

Instruction Manual

# HITACHI

## Inspire the Next

Model name  
DZHV1074



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## Preface

Congratulations on your purchase of this advanced camcorder. Ensure that you read this manual carefully and keep it in a safe place for future reference.

## About this manual

Every effort has been made to ensure that the contents of this manual are correct and up to date. However, no guarantee is made regarding the accuracy of the contents. If the contents of this manual do not tally with the camcorder, please take the camcorder as a criterion, and our company reserves the right to change the contents or technical rules without notice in advance. Also, the manufacturer reserves the right to change the technical specification in advance without notice.

If the accessories do not tally with the actual package, please take the actual package as a criterion.

## Copyright

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All rights reserved. No part of this publication may be reproduced, transmitted, transcribed, stored in a retrieval system or translated into any language or computer language, in any form or by any means, electronic, mechanical, magnetic, optical, manual or otherwise, without the prior written permission of the manufacturer.

# Precautions

## General precautions

- Do not use or store the product in dusty, dirty, or sandy areas, as its components may be damaged.
- Do not store the product in a hot environment. High temperatures can shorten the life of electronic devices, damage batteries and warp or melt certain plastics.
- Do not store the product in cold areas. When the product warms up to its normal temperature, moisture can form inside, which may damage the electronic circuits.
- Do not attempt to open the casing or attempt your own repairs. High-voltage internal components create the risk of electric shock when exposed.
- Do not drop or knock the product. Rough handling may damage the internal components.
- Do not use harsh chemicals, cleaning solvents or strong detergents to clean the product. Wipe the product with a slightly damp soft cloth.
- Do not fire the flash while it is too close to the subject's eyes. Intense light from the flash can cause eye damage if it is fired too close to the eyes. When using the flash, the camcorder should be at least one meter from the eyes of the subject.
- Do not open battery cover while an image is being recorded. Doing so will not only make storage of the current image impossible, it can also corrupt other image data already stored in file.
- If the product or any of its accessories are not working properly, take them to your nearest qualified service center. The personnel there will assist you and if necessary, arrange for the product to be repaired.
- Test for proper operation before using the camcorder.

## Notes on the LCD Screen

Be very careful to ensure the fluid contained in the LCD screen does not escape if the screen becomes cracked or damaged. If this occurs, follow these steps:

- If the fluids make contact with skin, wipe it with a clean cloth then rinse with a large amount of water.
- If the fluid makes contact with eyes, wash eyes with clean water for at least 15 minutes and go to the hospital as soon as possible.
- If the fluid is swallowed, first rinse mouth with water, then drink a large amount of water and induce vomiting. Go to the hospital as soon as possible.

## Operation conditions

- This camcorder is designed for use in temperatures ranging from 0°C to 40°C (32°F to 104°F).
- Do not use or keep the camcorder in the following areas:
  - In areas subject to direct sunlight
  - In areas subject to high humidity or dust
  - Near air conditioners, heaters, or other areas subject to temperature extremes
  - Inside of a closed vehicle, especially one parked in the sun.
  - In areas subject to strong vibration

## Power supply

- Use only the type of battery that came with your camcorder. Using any other type of battery may damage the equipment and invalidate the warranty.
- Ensure the battery is inserted correctly. Inserting the battery incorrectly can cause damage to the product and possibly start a fire.



- Remove the battery to avoid the fluid leakage if the camcorder is not going to be used for a long time.
- If the battery is crushed or damaged, remove it immediately to avoid the battery fluid leakage and abnormal expansion.
- Battery will be in high temperature after long time using (about 1hr), Please be careful while taking out the battery.
- Please be careful if you may need to take out the battery by finger nail.

## **Before You Start**

Take some test shots before performing a formal recording.

Before taking pictures/videos with this camcorder in any important occasion (such as a wedding ceremony or an overseas trip), do test the camcorder beforehand to ensure that it functions properly. Any additional loss caused by the malfunction of this product (such as costs of photography or any loss of benefit generated by the photography) is not the responsibility of the manufacturer and no compensation will be given for it.

The LCD may become dark under strong sunlight, which is the characteristic of LCD.

## **Copyright information**

Take care to observe "No Photography" notices in certain locations. In these cases, you cannot record any live performance, improvisation or exhibits, even for personal purposes. Any transfer of pictures or memory card data must be conducted under the constraints of copyright law.

# 1 Introducing the camcorder

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Read this section to learn about the features and functions of the camcorder. This chapter also covers system requirements, package contents, and descriptions of the hardware components.

## 1.1 System requirements

The camcorder requires a PC with the following specifications:

- Windows® Vista / XP operating system / Windows 7 / Mac
- Intel® Pentium 4 2.8GHz CPU or higher (3GHz recommended)
- At least 1GB of RAM or higher (1GB recommended)
- 64MB or Greater Video Card
- Standard USB 1.1 port or higher
- At least 200MB of available disk space

- **Note:**  
A USB 1.1 port may enable you to transfer files to and from your host PC, but transfer speeds may be much faster with a USB 2.0 port.

## 1.2 Features

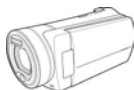
The camcorder offers a variety of features and functions including:

- HD Digital camcorder
- Digital camera (max. 12 Megapixels)

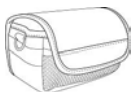
Additionally, the camcorder also features 5X optical zoom, 10X digital zoom, USB mass storage, a LCD touch screen and EIS function.

## 1.3 Unpacking the camcorder

The following items should be present in the package. If any item is missing or appears damaged, contact your dealer immediately.



**Camcorder**



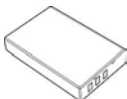
**Pouch**



**User manual**



**USB cable**



**Li-ion battery  
NP-120**



**Battery charger**



**CD-ROM  
(Application software)**



**AV cable**



**HDMI cable**



**Power cord**  
(UK Style - Used for UK Area)



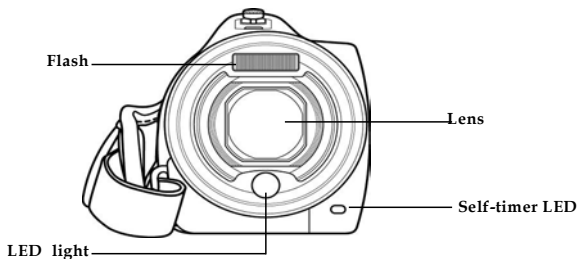
**Power cord**  
(EU Style - Used for Pan Europe Area)

- Do not use the European power cord in the UK.

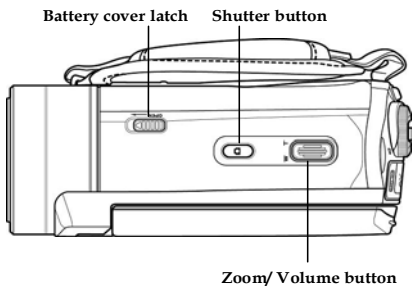
## 1.4 About the camcorder

Refer to the following illustrations to familiarize yourself with the buttons and controls of this camcorder.

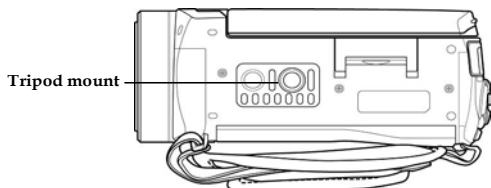
### 1.4.1 Front view



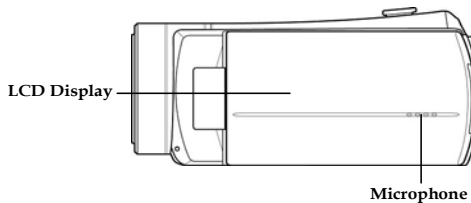
### 1.4.2 Top view



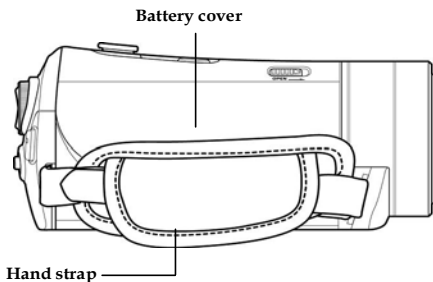
### 1.4.3 Bottom view



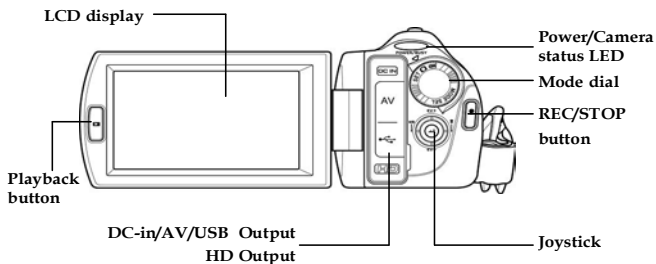
### 1.4.4 Right view



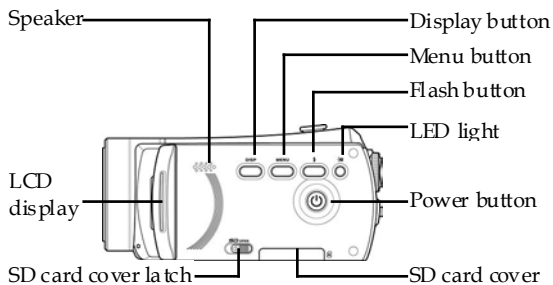
## 1.4.5 Left view



## 1.4.6 Back view

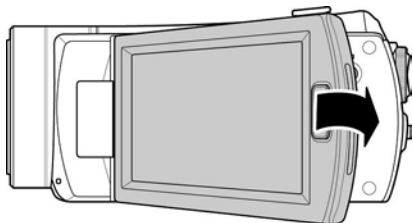
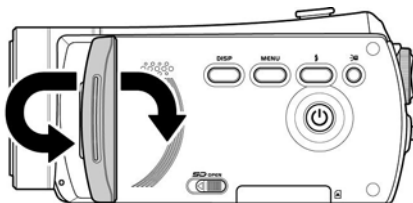
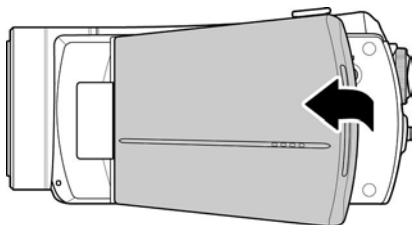


## 1.4.7 Control Panel








## 1.4.8 Adjusting the LCD display

Flip and twist the LCD screen as shown while capturing a still image or recording a video clip.





See the table below for a description of each button's function.

Button	Name	Function
	Power button	Press to turn power on/off.
	Menu button	Press to display main OSD menus.
	Mode dial	Use to turn <b>Camcorder</b> , <b>Camera</b> , and <b>SET</b> modes.
	Joystick	<ul style="list-style-type: none"> <li>● In <b>Camcorder</b> and <b>Camera</b> mode:               <ol style="list-style-type: none"> <li>1. Move up/ down to adjust the exposure settings.</li> <li>2. Move right to enable the macro function. A  icon appears on the LCD screen when enabled.</li> <li>3. Move left to adjust the white balance settings.</li> </ol> </li> <li>● In <b>Camera Playback</b> mode:               <ol style="list-style-type: none"> <li>1. Move right and left to view the stored images.</li> <li>2. When the image is zoomed in, the LCD screen appears up/down direction keys. You may press the</li> </ol> </li> </ul>

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joystick to move the image.  
Then you may press the center joystick button to switch the moving directions (up/down ↔ left/right).

3. Move the joystick up to enter the Thumbnail mode.

4. In the **Thumbnail** mode, move up, down, left, right to select the thumbnail images and then press the center joystick button to view the image in full screen mode.

● In **Camcorder Playback** mode:

1. Press right and left to view the stored video clips and press the center joystick button to play/stop the video clips.






2. In **Playing** mode, move right to fast-forward a video clip and move left to rewind a video clip.





3. Move the joystick up to enter the Thumbnail mode.

4. In the **Thumbnail** mode, move up, down, left, right to select a desired video clip and then press the center joystick button to show the video clip.

● In **SET** mode, press left and right to highlight menu items and press the

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		center joystick button to confirm.
	Shutter button	<ul style="list-style-type: none"> <li>● In <b>Camera</b> mode, press to take a photo.</li> <li>● In <b>Camcorder</b> mode, you can also press to take a photo before and during recording a video clip.</li> </ul>
	REC/Stop button	<ul style="list-style-type: none"> <li>● In <b>Camcorder</b> mode, press to start recording a video clip.</li> </ul>
	Playback button	In <b>Camcorder</b> and <b>Camera</b> mode, press to enter playback mode.
	Display button	Press once to turn off all OSD icons and press again to display all OSD icons off.
	Zoom button	<ul style="list-style-type: none"> <li>● In <b>Camcorder</b> and <b>Camera</b> modes, press right/ left to zoom in and out.</li> <li>● In <b>Camera Playback</b> mode, press right to zoom in your photo.</li> <li>● In <b>Camcorder Playback</b> mode, press left/ right to increase or decrease the volume of the video clip you are playing.</li> </ul>

	<p>LED light button</p>	<ul style="list-style-type: none"> <li>● In <b>Camcorder</b> and <b>Camera</b> modes, press the button to turn on/ off the increase light.</li> </ul>
	<p>Flash button</p>	<ul style="list-style-type: none"> <li>● In <b>Camera</b> modes, press the button to switch between the flash modes.</li> </ul>
	<p>SD card cover latch</p>	<ul style="list-style-type: none"> <li>● Slide the latch to open the SD card cover when you insert/remove the SD card.</li> </ul>
	<p>Battery cover latch</p>	<ul style="list-style-type: none"> <li>● Slide the latch to open the battery card cover when you insert/remove the battery.</li> </ul>

## 1.4.9 About the LEDs

The following table describes the camcorder LEDs:

LED	Colour	Definition
<b>Power / Rec./ Camcorder Status</b>	Green	Power-on
	Green/ Red Blinking	Recording
	Red	Camcorder busy
<b>Self-timer</b>	Red Blinking	Self-timer is activated.
	Red Blinking Rapidly	2 seconds self-timer remaining.

## 2 Getting started

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Read this section to learn how to start using the camcorder. This section covers basic functions such as switching on, inserting the battery and memory cards, and configuring preliminary settings. See later chapters for advanced functions.

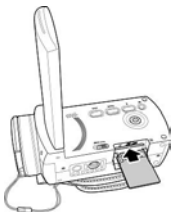
### 2.1 Inserting an SD card

An SD card can be installed in the camcorder to provide additional storage space for still images, video clips, or other files.

1. Open the LCD screen cover and move the SD card cover latch in the direction of the arrow to open the SD card compartment cover.



2. Insert an SD card, making sure the contacts are facing upwards.



3. Close the SD card compartment cover.



## 2.2 Inserting the batteries

This camcorder is designed to use a rechargeable Li-ion battery. Only use the batteries supplied or similar batteries recommended by the manufacturer or your dealer.

● **Note:**

Install the battery exactly as described here. Installing the battery incorrectly could cause damage to the camcorder and possibly start a fire.

1. Slide the battery cover latch as shown and then the battery cover opens automatically.



2. Insert the battery as shown.





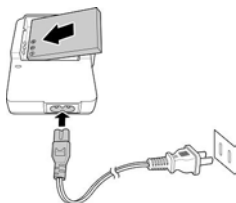
3. Close the battery cover as shown.



## 2.3 Charging the battery

You can charge the battery with the charging unit provided. Follow the below steps to charge your battery.

1. Insert the Li-ion battery into the charging bay. Connect one end of the power cord to the charging unit and then plug the other end to the wall outlet as shown.
2. The red LED will light up for proper charging.
3. After full charge, the LED turns to green.
4. It takes about 290 minutes to achieve full charge. Actual charging time depends on current battery capacity and charging conditions.



## 2.4 Turning on/ off the camcorder

Press and hold the power button to turn the camcorder on/off.

## 2.5 Changing modes

The camcorder can operate in three modes, **Camcorder**, **Camera**, and **SET**. Move the mode dial to toggle different modes.

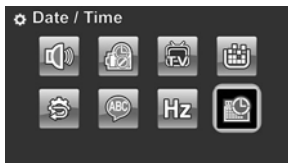


## 2.6 Before you start

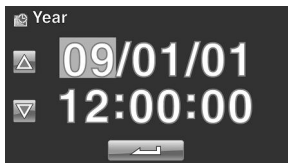
Before you start using the camcorder, some basic settings such as date and time, languages and beep function need to be configured.




### 2.6.1 Setting the date and time

1. Turn on the camcorder, and move the mode dial to **SET**. Move the joystick left and right or tap the screen to highlight **Date / Time**. Press the center joystick button to confirm.



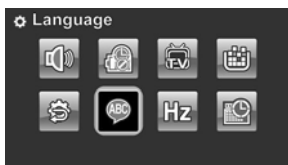
2. Move the joystick left and right or tap the screen to highlight each field.






3. Adjust each value by moving the joystick up, down, or tap the  /  . Press the center joystick button or tap  to save your changes and leave the **Date / Time** menu.
4. Press the **Enter** button to exit the menu.

## 2.6.2 Setting the language

1. Turn on the camcorder, and move the mode dial to **SET**. Move the joystick left and right or tap the screen to highlight **Language**. Press the center joystick button to enter the **Language** menu.



2. Move the joystick left and right or tap the screen to select the following languages: English, Japanese, French, Italian, Spanish, Portuguese, Dutch, Simplified Chinese, Traditional Chinese, Korean, Turkish, German, Russian, and Arabic. Move the joystick up and down or tap  /  to go to the previous/next page. After the language is selected, press the center joystick button or tap  to confirm.




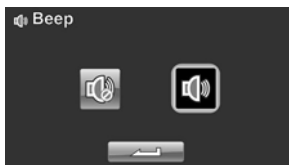
3. Press the **Enter** button to exit the menu.

## 2.6.3 Setting the beep

1. Turn on the camcorder, and move the mode dial to **SET**. Move the joystick left and right or tap the screen to highlight **Beep**. Press the center joystick button to enter the **Beep** menu.



2. Move the joystick left and right to select **Beep Off** or **Beep On** options. Press the center joystick button or tap  to confirm.



3. Press the **Enter** button to exit the menu.

### Notes:

Remove the LCD protective film to increase the sensitivity of the touch panel.

## 2.7 Shoot/Playback video

### 2.7.1 Shooting a video clip

1. Turn on the camcorder and move the mode dial to **Camcorder mode**.





2. Use the LCD screen to frame the video.
3. Press the **REC/STOP** button to start recording.
4. Press the **REC/STOP** button again to stop recording.
5. The video clip is automatically saved with a unique file name.

#### **Notes:**

1. The maximum length of each video recording file is approximately 3.75 GB.
2. The high-resolution settings result in larger files, and therefore shorter length.

3. The LCD preview and the ratio of a still-image capture can vary depending on the different video resolution settings. See the following table:

Video resolution	Preview	Taking pictures and focusing
WQVGA	16:9 ratio	4:3 ratio
WVGA		
720P		
1080P		













4. Before shooting a video clip, you can still take a photo in **Camcorder** mode.

## 2.7.2 Playing the video clip

1. In **Camcorder** mode, press the **Playback** button. The most recent file displays on the LCD screen.

Camcorder playback  
mode indicator



2. Move the joystick right and left to or tap  /  to select a desired video clip and press the center joystick button or . The video clip starts playing.
3. Move the joystick left or tap  to rewind the video clip and move the joystick right or tap  to fast forward.
4. Press the **REC/STOP** button or tap  to pause the video playback. Press the **REC/STOP** button again or tap  to resume the video playback.
5. When viewing the video clip, move the **Zoom** button left or right to adjust the volume.
6. Press the center joystick button or tap  to stop playing. Tap  to view the video clip in 1/2 x slow playback. Tap  twice to toggle between 1/2x and 2x speeds. Tap  then tap  to toggle among 1/4, 1/8 & 1/16 speeds.
7. Press the **Playback** button again to return to **Camcorder** mode.



## 2.8 Taking/viewing pictures

### 2.8.1 Taking a still picture

1. Turn on the camcorder and move the **Mode Dial** to **Camera** mode.









2. Use the LCD screen to frame the picture.
3. Press the **Shutter** button to capture the image.
4. The picture is automatically saved with a unique file name.

## 2.8.2 Viewing images

1. In **Camera** mode, press the **Playback** button. The most recent image displays on the LCD screen.

Camera  
Playback mode

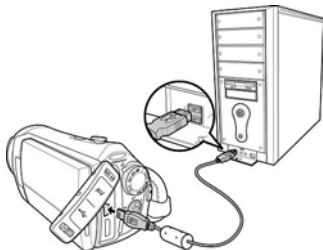


2. Press the joystick right and left or tap  /  to scroll through the images.
3. Move the **Zoom** button right to zoom in the picture. There are four direction keys appears on the LCD screen. You may use the joystick to pan across the picture.
4. Move the joystick up fully or tap  to view the thumbnails of all stored images.
5. Move the joystick left and right to select an image. Move the joystick up and down or tap  /  to go to the previous/next page
6. Press the center joystick button or tap  to view the image in full screen mode.
7. Press the **Playback** button again to return to **Camera** mode.

## 2.9 Connecting to a computer

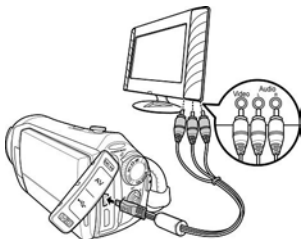
Read this section to learn how to transfer files to a PC, show the video clips or photos on a TV.

Connect the camcorder to a computer with the USB cable provided.



## 2.10 Connecting to a standard TV

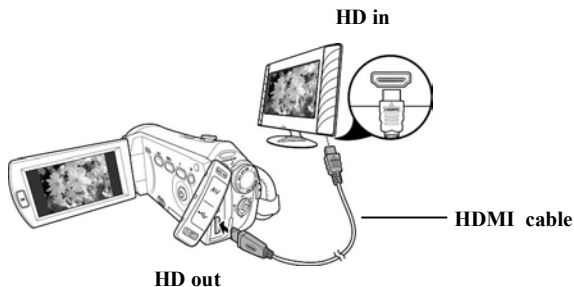
Connect the camcorder to a standard TV as shown with the AV cable provided.



## 2.11 Connecting to an HDTV

Read this section to learn how to show the video clips or photos on an HDTV. Connecting to an HDTV offers the high resolution for displaying the video clips or photos.

Connect the camcorder to an HDTV as shown with the HDMI cable provided.



### **Notes:**

When connected to an HDTV, dual video output is supported. You can view videos on the TV and operate the LCD panel at the same time.

## 3 Using the camcorder

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Read this section to learn how to use the camcorder.

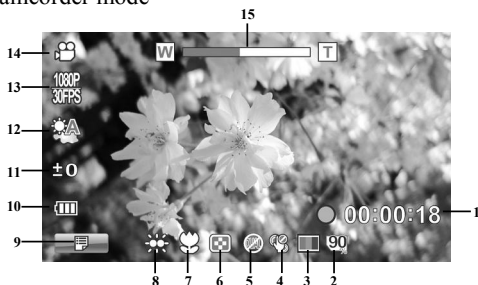
### 3.1 Camcorder mode

Use this mode to capture video clips or record voice and store them on an SD card.

#### 3.1.1 Camcorder mode

Use the following picture to familiarize yourself with the **Camcorder** mode icons and symbols.














Camcorder mode



#### Camcorder mode:


See the table below for a description of each icon and symbol.

1		Recording time elapsed
2		Memory status indicator SD card in

3		Stabilizer indicator
4		Dual video indicator
5		Colour effect indicator
6		Quality indicator
7		Macro indicator
8		LED light indicator
9		Menu indicator. Tap to enter the video menu.
10		Battery indicator
11		EV compensation indicator
12		White balance indicator
13		Video resolution indicator
14		Camcorder mode indicator
15		Zoom indicator

### 3.1.2 Using the macro function

This function can capture subjects close to the lens. In macro mode, subjects can be as close as 5 cm.

While in **Camera** or **Camcorder** modes, move the joystick right to activate the macro function, and a  icon displays on the LCD screen.

Move the joystick again to return to normal mode.

### 3.1.3 Using the zoom function

The camcorder is equipped with 5x optical zoom and 10X digital zoom.

Move the **Zoom** button **right** to get closer to a subject.

Move the **Zoom** button **left** to move away from a subject.



### **3.1.4 Using the LED light**

Use the LED light to illuminate subjects in dark environments.

Press the **LED Light** button to switch on the flash light and press again to switch it off.

### **3.1.5 Using the Flash module, auto and force**

Use the auto and force flash module to illuminate subjects in dark environments when press the shutter button.

You may switch the auto and force flash module by toggling the **Flash button**. The  or  displays on your camcorder when activated.

### **3.1.6 Using the Stabilizer function**

Use the Stabilizer function to reduce vibration caused by camcorder shanks during a video shoot.

See section 4.1.5 “Stabilizer”.

### **3.1.7 Quick access controls**

You can also make adjustments to exposure by pressing the joystick up and down.

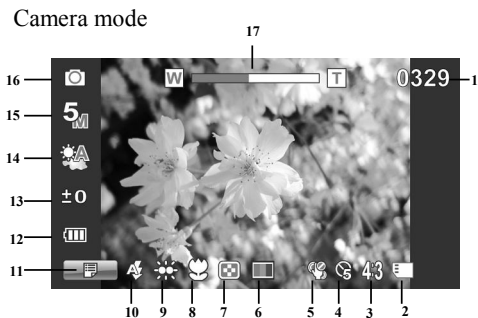
In **Camcorder** and **Camera** modes, press the joystick up and down to adjust the EV compensation settings. Press the joystick left to choose white balance settings.

## 3.2 Camera mode

Use **Camera** mode to capture still pictures and store them in the on an SD card.

### 3.2.1 Camera mode icons













Use the following picture to familiarize yourself with the **Camera** mode icons and symbols.



See the table below for a description of each icon and symbol.

1	0329	Remaining number of photos
2	[Memory status icon]	Memory status indicator [Memory status icon]: SD card in
3	4:3	Aspect ratio indicator
4	[Self-timer icon]	Self-timer indicator
5	[Stabilizer icon]	Stabilizer indicator



6		Colour effect indicator
7		Quality indicator
8		Macro indicator
9		LED light indicator
10		Flash indicator
11		Menu indicator. Tap to enter the camera menu.
12		Battery indicator
13		EV compensation indicator
14		White balance indicator
15		Video resolution indicator
16		Camera mode indicator
17		Zoom indicator

### 3.2.2 Using the macro function

See section 3.1.2 “Using the macro function”.

### 3.2.3 Using the zoom function

See section 3.1.3 “Using the zoom function”.

### 3.2.4 Using the LED light module

See section 3.1.4 “Using the LED light”.

### 3.2.5 Quick access controls

See section 3.1.7 “Quick access controls”.

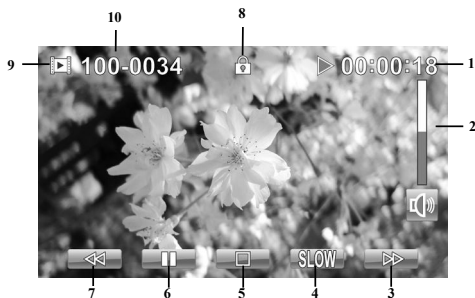
## 3.3 Camcorder Playback mode

Use **Camcorder Playback** mode to review all the movie files stored on the SD card.

### 3.3.1 Camcorder Playback mode icons


Refer to the following picture to familiarize yourself with the **Camcorder Playback** mode icons and symbols.










Camcorder playback mode



#### Camcorder mode:

See the table below for a description of each icon and symbol.

1	 00:00:18	Displays the elapsed time while playing the video clip
---	--	--

2		Volume level indicator
3		Fast forward icon. Tap to fast forward the video clip
4		Slow motion icon. Tap to play the video in slow motion
5		Stop icon. Tap to stop the video.
6		Pause icon. Tap to pause the video.
7		Rewind icon. Tap to rewind the video.
8		File protect indicator
9		Camcorder playback mode icon
10		Displays the file number of the video clip

## 3.4 Camera Playback mode

Use **Camera Playback** mode to review all the image files stored in the camcorder.

### 3.4.1 Camera Playback mode icons


Refer to the following picture to familiarize yourself with the **Camera Playback** mode icons and symbols.




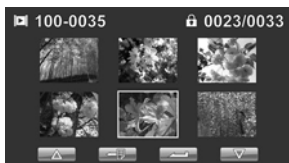
See the table below for a description of each icon and symbol.





1		Next icon. Tap to go to the next image.
2		Thumbnail icon. Tap to display images in thumbnail.
3		Menu icon. Tap to display the playback menu.
4		Back icon. Tap to return to the previous image.
5		Camera playback mode icon.
6	100-0033	File number indicator
7		File protect indicator

## 3.5 Thumbnail mode

When in **Camera Playback** or **Camcorder Playback** modes, move the joystick up or tap  to show images as thumbnails.

1. Turn on the camcorder and make sure it is in **Camera Playback** or **Camcorder Playback** mode.
2. The most recent image / video clip displays on the screen. Move the joystick up or tap  to view **six** thumbnail images / video clips on the LCD screen.




3. Move the joystick left and right or tap the screen highlight an image or a video clip. Move the joystick up and down or tap  /  to go to the previous/next page.
4. Press the center joystick button or tap  to view the image or playback the video clip in full screen mode.
5. Move the joystick up or tap  to return to thumbnail view.

## 4 Using the menus

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Read this section to learn how to configure the camcorder settings and use the advanced features.

### 4.1 Camcorder menu

When in **Camcorder** mode, press the **Menu** button or tap  to show the camcorder options menu.

#### 4.1.1. Video resolution

Use the resolution option to determine the resolution of the captured video. The larger screen size requires more memory storage space.

1. Turn the camcorder on and ensure it is in **Camcorder** mode.
2. Press the **Menu** button or tap  to enter the **Camcorder** menu.
3. Move the joystick left and right or tap the screen to highlight the **Resolution** option. Press the center joystick button to display the submenu.
4. Press the joystick left and right to select **1080i/60FPS**, **1080P/30FPS**, **720P/60FPS**, **720P/30FPS**, **WVGA/60FPS**, **WVGA/30FPS**, or **WQVGA/240FPS**. Press the center joystick button or tap  to confirm and exit the submenu.





5. Press the **Enter** button to exit the menu.

● **Note:**

In 1080P mode, you can capture a photo when the video is recording. The still image resolution is 2560\*1440.

## 4.1.2. Video quality

There are two different levels of video quality setting. Higher quality video needs more memory storage space.

1. Turn the camcorder on and ensure it is in **Camcorder** mode.
2. Press the **Menu** button or tap  to enter the **Camcorder** menu.
3. Move the joystick left and right or tap the screen to highlight the **Quality** option. Press the center joystick button to display the submenu.
4. Press the joystick left and right or tap the screen to select the desired option. Press the center joystick button or tap  to confirm and exit the submenu.





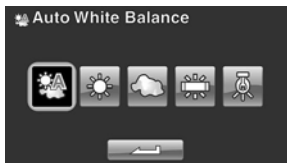
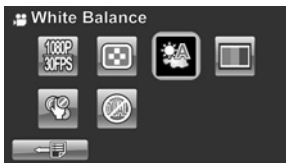
5. Press the **Enter** button to exit the menu.



### 4.1.3. White balance

Use this option to correct colour difference for different lighting conditions. When white balance is set to **Auto**, the camcorder automatically compensates for different lighting conditions.



1. Turn the camcorder on and ensure it is in **Camcorder** mode.
2. Press the **Menu** button or tap  to enter the **Camcorder** menu
3. Move the joystick left and right or tap the screen to highlight the **White Balance** menu. Press the center joystick button to display the submenu.
4. Move the joystick left and right or tap to select **Auto**, **Sunny**, **Cloudy**, **Tungsten**, or **Fluorescent**. Press the center joystick button or tap  to confirm and exit the submenu.

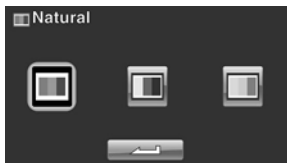


5. Press the **Enter** button to exit the menu.

#### 4.1.4. Colour effect

The camcorder can capture standard colour images, black and white images, or sepia tone to give an old-fashioned look.



1. Turn the camcorder on and ensure it is in **Camcorder** mode.
2. Press the **Menu** button or tap  to enter the **Camcorder** menu
3. Move the joystick left and right or tap the screen to highlight the **Effect** menu. Press the center joystick button to display the submenu.
4. Move the joystick left and right or tap to select **Natural**, **B&W**, or **Sepia**. Press the center joystick button or tap  to confirm and exit the submenu.




5. Press the **Enter** button to exit the menu.

## 4.1.5. Stabilizer

Use this function to reduce vibration caused by camcorder shakes during a video shoot.



1. Turn the camcorder on and ensure it is in **Camcorder** mode.
2. Press the **Menu** button or tap  to enter the **Camcorder** menu
3. Move the joystick left and right or tap the screen to highlight the **Stabilizer** menu. Press the center joystick button to display the submenu.
4. Move the joystick left and right or tap to select **Off** or **Stabilizer** options. Press the center joystick button or tap  to confirm and exit the submenu.

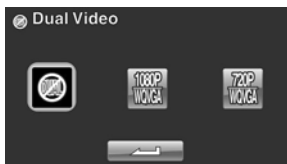
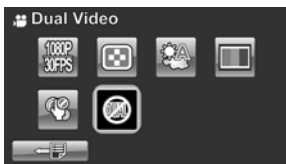


5. Press the **Enter** button to exit the menu.
6. An icon  displays on the screen.

## 4.1.6. Dual Video mode

Use this function to record two different resolution video clips at same time.

1. Turn the camcorder on and ensure it is in **Camcorder** mode.
2. Press the **Menu** button or tap  to enter the **Camcorder** menu
3. Move the joystick left and right or tap the screen to highlight the **Dual Video** menu. Press the center joystick button to display the submenu.
4. Move the joystick left and right or tap to select **Off**, **1080P/WQVGA**, or **720P/WQVGA** . Press the center joystick button or tap  to confirm and exit the submenu.



5. Press the **Enter** button to exit the menu.
6. The purpose of dual video mode is to let you have a downsize file for easy sharing & uploading to the website.


- **Note:**  
When this dual video function is enabled, the still image resolution of PIV is 1280\*720. When dual video function is off, the still image resolution is 1920\*1080.



## 4.2 Camcorder playback menu

Use the playback menu to manage the files stored on the SD card.


### 4.2.1 Delete

Use this function to delete files.


1. Turn the camcorder on and ensure it is in **Camcorder** mode. Press the **Playback** button and then press the **Menu** button or tap  to display the **Camcorder Playback** menu.
2. Move the joystick left and right or tap the screen to select **Delete One** or **Delete All** options.

If you select **Delete One**, the playback screen appears again. Move the joystick right and left or tap  to locate the file you want to delete and press the center joystick button or tap  to confirm.



If you select **Delete All**, a prompt appears on screen for confirmation. Move the joystick left and right or tap the screen to select the desired option. Press the center joystick button or tap  to confirm. All files stored in memory will be deleted.









3. Press the **Menu** button or tap  to exit the menu.

● **Note:**


Once deleted, files cannot be recovered so make sure you have a backup before you delete. Files that have been protected will not be deleted. You have to unlock the files first before deleting them.

## 4.2.2 Protect


Use this function to lock files to prevent accidental deletion.

1. Turn the camcorder on and ensure it is in **Camcorder** mode. Press the **Playback** button and then press the **Menu** button or tap  to display **Camcorder Playback** menu.
2. Move the joystick left and right or tap the screen to select **Protect** menu. Press the center joystick button or tap  to display the submenu.
3. Then playback screen appears again. Move the joystick or tap  /  to locate the file you want to protect. Press the center joystick button or tap  to protect or unprotect the file. A lock  icon is displayed to show that the file is protected.






4. Press the **Menu** button again or tap  to exit the menu.
5. If the protect function is activated on the camera to lock the files, if the card is removed and connected to a computer will the files still be locked.

● **Note:**

To unlock a file, repeat the above steps. The  lock icon disappears when the file is unlocked.

## 4.2.3 Autoplay

This camcorder includes an **Autoplay** function, which plays each video clip in turn.

1. Turn the camcorder on and ensure it is in **Camcorder** mode. Press the **Playback** button and then press the **Menu** button or tap  to display **Camcorder Playback** menu.
2. Move the joystick left and right or tap the screen to select **Autoplay** menu. Press the center joystick button or tap  to display the submenu.
3. Move the joystick right and left or tap the screen to select the desired options. Press the center joystick button or tap  to confirm.



4. Press the **Menu** button again or tap  to exit the menu.





## 4.3 Camera menu

In **Camera** mode, press the **Menu** button to show the **Camera Options** menu.

### 4.3.1 Resolution

Use this option to set the size of the captured image. Larger images contain more detail and therefore use more memory space.



1. Turn the camcorder on and ensure it is in **Camera** mode.
2. Press the **Menu** button or tap  to enter the **Camera** menu
3. Move the joystick left and right or tap the screen to highlight the **Resolution** menu. Press the center joystick button to display the submenu.
4. Move the joystick left and right to select from **12M**, **10M**, **5M**, **2M**, **10M burst** or **2M burst**. Press the center joystick button or tap  to confirm.

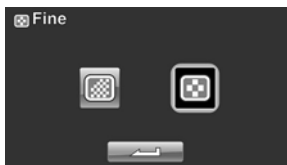


5. Press the **Enter** button to exit the menu.

### 4.3.2 Photo Quality

There are two different levels of video quality setting. Higher quality video needs more memory storage space.


1. Turn the camcorder on and ensure it is in **Camera** mode.
2. Press the **Menu** button or tap  to enter the **Camera** menu.
3. Move the joystick left and right or tap the screen to highlight the **Quality** option. Press the center joystick button to display the submenu.
4. Press the joystick left and right or tap the screen to select the desired option. Press the center joystick button or tap  to confirm and exit the submenu.




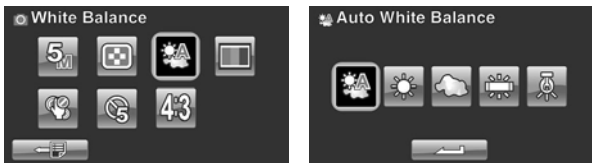
5. Press the **Enter** button to exit the menu.

### 4.3.3 White balance

Use this option to correct colour difference due to lighting conditions.

1. Turn the camcorder on and ensure it is in **Camera** mode.
2. Press the **Menu** button or tap  to enter the **Camera** menu.



3. Move the joystick left and right or tap the screen to highlight the **White Balance** option. Press the center joystick button to display the submenu.
4. Move the joystick left and right to select **Auto**, **Sunny**, **Cloudy**, **Tungsten**, or **Fluorescent**. Press the center joystick button or tap  to confirm.

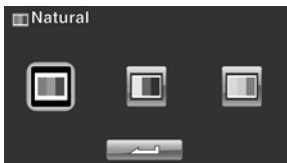


5. Press the **Enter** button to exit the menu.

#### 4.3.4 Colour effect

The camcorder can capture standard colour images, black and white images, or sepia tone to give an old-fashioned look.



1. Turn the camcorder on and ensure it is in **Camera** mode.
2. Press the **Menu** button or tap  to enter the **Camera** menu.
3. Move the joystick left and right or tap the screen to highlight the **Effect** menu. Press the center joystick button to display the submenu.
4. Move the joystick left and right or tap to select **Natural**, **B&W**, or **Sepia**. Press the center joystick button or tap  to confirm and exit the submenu.

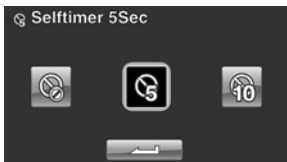
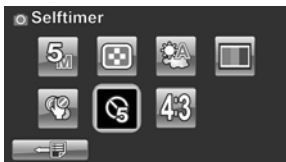


5. Press the **Enter** button to exit the menu.

### 4.3.5 Selftimer

Use the self timer function to take a photo of yourself.



1. Turn the camcorder on and ensure it is in **Camera** mode.
2. Press the **Menu** button or tap  to enter the **Camera** menu.
3. Move the joystick left and right or tap the screen to highlight the **Selftimer** menu. Press the center joystick button to display the submenu.
4. Move the joystick left and right or tap to select **Off**, **5 seconds**, or **10 seconds** options. Press the center joystick button or tap  to confirm.

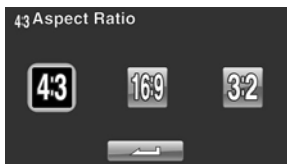


5. Press the **Enter** button to exit the menu.

### 4.3.6 Aspect Ratio

Use the aspect ratio function to adjust the aspect ratio of the display.

1. Turn the camcorder on and ensure it is in **Camera** mode.
2. Press the **Menu** button or tap  to enter the **Camera** menu.
3. Move the joystick left and right or tap the screen to highlight the **Aspect Ratio** menu. Press the center joystick button to display the submenu.
4. Move the joystick left and right or tap to select **4:3**, **16:9**, or **3:2** options. Press the center joystick button or tap  to confirm.







5. Press the **Enter** button to exit the menu.

## 4.4 Camera playback menu


### 4.4.1 Delete

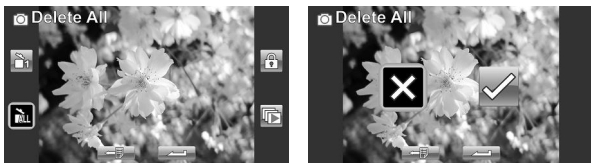
Use this function to delete files.


1. Turn the camcorder on and ensure it is in **Camera** mode. Press the **Playback** button and then press the **Menu** button or tap  to display the **Camera Playback** menu.
2. Move the joystick left and right or tap the screen to select **Delete One** or **Delete All** options.

If you select **Delete One**, the playback screen appears again. Move the joystick right and left or tap  /  to locate the file you want to delete and press the center joystick button or tap  to confirm.



If you select **Delete All**, a prompt appears on screen for confirmation. Move the joystick left and right or tap the screen to select the desired option. Press the center joystick button or tap  to confirm. All files stored in memory will be deleted.









3. Press the **Menu** button or tap  to exit the menu.

● **Note:**


Once deleted, files cannot be recovered so make sure you have a backup before you delete. Files that have been protected will not be deleted. You have to unlock the files first before deleting them.

## 4.4.2 Protect


Use this function to lock files to prevent accidental deletion.

1. Turn the camcorder on and ensure it is in **Camera** mode. Press the **Playback** button and then press the **Menu** button or tap  to display **Camera Playback** menu.
2. Move the joystick left and right or tap the screen to select **Protect** menu. Press the center joystick button or tap  to display the submenu.
3. Then playback screen appears again. Move the joystick or tap  /  to locate the file you want to protect. Press the center joystick button or tap  to protect or unprotect the file. A lock  icon is displayed to show that the file is protected.



4. Press the **Menu** button again or tap  to exit the menu.
5. If the protect function is activated on the camera to lock the files, if the card is removed and connected to a computer will the files still be locked.




● **Note:**

To unlock a file, repeat the above steps. The  lock icon disappears when the file is unlocked.




### 4.4.3 Autoplay

The camcorder includes a slide show function, which displays each image in turn with a regular interval between pictures.

1. Turn the camcorder on and ensure it is in **Camera** mode. Press the **Playback** button and then press the **Menu** button or tap  to display **Camera Playback** menu.
2. Move the joystick left and right or tap the screen to select Autoplay menu. Press the center joystick button or tap  to display the submenu.
3. Move the joystick right and left or tap the screen to select the desired options. Press the center joystick button or tap  to confirm. The images are displayed automatically.



4. Press the **Menu** button again or tap  to exit the menu.

## System menu


The system menu is used to configure miscellaneous camcorder functions.

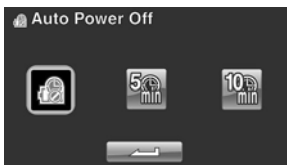
### 4.4.4 Setting the beep

See section 2.6.3 “Setting the Beep”.

### 4.4.5 Auto power off


Use this function to switch the camcorder off automatically after a period of inactivity for power saving.

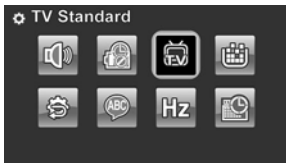
1. Turn on the camcorder and switch to **SET** mode.
2. Move the joystick left and right or tap highlight the **Auto Power Off** option. Press the center joystick button to display the submenu.
3. Move the joystick left and right or tap to select **Off**, **5 minute**, or **10 minutes**. Press the center joystick button or tap  to confirm.



## 4.4.6 TV standard


Use the TV option to set the TV system for the area.

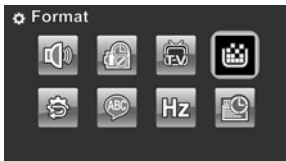
1. Turn on the camcorder and switch to **SET** mode.
2. Move the joystick left and right or tap to highlight the **TV standard** option. Press the center joystick button to display the submenu.
3. Move the joystick left and right or tap to select **NTSC** or **PAL**, and press the center joystick button or tap  to confirm.



## 4.4.7 Format

Use this function to format the current storage media. This format action will delete everything on the media.

1. Turn on the camcorder and switch to **SET** mode.
2. Move the joystick left and right or tap to highlight the **Format** option. Press the center joystick button to display the submenu.
3. Move the joystick left and right or tap to select X or ✓, and press the center joystick button or tap  to confirm.



4. The current media (memory card) is formatted.

## 4.4.8 Default

Use this option to reset all settings to the default settings.

1. Turn on the camcorder and switch to **SET** mode.
2. Move the joystick left and right highlight the **Default** option. Press the center joystick button to display the submenu.
3. Move the joystick left and right to select X or ✓, and press the center joystick button to confirm.




## 4.4.9 Language

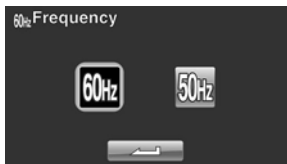
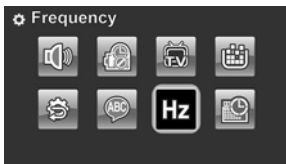
See section 2.6.2 “Setting the language”.

## 4.4.10 Frequency

Use the Frequency option to set the frequency system for your area.

To set the frequency:

1. Turn on the camcorder and switch to **SET** mode.
2. Move the joystick left and right to highlight the **Frequency** option. Press the center joystick button to display the submenu.
3. Move the joystick left and right to select **50 Hz or 60 Hz**. Press the center joystick button or tap  to confirm.



## 4.4.11 Date/time

See section 2.6.1 "Setting the date and time".

## 5 Installing the software and drivers

Read this section to learn how to install the software for the camcorder.

### 5.1 HD Cam

# ArcSoft TotalMedia™ HDCam 2.0



## Quick Start Guide

# Introduction

ArcSoft TotalMedia™ HDCam is a desktop software that combines media management and playback capabilities.

## Media management

You can import the media files from the device to edit, upload, and produce photo books and album pages.

## Playback capability

You can view pictures and play video clips using ArcSoft TotalMedia™ HDCam.

# System Requirements

**Operating System:** Windows XP SP2, Vista, and Windows 7

**CPU:** Intel / AMD Dual-Core or above

**Memory:** At least 1GB

**Graphic Card:** DirectX 9 or DirectX 10 (recommended)

**Interface:** Standard USB 1.1 port or higher

**Hard Disk:** At least 2GB of available disk space

# Installation

To install TotalMedia™ HDCam:

1. Connect your device to the desktop or notebook PC.
2. Insert the installation CD into the DVD-ROM/CD-ROM drive.
3. The CD runs automatically.
4. Follow the instructions to complete the installation.



If the CD does not automatically run, follow the steps below to install the software:

1. Double click **My Computer**.
2. Use the mouse to point to the DVD-ROM/CD-ROM drive.
3. Right click the mouse then click **Open**.
4. Double click **TotalMedia HDCam.exe**.
5. A wizard appears to guide you through the installation procedure.
6. Follow the instructions to complete the installation.

## Uninstallation

To uninstall TotalMedia™ HDCam:

1. Click **Start > Programs > ArcSoft TotalMedia HDCam > Uninstall**.
2. A wizard appears to guide you through the uninstallation procedure.
3. Follow the instructions to complete the uninstallation.

## Language

To change the interface language after installation:

1. Click **Options** > **Preferences** on the main screen.
2. Select a language then click **OK**.

## Registration and Upgrade

To register or upgrade:

1. Click **E** on the main screen to connect to **Information Center**.
2. Select **Upgrade, Patches, or Registration**.

# Media Browser



#	Area	Function
1	View Mode Area	Provides three modes to view media files.
2	Preview Area	Selects and displays file thumbnails and detailed information.
3	Function Bar	Lists main function buttons.

# View media files

Follow the instructions below to view the media files in your device:

1. Connect the device to the computer.
2. The device code appears on the top of View Mode Area.
3. Click the device code to display all media files in the device.

Device code

Media files in the device



- To rate a file, click ★ on the file.
- To view a file's properties, click ⓘ on the file.
- To preview a picture in a new window, double click the picture.
- To preview the previous or next picture, click the right/left button.
- To play a video clip, double click the clip.
- To pause / stop / continue a video clip, click ⏸ / ⏹ / ▶.
- To play the previous or next clip, click ⏮ / ⏭.
- To delete a file, select the file then click 🗑.

# View modes

Three view modes are available to view media files: Library View, Calendar View, and Browser View.

**Note:** To view media files in your device using Library or Calendar View, you need to import media files first.

## Library View


The Library View lists My Creation folder and other folders created while importing files.

- To switch to Library View
  1. Click **Libraries** to expand Libraries window.
  2. Select the desired folder.
  3. Click  to switch to Library View.
- To view or edit a folder's properties, select the folder then click .
- To delete a folder, select the folder then click .



## Calendar View






The Calendar View uses the file creation date to organize media files.

- To switch to Library View
  1. Click **Libraries** to expand Libraries window.
  2. Select the desired folder.
  3. Click  to switch to Calendar View.



Three modes are available in Calendar View: **Year**, **Month**, and **Day** mode.

To switch between different modes:

- Click the picture under the desired year to enter Month mode.
- Click   to change to the previous or next year if available.
- Click the picture under the desired month to enter Day mode.
- Click   to change to the previous or next month if available.
- Click  to return to the previous mode.



### Browser View








The Browser View enables you to browse for media files in your computer using the tree view.

To switch to Browser View:

1. Click **Computer** to expand Computer window.
2. Select the desired folder in your computer to view media files.

## Preview Area

In Preview Area, several options are available to select and display file thumbnails and detailed information. See the table below for a description of each option:

Option	Name	Function
	Rating filter	Displays the media files according to the selected rating.
	Import filter	Displays the media files which are not imported.
	Type filter	Displays the media files according to the selected type.
	Quick search	Displays the media files according to the typed characters.
	Thumbnail slider	Adjusts the thumbnail size by moving the slider.
	Thumbnail	Displays file thumbnails.
	Details	Displays file thumbnails with detailed information.

## Function Bar

The Function Bar lists main function buttons. Click the button to access the function. See the table below for a description of each button.

Button	Name	Function
	Import	Imports media files to the computer from a camera, camcorder, or storage device.
	File Merge	Produces movies with your video files.
	Upload to YouTube	Uploads files to your YouTube account.
	Photo Book	Produces photo books with your pictures.
	Album Page	Produces album pages with your pictures.
	Upload to Facebook	Uploads files to your Facebook account.

# Importing media files

To import media files to your computer:

1. Select the desired folder.
2. Select the desired files.
3. Click **Import**. The Import window appears.
4. Select **Import New Scenes**, **Import Selected Scenes**, or **Import All Scenes**.
5. Select or type a folder name. Three options are available: the default, existing folder names, and a new name.
6. Click **OK** to import files.



# Merging video clips

To merge video clips:




1. Click **File Merge**. The work area appears.
2. Click and drag the desired video clips into the work area.
3. Double click clips to preview and edit, if necessary.
4. Click **Next** to merge the clips.
5. Select the device and path to save the merged clip.












# Editing video clips

To edit a video clip:

1. Double click a video clip in the work area. The Editing windows appears.
2. Click  to select the beginning of the trimmed clip.
3. Click  to select the end of the trimmed clip.
4. Click  to save the trimmed clip.



See the table below for a brief description of other tools in the Editing window:

Button	Name	Function
	Play / Pause	Click to play or pause the clip.
	Stop	Click to stop the clip.
	Previous	Click to go to the previous clip.
	Next	Click to go to the next clip.
	Time box	Click on the number and use arrows to view a certain point of the video clip.
	Volume level	Drag to change the volume.
	Full screen	Click to enter full screen mode.

## Uploading files to YouTube

To upload files to YouTube:

1. Click **Upload to YouTube**. The work area appears.
2. Click and drag the desired file into the work area.
3. Click **Next**. The YouTube Login window appears.
4. Type your YouTube user name and password.
5. Click **Login** to sign in to YouTube.
6. Follow YouTube's instructions to upload the file.



## Uploading files to Facebook

To upload files to Facebook:

1. Click **Upload to Facebook**. The work area appears.
2. Click and drag the desired file into the work area.
3. Click **Next**. The Facebook Login window appears.
4. Type your Facebook Email and password.
5. Click Login to sign in to Facebook.
6. Follow Facebook's instructions to upload the file.



# Producing photo books

To produce photo books:

1. Click **Photo Book**. The work area appears.
2. Drag the desired pictures into the work area.
3. Click **Next** to launch the ArcSoft Print Creations application.



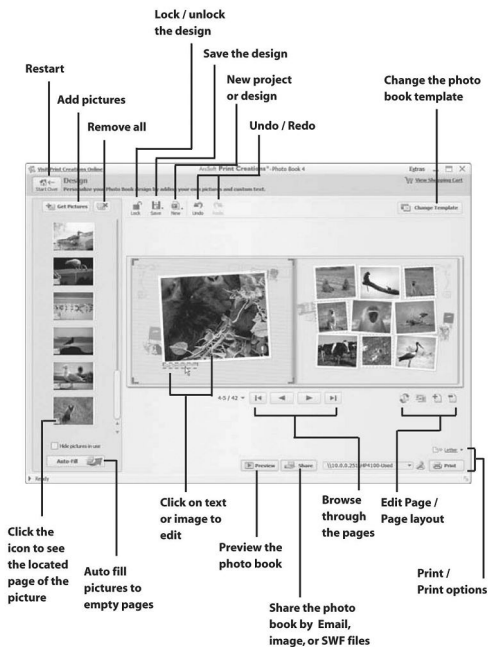
4. Select photo book categories to view photo books.
5. Select a photo book.



6. Click **Next** to enter Photo Book Design screen.



7. See the illustration below for descriptions of photo book design:



# Producing album pages

To produce photo books:

1. Click **Album Page**. The work area appears.
2. Drag the desired picture into the work area.
3. Click **Next** to launch the ArcSoft Print Creations application.



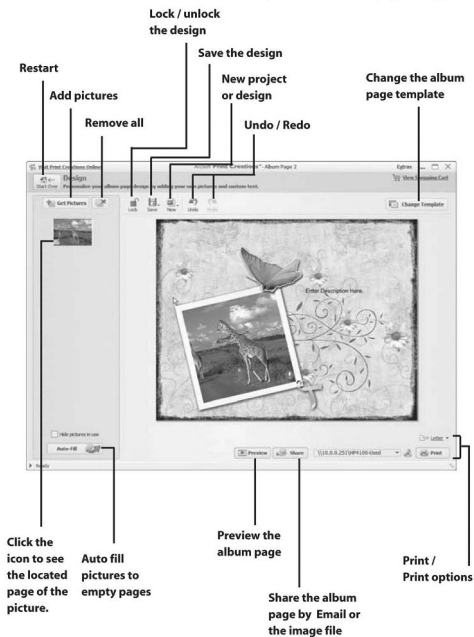
4. Select album page categories to view album pages.
5. Select an album page.



6. Click **Next** to enter Album Page Design screen.



7. See the illustration below for descriptions of album page design:



## Appendix

### Specifications

General	
Imaging sensor	1/2.3" CMOS 10.0 Megapixel sensor
Active pixels	10.0 Megapixel
Storage media	Internal: Built-in 128MB Flash Memory(The available memory for image storage is approximately 70MB) External: SD Card (Up to SDHC 16GB Class6)
Sensor sensitivity	Auto
Colour effects	Natural/B&W/Sepia
Lens	5X Optical zoom lens Wide: F3.5~F32, f=6.8mm Tele: F3.7~F33.8, f=34mm (38-190mm equivalent to 35mm) 8G11E with ND filter
Focus range	Normal: 10cm ~ inf. (Wide) 1cm ~inf. (tele)

## General

	Macro: 2cm ~ 80cm (Wide)
Still image	Formats: JPEG (EXIF2.2), DCF Resolution: 2M, 5M, 10M, 12M (Firmware interpolation) Continuous Shots: 10M, Max. 7 photos/sec; 2M, Max. 30 photos/sec.
Movie clips	Format: H.264 (MOV) Resolution: WQVGA (240fps), WVGA (30fps), WVGA (60fps), 720p (30fps), 720p (60fps), 1080p (30fps), 1080i (60fps)
Zoom	Movie: 5X Optical Zoom, 10X Digital Zoom Camera: 5X Optical zoom, 10X Digital zoom Playback: Still Image (8X)
TFT Monitor	3.0" TFT (960 x 240 pixels) (16:9)
LED light (Video)	Effective Range: 0.5m ~ 1m Mode: On / Off
Strobe (Camera)	Mode: Auto / Forced / Off
White balance	Auto/Sunny/Cloudy/Tungsten/Fluorescent



## General

EV compensation	-2.0 EV~+2.0 EV
Self-timer	Off, 5, 10 seconds
PC interface	MSDC: USB 2.0 (high speed)
TV out format	NTSC/PAL/ HDMI
Shutter	Still: 1/2-1/2000 Video: 1/30-1/4000
Auto power off	Off, 5 min., 10 min
Power supply	Li-Ion battery NP-120 battery/DC-in via USB
Dimension	57 (W) x 70 (H) x 129 (D) mm
Weight	Approx. 292+-5g (without batteries)

## Troubleshooting

Problem	Possible Cause	Solution
Cannot turn on the camcorder.	The batteries are not inserted correctly.  The batteries have no power.	<ul style="list-style-type: none"><li>• Insert the batteries correctly. (See 2.2 Inserting the batteries.)</li><li>• Please charge the battery. (See 2.3 Charging the battery.)</li></ul>
The camcorder suddenly turns off.	The auto power off function was enabled.  The camcorder is running out of battery power.	<ul style="list-style-type: none"><li>• Turn the power on again.</li><li>• Please charge the battery. (See 2.3 Charging the battery.)</li></ul>
The captured image is not stored in memory.	Before the image is saved the power has been cut off.	When battery indicator turns empty (without green bars), replace the battery immediately.

<b>Problem</b>	<b>Possible Cause</b>	<b>Solution</b>
The camcorder turns off when capturing image using self-timer.	The camcorder is running out of battery power.	<ul style="list-style-type: none"> <li>• Please charge the battery. (see 2.3 Charging the battery)</li> </ul>
The image is out of focus.	The subject is beyond focus range.	<ul style="list-style-type: none"> <li>• Please take a picture within the available focus range and choose normal or macro mode. (See 3.2.2 Using the macro function).</li> </ul>

<b>Problem</b>	<b>Possible Cause</b>	<b>Solution</b>
<p>Memory card cannot be used.</p>	<p>The memory card is protected.</p> <p>The memory card contains non-DCF images taken by other camcorders.</p> <p>The SD card speed is too low.</p>	<ul style="list-style-type: none"> <li>• Unlock the memory card.</li> <li>• Format the memory card. (See 4.4.7 Format.) Before formatting the card, ensure you back up the files.</li> <li>• You can set the video or photo to lower quality. (See 4.1.2 Video quality)</li> </ul>
<p>All buttons are inactive.</p>	<p>Short circuit occurred when connecting the camcorder with other devices.</p>	<ul style="list-style-type: none"> <li>• Remove the batteries from the camcorder and insert again.</li> </ul>

# Appendix

## IMPORTANT

The mains lead on this equipment may be supplied with a moulded plug incorporating a fuse, the value of which is indicated on the pin face of the plug. Should the fuse need to be replaced, an ASTA or BSI approved BS 1362 fuse must be used of the same rating. If the fuse cover is detachable never use the plug with the cover omitted. If a replacement fuse cover is required, ensure it is of the same colour as that visible on the pin face of the plug. Fuse covers are available from your dealer.

DO NOT cut off the mains plug from this equipment. If the plug fitted is not suitable for the power points in your home or the cable is too short to reach a power point, then obtain an appropriate safety approved extension lead or consult your dealer.

Should it be necessary to change the mains plug, this must be carried out by a competent person, preferably a qualified electrician.

If there is no alternative to cutting off the mains plug, ensure that you dispose of it immediately, having first removed the fuse, to avoid a possible shock hazard by inadvertent connection to the mains supply.

### IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:

**Blue** : NEUTRAL

**Brown** : LIVE

As these colours may not correspond to the coloured markings identifying the terminals in your plug, proceed as follows:

The wire coloured BLUE must be connected to the terminal marked with the letter **N** or coloured BLUE or BLACK. The wire coloured BROWN must be connected to the terminal marked with the letter **L** or coloured BROWN or RED.

On no account connect either of these wires to the terminal marked **E** or by the earth symbol  $\perp$  **E** or coloured green or green and yellow.

Alternatively, this equipment may be supplied with a rewirable plug already fitted, which may be removed if not suitable and an alternative fitted in accordance with the preceding instructions.

## SOME DOS AND DON'TS ON THE SAFE USE OF EQUIPMENT

This equipment has been designed and manufactured to meet international safety standards but, like any electrical equipment, care must be taken if you are to obtain the best results and safety is to be assured.

\*\*\*\*\*

**DO** read the operating instructions before you attempt to use the equipment.

**DO** ensure that all electrical connections (including the mains plug, extension leads and inter-connections between the pieces of equipment) are properly made and in accordance with the manufacturer's instructions. Switch off and withdraw the mains plug before making or changing connections.

**DO** consult your dealer if you are ever in doubt about the installation, operation or safety of your equipment.

**DO** be careful with glass panels or doors on equipment.

**DO** route the mains lead so that it is not likely to be walked on, crushed, chafed, or subjected to excessive wear and tear or heat.

\*\*\*\*\*

**DON'T** remove any fixed cover as this may expose dangerous voltages.

**DON'T** obstruct the ventilation openings of the equipment with items such as newspapers, tablecloths, curtains, etc. Overheating will cause damage and shorten the life of the equipment.

**DON'T** allow electrical equipment to be exposed to dripping or splashing, or objects filled with liquids, such as vases, to be placed on the equipment.

**DON'T** place hot objects or naked flame sources such as lighted candles or nightlights on, or close to equipment. High temperatures can melt plastic and lead to fires.

**DON'T** use makeshift stands and **NEVER** fix legs with wood screws - to ensure complete safety always fit the manufacturer's approved stand or legs with the fixings provided according to the instructions.

**DON'T** use equipment such as personal stereos or radios so that you are distracted from the requirements of traffic safety. It is illegal to watch television whilst driving.

**DON'T** listen to headphones at high volume, as such use can permanently damage your hearing.

**DON'T** leave equipment switched on when it is unattended unless it is specifically stated that it is designed for unattended operation or has a stand-by mode. Switch off using the switch on the equipment and make sure that your family know how to do this. Special arrangements may need to be made for infirm or handicapped people.

**DON'T** continue to operate the equipment if you are in any doubt about it working normally, or if it is damaged in any way - switch off, withdraw the mains plug and consult your dealer.

### ABOVE ALL

--- **NEVER** let anyone especially children push anything into holes, slots or any other opening in the case - this could result in a fatal electrical shock;

--- **NEVER** guess or take chances with electrical equipment of any kind

--- **it is better to be safe than sorry!**

\*\*\*\*\*



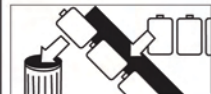
## BATTERY SAFETY GUIDELINES

Used correctly, domestic batteries are a safe and dependable source of portable power. Problems can occur if they are misused or abused — resulting in leakage or, in extreme cases, fire or explosion.

Here are some simple guidelines to safe battery use designed to eliminate any such problems.



Take care to fit your batteries correctly, observing the plus and minus marks on the battery and appliance. Incorrect fitting can cause leakage or, in extreme cases, fire or even an explosion.



Replace the whole set of batteries at one time, taking care not to mix old and new batteries or batteries of different types, since this can result in leakage or, in extreme cases, fire or even an explosion.



Store unused batteries in their packaging and away from metal objects which may cause a short-circuit resulting in leakage or, in extreme cases, fire or even an explosion.



Remove dead batteries from equipment and all batteries from equipment you know you are not going to use for a long time. Otherwise the batteries may leak and cause damage.



Never dispose of batteries in fire as this can cause them to explode. Please put dead batteries in with the normal household waste.



Never attempt to recharge ordinary batteries, either in a charger or by applying heat to them. They may leak, cause fire or even explode. There are special rechargeable batteries which are clearly marked as such.



Supervise children if they are replacing batteries themselves in order to ensure these guidelines are followed.



Remember that small button cell batteries such as used in some hearing aids, toys, games and other appliances, are easily swallowed by young children and this can be dangerous.



Keep loose button cells away from young children.



Make sure battery compartments are secure.



Seek medical advice if you believe a cell has been swallowed.



### SD Card Capacity & Approximate Recording Time:

Memory Card Capacity	Video Resolution	Video Quality	Approximate Recordable Time (Minutes)	Occupied Capacity (MB)	Residual Capacity (KB)
1 G	1080i/60fps	Super Fine	10	937	6.24
	1080P/30fps		10	937	6.1
	720P/60fps		12	938	5.61
	720P/30fps		12	938	5.58
	WVGA/60fps		16	939	5.27
	WVGA/30fps		16	939	5.31
	WQVGA/240fps	15	940	5.12	
	1080i/60fps	Fine	12	937	5.79
	1080P/30fps		12	937	5.82
	720P/60fps		16	938	5.31
	720P/30fps		16	938	5.12
	WVGA/60fps		21	939	4.88
WVGA/30fps	21		939	4.78	
WQVGA/240fps	21	939	4.69		
2 G	1080i/60fps	Super Fine	22	1949	6.37
	1080P/30fps		22	1949	6.15
	720P/60fps		26	1950	5.86
	720P/30fps		26	1950	5.69
	WVGA/60fps		33	1950	5.37
	WVGA/30fps		33	1951	5.26
	WQVGA/240fps	33	1951	4.96	
	1080i/60fps	Fine	26	1949	6.42
	1080P/30fps		26	1949	6.28
	720P/60fps		33	1950	5.45
	720P/30fps		33	1950	5.53
	WVGA/60fps		44	1950	4.48
WVGA/30fps	44		1951	4.57	
WQVGA/240fps	44	1951	4.38		
4 G	1080i/60fps	Super Fine	43	3761	6.53
	1080P/30fps		43	3761	6.34
	720P/60fps		51	3762	5.87
	720P/30fps		51	3762	5.79
	WVGA/60fps		64	3762	5.25
	WVGA/30fps		64	3762	5.39
	WQVGA/240fps	64	3763	5.21	
	1080i/60fps	Fine	271	3761	6.42
	1080P/30fps		51	3761	6.19
	720P/60fps		64	3762	5.81
	720P/30fps		64	3762	5.68
	WVGA/60fps		84	3762	5.18
WVGA/30fps	84		3762	5.11	
WQVGA/240fps	84	3763	4.61		
8 G	1080i/60fps	Super Fine	86	7621	6.62
	1080P/30fps		86	7621	6.48
	720P/60fps		103	7622	5.88
	720P/30fps		103	7622	5.76
	WVGA/60fps		130	7622	5.53
	WVGA/30fps		130	7622	5.42
	WQVGA/240fps	128	7623	5.13	
	1080i/60fps	Fine	103	7621	6.28
	1080P/30fps		103	7621	6.33
	720P/60fps		130	7622	5.96
	720P/30fps		130	7622	6.02
	WVGA/60fps		171	7622	5.47
WVGA/30fps	171		7622	5.38	
WQVGA/240fps	171	7623	5.19		
16 G	1080i/60fps	Super Fine	175	15455	6.42
	1080P/30fps		1	15455	6.28
	720P/60fps		210	15456	5.81
	720P/30fps		210	15456	5.78
	WVGA/60fps		263	15456	5.61
	WVGA/30fps		263	15456	5.54
	WQVGA/240fps	261	15456	5.27	
	1080i/60fps	Fine	209	15455	6.52
	1080P/30fps		210	15455	6.48
	720P/60fps		263	15456	6.12
	720P/30fps		263	15456	5.89
	WVGA/60fps		348	15456	5.73
WVGA/30fps	348		15456	5.68	
WQVGA/240fps	347	15457	5.45		

### SD Card Capacity & Approximate Numbers of Recordable Pictures:

Memory Card Capacity	Video Resolution	Photo Resolution	Approximate number of Recordable Pictures	Occupied Capacity (MB)	Residual Capacity (KB)
1 G	12 M	Fine	814	926	17336.32
	10 M		825	926	16998.4
	5 M		2158	926	16865.28
	2 M		4431	927	15902.72
	12 M	Super Fine	470	925	18073.6
	10 M		579	926	17141.76
	5 M		1364	926	16998.4
	2 M		2842	927	15912.96
2 G	12 M	Fine	1676	1938	17612.8
	10 M		1701	1939	17203.2
	5 M		4432	1939	16793.6
	2 M		8868	1940	15974.4
	12 M	Super Fine	980	1938	18022.4
	10 M		1200	1938	17305.6
	5 M		2839	1939	16998.4
	2 M		5708	1940	16076.8
4 G	12 M	Fine	3248	3751	17715.2
	10 M		3295	3751	17510.4
	5 M		8516	3751	16793.6
	2 M		16777	3752	15974.4
	12 M	Super Fine	1891	3750	18022.4
	10 M		2320	3751	17612.8
	5 M		5459	3751	16998.4
	2 M		10895	3752	16179.2
8 G	12 M	Fine	6590	7611	17715.2
	10 M		6679	7611	17305.6
	5 M		16996	7612	16896
	2 M		33542	7613	16179.2
	12 M	Super Fine	3836	7611	17817.6
	10 M		4702	7612	16896
	5 M		11077	7612	16691.2
	2 M		22178	7613	15769.6
16 G	12 M	Fine	13288	15445	17203.2
	10 M		13514	15445	17100.8
	5 M		34526	15446	16793.6
	2 M		67737	15446	16005.12
	12 M	Super Fine	7788	15444	17838.08
	10 M		9571	15445	17653.76
	5 M		22553	15445	17264.64
	2 M		45128	15446	16005.12



The above mark is in compliance with the Waste Electrical and Electronic Equipment Directive 2002/96/EC (WEEE).

The mark indicates the requirement NOT to dispose the equipment including any spent or discarded batteries as unsorted municipal waste, but use the return and collection systems available. If the batteries or accumulators included with this equipment display the chemical symbol Hg, Cd or Pb, then it means that the battery has a heavy metal content of more than 0.0005% Mercury, or more than 0.002% Cadmium or more than, 0.004% Lead.

**"Kesa is responsible for after service."**

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