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.

**Before You Start**

Take some test shots before performing a formal recording.

Before taking pictures 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.

**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**

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:

- **Operating System**: Windows XP SP2 32/64bit, Vista 32/64bit and Windows7 32/64bit
- **CPU**: Intel/AMD Dual-Core or above
- **Memory**: At least 1GB or above
- **Graphic Card**: DirectX 9 is must, DirectX 10 is recommendation
- **Interface**: Standard USB 1.1 Port or Higher
- **Hard Disk**: At least 2GB 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:

- Full HD 1080p (30fps)
- 3.0 TFT LCD Touch Display (16:9)
- 12X Optical Zoom, 10X Digital Zoom
- Li-ion Battery NP120
- Excellent AE performance by continuous IRIS
- Support Dual Video Size
- Support Face Detection
- Support Auto Focus (AF) Lock function
- Support Manual Focus (MF) 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
- CD-ROM (Application software)
- Battery charger
- Power cord
- AV cable
- HDMI cable (optional)
- Remote control (optional)
- Li-ion battery NP-120

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 and Top view
- Zoom/Volume button
- Shutter button
- Speaker
- Lens
- Flash
- LED light
- Microphone

1.4.2 Bottom view
- Tripod mount

1.4.3 Left view
1.4.6 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.

<table>
<thead>
<tr>
<th>Button</th>
<th>Name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power button</td>
<td>Press to turn power on/off.</td>
<td></td>
</tr>
<tr>
<td>MENU button</td>
<td>Press to display main OSD menus.</td>
<td></td>
</tr>
<tr>
<td>Mode dial</td>
<td>Use to turn Camcorder, Camera, and SET modes.</td>
<td></td>
</tr>
</tbody>
</table>

- **Joystick**
  - In Camcorder and Camera mode:
    1. Move up/down to adjust the exposure settings.
    2. Press the joystick to enable AF Lock. The AF Lock icon appears on the screen.
    3. Move right to enable the MF function. The MF icon appears on the LCD screen when enabled.
    4. Move left to adjust the white balance settings.
  - In Camera Playback mode:
    1. Move right and left to view the stored images.
    2. When the image is zoomed in, direction keys appear on the LCD.
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 center joystick button to confirm.

- **In Camera mode,** press to take a photo.

- **In Camcorder mode,** you can also press to take a photo before and during recording a video clip.

- **In Camcorder mode,** press to start/stop recording a video clip.

- **In Camcorder and Camera 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**
  - In Camcorder and Camera modes, press right/left to zoom in and out.
  - In Camera Playback mode, press right to zoom in your photo.
  - In Camcorder Playback mode, press right/left to increase or decrease the volume of the video clip you are playing.

- **LED light button**
  - In Camcorder and Camera modes, press the button to turn on/off the increase light.
1.4.7 About the LEDs

The following table describes the camcorder LEDs:

<table>
<thead>
<tr>
<th>LED</th>
<th>Color</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power/Rec/Status</td>
<td>Green</td>
<td>Power-on</td>
</tr>
<tr>
<td></td>
<td>Green/Red Blinks</td>
<td>Recording</td>
</tr>
<tr>
<td>Self-timer</td>
<td>Red Blinks</td>
<td>Self-timer is activated.</td>
</tr>
<tr>
<td></td>
<td>Red Blinks Rapidly</td>
<td>2 seconds self-timer remaining.</td>
</tr>
</tbody>
</table>
2. Getting started

2.1 Inserting an SD card

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

1. Open the SD card compartment cover and open the SD card compartment cover.

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

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 damage the camcorder and possibly start a fire.

1. Slide the battery cover latch as shown, the battery cover opens automatically.

2. Insert the battery as shown.

3. Close the battery cover.
2.3 Charging the battery
You can charge the battery with the charging unit provided. Follow the steps below 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 
   to save your changes and leave the Date/ Time menu.
### Setting the Beep

1. Turn on the camcorder, and move the mode dial to SET.
2. Move the joystick left and right or tap the screen to highlight Beep. Press the center joystick button to enter the Beep menu.
3. Move the joystick left and right to select Beep Off or Beep On options. Press the center joystick button to confirm.

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

### Setting the Language

1. Turn on the camcorder, and move the mode dial to SET.
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, and others. Move the joystick up and down or tap the screen to confirm and exit the menu.

### Language Selection

Select the desired language to use in the menu.
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.

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.

<table>
<thead>
<tr>
<th>Video resolution</th>
<th>Preview</th>
<th>Taking pictures and focusing</th>
</tr>
</thead>
<tbody>
<tr>
<td>WQVGA</td>
<td>16:9 ratio</td>
<td></td>
</tr>
<tr>
<td>WVGA</td>
<td>16:9 ratio</td>
<td></td>
</tr>
<tr>
<td>720P</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1080P</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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:

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.

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 2x, 4x, 8x and 16x.

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.

8. During playback, press the zoom button left or right to adjust volume.

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.
2.9 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.

2.8.2 Viewing images

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

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

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

Connect the camcorder to a HD TV 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

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

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>🎥</td>
<td>Recording time elapsed</td>
</tr>
<tr>
<td>🎥</td>
<td>Memory status indicator</td>
</tr>
<tr>
<td>🎥</td>
<td>SD card in</td>
</tr>
<tr>
<td>🎥</td>
<td>Stabilizer indicator</td>
</tr>
</tbody>
</table>
### 3.1.2 Using AF Lock

The **Auto Focus (AF) Lock** function is used to lock focus on a desired image.

1. Press the joystick button to enable AF Lock. The AF Lock icon appears on screen.

### 3.1.3 Using Manual Focus

The **Manual Focus (MF)** function is used to manually set the focus.

1. Move joystick right to enable MF function. The MF icon appears on screen.

2. Aim the camera on your desired subject.

3. Move the zoom buttons left or right to manually adjust focus.

*Note:* To zoom in or out the image, tap the icon on the screen. The icon is displayed; move the zoom buttons right or left to zoom in or out. To toggle back to MF mode, tap the icon again.

4. Press the REC button to record video or the shutter button to capture image.
3.1.4 Using the zoom function
The camcorder is equipped with 12x 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.

3.1.5 Using the LED light
Use the LED light to illuminate subjects in dark environments.
Press the LED Light button to switch on the LED light and press again to switch it off.

3.1.6 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 \( \mathcal{F} \) or \( \mathcal{F} \) displays on your camcorder when activated.

3.1.7 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".

3.1.8 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.

![Camera mode icons]

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

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Remaining number of photos</td>
</tr>
<tr>
<td>2</td>
<td>Memory status indicator</td>
</tr>
<tr>
<td>3</td>
<td>Aspect ratio indicator</td>
</tr>
<tr>
<td>4</td>
<td>Self-timer indicator</td>
</tr>
<tr>
<td>5</td>
<td>Stabilizer indicator</td>
</tr>
</tbody>
</table>
### Using the LED light module

#### 3.2.2 Using AF Lock
- See section 3.1.2 "Using AF Lock"

#### 3.2.3 Using Manual Focus
- See section 3.1.3 "Using Manual Focus"

#### 3.2.4 Using the zoom function
- See section 3.1.5 "Using the zoom function"

#### 3.2.5 Using the LED light module

<table>
<thead>
<tr>
<th>6</th>
<th>Face tracking indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Color effect indicator</td>
</tr>
<tr>
<td>8</td>
<td>Quality indicator</td>
</tr>
<tr>
<td>9</td>
<td>Auto Focus (AF) lock indicator</td>
</tr>
<tr>
<td>10</td>
<td>Manual Focus (MF) indicator</td>
</tr>
<tr>
<td>11</td>
<td>LED light indicator</td>
</tr>
<tr>
<td>12</td>
<td>Flash indicator</td>
</tr>
<tr>
<td>13</td>
<td>Menu indicator. Tap to enter the camera menu.</td>
</tr>
<tr>
<td>14</td>
<td>Battery indicator</td>
</tr>
<tr>
<td>15</td>
<td>White balance indicator</td>
</tr>
<tr>
<td>16</td>
<td>Video resolution indicator</td>
</tr>
<tr>
<td>17</td>
<td>Camera mode indicator</td>
</tr>
<tr>
<td>18</td>
<td>Zoom indicator</td>
</tr>
</tbody>
</table>

See section 3.1.5 "Using the LED light".
### 3.3 Camcorder Playback mode

**Camcorder Playback mode icons**

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

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Displays the elapsed time while playing the video clip.</td>
</tr>
<tr>
<td>2.</td>
<td>Fast forward icon. Tap to fast forward the video clip.</td>
</tr>
<tr>
<td>3.</td>
<td>Slow motion icon. Tap to play the video in slow motion.</td>
</tr>
</tbody>
</table>

### 3.3.1 Camcorder Playback mode icons

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.</td>
<td>Stop icon. Tap to stop the video.</td>
</tr>
<tr>
<td>5.</td>
<td>Pause icon. Tap to pause the video.</td>
</tr>
<tr>
<td>6.</td>
<td>Rewind icon. Tap to rewind the video.</td>
</tr>
<tr>
<td>7.</td>
<td>Camcorder playback mode icon</td>
</tr>
<tr>
<td>8.</td>
<td>Displays the file number of the video clip.</td>
</tr>
<tr>
<td>9.</td>
<td>100-0034</td>
</tr>
</tbody>
</table>

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

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

3.4.1 Camera Playback mode icons

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

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Icon 1" /></td>
<td>Next icon. Tap to go to the next image.</td>
</tr>
<tr>
<td><img src="image2.png" alt="Icon 2" /></td>
<td>Thumbnail icon. Tap to display images in thumbnail.</td>
</tr>
<tr>
<td><img src="image3.png" alt="Icon 3" /></td>
<td>Menu icon. Tap to display the playback menu.</td>
</tr>
<tr>
<td><img src="image4.png" alt="Icon 4" /></td>
<td>Back icon. Tap to return to the previous image.</td>
</tr>
<tr>
<td><img src="image5.png" alt="Icon 5" /></td>
<td>Camera Playback mode icon.</td>
</tr>
<tr>
<td><img src="image6.png" alt="Icon 6" /></td>
<td>File number indicator.</td>
</tr>
<tr>
<td><img src="image7.png" alt="Icon 7" /></td>
<td>File protect indicator.</td>
</tr>
</tbody>
</table>

3.5 Thumbnail mode

When in Camera Playback or Camcorder Playback modes, move the joystick up or down to display 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 down to view six thumbnail images/video clips on the LCD screen.

3. Move the joystick left and right or tap the screen to highlight an image or 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 the screen to view the image or playback the video clip in full screen mode.

5. Move the joystick up or tap the screen to display images in thumbnail view.
4 Using the menus

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 1080P/30FPS, 720P/60FPS, 720P/30FPS, WVGA/60FPS, WVGA/30FPS, or WQVGA/240FPS. Press the center joystick button or tap the screen to confirm and exit the submenu.

5. Press the Menu button or tap to exit the menu.

Note:
In 1080P mode, you can capture a photo when the video is recording. The still image resolution is 1920x1080.

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 to select the desired option. Press the center joystick button or tap the screen to confirm and exit the submenu.

4.1.3 White balance

5. Press the Menu button or tap button to exit the menu.
Use this option to correct color 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 the screen to select Auto, Sunny, Cloudy, Tungsten, or Fluorescent. Press the center joystick button or tap the screen to confirm and exit the submenu.
5. Press the Menu button or tap  to exit the menu.

4.1.4. Color effect

The camcorder can capture standard color 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 the screen to select Natural, B&W, or Sepia. Press the center joystick button or tap the screen to confirm and exit the submenu.
5. Press the Menu button or tap  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 the screen to confirm and exit the submenu.
5. Press the Menu button or tap 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 the 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 the screen to confirm and exit the submenu.
5. Press the Menu button or tap to exit the menu.

Note:
1. Select to capture two simultaneous video files. Use 1080P(30fps) or WQVGA(30fps) to easily upload videos to YouTube or Facebook.
2. When this dual video function is enabled, the still image resolution for 720 mode is 1280x720 and 1080 mode is 1920x1080.
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 and exit the submenu.

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 \( \text{Playback} \) 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 the screen to display the submenu.

3. Then playback screen appears again. Move the joystick or tap \( \text{Protect} \) to locate the file you want to protect. Press the center joystick button or tap \( \text{Protect} \) to protect or unprotect the file. A lock \( \text{lock} \) icon is displayed to show that the file is protected.

4. Press the Menu button again or tap \( \text{Exit} \) to exit the menu.

- **Note:**
  To unlock a file, repeat the above steps. The \( \text{lock} \) 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 \( \text{Playback} \) 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 the screen 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 to confirm and exit the submenu.

4. Press the Menu button again or tap \( \text{Exit} \) 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 \( \text{Menu} \) 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 or tap the screen to select from 20M, 12M, 10M, 5M, 2M, 10M burst or 2M burst. Press the center joystick button or tap the screen 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 \( \text{Menu} \) 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 the screen to confirm and exit the submenu.

4.3.3 White balance

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

1. Turn the camcorder on and ensure it is in Camera mode.
2. Press the Menu button or tap \( \text{Menu} \) 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 or tap to select **Auto, Sunny, Cloudy, Tungsten, or Fluorescent**. Press the center joystick button or tap the screen to confirm and exit the submenu.

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

### 4.3.4 Color effect

The camcorder can capture standard color 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 to confirm and exit the submenu.

5. Press the **Menu** button again or tap 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 the screen to confirm and exit the submenu.

5. Press the **Menu** button again or tap 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 the screen to confirm and exit the submenu.
5. Press the Menu button again or tap to exit the menu.

4.3.7 Face Detection
Use the face detection function to detect faces to capture photos.

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 Face Detection menu. Press the center joystick button to display the submenu.
4. Move the joystick left and right or tap to select on or off. Press the center joystick button or tap the screen to confirm and exit the submenu.
5. Press the Menu button again or tap 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 \( \text{Menu} \) 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 \( \text{Menu} \) to locate the file you want to delete and press the center joystick button or tap \( \text{Menu} \) 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 the screen to confirm. All files stored in memory will be deleted.

3. Press the Menu button or tap \( \text{Menu} \) 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 the screen 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.

**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 the screen 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 the screen to confirm. The images are displayed automatically.

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

The system menu is used to configure miscellaneous camcorder functions.

4.5.1 Setting the beep

See section 2.6.3 “Setting the Beep”.

4.5.2 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 minutes, or 10 minutes. Press the center joystick button or tap the screen to confirm and exit the submenu.

4.5.3 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 the screen to confirm and exit the submenu.
4.5.4 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 \(^{\text{\checkmark}}\), and press the center joystick button or tap the screen to confirm.

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

4.5.5 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 \(^{\text{\checkmark}}\), and press the center joystick button or tap the screen to confirm.

4.5.6 Language
See section 2.6.2 “Setting the language”.
4.5.7 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 the screen to confirm and exit the submenu.

4.5.8 Date/time
See section 2.6.1 “Setting the date and time”.

Appendix
Specifications

<table>
<thead>
<tr>
<th>General</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Imaging sensor</td>
<td>1/2.3” CMOS 10.0 Megapixel sensor</td>
</tr>
<tr>
<td>Active pixels</td>
<td>10.0 Megapixel</td>
</tr>
<tr>
<td>Storage media</td>
<td>Internal: Built-in 128MB Flash Memory External: SD Card (Up to SDHC 16GB Class6)</td>
</tr>
<tr>
<td>Sensor sensitivity</td>
<td>Auto</td>
</tr>
<tr>
<td>Color effects</td>
<td>Natural/ B&amp;W/ Sepia</td>
</tr>
<tr>
<td>Lens</td>
<td>12X Optical zoom lens</td>
</tr>
<tr>
<td></td>
<td>Wide: F1.85, f=6.3mm</td>
</tr>
<tr>
<td></td>
<td>Tele: F3.1, f=75.6mm (36-428mm equivalent to 35mm)</td>
</tr>
<tr>
<td></td>
<td>9G1E3 with ND filter</td>
</tr>
<tr>
<td>Focus range</td>
<td>Normal/MF: 10cm ~ inf. (Wide) 90cm ~ inf. (Tele)</td>
</tr>
<tr>
<td>General</td>
<td></td>
</tr>
<tr>
<td>---------</td>
<td></td>
</tr>
<tr>
<td><strong>Still image</strong></td>
<td>Formats: JPEG (EXIF 2.2), DCF</td>
</tr>
<tr>
<td>Resolution: 2M, 5M, 10M, 12M (Firmware interpolation), 20M (Firmware interpolation)</td>
<td></td>
</tr>
<tr>
<td>Continuous Shots: 10M, Max. 7 photos/sec; 2M, Max. 30 photos/sec.</td>
<td></td>
</tr>
<tr>
<td><strong>Movie clips</strong></td>
<td>Format: H.264 (AVI)</td>
</tr>
<tr>
<td>Resolution: WQVGA 240fps, WVGA 30fps, 60fps, 720P 30fps/60fps, 1080P 30fps</td>
<td></td>
</tr>
<tr>
<td>Dual Video: 1080P 30fps/720P 30fps</td>
<td></td>
</tr>
<tr>
<td><strong>Zoom</strong></td>
<td>Movie: 12X Optical Zoom, 10X Digital Zoom</td>
</tr>
<tr>
<td>Camera: 12X Optical zoom, 10X Digital zoom</td>
<td></td>
</tr>
<tr>
<td>Playback: Still Image (8X)</td>
<td></td>
</tr>
<tr>
<td><strong>TFT Monitor</strong></td>
<td>3.0&quot; TFT (960 x 240 pixels) (16:9)</td>
</tr>
<tr>
<td><strong>LED light</strong></td>
<td>Effective Range: 0.5m ~ 1m</td>
</tr>
<tr>
<td>Mode: On / Off</td>
<td></td>
</tr>
<tr>
<td><strong>Strobe (Camera)</strong></td>
<td>Mode: Auto / Forced / Off</td>
</tr>
<tr>
<td><strong>White balance</strong></td>
<td>Auto/Sunny/Cloudy/Tungsten/Fluorescent</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>General</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EV Compensation</strong></td>
</tr>
<tr>
<td><strong>Self-timer</strong></td>
</tr>
<tr>
<td><strong>PC interface</strong></td>
</tr>
<tr>
<td><strong>TV out format</strong></td>
</tr>
<tr>
<td><strong>Shutter</strong></td>
</tr>
<tr>
<td>Video: 1/30-1/2000</td>
</tr>
<tr>
<td><strong>Auto power off</strong></td>
</tr>
<tr>
<td><strong>Power supply</strong></td>
</tr>
<tr>
<td><strong>Dimension</strong></td>
</tr>
<tr>
<td><strong>Weight</strong></td>
</tr>
</tbody>
</table>
# Troubleshooting

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cannot turn on the camcorder.</td>
<td>The batteries are not inserted correctly. The batteries have no power.</td>
<td>• Insert the batteries correctly. (See 2.2 Inserting the batteries.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Please charge the battery. (See 2.3 Charging the battery.)</td>
</tr>
<tr>
<td>The camcorder suddenly turns off.</td>
<td>The auto power off function was enabled. The camcorder is running out of battery power.</td>
<td>• Turn the power on again.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Please charge the battery. (See 2.3 Charging the battery.)</td>
</tr>
<tr>
<td>The captured image is not stored in memory.</td>
<td>Before the image is saved the power has been cut off.</td>
<td>When battery indicator turns empty (without green bars), replace the battery immediately.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Please take a picture within the available focus range and choose normal or macro mode. (See 3.2.2 Using).</td>
</tr>
<tr>
<td>Problem</td>
<td>Possible Cause</td>
<td>Solution</td>
</tr>
<tr>
<td>---------</td>
<td>---------------------------------------------------</td>
<td>------------------------------</td>
</tr>
</tbody>
</table>
| Memory card cannot be used. | The memory card is protected. The memory card contains non-DCF images taken by other camcorders. The SD card speed is too low. | - Unlock the memory card.  
- Format the memory card. (See 4.5.4 Format.) Before formatting the card, ensure you back up the files.  
- You can set the video or photo to lower quality. (See 4.1.2 Video quality) |
| All buttons are inactive. | Short circuit occurred when connecting the camcorder with other devices. | - Remove the batteries from the camcorder and insert again. |