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DSC-TX55 User Guide

Use this manual if you encounter any problems, or have any questions about the camera.





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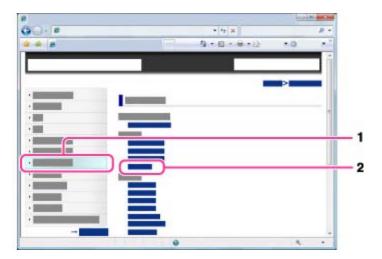
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This User Guide explains how to use each function of the camera, how to change settings, and how to troubleshoot a problem.

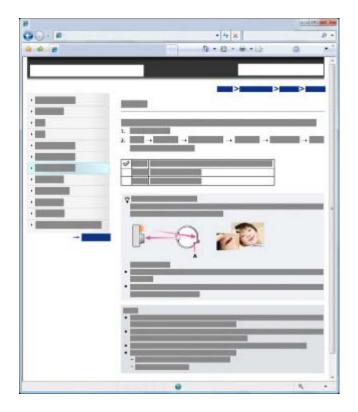
Selecting a topic to display

The following illustrations take Internet Explorer 7 as an example.

- 1. Click a title in the side bar on the left of the browser window. The title's topic list appears in the right pane.
- 2. Click a topic title in the list.



Descriptions appear in the right pane.

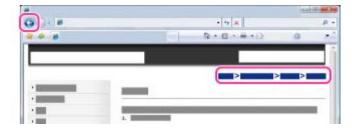


Changing the font size

Change the font size by changing the setting of your web browser. For how to change the font size setting, refer to the Help of your web browser.

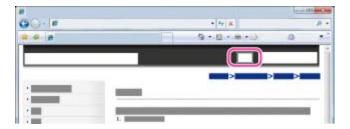
Returning to a previous page

Use the back button of your web browser or the breadcrumb trail navigation to return to a page you previously viewed.



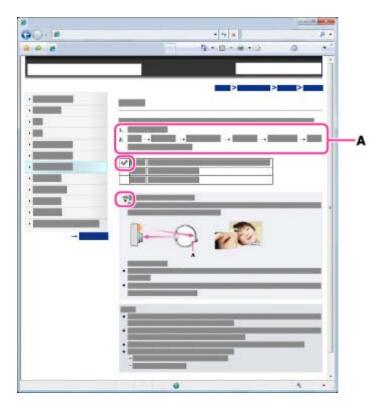
Printing out a page

Click the [Print] button to print out a page you are viewing.



Marks and notations used in this User Guide

In this User Guide, the sequence of operations is shown by arrows (\longrightarrow) (A). Operate the camera in the order indicated.



- Icons in the operating procedure sentences appear when the camera is in its default settings.
- The default setting is indicated by .

 indicates information that is useful to know.

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The images used in this User Guide

The images used as examples in this User Guide are reproduced images, and are not actual images shot using this camera.

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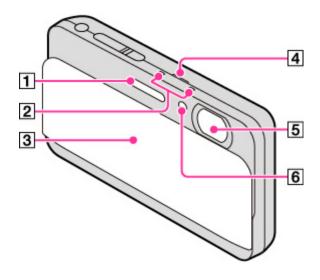
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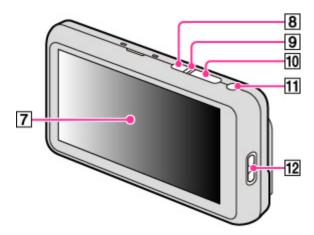
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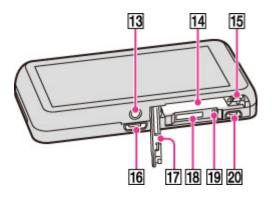


- 1 Flash
- Microphone
- 3 Lens cover
- Speaker
- 5 Lens
- 6 Self-timer lamp/Smile Shutter lamp/AF illuminator



- Screen/Touch panel
- 8 ON/OFF (Power) button
- Power/Charge lamp
- 10 Shutter button

- 11 W/T (zoom) lever
- Hook for wrist strap



- 13 Thread groove
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- Battery eject lever
- 16 Multi connector (Type3b)
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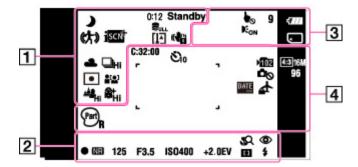
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Icons are displayed on the screen to indicate the camera status. The displayed icon positions may differ according to the shooting mode.

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ンプロ盟国はない。●の中央を	Scene Recognition icon
€ ¹ ii	Vibration warning
0	Anti Blink
iscni.	Scene Recognition
□ [†]	Overlay icon for Superior Auto
REC Standby	Recording a movie/Movie standby
0:12	Recording time (m:s)
(e)	Face Detection
☀▲湍湍急≫▶	White balance
⊚ •	Metering Mode
♣, ♣ .	Defocus Effect
®†ii ®‡ _{Mid} ®† _{Lo}	Soft Skin Effect
⊒Hi ⊈Lo	Burst Shooting Interval
[lea	Overheating warning

SPULL SError	Database file full/Database file error	

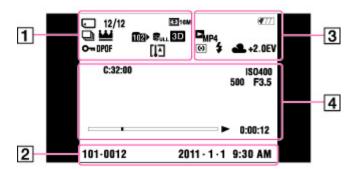
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•	AE/AF lock
ISO400	ISO speed
NR	NR slow shutter
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F3.5	Aperture value
+2.0EV	Exposure value
[]	AF range finder frame indicator
3 0	Close Focus
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4 •	Flash charging
Ū	Wind Noise Reduction

Display	Indication
9	Number of recordable images (Dual Rec)
· ///	Battery remaining
	Low battery warning
8	Touch panel invalid
==== × 1.4 cQ _D Q	Zoom scaling
CAPTURE	Importing still images
→	Recording Media (Memory card, internal memory)
K on	AF Illuminator

Display	Indication
වැල වන වන වන	Self-timer
C:32:00	Self-diagnosis display
100Min	Recordable time
≥102	Recording folder
₽⊗	Warning indicator pertaining to still image recording

å	Destination
	HDR Painting effect
TOY TOY TOY TOY	Color hue
Part) R Part) R Part) Y	Extracted Color
	AF range finder frame
+	Spot metering cross- hairs
433 16M 433 10M 433 8M 433 5M 433 2M 433 VGA (63) 12M (63) 3M (63) 2M (63) 2M (63) 12M (63) 3M (63) 2M (63) 12M (63) 12M (63) 3M (63) 2M (63) 12M (Image size/Panorama image size/Quality
96	Number of recordable images
DATE	Write Date

List of viewing mode icons



Ī	T
Display	Indication
4:3 16M 4:3 10M 4:3 8M 4:3 5M 4:3 2M 4:3 VGA (6:9 12M (6:9 3M (6:9 2M) STD (6:9) HR FX AVCHD (FH) AVCHD HO AVCHD (1086 MP4 7720 MP4 VGA MP4	Image size/Panorama image size/Quality
	Burst Images
₩	Main image in the burst group
От	Protect
DPOF	Print order (DPOF)
Qx2.0	Playback zoom
	Playback Media (Memory card, internal memory)
3D	3D images
1021	Playback folder
12/12	Image number/Number of images recorded in the selected date range or in the folder

Spull Error	Database file full/Database file error warning
[I]	Overheating warning
%	Enlargement unavailable

Display	Indication
101-0012	Folder-file number
2011-1-1 9:30 AM	Recorded date/time of the playback image

Display	Indication
771	Battery remaining
	Low battery warning
MP4 PAVCHD	View mode
₩ •	Metering Mode
\$ ®	Flash mode
AWB☀▲祟祟祟杂≸™┗┛	White balance
+2.0EV	Exposure value

Display	Indication
500	Shutter speed
F3.5	Aperture value
ISO400	ISO speed
C:32:00	Self-diagnosis display
	Playback
to be and	
PP 1	Variable speed playback
PP1	Variable speed playback Playback bar
00:00:12	



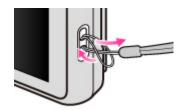
Top page > Before Use > Using the wrist strap > Using the wrist strap

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Using the wrist strap

Attach the strap and place your hand through the loop to prevent the camera from damage by being dropped.



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Using the paint pen

The paint pen is used when operating the touch panel. It attaches to the wrist strap.



Notes

- Do not carry the camera by holding the paint pen. The camera may drop.
- The supplied paint pen can be used only for this model. Using a pointed object other than the supplied paint pen may cause a malfunction.

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Taking advantage of the touch panel

The available functions may differ according to the screen mode.

Touch the screen to perform operations such as enlarging desired images or selecting a function with your finger.

Screen	Action		Operating method
Shooting		Invalids the touch panel operation	Touch few seconds. Touch few seconds to display the icon.
Shooting/Selecting the shooting mode	in in the second	Displays the function names	Touch ② on the top right of the screen → item you want to know.
Viewing	H H	Displays the previous/next image or page	Drag the screen to the right or left.

Note

• To operate the touch panel, press it lightly with your finger or the supplied paint pen.

Pressing hard or using a pointed object other than the supplied paint pen could damage the touch panel.

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Customizing the desired items

You can customize the buttons to the desired shooting modes or MENU items and layout, so that you can conveniently locate frequently used buttons.

Customizing MENU items

You can customize four menus displayed under the MENU button to the desired button in shooting mode/playback mode.

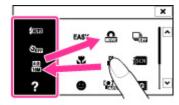
1. Touch MENU to display the MENU screen.



2. \bigcirc (Customize) \rightarrow [OK]



3. Keep touching the desired MENU item icon and drag it to the desired position in the customize area. It swaps the position with the MENU item icon currently at the position in the customize area. In playback mode, the customize area is displayed in the lower part of the screen.

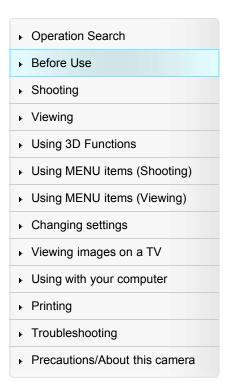


4. To cancel, touch * or [OK].

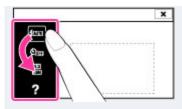
Taking advantage of customization

In addition to swapping MENU icons, you can also swap the positions of MENU icons in the customization area, or reduce the number of MENU icons.

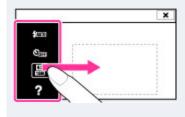
Swapping MENU icons inside the customization area Touch a MENU icon inside the customization area and drag it to the desired position.



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Reducing the number of icons in the customization area Touch a MENU icon inside the customization area and drag it to the right.



Note

• You cannot customize the MENU icon in Easy Mode.

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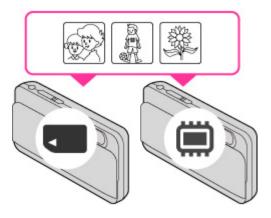
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Using the internal memory

On image data stored in the internal memory

The camera has approximately 19 MB of internal memory. This memory is not removable. You can record still images on the internal memory when there is no memory card inserted in the camera.



When a memory card is inserted

[Recording]: Images are recorded on the memory card.

[Playback]: Images on the memory card are played back.

[Menu, Settings, etc.]: Various functions can be performed on images on the memory card.

When there is no memory card inserted

[Recording]: Images are recorded using the internal memory. However, movies cannot be recorded to the internal memory.

[Playback]: Images stored in the internal memory are played back.

[Menu, Settings, etc.]: Various functions can be performed on images in the internal memory.

On image data stored in the internal memory

We recommend that you copy (back up) data using one of the following methods.

To copy (back up) data on a hard disk of your computer Without a memory card inserted in the camera, import the images into a computer. [Details] [Details]

To copy (back up) data on a memory card

Prepare a memory card with sufficient free capacity, then copy the images in the internal memory to the memory card. [Details]

Notes

- You cannot transfer image data on a memory card to the internal memory.
- By making a USB connection between the camera and a computer, you can transfer data stored in the internal memory to a computer. However you cannot transfer data on a computer to the internal memory.

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Using a memory card

Memory card

w "Memory Stick" media

Memory card

The types of memory cards that can be used with the camera are "Memory Stick Micro" (M2) media, "Memory Stick Micro" (Mark2) media, microSD memory card and microSDHC memory card.

Top page > Before Use > Using the internal memory/memory card > Using a memory card

In this User Guide, "Memory Stick Micro" (M2) media and "Memory Stick Micro" (Mark2) media are called "Memory Stick Micro" media, and microSD memory cards and microSDHC memory cards are called microSD memory cards.

- "Memory Stick Micro" media of up to 16 GB and microSD memory cards of up to 32 GB have been tested and proven to operate with your camera.
- When recording movies, it is recommended that you use the following memory cards:
 - MEMORY STICK MICRO ("Memory Stick Micro" (Mark2) media)
 - microSD memory card (Class 4 or faster)

Notes

- To ensure stable operations of the memory card, we recommend that you use this camera to format any memory card being used with this camera for the first time. Note that formatting will erase all data recorded on the memory card. This data cannot be restored. Be sure to backup any important data to a PC or other storage location.
- If you repeatedly record/delete images, fragmentation of data may occur on the memory card. Movies may not be able to be saved or recorded. In such a case, save your images to a PC or other storage location, then [Format].
- A memory card formatted with a computer is not guaranteed to operate with the camera.
- Data read/write speeds differ depending on the combination of the memory card and the equipment used.
- Data may be corrupted in the following cases:
 - When the memory card is removed or the camera is turned off during a read or write operation
 - When the memory card is used in locations subject to static electricity or electrical noise
- We recommend backing up important data.
- Do not attach a label on the memory card itself nor on a memory card adaptor.
- Do not touch the terminal section of the memory card with your hand or a metal object.
- Do not strike, bend or drop the memory card.
- Do not disassemble or modify the memory card.
- Do not expose the memory card to water.
- Do not leave the memory card within the reach of small children. They might accidentally swallow it.
- Insert a memory card that fits the memory card slot size. Otherwise, it will cause a
 malfunction.
- Do not use or store the memory card under the following conditions:
 - High temperature locations such as the hot interior of a car parked in direct sunlight
 - Locations exposed to direct sunlight
 - Humid locations or locations with corrosive substances present

"Memory Stick" media

The types of "Memory Stick" media that can be used with the camera are listed in the table below. However, proper operation cannot be guaranteed for all "Memory Stick" media functions.

"Memory Stick" media type	Recording/Playback	
Memory Stick Micro	O *1	
Memory Stick Micro (Mark2)	O *1*2	

- *1 "Memory Stick Micro" media is equipped with MagicGate functions. MagicGate is copyright protection technology that uses encryption technology. Data recording/playback that requires MagicGate functions cannot be performed with the camera.
- *2 Movies in [AVCHD view], [MP4 12M] and [MP4 6M] size movies cannot be recorded to "Memory Stick" media other than "Memory Stick Micro" (Mark2) media or the internal memory.

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In-Camera Guide

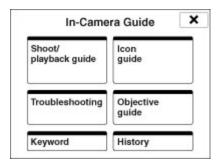
This camera is equipped with built-in instruction guide. This allows you to search the camera's functions according to your needs.

You can use the selected function after reading the guide.

1. Touch the ? (In-Camera Guide).



2. Select a search method.



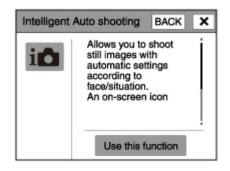
Operate following the instructions displayed in the lower part of the screen. The following explanations take [Shoot/ playback guide] as an example.

3. Select the desired mode, then touch [See details].



Functions available in the selected function is displayed.

4. Select the desired mode.



The operation guide for the selected mode is displayed.

- 5. Drag the screen to see the summary, operation guide and details.
 - The operation guide and details may not be displayed, depending on the selected function.
 - When you select [Use this function], the camera switches to the selected mode automatically.
- 6. To end [In-Camera Guide], touch X.

Guidance	Description
Shoot/ playback guide	Search for various operation functions in shooting/ playback mode.
Icon guide	Search the function and meaning of displayed icons.
Troubleshooting	Search common problems and their solution.
Objective guide	Search functions according to your needs.
Keyword	Search functions by keywords.
History	View the last 10 items displayed in [In-Camera Guide].

Notes

- ? (In-Camera Guide) is not available in Easy Mode.
- [Use this function] may not be available, depending on the selected functions.

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Operation Search

▶ Before Use

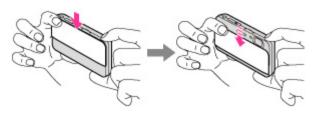
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Shooting still images

1. Lower the lens cover to switch to shooting mode.



2. Hold the camera steady as illustrated and compose the shot.



Press the shutter button halfway down to focus.
 When the image is in focus, a beep sounds and the indicator lights.



- The shortest shooting distance is approximately 3 cm (1 3/16 inches) (W), 60 cm (1 ft 11 5/8 inches) (T) (from the lens).
- 4. Press the shutter button fully down.
 - Do not put your fingers on the flash or lens when shooting.



👸 If you shoot a still image of a subject that is difficult to focus on

- When the camera cannot focus on the subject automatically, the AE/AF lock indicator changes to slowly flashing and the beep does not sound. Either recompose the shot or change the focus setting. [Details]
- Focusing may be difficult in the following situations:
 - It is dark and the subject is distant.

- The contrast between the subject and the background is poor.
- The subject is seen through glass.
- The subject is moving quickly.
- There is reflective light or shiny surfaces.
- The subject is backlit or there is a flashing light.

Related Topic

Viewing still images

Still Image Size/Panorama Image Size

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Zoom (Still images)

Available zoom

Zoom scale

Enlarges images with the W/T (zoom) lever when shooting. The camera's optical zoom function can enlarge images up to $5\times$.

Optical zoom allows you to enlarge an image without deteriorating its original quality.

- 1. Set the camera to shooting mode.
- Slide the W/T (zoom) lever.Slide the lever to the T side to zoom in, or to the W side to zoom out.



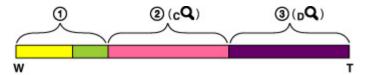


Note

- Zoom is locked to the W side for shooting in the following situations:
 - In Intelligent Sweep Panorama mode
 - In 3D Sweep Panorama mode
 - In Sweep Multi Angle mode
 - In Close Focus mode

Available zoom

You can combine certain zoom settings to zoom in at high magnification. The icon on the screen changes in accordance with the zoom you use.



1 Zoom with the original image quality

(You can shoot still images without deteriorating the original image quality even if the optical zoom scale exceeds 5× magnification.)

② (cQ) [Clear Image Zoom]:

Zoom with close to the original image quality [Details]

③ (**□**Q) [Digital Zoom]:

Less than the original image quality [Details]

Operation		Zoom bar (Magnifications shown with an * are zoom scales when the still image size is set to [10M].)
-----------	--	--

Using optical zoom only	Still Image Size: [16M] [Clear Image Zoom]: [Off] [Digital Zoom]: [Off]	×5
Zooming images without deterioration	Still Image Size: other than [16M] [Clear Image Zoom]: [Off] [Digital Zoom]: [Off]	×6.3*
Shooting clear images using [Clear Image Zoom] (close to the original image quality)	[Clear Image Zoom]: [On] [Digital Zoom]: [Off]	×12*
Zooming to the maximum zoom range	[Clear Image Zoom]: [On] [Digital Zoom]: [On] [Clear Image Zoom] may not be available for some settings. [Details]	when [Clear Image Zoom] is not available

Zoom scale

The supported zoom scales are different depending on the settings or the image size. The table below summarizes the zoom scales when [Clear Image Zoom] and [Digital Zoom] are set to [On].

	Zoom				
	①	0		3 (DQ)	Maximum
Image size	Optical zoom scale	Zoom scale without deterioration (including 5× optical zoom)	Clear Image Zoom	Digital Zoom	zoom scale*
16M	- 5×	5×	2×	2×	20×
10M		6.3×			25×
5M		8.9×			35×
VGA		36×			72×**
16:9(12M)		5×			20×
16:9(2M)		12×			48×

^{*} The maximum zoom scale is the total zoom magnification that can be achieved when zoom scale without deterioration (including 5× optical zoom), [Clear Image Zoom] and [Digital Zoom] are used in combination. The maximum zoom scale varies depending on the settings. The maximum zoom scale for the default setting is the same as when [Clear Image Zoom] is [On]. [Details]

Notes

- The default setting for [Clear Image Zoom] is [On].
- The default setting for [Digital Zoom] is [Off]. Set [Digital Zoom] to [On] to enlarge images even with deterioration. [Details]
- Zoom functions other than the optical zoom are not available when shooting in the following situations:

^{**} When [Movie Quality] is set to [VGA], [Digital Zoom] is limited; the maximum zoom scale is 72×.

- In Intelligent Sweep Panorama mode
- In Picture Effect mode
- In Background Defocus mode
- When the Smile Shutter function is activated.
- When [Self-Timer] is set to [Self-portrait One Person] or [Self-portrait Two People].
- ─ When (Backlight Correction HDR) mode is selected in Scene Selection.
- The Face Detection function does not operate when you use other than the optical zoom.

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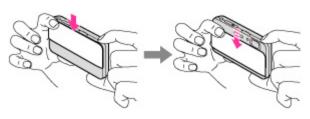
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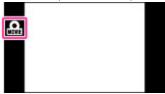
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Shooting movies

1. Lower the lens cover to switch to shooting mode.



2. Touch (Movie button) to start recording.



3. Touch 🚨 (Movie button) again to stop recording.

Notes

- The sound of the lever operating will be recorded when the zoom function operates while shooting a movie.
- Continuous shooting is possible for approximately 29 minutes at one time at the camera's default settings and when the temperature is approximately 25°C (77°F).
- When movie recording is finished, you can restart recording by touching (Movie button) again. Recording may stop to protect the camera depending on the ambient temperature.

Related Topic

Zoom (Movies)

Shooting still images while recording a movie (Dual Rec)

Movie Quality/Movie Size

Movie format

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Zoom (Movies)

Available zoom

▼ Zoom scale

Enlarges images with the W/T (zoom) lever when shooting. The camera's optical zoom function can enlarge images up to 5×.

Optical zoom allows you to enlarge an image without deteriorating its original quality.

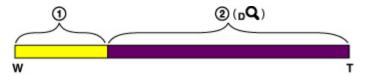
- 1. Set the camera to shooting mode.
- Slide the W/T (zoom) lever.Slide the lever to the T side to zoom in, or to the W side to zoom out.





Available zoom

You can exceed 5× optical zoom to zoom in. To zoom past the optical zoom range, set [Digital Zoom] to [On].



- 1 Zoom with the original image quality
- ② (pQ) [Digital Zoom]:

Less than the original image quality [Details]

Operation	Settings	Zoom bar
Using the optical zoom only	[Digital Zoom]: [Off]	×5
Zooming to the maximum zoom range	[Digital Zoom]: [On]	×20

Zoom scale

The supported zoom scales are different depending on the settings or the image size. The table below summarizes the zoom scales when [Digital Zoom] is set to [On].

	Zoom				
les o o o	①		② (c Q)	③ (□Q)	Maximum
Image size	Optical zoom scale	Zoom scale without deterioration (including 5× optical zoom)	Clear Image Zoom	Digital Zoom	zoom scale
Movie mode	5×			4×	20×

Notes

- [Clear Image Zoom] is not available while recording movies.The camera zooms slowly while recording movies.

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Shooting still images while recording a movie (Dual Rec)

You can shoot still images while recording a movie. The camera keeps recording the movie even if you shoot still images.

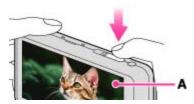
1. Touch (Movie button) on the screen to start recording a movie.



2. Shoot with the shutter button.

A still image is recorded.

• The number of recordable still images (A) appears on the screen when you press the shutter button halfway down.



3. Touch (Movie button) again to stop recording.

Notes

- Flash is not available for shooting still images during movie recording.
- The size of a still image that can be shot while recording a movie varies depending on the movie size. For details, see "Still Image Size (Dual Rec)." [Details]
- The sound of the shutter button operating may be recorded.
- When the Smile Shutter function is set to [On], the shutter releases automatically each time the camera detects a smiling face.
- When the camera is on [Standby] in movie mode, you cannot use [Smile Shutter].
- If the memory card capacity is insufficient or you have already shot the maximum number of images, papears on the screen. This icon means that you cannot shoot any more still images.

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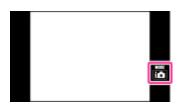
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Shooting mode functions

You can select the shooting mode based on condition and objective.

1. Touch it (REC Mode) \rightarrow desired mode



intelligent Auto)	Allows you to shoot still images with the setting adjusted automatically. [Details]
(Superior Auto)	Allows you to shoot still images in higher quality than with Intelligent Auto mode. [Details]
(Movie Mode)	Allows you to record movies. [Details]
P (Program Auto)	Allows you to shoot with the exposure adjusted automatically (both the shutter speed and the aperture value). Also you can select various settings using the menu. [Details]
i (iSweep Panorama)	Allows you to create a panoramic image from composite images. [Details]
(Background Defocus)	Allows you to shoot an image with background defocus and define the subject. [Details]
(Picture Effect)	Allows you to shoot a still image with an original texture according to the desired effect. [Details]
SCN (Scene Selection)	Allows you to shoot with preset settings according to the scene. [Details]
3D (3D Shooting)	Allows you to shoot 3D images by composing images. [Details]

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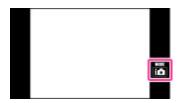
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Intelligent Auto

Allows you to shoot still images with the setting adjusted automatically.

- 1. Set the camera to shooting mode.
- 2. **i** (REC Mode) \rightarrow **i** (Intelligent Auto).



3. Shoot with the shutter button.

Note

 You may not be able to set some functions or MENU items depending on the selected REC mode. For details, see "Functions not available in some REC modes" [Details] and "MENU items not available in some REC modes." [Details]

On Scene Recognition

Scene Recognition operates in Intelligent Auto mode. This function lets the camera automatically recognize the shooting conditions and shoot the image.



In Scene Recognition, the position of an icon displayed on the screen is different depending on whether the camera recognizes a scene or condition.

If the camera recognizes a scene, icons and guides such as (Portrait), (Infant), (Night Portrait), (Night Scene), (Backlight Portrait), (Backlight), (Landscape), (Macro), (Close Focus), (Spotlight) or (Low Light) are displayed on the first line. If the camera recognizes a condition, icons such as (Tripod) or (Move) are displayed on the second line. The camera may recognize both the scene and condition, or just one. For details, see "Scene Recognition." [Details]

Related Topic

Scene Recognition

Top page > Shooting > Setting REC mode > Superior Auto

Operation Search

▶ Before Use

Shooting

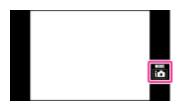
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Superior Auto

The camera combines Scene Recognition and high-quality image technology to automatically shoot the images with the optimal settings.

- 1. Set the camera to shooting mode.
- 2. **i** (REC Mode) \rightarrow **i** (Superior Auto).



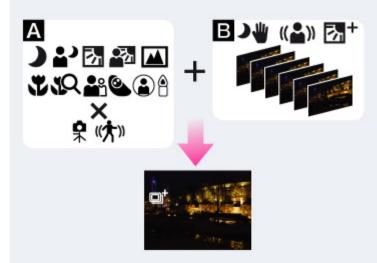
3. Shoot with the shutter button.

The camera shoots burst images when needed and overlays the multiple images. By overlaying the images, the camera records an image with less subject blur and noises.

What is the difference between Superior Auto mode and Intelligent Auto mode?

In Superior Auto mode, the camera shoots burst images based on the recognized scene, then creates a composite of the burst images (Overlay shooting).

The camera automatically corrects the backlight and reduces the noise by overlaying images, so a higher-quality image results than in Intelligent Auto mode.



A : Scene Recognition

Night Scene

Night Portrait

Backlight

Backlight Portrait

Landscape

Macro

Close Focus



Portrait
Infant
Spotlight
Low Light
Tripod
Move
: Overlaying processing
Hand-held Twilight
Anti Motion Blur
Backlight Correction HDR

• The camera automatically selects an overlaying mode based on the recognized scene, and (overlay) appears on the screen.

Notes

- When the camera overlays the images, it takes more time to record an image.
- In low light conditions such as night scenes, set [Flash] to [Off] to achieve the optimal effect of the overlaid images.
- The effect of reduced noise is less effective in the following situations:
 - Subjects are moving
 - Subjects are too close to the camera
 - Images with little contrast, such as sky, sandy beach or lawn
 - Images with constant changes, such as waves or waterfalls
- You may not be able to set some functions or MENU items depending on the selected REC mode. For details, see "Functions not available in some REC modes" [Details] and "MENU items not available in some REC modes." [Details]

Related Topic

Scene Recognition

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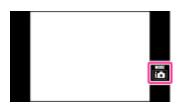
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Movie Mode

Allows you to record movies. You can select various settings using the menu for movie mode.

- 1. Set the camera to shooting mode.
- 2. **i** (REC Mode) → **III** (Movie Mode)



- 3. Touch (Movie button) to start recording.
- 4. Touch 🔝 (Movie button) again to stop recording.

Note

 You may not be able to set some functions or MENU items depending on the selected REC mode. For details, see "MENU items not available in some REC modes." [Details]

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Cyber-shot User Guide



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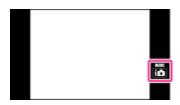
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Program Auto

Allows you to shoot with the exposure adjusted automatically (both the shutter speed and the aperture value). Also you can select various settings using the menu.

- 1. Set the camera to shooting mode.
- 2. **in** (REC Mode) \rightarrow P (Program Auto)



3. Shoot with the shutter button.

Note

 You may not be able to set some functions or MENU items depending on the selected REC mode. For details, see "Functions not available in some REC modes" [Details] and "MENU items not available in some REC modes." [Details]

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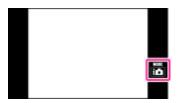
-- Contents list

iSweep Panorama

Allows you to create a panoramic image from composite images. The camera also automatically detects people's faces or moving subjects.



- 1. Set the camera to shooting mode.
- 2. in (REC Mode) → in (iSweep Panorama)



3. Align the camera with the end of the subject to be shot and press the shutter button.



- A black, translucent portion (A) appears before shooting. That part will not be recorded.
- Touch (B) to change the shooting direction.
- 4. Pan the camera to the end of the guide (C), following the arrow indication on the screen.



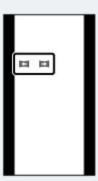
Shooting High Resolution panoramic images

If you set [Panorama Image Size] to (High Resolution), a 43 megapixel-size panoramic image (10480×4096) can be shot.

1 Hold the camera vertically.



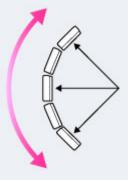
② Touch ☐ / ☐ on the screen to select the shooting direction.



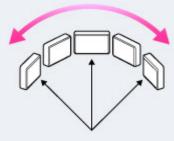
③ Pan the camera to shoot.

Tips for shooting a panoramic image

Pan the camera in an arc at a constant velocity in the direction indicated on the screen. Subjects at rest are more suited for panorama shots than moving subjects. Radius as short as possible.



Vertical direction



Horizontal direction

- First, press the shutter button halfway to lock the focus and exposure. Then, press the shutter button fully down and pan or tilt the camera.
- If a section with greatly varied shapes or scenery is concentrated along a screen edge, the

image composition may fail. In such case, adjust the frame composition so that the section is in the center of the image, then shoot again.

Notes

- If you cannot pan the camera across the entire subject within the given time, a gray area
 occurs in the composite image. If this happens, move the camera faster to record a full
 panoramic image.
- Since several images are stitched together, the stitched part will not be recorded smoothly.
- Under low light conditions, panoramic images may be blurred or the shooting may not be successful.
- Under lights that flicker, such as fluorescent lights, the brightness or color of the combined image will not always be the same.
- When the whole angle of panoramic shooting and the AE/AF locked angle are very different in brightness, color and focus, the shooting will not be successful. If this happens, change AE/AF locked angle and shoot again.
- Sweep Panorama is not suitable for the following situations:
 - Subjects are too close to the camera
 - Images with little contrast, such as sky, sandy beach or lawn
 - Images with constant changes, such as waves or waterfalls
- You cannot create panoramic images in the following situations:
 - You pan the camera too quickly or too slowly.
 - There is too much camera shake.
- You may not be able to set some functions or MENU items depending on the selected REC mode. For details, see "Functions not available in some REC modes" [Details] and "MENU items not available in some REC modes." [Details]

Related Topic

Scrolling the panoramic images for display Still Image Size/Panorama Image Size

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Background Defocus

Allows you to shoot an image with image processing so that the subject stands out from the background.



- 1. Set the camera to shooting mode.
- 2. in (REC Mode) → Mackground Defocus)



3. Shoot with the shutter button.

Tips for adjusting the intensity of the background defocus

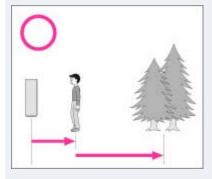
Before shooting, touch MENU → [Defocus Effect] → [Low], [Mid] or [High] to change the intensity of the background defocus effect.

Tips for defocusing the background

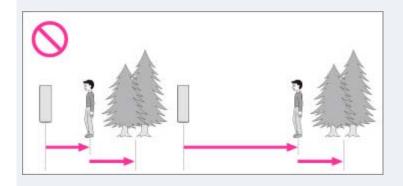
Position of the subject and the background

If you shoot an image with the subject and background far apart, as shown in the illustration, the background can be defocused. Shoot from the recommended shooting distance indicated on the screen.

Subject is sufficiently distant from the background



Subject and background are too close



Zoom scale and position of the subject

When you shoot a flower and a small item from close up, slide the W/T (zoom) lever to the W side. For shooting people, move a short distance away from the subject and slide the W/T (zoom) lever to the T side.



• To lock the focus on the subject more easily, use the tracking focus function of the camera. [Details]

Notes

- When shooting, hold the camera still to reduce camera shake.
- The background may not be defocused in the following situations:
 - The scene is too bright or too dark.
 - The subject is moving.
 - The subject is too far from the camera. (The recommended shooting distance has been exceeded.)
 - The subject is too close to the background.
- The Background Defocus effect may not work effectively in the following situations:
 - The subjects are too small.
 - The subject is the same color as the background.
 - You moved the camera after setting the AE/AF lock.
- If you are unable to defocus effectively, try the following steps:
 - Slide the W/T (zoom) lever to the T side.
 - Approach the subject until you are within the recommended shooting distance.
 - Separate the subject and the background.
 - Touch the area to adjust its focus.
- You may not be able to set some functions or MENU items depending on the selected REC mode. For details, see "Functions not available in some REC modes" [Details] and "MENU items not available in some REC modes." [Details]

Related Topic

Defocus Effect Tracking focus

Top page > Shooting > Setting REC mode > Picture Effect

Operation Search

Before Use

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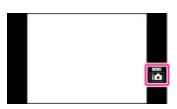
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Picture Effect

Allows you to shoot a still image with an original texture according to the desired effect.

- 1. Set the camera to shooting mode.
- 2. in (REC Mode) → (Picture Effect) → desired mode
 - If you want to select other Picture Effect mode, select from REC mode.



Allows you to shoot multiple images with different exposures to create a single image that looks like an oil painting. You can change the effect level using MENU [HDR Painting effect].





Allows you to shoot multiple images with different exposures to create a single, sharp monochrome image.

(Richtone Monochrome)

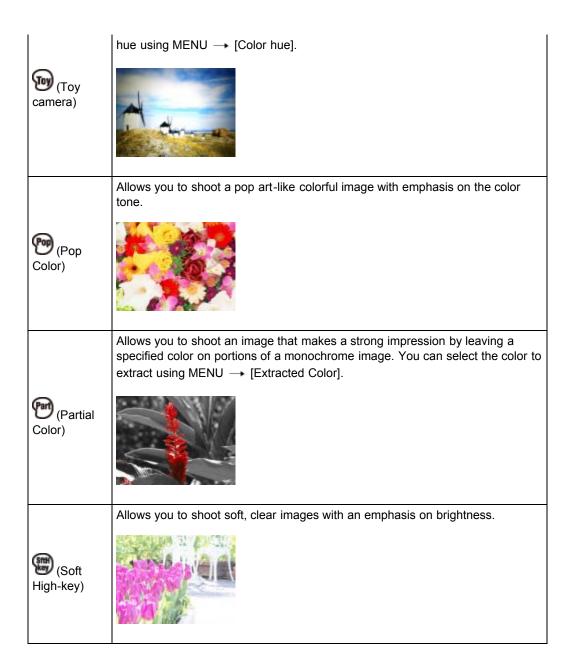


Allows you to retouch an image as if you are shooting a miniature or diorama when you shoot landscapes or other scenes. You can get a partially blurred or high contrast image. The part you want to blur is displayed on the screen as translucent. Touch MENU — [Area of emphasis] to change the part.





Allows you to shoot images with effects such as tunnel effect, high contrast, or color cast as if they were shot with a toy camera. You can change the color



Note

 You may not be able to set some functions or MENU items depending on the selected REC mode. For details, see "Functions not available in some REC modes" [Details] and "MENU items not available in some REC modes." [Details]

Related Topic
HDR Painting effect
Area of emphasis
Color hue
Extracted Color

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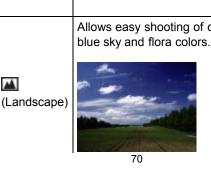
Scene Selection

Allows you to shoot with preset settings according to the scene.

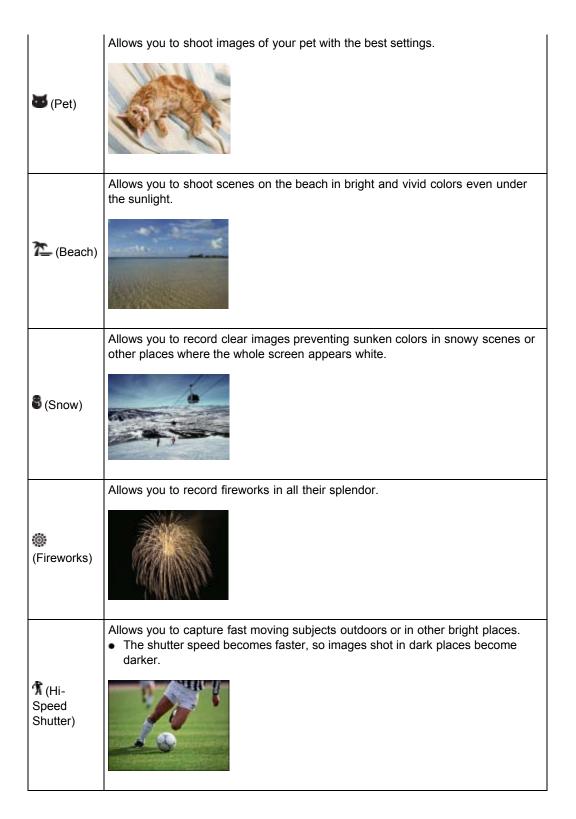
- 1. Set the camera to shooting mode.
- 2. **in** (REC Mode) \rightarrow **SCN** (Scene Selection) \rightarrow desired mode
 - If you want to select other Scene Selection mode, select from REC Mode.



Allows you to shoot faces for smoothness. Allows you to shoot images with a softer atmosphere for portraits and flowers, etc. Allows you to shoot images with a softer atmosphere for portraits and flowers, etc. Allows you to shoot indoor shots without using the flash to reduce subject blur. Allows easy shooting of distant scenes by focusing in the distance. Shoots vivid



(Backlight Correction HDR)	Allows you to shoot three images having different exposures to create a single image with a greater range of gradation. The camera combines the dark parts of an image taken with a bright exposure setting and the bright parts of an image taken with a dark exposure setting.
(Night Portrait)	Allows you to shoot sharp images of people with the night view in the background without compromising the atmosphere.
(Night Scene)	Allows you to shoot night scenes at far distance without losing the dark atmosphere of the surroundings.
(Hand- held Twilight)	Allows you to shoot night scenes with less noise without using a tripod.
Sensitivity)	Allows you to shoot images without a flash under low light conditions, reducing blur.
1 (Gourmet)	Shifts to Macro mode, allowing you to shoot food arrangements in delicious and bright color.



Notes

- When you shoot images using (Night Portrait), (Night Scene) or (Fireworks) mode, the shutter speed is slower and the images tend to blur. To prevent blurring, the use of a tripod is recommended.
- Some Scene Selection modes are available also in movie mode, but the selectable modes are limited. [Details]
- You may not be able to set some functions or MENU items depending on the selected REC mode. For details, see "Functions not available in some REC modes" [Details] and "MENU items not available in some REC modes." [Details]

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Functions not available in some REC modes

- ▼ Functions available in REC modes
- ▼ Functions available in Scene Selection
- ▼ Functions available in Picture Effect

In the table below, \checkmark indicates a user-changeable function, while — indicates an unchangeable one. The icons below [Self-Timer] and [Flash] indicate the available modes.

Functions available in REC modes

	Flash	Self- Timer	Close Focus	Face Detection	Tracking focus
intelligent Auto)	\$ AUTO (\$)	~	~	✓	~
in (Superior Auto)	\$ 1000 (L)	~	_	✓	~
P (Program Auto)	~	~	✓	✓	~
i (iSweep Panorama)	®	_	_	_	_
(Background Defocus)	®	~	_	✓-	~
(3D Still Image)	®	~	~	✓	~
(3D Sweep Panorama)	®	_	_	_	_
(Sweep Multi Angle)	®	_	_	_	_

Functions available in Scene Selection

	Flash	Self- Timer	Close Focus	Face Detection	Tracking focus
(Soft Skin)	~	~	_	~	~
🔐 (Soft Snap)	~	~	_	~	~
(Anti Motion Blur)	3	~	_	~	✓
(Landscape)	\$	රික රික	_	_	_
* (Backlight Correction HDR)	\$	~	~	~	~
(Night Portrait)	\$ED	~	_	~	✓
(Night Scene)	3	රි@ රිඞ	_	-	_

(Hand-held Twilight)	②	~	_	~	~
(High Sensitivity)	②	~	<u> </u>	~	~
(Gourmet)	\$	වික වන	~	_	~
(Pet)	\$	විත වන	~	_	~
(Beach)	\$	~	_	~	~
3 (Snow)	\$	~	_	~	~
(Fireworks)	②	විත වන	_	_	_
↑ (Hi-Speed Shutter)	\$	~	_	~	~

Functions available in Picture Effect

	Flash	Self- Timer	Close Focus	Face Detection	Tracking focus
(HDR Painting)	\$	>	_	~	~
(Rich-tone Monochrome)	\$	>	_	~	~
(Miniature)	\$	රි@ රික	_	_	_
(Toy camera)	\$ ®	~	_	✓	~
(Pop Color)	\$ (~	_	✓	~
(Partial Color)	\$	✓	_	✓	~
(Soft High-key)	\$	~	_	✓	~

^{* [}Off] cannot be selected for [Face Detection].

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▶ Before Use

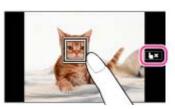
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Tracking focus

The camera tracks the subject and adjusts focus automatically until you press the shutter button halfway down, even if the subject is moving (Tracking focus). Press the shutter button halfway down to lock the position of the subject, focus and exposure.



Touch \(\begin{align*} \times \text{to cancel the tracking focus.} \end{align*}\)

Tracking a face

If you use the tracking focus function while the Face Detection function is activated, you can select a face to be given priority and register that face with the camera. Even if the registered face disappears from the screen, when it shows up on the screen again, the camera focuses on the registered face.

 When a specified face is registered in the camera memory and you use the Smile Shutter function, the camera searches only for that face's smile.

Notes

- Tracking focus may fail to lock the focus, lose the subject or track different subject in the following situations:
 - The subject moves too quickly.
 - The subject is too small or too large.
 - The subject is the same color as the background.
 - Under low light conditions.
 - Under conditions where the brightness varies.
- When you use zoom functions other than optical zoom, the tracking focus function is not available.
- Tracking focus will automatically be canceled when the subject disappears from the screen or has failed to be tracked. However, if the target of the tracking focus is a specified face, the camera keeps tracking on that face even if the face disappears from the screen.
- You may not be able to set some functions depending on the selected REC mode. For details, see "Functions not available in some REC modes." [Details]

Related Topic

Face Detection

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Viewing still images

1. Touch (Playback) to switch to playback mode.



2. Select an image with M.



Taking advantage of dragging operations

You can perform the following actions by dragging the screen during playback. Displays the next/previous image



In playback mode, drag the screen to the right or left. To change images continuously, drag the screen to the right or left and keep touching the screen.

"Viewing images taken with a different camera

This camera creates an Image Database File on the memory card for recording and playing images. If the camera detects images not registered in the Image Database File on the memory card, a registration screen with the message "An image that is not administered in this device has been found. Import?" will be displayed. To view unregistered images, register them by selecting [OK].

• Use a sufficiently charged battery to register images. If a battery with a low charge is used to register images, it may not be possible to register all of the data or the data may be corrupted if the battery charge runs out.

Viewing vertical images in full-screen display

If the camera is rotated, the horizontal or vertical orientation of the image is determined and the image being played back is automatically rotated.



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Playback zoom

▼ To save enlarged images

Enlarges the image being played back.

1. Touch (Playback) to switch to playback mode.



2. Touch the area you want to enlarge.

You can also enlarge the image by moving the zoom (W/T) lever to the T side.



3. Adjust the zoom scale and position.

The image is further enlarged each time you touch the screen.

Button/Operation method	Action
Drag up/down/right/left	Changes the zoom position.
⊕,/Q	Changes the zoom scale.
×	Cancels playback zoom.

To save enlarged images

You can save an enlarged image by using the trimming function.

Touch MENU → [Retouch] → [Trimming (Resize)].

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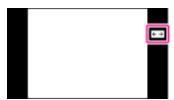
Wide Zoom

In single-image mode, still images at a 4:3 aspect ratio are displayed over the entire screen. In this case, the top and bottom of the image will be slightly cropped.



1. Touch (Playback) to switch to playback mode.





3. To cancel Wide Zoom, touch (Wide Zoom) again.

Note

- Wide Zoom is not available for the following image files:
 - Movies
 - Panoramic images
 - Images displayed in a burst group
 - 16:9 images
 - 3D Still Image

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Viewing burst images

▼ Tilt playback

W Unfold

You can select the playback method for continuous (burst) shots when [View Mode] is set to [Date View] and [Display Cont. Shooting Group] is set to [Display Main Image Only]. [View Mode] is set to [Date View] and [Display Cont. Shooting Group] is set to [Display Main Image Only] in its default setting.

1. Touch (Playback) to switch to playback mode.



2. Select the burst images with 1/14.



3. Touch the desired playback button according to the playback mode.

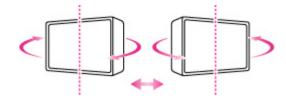


Button/Operation	Action
	Only the main image is displayed. The display switches between single image display and thumbnail image display each time you touch the screen.
(0)	You can view the burst images as a movie by tilting the camera to the right or left.

Tilt playback

The burst shots are played back smoothly as a movie.

- 1. Touch .
- 2. Tilt the camera to the right or left, with the center of the camera as the axis.



3. To exit tilt playback, touch the screen.

Unfold

If you touch \square , only the main image is displayed. You can display a line-up of images by following the procedure below.



When images are displayed in an index, **!** is displayed on the main image.

- 2. Touch \(\big| / \Big| \) to display each image in a burst group.
 - You can also select an image to be displayed by touching the thumbnail image at the bottom of the screen.
- 3. The display switches between single image display and thumbnail image display each time you touch the screen.
- 4. To cancel the display, touch X.

Related Topic

View Mode

Display Cont. Shooting Group

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Viewing movies

1. Touch (Playback) to switch to playback mode.



2. Select a movie with 1/14.



3. Touch on the screen.

When you touch the screen during playback, operation buttons are displayed.

On the movie viewing screen

When you touch the screen during playback, the playback bar appears, indicating the playback position of a movie and operation buttons are displayed.



FX AVCHD, EH AVCHD, HO AVCHD, HOW MP4, 720 MP4 or VGA MP4 appears on the movie viewing screen. The icon displayed may vary depending on image size and quality.

Button	Action
٨	Playback
=	Pause
*	Fast forward
4	Fast rewind
1	Slow playback
4	Slow rewind playback

▶	Chapter advance
H	Chapter rewind
 	Frame advance
■	Frame rewind
A	Volume settings
×	Closes the control panel

To display only movies on the index screen

You can view only movie thumbnails on the index screen by touching MENU

Output

Outp

- PMP4 (Folder view (MP4)): Displays MP4-format movie thumbnails on the index screen.
- **PAVCHD** (AVCHD view): Displays AVCHD-format movie thumbnails on the index screen.
- When a movie file is played back to the end, the camera automatically starts playing back the next movie file.

Notes

- The buttons on the control panel will vary depending on the playback status.
- The screen changes to the next/previous image when you touch the Chapter advance/Chapter rewind button in Date View setting.
- You may not be able to play back some movies using other cameras.

Related Topic

View Mode

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Scrolling the panoramic images for display

You can scroll panoramic images by touching while panoramic images are being displayed. In playing back, touch the screen to display the operation buttons.



A: Shows the displayed area of the whole panoramic image

Button/Operation	Action
Touch ▶	Starts scrolling playback
Drag up/down/right/left	Scrolls image

- Panoramic images can also be played back using the supplied software "PMB". [Details]
- Panoramic images recorded using another camera may not be scrolled correctly when being played back.

Note

 A panoramic image recorded in [High Resolution] size requires a longer time to scroll than a normal size panoramic image.

Related Topic

Still Image Size/Panorama Image Size

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3D Functions

The camera is compatible with 3D functions. The following three modes are installed on this camera. Images recorded using the 3D functions can be played back stereoscopically on a 3D TV.

The basic differences among the three 3D modes are described here. For details on each mode, click [Details].

- 3D Still Image [Details]
- 3D Sweep Panorama [Details]
- Sweep Multi Angle [Details]



* The image on the TV screen is only for reference.

	Aspect ratio	Shooting mode	Playback method on this camera	Playback method on a 3D TV
3D Still Image	4:3 or 16:9 (Same aspect ratio as a standard still image.)	Still image	Same as a standard still image.	Stereoscopic
3D Sweep Panorama	Panorama	Panorama	Same as a standard still image.	Stereoscopic
Sweep Multi Angle	Panorama	Panorama	Tilt the camera to the right or left to view a stereoscopic image.	Stereoscopic

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File name of the 3D image

A 3D image consists of both JPEG and MPO files.

If you import images shot using 3D functions into a computer, the image data is stored on the computer as follows.

	File name on the computer	Usage
3D Still Image	DSC0 ��� �.JPG DSC0 ��� �.MPO	For playing back 3D images on a 3D TV
3D Sweep Panorama	DSC0 A A A JPG DSC0 A A A MPO	For playing back 3D images on a 3D TV
Sweep Multi	DSC0 O O JPG DSC0 O O .MPO	For playing back 3D images on a 3D TV
Angle	DSC0 JPG DSC0 MPO	Shoots an image that can be played back as a stereoscopic image by tilting the camera to the right or left, and an image that can be played back on a 3D TV.

- If you shoot 3D images in [Sweep Multi Angle] mode, JPEG files and MPO files are stored on the computer for playing back on the camera and a 3D TV, respectively.
- If you delete either the JPEG file or the MPO file comprising a 3D image, that 3D image may not be played back successfully.

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Operation Search

▶ Before Use

Shooting

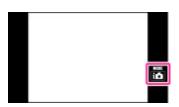
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3D Still Image

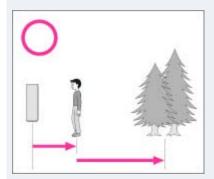
The camera shoots an image that can be played back as 3D on a 3D TV.

1. **i** (REC Mode) \rightarrow 3D (3D Shooting) \rightarrow 4 (3D Still Image)



2. Shoot with the shutter button.

Tips for shooting 3D images



Approach a subject with the subject and background far apart, as shown in the illustration. The 3D effect may not work effectively when the scene is too dark, the subject is moving or you moved the camera after setting the AE/AF lock.

If you shoot the image in a dark place, noise may be highly visible.

Notes

- The available image size is [16M] or [16:9(12M)].
- You may not be able to set some functions or MENU items depending on the selected REC mode. For details, see "Functions not available in some REC modes" [Details] and "MENU items not available in some REC modes." [Details]

Related Topic

Viewing 3D images on a 3D TV

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3D Sweep Panorama

Multiple images are shot while the camera is moving, and these images are compiled into a 3D image.

The recorded image can be played back on a 3D TV.

- 1. Set the camera to shooting mode.
- 2. in (REC Mode) 3D (3D Shooting) 4 (3D Sweep Panorama)



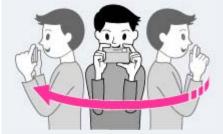
3. Align the camera with the end of the subject to be shot and press the shutter button.



- A black, translucent portion (A) appears before shooting. That part will not be recorded.
- In (3D Sweep Panorama), you can change the shooting direction by touching (B).
- 4. Pan the camera to the end of the guide (C), following the indication on the screen.



Tips for shooting in 3D Sweep Panorama mode



To take 3D images correctly, sweep the camera slowly. (Aim for a 5-second semicircle.) If you are sweeping too quickly or too slowly, a message will be displayed on the screen. We recommend that you practice it several times before shooting.

Subjects at rest are best suited for 3D shots.

• Determine the scene and press the shutter button halfway, so that you can lock the focus,

exposure and white balance. Then, press the shutter button fully down and pan the camera.

Notes

- 3D shooting is not suitable for the following situations:
 - When there is a large subject
 - Moving subjects
 - When the main subject is too close to the camera
 - Images with little contrast, such as the sky, a sandy beach, or lawn
- 3D images consist of a JPEG file and an MPO file. If either file is deleted on your computer, the camera may not operate correctly.
- If you cannot pan the camera across the entire subject within the given time, a gray area
 occurs in the composite image. If this happens, move the camera faster to record a full 3D
 image
- Since several images are stitched together, the stitched part will not be recorded smoothly.
- Under low light conditions, the images may be blurred. It is recommended that you shoot images in bright outside light.
- Under lights that flicker, such as fluorescent lights, the 3D shot may not be successful.
- If the entire angle of view of the 3D shot and the angle of view when the AE/AF was locked are extremely different in brightness, color or focus, the shot will not be successful. If this happens, change the location of the AE/AF lock and try again.
- 3D shooting may be canceled in the following situations:
 - You pan the camera too quickly or too slowly.
 - There is too much camera shake.
- You may not be able to set some functions or MENU items depending on the selected REC mode. For details, see "Functions not available in some REC modes" [Details] and "MENU items not available in some REC modes." [Details]

Related Topic

Viewing 3D images on a 3D TV

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Sweep Multi Angle

As you sweep the camera, the camera shoots multiple images, then compiles them into one stereoscopic image. It shoots an image that can be played back as a stereoscopic image by tilting the camera to the right or left, and an image that can be played back on a 3D TV.

1. i (REC Mode) → 3D (3D Shooting) → III (Sweep Multi Angle)



2. Align the camera with the end of the subject to be shot and press the shutter button.



- A black, translucent portion (A) appears before shooting. That part will not be recorded.
- 3. Pan the camera to the end of the guide (B), following the indication on the screen.



Shooting range in Sweep Multi Angle mode



Sweep the camera approximately 30 degrees to the left and right of the subject you want to focus on.

Refer also to the tips for 3D Sweep Panorama. [Details]

Notes

- In Sweep Multi Angle mode, you can select only the [16:9(2M)] panoramic image size.
- Refer also to the tips for 3D Sweep Panorama. [Details]
- You may not be able to set some functions or MENU items depending on the selected REC

mode. For details, see "Functions not available in some REC modes" [Details] and "MENU items not available in some REC modes." [Details]

Related Topic

Viewing images shot in Sweep Multi Angle mode stereoscopically Viewing 3D images on a 3D TV

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Angle mode stereoscopically

Viewing images shot in Sweep Multi Angle mode stereoscopically

You can view the stereoscopic images shot in [Sweep Multi Angle] mode by tilting the camera to the right or left.

1. Touch (Playback) to switch to playback mode.



2. Select an image shot in (Sweep Multi Angle) mode with 1/14.

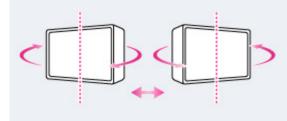


3. Touch .



- 4. Tilt the camera to the right or left.
- 5. Touch the screen to stop playback.

Tips for playing back stereoscopically
To view images shot in Sweep Multi Angle mode stereoscopically, tilt the camera to the right or left as illustrated, keeping the camera horizontal.



Note

• 3D images shot in [3D Still Image], [3D Sweep Panorama] mode cannot be played back

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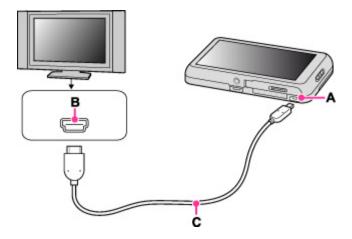
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Viewing 3D images on a 3D TV

You can view 3D images recorded on the camera in 3D format by connecting the camera to a 3D TV using an HDMI Cable (sold separately).

Refer also to the operating instructions supplied with the TV.

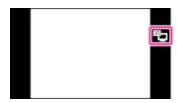
- 1. Turn off both the camera and the TV.
- 2. Connect the HDMI connector of the camera (A) and the HDMI jack (B) using an HDMI Cable (sold separately) (C).



- 3. Turn on the TV and set the input.
- 4. Lower the lens cover to turn on the camera.
- 5. Touch (Playback).



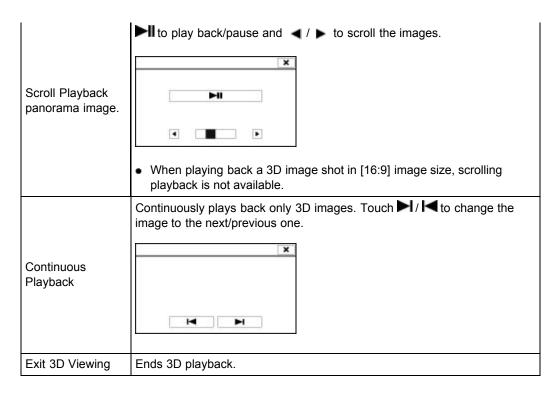
- 6. Touch ► / I to select images shot using 3D (3D Shooting) mode.
- 7. Touch (3D Viewing).



- 8. Touch [OK]. Images shot with the camera appear on the TV.
- 9. Touch ►I/ I to select the images and select the desired mode.

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• You can change the zoom scale for 3D still images using the W/T (zoom) lever.

Notes

- When you select [3D Viewing] mode, only 3D images are displayed.
- If you play back an image shot in [3D Sweep Panorama] mode with the shooting direction set to up or down, the image is played back horizontally on the TV.
- Do not connect the camera and equipment to be connected using output terminals. When
 the camera and equipment are connected using output terminals, no video and sound are
 produced. Such a connection can also cause trouble of the camera and/or connected
 equipment.
- This function may not work properly with some TVs. For example, you may not be able to view a video on your TV, output in 3D mode or hear sound from the TV.
- Use an HDMI Cable with the HDMI logo.
- When connecting the camera to a TV, use an HDMI Cable that can be connected to the micro jack on the camera end and to the TV jack.
- Recording may automatically stop to protect the camera after a period of time when you shoot movies in the condition where the camera and TV are connected by an HDMI Cable (sold separately).

Related Topic

3D Viewing

Viewing an image on an HD TV using the HDMI Cable (sold separately)

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Using MENU items (Shooting)

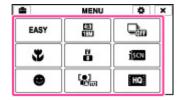
You can display and easily select the functions that can be used on the currently displayed screen during shooting.

- 1. Lower the lens cover to switch to shooting mode.
- 2. Touch the MENU icon to display the MENU screen.

 The 4 menu items usually displayed under MENU will not appear on the MENU screen.



3. Touch MENU → desired mode



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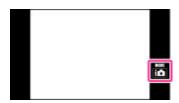
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Movie shooting scene

▼ On Scene Recognition

Allows you to shoot with preset settings according to the scene when the camera is in movie mode.

1. **i** (REC Mode) → (Movie Mode)



2. MENU → iIII (Movie shooting scene) → desired mode



V	i (Intelligent Auto)	Adjusts the setting automatically. [Details]
	SCN (Scene Selection)	Allows you to shoot movies with preset settings according to the scene. [Details]

On Scene Recognition

Scene Recognition operates in Movie shooting scene. This function lets the camera automatically recognize the shooting conditions and shoot the image.



In Scene Recognition, the position of an icon displayed on the screen is different depending on whether the camera recognizes a scene or condition.

If the camera recognizes a scene, icons and guides such as 🛍 (Portrait), 🌯 (Infant), 🔹 (Night

Portrait), (Night Scene), (Backlight Portrait), (Backlight), (Landscape), (Macro), (Close Focus), (Spotlight) or (Low Light) are displayed on the first line. If the camera recognizes a condition, icons such as (Tripod) or (Move) are displayed on the second line. The camera may recognize both the scene and condition, or just one. For details, see "Scene Recognition." [Details]

Note

• You may not be able to set some MENU items depending on the selected REC mode. For details, see "MENU items not available in some REC modes." [Details]

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Easy Mode

▼ On Scene Recognition

▼ Shooting functions available in Easy Mode (Shooting)

Allows you to shoot still images using the minimum necessary functions. The text size increases and indicators become easier to see.

1. MENU → **EASY** (Easy Mode) → [OK]



- 2. Shoot with the shutter button.
 - To end Easy Mode, touch MENU → [Exit Easy Mode]

Notes

- The battery power may decrease faster because the screen brightness increases automatically.
- The playback mode also changes to [Easy Mode].

On Scene Recognition

Scene Recognition operates in Easy Mode. This function lets the camera automatically recognize the shooting conditions and shoot the image.



In Scene Recognition, the position of an icon displayed on the screen is different depending on whether the camera recognizes a scene or condition.

If the camera recognizes a scene, icons such as (Portrait), (Infant), (Night Portrait), (Night Scene), (Backlight Portrait), (Backlight), (Landscape), (Macro), (Close Focus), (Spotlight) or (Low Light) are displayed on the first line. If the camera recognizes a condition, icons such as (Tripod) or (Move) are displayed on the second line. The camera may recognize both the scene and condition, or just one. For details, see "Scene Recognition." [Details]

Shooting functions available in Easy Mode (Shooting)

Movie button	Touch ♣.
Flash	Touch 1000.
Still Image Size	MENU → [Still Image Size] → desired mode, select between [Large] or [Small] size.
Self-Timer	MENU → [Self-Timer] → select between [On] or [Off] mode.
Exit Easy Mode	To end Easy Mode, touch MENU → [Exit Easy Mode] → [OK].

Note

• You may not be able to set some MENU items depending on the selected REC mode. For details, see "MENU items not available in some REC modes." [Details]

Related Topic

Scene Recognition

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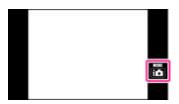
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Scene Selection

Allows you to shoot with preset settings according to the scene.

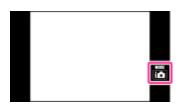
For still images:

- 1. Set the camera to shooting mode.
- 2. in (REC Mode) → SCN (Scene Selection) → desired mode



For movies:

1. **i** (REC Mode) → **I** (Movie Mode)



2. MENU \rightarrow **i** (Movie shooting scene) \rightarrow **SCN** (Scene Selection) \rightarrow desired mode



* Scene Selection modes with an * mark are not available for [Scene Selection] in [Movie shooting scene].

(Soft Skin)*

Allows you to shoot faces for smoothness.



Allows you to shoot images with a softer atmosphere for portraits and flowers, etc.



Snap)	
((4) (Anti Motion Blur)*	Allows you to shoot indoor shots without using the flash to reduce subject blur.
(Landscape)	Allows easy shooting of distant scenes by focusing in the distance. Shoots vivid blue sky and flora colors.
(Backlight Correction HDR)*	Allows you to shoot three images having different exposures to create a single image with a greater range of gradation. The camera combines the dark parts of an image taken with a bright exposure setting and the bright parts of an image taken with a dark exposure setting.
(Night Portrait)*	Allows you to shoot sharp images of people with the night view in the background without compromising the atmosphere.
(Night Scene)	Allows you to shoot night scenes at far distance without losing the dark atmosphere of the surroundings.
▶ ∰ (Hand-	Allows you to shoot night scenes with less noise without using a tripod.
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held Twilight)*	
ISO (High Sensitivity)	Allows you to shoot images without a flash under low light conditions, reducing blur.
(Gourmet)*	Shifts to Macro mode, allowing you to shoot food arrangements in delicious and bright color.
(Pet)*	Allows you to shoot images of your pet with the best settings.
(Beach)	Allows you to shoot scenes on the beach in bright and vivid colors even under the sunlight.
3 (Snow)	Allows you to record clear images preventing sunken colors in snowy scenes or other places where the whole screen appears white.
(Fireworks)	Allows you to record fireworks in all their splendor.



Allows you to capture fast moving subjects outdoors or in other bright places.

 The shutter speed becomes faster, so images shot in dark places become darker.

¶ (Hi-Speed Shutter)*



Notes

- When you shoot images using (Night Portrait), (Night Scene) or (Fireworks) mode, the shutter speed is slower and the images tend to blur. To prevent blurring, the use of a tripod is recommended.
- You may not be able to set some functions or MENU items depending on the selected REC mode. For details, see "Functions not available in some REC modes" [Details] and "MENU items not available in some REC modes." [Details]

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Movie button

You can quickly start shooting movies from all shooting modes.

1. Touch 🔐 (Movie button).



2. To stop recording, touch 🚨 (Movie button).

Note

• You may not be able to set some MENU items depending on the selected REC mode. For details, see "MENU items not available in some REC modes." [Details]

Related Topic

Movie format

Movie Quality/Movie Size

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Flash

flash) → desired mode
 If the button is not displayed on the left side of the screen, touch MENU.



$ \checkmark $	(Auto)	Flashes when shooting in low light or backlit conditions.	
	₹ (On) Flash always operates.		
	(Slow Synchro)	Flash always operates. The shutter speed is slow in a dark place to clearly shoot the background that is out of flash light.	
	(Off)	Flash does not operate.	

When the "White circular spots" appears in flash photos

This is caused by particles (dust, pollen, etc.) floating close to the lens. When they are accentuated by the camera's flash, they appear as white circular spots.







How can the "White circular spots" be reduced?

- Light the room and shoot the subject without a flash.
- Select (Anti Motion Blur) or (High Sensitivity) mode in Scene Selection. ([Flash] is set to [Off].)

Notes

- The flash strobes twice. The first flash adjusts the light quantity.
- While charging the flash, is displayed.
- You cannot use the flash during burst shooting.
- You may not be able to set some functions or MENU items depending on the selected REC mode. For details, see "Functions not available in some REC modes" [Details] and "MENU items not available in some REC modes." [Details]

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Self-Timer

Automatic shooting with Self-portrait timer

Self-Timer) → desired mode
 If the button is not displayed on the left side of the screen, touch MENU.



$ \checkmark $	Off)	Does not use the self-timer.
	1 (10sec)	Sets the self-timer to a 10-second delay. When you press the shutter button, the self-timer lamp flashes and a beep sounds until the shutter operates. To cancel, touch
	(2sec)	Sets the self-timer to a 2-second delay.
	(Self- portrait One Person)	Sets the self-timer to Self-portrait timer.
	(Self- portrait Two People)	When the camera detects the specified number of faces, a beep sounds, and the shutter operates 2 seconds later.

Hints for preventing blur

If your hands or body moves while holding the camera and pressing the shutter button, "Camera shake" occurs.



Camera shake occurs frequently under low-light or slow shutter speed conditions, such as those encountered in (Night Portrait) or (Night Scene) mode.

In such a case, shoot with the below tips in mind.

- Shoot with a 2-second delay self-timer and stabilize the camera by holding your arms firmly at your side after pressing the shutter button.
- Use a tripod or place the camera on a flat surface to hold the camera steady.

Note

You may not be able to set some functions or MENU items depending on the selected REC

mode. For details, see "Functions not available in some REC modes" [Details] and "MENU items not available in some REC modes." [Details]

Automatic shooting with Self-portrait timer

Point the lens at yourself so your face is reflected in the screen. When the camera detects the faces of the number of subjects set, the shutter operates. The camera determines the optimal composition and prevents faces from being cut out of the screen. Do not move your camera after the beep sounds.



• You can also shoot an image by pressing the shutter button during this operation.

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Defocus Effect

Sets the level of background defocus effect when shooting in Background Defocus mode.

- 1. **i** (REC Mode) → **4** (Background Defocus)
- 2. MENU \rightarrow * (Defocus Effect) \rightarrow desired mode



		Low)	Adds a slight Background Defocus effect.
✓ Marie Marie		Mid)	Adds an average Background Defocus effect.
		High)	Adds a strong Background Defocus effect.

Related Topic

Background Defocus

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Still Image Size(Dual Rec)

Sets the still image size shot while recording a movie.

MENU → 1211 (Still Image Size(Dual Rec)) → desired size
 If the button is not displayed on the left side of the screen, touch MENU.



When [Movie Size] is set to other than [VGA]

V	16:9(12M Level)	For viewing on a high-definition TV and printing up to A3 size
	16-0	For viewing on a high-definition TV

When [Movie Size] is set to [VGA]

		For prints up to A3(11x17")
	4:3 2M 2M	For prints up to 10x15 cm (4x6") or 13x18 cm(5x7").

Notes

- The number of images you can shoot in Dual Rec mode varies depending on the still image size.
- You may not be able to set some MENU items depending on the selected REC mode. For details, see "MENU items not available in some REC modes." [Details]

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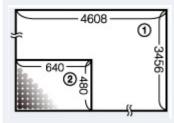
Still Image Size/Panorama Image Size

- ▼ Image size when shooting still images
- ▼ 3D Still Image Size
- ▼ Image size in Easy Mode
- ▼ Image size when shooting Sweep Panorama

The image size determines the size of the image file that is recorded when you take an image. The larger the image size, the more detail will be reproduced when the image is printed on large-format paper. The smaller the image size, the more images can be recorded.

On "image quality" and "image size"

A digital image is made up of a collection of small dots called pixels. If it contains a large number of pixels (A), the image becomes large, it takes up more memory, and the image is displayed in fine detail. "Image size" is shown by the number of pixels. Although you cannot see the differences on the screen of the camera, the fine detail and data processing time differ when the image is printed or displayed on a computer screen.

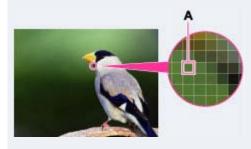


① Image size: 16M

4608 pixels × 3456 pixels = 15,925,248 pixels

(2) Image size: VGA

640 pixels \times 480 pixels = 307,200 pixels





Many pixels (Fine image quality and large file size)



Few pixels (Rough image quality but small file size)

- Image size when shooting still images
- 1. IIII (Still Image Size) → desired size
 When the button is not displayed on the left of the screen, touch MENU.



	Still image size	Usage guidelines	Displaying on the screen
V	4:3 15M (4608×3456)	For prints up to A3+ size	
	4:3 10M (3648×2736)	For prints up to A3 size	
	4:3 5M (2592×1944)	For prints from 10×15 cm up to A4 size	leading the state of the Arthur
	4:3 VGA (640×480)	For e-mail attachments	Images are displayed in 4:3 aspect ratio.
	16:9 12M (4608×2592)	For viewing on a high-definition TV and printing up to A3 size	
	16:9 2M (1920×1080)	For viewing on a high-definition TV	Images will fill the entire screen.

- 3D Still Image Size
- 1. MENU \rightarrow (Still Image Size) \rightarrow desired size



(4608×3456) For prints up to		For prints up to A3+ size
	16:9 12M (4608×2592)	For viewing on a high-definition TV and printing up to A3 size

Note

• When you print still images recorded at a 16:9 aspect ratio or panoramic images, both edges may be cut off.

Image size in Easy Mode

1. MENU → IIII (Still Image Size) → desired size

"	1	Large	Shoots images in [16M] size.
		Small	Shoots images in [5M] size.

Image size when shooting Sweep Panorama

MENU → (Panorama Image Size) → desired size
 When the button is not displayed on the left of the screen, touch MENU.



	169 2M (16:9) (Horizontal: 1920 × 1080)	[16:9] is available only for 3D shooting.
8	(Standard) (Horizontal: 4912 × 1080) (Vertical: 3424 × 1920)	Shoots images using standard size.
	(Wide) (Horizontal: 7152 × 1080) (Vertical: 4912 × 1920)	Shoots images using wide size.
	(High Resolution) (Horizontal: 10480 × 4096)	Shoots high-resolution panorama in 43M.

Notes

- If you cannot print panoramic images recorded in [High Resolution] size due to the large size, use the resize function in the supplied software "PMB". "PMB" allows you to resize panoramic images recorded in [High Resolution] to 50% etc.
- You may not be able to set some MENU items depending on the selected REC mode. For details, see "MENU items not available in some REC modes." [Details]

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Movie Quality/Movie Size

The larger the size of the movie image, the higher the image quality. The higher the amount of data used per second (average bit-rate), the higher the image quality.

Select a movie recording format by touching MENU → (Settings) → (Shooting Settings) → (Movie format] in shooting mode. [Details]

You can set [Movie Quality] in AVCHD format, and set [Movie Size] in MP4 format.

Movie Quality (recording format: AVCHD)

MENU → (Movie Quality) → desired mode
 Set using the buttons displayed on the left of the screen depending on the REC mode.



Movies shot with this camera are recorded in AVCHD format, at approximately 60 fields/sec (1080 60i-compatible devices) or 50 fields/sec (1080 50i-compatible devices), in interlaced mode, with Dolby Digital audio.

	Movie quality	Average bit- rate	Description
	AVC HD 24M (FX)	24 Mbps	Shoots at a highest picture quality of 1920×1080 (50i/60i) size.
	FH AVC HD 17M (FH)	17 Mbps	Shoots at a high picture quality of 1920×1080 (50i/60i) size.
V	HO AVC HD 9M (HQ)	9 Mbps	Shoots at a standard picture quality of 1440×1080 (50i/60i) size.

Movie Size (recording format: MP4)

MENU → (Movie Size) → desired size
 Set using the buttons displayed on the left of the screen depending on the REC mode.



Movies shot with this camera are recorded in MPEG-4 format, at approximately 30 frames/sec (for 1080 60i-compatible devices) or approximately 25 frames/sec (for 1080 50i-compatible devices), in progressive mode, with AAC audio, mp4 format.

	Movie image size	Average bit-rate	Description
V	MP4 12M	12 Mbps	Shoots at 1440×1080 size
	720 MP4 6M	6 Mbps	Shoots at 1280×720 size
	WGA MP4 3M	3 Mbps	Shoots at VGA size

Notes

- A telephoto image is produced when [MP4 3M] image size is selected.
- Movies recorded with movie mode set to [AVC HD 24M (FX)] cannot be saved to a DVD disc or as an AVCHD disc. Save them to a Blu-ray disc.
- You may not be able to set some MENU items depending on the selected REC mode. For details, see "MENU items not available in some REC modes." [Details]

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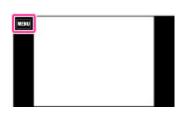


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Cont. Shooting Settings

The camera shoots up to 10 continuous frames in one burst when you hold down the shutter button.

1. MENU \rightarrow \longrightarrow (Cont. Shooting Settings) \rightarrow desired mode



✓		Records a single image.	
		(High)	Shoots up to 10 images per second in succession.
		(Low)	Shoots up to 2 images per second in succession.

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- [Flash] is set to [Off].
- When recording with the self-timer, a series of up to 10 images is recorded.
- The recording interval becomes longer, depending on the setting for the image size.
- [Focus], [White Balance], and [EV] are adjusted for the first image, and these settings are also used for the other images.
- When the [Cont. Shooting Settings] is set to [High] or [Low], up to ISO800 can be selected for ISO speed.
- [VGA] image size will be set while recording on internal memory.
- When the battery level is low, or when the internal memory or a memory card is full, the burst stops.
- In slow shutter speed conditions, the burst of shots per second may be decreased.
- You may not be able to set some MENU items depending on the selected REC mode. For details, see "MENU items not available in some REC modes." [Details]

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Macro

Use this setting to capture beautiful close-up images of small subjects such as insects or flowers.

MENU → (Macro) → desired mode
 Depending on the REC mode, this is set using buttons displayed on the left side of the screen.



The camera adjusts the focus automatically from distant subclose-up.		The camera adjusts the focus automatically from distant subjects to close-up.
	(Close Focus)	Use this mode to shoot at close distances. Locked to the W side: Approximately 3 cm to 20 cm (1 3/16 inches to 7 7/8 inches)

Notes

- Note the following points when using the Close Focus mode.
 - You cannot use the Scene Recognition or Face Detection functions.
 - This mode is cancelled if you turn off the power or switch the REC mode to another one.
 - The flash mode settings you can use in this mode are [On] or [Off] only.
 - The focus speed becomes slower.
- You may not be able to set some functions or MENU items depending on the selected REC mode. For details, see "MENU items not available in some REC modes." [Details]

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When you select (HDR Painting) in Picture Effect, set the effect level.

1. MENU → (HDR Painting effect) → desired mode



	(Low)	Adds a slight effect for emphasizing attributes such as colors.
Ø	(Medium)	Adds a medium effect for emphasizing attributes such as colors.
	(High)	Adds a strong effect for emphasizing attributes such as colors.

HDR Painting effect

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• You may not be able to set some MENU items depending on the selected REC mode. For details, see "MENU items not available in some REC modes." [Details]

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Area of emphasis

When you select (Miniature) in Picture Effect, set the part you want attention on.

1. MENU \rightarrow (Area of emphasis) \rightarrow desired mode



		·
	(Top)	Sets area of emphasis at the top.
	(Center)	Sets area of emphasis in the center.
$ \checkmark $	(Bottom)	Sets area of emphasis at the bottom.
	(Left)	Sets area of emphasis to the left.
	(Middle)	Sets area of emphasis in the middle.
	(Right)	Sets area of emphasis to the right.

Note

 You may not be able to set some MENU items depending on the selected REC mode. For details, see "MENU items not available in some REC modes." [Details]

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Color hue

When you select (Toy camera) in Picture Effect, adjust the color hue.

1. MENU \rightarrow (Color hue) \rightarrow desired mode



V	(Normal)	Adds a normal hue and darkens the surroundings.
	(Cool hue)	Adds a bluish cool hue and darkens the surroundings.
	(Warm hue)	Adds a reddish warm hue and darkens the surroundings.
	(Green hue)	Adds a green filter-like hue and darkens the surroundings.
	(Magenta hue)	Adds a magenta filter-like hue and darkens the surroundings.

Notes

- It is recommended that you shoot a test image in advance for some subjects.
- You may not be able to set some MENU items depending on the selected REC mode. For details, see "MENU items not available in some REC modes." [Details]

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Extracted Color

When you select (Partial Color) in Picture Effect, select the color to extract.

1. MENU \rightarrow (Extracted Color) \rightarrow desired mode



$ \checkmark $	(Red)	Extracts red only.
	(Green)	Extracts green only.
	(Blue)	Extracts blue only.
	(Yellow)	Extracts yellow only.

Notes

- When [Partial Color] is selected, images may not retain the selected color, depending on the subject.
- You may not be able to set some MENU items depending on the selected REC mode. For details, see "MENU items not available in some REC modes." [Details]

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You can adjust the exposure manually in 1/3 EV steps in a range of -2.0 EV to +2.0 EV.

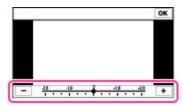
1. MENU → (EV)

Depending on the REC mode, this is set using buttons displayed on the left side of the screen.



2. Touch + / - to adjust exposure \rightarrow [OK].

You can also adjust the exposure by touching • of the adjustment bar and dragging to the right or left.



Adjusting the exposure for better looking images



A: Overexposure (too much light)

B: Correct exposure

C: Underexposure (too little light)

- When the image shot is overexposed, adjust [EV] to the minus side.
- When the image shot is underexposed, adjust [EV] to the plus side.

Notes

- If you shoot a subject in extremely bright or dark conditions, or when you use the flash, the exposure adjustment may not be effective.
- You may not be able to set some MENU items depending on the selected REC mode. For details, see "MENU items not available in some REC modes." [Details]

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ISO

Adjusts the luminous sensitivity when the camera is set to Program Auto.

1. MENU \rightarrow (ISO) \rightarrow desired mode



0	(Auto)	Sets the ISO sensitivity automatically.	
	ISO ISO ISO ISO ISO ISO ISO ISO ISO	You can reduce image blurring in dark locations or with moving subjects by increasing the ISO sensitivity (select a larger number).	

Adjusting ISO Sensitivity (Recommended Exposure Index)

ISO sensitivity is a speed rating for recording media that incorporates an image sensor that receives light. Even when the exposure is the same, images differ depending on the ISO sensitivity.

High ISO sensitivity



Records a bright image even in dark locations while increasing shutter speed to reduce blur. However, the image tends to become noisy.

Low ISO sensitivity



Records a smoother image.

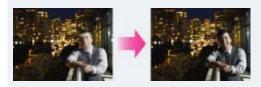
However, when the exposure is insufficient, the image may become darker.

Hints for preventing blur

Even though the camera is steady, the subject moves during the exposure and is captured

blurred when the shutter button is pressed. Camera shake is reduced automatically, however, the function does not effectively reduce subject blur.

Subject blur occurs frequently under low-light or slow shutter speed conditions. In such case, shoot with the below tips in mind.



- Select a higher ISO sensitivity so that the shutter speed is faster.
- Select So (High Sensitivity) mode in Scene Selection.

Note

• You may not be able to set some MENU items depending on the selected REC mode. For details, see "MENU items not available in some REC modes." [Details]

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White Balance

▼ To capture the basic white color in One Push Set mode

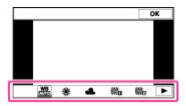
Adjusts color tones according to the surrounding light conditions. Use this function if image color appears unnatural.

1. MENU → (White Balance)

Depending on the REC mode, this is set using buttons displayed on the left side of the screen.



2. Desired mode → [OK].



$ \checkmark $	Adjusts the white balance automatically so that the colors appear n	
	※ (Daylight)	Adjusts for outdoors conditions on a fine day, evening views, night scenes, neon signs, fireworks, etc.
(Cloudy) Adjusts for a cloudy sky or a shady		Adjusts for a cloudy sky or a shady location.
	(Fluorescent White Balance 1) (Fluorescent White Balance 2) (Fluorescent White Balance 3)	[Fluorescent White Balance 1]: Adjusts for white fluorescent lighting. [Fluorescent White Balance 2]: Adjusts for natural white fluorescent lighting. [Fluorescent White Balance 3]: Adjusts for day white fluorescent lighting.
	(Incandescent)	Adjusts for places under incandescent lamp, or under bright lighting, such as in a photo studio.
(Flash) A		Adjusts for the flash conditions.
	(One	Adjusts the white balance depending on the light source. The white color memorized in (One Push Set) mode becomes the basic white color.

Time Effects of lighting conditions

The apparent color of the subject is affected by the lighting conditions.

The color tones are adjusted automatically, but you can adjust color tones manually using the White Balance function.



Daylight (White as Standard)



Cloudy (Bluish)



Fluorescent (Green-tinged)



Incandescent (Reddish)

Notes

- Under fluorescent lights that flicker, the white balance function may not work correctly even though you select [Fluorescent White Balance 1], [Fluorescent White Balance 2] or [Fluorescent White Balance 3].
- When shooting with a flash in other than [Flash] mode, [White Balance] is set to [Auto].
- When flash mode is [On] or [Slow Synchro], the white balance can only be set to [Auto], [Flash] or [One Push].
- You may not be able to set some MENU items depending on the selected REC mode. For details, see "MENU items not available in some REC modes." [Details]

To capture the basic white color in One Push Set mode

1. Frame a white object such as a piece of paper filling the screen under the same lighting conditions as you will shoot the subject.



- 2. MENU → (White Balance) → [One Push]
- 3. Touch \checkmark (One Push Set) \rightarrow [OK]

The screen momentarily turns black, and when the white balance has been adjusted and stored in the memory, the recording screen is displayed again.

Notes

- If the indicator flashes while shooting, the white balance is either not set or cannot be set. Use automatic white balance.
- Do not shake or strike the camera while [One Push Set] is in progress.
- When flash mode is set to [On] or [Slow Synchro], the white balance is adjusted to the condition with the flash emitting.

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Focus

Focusing on subjects near the edge of the screen

You can change the focus method. Use the menu when it is difficult to get the proper focus in auto focus mode.

AF stands for "Auto Focus," a function that adjusts the focus automatically.

The selected AF range finder frame appears on the screen.



Focuses on a subject in all ranges of the finder frame automatically.

When you press the shutter button halfway down in still image shooting mode, a

green frame is displayed around the area that is in focus.





• When the Face Detection function is active, AF operates with priority on faces.

Focuses on a subject in the center of the finder frame automatically. Using the AF lock function together, you can compose the image the way you want.

(Center AF)



Focuses on an extremely small subject or a narrow area automatically. Using the AF lock function together, you can compose the image the way you want.

(Spot AF)



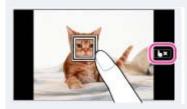
Hold the camera steady so as not to misalign the subject and the AF range

Notes

- When you use the following functions, the AF range finder frame is disabled and a dotted line appears instead. In this case, the camera works to focus on the subjects at the center of the screen.
 - Zoom functions other than optical zoom
 - AF illuminator
- When the focus mode is set to other than [Multi AF], you cannot use the Face Detection function.
- If tracking focus is activated, the camera focuses with priority on the subject to be tracked.
- You may not be able to set some MENU items depending on the selected REC mode. For details, see "MENU items not available in some REC modes." [Details]

Ouickly choosing the priority subject

Touching the screen displays a frame, and then pressing the shutter button halfway down brings the frame into focus. Touch **x** to cancel the focus.



Focusing on subjects near the edge of the screen

If the subject is out of focus, do as follows:



- 1. Recompose the shot so that the subject is centered in the AF range finder (A), and press the shutter button halfway to focus on the subject (AF lock).
- 2. When the AE/AF lock indicator (B) stops flashing and remains on, return to the fully composed shot, and press the shutter button fully down.
 - As long as you do not press the shutter button fully down, you can retry the procedure as many times as necessary.

Related Topic

Tracking focus

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Metering Mode

Selects the metering mode that sets which part of the subject to measure to determine the exposure.

1. MENU → (Metering Mode) → desired mode



V	(Multi)	Divides into multiple regions and measures each region. The camera determines a well-balanced exposure (Multi-pattern metering).	
	(Center)	Measures the center of the image, and determines the exposure based on the brightness of the subject there (Center-weighted metering).	
	(Spot)	Align the spot metering cross hairs (A) on the subject to meter one part of the subject (Spot metering). This function is useful when the subject is backlit or when there is strong contrast between the subject and the background.	

Notes

- If you set [Metering Mode] to other than [Multi], the Face Detection function cannot be used.
- You may not be able to set some MENU items depending on the selected REC mode. For details, see "MENU items not available in some REC modes." [Details]

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Operation Search

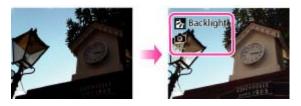
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Scene Recognition

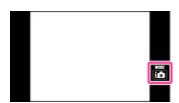
Advanced mode

The camera automatically detects shooting conditions, and then takes the shot. When a motion is detected, the ISO sensitivity is increased according to the movement to reduce subject blur. When the camera is set to Intelligent Auto mode, you can select [Advanced] mode, in which the camera automatically shoots two images.



In Scene Recognition, the position of an icon displayed on the screen is different depending on whether the camera recognizes a scene or condition. If the camera recognizes a scene, icons and guides such as (Portrait), (Infant), (Night Portrait), (Night Scene), (Backlight Portrait), (Backlight), (Landscape), (Macro), (Close Focus), (Spotlight) or (Low Light) are displayed on the first line. If the camera recognizes a condition, icons such as (Tripod) or (Move) are displayed on the second line. The camera may recognize both the scene and condition, or just one.

1. $i \bullet$ (REC Mode) \rightarrow $i \bullet$ (Intelligent Auto)



2. MENU \rightarrow iscn (Scene Recognition) \rightarrow desired mode



V	iscn (Auto)	When the camera recognizes the scene, it switches to the optimal settings and shoots the image.
	<u>†</u> scn†	When the camera recognizes the scene, it switches to the optimal settings. When the camera recognizes (Night Scene), (Night Portrait), (Backlight) or (Backlight Portrait), it automatically changes the setting and shoots another image. When you shoot 2 images consecutively, the + mark on the icon will

(Advanced)		turn green.
	•	When two frames are shot, the two images are displayed side by side
		immediately after shooting.

• When [Anti Blink] is displayed, 2 images are taken automatically and the image with the eyes open is selected automatically. [Details]

Notes

- The Scene Recognition function does not operate when you shoot images using zoom functions other than the optical zoom.
- 🔐 (Portrait), (Night Portrait) or 🚰 (Backlight Portrait) are not recognized in tracking focus mode.
- The available flash settings are [Auto] and [Off].
- These scenes may not be recognized depending on the situation.
- If the environment causes vibrations to be transferred to the camera when \Re (Tripod) and \Im (Night Scene) conditions are recognized at the same time, \Re (Tripod) condition may not be recognized.
- Sometimes a slow shutter results when a scene is recognized as a \$ (Tripod) and \flat (Night Scene) at the same time. Keep the camera still during shooting.
- You may not be able to set some MENU items depending on the selected REC mode. For details, see "MENU items not available in some REC modes." [Details]

Advanced mode

In [Advanced] mode, the camera shoots two images consecutively with the settings differing as follows when it recognizes (Night Scene), (Night Portrait), (Backlight) or (Backlight Portrait) scenes, which tend to blur. You can select the desired image from the two images shot.

	First Image*	Second Image
	Shoots in Slow Synchro	Shoots with sensitivity increased and shake reduced
•	Shoots in Slow Synchro with the face which the flash strobes on as guide	Shoots with sensitivity increased with the face as guide and shake reduced
₽	Shoots in Slow Synchro	Shoots with even slower shutter speed without increasing sensitivity
Ž.	Shoots with the flash	Shoots with the brightness and contrast of the background adjusted
c_{t}	Shoots with the face which the flash strobes on as guide	Shoots with the brightness and contrast of the face and the background adjusted

^{*} When [Flash] is set to [Auto].

" What is the Anti Blink function?

When set to [Advanced], the camera automatically shoots two images consecutively* when it recognizes (Portrait) or (Infant). The camera will select, display, and record the image which the eyes are not blinked automatically. If the eyes are closed in both images, the message "Blinked eye detected" is displayed.

* except when the flash strobes/when the shutter speed is slow.



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Soft Skin Effect

When the Face Detection function is activated, sets whether to use the Soft Skin effect, and the effect level.

1. MENU → Main (Soft Skin Effect) → desired mode



V	(Off)	Does not use the Soft Skin Effect.
	(Low)	Adds light Soft Skin Effect.
	(Mid)	Adds moderate Soft Skin Effect.
	(High)	Adds strong Soft Skin Effect.

Notes

- The [Soft Skin Effect] may not be visible depending on the subject.
- You may not be able to set some MENU items depending on the selected REC mode. For details, see "MENU items not available in some REC modes." [Details]

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Smile Shutter

When the camera detects a smile, the shutter is released automatically.

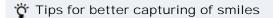
1. MENU → ⁽²⁾ (Smile Shutter)



Wait for a smile to be detected.
 When a smile is detected and the smile level exceeds the ▼ point on the indicator, the camera records images automatically.



- In Movie shooting scene, the indicator is not displayed. [Details]
- If you press the shutter button during Smile Shutter, the camera shoots the image, and then returns to Smile Shutter mode.
- 3. To end the Smile Shutter, touch MENU \rightarrow \bigcirc (Smile Shutter).





- Do not cover the eyes with the bangs. Do not obscure the face by hat, masks, sunglasses, etc.
- 2 Try to orient the face in front of the camera and be as level as possible. Keep the eyes narrowed.
- Give a clear smile with an open mouth. The smile is easier to detect when the teeth are shown.

- The shutter operates when any person whose face is being detected smiles.
- You can select or register the priority subject for face detection with [Face Detection]. When the selected face is registered in the camera memory, Smile Detection is performed only for that face. [Details]
- If a smile is not detected, select MENU → [Smile Detection Sensitivity], then set the value to [Slight Smile].

Notes

- Shooting using the Smile Shutter ends automatically when either the memory card or internal memory becomes full.
- Smiles may not be detected correctly depending on the conditions.
- You cannot use Smile Shutter when you use zoom functions other than optical zoom.
- You may not be able to set some MENU items depending on the selected REC mode. For details, see "MENU items not available in some REC modes." [Details]

Related Topic

Smile Detection Sensitivity

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Smile Detection Sensitivity

Sets the sensitivity of the Smile Shutter function for detecting smiles.

1. MENU → (Smile Detection Sensitivity) → desired mode



	(Big Smile)	Detects a big smile.
V	(Normal Smile)	Detects a normal smile.
	(Slight Smile)	Detects even a slight smile.

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Notes

- Smiles may not be detected correctly depending on the conditions.
- You may not be able to set some MENU items depending on the selected REC mode. For details, see "MENU items not available in some REC modes." [Details]

Related Topic

Smile Shutter

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Face Detection

When the Face Detection function is used, the camera detects the faces of your subjects and adjusts the focus, flash, exposure, white balance and red-eye reduction settings automatically.



When the camera detects more than one subject, the camera will judge which is the main subject and set focus by priority. The frame for which the focus is set will turn green by pressing the shutter button halfway down.

1. MENU \rightarrow [Face Detection) \rightarrow desired mode



	(Off)	Does not use the Face Detection.
V	(Auto)	Selects the face the camera is to automatically focus on.
	Child Priority)	Detects and shoots with priority on a child's face.
	(Adult Priority)	Detects and shoots with priority on an adult's face.

Notes

- [Off] is not available when [Self-Timer] is set to [Self-portrait One Person] or [Self-portrait Two People].
- You can select [Face Detection] only when the focus mode is set to [Multi AF] and the metering mode is set to [Multi].
- The Face Detection function does not operate when you use zoom functions other than optical zoom.
- Up to 8 faces of your subjects can be detected.
- Adults and children may not be recognized correctly depending on the conditions.
- During Smile Shutter shooting, [Face Detection] is automatically set to [Auto] even if it is set to [Off].
- You may not be able to set some MENU items depending on the selected REC mode. For details, see "MENU items not available in some REC modes." [Details]

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Anti Blink

When Scene Selection is set to (Soft Skin) or (Soft Snap) and the subject blinks while you are shooting an image, the camera automatically shoots two images consecutively. The camera will automatically select, display and record the image in which the eyes are not blinked.

1. MENU → m (Anti Blink) → desired mode



V			When Face Detection is active, the Anti Blink function operates so that images with the subject's eyes open are recorded.	
-		(Off)	Does not use the Anti Blink function.	

Notes

- Anti Blink does not work in the following situations:
 - When using the flash
 - During burst shooting
 - When the Face Detection function does not work
 - When the Smile Shutter function is activated
- Sometimes the Anti Blink function does not work depending on the situation.
- When the Anti Blink function is set to [Auto] but only images with the subject's eyes closed are recorded, the message "Blinked eye detected" is displayed on the screen. Shoot again as necessary.
- You may not be able to set some MENU items depending on the selected REC mode. For details, see "MENU items not available in some REC modes." [Details]

Related Topic

Scene Selection

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Movie SteadyShot

The strength of the SteadyShot effect when shooting movies can be adjusted.

1. MENU → (Movie SteadyShot) → desired mode



	(Standard)	Provides the SteadyShot effect under stable recording conditions.
V	(Active)	Provides a more powerful SteadyShot effect.

Notes

- If you change the setting for [Movie SteadyShot], the angle of view will change.
- You may not be able to set some MENU items depending on the selected REC mode. For details, see "MENU items not available in some REC modes." [Details]

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Shooting movies

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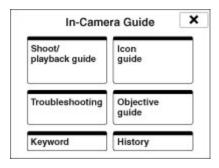
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In-Camera Guide

This camera is equipped with built-in instruction guide. This allows you to search the camera's functions according to your needs.

You can use the selected function after reading the guide.



1. Touch ? (In-Camera Guide).

If the icon button is not displayed on the left of the screen, touch the MENU to display.



2. Select a search method from [In-Camera Guide].

Guidance	Description
Shoot/ playback guide	Search for various operation functions in shooting/ playback mode.
Icon guide	Search the function and meaning of displayed icons.
Troubleshooting	Search common problems and their solution.
Objective guide	Search functions according to your needs.
Keyword	Search functions by keywords.
History	View the last 10 items displayed in [In-Camera Guide].

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MENU items not available in some REC modes

▼ MENU items not available in Scene Selection/Picture Effect mode

In the table below, \checkmark indicates settings that can be changed, while - indicates settings that cannot be changed. A setting may be fixed or restricted depending on the shooting mode. For details, see each topic.

	:-		å⁺ i⊟ ⊞		Ш Р		3D		
Menu items	1 •	i © ⁺	1111	H-H	P		30	92	3D
Movie shooting scene	_	_	_	~	_	_	_	_	_
Easy Mode	~	~	~	_	>	>	~	~	>
Movie button	>	~	>	~	>	>	~	~	>
Flash	<	<	1	-	>	-	-	-	١
Self-Timer	~	~	_	_	~	~	~	_	_
Defocus Effect	_	_	_	_	_	~	_	_	_
Still Image Size(Dual Rec)	>	>	>	>	>	>	>	>	>
Still Image Size	<	<	1	-	>	>	\	-	١
Panorama Image Size	_	_	>	_	_	_	_	>	-
Movie Quality	~	~	~	~	~	~	~	~	>
Movie Size	~	~	~	~	~	~	~	~	>
Cont. Shooting Settings	>	_	-	_	~	_	_	_	-
Macro	~	_	_	_	~	_	~	_	_
HDR Painting effect	_	_	_	_	_	_	_	_	_
Area of emphasis	_	_	_	_	_	_	_	_	_
Color hue	_	_	_	_	_	_	_	_	_
Extracted Color	_	_	_	_	_	_	_	_	_
EV	~	~	~	~	>	>	~	~	>
ISO	_	_	_	_	~	_	_	_	_
White Balance	_	_	~	_	~	_	_	~	>
Focus	_	_	~	_	>	_	_	~	>
Metering Mode	_	_	~	_	~	_	_	~	~
Scene Recognition	~	_	_	_	_	_	_	_	_

Soft Skin Effect	_	_	_	_	_	~	_	_	_
Smile Shutter	~	-	_	~	~	_	_	_	_
Smile Detection Sensitivity	_	-	_	~	_	_	_	_	_
Face Detection	~	~	_	~	~	~	~	_	_
Anti Blink	_	-	_	_	_	_	_	_	_
Movie SteadyShot	~	~	~	~	~	~	~	~	~
In-Camera Guide	~	V	~	~	~	~	~	~	~
(Settings)	>	~	~	~	>	>	>	>	>

MENU items not available in Scene Selection/Picture Effect mode The icons below **SCN** or **9** indicate the available modes.

Menu items	SCN (Still images)	SCN (Movies)	Ø
Movie shooting scene	_	~	_
Easy Mode	✓	_	~
Movie button	✓	~	✓
Flash	St # M M M T T S S T S S T S	_	~
Self-Timer	✓	_	✓
Defocus Effect	_	_	_
Still Image Size(Dual Rec)	✓	~	✓
Still Image Size	✓	_	~
Panorama Image Size	_	-	-
Movie Quality	✓	~	~
Movie Size	✓	~	~
Cont. Shooting Settings	## # ###	-	Toy Pop Part Stall
Macro	27 ⁺ 11 3	_	_
HDR Painting effect	-	_	Pring
Area of emphasis	_	_	Mini
Color hue	_	_	(Joy)
Extracted Color	_	_	(Part)
EV	新設(4) (4) (4) (4) (4) (4) (4) (4) (4) (4)	~	(Min) Toy Pop Part Staty
ISO	147		

	_	_	_
White Balance*1	((♣)) (3+) ₩ (ŝo 11 🐱	iŝo	_
Focus	·	_	Pring Rich
Metering Mode	((♣)) > ₩	_	_
Scene Recognition	_	_	_
Soft Skin Effect*2	(유) 유· (유) 유·	_	_
Smile Shutter	\$* & * & 1 sੇo ₹ > 8 1 s	≗ 3 iso ₹ <u></u>	-
Smile Detection Sensitivity	-	≗ 3 iso ₹ <u></u>	-
Face Detection*3	新器(名)(名)(名)(名)(名)(名)(名)(名)(名)(名)(名)(名)(名)(#≗iso 7⊆ 8	Putty Rich Toy Pop Part State
Anti Blink	8+ ≗ 3	_	_
Movie SteadyShot	✓	~	✓
In-Camera Guide	✓	~	✓
(Settings)	✓	✓	✓

^{*1 [}Flash] cannot be selected for [White Balance] when Scene Selection is set to (Anti Motion Blur), (Hand-held Twilight) or (High Sensitivity).

Notes

- Only the items that are available for each mode are displayed on the screen.
- The 4 menu items displayed under MENU differ according to the mode.

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^{*2 [}Off] cannot be selected for [Soft Skin Effect] when Scene Selection is set to 😭 (Soft Skin).

^{*3 [}Off] cannot be selected for [Face Detection] when Scene Selection is set to (Soft Skin) or (Soft Snap).



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Using MENU items (Viewing)

You can select the various viewing functions easily from the screen.

1. Touch (Playback) to switch to playback mode.



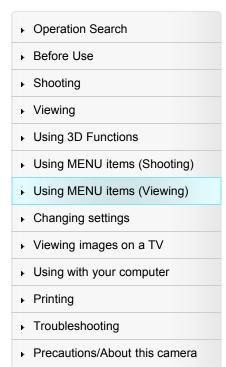
Touch MENU to display the Menu screen.
 The 4 menu items usually displayed under MENU will not appear on the MENU screen.



3. Touch the MENU items → desired mode



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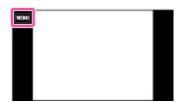
Easy Mode

When viewing still images in Easy Mode, the playback screen text becomes larger, indicators become easier to see, and fewer functions can be used.

1. Touch (Playback) to switch to playback mode.



2. MENU \rightarrow **EASY** (Easy Mode) \rightarrow [OK]

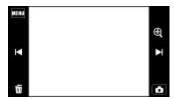


Notes

- The battery charge is used up more quickly because the screen brightness increases automatically.
- The shooting mode also changes to [Easy Mode].

Viewing functions available in Easy Mode

In Easy Mode, only the deletion and the zoom functions are available.



(Delete)	You can delete the currently displayed image.
(Zoom)	 Enlarges the displayed image. Drag up, down, right or left, or touch ▲ / ▼ / ■ / ▶ to change the zoom position. Touch ♀ / ♀ to change the zoom magnification.
MENU	You can delete currently displayed image with [Delete Single Image], and delete all images in the selected date range or internal memory (if selected) with [Delete All Images]. Select [Exit Easy Mode] [OK] to exit Easy Mode.

Note

• When a memory card is inserted in the camera, [View Mode] is set to [Date View].

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Date Select

Selects the desired image to view by date.

1. Touch (Playback) to switch to playback mode.



2. Touch (Date Select).



- 3. Display images shot on a specific date at center of the screen by dragging right or left on the screen to select the date.
- 4. Touch the center of image.

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Calendar

This feature selects the date to be played back on the calendar when using Date View. Step 2 is unnecessary when [Date View] is already set.

1. Touch (Playback) to switch to playback mode.



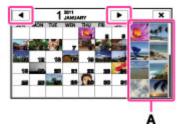
2. MENU → touch (Calendar).



3. Select the month you want to display with ◀ / ▶ , then touch the desired date.

Drag the thumbnails of images for the selected date (A) up or down to change the page.

Touch an image to return to the single-image screen for that image.



Note

• This function is not displayed when the internal memory is used.

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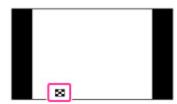
Image Index

Displays multiple images at the same time.

1. Touch (Playback) to switch to playback mode.



2. Touch (Image Index).



3. Touch the screen and drag up or down to change the page.

Touch an image on the index screen to return to the single-image screen for that image.

Related Topic

Number of images in index

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Slideshow

Continuous Playback

▼ Slideshow with music

Images are automatically played back in succession.

1. Touch (Playback) to switch to playback mode.



2. MENU \rightarrow \square (Slideshow) \rightarrow desired slideshow



(Continuous Playback)	Starts playback from the currently displayed image. Playback stops at the image just before the starting image.
(Slideshow with music)	Plays back still images in succession along with effects and music.

Note

• [Slideshow] is not available when [View Mode] is set to [Folder view (MP4)] or [AVCHD view].

Continuous Playback

- 1. Select the desired image for playing.
- 2. MENU → (Slideshow) → [Continuous Playback]
- 3. To end continuous playback, touch the screen, and then touch [Exit Continuous Playback]. Touch ¶+ or ¶- on the screen to adjust the movie volume.

"Viewing panoramic images during continuous playback

The whole panoramic image is displayed for 3 seconds.

You can scroll a panoramic image by touching ...

Slideshow with music

- 1. MENU → (Slideshow) → [Slideshow with music]
- 2. Desired setting → [Start]
- 3. To end slideshow, touch the screen, and then touch [Exit Slideshow].

Note

- [Slideshow with music] is not available for the following images:
 - Panoramic images
 - 3D images recorded in [Standard] or [Wide] size

Playback Selection

Selects the group of images to be shown. The setting is fixed to [Folder] when the internal memory is used to record images.

$ \checkmark $	All	Plays a slideshow of all the images in order.
	This Date	Plays a slideshow of images with the currently selected date range when View Mode is [Date View].
	Folder	Plays a slideshow of images in the currently selected folder in Folder View.

Effects

Selects the playback speed and mood for slideshows. If the playback time of movie is long, an image is taken from it and displayed.

<	Simple	A simple slideshow switching images at a preset interval. The playback interval is adjustable in [Interval] and you can thoroughly enjoy your images.
	Nostalgic	A moody slideshow reproducing the atmosphere of a movie scene.
	Stylish	A stylish slideshow proceeding at a middle tempo.
	Active	A high-tempo slideshow suitable for active scenes.

Music

Specifies the music to be played during slideshows. You can select more than one background music track. Touch to listen to each background music. Touch to adjust the background music volume.

$ \checkmark $	Music1	The default setting for a [Simple] slideshow.
	Music2	The default setting for a [Nostalgic] slideshow.
	Music3	The default setting for a [Stylish] slideshow.
	Music4	The default setting for an [Active] slideshow.
	Muting	Does not use BGM.

Note

• The movies are played back without their audio.

Sets	Interval Sets the screen switching interval. The setting is fixed to [Auto] when [Simple] is not selected as the [Effects].					
	1 sec					
V	3 sec	Sets the display interval of images for a [Simple] slideshow.				
	5 sec	deta the display interval of images for a [online] slideshow.				
	10 sec					
	Auto	The interval is set to suit the selected [Effects] item.				

Selecting background music

You can transfer a desired music file from your CDs or MP3 files to the camera to play back during slideshow. To transfer music, install the "Music Transfer" software to your computer. [Details]

- You can record up to four pieces of music on the camera. (The 4 preset pieces (Music1 Music4) can be replaced with the ones you transferred.)
- The maximum length of each music file for music playback of the camera is about 5 minutes
- If you cannot play back a music file due to damage or other malfunctions of the file, execute [Empty Music] [Details] and transfer the music again.

Related Topic

"Music Transfer"

Installing "PMB" and "Music Transfer" (Windows)

Installing "Music Transfer" (Macintosh)

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Delete

Allows you to select unwanted images for deletion.

1. Touch (Playback) to switch to playback mode.



2. **m** (Delete) → desired mode



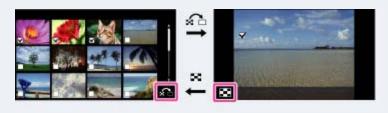
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(All but This Image)	Deletes burst group images other than the selected image in Display Cont. Shooting Group mode. After step 2, touch [OK].
(All Imgs in This Cnt.Sht. Grp.)	Deletes all images in the selected burst group at once. After step 2, touch [OK].
(This Image)	Deletes the currently displayed image in single-image mode.
(Multiple Images)	Allows you to select and delete multiple images. Do as the following after step 2. Select an image then touch it. Repeat the above step until there are no more images to be deleted. Touch an image with a mark again to release the mark. Touch [OK].
(All Images on This Date) (All in This Folder) (All AVCHD view files)	Deletes all still images and movies in the selected date range or folder, or all movies in [AVCHD view] at once. After step 2, touch [OK].

You can switch between index and single-image mode when selecting images

When you select (Multiple Images), touch on the index screen to return to the single-image screen, and touch on the single-image screen to return to the index screen.

• You can also switch between index and single-image mode in [Protect] or [Print (DPOF)].



Note

• When using the internal memory, the image is displayed in Folder View.

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Paint

Paints or adds stamps to a still image and saves it as a new file. The original image is retained.



1. Touch (Playback) to switch to playback mode.



2. MENU → **(Paint)**



- 3. Draw on the image using the paint pen (supplied).
- 4. Touch the $\frac{1}{2}$ button \rightarrow select the saved image size.



Button		Action		
☆ / ♠	Save	Saves the image in VGA or 5M format in the internal memory or on a memory card.		
/	Pen	Paints characters or graphics.		
•	Eraser	Makes corrections.		
4	Stamp	Applies a stamp to the image.		
Thickness/Stamps		Selects the pen or eraser thickness, or the stamp.		

	Color	Selects the color.	
×	Exit Exits paint mode.		
	Adds a frame. Selects the desired frame with 4 /		
Ħ	Revert	Undoes the last action.	
•	Clear all	Erases all painting.	

Note

- You cannot paint or put stamps on the following images:
 Panoramic images
 3D images

 - Movies
 - Images displayed in a burst group

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Retouch

Retouches a recorded image and saves it as a new file. The original image is retained.

1. Touch (Playback) to switch to playback mode.



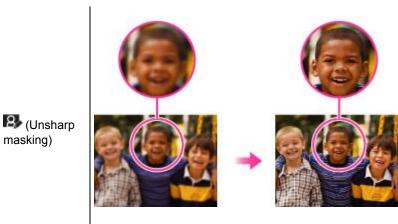
2. MENU \rightarrow \square (Retouch) \rightarrow desired mode



3. Perform retouching according to the operation method in each mode.

Records the zoomed playback image. Touch ♥/♀→ set the point with ►/▷/◊/♪→ [Next] → select an image size to save with र/▷→ [Next] → [OK]. • The quality of trimmed images may deteriorate. • The image size that you can trim may vary depending on the image. Corrects the red-eye phenomenon caused by flash. After red eye correction is completed, touch [OK]. • You may not be able to correct the red-eye phenomenon depending on the image.

Sharpens the image within a chosen frame.



masking)

Touch the area (frame) of the desired image to retouch \rightarrow [Next] \rightarrow [OK].

• Depending on the image, sufficient correction may not be applied and the image quality may deteriorate.

Note

- You cannot retouch the following images:
 - Panoramic images
 - 3D images
 - Movies
 - Images displayed in a burst group

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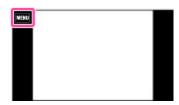
3D Viewing

Select [3D Viewing] when you want to play back images shot in 3D mode on the 3D TV. Connect the camera and the 3D TV using an HDMI Cable (sold separately). [Details]

1. Touch (Playback) to switch to playback mode.

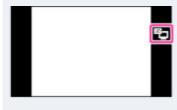


2. MENU → ¹ (3D Viewing) → [OK]



Setting to 3D Viewing mode easily

You can set the camera to 3D Viewing mode by touching on the upper right side of the screen.



Related Topic

Viewing 3D images on a 3D TV

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View Mode

Viewing images taken with a different camera

Allows you to select the display format for images.

1. Touch (Playback) to switch to playback mode.





$ \checkmark $	(Date View)	Displays images by date.		
	Folder view (Still))	Displays still images.		
	MP4 (Folder view (MP4))	Displays MP4-format movies.		
	PAVCHD (AVCHD view)	Displays AVCHD-format movies.		

Note

 When the internal memory is used to record images, still images are displayed in the Folder View.

Viewing images taken with a different camera

This camera creates an Image Database File on the memory card for recording and playing images. If the camera detects images not registered in the Image Database File on the memory card, a registration screen with the message "An image that is not administered in this device has been found. Import?" will be displayed.

To view unregistered images, register them by selecting [OK].

 Use a sufficiently charged battery to register images. If a battery with a low charge is used to register images, it may not be possible to transfer all of the data or the data may be corrupted if the battery charge runs out.



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Group

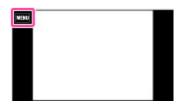
▶ Operation Search

Display Cont. Shooting Group

You can select to display burst images in groups or display all images during playback.

1. Touch (Playback) to switch to playback mode.





3. MENU → ☐ (Display Cont. Shooting Group) → desired setting

\$		(Display Main Image Only)	Groups burst images, then plays back the main image only. • When Face Detection is performed in burst mode, the camera determines and displays the optimum image as the main image. When Face Detection is not performed, the first image in the burst group is displayed as the main image.
		(Display All)	Plays back all burst images one at a time.

Related Topic

Viewing burst images

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Protect

Protects recorded images against accidental erasure.

The Om mark is displayed for registered images.

1. Touch (Playback) to switch to playback mode.



2. MENU → Om (Protect) → desired mode



ீ் (This Image)	Protects the currently displayed image in single-image mode.		
	You can select and protect multiple images. Do as the following after step 2.		
(Multiple Images)	① Select an image to be protected, then touch it. Repeat the above steps until there are no more images to be protected.		
	Touch an image with a V mark again to release the V mark.		
	②Touch [OK] → [OK].		
Shooting Imgs.)	Protects all images in the selected burst group at once in Display Cont. Shooting Group mode. Touch [OK] after step 2.		
Set All on This Date)			
Set All in This Folder)	Protects all images in the date range or folder, or all movies in [AVCHD view]. Touch [OK] after step 2.		
Set All AVCHD view files)			
(Rmv. All Cnt. Shoot. Images.)	Releases all protected images in the selected burst group at once in Display Cont. Shooting Group mode. Touch [OK] after step 2.		
(Remove All on This Date)			
(Remove All in	Releases all images in the date range or folder, or all movies in		

This Folder)	[AVCHD view] files at once. Touch [OK] after step 2.
(Remove All AVCHD view files)	

Note

• When the internal memory is used to record images, still images are displayed in the Folder View.

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Print (DPOF)

DPOF (Digital Print Order Format) is a function that allows you to specify the images of the memory card that you want to print out later.

The **DPOF** (Print order) mark is displayed for registered images.

1. Touch (Playback) to switch to playback mode.



2. MENU → Print (DPOF) → desired mode



(This Image)	Orders printing the currently displayed image in single-image mode.
	You can select and order printing multiple images. Do as the following, after step 2.
DPOE (Multiple Images)	 Select an image to be printed, then touch it. Repeat the above steps until there are no more images to be printed. Touch an image with a

Notes

- The **DPOF** (Print order) mark cannot be added to the following images:
 - Movies
 - Images in the internal memory
- You can add a **DPOF** (Print order) mark to a maximum 999 images.

Related Topic

Printing still images

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Rotate

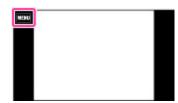
Rotates a still image. Use this to display a horizontal orientation image in vertical orientation.



1. Touch (Playback) to switch to playback mode.



2. MENU → (Rotate)



3. \square / \square \rightarrow [OK]

Notes

- You cannot rotate the following images:
 - Movies
 - 3D Still Image
 - Images displayed in a burst group
- You may not be able to rotate images shot with other cameras.
- When viewing images on a computer, the image rotation information may not be reflected depending on the software.

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Volume

Adjusts the volume for slideshow and movie playback.

1. Touch (Playback) to switch to playback mode.

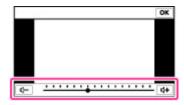


2. MENU → [¶] (Volume)



3. Adjust the volume by touching \P + or \P - \longrightarrow [OK].

You can also adjust the volume by touching
on the volume adjustment bar and dragging to the right or left.



Adjusting the volume during playback of a movie or slideshow

Movie playback: Touch the screen to display the operation buttons, touch and then touch to adjust the volume.

Slideshow: Touch the screen to display the volume control screen, then touch \P + or \P - to adjust the volume.

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Exposure data

Sets whether or not to display the exposure data of the currently displayed file.



1. Touch (Playback) to switch to playback mode.



2. MENU \rightarrow (Exposure data) \rightarrow desired mode



	(On)	Displays the exposure data on the screen.
V	(Off)	Does not display the exposure data.

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Number of images in index

Sets the number of images displayed in the index screen.

1. Touch (Playback) to switch to playback mode.



2. Touch (Image Index).



3. MENU \rightarrow \blacksquare (Number of images in index) \rightarrow desired mode



8	(12-up)	Displays 12-up images.
	(28-up)	Displays 28-up images.

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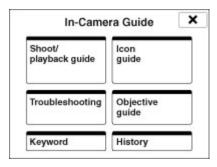
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In-Camera Guide

This camera is equipped with built-in instruction guide. This allows you to search the camera's functions according to your needs.

You can use the selected function after reading the guide.



1. Touch ? (In-Camera Guide).



2. Select a search method from [In-Camera Guide].

Guidance	Description		
Shoot/ playback guide	Search for various operation functions in shooting/ playback mode.		
Icon guide	Search the function and meaning of displayed icons.		
Troubleshooting	Search common problems and their solution.		
Objective guide	Search functions according to your needs.		
Keyword	Search functions by keywords.		
History	View the last 10 items displayed in [In-Camera Guide].		

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set according to View I	Mode

MENU items that cannot be set according to View Mode

In the table below, \checkmark indicates a user-changeable function, while — indicates an unchangeable one.

	Memory card				Internal Memory
Menu items	Date View	Folder view (Still)	Folder view (MP4)	AVCHD AVCHD view	Folder View
EASY (Easy Mode)	~	~	~	>	<
(Date Select)	~	_	_	_	_
(Calendar)	~	_	_	_	_
(Image Index)	~	✓	✓	~	~
(Slideshow)	~	✓	_	_	~
(Delete)	~	✓	✓	~	~
(Paint)	~	✓	_	_	~
(Retouch)	~	✓	_	_	~
(3D Viewing)	~	✓	_	_	~
(View Mode)	~	✓	✓	~	_
(Display Cont. Shooting Group)	~	_	_	_	_
Om (Protect)	~	✓	✓	~	~
Print (DPOF)	~	✓	_	_	_
(Rotate)	~	✓	_	_	~
◀ (Volume)	~	✓	✓	~	~
(Exposure data)	~	✓	✓	~	~
(Number of images in index)	~	✓	✓	~	~
? (In-Camera Guide)	~	✓	✓	~	✓
(Settings)	~	✓	✓	~	~

- Only the items that are available for each mode are displayed on the screen.
- 4 MENU items displayed under MENU vary depending on the selected mode.

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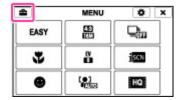
Changing camera settings

You can change the settings on the (Settings) screen.

1. Touch MENU to display the Menu screen.



2. Touch \blacksquare (Settings) \longrightarrow desired category \longrightarrow desired function \longrightarrow desired mode



Notes

- [Shooting Settings] appears only when settings have been entered from shooting mode.
- [Memory Card Tool] appears only when a memory card is inserted in the camera, while [Internal Memory Tool] appears only when a memory card is not inserted.

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Movie format

You can set the recording method used to record movies.

- 1. Set the camera to shooting mode.
- 2. $MENU \rightarrow$ (Settings) \rightarrow (Shooting Settings) \rightarrow [Movie format] \rightarrow desired mode



>	AVCHD	AVCHD movies are recorded. Sets the recording method to AVCHD, which is suitable for viewing smooth video images on a high-definition television. Blu-ray discs, AVCHD discs and DVD-Video discs can be created using the supplied software "PMB". However, AVCHD discs cannot be created from movies recorded in [AVC HD 24M (FX)] quality. Save the images to Blu-ray discs.
	MP4	MP4 (AVC) movies are recorded. Sets the recording method to MP4, which is suitable for WEB uploads and e-mail attachments. No discs can be created from MP4 movies, even if you use the supplied software "PMB".

Related Topic

AVCHD format

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AF Illuminator

The AF illuminator supplies fill light to focus more easily on a subject in dark surroundings. The AF illuminator emits red light allowing the camera to focus easily when the shutter button is pressed halfway, until the focus is locked. The **FON** indicator appears at this time.

- 1. Set the camera to shooting mode.



V	Auto	Uses the AF illuminator.
	Off	Does not use the AF illuminator.

Notes

- Focus is achieved as long as the AF illuminator light reaches the subject, regardless of whether light fails to reach the center of the subject.
- You cannot use the AF illuminator in the following situations:
 - In movie mode
 - In Intelligent Sweep Panorama mode
 - When (Landscape), (Night Scene), (Pet), (Fireworks) or (Hi-Speed Shutter) mode is selected in Scene Selection.
 - When [Self-Timer] is set to [Self-portrait One Person] or [Self-portrait Two People].
- When you use the AF illuminator, the normal AF range finder frame is disabled and a new AF range finder frame is displayed by a dotted line. AF operates with priority on subjects located near the center of the frame.
- The AF illuminator emits very bright light. Although there is no health hazard, do not look directly into the AF illuminator emitter at close range.

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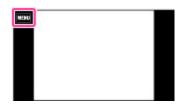
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Grid Line

With reference to the grid lines, you can easily set a subject in a horizontal/vertical position.

- 1. Set the camera to shooting mode.
- 2. MENU \rightarrow $\stackrel{\triangle}{=}$ (Settings) \rightarrow $\stackrel{\triangle}{=}$ (Shooting Settings) \rightarrow [Grid Line] \rightarrow desired mode



	On	Displays the grid lines. The grid lines are not recorded.
$ \checkmark $	Off	Does not display the grid lines.

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Clear Image Zoom

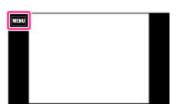
▼ Zoom scale when [Clear Image Zoom] is selected (including 5× optical zoom)

[Clear Image Zoom] allows you to enlarge the image with close to the original image quality when shooting still images.

The camera zooms images with the original image quality first depending on the selected still image size.

When [Clear Image Zoom] is set to [On], the camera automatically switches over to [Clear Image Zoom] when the zoom range without deterioration of the original image quality is exceeded.

- 1. Set the camera to shooting mode.
- MENU → (Settings) → (Shooting Settings) → [Clear Image Zoom] → desired mode



	Off Does not use [Clear Image Zoom].	
×	On	Zooms the images with close to the original image quality, depending on the image size. Switches to [Clear Image Zoom] within the range where constant is displayed.

Notes

- To zoom the images within the range where original image quality can be retained, set both [Clear Image Zoom] and [Digital Zoom] to [Off]. [Details]
- [Clear Image Zoom] function does not operate in the following situations:
 - In movie mode
 - In Intelligent Sweep Panorama mode
 - In Picture Effect mode
 - In Background Defocus mode
 - When the Smile Shutter function is activated.
 - When [Self-Timer] is set to [Self-portrait One Person] or [Self-portrait Two People].
 - When [Cont. Shooting Settings] is set to [High] or [Low].
 - ─ When (Backlight Correction HDR) mode is selected in Scene Selection.
- The Face Detection function does not operate in the range of [Clear Image Zoom].

Zoom scale when [Clear Image Zoom] is selected (including 5× optical zoom)

The supported zoom scales are different depending on the image size.

Image size Total zoom scale

16M	Approx. 10×
10M	Approx. 12.6×
5M	Approx. 17.8×
VGA	Approx. 72×
16:9(12M)	Approx. 10×
16:9(2M)	Approx. 24×

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Digital Zoom

Sets the total zoom scale (including 5× optical zoom). When [Digital Zoom] is set to [On], the camera zooms images without deteriorating the original quality, but it automatically switches over to [Digital Zoom] when that zoom range (for achieving the original image quality) is exceeded. When [Clear Image Zoom] is set to [On] to shoot still images, the camera automatically switches over to [Digital Zoom] when the [Clear Image Zoom] range is exceeded. [Details]

- 1. Set the camera to shooting mode.



*	1	Off Does not use [Digital Zoom].	
		On	The quality of the resulting image will deteriorate when \mathbf{pQ} is displayed, since the zoom function is switched over to [Digital Zoom], but you can enlarge images 4× up to the maximum zoom scale.

Notes

- When using [Clear Image Zoom], the maximum zoom scale for [Digital Zoom] is 2×.
- [Digital Zoom] is not available in the following situations:
 - In Intelligent Sweep Panorama mode
 - In Picture Effect mode
 - In Background Defocus mode
 - When the Smile Shutter function is activated.
 - When [Self-Timer] is set to [Self-portrait One Person] or [Self-portrait Two People].
- ─ When (Backlight Correction HDR) mode is selected in Scene Selection.
- The Face Detection function does not operate in the range of [Digital Zoom].

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Wind Noise Reduct.

Reduces the noise of the wind when shooting movies.

- 1. Set the camera to shooting mode.



	On	Reduces the noise of the wind.
V	Off	Does not reduce the noise of the wind.

Note

• If [Wind Noise Reduct.] is set to [On] even though the wind is not blowing strongly, the recorded sounds other than the wind may be hard to hear.

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Scene Recog. Guide

You can select whether or not the guide is displayed next to the Scene Recognition icon when Scene Recognition is activated.



- 1. Set the camera to shooting mode.



$ \checkmark $	On	Displays the Scene Recognition Guide.
	Off	Does not display the Scene Recognition Guide.

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Shooting

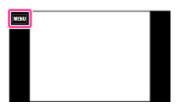
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Red Eye Reduction

The flash strobes two or more times before shooting to reduce the red-eye phenomenon when using the flash.

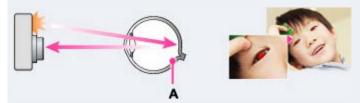
- 1. Set the camera to shooting mode.
- MENU → (Settings) → (Shooting Settings) → [Red Eye Reduction] → desired mode



V	Auto When the Face Detection function is activated, the flash strobes automatically reduce the red-eye phenomenon.	
On The flash always strobes to reduce the red-eye phenomenon.		The flash always strobes to reduce the red-eye phenomenon.
Off Does not use Red Eye Reduction.		Does not use Red Eye Reduction.

What causes the red-eye phenomenon?

Pupils become dilated in dark environments. Flash light is reflected off the blood vessels at the back of the eye (retina) (A), causing the "red-eye" phenomenon.



Other ways to reduce red-eye

- Select SO (High Sensitivity) mode in Scene Selection. (The flash is set to [Off] automatically.)
- When the eyes of the subject turn out red, correct the image with [Retouch] → [Red Eye Correction] on the viewing menu or with the supplied software "PMB".

Notes

- To avoid blurring of images, hold the camera firmly until the shutter is released. It usually
 takes a second until the shutter is released, and also be sure not to allow the subject to
 move during this period.
- Red Eye Reduction may not produce the desired effects. It depends on individual
 differences and conditions, such as distance to the subject, or if the subject looked away
 from the pre-strobe.
- If you do not use the Face Detection function, Red Eye Reduction does not work, even when you select [Auto].

- [Red Eye Reduction] is set to [Off] in the following situations:
 - In Background Defocus mode
 - In 3D shooting mode
 - When (♣) (Anti Motion Blur), → (Hand-held Twilight), iso (High Sensitivity), if (Gourmet), → (Pet) or (Fireworks) mode is selected in Scene Selection.
 - When Smile Shutter function is activated.

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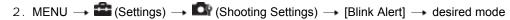
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Blink Alert

When an image with the subject's eyes closed is recorded while Face Detection is activated, the message "Blinked eye detected" is displayed.

1. Set the camera to shooting mode.





$ \checkmark $	Auto	Displays the "Blinked eye detected" message.
	Off	Does not display the message.

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Write Date

Sets whether to record a shooting date on the still image.





- 1. Set the camera to shooting mode.
- 2. MENU →

 (Settings) →

 (Shooting Settings) → [Write Date] → desired mode



	On (Records a shooting date. When [On] is selected, the mark will appear on the bottom right of the screen while shooting. However, in some shooting modes that cannot record dates on images, the mark will disappear.
$ \checkmark $	Off	Does not record a shooting date.

Notes

- You cannot record dates in the following situations:
 - In movie mode
 - In Dual Rec mode
 - In Intelligent Sweep Panorama mode
 - In burst shooting mode
 - In Easy Mode
 - In 3D shooting mode
- If you shot images with the date once, you cannot delete the date from the images later.
- The dates are doubly printed, if you set the camera to superimpose the dates when printing.
- The recorded time of the image cannot be superimposed on the image.

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Веер

Selects the sound produced when you operate the camera.

1. MENU \rightarrow \blacksquare (Settings) \rightarrow \P (Main Settings) \rightarrow [Beep] \rightarrow desired mode



₩ On Turr		Shutter	Turns on the shutter sound when you press the shutter button.		
		On	Turns on the beep/shutter sound when you operate the touch panel/press the shutter button.		
		Off	Turns off the beep/shutter sound.		

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Panel Brightness

You can select the brightness level from 1 to 5. The screen becomes brighter as the number rises.

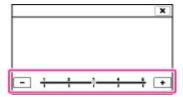
When you use the camera in bright outside light, select a higher number to see the screen easier.

1. MENU \rightarrow \blacksquare (Settings) \rightarrow \P (Main Settings) \rightarrow [Panel Brightness]



2. Touch to adjust the brightness → [OK]

You can also adjust the panel brightness by touching • of the adjustment bar and dragging to the left/right.



Notes

- The brighter the screen, the faster the battery pack runs out.
- The screen grows dark if you do not operate the camera while the power is on.
- When the high-temperature indicator (III) is displayed, the screen may grow dark regardless of the settings. [Details]

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Language Setting

Selects the language to be used in the menu items, warnings and messages.

1. MENU \rightarrow \blacksquare (Settings) \rightarrow \P (Main Settings) \rightarrow [Language Setting]



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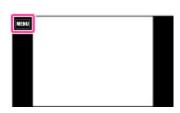
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Display color

Sets the color of the screen display.

1. MENU \rightarrow \blacksquare (Settings) \rightarrow \P (Main Settings) \rightarrow [Display color] \rightarrow desired mode



V	Black	
	White	Sets the background color of the screen.
	Pink	

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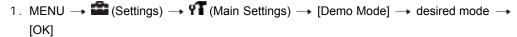
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Demo Mode

You can set whether to use a demonstration of Smile Shutter or playback movies in [AVCHD view]. When there is no need to view a demonstration, set to [Off].





		Demo Mode1	A demonstration of the shooting functions will be performed.	
		Demo Mode2	Automatically starts the Smile Shutter demonstration when no operation is performed for 15 seconds.	
		Demo Mode3	If no operation is performed for a set period of time while the camera is connected to an HD TV, a demonstration of playback movies in [AVCHD view] will automatically start.	
0	1	Off	Does not perform a demonstration.	

Notes

- Pressing the shutter button during the Smile Shutter demonstration operates the shutter, but no image is recorded.
- During a demonstration, if the number of images saved in the internal memory increases, the camera may automatically delete the images. It is recommended to make a backup copy of the images on the internal memory before a demonstration.

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Initialize

Initializes the setting to the default setting.

Even if you execute [Initialize] the images are retained.

1. MENU \rightarrow \blacksquare (Settings) \rightarrow \P (Main Settings) \rightarrow [Initialize] \rightarrow [OK]



Note

• Be sure not to turn off the camera while initializing.

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CTRL FOR HDMI

This setting allows (TV) remote control of a camera that is connected to a "BRAVIA" Sync TV using the HDMI Cable (sold separately). [Details]

1. MENU \rightarrow \blacksquare (Settings) \rightarrow \P (Main Settings) \rightarrow [CTRL FOR HDMI] \rightarrow desired mode



✓ On Ena		On	Enables remote-controlled operation.
		Off	Disables remote-controlled operation.

Note

• You can perform the operation of the camera with the remote controller of your TV by connecting your camera to a "BRAVIA" Sync-compatible TV.

Related Topic

Viewing an image on a "BRAVIA" Sync-compatible TV

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USB Connect Setting

Selects the USB mode when connecting the camera to a computer or a USB device using the multi-use terminal USB cable.





9	1	Depending on the computer or other USB devices you connect to the camera, the connection mode is automatically selected from [MTP] or [Mass Storage]. When you use Windows 7, [MTP] is selected and Windows 7-specific functions become available.	
		MTP	Establishes a MTP connection between the camera and a computer or other USB devices. When you use Windows 7, [MTP] is selected and Windows 7-specific functions become available. When you use other operating systems (Vista/XP, MacOS X), the AutoPlay Wizard appears, and the still images in the recording folder on the camera are imported to the computer.
		Mass Storage	Establishes a Mass Storage connection between the camera and a computer or other USB device.

Note

- If Device Stage* does not appear when connecting the camera to a Windows 7 computer, set [USB Connect Setting] to [Auto].
- * Device stage is a manageable menu (Windows 7-specific function) for camera connection, etc.

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USB Power Supply

Sets whether to use the USB power supplied function when the camera is connected to a computer or a USB device using the multi-use terminal USB cable.



V		On	The power is supplied when connected using the multi-use terminal USB cable.		
		Off	Disables USB power supplied function even if you connect the camera to a device such as a computer using a multi-use terminal USB cable.		

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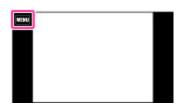
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LUN Setting

Sets the display method for the recording media displayed on a computer screen or other monitor when the camera is connected with a computer or AV component using a USB connection.

1. MENU \rightarrow \blacksquare (Settings) \rightarrow \P (Main Settings) \rightarrow [LUN Setting] \rightarrow desired mode



8		The images both on the memory card and in the internal memory are displayed. Select this setting when you connect the camera to a computer.
	Single	When the memory card is inserted into the camera, the images on the memory card are displayed; when it is not inserted, the images in the internal memory are displayed. Select this setting in cases where the images of both the memory card and the internal memory are not displayed when the camera is connected to a device other than a computer.

Note

 Set [LUN Setting] to [Multi] when uploading images to a media service using "PMB Portable".

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Download Music

You can use "Music Transfer" in the CD-ROM (supplied) to change background music tracks.



- 2. Make a USB connection between the camera and a computer, then start "Music Transfer".
- 3. Follow the instructions on the screen to change music files.

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Empty Music

You can delete all the background music files stored in the camera. It can be used in cases such as when the background music files are damaged and cannot be played.

1. MENU \rightarrow \blacksquare (Settings) \rightarrow \P (Main Settings) \rightarrow [Empty Music] \rightarrow [OK]



Restoring the music preset at the factory to the camera

You can use "Music Transfer" in the CD-ROM (supplied) to reset music files to the preset ones. For details on using "Music Transfer", see the help in "Music Transfer".

- 1. Execute [Download Music], then make a USB connection between the camera and a computer.
- 2. Start "Music Transfer", then restore the default music.

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Power Save

Sets the length of time until the screen goes dark and the time until the camera turns off. If you do not operate the camera for a certain period of time while the power is on using the battery pack, the screen goes dark and the camera later turns off automatically to prevent draining the battery pack (Auto power-off function).

1. MENU \rightarrow \blacksquare (Settings) \rightarrow \P (Main Settings) \rightarrow [Power Save] \rightarrow desired mode



		Stamina	Proactively saves the battery power. If the camera is not operated for a certain period of time, the power turns off automatically. In shooting mode, the screen automatically goes dark before the power turns off.
0	1	Standard	If the camera is not operated for a certain period of time, the power turns off automatically. In shooting mode, the screen automatically goes dark before the power turns off. It takes longer before the power turns off than when set to [Stamina].
		Off	Does not use the Auto power-off function.

Note

• The camera does not enter Power Save mode under conditions such as during a slideshow, during movie playback or when the camera is connected to a TV or a computer.

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Format

Formats the memory card or the internal memory.

When you use a memory card with this camera for the first time, it is recommended to format the card using the camera for stable performance of the memory card before shooting. Note that formatting permanently erases all data on the memory card, and is unrecoverable. Save precious data on a computer, etc.

1. MENU → ♠ (Settings) → ♠ (Memory Card Tool) or ♠ (Internal Memory Tool) → [Format] → [OK]



Note

• Note that formatting permanently erases all data including even protected images.

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Create REC.Folder

Creates a folder in a memory card for recording images.

Images are recorded in the newly created folder until you create another folder or select another recording folder.



On the folders

After a new folder is created, you can change the storage destination folder or select the playback folder. [Details]

Notes

- This item is not displayed when the internal memory is used to record images.
- When you insert a memory card that was used with other equipment into the camera and shoot images, a new folder may be automatically created.
- Up to 4,000 images can be stored in one folder. When the folder capacity is exceeded, a new folder is automatically created.

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Change REC.Folder

Changes the folder in the memory card that is currently used for recording images.

1. MENU \rightarrow $\stackrel{\triangle}{=}$ (Settings) \rightarrow $\stackrel{\blacksquare}{=}$ (Memory Card Tool) \rightarrow [Change REC.Folder]



2. Select a folder with $\boxed{-}$ $\boxed{-}$ [OK].



Notes

- This item is not displayed when the internal memory is used to record images.
- You cannot select a folder with a number that has only " □ □ MSDCF" or " □ □ □ ANV01" as a recording folder.
- You cannot move recorded images to another folder.

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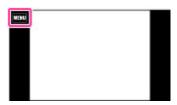
-- Contents list

Top page > Changing settings > Memory Card Tool/Internal Memory Tool > Delete REC.Folder

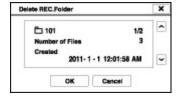
Delete REC.Folder

Deletes a folder for recording images in a memory card.

1. MENU → (Settings) → (Memory Card Tool) → [Delete REC.Folder]



2. Select a folder with $\boxed{-}/\boxed{-} \rightarrow [OK]$.



Notes

- This item is not displayed when the internal memory is used to record images.
- If you delete the folder set as the recording folder using [Delete REC.Folder], the folder that has the largest folder number is selected as the next recording folder.
- If a folder contains protected images or files that cannot be played back by the camera, images other than these images are deleted and the folder will remain.

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Top page > Changing settings > Memory Card Tool/Internal Memory Tool > Copy

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Copy

Copies all images in the internal memory to a memory card.

- 1. Insert a memory card with sufficient free capacity into the camera.



Notes

- Use a fully charged battery pack. If you attempt to copy image files using a battery pack with little remaining charge, the battery pack may run out, causing copying to fail or possibly corrupting the data.
- · Images cannot be copied individually.
- The original images in the internal memory are retained even after copying. To delete the contents of the internal memory, remove the memory card after copying, then format the internal memory ([Format] in [Internal Memory Tool]).
- The data will be copied to the recording folder that is currently being used, with a number one higher than the largest data number in that folder. [Details]

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Top page > Changing settings > Memory Card Tool/Internal Memory Tool > File Number

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File Number

Selects the method used to assign file numbers to images.

1. $MENU \rightarrow \blacksquare$ (Settings) $\rightarrow \blacksquare$ (Memory Card Tool) \rightarrow [File Number] \rightarrow desired mode



8	Series	Assigns numbers to files in sequence even if the recording folder or the memory card is changed. (When the replaced memory card contains a file with a number higher than the last assigned number, a number one higher than the largest number is assigned.)
	Reset	Starts from 0001 each time the folder is changed. (When the recording folder contains a file, a number one higher than the largest number is assigned.)

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Area Setting

Adjusts the time to the local time of a selected area.

Setting a frequently visited destination lets you easily adjust the time when you visit that destination.

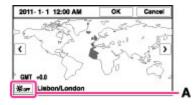




✓ Home	Home	You use the camera in your area. When the currently set area differs from your home area, you must make the Area Setting.
	Destination	You use the camera set to the time at your destination. Set the destination area.

2. Touch the [Destination] area.





- ${\tt 4. \ \, Touch \, Daylight \, Savings \, icon \, (A), \, then \, select \, Daylight \, Savings \, On/Off.}$
- 5. Touch [OK].

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Top page > Changing settings > Clock Settings > Date & Time Setting

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Date & Time Setting

Sets the date and time again.



Date & Time Format	You can select the date and time display format.
Summer Time/Daylight Savings	You can select Daylight Savings [On]/[Off].
Date & Time	You can set the date and time.

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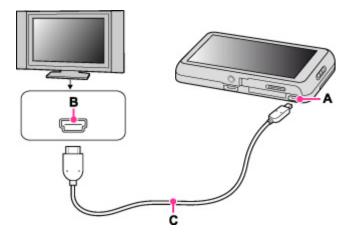
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TV > Viewing an image on an HD TV using the HDMI Cable (sold separately)

Viewing an image on an HD TV using the HDMI Cable (sold separately)

Connect the camera to an HD (High Definition) TV that has an HDMI jack using the HDMI Cable (sold separately).

- 1. Turn off both the camera and the TV.
- 2. Connect the HDMI connector of the camera (A) and the HDMI jack of the TV (B) using an HDMI Cable (sold separately) (C).



- 3. Turn on the TV and set the input.
- 4. Lower the lens cover to turn on the camera.
- 5. Touch (Playback).



Images shot with the camera appear on the TV. Touch \(\bigsim 1/\implies\) on the screen to select the desired image.

🍟 "PhotoTV HD"

This camera is compatible with the "PhotoTV HD" standard.

By connecting a Sony TV compatible with "PhotoTV HD" using an HDMI Cable (sold separately), a whole new world of photos can be comfortably enjoyed in breathtaking Full HD quality.

- "PhotoTV HD" allows for a highly-detailed, photo-like expression of subtle textures and colors
- When the camera is connected to a Sony TV compatible with Video A mode using an HDMI Cable, your TV is automatically set to the picture quality suitable for still images. When the setting of the TV is set to Video, the picture quality is set to that suitable for movies.
- When playing back movies in [AVCHD view], it is recommended that you set [View Mode] to

[AVCHD view].

• For details, see the operating instructions of the TV.

Notes

- Images shot in [VGA] image size cannot be played back in the HD format.
- [Beep] is fixed to [Shutter].
- Do not connect the camera and equipment to be connected using both output terminals.
 When the camera and TV are connected using output terminals, no video or sound are produced. Such a connection can also cause problems with the camera and/or connected equipment.
- The camera may not work properly with some HD TVs. For example, you may not be able to view a video on your HD TV or hear sound from the HD TV.
- Use an HDMI Cable with the HDMI logo.
- Recording may automatically stop to protect the camera after a period of time if you are shooting movies when the camera and TV are connected by an HDMI Cable (sold separately).

Related Topic

Viewing 3D images on a 3D TV

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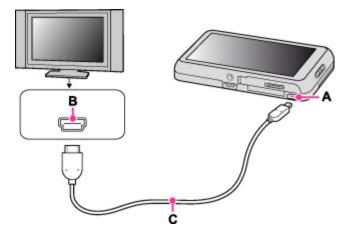
-- Contents list

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Viewing an image on a "BRAVIA" Sync-compatible TV

When you use a TV that has "BRAVIA" Sync (compatible with SYNC MENU) support, you can operate the playback functions of the camera using the remote controller supplied with the TV by connecting the camera to the TV using an HDMI Cable (sold separately).

1. Connect the HDMI connector of the camera (A) and the HDMI jack of the TV (B) using an HDMI Cable (sold separately) (C).



- 2. Turn on the TV and set the input.
- 3. Lower the lens cover to turn on the camera.
- 4. Touch (Playback).



- 5. MENU \rightarrow \blacksquare (Settings) \rightarrow \P (Main Settings) \rightarrow [CTRL FOR HDMI] \rightarrow [On]
- 6. Press the SYNC MENU button of the TV's remote controller to select the desired mode.

Menu	Function
Slideshow with music	Automatically plays back images with sound effects or background music in a continuous loop.
Single Image	Plays back a single image at a time.
Image Index	Displays multiple images at the same time.
3D Viewing	Plays back 3D images recorded in 3D shooting mode.

Delete	Deletes recorded images.
PB Zoom	Plays back enlarged images.
Wide Zoom	Plays back 4:3 aspect ratio still images in 16:9 aspect ratio when you view a single image. In that case, the top and bottom of the image will be slightly cropped.
Rotate	Rotates a still image.
View Mode	Selects the display format for viewing multiple images.
Exit	Exits from the playback operations.

Notes

- When the camera is connected to a TV set using an HDMI Cable, the functions that you can operate are limited.
- When you touch the screen of the camera while you operate the remote controller, the remote controller operation is temporarily interrupted.
- You can perform the operation of the camera with the remote controller of your TV by connecting your camera to a "BRAVIA" Sync-compatible TV. For details, see the operating instructions of the TV.
- When the camera is in Easy Mode, SYNC MENU does not appear on the TV.

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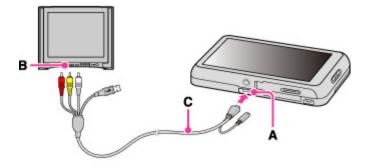
Top page > Viewing images on a TV > Viewing an image on a Standard Definition (SD)

TV > Viewing an image on a Standard Definition (SD) TV

Viewing an image on a Standard Definition (SD) TV

You can view images recorded on the camera in standard picture quality by connecting the camera to a Standard Definition (SD) TV using a USB/AV/DC IN Cable for multi-use terminal (sold separately). Refer also to the operating instructions supplied with the TV.

- 1. Turn off both the camera and the TV.
- 2. Connect the multi connector of the camera (A) and the audio/video input jacks on the TV (B) using a USB/AV/DC IN Cable for multi-use terminal (sold separately) (C).



- Use a Type3b-compliant USB/AV/DC IN Cable for multi-use terminal (sold separately).
- 3. Turn on the TV and set the input.
- 4. Lower the lens cover to turn on the camera.
- 5. Touch (Playback).



Images shot with the camera appear on the TV. Touch \square / displayed on the screen of this camera to select the desired image.

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computer environment (Windows)

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Recommended computer environment (Windows)

The following computer environment is recommended when using the supplied software "PMB", "Music Transfer" and "PMB Portable", and when importing images via a USB connection.

Top page > Using with your computer > Recommended computer environment > Recommended

OS (pre- installed)	Microsoft Windows XP*1 SP3/Windows Vista*2 SP2/Windows 7 SP1
Others	CPU: Intel Pentium III 800 MHz or faster (For playing/editing High Definition movies: Intel Core Duo 1.66 GHz or faster/Intel Core 2 Duo 1.66 GHz or faster (Intel Core 2 Duo 2.26 GHz or faster is required when processing HD FX/HD FH movies)) Memory: 512 MB or more (For playing/editing the High Definition movies: 1 GB or more) Hard Disk: Disk space required for installation—approximately 500 MB Display: Screen resolution: 1,024 × 768 dots or more

^{*1 64-}bit editions and Starter (Edition) are not supported. Windows Image Mastering API (IMAPI) Ver.2.0 or later is required to use the function for creating discs.

Notes

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- Operation is not assured in an environment based on an upgrade of the operating systems described above or in a multi-boot environment.
- If you connect two or more USB devices to a single computer at the same time, some
 devices, including this camera, may not operate, depending on the types of USB devices
 you are using.
- Connecting the camera using a USB interface that is compatible with Hi-Speed USB (USB 2.0) allows advanced transfer (high speed transfer), as the camera is compatible with Hi-Speed USB (USB 2.0).
- When your computer resumes activity from suspend or sleep mode, communication between the camera and your computer may not recover at the same time.

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^{*2} Starter (Edition) is not supported.



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Recommended computer environment (Macintosh)

The following computer environment is recommended when using "Music Transfer" and "PMB Portable" and when importing images via a USB connection.

OS (pre-installed)	USB Connection: Mac OS X (v10.3 to v10.6)
	USB Connection: Mac OS X (v10.3 to v10.6) Music Transfer/PMB Portable: Mac OS X* (v10.4 to v10.6)

^{*} Equipped with Intel processor

Notes

- Operation is not assured in an environment based on an upgrade of the operating systems described above or in a multi-boot environment.
- If you connect two or more USB devices to a single computer at the same time, some
 devices, including this camera, may not operate, depending on the types of USB devices
 you are using.
- Connecting the camera using a USB interface that is compatible with Hi-Speed USB (USB 2.0) allows advanced transfer (high speed transfer), as the camera is compatible with Hi-Speed USB (USB 2.0).
- When your computer resumes activity from suspend or sleep mode, communication between the camera and your computer may not recover at the same time.

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Top page > Using with your computer > Using the software > "PMB (Picture Motion Browser)"

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"PMB (Picture Motion Browser)"

- "PMB" allows you to import images shot with the camera to a computer for display. Make a USB connection between the camera and your computer, and click [Import].
- Images on a computer can be exported to a memory card, and displayed on the camera.
 Make a USB connection between the camera and your computer, click [Export] → [Easy Export (PC Sync)] in the [Manipulate] menu, and click [Export].
- You can save and print images with the date.
- You can display images stored on a computer by shooting date in a calendar display.
- You can correct still images (Red Eye Correction, etc.), and change the shooting date and time.
- Blu-ray discs, AVCHD discs and DVD-Video discs can be created from movies in [AVCHD view] imported to a computer. (An internet connection is required when creating a Blu-ray disc or a DVD-Video disc for the first time.)
 - Movies recorded with movie mode set to [AVC HD 24M (FX)] cannot be saved to a DVD disc or as an AVCHD disc. Save them to a Blu-ray disc.
- You can upload images to a sharing service. (An internet connection environment is required.)
- For other details, see M (PMB Help).

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"Music Transfer"

"Music Transfer" allows you to replace the Music files provided in the camera at the factory with your favorite tracks, and to delete and add Music files.

You can also restore the tracks stored at the factory to your camera.

- The following track types can be imported using "Music Transfer".
- MP3 files stored on the hard disk of your computer
- Music CD tracks
- Preset-music saved on the camera
- Before starting up "Music Transfer", select MENU \rightarrow \blacksquare (Settings) \rightarrow \P (Main Settings)
 - → [Download Music], and connect the camera to the computer.

For other details, see the help in "Music Transfer".

Related Topic

Download Music

Empty Music

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Installing "PMB" and "Music Transfer" (Windows)

- 1. Turn on your computer and insert the CD-ROM (supplied) into the CD-ROM drive. The installation menu screen appears.

 - If the AutoPlay screen appears, select "Run Install.exe" and follow the instructions that appear on the screen to proceed with the installation.
- 2. Click [Install].

The "Choose Setup Language" screen appears.

- 3. Select the desired language, then proceed to the following screen. The "License Agreement" screen appears.
- Carefully read the agreement, click the radio button (○ → ●) to accept the terms of the agreement, and then click [Next].
- 5. Follow the instructions on the screen to complete the installation.
 - Restarting the computer may be necessary. When the restarting confirmation message appears, restart the computer following the instructions on the screen.
 - DirectX may be installed depending on the system environment of your computer.
- 6. Connect the camera to your computer when the connecting confirmation message appears.
 - When the camera is not connected to your computer, some functions cannot be used, such as importing images.
- 7. Remove the CD-ROM after the installation is complete.
- 8. Start up the software.
 - To start up "PMB," click (PMB) on the desktop.
 For the detailed operation method, see the following "PMB" support page (English only): http://www.sony.co.jp/pmb-se/
 or click (PMB Help).
 - To start up "PMB" from the Start menu, select [Start] → [All Programs] → ^{■ 1} (PMB).
 - If "PMB" was installed on your computer and if you re-install "PMB" using the supplied CD-ROM, you can start up all the applications from "PMB Launcher." To start up "PMB Launcher," double-click (PMB Launcher) on the desktop.

Notes

- Log on as Administrator.
- If "PMB" has been already installed on your computer and that "PMB" version number is lower than that of the supplied CD-ROM, re-install "PMB" using the supplied CD-ROM.
- If the version number is higher than that of the supplied CD-ROM, you do not need to reinstall "PMB". When you connect the camera and the computer via USB cable, the available "PMB" function is activated.
- If "PMB" has already been installed on your computer and that "PMB" version number is lower than 5.0, some functions may become invalid after you install "PMB" using the supplied CD-ROM. Also, you can start up "PMB" or other various software from "PMB Launcher" installed at the same time. To start up "PMB Launcher" double-click (PMB Launcher) on the desktop.



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(Macintosh)

Top page > Using with your computer > Using the software > Installing "Music Transfer"

Installing "Music Transfer" (Macintosh)

- Turn on your Macintosh computer, and insert the CD-ROM (supplied) into the CD-ROM drive.
- 2. Double-click (SONYPMB).
- 3. Double-click the [MusicTransfer.pkg] file in the [Mac] folder. The installation of the software starts.

Notes

- "PMB" is not compatible with Macintosh computers.
- Shut down all other application software before you install "Music Transfer".
- For installation, you need to log on as Administrator.

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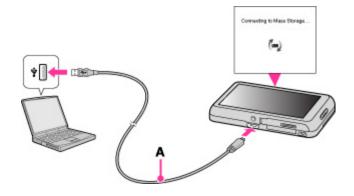
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Top page > Using with your computer > Connecting the camera to the computer > Connecting the camera to the computer

Connecting the camera to the computer

- 1. Connect the camera to your computer using a multi-use terminal USB cable (supplied) (A).
 - When a USB connection is established for the first time, your computer automatically runs a program to recognize the camera. Wait for a while.



Related Topic
USB Connect Setting
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Top page > Using with your computer > Connecting the camera to the computer > Importing images to a computer (Windows)

Importing images to a computer (Windows)

"PMB" allows you to easily import images.
For details on "PMB" functions, see the "PMB Help".

Importing images to a computer without using "PMB" When the AutoPlay Wizard appears after making a USB connection between the camera and a computer, click [Open folder to view files] \rightarrow [DCIM] or [MP_ROOT] \rightarrow copy the desired images to the computer.

Notes

- Use "PMB" for operations such as when importing movies in [AVCHD view] to a computer.
- If operations are performed on files or folders for movies in [AVCHD view] on the camera
 from a PC while the camera is connected to a PC, the image file may be destroyed or
 playback may become impossible. Do not delete or copy movies in [AVCHD view] from a PC
 to the camera's memory card. Sony bears no responsibility for the result of operations of
 this type.
- The camera creates a 3D image by combining a JPEG file with an MPO file. If you delete either file on a PC, you cannot playback the 3D image.

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Importing images to a computer (Macintosh)

- Connect the camera to your Macintosh computer first. Double-click the newly recognized icon on the desktop → the folder where the images you want to import are stored.
- 2. Drag and drop the image files to the hard disk icon. The image files are copied to the hard disk.
- 3. Double-click the hard disk icon → the desired image file in the folder containing the copied files.

The image is displayed.

Notes

- If operations are performed on files or folders for movies in [AVCHD view] on the camera
 from a PC while the camera is connected to a PC, the image file may be destroyed or
 playback may become impossible. Do not delete or copy movies in [AVCHD view] from a PC
 to the camera's memory card. Sony bears no responsibility for the result of operations of
 this type.
- The camera creates a 3D image by combining a JPEG file with an MPO file. If you delete either file on a PC, you cannot playback the 3D image.

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Deleting the USB connection

Perform the procedures from step 1 to 3 below before:

- Disconnecting the cable.
- Removing a memory card.
- Inserting a memory card into the camera after copying images from the internal memory.
- Turning off the camera.
- 1. Double-click the disconnect icon (on the task tray.

Windows Vista



Windows XP

- 2. Click [♠] (USB Mass Storage Device) → [Stop].
- 3. Confirm the device on the confirmation window, then click [OK].

Notes

- Drag and drop the icon of the memory card or the drive icon to the "Trash" icon beforehand when you use a Macintosh computer, and the camera is disconnected from the computer.
- The disconnect icon may not appear when you use a Windows 7 computer. In this case, you can disconnect the camera from the computer without following the above steps.

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Top page > Using with your computer > Uploading images to a media service > "PMB Portable"

"PMB Portable"

This camera has a built-in application "PMB Portable".

You can use this application to do the following:

- You can easily upload images to a blog or other media service.
- You can upload images from a computer connected to the Internet even when you are away from home or the office.
- You can easily register the media services (such as blogs) you use frequently.

For details on "PMB Portable", see the "PMB Portable" help.

Notes on "PMB Portable"

"PMB Portable" makes it possible to download the URLs of a number of websites from the server administered by Sony (the "Sony server").

In order to use "PMB Portable" to enjoy the benefits of the image uploading service or other services (the "services") provided by these and other websites, you must consent to the following.

- Some websites require registration procedures and/or fees to use their services. In using such services, you must comply with the terms and conditions established by the websites concerned.
- Services may be terminated or changed in accordance with the convenience of the website
 operators. Sony will not be held responsible for any trouble occurring between the users and
 third parties or any inconvenience caused to users relating to the utilization of the services
 inclusive of the termination of or changes to such services.
- To view a website, you will be redirected to it by the Sony server. There may be times when you cannot access the website because of server maintenance or for other reasons.
- If the operation of the Sony server is to be terminated, you will be notified of the termination ahead of time on Sony's website, etc.
- The URLs to which you are redirected by the Sony server and other information may be recorded for the purposes of improving Sony's future products and services. However, no personal data will be recorded on such occasions.

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Starting up "PMB Portable" (Windows/Macintosh)

When using "PMB Portable" for the first time, you must select the language. Follow the procedure below to make the selection. Once the language selection has been made, steps 3 to 5 are unnecessary the next time you use "PMB Portable".

1. Connect the camera to a computer.

Windows 7: Activate Device Stage*.

Windows XP/Windows Vista: The AutoPlay Wizard appears.

Macintosh: [PMBPORTABLE] appears.

* Device Stage is a menu screen to manage the connected devices, such as a camera. (Equipped with Windows 7)

2. Click [PMB Portable].

The User Agreement screen appears.

Macintosh: Click [PMBP Mac] in the [PMBPORTABLE] folder.

3. Select the desired language, then click [OK]. The Region Selection screen appears.

4. Select the appropriate [Region] and [Country/Area], and then click [OK]. The User Agreement screen appears.

5. Read the agreement carefully. If you accept the terms of the agreement, click [I Agree]. "PMB Portable" starts up.

Notes

- "PMB Portable" does not support for movies in [AVCHD view].
- Set [LUN Setting] in [Main Settings] to [Multi].
- If you cannot start up "PMB Portable", set [USB Connect Setting] to [Mass Storage].
- Always connect to a network when using "PMB Portable".
- When uploading images over the Internet, the cache may remain in the computer being used depending on the service provider. This is also true when this camera is used for this purpose.
- If any trouble occurs to "PMB Portable" or if you accidentally delete it, restore "PMB Portable" by downloading the PMB Portable installer from the website.
- If the Auto Play Wizard does not appear with Windows XP/Windows Vista, click [Computer] (in Windows XP, [My Computer]) -> [PMBPORTABLE], and double-click [PMBP_Win.exe].
- If Device Stage does not activate with Windows 7, click [Computer] and double-click camera icon → media icon → [APPLICATION] → [PMBP_MTP.exe].
- Initial screen of Device Stage which does not contain specific information of the model may appear depending on settings of your computer with Windows 7. If this happens, download the latest information following the instructions on screen.
- It automatically switches to Mass Storage connection when starting up "PMB Portable" with Windows 7.

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Selecting the method for creating a disc of movies

- That Characteristics of each type of disc
- Creating a disc with a device other than a computer

You can create a disc from AVCHD movies that have been recorded with this camera. Select the method that suits your disc player.

For details on the method for creating a disc using "PMB", see "PMB Help."

To import movies into a PC, see "Importing images to a computer" [Details] (Windows)/[Details] (Macintosh).

Player	Disc type	Creation method
Blu-ray disc playback devices (Blu-ray disc player, PlayStation 3, etc.)	Blu-ray	Importing movies to a computer using "PMB" and creating a Blu-ray disc
AVCHD format playback devices	AVCHD	Importing movies to a computer using "PMB" and creating an AVCHD format disc
(Sony Blu-ray disc player, PlayStation 3, etc.)	9	Creating an AVCHD format disc using a DVD Writer/Recorder other than DVDirect Express
Ordinary DVD playback devices (DVD player, computer that can play DVDs, etc.)	500	Importing movies to a computer using "PMB" and creating a standard definition image quality (STD) disc

Notes

- If you create a disc using Sony DVDirect (DVD Writer), use the memory card slot of the DVD Writer or connect the DVD Writer via USB connection to transfer the data.
- If you use Sony DVDirect (DVD Writer), check that the firmware is updated to the newest version.

For details, see the following URL: http://sony.storagesupport.com/

Characteristics of each type of disc

Blu-ray	Using a Blu-ray disc enables you to record high-definition image quality (HD) movies of a longer duration than DVD discs.
AVCHD	 High-definition image quality (HD) movies can be recorded on DVD media, such as DVD-R discs, and a high-definition image quality (HD) disc is created. You can play a high-definition image quality (HD) disc on AVCHD format playback devices, such as a Sony Blu-ray disc player and a PlayStation 3. You cannot play the disc on ordinary DVD players.



Standard definition image quality (STD) movies converted from high-definition image quality (HD) movies can be recorded on DVD media, such as DVD-R discs, and a standard definition image quality (STD) disc is created.

"Types of discs that can be used with "PMB"

The following 12-cm discs can be used with "PMB". For information on Blu-ray discs, see [Details].

DVD-R/DVD+R/DVD+R DL: Cannot be re-written.

DVD-RW/DVD+RW: Can be re-written and used again.

- Always maintain your PlayStation 3 to use the latest version of the PlayStation 3 system software.
- The PlayStation 3 may not be available in some countries/regions.

Creating a disc with a device other than a computer

You can also create a disc using a Blu-ray recorder or a DVD Writer. Depending on which device you use, the types of disc that can be created vary.

Devices	Disc type
Creates a Blu-ray disc or a DVD disc in standard image quality using a Blu-ray recorder.	Blu-ray STB
Creates a AVCHD disc or a standard definition (STD) quality disc using a DVD Writer other than DVDirect Express.	ANCHD
Creates a standard definition (STD) quality disc using a device such as an HDD recorder.	STB

Notes

- For details on how to create a disc, refer to the operating instructions of the device you use.
- If you create a disc using Sony DVDirect (DVD Writer), use the memory card slot of the DVD Writer or connect the DVD Writer via USB connection to transfer the data.
- If you use Sony DVDirect (DVD Writer), check that the firmware is updated to the newest version.

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Creating AVCHD discs

An AVCHD disc with HD picture quality can be created from movies in [AVCHD view] imported to a PC using the supplied "PMB" software.

- 1. Turn on the power of the PC and insert an unused disc in the DVD drive.
- 2. Start "PMB".
- 3. Select the movies in [AVCHD view] to be recorded to the disc.
- 4. Click (Create Discs), then select [Create AVCHD Format Discs (HD)].
- 5. Create the disc by following the on-screen instructions.

Ö Playing an AVCHD disc on a PC

AVCHD discs can be played on a PC using "Player for AVC HD" installed along with "PMB". To start the software, click on [Start] → [All Programs] → [PMB] → [PMB Launcher] → [View] → [Player for AVCHD].

For detailed operations, see the Help for "Player for AVC HD".

• Images may not play back smoothly depending on the PC environment.

Notes

- Be sure that "PMB" has already been installed. [Details]
- You cannot record the following images on an AVCHD disc:
 - Still images
 - MP4 movies
 - Movies recorded in [AVC HD 24M (FX)] quality
- · Disc creation may take time.

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Creating standard definition image quality (STD) discs

DVD discs with standard definition image quality (STD) can be created using the supplied "PMB" software and by selecting a movie in [AVCHD view] imported to the PC.

- 1. Turn on the power of the PC and insert an unused disc in the DVD drive.
 - If software other than "PMB" starts automatically, exit that software.
- 2. Start "PMB".
- 3. Select the movies in [AVCHD view] to be recorded to the disc.
- 4. Click (Create Discs), then select [Create DVD-Video Format Discs (STD)].
- 5. Create the disc by following the on-screen instructions.

Notes

- Be sure that "PMB" has already been installed. [Details]
- Discs cannot be created for MP4 movies.
- Disc creation may take time as a movie in [AVCHD view] must be converted to standard definition image quality (STD).
- The PC must be connected to the Internet the first time a DVD-Video disc is created.

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Creating Blu-ray discs

You can create Blu-ray discs from movies in [AVCHD view] imported to a PC.

The PC in question must be capable of creating Blu-ray discs. BD-R (not re-writable) or BD-RE (re-writable) discs can be used. Multi-session recordings cannot be made.

To create Blu-ray discs, be sure to install [BD Add-on Software] on the "PMB" installation screen. To install, your PC must be connected to the Internet.

For detailed operations, see "PMB Help".

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Printing still images

You can print still images using the following methods.

- Printing directly using a printer which supports your memory card type. For details, see the operating instructions supplied with the printer.
- Printing using a computer
 You can import images to a computer using the supplied "PMB" software and print the
 images.
 For details, see the "PMB Help".
- Printing at a shop [Details]

Notes

- When you print still images shot in [16:9] mode, both edges may be cut off.
- You cannot print panoramic images depending on the printer.

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Printing at a shop

You can take a memory card containing images shot with the camera to a photo printing service shop. As long as the shop supports photo printing services conforming to DPOF, you can make a **DPOF** (Print order) mark on images in advance in the playback mode so that you do not have to reselect them when you print them out at the shop.

Notes

- You cannot print images stored in the internal memory at a print shop directly from the camera. Copy the images to a memory card, then take the memory card to the print shop. [Details]
- Consult your photo printing service shop as to what types of memory card they handle.
- A memory card adaptor (sold separately) may be necessary. Consult your photo printing service shop.
- Before you take image data to a shop, always copy (back up) your data to a disk.
- You cannot set the number of prints.

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If you have problems	
If you experience trouble with the camera, try the following solutions.	
Check the items under "Troubleshooting", then check your camera.	
If a code such as "C/E: ☐ ☐ : ☐ ☐ " appears on the screen, see "Self-diagnosis display".	
2. Remove the battery pack, wait for about one minute, re-insert the battery pack, then turn on the power.	
3. Initialize the settings. [Details]	
4. Consult your Sony dealer or local authorized Sony service facility.	
 Be aware that by sending the camera for repair, you give consent that the contents of the internal memory, music files may be checked. 	
 Additional information on this product and answers to frequently asked questions can be found at our Customer Support Website. 	
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Battery pack and power

Cannot insert the battery pack into the camera.

 Make sure the direction of the battery pack is correct, and insert it until the battery eject lever is locked.

Cannot turn on the camera.

- After inserting the battery pack into the camera, it may take a few moments for the camera to power up.
- Make sure that the battery pack is inserted correctly.
- The battery pack is discharged. Charge the battery pack.
- The battery pack terminals are dirty. Gently wipe away any dirt with a soft cloth.
- Check that the battery pack type is NP-BN or NP-BN1.

The power turns off suddenly.

- Depending on the camera and battery temperature, the power may turn off automatically to
 protect the camera. In this case, a message is displayed on the screen before the power turns
 off.
- If you do not operate the camera for a certain period of time while the power is on and [Power Save] is set to [Standard] or [Stamina], the camera turns off automatically to prevent draining the battery pack. Turn on the camera again.
- If you do not operate the camera for a certain period of time while the power is on and [Power Save] is set to [Off] or the camera is connected to AC adaptor to supply the power, the screen automatically goes dark to prevent burn-in on the screen. Touch the screen again to display.

The remaining charge indicator is incorrect.

- This is caused when you use the camera in an extremely hot or cold location.
- A discrepancy arose between the remaining charge indicator and the actual remaining battery charge. Fully discharge the battery pack once, then charge it to correct the indication. The remaining charge indicator may not be correct under certain circumstances.
- Battery capacity decreases over time and through repeated use. If decreased usage time between charges becomes significant, it is probably time to replace it with a new one.

The Power/charge lamp of the camera flashes while charging the battery.

- Check that the battery pack type is NP-BN or NP-BN1.
- The Power/charge lamp of the camera flashes infrequently when you use a battery pack that has not been used for a long time. In such cases, remove the battery pack from the camera and re-insert it.

• For details, see "Battery pack" [Details].

The battery is not charged even if the Power/charge lamp turns off and charging is finished.

• This happens when you charge the battery pack in an extremely hot or cold location. Charge the battery pack within the proper charging temperature range of between 10°C to 30°C (50°F to 86°F).

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Shooting still images/movies

Cannot record images.

- If images are recorded on the internal memory even when a memory card is inserted into the camera, make sure that the memory card is fully inserted into the camera.
- Check the free capacity of the internal memory or memory card. If it is full, do one of the following:
 - Delete unnecessary images. [Details]
 - Change the memory card.
- You cannot record images while charging the flash.
- When recording movies, it is recommended that you use the following memory cards:
 - "Memory Stick Micro" (Mark2) media
 - microSD memory card or microSDHC memory card (Class 4 or faster)
- Set [Demo Mode] to [Off]. [Details]

Smile Shutter function does not work.

- No image is shot if a smiling face is not detected. [Details]
- Set [Demo Mode] to [Off]. [Details]

Anti-blur function does not work.

- The anti-blur function may not work properly when shooting night scenes.
- Shoot after pressing the shutter button halfway down.

Recording takes a long time.

When the shutter speed becomes slower than a certain speed, for example, when you shoot
images in dark locations, the camera automatically reduces the image noise. This function is
called NR (noise reduction) slow shutter and the shooting time takes longer.

The image is out of focus.

- The subject is too close. When shooting, make sure to position the lens farther away from the subject than the shortest shooting distance in the following situation.
 - In Intelligent Auto mode, Superior Auto mode, Easy Mode: approximately 3 cm (1 3/16 inches) (W) / 60 cm (1 ft 11 5/8 inches) (T) (from the lens)
 - In other shooting modes: approximately 8 cm (3 1/4 inches) (W) / 60 cm (1 ft 11 5/8 inches)
 (T) (from the lens). Or set to close focus mode and shoot about 3 cm to 20 cm (1 3/16 inches to 7 7/8 inches) from the W side distance.
- (Landscape), (Night Scene) or (Fireworks) mode is selected in the Scene Selection when shooting still images.

Zoom does not work.

- You cannot use the optical zoom when:
 - Shooting in Intelligent Sweep Panorama mode
 - Shooting in 3D Sweep Panorama mode
 - Shooting in Sweep Multi Angle mode
- You cannot use zoom functions other than optical zoom when:
 - Shooting in Background Defocus mode
 - Shooting in Picture Effect
 - 37 (Backlight Correction HDR) mode is selected in the Scene Selection
 - Shooting in 3D mode
 - The Smile Shutter is working.
 - When [Self-Timer] is set to [Self-portrait One Person] or [Self-portrait Two People].

Cannot select the Face Detection function.

- You can select Face Detection only when the focus mode is set to [Multi AF] and the metering mode is set to [Multi].
- You cannot select Face Detection when the Close focus mode is activated.

The flash does not work.

- You cannot use the flash when:
 - Shooting in Background Defocus mode
 - Burst mode is selected. [Details]
 - (High Sensitivity) mode or (Fireworks) mode is selected in Scene Selection.
 - Shooting in Intelligent Sweep Panorama mode.
 - Shooting in 3D mode
 - Shooting in movie mode.
- Set the flash to [On] in Close focus mode, when Picture Effect is selected or when Scene Selection is set to (Landscape), (Backlight Correction HDR), (Gourmet), (Pet), (Beach), (Snow) or (Hi-Speed Shutter) mode. [Details]

Fuzzy white circular spots appear in images shot using the flash.

• Particles (dust, pollen, etc.) in the air reflected the flash light and appeared in the image. This is not a malfunction. [Details]

The close-up shoot function (Macro / Focus On) does not work.

- 🖾 (Landscape), 🕨 (Night Scene) or 🏶 (Fireworks) mode is selected in the Scene Selection.
- When Close Focus mode is selected, the shooting distance is approximately 3 cm to 20 cm (1 3/16 inches to 7 7/8 inches).
- [Macro] is set to [Auto] in the following situations:
 - Shooting in Intelligent Sweep Panorama mode
 - Shooting in 3D mode
 - Shooting in 3D Sweep Panorama mode
 - Shooting in Sweep Multi Angle mode
 - When the Smile Shutter function is activated.
 - In Easy Mode
 - When [Self-Timer] is set to [Self-portrait One Person] or [Self-portrait Two People].

Macro shooting cannot be turned off.

 There is no function for forcibly turning off macro shooting. In [Auto] mode, you can even shoot a distant subject.

The date and time are not displayed on the screen.

While shooting, the date and time are not displayed. They are displayed only during playback.

The F value and shutter speed flash when you press and hold the shutter button halfway down.

• The exposure is incorrect. Correct the exposure. [Details]

The image colors are not correct.

- Picture Effect is selected. [Details]
- Adjust [White Balance]. [Details]

Noise appears in the image when you view the screen in a dark place.

• The camera is attempting to increase the visibility of the screen by temporarily brightening the image under conditions of low illumination. There is no effect on the recorded image.

There is a dark shadow on the image.

• Depending on the brightness of the subject, you may see a dark shadow when you change the aperture. This is not a malfunction.

The eyes of the subject come out red.

- Set [Red Eye Reduction] to [Auto] or [On]. [Details]
- Shoot the subject at a distance closer than the flash range using the flash.
- Light the room and shoot the subject.
- Retouch the image using [Retouch] → [Red Eye Correction] in viewing menu [Details], or correct using "PMB". [Details]

Dots appear and remain on the screen.

• This is not a malfunction. These dots are not recorded.

Cannot shoot images in succession.

- You cannot shoot images in succession while the Smile Shutter function is activated.
- The internal memory or memory card is full. Delete unnecessary images. [Details]
- The battery level is low. Insert a charged battery pack.

The same image is shot several times.

- Set [Cont. Shooting Settings] to [Off]. [Details]
- [Scene Recognition] is set to [Advanced]. [Details]

The buttons and icons no longer appear.

- If you touch , all indicators will disappear. Touch on the right of the screen for few seconds.
- While you touch the upper right of the screen during shooting images, the buttons or icons are temporarily turned off. The buttons and icons will reappear when your fingers move away from the screen.

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Viewing images

Cannot play back images.

- Make sure that the memory card is fully inserted into the camera.
- The folder/file name has been changed on your computer.
- No guarantees are made for playing back, on this camera, files containing images which were processed on a computer or images which were shot using other cameras.
- The camera is in USB mode. Delete the USB connection. [Details]
- Use "PMB" to play images stored on a PC with this camera.

Cannot play back stereoscopic images on the camera.

- Stereoscopic images can be played back on this camera only when that image has been recorded using [Sweep Multi Angle] mode.
- 3D images consist of a JPEG file and an MPO file. If either file is deleted on the PC, the camera may not operate correctly.

Cannot hear music during slideshow.

- Transfer music files to the camera with "Music Transfer". [Details]
- Confirm that the volume setting and slideshow setting are correct. [Details] [Details]
- Slideshow is played back with [Continuous Playback]. Select [Slideshow with music] and play back.

The image does not appear on the TV.

- For viewing movies, the camera and television must use the same color television system. [Details]
- Check whether the connection is correct. [Details]

The 3D images do not appear on the TV even though the camera is in [3D Viewing] mode.

Check that the TV is set to display the 3D images.

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Deleting

Cannot delete an image.

• Cancel the protection. [Details]

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Computers

"Memory Stick Micro" media is not recognized by a computer with a "Memory Stick" media slot.

- Check that the computer and the "Memory Stick" media Reader/Writer support "Memory Stick Micro" media.
- If "Memory Stick Micro" media is not supported, connect the camera to the computer. The computer recognizes the "Memory Stick Micro" media. [Details]

Your computer does not recognize the camera.

- Set [USB Connect Setting] to [Mass Storage]. [Details]
- Use the multi-use terminal USB cable (supplied).
- Disconnect the USB cable from both the computer and the camera, and connect it again firmly.
- Disconnect all equipment other than the camera, the keyboard and the mouse from the USB connectors of your computer.
- Connect the camera directly to your computer without passing through a USB hub or other device.
- Set [USB Power Supply] to [Off]. Your computer may recognize the camera.

Cannot import images.

- Connect the camera and your computer correctly making a USB connection. [Details]
- When you shoot images with a memory card formatted by a computer, you may not be able to import the images to a computer. Shoot using a memory card formatted by the camera.
 [Details]

After making a USB connection, "PMB" does not start automatically.

• Make the USB connection after the computer is turned on.

After making a USB connection, "PMB Portable" does not start.

- Set [LUN Setting] to [Multi]. [Details]
- Set [USB Connect Setting] to [Mass Storage]. [Details]
- · Connect the computer to the network.

Cannot play back images on your computer.

- If you are using "PMB", refer to "PMB Help". [Details]
- Consult the computer or software manufacturer.

The image and sound are interrupted by noise when you view a movie on a computer.

• You are playing back the movie directly from the memory card. Import the movie to your computer using "PMB" and play it back. [Details]

Images once exported from a computer cannot be viewed on the camera.

- Export them to a folder recognized by the camera, such as "101MSDCF".
- Use "PMB" to play images stored on a PC with this camera.
- Register the image in the Image Database File and play in [Date View]. [Details]
- Event View is not available on this camera.

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Memory card

Cannot insert a memory card.

• Insert the memory card in the correct direction.

You have formatted a memory card by mistake.

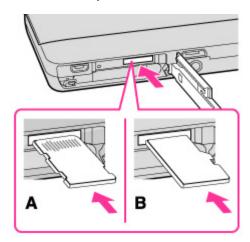
• All the data on the memory card is deleted by formatting. You cannot restore it.

Images are recorded on the internal memory even when a memory card is inserted into the camera.

• Make sure that the memory card is fully inserted into the camera.

A memory card cannot be recognized.

• Insert the memory card in the correct direction.



A: "Memory Stick Micro" media B: microSD memory card

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Internal memory

Cannot play back or record images using the internal memory.

• There is a memory card inserted in the camera. Remove it.

Cannot copy the data stored in the internal memory to a memory card.

• The memory card is full. Copy to a memory card with sufficient capacity.

Cannot copy the data on the memory card or the computer to the internal memory.

• This feature is not available.

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Printing

Cannot print an image.

• Refer to the operation manual of the printer.

Images are printed with both edges cut off.

- Depending on your printer, all the edges of the image may be cut off. Especially when you print an image shot with the image size set to [16:9], the lateral end of the image may be cut off.
- When printing images using your printer, cancel the trimming or borderless settings. Consult the printer manufacturer as to whether the printer provides these functions or not.
- When having images printed at a digital print shop, ask the shop whether they can print the images without cutting off both edges.

Cannot print images with the date.

- Using "PMB", you can insert the date on still images. [Details]

Cannot print 3D images as they are displayed on the camera's screen.

 3D images displayed on the camera are MPO files, but the images to be printed are JPEG files, so in some cases, the images to be printed out will differ from the ones displayed on the screen.

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Touch Panel/Screen

Cannot operate the touch panel buttons correctly or fully.

- The touch panel may not react the operation when sticking the protection film on.
- If you touch an area other than that for the operation you want to perform, the operation may not work properly.

When operating the touch panel, do not touch any other area except the desired area.

The paint pen operation reacts at inappropriate points.

- · Hold the paint pen straight up.
- Avoid holding the point of the paint pen.

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Others

The lens gets fogged.

 Moisture condensation has occurred. Turn off the camera and leave it for about an hour before using it.

The camera becomes warm when you use it for a long time.

• This is not a malfunction.

The Clock Set screen appears when you turn on the camera.

- Set the date and time again. [Details]
- The internal rechargeable backup battery has discharged. Insert a charged battery, and set aside for 24 hours or more with the power left off.

The date or time is incorrect.

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Self-diagnosis display
If a code starting with a letter of the alphabet appears, the self-diagnosis function on the camera is working. The last two digits (indicated by \square \square) will differ depending on the state of the camera.
If you cannot solve the problem even after trying the following corrective actions a few times, the camera may need repair. Contact your Sony dealer or local authorized Sony service facility.
C:32: 🗖 🗖
There is trouble with the camera's hardware. Turn the power off and on again.
C:13:
• The camera cannot read or write data on the memory card. Try turning off and on the camera again, or taking out and inserting the memory card several times.
 The internal memory has experienced a format error, or an unformatted memory card is inserted. Format the internal memory or the memory card. [Details]
 The inserted memory card cannot be used with the camera, or the data is damaged. Insert a new memory card.
E:61:
E:62:
E:91:
 A camera malfunction has occurred. Initialize the camera, then turn the power on again. [Details]
E:94: 🗆 🗖

• There is a malfunction when writing or deleting data. Repair is required. Contact your Sony dealer or local authorized Sony service facility. Be prepared to give all numbers in the error

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code beginning from the E.

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Messages

If the following messages appear, follow the instructions.



• The battery level is low. Charge the battery pack immediately. Depending on the conditions of use or the type of battery pack, the indicator may flash even though there are still 5 minutes to 10 minutes of remaining battery time left.

Camera overheating Allow it to cool

 The camera temperature has risen. The power may turn off automatically, or you may be unable to record movies. Leave the camera in a cool location until the temperature goes down.

Internal memory error

• Turn the power off and then on again.

Memory card error has occurred. Cannot write data to memory card.

- The inserted memory card cannot be used in the camera. [Details]
- The terminal section of the memory card is dirty.
- The memory card is damaged.

This memory card is not formatted correctly.

• The inserted memory card cannot be used in the camera. [Details]

This memory card may not be able to record or play images correctly.

• The inserted memory card cannot be used in the camera. [Details]

Buffer overflow. Writing to the media was not completed in time.

- If you use a memory card that has been recorded and erased repeatedly, or that was formatted on a different camera, the data writing speed may be too slow. First back up any data on the card to a computer, and then reformat the card before using it. [Details]
- The writing speed of the memory card you are using is not sufficient for movie recordings. Use a "Memory Stick Micro" (Mark2) media or a microSD memory card (Class 4 or faster).

This is a read- only memory card.

• The camera cannot record or delete images on this memory card.

Writing to the memory card was not completed correctly Recover data

• Reinsert the memory card, and touch [OK] to recover the data.

No images

- No images that can be played back have been recorded in the internal memory.
- No images that can be played back have been recorded in this folder of the memory card.

No still images

- There are no 3D images that can be played back in [3D Viewing] mode.
- The selected folder or date does not contain a file that can be played back in a slideshow.

File found which was not recognized

• You tried to delete a folder containing a file that cannot be played on this camera. Delete the file on a computer and then delete the folder.

Folder error. Cannot record to the selected folder. Please select a different folder.

 A folder with the same first three digit number already exists on the memory card (for example: 123MSDCF and 123ABCDE). Select another folder [Details], or create a new folder [Details].

Cannot create more folders

• The folder with a name beginning with "999" exists on the memory card. You cannot create any folders if this is the case.

Empty folder contents

You tried to delete a folder containing one or more files. Delete all of the files and then delete
the folder.

Folder protected

• You tried to delete a folder that is protected as read only on a computer.

File Error.

An error occurred while the image was playing back.
 No guarantees are made for playing back, on this camera, files containing images which were processed on a computer or images which were shot using other cameras.

Read only folder

 You have selected a folder that cannot be set as a recording folder on the camera. Select another folder. [Details]

File protected

Release the protection. [Details]

Image size over limit

• You are playing back an image with size that cannot be played back on the camera.

Unable to detect face for retouch

You may not be able to retouch the image depending on the image.

(Vibration warning indicator)

• Camera shake may occur due to insufficient light. Use the flash, or mount the camera on a tripod to secure the camera.

MP4 12M is not supported with this memory card. MP4 6M is not supported with this memory card.

• For recording movies, it is recommended that you use a "Memory Stick Micro" (Mark2) media or a microSD memory card (Class 4 or faster).

Recording is unavailable in this movie format.

Set [Movie format] to [MP4]. [Details]

Maximum number of images already selected.

- Up to 100 files can be selected when using [Multiple Images].
- You can add DPOF (Print order) marks to up to 999 files.

Error Playing Music

- Delete the Music file, or replace it with a normal Music file.
- Execute [Empty Music], then download a new Music file.

Error Formatting Music

Execute [Empty Music].

Operation cannot be executed in unsupported files.

• Processing and other editing functions of the camera cannot be performed on image files that have been processed using a computer or images that were recorded with other cameras.

Preparing image database file. Please wait.

- The camera restores the date information, etc., in cases where images have been deleted on a PC, etc.
- The necessary Image Database File is created after the memory card is formatted.

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• The number of images exceeds that for which date management in a database file by the camera is possible. To register additional images in the Image Database File, delete images in [Date View].

Inconsistencies found in image database file. Do you want to repair the image database file?

 Movies in [AVCHD view] cannot be recorded or played because the Image Database File is corrupt. Follow the on-screen instructions to recover the Image Database File.

Error

 It is not possible to record to the camera's Image Database File or play back using [Date View]. Use "PMB" to back up all images to a PC and use it to restore a memory card.

Image Database File error. Cannot recover data.

• Import all of the images to the computer with "PMB", and format the memory card or the internal memory. To view the images again with the camera, export the imported images to the camera with "PMB". [Details]

Recording function unavailable due to high internal temperature.

 The camera temperature has risen. You cannot record images until the temperature has gone down.

Recording has stopped due to increased camera temperature.

Recording has stopped due to a rise in temperature while recording a movie. Please wait until
the temperature goes down.

[]~

 When you record movies for a long time, the camera temperature rises. In this case, stop recording movies.

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Precautions

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Internal memory and memory card back up

Do not turn off the camera, remove the battery pack, or remove the memory card while the access lamp is lit. Otherwise, the internal memory data or the memory card may be damaged. Be sure to make a backup copy to protect your data.

On database files

When you insert a memory card without a database file into the camera and turn on the power, part of the memory card capacity is used to automatically create a database file. It may take some time until you can perform the next operation.

Do not use/store the camera in the following places

- In an extremely hot, cold or humid place
 In places such as in a car parked in the sun, the camera body may become deformed and this may cause a malfunction.
- Under direct sunlight or near a heater

 The camera body may become discolored or deformed, and this may cause a malfunction.
- In a location subject to rocking vibration
- · Near strong magnetic place
- In sandy or dusty places
 Be careful not to let sand or dust get into the camera. This may cause the camera to malfunction, and in some cases this malfunction cannot be repaired.

On carrying

Do not sit down in a chair or other place with the camera in the back pocket of your trousers or skirt, as this may cause malfunction or damage the camera.

On operating temperatures

Your camera is designed for use under the temperatures between 0°C and 40°C (32°F and 104°F). Shooting in extremely cold or hot places that exceed this range is not recommended.

On moisture condensation

- If the camera is brought directly from a cold to a warm location, moisture may condense
 inside or outside the camera. This moisture condensation may cause a malfunction of the
 camera.
- If moisture condensation occurs, turn off the camera and wait about an hour for the moisture to evaporate. Note that if you attempt to shoot with moisture remaining inside the lens, you will be unable to record clear images.

Functions built into this camera

 This manual describes the functions of 1080 60i-compatible and 1080 50i-compatible devices.

To check whether your camera is a 1080 60i-compatible device or a 1080 50i-compatible device, check for the following marks on the bottom of the camera.

1080 60i-compatible device: 60i

1080 50i-compatible device: 50i

- Do not watch 3D images shot with this camera for extended periods of time on 3D-compatible monitors.
- When you view 3D images shot with this camera on a 3D-compatible monitor, you may
 experience discomfort in the form of eye strain, fatigue, or nausea. To prevent these
 symptoms, we recommend that you take regular breaks.

However, you need to determine for yourself the length and frequency of breaks you require, as they vary according to the individual. If you experience any type of discomfort, stop viewing the 3D images until you feel better, and consult a physician as necessary. Also refer to the operating instructions supplied with the device or software you have connected or are using with this camera.

Note that a child's eyesight is still at the development stage (particularly children below the age of 6). Consult a pediatrician or ophthalmologist before letting your child view 3D images, and make sure he/she observes the above precautions when viewing such images.

On image data compatibility

- The camera conforms with DCF (Design rule for Camera File system) universal standard established by JEITA (Japan Electronics and Information Technology Industries Association).
- Sony does not guarantee that the camera will play back images recorded or edited with other equipment, or that other equipment will play back images recorded with the camera.

Notes when playing movies on other devices

- This camera uses MPEG-4 AVC/H.264 High Profile for AVCHD format recording. Movies recorded in AVCHD format with this camera cannot be played by the following devices.
 - Other devices compatible with AVCHD format that does not support High Profile
 - Devices incompatible with the AVCHD format

This camera also uses MPEG-4 AVC/H.264 Main Profile for MP4 format recording. For this reason, movies recorded in MP4 format with this camera cannot be played on devices other than those that support MPEG-4 AVC/H.264.

You can play a high-definition image quality (HD) disc only on AVCHD format playback devices. A DVD player or DVD recorder cannot play back a disc recorded in high-definition image quality (HD) because they are not compatible with the AVCHD format. In addition, if you insert a high-definition image quality (HD) disc recorded in AVCHD format into a DVD player or DVD recorder, you may not be able to eject the disc.

Notes on the screen and lens

The screen is manufactured using extremely high-precision technology so over 99.99% of the
pixels are operational for effective use. However, some tiny black and/or bright dots (white,
red, blue or green) may appear on the screen. These dots are a normal result of the
manufacturing process and do not affect the recording.

- If water droplets or other liquids splash on the screen and make it wet, immediately wipe off the screen with a soft cloth. Leaving liquids on the screen surface can harm the quality and cause a malfunction.
- Exposing the screen or the lens to direct sunlight for long periods may cause malfunctions. Be careful when placing the camera near a window or outdoors.
- Do not press against the screen. The screen may be discolored or a malfunction may result.
- Images may trail across on the screen in a cold location. This is not a malfunction.
- Be careful not to bump the lens, and be careful not to apply force to it.

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On the internal rechargeable backup battery

This camera has an internal rechargeable battery for maintaining the date and time and other settings regardless of whether the power is on or off.

This rechargeable battery is continually charged as long as you are using the camera. However, if you use the camera for only short periods, it discharges gradually, and if you do not use the camera at all for about one month it becomes completely discharged. In this case, be sure to charge this rechargeable battery before using the camera.

However, even if this rechargeable battery is not charged, you can still use the camera, but the date and time will not be indicated.

Charging method of the internal rechargeable backup battery Insert a charged battery pack in the camera, and then leave the camera for 24 hours or more with the power off.

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Battery pack

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On charging the battery pack

- Charge the battery pack (supplied) before using the camera for the first time.
- You can charge the battery pack even if it is not completely discharged. In addition, even if
 the battery pack is not fully charged, you can use the partially charged capacity of the battery
 pack as is.
- We recommend charging the battery pack in an ambient temperature of between 10°C to 30°C (50°F to 86°F). The battery pack may not be effectively charged in temperatures outside this range.

Effective use of the battery pack

- Battery performance decreases in low temperature surroundings. So in cold places, the operational time of the battery pack is shorter. We recommend the following to ensure longer battery pack use:
 - Put the battery pack in a pocket close to your body to warm it up, and insert it in the camera immediately before you start shooting.
- (If there are any metal objects such as keys in your pocket, be aware of short-circuits.)
 The battery pack will run out quickly if you use the flash or zoom frequently.
- We recommend having spare battery packs handy for two times or three times the expected shooting time, and making trial shots before taking the actual shots.
- Do not expose the battery pack to water. The battery pack is not water-resistant.
- Do not leave the battery pack in extremely hot places, such as in a car or under direct sunlight.
- You may not be able to turn on the camera or the battery pack may not be effectively charged
 if the terminal section of the battery is dirty. In this case, wipe any dust off lightly using a soft
 cloth or a cotton swab to clean the battery.

Remaining battery charge

• A remaining charge indicator appears on the screen.



A: High B: Low

It takes about one minute until the correct remaining charge indicator appears.

•

- The remaining charge indicator may not be correct under certain circumstances.
- When [Power Save] is set to [Standard] or [Stamina], if you do not operate the camera for a
 certain period of time while the power is on, the screen becomes dark, then the camera turns
 off automatically (Auto power-off function).

How to store the battery pack

- Fully discharge the battery pack before storing and store it in a cool, dry place. To maintain
 the battery pack's function, charge the battery pack and then fully discharge it on the camera
 at least once a year while storing.
- To use the battery pack up, leave the camera in slideshow playback mode until the power goes off.
- To prevent staining the terminal, short-circuiting, etc., be sure to use a plastic bag, etc. to keep away from metal materials when carrying or storing.

On battery life

- The battery life is limited. Battery capacity decreases over time and through repeated use. If decreased usage time between charges becomes significant, it is probably time to replace it with a new one.
- The battery life varies according to how it is stored and the operating conditions and environment in which each battery pack is used.

Compatible battery pack

• The NP-BN (supplied) or NP-BN1 (sold separately) can be used with this model.

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Charging the battery pack

- The supplied AC Adaptor is dedicated to this camera. Do not connect with other electronic devices. Doing so may cause a malfunction. Also, make sure to use a genuine Sony AC Adaptor.
- If the Power/charge lamp of the camera flashes during charging, remove the battery pack being charged, and then insert the same battery pack into the camera securely again. If the Power/charge lamp flashes again, this may indicate a battery error or that a battery pack other than the specified type has been inserted. Check that the battery pack is the specified type. If the battery pack is the specified type, remove the battery pack, replace it with a new or different one and check that the battery is charged correctly. If the battery is charged correctly, a battery error may have occurred.
- If the Power/charge lamp does not light even if the AC Adaptor is connected to the camera and the wall outlet (wall socket), this indicates that the charging has stopped temporarily and is on standby. Charging stops and enters standby mode automatically when the temperature is outside of the recommended operating temperature. When the temperature returns to the appropriate range, charging resumes and the Power/charge lamp lights up again. We recommend charging the battery pack in an ambient temperature of between 10°C to 30°C (50°F to 86°F).
- Using the supplied AC Adaptor, you can charge the battery pack inserted in the camera. In
 addition, power supply via AC Adaptor in playback mode is also available. However, in
 shooting mode, power supply via AC Adaptor is not available. You need the AC Adaptor ACUD10 (sold separately) for shooting to supply a power from the wall outlet (wall socket) during
 shooting.

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On cleaning

Cleaning the lens and flash

Wipe the lens and flash with a soft cloth to remove fingerprints, dust, etc.

Cleaning the flash

Clean the flash surface before use. The heat of flash emission may cause dirt on the flash surface to start smoking or burning. Wipe the flash surface with a soft cloth to remove dirt or dust, etc.

Cleaning the camera surface

Clean the camera surface with a soft cloth slightly moistened with water, then wipe the surface with a dry cloth. To prevent damage to the finish or casing:

- Do not expose the camera to chemical products such as thinner, benzine, alcohol, disposable cloths, insect repellent, sunscreen or insecticide.
- Do not touch the camera with any of the above on your hand.
- Do not leave the camera in contact with rubber or vinyl for a long time.

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Number of still images

The number of still images may vary depending on the shooting conditions and the memory card. (Units: Images)

Size	Internal memory	Memory card formatted with this camera				
Size	Approx. 19 MB	2 GB	4 GB	8 GB	16 GB	
16M	3	335	670	1350	2700	
10M	4	430	860	1700	3450	
5M	7	730	1450	2950	5900	
VGA	98	9600	19000	38500	40000	
16:9(12M)	3	355	710	1400	2850	
16:9(2M)	21	2100	4250	8600	17000	

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Notes

- When the number of remaining shootable images is greater than 9,999, the ">9999" indicator appears.
- When an image shot with other cameras is played back on this camera, the image may not appear in the actual image size.

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Recordable time of movies

The table below shows the approximate maximum recording times. The recordable time may vary depending on the shooting conditions and the memory card. (h (hour), m (minute))

Quality/Size	Internal memory	Memory card formatted with this camera			
Quality/3/2e	Approx. 19 MB	2 GB	4 GB	8 GB	16 GB
AVC HD 24M (FX)	_	10m (10m)	20m (20m)	40m (40m)	1h 30m (1h 30m)
AVC HD 17M (FH)	_	10m (10m)	25m (25m)	1h (1h)	2h (2h)
AVC HD 9M (HQ)	_	25m (15m)	50m (35m)	1h 45m (1h 20m)	3h 35m (2h 45m)
MP4 12M	_	15m	40m	1h 20m	2h 45m
MP4 6M	_	35m	1h 15m	2h 40m	5h 20m
MP4 3M	_	1h 10m	2h 20m	4h 55m	9h 55m

The number in () is the minimum recordable time.

Continuous shooting is possible for approximately 29 minutes at one time. The maximum size
of an MP4-format movie file is up to approximately 2 GB.

Note

 The recordable time of movies varies because the camera is equipped with VBR (Variable Bit-Rate), which automatically adjusts image quality depending on the shooting scene.
 When you record a fast-moving subject, the image is clearer but the recordable time is shorter because more memory is required for recording.

The recordable time also varies depending on the shooting conditions, the subject or the image quality/size settings.

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Using the camera abroad

You can use the AC Adaptor (supplied) in any country or region where the power supply is within 100 V to 240 V AC, $50 \, \text{Hz}/60 \, \text{Hz}$.

Note

• An electronic voltage transformer is unnecessary and its use may cause a malfunction.

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On TV color systems

To view movies shot using this camera on a television, the camera and television must use the same color television system. Check the color TV system for the country or region where you are using the camera.

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NTSC system

Bahama Islands, Bolivia, Canada, Central America, Chile, Colombia, Ecuador, Jamaica, Japan, Korea, Mexico, Peru, Surinam, Taiwan, the Philippines, the U.S.A., Venezuela, etc.

PAL system

Australia, Austria, Belgium, China, Croatia, Czech Republic, Denmark, Finland, Germany, Holland, Hong Kong, Hungary, Indonesia, Italy, Kuwait, Malaysia, New Zealand, Norway, Poland, Portugal, Romania, Singapore, Slovak Republic, Spain, Sweden, Switzerland, Thailand, Turkey, United Kingdom, Viet Nam, etc.

PAL-M system Brazil

PAL-N system Argentina, Paraguay, Uruguay

SECAM system

Bulgaria, France, Greece, Guiana, Iran, Iraq, Monaco, Russia, Ukraine, etc.

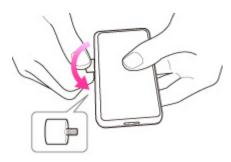
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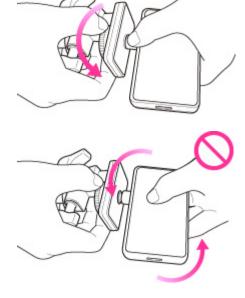
Using the tripod adaptor

Using the tripod adaptor (supplied), you can attach the camera to a tripod.

- 1. Insert the tripod adaptor into the thread groove of the camera and screw it in.
 - Do not screw the tripod adaptor in too firmly.



- 2. When attaching the tripod to the camera, hold by the tripod and the tripod adaptor.
 - Do not hold by the camera body when attaching the camera to the tripod. This may cause malfunction.



Notes

- The tripod adaptor must be attached to the camera before attaching the camera to the tripod.
- After the tripod is attached to the camera, be sure to carry the assemblage by the tripod. Do not carry by the camera body, as this may cause malfunction.

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Carl Zeiss lens

The camera is equipped with a Carl Zeiss lens which is capable of reproducing sharp images with excellent contrast. The lens for the camera has been produced under a quality assurance system certified by Carl Zeiss in accordance with the quality standards of Carl Zeiss in Germany.

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AVCHD format

The AVCHD format has been developed for high-definition digital video cameras when recording an HD (High-Definition) signal at the 1080i*¹ or 720p*² specification using high-efficiency compression coding technology. The MPEG-4 AVC/H.264 format is adopted to compress video data, and the Dolby Digital or Linear PCM system is used to compress audio data. The MPEG-4 AVC/H.264 format is capable of compressing images at higher efficiency than that of the conventional image compression format. The MPEG-4 AVC/H.264 format enables a high

definition video signal shot on a digital video camera recorder to be recorded on 8 cm DVD discs,

Recording and playback on the camera

hard disk drive, flash memory, memory card, etc.

Based on the AVCHD format, your camera records with the high definition image quality (HD) mentioned below.

Video signal*3:

1080 60i-compatible device

MPEG-4 AVC/H.264 1920×1080/60i, 1440×1080/60i

1080 50i-compatible device

MPEG-4 AVC/H.264 1920×1080/50i, 1440×1080/50i

Audio signal: Dolby Digital 2ch Recording media: Memory card

*1 1080i specification

A high definition specification which utilizes 1,080 effective scanning lines and the interlace system.

*2 720p specification

A high definition specification which utilizes 720 effective scanning lines and the progressive system.

*3 Data recorded in AVCHD format other than the above mentioned cannot be played on your camera.

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On GNU GPL/LGPL applied software

The software that is eligible for the following GNU General Public License (hereinafter referred to as "GPL") or GNU Lesser General Public License (hereinafter referred to as "LGPL") are included in the camera.

This informs you that you have a right to have access to, modify, and redistribute source code for these software programs under the conditions of the supplied GPL/LGPL.

Source code is provided on the web. Use the following URL to download it. http://www.sonv.net/Products/Linux/

We would prefer you do not contact us about the contents of source code.

Read "license2.pdf" in the "License" folder on the CD-ROM. You will find licenses (in English) of "GPL". and "LGPL" software.

To view the PDF, Adobe Reader is needed. If it is not installed on your computer, you can download it from the Adobe Systems web page:

http://www.adobe.com/

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