camcorder to open the OSD.
- 4 Press the ◀ or ▶ buttons to select the OSD menu.
- 5 Press the ▲ and ▼ buttons to select the option you want to change.
- 6 Press the ◀ or ▶ buttons to change settings.
- 7 Press the **OK** button when you have finished making your changes.
- 8 Press the **Power/Menu** button to exit the OSD.

OSD Menu

Description

Setup



Format. Formats and erases the internal memory. Also formats and erases an optional SD memory card.

Beep. Turns audible mode on and off. Your camcorder beeps whenever a button is pressed when this mode is on.

Speaker. Turns the volume of the built-in speaker up or down.

LCD brightness. Adjusts the brightness of the LCD display.

Power off. Sets the power save mode.

Reset to default. Resets camcorder settings to the factory default.

Date type. Selects the date format that will be imprinted on your images.

Date setup. Sets the date and time.

Date imprint. Turns date imprinting on and off.

Video out. Select NTSC format for U.S., Canada, and Mexico.

Light freq. Sets the frequency for the CMOS sensor.

Language. Changes the language of the OSD menus.

OSD Menu

Description

Record

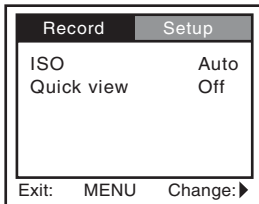
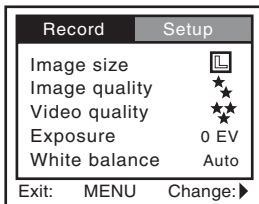


Image size. Sets the resolution. Choose between 1600 × 1200 and 800 × 600.

Image quality. Sets the compression ratio of the still image. Choose between Super fine, Fine, and Normal.

Video quality. Sets the compression ratio for video files. Choose between Super fine, Fine, and Normal.

Exposure. Manually adjusts the exposure for dark or light images.

Add positive compensation for bright light, backlit portraits, or text.

Add negative compensation for spot lighting, reverse text, or low lighting.

White balance. Set to Auto or manually adjust the color balance for Daylight, Shade, Fluorescent 1, Fluorescent 2, or Lamp.

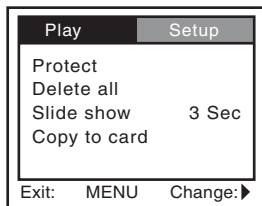
ISO. Sets photographic speed. Choose between Auto, 100, 200, and 400.

Quick view. Displays a still image on the LCD display immediately after you have taken the photograph.

OSD Menu

Description

Play



Protect. Prevents video and still images from being deleted.

Delete all. Deletes all video and still images from the internal memory or optional SD memory card.

Slide show. Displays recorded still images sequentially at a selected interval.

Copy to card. Copies all video and still images from the internal memory to an optional SD memory card.

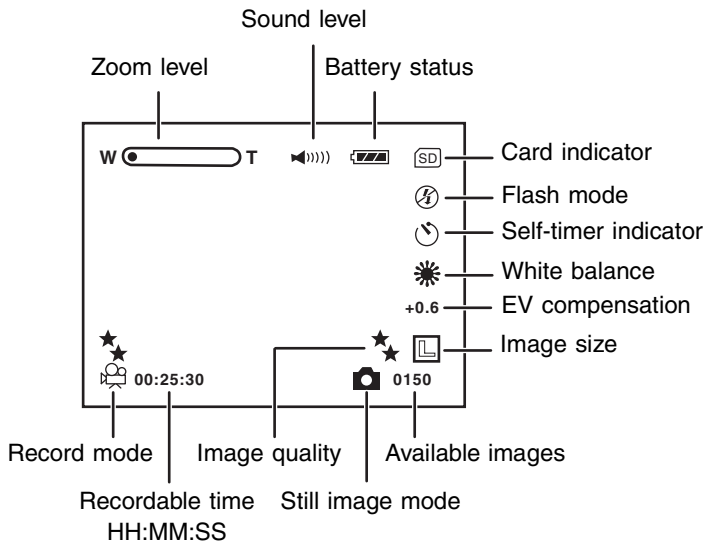
Using your camcorder

Read this section to learn about:

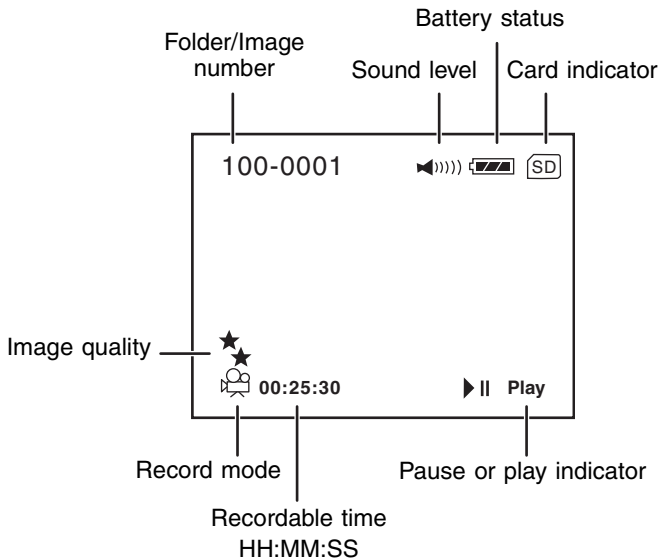
- Understanding LCD display information
- Understanding image quality and storage
- Recording video and still images
- Using the flash (still images only)
- Using the digital zoom (video only)
- Using the self-timer (still images only)
- Viewing video and still images
- Deleting video and still images

Understanding LCD display information

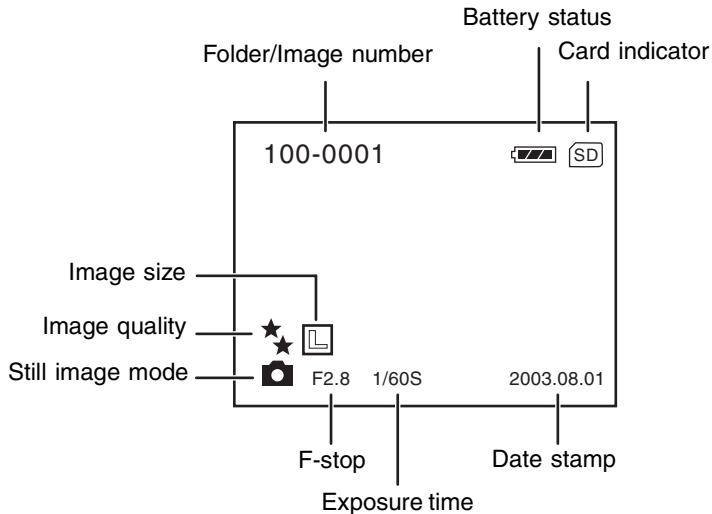
The following information appears on the LCD display when you are recording video and still images.



The following information appears on the LCD display when you are in video playback mode.



The following information appears on the LCD display when you are in still image playback mode.



Understanding image quality and storage

Resolution and quality settings determine the pixel size (dimension), image file size, and compression ratio for your video and still images.

Your camcorder has three image quality settings:

- Super fine
- Fine
- Normal

The Super fine setting provides the highest resolution and quality. However, this setting generates larger files that require more memory storage space. The Super fine setting is recommended for printed output.

The Normal setting provides lower resolution and smaller files that take up less memory storage space. The Normal setting is good for sharing images through e-mail or displaying them on a Web page.

Number of recordable images

The table below indicates the approximate number of still images that can be stored in your camcorder's internal memory and with an optional SD memory card.

Resolution	Still Image Quality	64 MB Internal Memory	128 MB SD Memory Card	256 MB SD Memory Card	512 MB SD Memory Card
1600 × 1200	Super fine	91	176	352	704
1600 × 1200	Fine	137	264	528	1056
1600 × 1200	Normal	183	352	704	1408
800 × 600	Super fine	366	704	1408	2826
800 × 600	Fine	549	1058	2116	4232
800 × 600	Normal	732	1410	2820	5640

Video quality and estimated recording time

The table below indicates the approximate recording time at each setting based on 64 MB internal memory and using an optional SD memory card.

Resolution	Video Quality	64 MB Internal Memory	128 MB SD Memory Card	256 MB SD Memory Card	512 MB SD Memory Card
320 × 240	Super fine	5 min.	10 min.	20 min.	40 min.
320 × 240	Fine	10 min.	20 min.	40 min.	80 min.
320 × 240	Normal	18 min.	36 min.	72 min.	144 min.

Recording video and still images

Your camcorder can record video and still images.



To record video:

- 1 Turn on your camcorder.
- 2 Open the LCD display on your camcorder 90 degrees.
- 3 Press the **Record/Stop** button.
- 4 Press the **Record/Stop** button again to stop recording.



To record still images:

- 1 Turn on your camcorder.
- 2 Open the LCD display on your camcorder 90 degrees.
- 3 Press the **Image shutter** button.

Using the flash

Your camcorder has three flash modes for taking still images:

- Auto flash (intensive)
- Auto flash (extensive)
- Flash off

Auto flash (intensive). The flash fires automatically according to the ambient lighting conditions. Use this mode for general photography.

Auto flash (extensive). The flash fires every time. Use for this mode for distance photography.

Flash off. Flash is turned off.



To set the flash mode:

- 1 Turn on your camcorder.
- 2 Open the LCD display on your camcorder 90 degrees.
- 3 Press the **OK** button repeatedly until the flash mode that you want appears on the LCD display.

Using the digital zoom

Use the digital zoom to enlarge video. The digital zoom's range is from 1x to 2.5x.

Digital zoom is only available when digital zoom mode is turned on and you are filming video. You can use digital zoom to help you to see clearly when you are recording still images, but the images will be recorded at 1x.



To use the digital zoom:

- 1 Turn on your camcorder.
- 2 Open the LCD display on your camcorder 90 degrees.
- 3 Press the **Digital zoom** button to activate the zoom mode.
- 4 Use the **Zoom in** and **Zoom out** buttons to adjust the zoom level. The digital zoom level appears on the LCD display.

Using the self-timer

Use the self-timer so you can join the picture when taking group shots. After the self-timer is set, the self-timer lamp blinks slowly for 7 seconds, then blinks rapidly for the last 3 seconds prior to shutter release. Self-timer mode automatically turns off after an image is taken.



To use the self-timer:

- 1 Attach your camcorder to a tripod or place it on a stable surface.
- 2 Turn on your camcorder.
- 3 Open the LCD display on your camcorder 90 degrees.
- 4 Compose the photograph.
- 5 Press the **Self-timer** button, then press the **Image shutter** button to activate the count-down. The count-down appears on the LCD display.

Press the **Self-timer** button again to cancel the self-timer.

Tips & Tricks



The LCD display swivels 270 degrees so you can join the picture and watch the LCD display at the same time.

Viewing images

In playback mode, you can view, magnify, protect, or delete all images. Playback mode also provides a thumbnail image display, letting you quickly find the image you want.

Still image files



To view recorded still images:

- 1 Turn on your camcorder.
- 2 Open the LCD display on your camcorder 90 degrees.
- 3 Press the **Playback/Pause** button to view recorded still images.
- 4 Select the still image you want to view using the ◀ or ▶ button.

Zoomed playback

While reviewing your images, you can enlarge a portion of an image.



To use zoom playback:

- 1 Turn on your camcorder.
- 2 Open the LCD display on your camcorder 90 degrees.
- 3 Press the **Playback/Pause** button to view recorded still images.
- 4 Select the still image you want to view using the ◀ or ▶ button.
- 5 Press the **Digital Zoom** button to adjust the zoom level.

A red frame with a red box inside appears. The red frame indicates the entire image, while the red box shows the location of the zoomed area.

- 6 Use the arrow buttons to move the zoomed area.
- 7 Press the **Digital Zoom** button to return to the normal size.

Displaying thumbnail images

Thumbnail mode lets you to view nine small images on the LCD display simultaneously so you can quickly find a specific still image.



To use thumbnail mode:

- 1 Turn on your camcorder.
- 2 Open the LCD display on your camcorder 90 degrees.
- 3 Press the **Playback/Pause** button to view recorded still images.
- 4 Select the still image you want to view using the ◀ or ▶ button.
- 5 Press the **OK** button multiple times to select thumbnail mode. Up to nine small images appear on the LCD display.
- 6 Use the arrow buttons to select the image you want to displayed at regular size.
- 7 Press the **OK** button to display the selected still image at normal size.

Slide show display

Slide show mode lets you playback your still images automatically in sequential order as a slide show viewed on the LCD display. To view the slide show on your TV or computer, see “Connecting your camcorder” on page 43.



To use slide show mode:

- 1 Turn on your camcorder.
- 2 Open the LCD display on your camcorder 90 degrees.
- 3 Press the **Playback/Pause** button, then press the **Power/Menu** button to enter the OSD. For additional information, see “Using the OSD” on page 21.
- 4 Select **Slide show** from the **Play** menu.
- 5 Use the \triangle and ∇ buttons to select the playback interval, then press the **OK** button.

Press the **Playback/Pause** button to pause the slide show.

- 6 Press the **OK** button to stop the slide show.

Video files



To view recorded video files:

- 1 Turn on your camcorder.
- 2 Open the LCD display on your camcorder 90 degrees.
- 3 Press the **Playback/Pause** button to view recorded video.
- 4 Select the video file you want to view using the ◀ or ▶ button.

Press the **Playback/Pause** button again to pause the playback.

- 5 Press the **OK** button to stop the playback.

To play the video file back on your computer, we recommend you use Windows Media Player 9.0. If your Windows Media Player version is 7.0 or less, your computer will not be able to read the video file (*.ASF). Update the Media Player version from Microsoft's Web site at www.microsoft.com.

Deleting images

All files stored in the internal memory or on an optional SD memory card can be removed.




To delete one image at a time:

- 1 Turn on your camcorder.
- 2 Open the LCD display on your camcorder 90 degrees.
- 3 Press the **Playback/Pause** button to view recorded still images.
- 4 Select the still image you want to delete using the ◀ or ▶ button.
- 5 Press the **Delete** button. A *Delete this?* message appears.
- 6 Use the ▶ button to select **Yes**, then press the **OK** button to confirm.
- 7 Go back to Step 4 to delete additional images.



To delete all images at once:

- 1 Turn on your camcorder.
- 2 Open the LCD display on your camcorder 90 degrees.
- 3 Press the **Playback/Pause** button, then press the **Power/Menu** button to enter the OSD. For additional information, see “Using the OSD” on page 21.
- 4 Select **Delete all** from the **Play** menu.
- 5 Use the  button to select **Yes**, then press the **OK** button to confirm. A progress bar appears as image files are deleted.

Files are deleted from an SD memory card first, then from your camcorder's internal memory.

Connecting your camcorder

You can view video and still images on:

- Your computer
- Your TV or VCR



To connect to your computer:

- Connect the small square end of the USB cable that came with your kit to your camcorder, then connect the other end to your computer.

See the documentation that came with your computer for additional information.

Tips & Tricks



If you have purchased an optional SD memory card reader, you can transfer video and still images to your computer. See the documentation that came with the SD memory card reader for instructions.



To connect to your TV or VCR:

- 1** Connect the single connector of the AV cable that came with your kit to the video out connector on your camcorder.
- 2** Connect the yellow video connector on the AV cable to the yellow video in jack on the back of your TV or VCR.
- 3** Connect the red (R) and white (L) audio connectors to the R and L audio-in jacks on the back of your TV or VCR.

See the documentation that came with your TV or VCR for additional information.

Tips & Tricks



Connect your camcorder to transfer the recorded video and still images to tape.

Software

After you have connected your camcorder to your computer, you can edit recorded video and still images with Pinnacle Studio 8 SE.



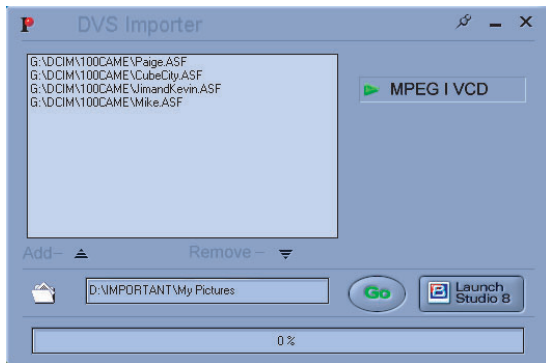
To load the software:

- Insert the CD that came with your camcorder into the CD or DVD drive. Setup runs automatically. Follow all screen prompts.



To use the software:

- 1 Click **Start, All Programs, Studio 8, Tools**, then click **DVS Importer**. The *DVS Importer* window opens.



- 2 Click **Add**. The *Destination* dialog box opens.
- 3 Navigate to the folder that contains the video files, click each file you want to convert, then click **Open**.

- 4 Click the **Set Destination Folder** icon, then select the destination folder where you want to store the finished video files.
- 5 Click **Go**. The files are converted into the correct format.
- 6 Click the **Launch Studio 8** button to launch Studio 8 SE.

For instructions on how to use Studio 8 SE, see the online documentation and help files.

Troubleshooting

Use the following information to understand error messages and indicator status.

Error messages

MEMORY ERROR

Internal memory access error.

CARD ERROR

Optional SD memory card access error.

MEMORY FULL

There is not enough to memory to store the image.

NO IMAGES

There are no images stored in internal memory or on an optional SD memory card.

NO CARD

There is not an optional SD memory card loaded in your camcorder.

USB ERROR

USB transmit error.

MEMORY FULL

XXX OF XXX IMAGES COPIED

STORAGE HAS NOT ENOUGH MEMORY SIZE

XXX — Number of images

“LOW BATTERY” “AUTO” “6”

Battery power is low and your camcorder is going to shut-down within 6 seconds. The LCD display will also show the count-down (from 6 to 1).

LED indicators and audible beeps

Indicator	Status	Description/Activity	Sound
LED indicator	Solid red	Camcorder is powering up	No
LED indicator	Solid green	Camcorder is powered and ready	Yes (1)
LED indicator	Blinking red	Camcorder error	Yes (3)
LED indicator	Blinking red	Charging the flash	No
LED indicator	Blinking green	Images are being recorded to the memory card	No
LED indicator	Blinking green	USB communication/transfer	No
LED indicator	Solid green	Camcorder is ready to record images	Yes (1)
Self-timer indicator	Blinking blue	Self-timer mode is active	Yes (1)
—	—	Error message	Yes (3)
—	—	Valid button event	Yes (1)

Specifications

Item	Description
Image sensor	1/2-inch CMOS
Effective pixels	2.1 Mega Pixels
Image size	Movie image: QVGA 320 × 240 Still Image: 1600 × 1200; 800 × 600
Image quality	Super fine, Fine, Normal
Recording media	64 MB internal memory Optional SD memory card (up to 512 MB)
Lens	F-no: 2.8, 5G All glass, Focus range: 1.2 m ~ infinity
LCD display	High resolution (130 k dots) 1.5-inch color LTPS LCD
Self-timer	10-second delay
Zoom	Digital capture mode: 2.5X Playback mode: 2X/4X

Item	Description
Exposure compensation	Auto Manual: -1.8 ~ +1.8 EV (0.3 EV)
White Balance	Auto Manual: Daylight, Shade, Fluorescent 1, Fluorescent 2, Lamp
ISO	ISO 100/200/400
Light frequency	50/60Hz
Compressed format	MPEG4 SP (video); IMA-ADPCM (audio)
Standards	EXIF 2.1, DCF 1.1, JPEG
Interface	DC in, USB, video out (NTSC or PAL)
Power	2 AA Alkaline or Ni-MH batteries, Rechargeable batteries (optional), AC power adapter (optional)
Software Application	Pinnacle Studio SE and DVS Importer
Dimensions (H×W×D)	3.54 × 2.56 × 1.22 inches (90 × 65 × 31 mm)
Weight	4.3 ounces (123 g) without batteries

FCC Statement

FCC declaration of conformity

Responsible party:

Gateway Companies, Inc.
610 Gateway Drive, North Sioux City, SD 57049
(605) 232-2000 Fax: (605) 232-2023

Product:

- DV-S20 Digital MPEG4 Camcorder

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.

Canada

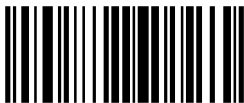
Industry Canada (IC)

Unintentional emitter per ICES-003 / NMB-003

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of Industry Canada.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de Classe B prescrites dans le règlement sur le brouillage radioélectrique édicté par Industrie Canada.

MAN DV-S20 DIG MPEG4 GDE R0 8/03



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