BENQ S21 Series - Camcorder User Manual

Welcome

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Preface

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

About This Manual

This manual is designed to assist you in using your new camcorder. All information presented is as accurate as possible but is subject to change without notice.

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Safety Warning and Notice

Before operating the camcorder, please make sure that you read and fully understand the content in this section. If you ignore and violate all safety warning notices indicated in this section, the camcorder warranty may be void. Meanwhile, not only the camcorder but also you and all other people and things around you may be severely damaged, injured, or even placed in danger of death

For your safety

- 1. Do not attempt to charge any battery using this camcorder.
- Operate the power supply only on even surfaces, without any cover. Air circulation around the product must be always given. The maximum ambient temperature is 40 °C.
- 3. The battery should fully charge in about four hours.
- Risk of explosion if battery is replaced by an incorrect type.
 Dispose of used batteries according to the instructions.
- Keep the camcorder and its accessories out of the reach of babies, toddlers, and children. In particular, small parts such as memory cards and batteries could be easily dismantled and swallowed by them.
- Use only the original accessories to avoid possible risks to health and property, and thus meet all related legal regulations.
- 7. Do not dismantle the camcorder under any circumstances.
- When using the flash, do not go too close to human eyes (particularly for babies, toddlers, and children) or animal eyes.
 Otherwise, when the flash fires, the light may cause damage to human eyes or irritate animals.

- 9. Batteries could explode, for instance. All batteries can cause property damage, injury or burns if a conductive material such as jewelry, keys or beaded chains touch exposed terminals. The material may complete an electrical circuit and become quite hot. Exercise care in handling any batteries, particularly when placing it inside your pocket, purse, or other container with metal objects. Do not dispose of batteries in fire as they may explode.
- To prevent electric shock, do not attempt to disassemble or repair your camcorder by yourself.
- Some camcorder models accept non-rechargeable batteries.
 When using these batteries, do not charge them. Otherwise, dangers such as explosion and fire may occur.

Warranty

- Warranty is void if damage or system failure occurred due to outside factors such as collision, fire, flood, dirt, sewage, earthquake, and other force majeure events as well as incorrect usage of electricity or use of non-original accessories.
- It is the sole responsibility of the user if problems (such as data loss and system failure) occurred due to non-factory installed software, parts, and/or non-original accessories.
- Do not change the camcorder. Any changes to the camcorder invalidate the warranty.

Taking care of your camcorder

 Always keep the camcorder in a leather case or pouch for better protection against splashes, dust, and collision.

- The only way of replacing the battery is to open the battery cover.
- 3. Dispose of unwanted batteries and camcorders as permitted by the laws in your countries.
- Water may cause a fire or electric shock. Therefore, store your camcorder in a dry place.
- If your camcorder becomes wet, wipe it with a dry cloth as soon as possible.
- 6. Salt or seawater may cause severe camcorder damage.
- Do not drop, knock, or shake the camcorder. A rude behavior of using the camcorder may damage the internal electronic circuit board or deform the lens shape.
- 8. Do not use harsh chemicals, cleaning solvents, or strong detergents to clean the camcorder.
- Finger grease may be left on the camcorder lens and will result in unclear images or videos. To avoid this problem, be sure to clean the camcorder lens before taking pictures or recording videos. You should also clean the camcorder lens on a regular basis.
- If the lens is dirty, use a lens brush or soft cloth to clean the lens.
- 11. Do not touch the lens with your fingers.
- If a foreign substance or water gets in your camcorder, please turn the power off immediately and disconnect the batteries. Next, remove the foreign substance or water and send it to the maintenance center.

- 13. Whenever there is data in the external memory card, you should make a backup copy to a computer or disc. So, you can have a backup solution if data loss occurs.
- 14. All original accessories are designed only for use with this camcorder model you purchased. Do not use these accessories with other camcorder models or camcorders of other brands to avoid unpredictable danger or damage.
- 15. Before initial use of a memory card, always use the camcorder to format the card first.
- Remember to slide the write-protect tab (if available) to the unlock position. Otherwise, all data (if any) on the memory card is protected and the card cannot be edited or formatted.

Operating environment

- Do not use or store your camcorder in the environments listed below:
 - Direct sunlight
 - Dusty places
 - Next to an air conditioner, electric heater or other heat sources
 - In a closed car that is in direct sunlight
 - Unstable locations
- Do not use your camcorder outdoors when it is raining or snowing.
- 3. Do not use your camcorder in or near water.
- The camcorder operating temperature is between 0 and 40 degrees Celsius. It is normal for the operating time to be shortened when the temperature is low.

- 5. The capacity of your camcorder batteries will reduce each time it is charged/emptied.
- Storage at too high or low temperatures will also result in a gradual capacity loss. As a result, the operating time of your camcorder may be considerably reduced.
- It is normal for the camcorder to become warm during operation, because the camcorder casing can conduct heat.

1 Overall Introduction

Please read this chapter carefully to understand the features and functions of this Digital Video Camera. The description of this chapter also includes the description of system requirement, package contents, and hardware components.

1.1 System Requirements

This Digital Video Camera requires a unit of computer with the following specifications:

- Windows® Vista / XP / 2000 operating system or Mac OS 10.3 ~10.4
- A CPU of at least the equivalent of Intel® Pentium 4 2.8GHz
- At least 512 MB of RAM
- Standard USB 1.1 connection port or higher
- At least 64MB of display card

Note: USB 1.1 allows you to transmit files to the host, but using USB 2.0 connection port could increase the transmission speed far faster.

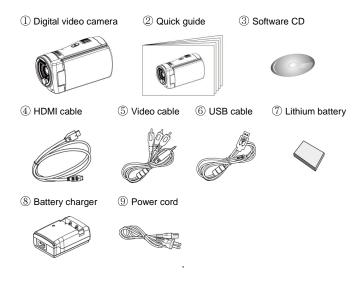
1.2 Features

This Digital Video Camera provides many features and functions including:

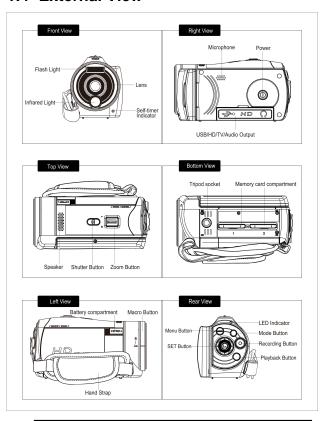
- High resolution pixel camera (maximum 16 million pixels by firmware interpolation)
- Touch screen
- 2 SD card sockets design
- Slow motion Playback
- Capturing a still image from a movie
- Capturing a still image in video mode
- Infrared Night Vision

1.3 Accessories

This package should contain the following items. In case there is any missing or damaged item, please contact your dealer immediately.

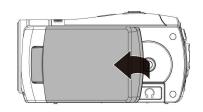


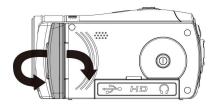
1.4 External View



1.5 Adjusting LCD Display

Before taking picture or recording movie clips, please rotate according to the illustrations below.



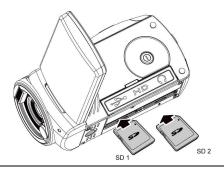




2 Getting Started

2.1 Inserting SD Card

 Insert an SD card and make sure facing the touching face downward.



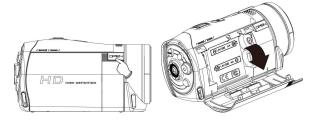
Note: Do not remove or insert SD cards when the power of the Digital Video Camera is on to avoid damaging files.

2.2 Loading Batteries

Please use only batteries provided or recommended by the manufacturer or dealer. This package is supplied with a lithium battery. AA batteries are optional.

Note: Insert batteries correctly according to this description. Error in inserting batteries could result in non-repairable damage to this Digital Video Camera.

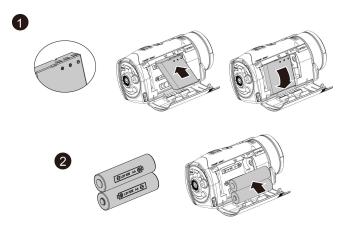
1. Open the battery cover.



Battery Status Indicator:

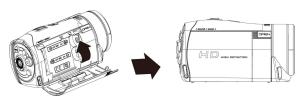
Batteries full	
	Batteries half full
Battery empty	

2. Insert batteries according to the illustration.



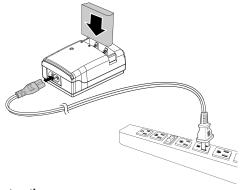
*Important:

- Please use the supplied lithium battery when using the infrared function. The infrared function can not be supported by using AA batteries.
- 2. Close battery cover.



2.3 Charging the Battery (Optional)

You can use the supplied battery charger to charge the lithium battery.



Safety instructions

In order for Li-ion batteries to get optimum performance it is highly recommended to charge the battery for at least 8 hours on first use or after storage of more than 3 months.

LED indicator illustration

Operation status	LED indicator recharging	status
No battery	green	
Battery in use	green	Full powered
Battery in use	red	recharging
No battery/battery in use	off	error

2.4 The gestures of using the touch screen

2.4.1 Single touch

Single touch for the below touchable hotkeys:

- 1. Mode change (DV, DSC and Voice Recording)
- Resolution change (FHD, HD, WVGA, WEB or 16M, 8M, 5M, 3M)







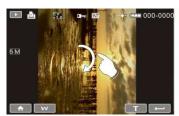
2.4.2 Slide

Slide right or left to view the previous file or the next file under the Playback Mode.



2.4.3 Rotate

Under Playback Mode, you can rotate the image by 90% step as shown below.





2.5 Buttons & Functions

Description	Button	Function
Power Button		Press the button to turn ON/OFF the Digital Video Camera.
Menu Button		Press the button to display the main OSD menu.
MODE Button		There are three operating modes for the Digital Video Camera: DV Mode, DSC Mode, and Voice Recording Mode. Press the Mode button to change to different modes.
SET Button		Confirmation for various setting of functions
4-Way Direction Button		Press the 4-Way Direction Button UP (In DSC Mode) to turn on/off the flash light: off, auto, fill-in; UP (In DV Mode) to turn on/off the Infra Red Night Vision Press DOWN to delete the file when it's in Playback mode.
Recording button		Press the button to take movie clip and voice recording.
Shutter button		Press the button to take still images

Zoom button	0	This Digital Video Camera is equipped with 4X (720P) digital zoom function. Press the Zoom Button Right (T) to pull in the distance of the subject, or Left (W) to move away the distance from the object.
Macro button	A V	Macro function allows you to shoot image of an object at very close distance. In the Macro Mode, you can pull in the focusing distance to 20 cm. (Normal focus range: 1.2m ~ infinity) The icon will be displayed on the LCD screen when the Macro mode is selected.
Playback Button		Press the Playback button to enter Playback mode and playback the last file.

2.6 Infrared Night vision:

The function provides users with the miracle of vision in total darkness and the improvement of vision in low light environments. The function is supported under Video mode only.

Working Range: < 1.5m

2.7 About LED Indicators

Below table describes the meaning of the camera LED indicators:

	Indicator Color	Definition
Power	Green	Turning power on.
i owe.	Red blinking	Flash is charging.
Recording	Red blinking	Recording
Self-timer	Red blinking	Start of Self-timer.

2.8 Initial settings before use

2.8.1 Setting Date and Time

 Turn on the Digital Video Camera to set up the date and time for the first time. Set the date and time by moving up/down button or touch the screen to select.



Press the 4-Way Direction Button left/right to highlight each column. Then press up/down or touch the screen to select the column.



 Press the 4-Way Direction Button Up/Down to adjust the value. Press SET Button to store the value you change or touch the screen to adjust the Year, Date and Time before pressing the Return Button () to store the value and leave the setting.

3 LCD Display Information

3.1 In Movie Clip Mode

The following table regarding the description of each icon and symbol will be shown when the Digital Video Camera is in DV Mode (Um).



1		Movie Clip recording indicator
2		Motion Detection
3	3	Night Mode indicator
4	≣∀ +1.0	Exposure compensation indicator
5		Color effect indicator

6		Metering Mode
7		Memory Status indicator ▶1: SD card 1 indicator; ▶2: SD card 2 indicator INT: Internal memory indicator (displayed when there is no SD card)
8	PÖ	Compensation indicator
9		Macro indicator
10	*	White balance indicator
11	(11	Battery status indicator
12	00:00:00	Remaining recording time indicator
13		Histogram indicator
14	•	Playback indicator
15	T W	Digital Zoom indicator
16	\blacksquare	Menu Button
17	-	Infrared Button (on, off)
18	HD	Resolution indicator
19		Multi shot

3.2 In Voice Recording Mode

6

The following table regarding the description of each icon and symbol will be shown when the Digital Video Camera is in Voice Recording Mode $(\stackrel{\bigcirc}{\mathbb{Q}})$.



1		Voice Recording Mode indicator
2	INT	Memory Status indicator ▶1: SD card 1 indicator; ▶2: SD card 2 indicator INT: Internal memory indicator (displayed when there is no SD card)
3	(Battery status indicator
4	00:00:00	Recording time left indicator
5		Playback Button
6	^	Menu Button

3.3 In DSC Mode

The following table regarding the description of each icon and symbol will be shown when the Digital Video Camera is in DSC Mode (().



1		DSC Mode indicator
2		Night Mode indicator
3	E∀ +1.0	EV compensation indicator
4		Effect indicator
5	[0]	Metering Mode
6	INT	Memory Status indicator 1: SD card 1 indicator; 2: SD card 2 indicator INT: Internal memory indicator (displayed when there is no SD card)

7	PÖ	Backlight compensation
8		Macro indicator
9	*	White balance indicator
10	Ę //	Battery indicator
11	0000	Number of pictures left.
12		Histogram indicator
13		Playback Button
14	T W	Digital zoom indicator
15	\uparrow	Menu Button
16	A.J.	Flash Mode selection (off, auto, fill-in)
17	5 M	Resolution indicator
18		Continuous Shot Mode
19	23	Self-timer indicator

4 Using the Camera

4.1 Shooting a Movie Clip

- DV mode is the default setting after you power on the Digital Video Camera.
- Press the Recording button to start or stop movie recording.
- 3. The Digital Video Camera will store the Movie clip automatically.



 LCD screen ratio will be different depending on the setting of Movie Clip resolution. Please refer to the table shown below:

Video Resolution	Preview
FHD (1920 x 1080) HD (1280 x 720) WVGA (848x480)	16:9 ratio
WEB (320 x 240)	4:3 ratio

4.2 Capturing a still image from a movie

You can save a selected frame from a recorded movie as a still image. Select the video clip, and press the shutter button at an interested frame.

- DV mode is the default setting after you power on the Digital Video Camera.
- Press the Recording button to start or stop video recording.
- While filming video, still image can be taken by pressing the shutter button.
- 4. The Digital Video Camera will store the image automatically.



Image resolution				
FHD FHD	1920 x 1080			
Ⅲ HD	1280 x 720			
WVGA WVGA	848 x 480			
WEB WEB	320 x 240			

Notes: the image size is fixed depending on the image quality of the video clip.

- 1. When setting to FHD, HD or WVGA resolution, the LCD display aspect ratio is 16:9.
- 2. When setting to WEB video resolution, the LCD display aspect ratio is 4:3.

4.3 Capturing a still image in video mode

You can save a selected frame in the video mode as a still image. Press shutter button at an interested preview image to save the interested frame. It is also workable during recording a video clip.

- Press the shutter button in movie clip during playback .
- 2. The Digital Video Camera will store the image automatically.



Image resolution				
FHD FHD	1920 x 1080			
Ⅲ HD	1280 x 720			
WVGA WVGA	848 x 480			
WEB WEB	320 x 240			

Notes: the image size is fixed depending on the image quality of the video clip.

- 1. When setting to FHD, HD or WVGA resolution, the LCD display aspect ratio is 16:9.
- 2. When setting to WEB video resolution, the LCD display aspect ratio is 4:3.

4.4 Voice Recording:

- 1. Turn on the Digital Video Camera.
- 2. Press the MODE button to enter Voice Recording mode or touch the screen hotkey.
- 3. Press the Recording button to start or stop Voice recording.



4.5 Movie Clip / Voice Clip Playback

In Movie/Voice Recording Mode, press Playback Button to 1. display recently stored file on the LCD screen.







Press 4-Way Direction Button up/down, left/right to view the stored file. Press SET Button to playback or touch the screen to select Playback of the file.





3. To pause the Playback of file, press the Recording button or touch the screen icon ().





4. Press the Playback Button to return to Movie/Voice Recording Mode.

5. You can also playback the movie clip by different speed by touching (ON/OFF) the screen icon ().



Playback speed is as below when the Slow Motion is "OFF"



Rewind

Rewind

Rewind



Playback speed is as below when the Slow Motion is "**ON**":

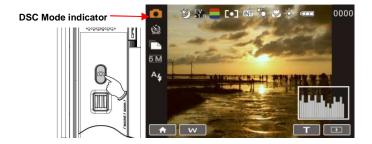




4.6 Shooting / Playback images

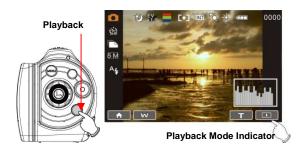
4.6.1 Taking a picture

- Turn on the power and adjust the Mode Button to DSC Mode or touch hot key on the screen to set up.
- 2. Press Shutter Button to capture images.



4.6.2 Images Playback

 In DSC Mode, press Playback Button to display the images on the LCD screen.



Press 4-Way Direction Button up/down, or left/right to view the stored files. Press SET Button to replay or touch the screen to playback.



Press SET Button or touch the screen to return to full screen for viewing images.



 Touch the panel icon (or w) to enlarge or shrink the image. Then, you can move the image up/down or left/right.



5. Press Playback Button again to return to DSC Mode.

5 LCD Display Information

5.1 Movie Clip Recording Mode:

Please refer to the following table regarding the description of each icon and symbol.



1	\triangleright	Playback Mode icon
2	000-0000	Folder and file number
3		File Protect indicator
4	INT	Memory Status indicator 1: SD card 1 indicator; 2: SD card 2 indicator 1: Internal memory indicator (displayed when there is no SD card)
5	(Battery status indicator

6	00:00:00	Length of each Movie Clip
7	4 +	Sound volume touch icons
8	→	Return Button
9	>>	Fast forward Playback Button
10	 / II	Playback/Pause button
11	*	Fast rewind Playback Button
12	lack	Menu Button
13	HD	Resolution indicator
14	¾ S	Slow motion Playback

5.2 Voice Recording Mode:

Please refer to the following table regarding the description of each

icon and symbol.



1	\triangleright	Playback Mode icon
2	000-0000	Folder and file number
3	7	File Protect indicator
4		Memory Status indicator 1: SD card 1 indicator; 2: SD card 2 indicator INT: Internal memory indicator (displayed when there is no SD card)
5		Battery status indicator
6	00:00:00	Length of each Movie Clip
7	+	Sound volume touch icons
8	1	Return Button
9		Playback/Pause button
10	^	Menu Button

5.3 DSC Playback Mode

Please refer to the following illustration to familiarize yourself with icons and symbols of DSC Playback Mode.



1		Image Playback Mode icon
2		DPOF (Digital Print Order Format) indicator
3	E∀ +1.0	Exposure compensation indicator
4		File Protect indicator
5	INT	Memory Status indicator ▶1: SD card 1 indicator; ▶2: SD card 2 indicator INT: Internal memory indicator (displayed when there is no SD card)

6	*	White balance
7		Battery status indicator
8	000-0000	Number of pictures left
9	\leftarrow	Return Button
10	Т	Zoom- In indicator
11	W	Zoom- Out indicator
12	lack	Menu Button
13	5 M	Resolution indicator

6 Menu Mode

When the menu appears on the LCD display, the MENU button is used to move through the highlighted items in the submenu or to select a menu item.

6.1 Menu options of Movie Clip Mode

When in Movie Clip mode, press the MENU Button to show the Movie options menu.

6.1.1 Movie Clip Resolution

- Turn on the Digital Video Camera and make sure it is in the DV Mode.
- Press MENU Button and press the 4-Way Direction Button to highlight the Resolution item. Press SET Button to display submenu; or touch the screen to select the item.
- Press 4-Way Direction Button to select FHD, HD, WVGA or WEB. Press SET Button to confirm; or touch the screen to select the item.



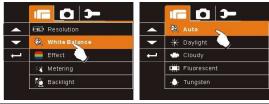


FHD FHD	1920 x 1080
⊞ HD	1280 x 720
WVGA WVGA	848 x 480
WEB WEB	320 x 240

- **Notes:** 1. When setting to FHD, HD or WVGA resolution, the LCD display aspect ratio is 16:9.
 - 2. When setting to WEB video resolution, the LCD display aspect ratio is 4:3.

6.1.2 White Balance

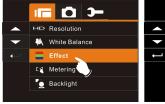
- Turn on the Digital Video Camera and make sure it is in the DV Mode.
- Press SET MENU Button and move the 4-Way Direction Button to highlight the White Balance item. Press SET Button to display submenu; or touch the screen to select the item.
- Press 4-Way Direction Button to select Auto, Daylight, Cloudy, Fluorescent or Tungsten. Press SET Button to confirm; or touch the screen to select the item.



⁻∰Auto	The Digital Video Camera automatically adjusts white balance.
[‡] ∕ Daylight	The setting is suitable for outdoor recording in daylight.
Cloudy	The setting is suitable for recording in cloudy or shady environments.
Fluorescent	The setting is suitable for indoor with fluorescent lamp lighting, or environments with high color temperature.
- Tungsten	The setting is suitable for indoor with incandescent lamp light, or environments with low color temperature.

6.1.3 Effect

- Turn on the Digital Video Camera and make sure it is in the DV Mode.
- Press MENU Button and press the 4-Way Direction Button to highlight the Effect item. Press SET Button to display submenu; or touch the screen to select the item.
- Press 4-Way Direction Button to select Normal, B/W or Sepia.
 Press SET Button to confirm; or touch the screen to select the item.

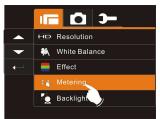




Normal	Make recordings in nature color
B&W	Make recordings in B&W (Black and White) color
Sepia	Make recordings in Sepia-toned color

6.1.4 Metering

- Turn on the Digital Video Camera and make sure it is in the DV Mode.
- Press MENU Button and move the 4-Way Direction Button to highlight the Metering item. Press SET Button to display submenu; or touch the screen to select the item.
- Press 4-Way Direction Button to select Spot, Center or Touch AE. Press SET Button to confirm; or touch the screen to select the item.





[o] Spot	This setting is to ensure correct exposure for the object even if the background is very bright or very dark.
Center	Use this setting to preserve background details while letting lighting conditions at the center of the frame define exposure.
Touch AE	Touch the object to make it with suitable light.

6.1.5 Backlight

- Turn on the Digital Video Camera and make sure it is in the DV Mode.
- Press MENU Button and move the 4-Way Direction Button to highlight the Backlight item. Press SET Button to display submenu; or touch the screen to select the item.
- Press 4-Way Direction Button to select On or Off. Press SET Button to confirm; or touch the screen to select the item.





6.1.6 Night Mode

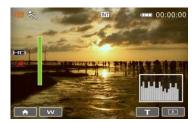
- Turn on the Digital Video Camera and make sure it is in the DV Mode.
- Press MENU Button and press the 4-Way Direction Button to highlight the Night Mode item. Press SET Button to display submenu; or touch the screen to select the item.
- Press 4-Way Direction Button to select On or Off. Press SET Button to confirm: or touch the screen to select the item.





6.1.7 Motion Detection

When Motion Detection is turned on, the camera will detect the motion for Movie Clip recording without human intervention. When the AE variation is detected, the recording will start immediately.



- Turn on the Digital Video Camera and make sure it is in the DV Mode.
- Press MENU Button and move the 4-Way Direction Button to highlight the Motion Detection item. Press SET Button to display submenu; or touch the screen to select the item.
- 3. Press 4-Way Direction Button to select On or Off. Press SET Button to confirm; or touch the screen to select the item.





6.1.8 EV Compensation

You can adjust the value of the exposure compensation which is ranged from -2.0EV to +2.0EV (at 0.5EV increment). The higher the EV value, the brighter the image will be.

- Turn on the Digital Video Camera and make sure it is in the DV Mode.
- Press MENU Button and move the 4-Way Direction Button to highlight the EV Compensation item. Press SET Button to display submenu; or touch the screen to select the item.
- Press 4-Way Direction Button to adjust the Exposure value (-2.0 ~ + 2.0). Press SET Button to confirm; or touch the screen to select the item.





6.1.9 Multi shot

- Turn on the Digital Video Camera and make sure it is in the DV Mode.
- Press MENU Button and press the 4-Way Direction Button to highlight the Multi shot item. Press SET Button to display submenu; or touch the screen to select the item.
- Press 4-Way Direction Button to select On or Off. Press SET Button to confirm; or touch the screen to select the item.

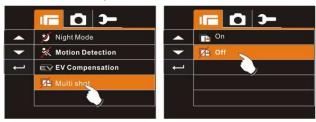


Image resolution	
FHD FHD	1920 x 1080
HD HD	1280 x 720
WVGA WVGA	848 x 480
WEB WEB	320 x 240

Notes: the image size is fixed depending on the image quality of the video clip.

- When setting to FHD, HD or WVGA resolution, the LCD display aspect ratio is 16:9.
- 2. When setting to WEB video resolution, the LCD display aspect ratio is 4:3.

6.2 Menus of Movie Clip/Voice Playback

When in Movie Clip mode, press the SET Button to show the Movie Clip options menu.

6.2.1 Delete

- Turn on the Digital Video Camera and make sure it is in the Movie Clip/Voice Playback Mode.
- Press MENU Button and move the 4-Way Direction Button to highlight the Delete item. Press SET Button to display submenu: or touch the screen to select the item.
- Use 4-Way Direction Button to select Delete One or Delete All.
 Press SET Button to confirm; or touch the screen to select the item.





 Press 4-Way Direction Button to select "O" Yes or "X" NO. Press SET Button to confirm; or touch the screen to select the item.



Delete One	Delete the current file
Delete All	Delete all files stored in the Digital Video Camera

Note: The file cannot be recovered once it is deleted. Therefore, please make sure you have backed up the file before Delete. Protect files cannot be deleted. Before delete, you must unlock the file.

6.2.2 Protect

- Turn on the Digital Video Camera and make sure it is in the Movie Clip/Voice Playback Mode.
- Press MENU Button and move the 4-Way Direction Button to highlight the Protect item. Press SET Button to display submenu; or touch the screen to select the item.
- Use 4-Way Direction Button to select Lock One, Local All, Unlock One or Unlock All. Press SET Button to confirm; or touch the screen to select the item.





Protect Lock



Note: To unlock the file from Protect, repeat steps stated above. When the Protection is relieved from Protect mode, the locked icon will disappear.

6.3 Menu options of Camera Mode

When in DSC Mode, press MENU Button to display camera mode option Menu.

6.3.1 Still Image Resolution

- Turn on the Digital Video Camera and make sure it is in the DSC Mode.
- Press MENU Button and move the 4-Way Direction Button to highlight the Resolution item. Press SET Button to display submenu; or touch the screen to select the item.
- Press 4-Way Direction Button to select 16M, 8M, 5M or 3M. Press SET Button to confirm; or touch the screen to select the item.



16M 16M	4608 x 3456 pixels (Interpolation)
₹№ 8M	3200 x 2400 pixels (Interpolation)
5 № 5M	2592 x 1944 pixels
3 № 3M	2048 x 1536 pixels

6.3.2 White Balance

- Turn on the Digital Video Camera and make sure it is in the DSC Mode.
- Press MENU Button and move the 4-Way Direction Button to highlight the White Balance item. Press SET Button to display submenu; or touch the screen to select the item.
- Use 4-Way Direction Button to select Auto, Daylight, Cloudy, Fluorescent or Tungsten. Press SET Button to confirm; or touch the screen to select the item.





6.3.3 Effect

This Digital Video Camera can take standard color images, Black and White images, or Sepia color tone images.

- Turn on the Digital Video Camera and make sure it is in the DSC Mode.
- Press MENU Button and move the 4-Way Direction Button to highlight the Effect item. Press SET Button to display submenu; or touch the screen to select the item.
- Use 4-Way Direction Button to select Normal, B/W or Sepia.
 Press SET Button to confirm; or touch the screen to select the item.





6.3.4 Metering

- Turn on the Digital Video Camera and make sure it is in the DSC Mode.
- Press MENU Button and move the 4-Way Direction Button to highlight the Metering item. Press SET Button to display submenu; or touch the screen to select the item.
- Press 4-Way Direction Button to select Spot, Center or Touch AE. Press SET Button to confirm; or touch the screen to select the item.





6.3.5 Backlight

- Turn on the Digital Video Camera and make sure it is in the DSC Mode.
- Press MENU Button and move the 4-Way Direction Button to highlight the Backlight item. Press SET Button to display submenu; or touch the screen to select the item.
- Press 4-Way Direction Button to select ON or OFF. Press SET Button to confirm; or touch the screen to select the item.





6.3.6 Night Mode

- Turn on the Digital Video Camera and make sure it is in the DSC Mode.
- Press MENU Button and move the 4-Way Direction Button to highlight the Night Mode item. Press SET Button to display submenu; or touch the screen to select the item.
- Press 4-Way Direction Button to select On or Off. Press SET Button to confirm; or touch the screen to select the item.





6.3.7 Self-timer

- Turn on the Digital Video Camera and make sure it is in the DSC Mode.
- Press MENU Button and use the 4-Way Direction Button to highlight the Self-timer item. Press SET (Menu Button) to display submenu; or touch the screen to select the item.
- Press 4-Way Direction Button to select OFF, 2 Sec or 10 sec. Press SET Button to confirm; or touch the screen to select the item.



With 2 sec. Self-timer:

The image will be taken 2 seconds after the shutter is released.

With 10 sec. Self-timer:

The image will be taken 10 seconds after the shutter is released.

6.3.8 Continuous Shot

You can continuously shoot three pictures using this function. To start, press and hold the Shutter Button. The function will end automatically after three pictures are taken.

- Turn on the Digital Video Camera and make sure it is in the DSC Mode.
- Press MENU Button and press the 4-Way Direction Button to highlight the Continuous Shot item. Press SET Button to display submenu; or touch the screen to select the item.
- Press 4-Way Direction Button to select OFF or ON. Press SET Button to confirm; or touch the screen to select the item





6.3.9 EV compensation

You can adjust the value of the exposure compensation which is ranged from -2.0EV to +2.0EV (at 0.5EV increment). The higher the EV value, the brighter the image will be.

- Turn on the Digital Video Camera and make sure it is in the DSC Mode.
- Press MENU Button and press the 4-Way Direction Button to highlight the EV Compression item. Press SET Button to display submenu; or touch the screen to select the item.
- Press 4-Way Direction Button to adjust the exposure value (-2.0 ~ +2.0). Press SET Button to confirm; or touch the screen to select the item.



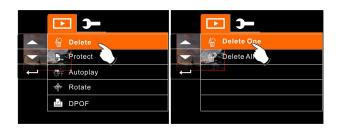


6.4 Menus of Playback

6.4.1 Delete

Use this function to delete the files.

- Turn on the Digital Video Camera and make sure it is in the Playback Mode.
- Press MENU Button and press the 4-Way Direction Button Down; or touch the screen to select the file to be deleted or to delete all files.
- 3. Press the 4-Way Direction Button or touch the screen to select "Delete one" or "Delete All" to display submenu.



 Press 4-Way Direction Button or touch the screen to select "O" YES or "X" No and press SET Button to delete file(s).



Note: The files cannot be recovered once deleted. Therefore, please make sure you have a backup file before delete. The protect files will not be able to delete. Before delete of Protected file, you must unlock the file.

6.4.2 Protect

- Turn on the power of Digital Video Camera and make sure it is in the Playback Mode.
- 2. Choose the file which you want to protect.
- Press MENU Button and move the 4-Way Direction Button to highlight the Protect item. Press SET Button to display submenu: or touch the screen to select the item.
- 4. Press 4-Way Direction Button or touch the screen to select item. Press SET Button or touch the screen to confirm. The Locked icon will be displayed to indicate the file is Protected.





Protect Lock



Note: Repeat above steps to unlock the file. When the file is unlocked, the locked icon will disappear.

6.4.3 Auto play

This Digital Video Camera includes a slide show function that could playback each picture at a regular interval.

- Turn on the power of Digital Video Camera and make sure it is in the Playback Mode.
- Press MENU Button and move the 4-Way Direction Button to highlight the Auto play item. Press SET Button to display submenu; or touch the screen to select the item.
- Press 4-Way Direction Button or touch the screen to select "Off", 1sec., or "3 sec", The images will be displayed automatically.





6.4.4 Rotate

- Turn on the power of the Digital Video Camera and make sure it is in the Playback Mode.
- Use 4-Way Direction Button to highlight Rotate item and press SET Button; or touch the screen to select the Left 90 or Right 90.





6.4.5 DPOF

Use DPOF (Digital Print Order Format) function to indicate the printing information stored in the memory card.

- Turn on the power of the Digital Video Camera and make sure it is in the Playback Mode. Press Playback Button and press SET Button to display Image Playback Menu; or touch the screen to select the item.
- Use 4-Way Direction Button to highlight the DPOF item. Press SET Button; or touch the screen to display submenu.



 Use the 4-Way Direction Button and press SET Button; or touch the screen to select the item. The DPOF icon will be shown to indicate the files that are ordered for printing.



 Press the Playback Button or touch the screen to exit the image.

Note: 1. A memory card is required for the DPOF function.

If DPOF is set, the pictures to be printed are ordered to print.

6.5 Setting Menu

Setting Menu can be used to select all kinds of the Digital Video Camera settings.

6.5.1 Information

This function can be used to display information on the LCD screen to help you in capturing best images and movie clips.

- Turn On the Digital Video Camera and switch to SET Mode.
- Press 4-Way Direction Button to highlight Information item. Press SET Button to display submenu; or touch the screen to select the item.
- Press 4-Way Direction Button to select Normal, Histogram, or OFF. Press SET Button to confirm; or touch the screen to select the item.





6.5.2 Date / Time

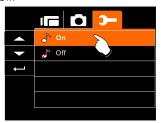
Please refer to 2.7.1 the Setting of Date and time on page 21.

6.5.3 Beep

 Turn on the power of Digital Video Camera and switch to SET Mode. Press the 4-Way Direction Button up or down to highlight the Beep and press SET selection Button to confirm or touch the screen to select.



Use 4-Way Direction Button or touch the screen to select On or Off.

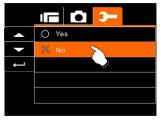


6.5.4 Default

Use this function to reset all settings to default settings.

- Turn on the power of Digital Video Camera and switch to SET Mode.
- Press 4-Way Direction Button to highlight Default item. Press SET Button to display submenu; or touch the screen to select the item.
- Use 4-Way Direction Button or touch the screen to select "O" YES or "X" NO. Press SET Button to confirm; or touch the screen to select the item.





6.5.5 TV standard

Use the TV standard to set the TV system for your area.

- Turn on the power of Digital Video Camera and switch to SET Mode.
- Use 4-Way Direction Button to highlight the TV standard item. Press SET Button to display submenu; or touch the screen to select the item.
- Use 4-Way Direction Button to select NTSC or PAL. Press SET Button to confirm; or touch the screen to select the item.





TV out standard setting reference		
NTSC NTSC	USA, Canada, Japan, Korea, Taiwan, Mexico	
PAL PAL	Australia, Austria, Belgium, China, Denmark, Finland, Germany, UK, Italy, Kuwait, Malaysia, New Zealand, Singapore, Spain, Sweden, Switzerland, Thailand, Norway	

6.5.6 USB

This setting is for USB output function. You can select an external device to connect the Digital Video Camera by using the supplied USB cable.

- Turn on the Digital Video Camera and switch to SET Mode.
- Press 4-Way Direction Button to highlight the USB item.
 Press SET Button to display submenu; or touch the screen to select the item.
- Use 4-Way Direction Button to select PC Camera or Mass Storage. Press SET Button to confirm; or touch the screen to select the item.





6.5.7 Auto Power Off

This function can be used to turn off the Digital Video Camera automatically after a period of time not using the Digital Video Camera.

- Turn on the Digital Video Camera and switch to SET Mode.
- Press 4-Way Direction Button to highlight Auto Power Off item. Press SET Button to display submenu; or touch the screen to select the item.
- Press 4-Way Direction Button to select OFF, 3 mins, or 5 mins; or touch the screen to select the item.





6.5.8 Frequency

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

- Turn on the power of Digital Video Camera and switch to SET Mode.
- Use 4-Way Direction Button to highlight the Frequency selection item. Press SET Button to display submenu; or touch the screen to select the item.
- Use 4-Way Direction Button to select 50 Hz or 60 Hz. Press SET Button to confirm; or touch the screen to select the item.





Frequency setting reference:		
50HZ _{50HZ}	UK, Germany, Spain, Italy, France, Netherlands, Portugal, Russia, China, Japan	
60HZ _{60HZ}	USA, Taiwan, Korea, Japan	

6.5.9 Language

 Turn on the power of the Digital Video Camera. Then select the Mode Button to "SET". Move 4-Way Direction Button up and down to highlight the Language and press SET button to confirm or touch the screen to select.



 Press 4-Way Direction Button or touch the screen to select the following languages: English, German, French, Italian, Japanese, Spanish, Portuguese, Traditional Chinese, Simplified Chinese, Turkish, Russian, Thai, Arabian, or Korean.



6.5.10 Format

This function allows you to format the memory card or the built-in memory.

- Turn on the power of Digital Video Camera and switch to SET Mode.
- Press 4-Way Direction Button to highlight Format item.
 Press SET Button or touch the screen to display submenu.
- Press 4-Way Direction Button to select "O" Yes or "X" NO. Press SET Button to confirm; or touch the screen to select the item.





 The format of the current storage media (memory card or internal memory) is now completed.

Note: All the data stored in the memory card or flash memory will be deleted after formatting.

6.5.11 File Number (Default: Series)

This setting allows you to name the files.

If "Series" is selected, the file name will follow the latest stored file instead.

If "Reset" is selected, the next file name will start from 0001 even after formatting, deleting or inserting a new memory card.

- Turn on the power of Digital Video Camera and switch to SET Mode.
- Press 4-Way Direction Button to highlight File Number item. Press SET Button to display submenu; or touch the screen to select the item.
- Use 4-Way Direction Button to select Series or Reset. Press SET Button to confirm; or touch the screen to select the item.





6.5.12 LCD brightness

This function can be used to adjust the brightness of the screen.

- Turn on the Digital Video Camera and switch to SET Mode.
- Use 4-Way Direction Button to highlight LCD brightness item. Press SET Button to display submenu; or touch the screen to select the item.
- Press 4-Way Direction Button to select High, Medium, or Low. Press SET Button to confirm; or touch the screen to select the item.





6.5.13 Instant Review

This function can be used to instantly browse the files after taking the picture.

- Turn on the Digital Video Camera and switch to SET Mode.
- Press 4-Way Direction Button to highlight Instant Review item. Press SET Button to display submenu; or touch the screen to select the item.
- Press 4-Way Direction Button to select 1 sec, 3 sec, or 5 sec. Press SET Button to confirm; or touch the screen to select the item.

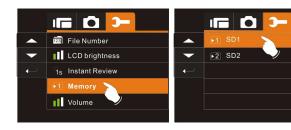




6.5.14 Memory

Use this function to select data storage location.

- Turn on the Digital Video Camera and switch to SET Mode.
- Press 4-Way Direction Button to highlight Memory item.
 Press SET Button to display submenu; or Touch the screen to select the item.
- Press 4-Way Direction Button to select Internal, SD1, or SD2. Press SET Button to confirm; or touch the screen to select the item.



Note: The images or movie clips can be stored in a built-in flash memory or external SD cards. When the SD cards are inserted, the files will be stored in the external SD cards rather than the internal flash memory. On the other hand, the files will be stored in the built-in flash memory when SD card(s) is not inserted.

6.5.15 Volume

Use this function to adjust the volume of sound.

- Turn on the Digital Video Camera and switch to SET Mode.
- Press the 4-Way Direction Button to highlight Volume item. Press SET Button to display submenu; or touch the screen to select the item.
- Press the 4-Way Direction Button to select High, Medium, or Low. Press SET Button to confirm; or touch the screen to select the item.





6.5.16 Start-up LOGO

Use this function to the image that is displayed on the LCD when the digital camcorder is turned on.

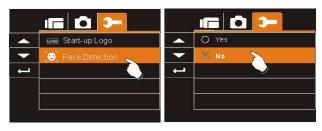
- Turn on the Digital Camcorder and switch to Setup Menu.
- Press the 4-Way Direction Button to highlight the Star-up Logo item. Press the SET Button or touch the icon on the screen to display the submenu.
- Press the 4-Way Direction Button to select Default or User Setting. Press the SET Button or touch the screen to select the item.



6.5.17 Face Detection

You can use the Face Detection function to detect faces in a scene automatically during a photo shoot.

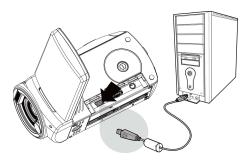
- Turn on the Digital Camcorder and switch to Setup Menu.
- Press the 4-Way Direction Button to highlight the Face Detection item. Press the SET Button or touch the icon on the screen to display the submenu.
- Press the 4-Way Direction Button to select "O" YES or "X" NO. Press the SET Button or touch the screen to select the item.



7 PC and TV Connection

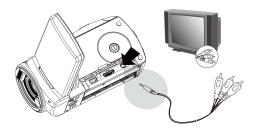
7.1 Connecting to the Computer

As shown in the illustration, use the USB cable provided to connect the Digital Video Camera to a PC for file transmission, or use the Digital Video Camera as a Web camera for conferencing purpose.



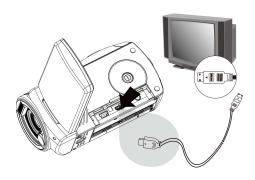
7.2 Connecting to a Standard TV

As shown in the illustration, use the video cable to connect the Digital Video Camera to a standard TV.



7.3 Connecting to a HD TV

As shown in the illustration, use the HDMI cable provided to connect the Digital Video Camera to a HD TV for high resolution picture display.



8 Installing the Software

- Place the CD ROM attached into the CD player.
- If the CD is not executed automatically, please use Windows File Manager to execute the Install_CD.exe file in the CD.

The following screen will be displayed.



3. Press the Menu item and follow the Installation process and follow the instructions on-screen.

9 Editing Software



ArcSoft Total Media Extreme (TME) ™ manages your media for you, and gives you tons of fun and exciting ways to create and share projects featuring your photo, video, and music files. Edit, enhance and add creative effects to your photos. You can

- Create your own movies or photo slide shows complete with soundtrack.
- Upload your files easily to YouTube™!
- Or share them through simple email attachments or popular photo printing.
- You can go to http://www.arcsoft.com/ for more information.

10 Appendix

Specifications

Image sensor	1/2.5 inch. 5.0 mega pixels CMOS sensor	
Effective pixels	5.03 Mega pixels (2592 x 1944)	
Storage media	SD card and SDHC card Supported.	
ISO Equipment	Auto	
Color effect	Normal/BW/Sepia	
Lens	Fixed lens F/3.2, f=7.5mm	
Focus range	Normal: 1.5m~infinity Macro: 16 cm	
Still image	Format: JPEG (DPOF, EXIF) Resolution: 3MP, 5MP, 8MP (Firmware interpolation), 16MP (Firmware interpolation)	
Movie Clip	Format: H.264 (MOV) Resolution: FHD (1920 x 1080 / 30fps) HD (1280 x 720 / 30 fps) WVGA (848 x 480 / 60 fps) WEB (320 x 240 / 30 fps.)	
Digital zoom	Still Image mode: 4X (720P) Play mode: 8X (depends on image size)	
Audio	Audio for Voice Recording: ADPCM	

LCD Display	3.0" Touch Panel screen(16:9)
Flash light	Range: < 2 m off, auto, fill-in
IR Night Vision	Range: < 1.5m Video Mode: On/Off
White balance	Auto / Daylight / Cloudy / Tungsten / Fluorescent
Exposure	-2.0 EV~+2.0 EV
Self-Timer	Off, 2 seconds, 10 seconds.
Interface	Digital output connector: USB 2.0 high- speed (480Mbps Max.) MIC Input, Speaker HDMI USB DC IN
TV output	NTSC/PAL
Shutter	Electronic shutter 2~1/8000 second
Auto Power Off	Off, 3 minutes, 5 minutes
Power Source	CNP-40 Lithium battery or 2 AA Alkaline batteries
Dimensions	112 (L) x 59.5 (H) x 50.3 (W) mm
Weight	About 225g (without battery)

Troubleshooting

Problem	Possible Cause	Solution
Can not turn on the power of Digital Video Camera.	Batteries are not inserted correctly. Batteries are exhausted.	Please insert batteries correctly. Replace the batteries.
Camera shutdown suddenly.	Power saving mode already activated. Battery exhausted.	Please turn on the power again. Replace the batteries.
Pictures are not stored in the memory.	Power off before storing the images.	Please change to new batteries when the battery indicator turns to red color.
Camera shutdown when using Self-timer shooting picture.	Batteries in camera are exhausted.	Change new batteries.
Images are out of focus	Object exceeds the range of focus.	Please take the picture within the focusing range and select normal or Macro Mode.

Unable to use the external memory card.	1. Memory card is Protected. 2. Memory card contains non-DCF images taken by other cameras.	1. Unlock the memory card. 2. Reformat the memory card. Please make sure to backup the file before reformatting memory card.
All Buttons can not work or camera hangs.	Short circuit occurred when connecting the camera to other device.	Take out batteries in the camera and re-insert again.

Technical support

For technical assistance, free driver updates, product information, and news releases, visit the following web site:

http://www.BenQ.com