



Digital HD Video Camera Recorder

HDR-AZ1/RM-LVR2V

How to Use

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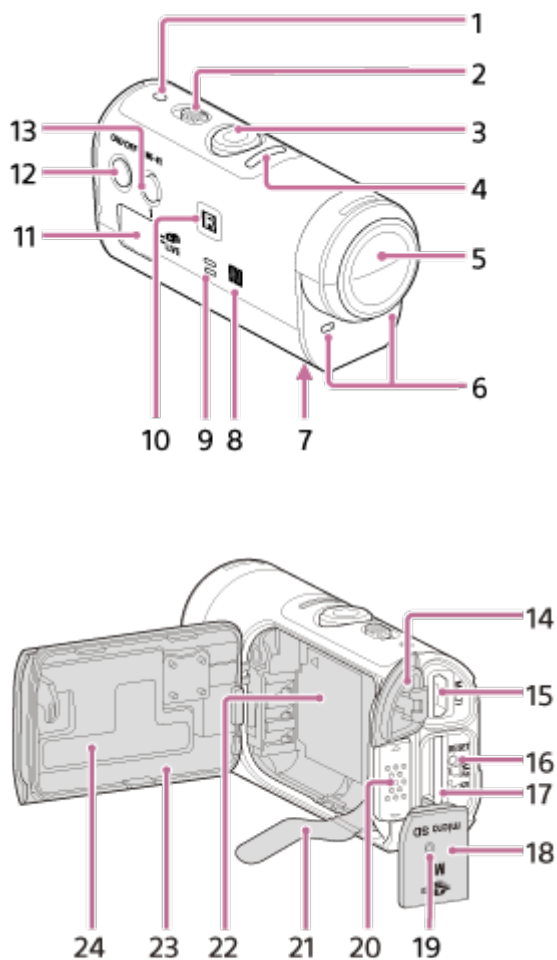
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[1] How to Use | Read This First | Identifying Parts

Identifying Parts of the Camera

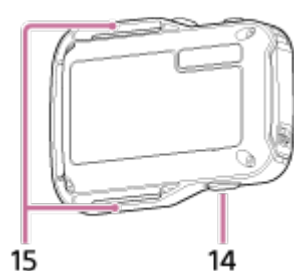
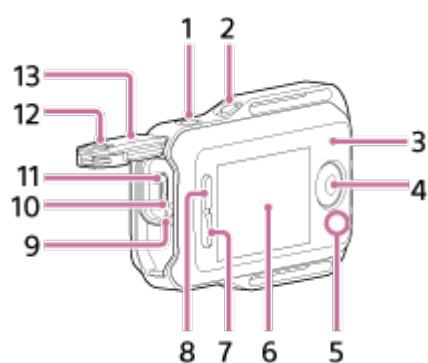


1. POWER/CHG (Charge) lamp
2. REC HOLD switch
3. REC (Movie/Photo) button
4. REC lamp (red)/LIVE lamp (blue)
 - Light up (red): During recording
 - Blink (red): Error occurs
 - Light up (blue): During live streaming
 - Blink slowly (blue): During live streaming (There is an audience)
5. Lens
6. Microphones
7. Tripod adaptor attachment hole
8.  (N Mark)
 - NFC (Near Field Communication) is an international standard of the short-range wireless communication technology.
9. Speaker
10. IR remote receiver
11. Display panel
12. ON/OFF button
13. Wi-Fi button
14. Connector cover (USB)
15. Multi/Micro USB Terminal
 - Supports Micro USB compatible devices.

16. RESET button
17. Memory card insertion slot
18. Memory card cover
19. REC/Access lamp
20. Battery cover lock lever
21. Battery ejection sheet
22. Battery storage area
23. Battery pack cover
24. SSID label

[2] How to Use | Read This First | Identifying Parts

Identifying Parts of the Remote Control



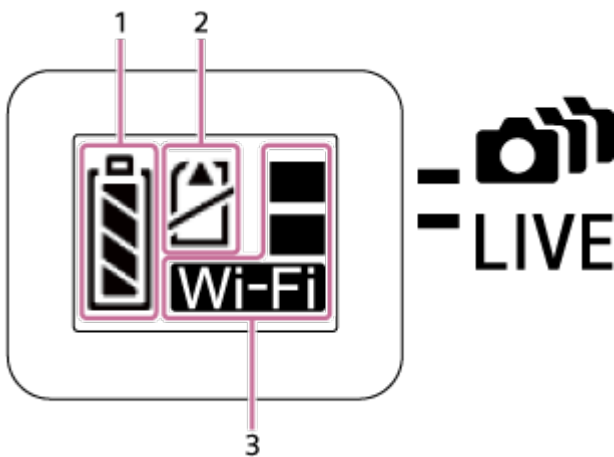
1. MENU button
2. DISP button
3. GPS antenna
4. REC/ENTER button
5. REC/Wi-Fi lamp
6. LCD screen
7. DOWN button
8. UP button
9. CHG (Charge) lamp

10. RESET (Reset) button
11. Multi/Micro USB Terminal
12. Lock lever
13. Connector cover (USB)
14. ON/OFF button
15. Loop for a belt

[3] How to Use | Read This First | Display

Camera Display

The following describes the icons displayed on the display panel of the camera.



1. Battery level indicator







The further right the indicator goes to, the lower the battery level is.

2. Memory card warning indicator

- The memory card is uninserted (Light up)
- The memory card full capacity (Light up)
- The memory card error (Blink):
 - The memory card incompatible with the camera is inserted.
 - The memory card terminal is dirty.
 - The memory card is damaged.
 - The memory card is inserted in the wrong direction.

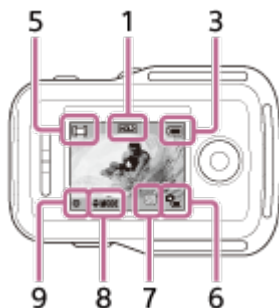
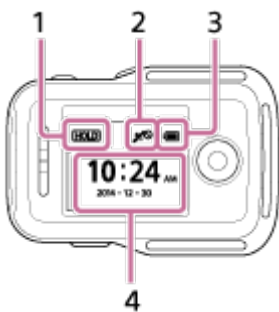
3. Wi-Fi settings indicator

-  When Wi-Fi is set to the single connection
-  When Wi-Fi is set to the multi connection
-  When Wi-Fi is set to the live connection
-  When Wi-Fi is set to OFF

[4] How to Use | Read This First | Display

Live-View Remote Display (Single Connection)


The following describes the icons displayed on the LCD screen of the remote control in the single connection.



① Clock display

1 Button hold indicator

2 GPS/Airplane Mode

- The icon of the airplane mode  will be displayed when the airplane mode is set to ON. The GPS icon will be displayed when the airplane mode is set to OFF.
- The GPS icon changes depending on whether GPS is ON/OFF or depending on the strength of GPS signal reception.

3 Battery level indicator of the remote control



- The further right the indicator goes to, the lower the battery level is.


4 Clock display

②Live-View display

5 Shooting mode display


6 Battery level indicator

7 Memory card warning indicator/ Rising temperature icon

- When  is indicated, stop recording the movie.
- If the camera stops recording due to the temperature, leave it for several minutes with the power turned off. Start recording after the temperature inside the camera drops fully.

8 Shooting mode switching indicator

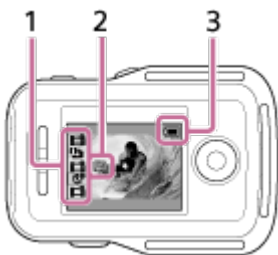
9 REC icon

 is displayed during movie recording,  is displayed during photo recording, and  is displayed during interval photo recording.

[5] How to Use | Read This First | Display

Live-View Remote Display (Multi Connection)


The icons described below are displayed on the LCD screen of the remote control in the multi connection.



1 Shooting mode display/REC icon

- The shooting mode and record status of the connected camera will be displayed. The orange cursor indicates which camera's Live-View display is selected.
- REC icon will be displayed on the right above the shooting mode display while images are being recorded.

2 Rising temperature icon

- When  is indicated, stop recording the movie.
- If the camera stops recording due to the temperature, leave it for several minutes with the power turned off. Start recording after the temperature inside the camera drops fully.

3 Battery level indicator of the remote control



- The further right the indicator goes to, the lower the battery level is.

[6] How to Use | Getting Started | Checking the Bundled Items

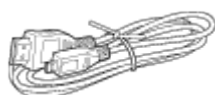
Checking the Bundled Items

Make sure that you have the following bundled items. The number in parentheses indicates the quantity of each item bundled.

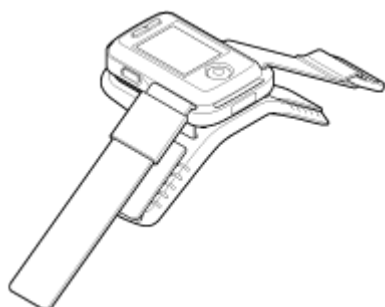
- Camera (1)



- Micro USB cable (1)



- Live-View Remote (RM-LVR2V) (1)



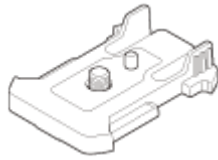
- Rechargeable battery pack (NP-BY1) (1)



- Waterproof Case (SPK-AZ1) (1)



- Attachment Buckle (1)



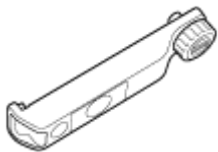
- Flat Adhesive Mount (1)



- Curved Adhesive Mount (1)



- Tripod Adaptor (1)



- Set of printed documentation

[7] How to Use | Getting Started | Preparing to Use

Preparing to Use

The flow of what needs to be prepared in advance is summarized. Check each item for further details.

① The camera

Inserting the battery pack of the camera

Insert the battery pack confirming that the battery is correctly oriented.



Charging the battery pack of the camera

Check the power of the camera is off and connect the micro USB cable (supplied) to a computer that is turned on.



Inserting a memory card into the camera

Insert the memory card into the camera, confirming that the card is correctly oriented.



Turning on the power of the camera

Press the ON/OFF button of the camera.

- You can record movies by pressing the REC button of the camera.

②The remote control

Charging the remote control

Check the power of the remote control is off and connect the micro USB cable (supplied) to the computer that is turned on.



Turning on the power of the remote control

Press the ON/OFF button of the remote control.



Setting the date and time using the remote control

When the remote control is turned on for the first time, the date & time setting screen is displayed. Use the remote control after the date & time setting is complete.



Connecting the camera and the Live-View Remote through Wi-Fi

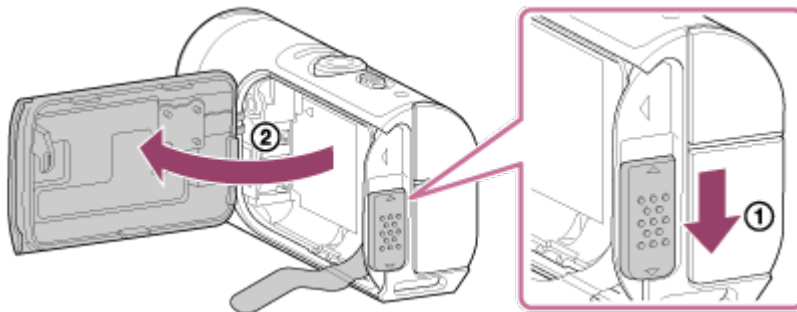
Inserting/Removing the Battery Pack of the Camera

Insert/remove the battery pack to/from the camera.

Inserting the battery pack

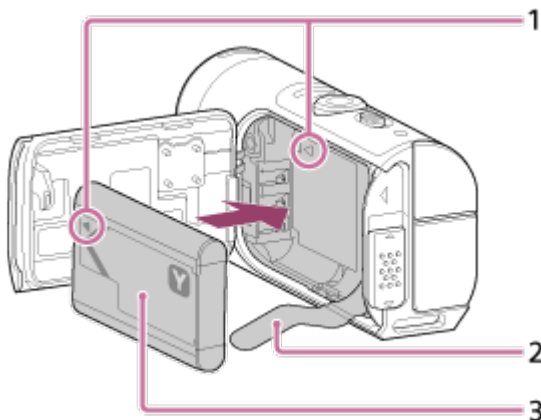
1. Open the cover

- ① Slide the lock lever to the OPEN side.
- ② Open the cover from ◀.



2. Insert the battery pack

- There are chances that the battery may not be ejected if the battery ejection sheet is stored under the battery. Additionally, this may cause water leakage.

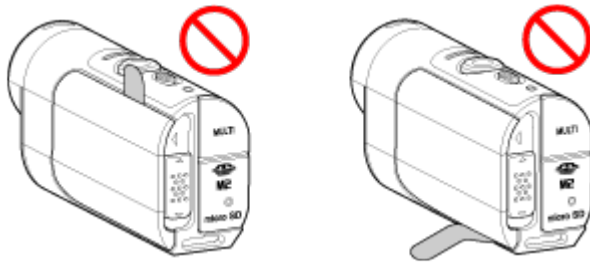


- 1 Align the ◀ mark of the battery with that of the camera
- 2 Place the battery on the battery ejection sheet and insert the battery pack
- 3 Insert the battery pack, aligning the ◀ mark of the battery with that of the camera and orienting its printed side, as illustrated

3. Close the cover

- Securely close the cover and slide the lock lever to the LOCK position. Make sure that the yellow mark on the lock lever is not visible and the cover is securely closed.

Double check that the battery ejection sheet is not pinched in the cover or sticking out of the cover. If any foreign matter such as sand gets inside the cover, the sealing gasket may be scratched, and may result in water entering the inside of the camera.



4. Remove the battery pack

- Open the battery cover and pull out the battery ejection sheet to remove the battery.

[9] How to Use | Getting Started | Preparing the Camera

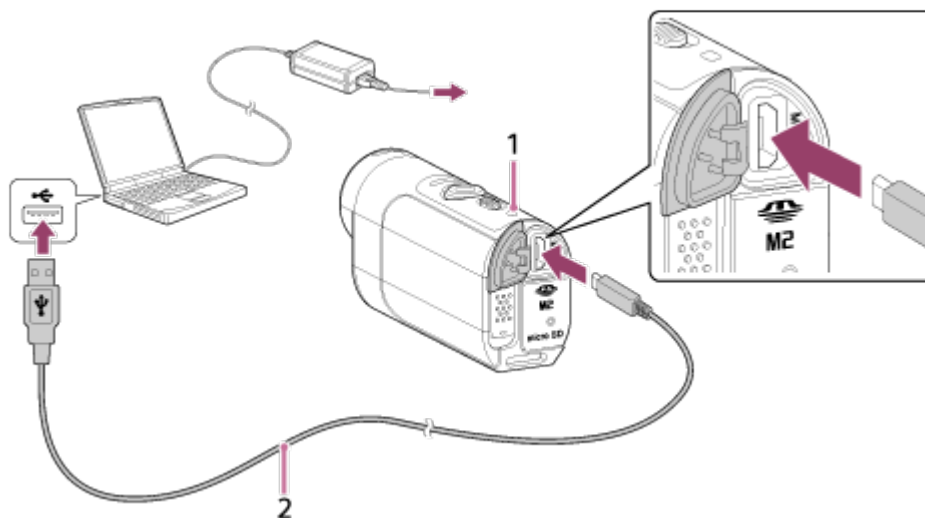
Charging the Battery Pack of the Camera

Charging the camera with a computer.

1. Check that the power of the camera is OFF

- Charging is not possible when the camera is turned on. To turn off the camera, press the ON/OFF button until the POWER lamp turns off.

2. Connect the camera to an activated computer with the micro USB cable (supplied)



1 Lights in orange while charging

2 Micro USB cable (supplied)

3. Disconnect the camera from the computer when the battery is charged

- The battery is charged (full charge) when the POWER/CHG (Power) lamp is turned on.
- The charging time^{*1} of the battery pack NP-BY1 (supplied) is as follows.
Charging via a computer: Approx. 2 h 25 min.
Charging via AC-UD10^{*2} (sold separately): Approx. 2 h 05 min.

^{*1} Time required to charge a fully depleted battery pack at a temperature of 25°C (77°F). Charging may take longer under certain circumstances or conditions.

^{*2} Rapid charging is possible using the USB charger AC-UD10 (sold separately). To connect to the charger, use the micro USB cable (supplied).

Note

- You can use only a type Y battery with this camera.
- Turn off the camera while charging the battery.
- Do not apply force to the camera when you connect the camera to a computer. This may cause damage to the camera or the computer.
- When you connect the camera to a notebook computer that is not connected to an AC power source, the battery of the notebook computer may be depleted rapidly. Do not leave the camera connected to the computer for a long time.
- Charging the battery pack or the connection with customized or hand-built computers is not guaranteed. Depending on the type of your USB device, charging may not function properly.
- Operation with all computers is not assured.
- If you do not intend to use the camera for an extended period, charge the camera once every 6 to 12 months to maintain battery performance.

Hint

• Checking the remaining battery charge

A remaining charge indicator appears on the upper left of the display panel.



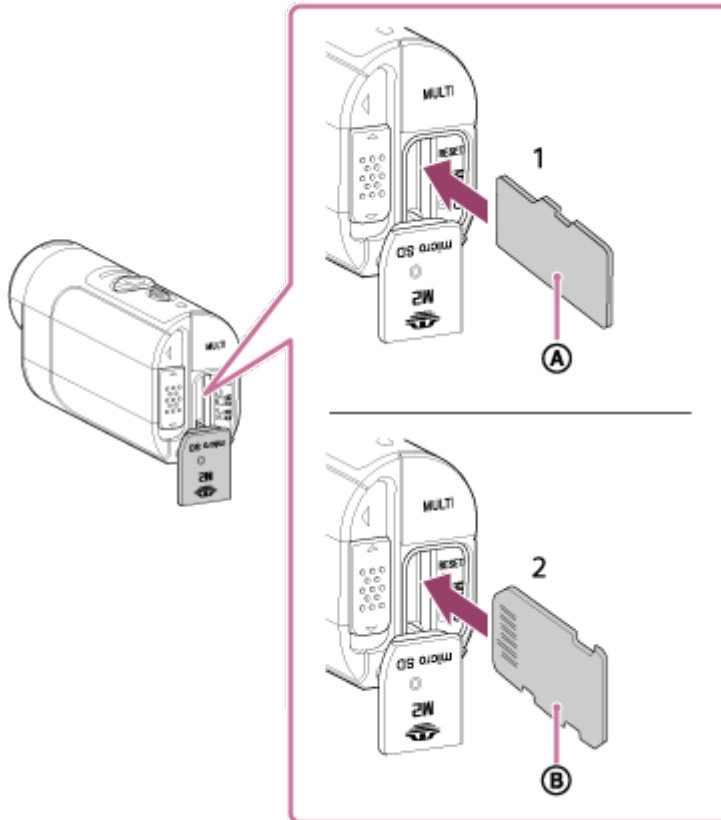
- The displayed remaining charge indicator may not be correct under certain circumstances.
- It takes about one minute until the correct remaining charge indicator appears.

The following describes how to insert/eject a memory card.

1. Insert the memory card until it clicks

microSD card: Insert in the direction of the printed side **(A)**.

Memory Stick Micro™ (Mark2) media: Insert in the direction of the terminal side **(B)**.



1 microSD card/microSDHC card/microSDXC card

2 Memory Stick Micro™ (Mark2) media

- Insert the memory card properly, confirming each side is facing the correct direction.
- Insert a memory card squarely in the correct orientation; otherwise, the camera will not recognize it.

2. Close the cover

3. Eject the memory card

- Open the memory card cover, then lightly push the memory card once.

Note

- Operation with all memory cards is not assured.
- Confirm the direction of the memory card. If you forcibly insert the memory card in the wrong direction, the memory card, memory card slot, or image data may be damaged.
- To ensure stable operation 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 back up any important data to a computer or other storage location.
- Do not insert anything other than the compliant size of memory card into the memory card slot. Otherwise, a malfunction may result.
- When inserting or ejecting the memory card, be careful to prevent the memory card from popping out and dropping.
- Before you start recording, make a trial recording to make sure that the camera is working correctly.
- Turning off the camera or removing the memory card while the REC/Access lamp is lit may cause a malfunction of the memory card. Be sure to back up any important data to a computer or other storage locations.
- Check the following when using.
 - That the terminal cover, memory card and battery pack cover are securely closed
 - That any foreign matter is not pinched in any of the covers

If any of the covers are not securely closed or any foreign matter gets inside any of the covers, it may result in water entering the inside of the camera.

[11] How to Use | Getting Started | Preparing the Camera

Memory Cards Usable with the Camera

Memory cards usable with the camera are as follows.

- **Use an SDXC card faster than Class10 when recording movies in XAVC S.**

Memory Stick Micro™ (Mark2) media ^{*1}

microSD memory card ^{*2}

microSDHC memory card ^{*2}

microSDXC memory card ^{*2}

^{*1} Referred to as "Memory Stick Micro" in this Help Guide.

^{*2} Referred to as "microSD card" in this Help Guide.

Note

- Operation with all memory cards is not assured.
- Guaranteed operating temperature of the camera is from -5°C to +40°C (23°F to 104°F). However, depending on the types of memory cards, guaranteed operating temperature varies. For details, refer to the operating instructions supplied with the memory card.
- Images recorded in a microSDXC memory card cannot be transferred or played back on a computer or AV device that is not exFAT^{*}-compatible (via USB connection). Before

connecting, make sure that the device is exFAT-compatible. If the camera is connected to a device that is not exFAT-compatible, a prompt to format the memory card may appear. In this case, do not format the memory card, otherwise all its data will be lost.

* exFAT is the file system used by microSDXC memory cards.

[12] How to Use | Getting Started | Preparing the Camera

Turning On/Off the Power of the Camera

Turn on the power of the camera.

1. Press the ON/OFF button

- You can start recording by pressing the REC button of the camera to turn on the power.



Turning off the power of the camera

To turn off the camera, press the ON/OFF button again.

- Check that the POWER lamp has been turned off by pressing the ON/OFF button.

[13] How to Use | Getting Started | Preparing the Live-View Remote

Charging the Live-View Remote

Charge the remote control through a computer.

1. Check that the power of the remote control is OFF

2. Connect the remote control to an activated computer with the micro USB cable (supplied)

- The CHG (Charge) lamp of the remote control lights up in orange and charging begins.

- The CHG (Charge) lamp goes out when charging is completed.

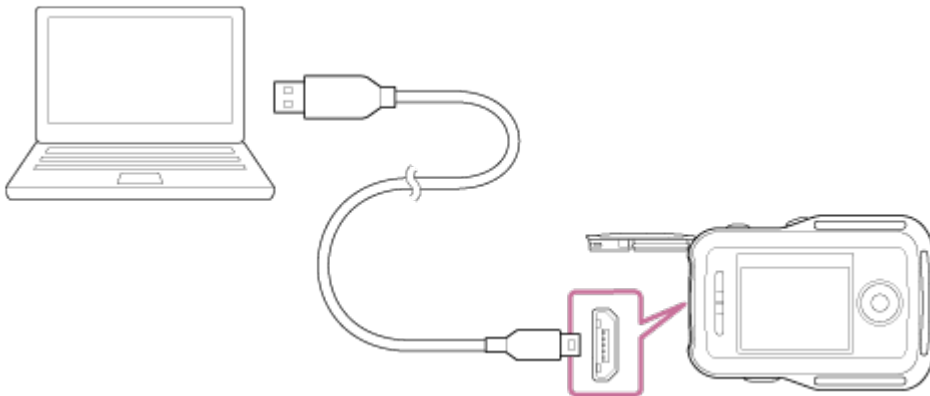
The charging time^{*1} of the battery pack on the remote control is as follows.

Via a computer: Approx. 4 h 05 min.

Via an AC-UD10^{*2}: Approx. 2 h 55 min.

^{*1} Time required to charge a fully depleted battery pack at a temperature of 25°C (77°F). Charging may take longer under certain circumstances or conditions.

^{*2} Rapid charging is possible using the USB charger AC-UD10 (sold separately). To connect to the charger, use the micro USB cable (supplied).



Note

- You can charge the remote control even if it is not completely discharged. Also, even if the remote control is not fully charged, you can use the partial charge capacity of the battery pack as is.
- When the power of the remote control is on, it is supplied with power but not charged.
- To maintain the remote control's function, fully charge the remote control, and then fully discharge it at least once a year while storing. And keep the remote control in a cool place with low humidity.

Hint

• Checking the remaining battery charge

A remaining charge indicator appears on the upper right of the LCD screen.

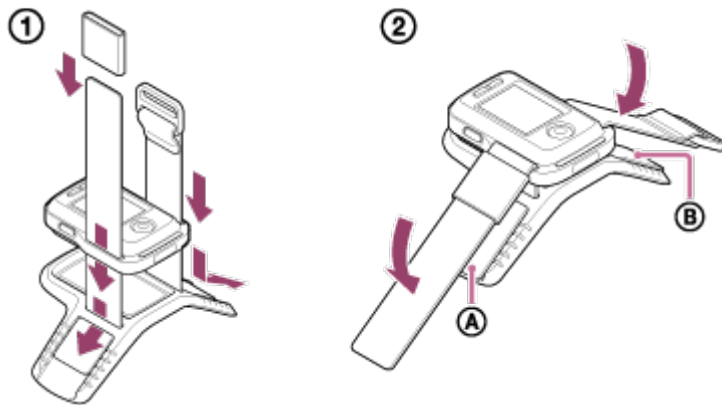


- The displayed remaining charge indicator may not be correct under certain circumstances.
- It takes about 30 seconds until the correct remaining charge indicator appears.
- If the battery pack runs out quickly even though the remaining charge indicator is high, fully charge the remote control, again. The remaining charge indicator will then be displayed correctly. Note that it may not be displayed correctly in a situation where the remote control is used for a long time at high ambient temperature or the remote control is left fully charged.

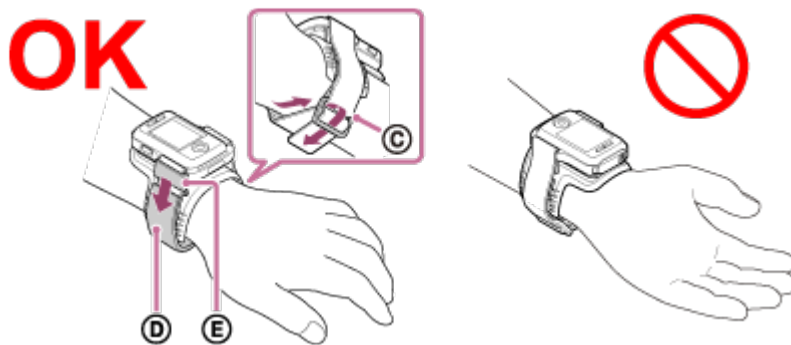
Attaching the Belt to the Live-View Remote

Attach the belt to the remote control.

1. Place the remote control on the base plate and thread the belt through the belt loop of the remote control and the base plate as illustrated in ①, and then attach it as illustrated in ②.
 - You can adjust the belt length depending on the pasting position of ①A and ①B.



2. To fasten the remote control to your arm, wear the remote control with the LCD screen parallel to the back of your hand and the REC/ENTER button facing toward your fingertips. Thread the belt through ①C as illustrated on the left below
 - After attaching ①D, move ①E to cover the end of ①D.



Note

- Attaching the belt incorrectly may cause injury.
- The GPS antenna is built in the front of the remote control. Placing the remote control upside down may cause positioning to take long time or may not be able to determine your position.

- When placing the remote control on your right wrist, set the screen rotation in the remote control settings to ON.
- When using the remote control attached to your arm, always attach the supplied base plate and belt correctly.
- Be careful not to drop the remote control when unfastening the belt.

[15] How to Use | Getting Started | Preparing the Live-View Remote

Turning On/Off the Power of the Live-View Remote

Turn on/off the power of the remote control.

1. Be sure that the connector cover of the remote control is closed
 - Securely close the terminal cover until the yellow mark under the lock lever can no longer be seen.
If any foreign matter such as sand gets inside the terminal cover, the sealing gasket may be scratched, leading to water entering the remote control.

2. Press the ON/OFF button of the remote control



- When the remote control is turned on for the first time, the date & time setting screen is displayed.

To turn off the power of the remote control

To turn off the remote control, press the ON/OFF button again.

[16] How to Use | Getting Started | Preparing the Live-View Remote

Changing the Date & Time Setting by the Live-View Remote

When you use the remote control for the first time or after updating the software, the date & time setting screen is displayed. Use the remote control after the date & time setting is

complete.

1. Press the UP button or DOWN button of the remote control to select the desired item, then press the REC/ENTER button

- The following items will be displayed in order on the LCD screen of the remote control.

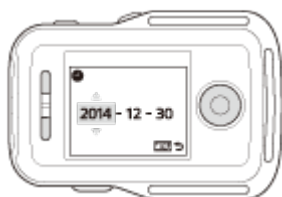
GMT+0.0: Area setting

☀: OFF : Saving time (Summer time) setting

Y-M-D/M-D-Y/M(Eng)-D-Y/D-M-Y: Date and time format

Y-M-D : Date setting

00:00: Time setting



2. Press the UP button or DOWN button to select the desired date and then press the REC/ENTER button of the remote control to set the date and time

- You can also switch from the MENU items of the remote control. See the Date & Time Setting.

[17] How to Use | Getting Started | Preparing the Live-View Remote

GPS Assist Data


The time for the GPS to acquire the location information can be shortened by taking in GPS assist data. If the bundled remote control RM-LVR2V is connected to a computer on the Internet using a software Action Cam Movie Creator, the GPS assist data can be updated automatically.

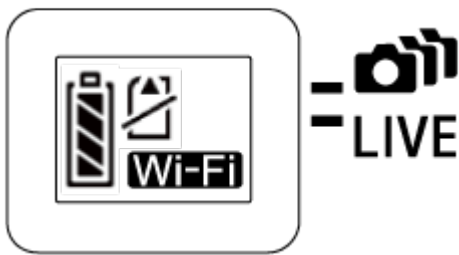
- If the date & time setting is not set, or set time is shifted greatly, the time for the GPS acquiring location information cannot be shortened.
- If the term of validity of GPS assist data has run out, the time until you can record location information cannot be shortened.

[18] How to Use | Getting Started | Connecting the Live-View Remote to the Camera (Single Connection)

Checking the Connection Mode of the Camera

You can check the connection mode of the camera before connecting the remote control and the camera through Wi-Fi. You can switch the Wi-Fi setting of the camera that is to be connected to the Live-View Remote by pressing the Wi-Fi button of the camera. Check the connection mode of the camera is set to the single connection here.










1. Turn on the power of the camera
2. Check that a **Wi-Fi** mark is displayed on the display panel of the camera
 - If a **Wi-Fi** mark is not displayed or  is displayed above the **Wi-Fi** mark, press the Wi-Fi button until only the **Wi-Fi** mark is displayed.



[19] How to Use | Getting Started | Connecting the Live-View Remote to the Camera (Single Connection)

Checking the Connection Mode of the Live-View Remote

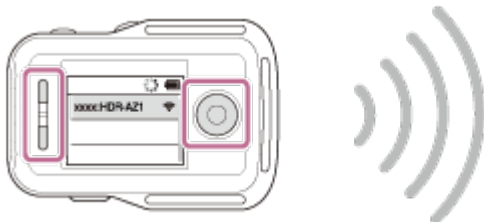
Check the connection mode of the remote control is set to the single connection before connecting the remote control and the camera through Wi-Fi.

1. Turn on the power of the remote control
2. Press the MENU button of the remote control to select ..... (Connection mode) in  (Remote control settings), then press the REC/ENTER button of the remote control
3. Check that ..... (Single connection) has been selected and then press the REC/ENTER button of the remote control
 - Change to ..... (Single connection) if ..... (Multi connection) is set.

Connecting the Live-View Remote to One Camera

You can easily operate all the functions of the camera by connecting one camera to the remote control through Wi-Fi.

1. Turn on the power of the camera
2. Press the Wi-Fi button of the camera to set the setting of the camera to **Wi-Fi** (Single connection)
3. Turn on the remote control
4. The Wi-Fi device selection screen is displayed on the LCD screen of the remote control. Select the SSID of the camera you want to connect with the UP button or DOWN button and press the REC/ENTER button.
 - Check that Wi-Fi of the camera is set to the single connection when SSID is not displayed.
 - SSID is indicated on the sticker attached to the back side of the battery pack cover of the camera.



5. Press and hold the Wi-Fi button of the camera when you hear the camera beep
 - The camera and remote control enter the waiting state for Wi-Fi certification. When you hear a beep sound at a long interval, press and hold the Wi-Fi button. The beep sounds at a short interval, and then connection is completed.
 - The display on the LCD screen of the remote control switches to the Live-View display and the REC/Wi-Fi lamp of the remote control lights up in blue.



Note

- [DIRECT-] is omitted from the camera SSID text string when it is displayed on the LCD screen of the remote control.
- You cannot copy images recorded in the camera to the remote control.
- The camera should only be connected to a smartphone or the remote control via Wi-Fi and not to other Wi-Fi access points. If you choose to connect the camera to other Wi-Fi access points, then you will do so at your own risk. The camera may be subject to unauthorized access and any content communicated may be at risk of interception.

[21] How to Use | Getting Started | Connecting the Live-View Remote to the Camera (Single Connection)

Establishing a Proper Connection

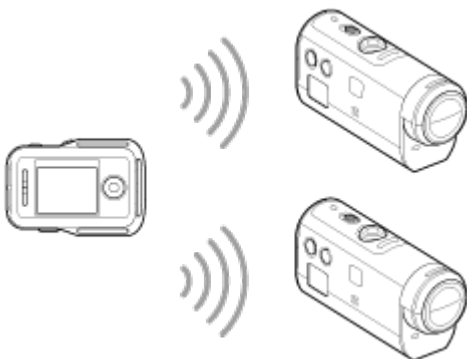
Try the following operations when the camera and the remote control cannot be connected through Wi-Fi.

- Check the connection modes of the camera and remote control are set to the single connection respectively. When both connection modes of the camera and remote control are not set to the single connection, change the connection modes and re-establish the connection.

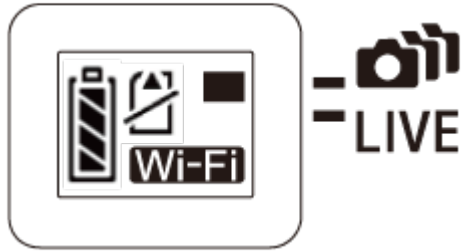
[22] How to Use | Getting Started | Connecting the Live-View Remote to Multiple Cameras (Multi Connection)





Connecting the Live-View Remote to Multiple Cameras

You can connect a maximum of five cameras to the remote control and operate all cameras simultaneously.




1. Turn on the power of the camera
2. Press the Wi-Fi button of the camera to switch to the multi connection







3. Turn on the remote control
4. Press the MENU button to select  (Connection mode) in  (Remote control setting), then select  (Multi connection)
5. Press the MENU button to select  (Device registration)
 - The device registration screen will be displayed on the LCD screen of the remote control, and the camera and remote control enter the waiting state for the multi connection.
6. Press and hold the Wi-Fi button of the camera
 - When a connection request is sent from the camera to the remote control, a beep sounds.
7. Press the OK button displayed on the LCD screen of the remote control.
 - After the connection is established, the LCD screen of the remote control switches to the Live-View display.
8. Repeat the procedure from step 1 to connect to an additional camera

Note

- Register each camera before the connection standby mode of the camera is cancelled.
- The multi camera control function is only available with compatible cameras.
- When operating a camera that does not support the multi camera control function, set the remote control to  (Single connection).
- You cannot copy images recorded in the camera to the remote control.
- The WPS method is used to connect the remote control to multiple cameras. If there is another device using the WPS method in the vicinity of the cameras, the registration may fail. If the registration fails, reconnect by performing each step again.
- The camera should only be connected to a smartphone or the remote control via Wi-Fi and not to other Wi-Fi access points. If you choose to connect the camera to other Wi-Fi access points, then you will do so at your own risk. The camera may be subject to unauthorized access and any content communicated may be at risk of interception.

Resetting the Connection Information of the Registered Cameras

This function is available only when the remote control is set to the multi connection.

1. Press the MENU button of the remote control to select   (Reset network settings) in  (Remote control setting)
 - Select **OK** to reset the network settings. Select  to cancel the resetting.

Installing the App on Your Smartphone

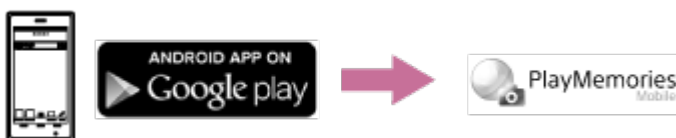
Install the PlayMemories Mobile on your smartphone or tablet. Update PlayMemories Mobile to the latest version if you have already installed it on your smartphone.

For the latest information and functional detail of PlayMemories Mobile, refer to the following website.

<http://www.sony.net/pmm/>

Android OS

Search for PlayMemories Mobile on Google Play, then install it.



- When using One-touch functions (NFC), Android 4.0 or later is required.

iOS

Search for PlayMemories Mobile on App Store, then install it.



- When using iOS, One-touch functions (NFC) are not available.

Note

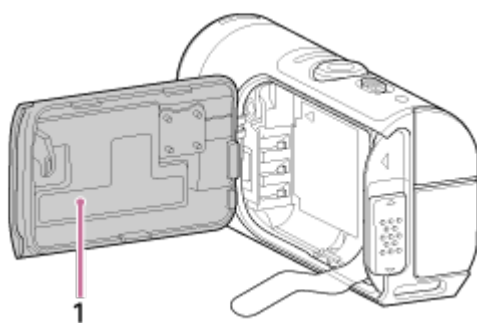
- An NFC-enabled smartphone or tablet is required for using One-touch functions (NFC) of the camera.
- The Wi-Fi function described in this Help Guide is not guaranteed to work with all smartphones and tablets.
- The operation methods and display screens for the application are subject to change without notice by future upgrades.

[25] How to Use | Getting Started | Connecting the Camera to Your Smartphone

Checking the ID/Password

Check the ID/password used to connect the camera to your smartphone.

- Check the password on the sticker (SSID label) attached to the back side of the battery pack cover.
- The ID/password is not necessary for one-touch connect by a smartphone.



1. SSID label

If the sticker is peeled off or becomes difficult to be read, you can recall your user ID and password by the following procedure.

1. Insert a charged battery pack into the camera
2. Connect the camera to a computer with the micro USB cable (supplied)
3. Press the ON/OFF button of the camera to turn on the power

4. Display [Computer] > [PMHOME] > [INFO] > [WIFI_INF.TXT] on your computer, then confirm the user ID and password

[26] How to Use | Getting Started | Connecting the Camera to Your Smartphone

Using One-touch Functions to Connect to an NFC-enabled Android Smartphone

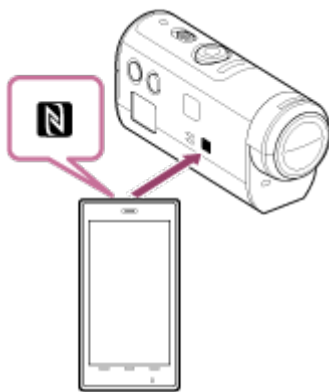
By easily connecting the camera to your smartphone, you can operate the camera with your smartphone as well as the bundled remote control.

1. Turn on the camera
2. Press the Wi-Fi button of the camera to display **Wi-Fi** (Single connection)
3. Select [Settings] on the smartphone, then select [More...] and checkmark [NFC] or [Reader/Writer]





4. Touch the smartphone and the camera



- Cancel the sleep mode and the screen lock of the smartphone beforehand.
- Touch and hold without moving until PlayMemories Mobile starts (1-2 seconds).
- Touch the **N** (N Mark) of the smartphone and the **N** (N Mark) on the side of the camera.
- Some smartphones with e-wallet functions support NFC. For details, refer to the operating instructions supplied with your smartphone.
- If the camera and the smartphone cannot be connected by NFC, connect them in the method described in Connecting to the Android Smartphone (connecting without NFC).

Note

- You cannot connect a smartphone to multiple cameras at the same time.
- Depending on local electrical environments or the performances of smartphones, the live-view images may not be displayed smoothly.
- When the airplane mode is set to [ON] on the remote control, the Wi-Fi function is not available.

Hint

- **About NFC**

NFC is a technology for short-range wireless communication among various devices, such as a mobile phone and IC tag etc. Data communication is achieved by simply touching a specific point. NFC (Near Field Communication) is an international standard of the short-range wireless communication technology.

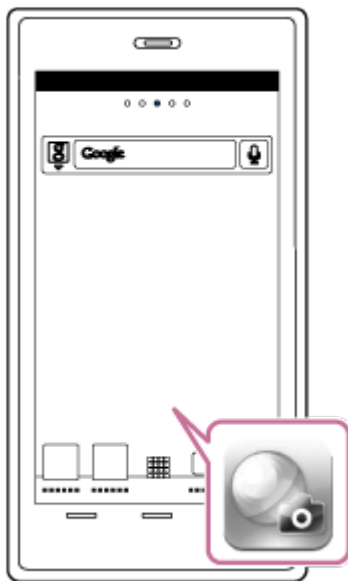
[27] How to Use | Getting Started | Connecting the Camera to Your Smartphone

Connecting to an Android Smartphone

By connecting the camera to your smartphone, you can operate the camera with your smartphone as well as the bundled remote control.

If the camera and the smartphone are connected without NFC, follow the following steps for the settings.

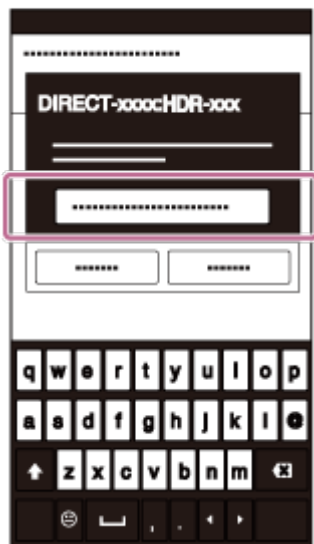
1. Turn on the power of the camera
2. Press the Wi-Fi button of the camera to display **Wi-Fi** (Single connection)
3. Start PlayMemories Mobile on the smartphone



4. Select the SSID, as printed on the sticker attached to the back side of the battery pack cover



5. Input the password on the sticker attached to the back side of the battery pack cover (First time only)



Note

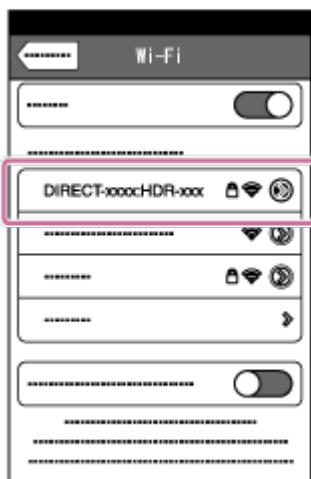
- You cannot connect a smartphone to multiple cameras at the same time.
- Depending on local electrical environments or the performances of smartphones, the live-view images may not be displayed smoothly.

[28] How to Use | Getting Started | Connecting the Camera to Your Smartphone

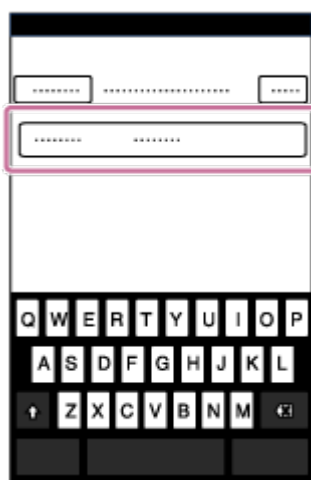
Connecting to iPhone

By connecting the camera to iPhone, you can operate the camera with iPhone as well as the bundled remote control.

1. Select [Settings] on the iPhone, then select [Wi-Fi] and the SSID of the camera



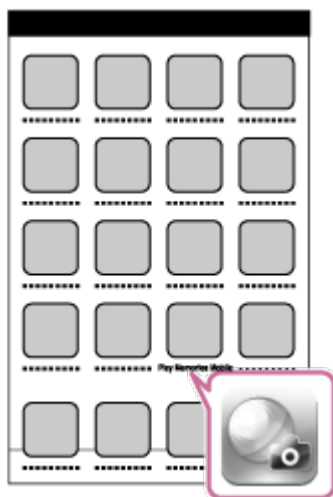
2. Input the password on the sticker attached to the back side of the battery pack cover (First time only)



3. Confirm the connection to the SSID on the attached sticker



4. Return to the Home screen, then start PlayMemories Mobile



Note

- You cannot connect an iPhone to multiple cameras at the same time.
- Depending on local electrical environments or the performances of iPhones, the live-view images may not be displayed smoothly.

[29] How to Use | Getting Started | Other Preparations (Using Accessories)

Using the Tripod Adaptor

By attaching the tripod adaptor to the camera, you can attach accessories to the camera without using the waterproof case. Opening/closing the connector cover of the Multi/Micro USB Terminal is also possible. This enables you to connect the camera to a computer or a USB device while the tripod adaptor is attached.

For details about the tripod adaptor, visit the following website.

http://rd1.sony.net/help/cam/1415/h_ zz/

[30] How to Use | Getting Started | Other Preparations (Using Accessories)

Using the Waterproof Case (SPK-AZ1)

By inserting the camera in the waterproof case, you can shoot movies under/near water.

For details about the waterproof case, visit the following website.

http://rd1.sony.net/help/cam/1415/h_ zz/

Using the Adhesive Mount

The adhesive mount is used to fix the waterproof case or tripod adaptor to an item you intend to use.

The adhesive mount is a general term for the attachment buckle, flat adhesive mount and curved adhesive mount. Before attaching, insert the camera in the waterproof case or attach the tripod adaptor.

For details about the adhesive mount visit the following website.

http://rd1.sony.net/help/cam/1415/h_zz/

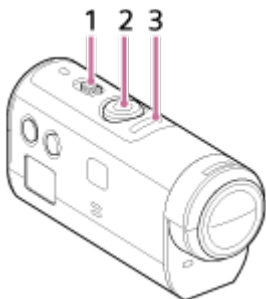
REC HOLD (Lock) Switch

The REC button can prevent accidental operation.

Slide the switch in the direction of [HOLD] to lock the REC button. To release the lock, back to the original position.

- Before recording, release the lock.
- If you lock the camera while recording, "it will continue recording*."
- If you lock the camera after you stop recording, "it will remain stopped*."

* Release the lock to change the setting.



1 REC HOLD (lock) switch

2 REC button

3 REC lamp/LIVE lamp

Button Hold Function of the Live-View Remote

Press the MENU button of the remote control connected to the camera for 2 seconds or more to activate the button hold function.



In the button hold function, **HOLD** appears on the LCD screen of the remote control. The REC button, DISP button, UP button and DOWN button of the remote control are disabled. To cancel the button hold function, press the MENU button of the remote control for 2 seconds or more, or press the ON/OFF button to turn off the power of the remote control.

Note

The button hold function is only available when the remote control is connected to a camera by Wi-Fi. When the remote control is not connected, the button hold function cannot be used.

- The button hold function cannot be used while the MENU items are displayed.
- When the Wi-Fi connection between the remote control and the camera is disconnected, the button hold function is cancelled.

Switching the Shooting Mode

Switch the shooting mode by pressing the UP/DOWN button on the LCD screen of the remote control.

The shooting mode icon will be displayed on the upper left side of the screen.



The shooting mode icons are as follows.

 Movie Mode: Records movies.



Photo mode: Records photos.



Interval photo recording mode: Continues to record photos at regular intervals.

Hint

- **Switch the shooting mode from the MENU items**


You can also switch the shooting mode from the MENU items of the remote control. The procedure for switching via the MENU items is as follows.

- Press the MENU button of the remote control to select **MODE: [Movie icon]** (Shooting mode) from the setting items. Select a desired shooting mode by pressing the UP/DOWN button of the remote control.

[35] How to Use | Shooting | Shooting Movies or Still Images

Movie Mode

Record movies.

1. Press the ON/OFF button of the camera to turn on the power of the camera
2. Slide the REC HOLD switch of the camera to release REC HOLD
 - If REC HOLD of the camera is released, proceed to step 3.
3. Switch the shooting mode to  (Movie mode) by pressing the UP/DOWN button of the remote control
4. Press the REC button of the camera or the remote control to start recording
 - The REC/Wi-Fi lamp of the remote control changes from blue to red.

To stop recording

Press the REC button of the camera or the remote control again.

The REC/Wi-Fi lamp of the remote control changes from red to blue.

Note


- Images cannot be played on the camera. To play back images, you need the supplied remote control or a smartphone with PlayMemories Mobile installed.
- During periods of extended shooting, the camera's temperature may rise to a point where shooting stops automatically.
- The shooting mode setting is set to the movie mode by default. For PHOTO/INTVL recording, you need the supplied remote control or a smartphone with PlayMemories Mobile installed.

The shooting mode set when the camera is turned off will be resumed when the camera is turned on the next time.

[36] How to Use | Shooting | Shooting Movies or Still Images

Photo Mode

Record photos.

1. Press the ON/OFF button of the camera to turn on the power of the camera
2. Switch the shooting mode to  (Photo mode) by pressing the UP/DOWN button of the remote control
3. Press the REC button of the camera or the remote control to start recording


Note

- Images cannot be played on the camera. To play back images, you need the supplied remote control or a smartphone with PlayMemories Mobile installed.
- During periods of extended shooting, the camera's temperature may rise to a point where shooting stops automatically.
- The shooting mode set when the camera is turned off will be resumed when the camera is turned on the next time.

[37] How to Use | Shooting | Shooting Movies or Still Images

Interval Photo Recording Mode

After you start shooting, the camera continues to record photos at regular intervals until you stop shooting.

1. Press the ON/OFF button of the camera to turn on the power of the camera
2. Switch the shooting mode to  (Interval photo recording) by pressing the UP/DOWN button of the remote control
3. Press the REC button of the camera or the remote control to start recording

To stop recording

Press the REC button of the camera or the remote control.
The REC/Wi-Fi lamp of the remote control changes from red to blue.

Note

- Images cannot be played on the camera. To play back images, you need the supplied remote control or a smartphone with PlayMemories Mobile installed.
- During periods of extended shooting, the camera's temperature may rise to a point where shooting stops automatically.
- The shooting mode set when the camera is turned off will be resumed when the camera is turned on the next time.

[38] How to Use | Shooting | Shooting Movies or Still Images

Recording for an Extended Time

Note the items below when recording for an extended time.

- When you continue to shoot for a long time, the temperature of the camera rises. If the temperature reaches above a certain level, shooting stops automatically. Leave the camera alone for 10 minutes or longer to allow the temperature inside the camera to decrease to a safe level.
- Under high ambient temperatures, the temperature of the camera rises quickly.
- When the temperature of the camera rises, the image quality may deteriorate. It is recommended that you wait until the temperature of the camera drops before continuing to shoot images.
- The surface of the camera may get warm with use - this is normal.

[39] How to Use | Changing the Settings of the Live-View Remote | List of Setting Items

List of Setting Items


You can check that the setting items and current setting items will be displayed and change the settings by pressing the MENU button of the remote control while the camera and remote control are connected through Wi-Fi.

You can select a setting from the following items.

Disconnect

 Disconnects the Wi-Fi connection and returns to the Wi-Fi device selection screen.


Device registration ^{*6}

 Registers a camera to connect to the remote control using the multi connection.

Play mode ^{*2}

 Plays and deletes images using the remote control.

Shooting Mode

MODE:  Switches between movie/still image/interval photo.


The setting items of the camera ^{*2}

- The items listed below can be set in the movie mode.

Movie settings

HQ Image quality setting: Sets the image resolution and frame rate to shoot movies.

: **ON** SteadyShot: Activates the camera-shake reduction.

: **OFF** Flip: Records the image upside down.


SCN : NORMAL Scene: Sets an image quality suitable for scenes.

COLOR: VIVID Color setting: Sets the image color tone.

: **MP4** Movie record format: Selects the movie record format.


- The items listed below can be set in the still image mode.


Still image settings

: **OFF** Flip: Records the image upside down.

SCN : NORMAL Scene: Sets an image quality suitable for scenes.


DRIVE :  Continuous shooting: Sets continuous shooting (Drive mode).

: **8 fps 1s** Continuous shooting interval ^{*3}: Sets continuous shooting intervals for high speed continuous shooting and motion shot LE shooting.


: **OFF** Self-timer: Sets the self-timer.

- The items listed below can be set in the interval photo recording mode.

Interval photo setting

: **OFF** Flip: Records the image upside down.

SCN : NORMAL Scene: Sets an image quality suitable for scenes.

: **2 sec** Time lapse: Sets the time lapse of the interval photo recording.

The setting items of connecting devices ^{*2}

Connecting devices settings



TC/UB Time code/user bit setting^{*4}: You can select the time code/user bit function setting.

: **OFF** IR-remote controller: Sets the infrared remote controller RMT-845 (sold separately).

NTSC → PAL Switching NTSC/PAL: Selects a setting, depending on the TV system of the country or region where you use this camera.

: **OFF** Auto power off: Sets the power of the camera to turn off automatically.

: **ON** Beep: Sets the Beep to ON/OFF.

FORMAT Format^{*3}: Deletes all images in the memory card and restores the memory card to its initial state.

The setting items of the remote control

Remote control settings

: **OFF** Screen rotation: Changes the directions of LCD monitor and UP button/DOWN button of the remote control.

: **HI** Monitor brightness: Sets LCD monitor brightness of the remote control.

Date & time setting: Sets the year/month/day and region.

Reset settings: Resets each setting value of the remote control to default setting value.

Version: Displays the software version of the remote control.

Connection mode^{*1, *5}: Sets the number of cameras connected to the remote control.

: **ON** GPS setting^{*5}: Records GPS log while recording movies and the location information while recording photos using GPS of the Live-View Remote.

: **OFF** Airplane mode^{*1}: Sets the camera to disable all functions related to the Wi-Fi function and GPS function temporarily when you are in an airplane.

Reset network settings^{*6}: Resets network settings for the multi connection.

^{*1} Not displayed when the camera and remote control are connected through Wi-Fi.

^{*2} Displayed only in the single connection.

^{*3} Displayed when a memory card is inserted.

^{*4} Displayed only when set to the movie mode.

^{*5} Not displayed when the airplane mode is set to ON.

^{*6} Displayed only for the multi connection.

Note


- The setting items of the camera are displayed only when the camera and remote control are connected through Wi-Fi (excluding the remote control settings).
- The icons displayed in the default settings are listed.
- To return to the setting item selection screen from the setting value selection screen, select .
- To perform the setting item in the selection screen or the setting value, select **OK**.

Image Quality Setting

You can set the image resolution and frame rate to shoot movies.

1. Press the MENU button of the remote control

The list of setting items will be displayed.

2. Press the UP button or DOWN button of the remote control to select **HQ** or **HD 30p50M** (Image quality setting) in  (Movie settings), then press the REC/ENTER button of the remote control

3. Press the UP button or DOWN button of the remote control to select the desired setting value, then press the REC/ENTER button of the remote control

XAVC S (When the movie record format is set to XAVC S)

HD 60p50M XAVC S 50 Mbps (default) *1

Resolution: 1920 × 1080

Imaging frame rate: 60p

Playback frame rate: 60p

HD 30p50M XAVC S 50 Mbps *1

Resolution: 1920 × 1080

Imaging frame rate: 30p

Playback frame rate: 30p

HD 24p50M XAVC S 50 Mbps *1

Resolution: 1920 × 1080

Imaging frame rate: 24p

Playback frame rate: 24p

HD 50p50M XAVC S 50 Mbps (default) *2

Resolution: 1920 × 1080

Imaging frame rate: 50p

Playback frame rate: 50p

HD 25p50M XAVC S 50 Mbps *2

Resolution: 1920 × 1080

Imaging frame rate: 25p

Playback frame rate: 25p

MP4 (When the movie record format is set to MP4)

PS Highest resolution (smooth image recorded at 4× frame rate)

Resolution: 1920 × 1080

Imaging frame rate^{*3}: 60p/50p

Playback frame rate^{*3}: 60p/50p

HQ Highest resolution (default)

Resolution: 1920 × 1080

Imaging frame rate^{*3}: 30p/25p

Playback frame rate^{*3}: 30p/25p

STD High resolution

Resolution: 1280 × 720

Imaging frame rate^{*3}: 30p/25p

Playback frame rate^{*3}: 30p/25p

HS 120 / HS 100 High speed recording (smooth image recorded at 4× frame rate)^{*4}

Resolution: 1280 × 720

Imaging frame rate^{*3}: 120p/100p

Playback frame rate^{*3}: 120p/100p^{*5}

SSLOW Super slow recording (slow motion image recorded at 4× frame rate)

Resolution: 1280 × 720

Imaging frame rate^{*3}: 120p/100p

Playback frame rate^{*3}: 30p/25p

VGA Standard resolution

Resolution: 640 × 480

Imaging frame rate^{*3}: 30p/25p

Playback frame rate^{*3}: 30p/25p

^{*1} When NTSC/PAL switching is set to NTSC.

^{*2} When NTSC/PAL switching is set to PAL.

^{*3} Frame rate depends on the NTSC/PAL setting.

^{*4} Action Cam Movie Creator converts the frame rate to 60p/50p and plays back images at standard speed. It also allows you to play back images in slow motion and edit them during slow motion playback.

^{*5} Depending on your device and software, images are played back at 60p/50p.

Note

- Use an SDXC card faster than Class10 when recording movies in XAVC S.
- The playback frame rate shown above is the frame rate when movies are played back using playback devices or software other than the remote control. The playback image frame rate displayed on the LCD screen of the bundled Live-View Remote will change





according to the Wi-Fi communication status of the camera and remote control (and it is different from the frame rate used when shooting).

- Continuous movie shooting time is approximately 13 hours. In SSLOW mode, it is approximately 3 hours.
- Audio is not recorded when images are recorded in [SSLOW] mode.
- The field angle changes when the movie size is set to [VGA].
- SteadyShot is not effective when the image quality setting mode is set to [HS120]/[HS100] or [SSLOW].

[41] How to Use | Changing the Settings of the Live-View Remote | Movie Settings

SteadyShot

You can activate the camera-shake reduction when shooting movies.

1. Press the MENU button of the remote control
The list of setting items will be displayed.
2. Press the UP button or DOWN button of the remote control to select : **ON**
(SteadyShot) in  (Movie settings), then press the REC/ENTER button of the remote control
3. Press the UP button or DOWN button of the remote control to select the desired value, then press the REC/ENTER button of the remote control
: **ON (default)**: Uses SteadyShot (Field angle: 120°)
: **OFF** : Does not use SteadyShot (Field angle: 170°)





Note

- The field angle changes when the movie size is set to [VGA].
- SteadyShot is not effective in the following settings.
 - When the movie size is set to [HS120]/[HS100] or [SSLOW]
 - In the photo mode
 - In the interval photo recording mode

[42] How to Use | Changing the Settings of the Live-View Remote | Movie Settings


Flip (Movies)

You can flip the images vertically and record them when recording movies. This function is useful when the camera is attached upside down.

1. Press the MENU button of the remote control
The list of setting items will be displayed.
2. Press the UP button or DOWN button of the remote control to select :OFF (Flip) in  (Movie settings), then press the REC/ENTER button of the remote control
3. Press the UP button or DOWN button of the remote control to select the desired setting value, then press the REC/ENTER button of the remote control
: ON : Flips vertically
:OFF (default): Does not flip vertically

[43] How to Use | Changing the Settings of the Live-View Remote | Movie Settings Scene (Movies)

You can set a scene when recording movies.


1. Press the MENU button of the remote control
The list of setting items will be displayed.
2. Press the UP button or DOWN button of the remote control to select **SCN : NORMAL** (Scene) in  (Movie settings), then press the REC/ENTER button of the remote control
3. Press the UP button or DOWN button of the remote control to select the desired setting value, then press the REC/ENTER button of the remote control
SCN : NORMAL (default) : Shoots images in the standard quality
SCN : WATER : Shoots images in an image quality suitable for bluish objects in such situations as in an aquarium or near a water tank under blue lighting

Note

- For details about the waterproof case, visit the following website.
http://rd1.sony.net/help/cam/1415/h_zz/

Color Setting

You can change the image color tone when shooting movies.

1. Press the MENU button of the remote control
The list of setting items will be displayed.
2. Press the UP button or DOWN button of the remote control to select **COLOR: VIVID** (Color setting) in  (Movie settings), then press the REC/ENTER button of the remote control
3. Press the UP button or DOWN button of the remote control to select the desired setting value, then press the REC/ENTER button of the remote control
COLOR : NUTRL : Records in natural colors
You can record in colors that are easy to correct in image editing after shooting.
COLOR: VIVID (default): Records in vivid colors
You can record in colors to improve a real sense of scale of active scenes.





Note

- You may feel that the level of contrast is low when shooting in NUTRL. This is not a malfunction.

[45] How to Use | Changing the Settings of the Live-View Remote | Movie Settings

Movie Record Format

You can select the movie record format when shooting movies.

1. Press the MENU button of the remote control
The list of setting items will be displayed.
2. Press the UP button or DOWN button of the remote control to select : **MP4** (Movie record format) in  (Movie settings), then press the REC/ENTER button of the remote control
3. Press the UP button or DOWN button of the remote control to select the desired setting value, then press the REC/ENTER button of the remote control
: **XAVCS** : Select this to record high quality movies at a high bit-rate of approximately 50 Mbps. In addition, you can set the time code/user bit.
: **MP4 (default)**: Select this when transferring images to your smartphone or





uploading images to a website.

Note

- Use an SDXC card faster than Class10 when recording movies in XAVC S.
- After selecting the movie record format, set the image quality setting as well.


[46] How to Use | Changing the Settings of the Live-View Remote | Still Image Settings Flip (Still Images)

You can flip the images vertically and record them when recording photos. This function is useful when the camera is attached upside down.

1. Press the MENU button of the remote control
The list of setting items will be displayed.
2. Press the UP button or DOWN button of the remote control to select :OFF (Flip) in  (Still image settings), then press the REC/ENTER button of the remote control
3. Press the UP button or DOWN button of the remote control to select the desired setting value, then press the REC/ENTER button of the remote control
: ON : Flips vertically
:OFF (default): Does not flip vertically

[47] How to Use | Changing the Settings of the Live-View Remote | Still Image Settings Scene (Still Images)

You can set a scene when recording photos.

1. Press the MENU button of the remote control
The list of setting items will be displayed.
2. Press the UP button or DOWN button of the remote control to select **SCN : NORMAL** (Scene) in  (Still images settings), then press the REC/ENTER button of the remote control
3. Press the UP button or DOWN button of the remote control to select the desired setting

value, then press the REC/ENTER button of the remote control

SCN : NORMAL (default) : Shoots images in the standard quality

SCN : WATER : Shoots images in an image quality suitable for bluish objects in such situations as in an aquarium or near a water tank under blue lighting



Note

- For details about the waterproof case, visit the following website.
http://rd1.sony.net/help/cam/1415/h_zz/


[48] How to Use | Changing the Settings of the Live-View Remote | Still Image Settings


Continuous Shooting

You can select either one file shooting or continuous shooting when recording photos.

1. Press the MENU button of the remote control
The list of setting items will be displayed.
2. Press the UP button or DOWN button of the remote control to select **DRIVE** : 
(Continuous shooting) in  (Still image settings), then press the REC/ENTER button of the remote control
3. Press the UP button or DOWN button of the remote control to select the desired setting value, then press the REC/ENTER button of the remote control

DRIVE :  **One file shooting (Single shoot) (default)**: Image size 11.9M
Records one still image.

DRIVE :  **High speed continuous shooting**: Image size 11.9M
Shoots continuously at the frame rate and duration specified in the continuous shooting interval setting.

DRIVE :  **Motion shot LE**: Image size 3.0M
Automatically creates one composite photo from the images that were shot continuously at the frame rate and duration specified in the continuous shooting interval setting.

To perform Motion shot LE well

Attempt the following methods of shooting.

- Hold the camera securely to enhance steady shots.
- In order to enhance steady shots, you can achieve better performances with the combination of the remote control operations or self-timer functions of a smartphone.
- Be careful not to select too big a moving object or too many objects.

- Be aware of shooting in as light a place as possible without brightness differences.

To perform high speed continuous shooting well

Attempt the following methods of shooting.

- Hold the camera securely to enhance steady shots.
- In order to enhance steady shots, you can achieve better performances with the combination of the remote control operations or self-timer functions of a smartphone.



Note

- [FAIL] will be displayed on the LCD screen of the remote control when the motion shot LE composite has failed. Images may not be saved depending on the timing of displaying [FAIL].
- There is a processing time to move on to next operation after high speed continuous shooting/motion shot LE.
- Only one photo is transferred to a smartphone. In the case of high speed continuous shooting, the last photo is transferred. In the case of motion shot LE, the composite photo is transferred.

[49] How to Use | Changing the Settings of the Live-View Remote | Still Image Settings

Continuous Shooting Interval

You can set the continuous shooting speed for high speed continuous shooting and motion shot LE shooting.


1. Press the MENU button of the remote control
The list of setting items will be displayed.
2. Press the UP button or DOWN button of the remote control to select : 8 fps 1s (Continuous shooting interval) in  (Still image settings), then press the REC/ENTER button of the remote control
3. Press the UP button or DOWN button of the remote control to select the desired setting value, then press the REC/ENTER button of the remote control

: 8 fps 1s **(8fps 1s) (default): Totally records 10 photos at a speed of 8 photos per second in 1.25 seconds**

Appropriate to record comparatively fast moving objects.

: 5 fps 2s **(5fps 2s): Totally records 10 photos at a speed of 5 photos per second in 2 seconds**

Appropriate to record the action of a person or people.

: **2 fps 5s (2fps 5s): Totally records 10 photos at a speed of 2 photos per second in 5 seconds**






Appropriate to record comparatively slowly moving objects.

Note


- [8fps], [5fps], and [2fps] are estimated maximum speeds. The speed may not reach the maximum speed in some shooting conditions.

[50] How to Use | Changing the Settings of the Live-View Remote | Still Image Settings Self-Timer

You can use the self-timer when recording photos.

1. Press the MENU button of the remote control
The list of setting items will be displayed.
2. Press the UP button or DOWN button of the remote control to select : **OFF** (Self-timer) in  (Still image settings), then press the REC/ENTER button of the remote control
3. Press the UP button or DOWN button of the remote control to select the desired setting value, then press the REC/ENTER button of the remote control
 - : **OFF (default)**: Does not use the self-timer
 - : **2 sec** : Sets the self-timer to after 2 seconds
 - : **10 sec** : Sets the self-timer to after 10 seconds

Note

- You cannot use the self-timer when recording movies.
- The self-timer function is enabled until released. Set the self-timer to : **OFF** after using it.


[51] How to Use | Changing the Settings of the Live-View Remote | Interval Photo Settings

Flip (Interval Photo Recording)

You can flip the images vertically and record them during the interval photo recording. This function is useful when the camera is attached upside down.

1. Press the MENU button of the remote control

The list of setting items will be displayed.

2. Press the UP button or DOWN button of the remote control to select **☐:OFF** (Flip) in  (Interval photo settings), then press the REC/ENTER button of the remote control
3. Press the UP button or DOWN button of the remote control to select the desired setting value, then press the REC/ENTER button of the remote control

☐: ON : Flips vertically

☐:OFF (default): Does not flip vertically


[52] How to Use | Changing the Settings of the Live-View Remote | Interval Photo Settings

Scene (Interval Photo Recording)

You can set a scene during the interval photo recording.

1. Press the MENU button of the remote control

The list of setting items will be displayed.









2. Press the UP button or DOWN button of the remote control to select **SCN : NORMAL** (Scene) in  (Interval photo settings), then press the REC/ENTER button of the remote control
 3. Press the UP button or DOWN button of the remote control to select the desired setting value, then press the REC/ENTER button of the remote control
- SCN : NORMAL (default)** : Shoots images in the standard quality
- SCN : WATER** : Shoots images in an image quality suitable for bluish objects in such situations as in an aquarium or near a water tank under blue lighting

Note

- For details about the waterproof case, visit the following website.
http://rd1.sony.net/help/cam/1415/h_zz/
-

Time Lapse

You can set the time lapse of the interval photo recording.


1. Press the MENU button of the remote control
The list of setting items will be displayed.
2. Press the UP button or DOWN button of the remote control to select : **2 sec** (Time lapse) in  (Interval photo settings), then press the REC/ENTER button of the remote control
3. Press the UP button or DOWN button of the remote control to select the desired setting value, then press the REC/ENTER button of the remote control
 - : **1 sec** : Continues to record photos at about 1-second intervals
 - : **2 sec (default)**: Continues to record photos at about 2-second intervals
 - : **5 sec** : Continues to record photos at about 5-second intervals
 - : **10 sec** : Continues to record photos at about 10-second intervals
 - : **30 sec** : Continues to record photos at about 30-second intervals
 - : **60 sec** : Continues to record photos at about 60-second intervals

Note

- The first photo is recorded immediately when recording starts, without waiting for the set interval. The second and subsequent photos are recorded at the set intervals.
- The maximum number of recordable files is 40,000 in total, including movie files.

Time Code/User Bit Setting

You can use the time code/user bit when the shooting mode is set to the movie mode and the movie record format is set to XAVC S.

1. Press the MENU button of the remote control
The list of setting items will be displayed.
2. Press the UP button or DOWN button of the remote control to select **TC/UB** (Time code/User bit) in  (Connecting devices settings), then press the REC/ENTER

button of the remote control

3. Press the UP button or DOWN button of the remote control to select the desired setting value, then press the REC/ENTER button of the remote control

TC PRESET : Sets the time code

- Select 4-digit numbers, then press the REC/ENTER button of the remote control.
- The time code can be selected within the following range.
 - When selecting 30p or 60p
00:00:00:00 (default) - 23:59:59:29
 - When selecting 25p or 50p
00:00:00:00 (default) - 23:59:59:24
- When selecting 24p, you can set the last 2 time code digits of the frames in multiples of 4, between 0 and 23.
- You can set the items below.

TC FORMAT

FORMAT : DF (default): Records the time code in drop frame

FORMAT : NDF : Records the time code in non-drop frame

- In the following situation, time code is recorded in [NDF], and Format will not be displayed.
 - When the TV system is [PAL].

TC RUN

RUN : FREE : The time code advances sequentially, regardless of the operation of the camera

RUN : REC (default): The time code advances only during XVAC S movie recording , and it starts recording sequentially from the time code of the last recorded image

TC MAKE

MAKE : PRESET (default): The newly set-up time code is recorded on recording media

MAKE : REGEN : The last time code of the previous recording is read out from the recording media and the new time code is recorded sequentially from the last time code.

- The time code advances in the REC mode regardless of the setting of **RUN : REC** .

UB PRESET : Sets the user bit

- Set 4-digit numbers, then press the ENTER button.
The user bit can be selected within the following range.
00:00:00:00 (default) - FF:FF:FF:FF
- You can set the items below.

UB TIME REC

: Records the time as the user bit

⌚ REC : ON

⌚ REC : OFF (default): Does not record the time as the user bit

To reset

All of the values will be 0 if you press the DISP button of the remote control while selecting TC PRESET or UB PRESET using the remote control. All of the values will be reset if you press the REC/ENTER button of the remote control once again.

Note

- Time code/User bit can be set only for the movie mode.
- Use an SDXC card faster than Class10 when recording movies in XAVC S.
- When the remote control is not connected to the camera through Wi-Fi, the camera settings cannot be changed.
- To return to the setting item selection screen from the setting value selection screen, select ↶.
- To perform the setting item in the selection screen or the setting value, select **OK**.

Hint

- **About time code**

Time code is a useful function for advanced image editing, by recording hours/minutes/seconds/frames on the image data.

When TV system is set to [NTSC] and the frame rate is 30p or 60p, gaps between the actual time and the time code occur during extended periods of recording as there is a slight difference between the number of frames of the time code and the actual frame frequency of NTSC image signal per second. Drop frame corrects these gaps to ensure that the time code matches the actual time. The first frame numbers (the first 2 frame numbers for 30p or the first 4 for 60p) are removed every minute except in every ten minute. Time code without this correction is called non-drop frame.





- **About the user bit**

User bit is a function that can record information (8-digit hexadecimal numbers) such as date/time/scene number. This function is useful to edit movies using two or more cameras.

[55] How to Use | Changing the Settings of the Live-View Remote | Connecting Devices Settings

IR-Remote Controller

You can operate the camera using an infrared remote controller (RMT-845 (sold separately)).

1. Press the MENU button of the remote control
The list of setting items will be displayed.
2. Press the UP button or DOWN button of the remote control to select  : **OFF** (IR-remote controller) in  (Connecting devices settings), then press the REC/ENTER button of the remote control
3. Press the UP button or DOWN button of the remote control to select the desired setting value, then press the REC/ENTER button of the remote control
 : **ON** : Allows you to operate the camera using the infrared remote controller
 : **OFF (default)**: Prevents the operation of the camera using the infrared remote controller


Note

- The infrared remote controller RMT-845 (sold separately) is required to use this function. Purchase one at a Sony service center.
- You can operate only in the following settings using the RMT-845 (sold separately). Other settings are inoperable.
 - Reset the time code
 - Start/stop recording

[56] How to Use | Changing the Settings of the Live-View Remote | Connecting Devices Settings

Switching NTSC/PAL

You can select a setting, depending on the TV system of the country or region where you use this camera.

1. Press the MENU button of the remote control
The list of setting items will be displayed.
2. Press the UP button or DOWN button of the remote control to select **NTSC → PAL** (Switching NTSC/PAL) in  (Connecting devices settings), then press the REC/ENTER button of the remote control
3. Press the UP button or DOWN button of the remote control to select the desired setting value, then press the REC/ENTER button of the remote control
PAL → NTSC : Select when the TV system is NTSC.
NTSC → PAL : Select when the TV system is PAL.



Note


- When you change the settings by remote control, the camera and remote control will be disconnected and the camera will restart automatically. When the restart of the camera is completed, the remote control and the camera will be automatically connected.
- Recording media formatted or recorded in NTSC (PAL) cannot be recorded or played in PAL (NTSC). After switching the NTSC/PAL setting, format the current recording media or use another recording media.


[57] How to Use | Changing the Settings of the Live-View Remote | Connecting Devices Settings

Auto Power Off


You can change the auto power off setting of the camera.

1. Press the MENU button of the remote control
2. Press the UP button or DOWN button of the remote control to select :OFF (Auto power off) in  (Connecting devices settings), then press the REC/ENTER button of the remote control
3. Press the UP button or DOWN button of the remote control to select the desired setting value, then press the REC/ENTER button of the remote control

:60sec (default): Turns the power of the camera off after about 60 seconds





:OFF : Does not use the auto power off function

Note


- Auto power off is not available in the following situations.
 - Recording data to media
 - Shooting movies, or shooting in the interval photo recording mode
 - During movie playback or live streaming
 - Wi-Fi connection is in process, Wi-Fi remote control is connected, or an Image is being uploaded to a smartphone
 - Connecting to a mass storage device
- When the remote control is not connected to the camera through Wi-Fi, the camera settings cannot be changed.
- To return to the setting item selection screen from the setting value selection screen, select .
- To perform the setting item in the selection screen or the setting value, select **OK**.

Beep

You can set the beep of the camera to ON/OFF.



1. Press the MENU button of the remote control
The list of setting items will be displayed.
2. Press the UP button or DOWN button of the remote control to select : **ON** (Beep) in  (Connecting devices settings), then press the REC/ENTER button of the remote control
3. Press the UP button or DOWN button of the remote control to select the desired setting value, then press the REC/ENTER button of the remote control
: **ON (default)**: Beeps
: **OFF**: Does not beep

Note


- When the remote control is not connected to the camera through Wi-Fi, the camera settings cannot be changed.
- To return to the setting item selection screen from the setting value selection screen, select .
- To perform the setting item in the selection screen or the setting value, select **OK**.

Format


You can delete all movies and photos in the media and reset the memory capacity of the media.

1. Press the MENU button of the remote control
The list of setting items will be displayed.
2. Press the UP button or DOWN button of the remote control to select  **FORMAT** (Format) in  (Connecting devices settings), then press the REC/ENTER button of

the remote control

- Formatting is complete.
- Select  (Back), then press the REC/ENTER button to cancel the formatting.





Note

- Save important images to devices such as a computer before formatting.
- Do not perform any of the following operations while formatting.
 - Press a button
 - Eject the Memory card
 - Connect/disconnect a cable
 - Insert/remove the battery pack
- When the remote control is not connected to the camera through Wi-Fi, the camera settings cannot be changed.
- To return to the setting item selection screen from the setting value selection screen, select .
- To perform the setting item in the selection screen or the setting value, select **OK**.


[60] How to Use | Changing the Settings of the Live-View Remote | Remote Control Settings

Screen Rotation

You can change the directions of LCD monitor and UP button/DOWN button of the remote control. You can use the screen rotation to wear the belt on the right wrist.

1. Press the MENU button of the remote control
The list of setting items will be displayed.
2. Press the UP button or DOWN button of the remote control to select :OFF (Screen rotation) in  (Remote control settings), then press the REC/ENTER button of the remote control
3. Press the UP button or DOWN button of the remote control to select the desired setting value, then press the REC/ENTER button of the remote control
 - : ON : Rotates the screen
 - :OFF (default): Does not rotate the screen





Note

- To return to the setting item selection screen from the setting value selection screen, select .
- To perform the setting item in the selection screen or the setting value, select **OK**.


[61] How to Use | Changing the Settings of the Live-View Remote | Remote Control Settings

Monitor Brightness

You can set the LCD monitor brightness of the remote control.

1. Press the MENU button of the remote control
The list of setting items will be displayed.
2. Press the UP button or DOWN button of the remote control to select  : **HI** (Monitor brightness) in  (Remote control settings), then press the REC/ENTER button of the remote control
3. Press the UP button or DOWN button of the remote control to select the desired setting value, then press the REC/ENTER button of the remote control
 : **HI (default)**: Bright
 : **LO** : Dark


Note


- To return to the setting item selection screen from the setting value selection screen, select .
- To perform the setting item in the selection screen or the setting value, select **OK**.
- You cannot set the LCD monitor brightness when power is supplied from the Multi/Micro USB Terminal (Fixed to “Bright”).

[62] How to Use | Changing the Settings of the Live-View Remote | Remote Control Settings

Date & Time Setting

You can set the year/month/day and region.

1. Press the MENU button to display the setting items. Then select  (Date & time

setting) in  (Remote control settings)

2. Select the desired date format and then press the REC/ENTER button of the remote control

Y-M-D: Year-Month-Day

M-D-Y: Month-Day-Year

M(Eng)-D-Y: Month (in English)-Day-Year


D-M-Y: Day-Month-Year

GMT+0.0: Sets the region

Regions are defined by the time difference from Greenwich Mean Time (GMT).

3. Press the UP button or DOWN button of the remote control to set the desired date and then press the REC/ENTER button to set the date and time

Note

- To return to the setting item selection screen from the setting value selection screen, select .
- To perform the setting item in the selection screen or the setting value, select **OK**.

[63] How to Use | Changing the Settings of the Live-View Remote | Remote Control Settings



Reset Settings

You can reset the settings of the remote control to their defaults. Even if you activate reset settings, images will not be deleted.

- The settings of the camera will not be reset even if those of the remote control are reset.

1. Press the MENU button of the remote control

The list of setting items will be displayed.

2. Press the UP button or DOWN button of the remote control to select  (Reset settings) in  (Remote control settings), then press the REC/ENTER button of the remote control

3. Press the UP button or DOWN button of the remote control to select the desired setting value, then press the REC/ENTER button of the remote control

Note

- To return to the setting item selection screen from the setting value selection screen,



select .

- To perform the setting item in the selection screen or the setting value, select **OK**.


[64] How to Use | Changing the Settings of the Live-View Remote | Remote Control Settings

Version

You can display the software version of the remote control.





1. Press the MENU button of the remote control
The list of setting items will be displayed.
2. Press the UP button or DOWN button of the remote control to select  (Version) in  (Remote control settings), then press the REC/ENTER button of the remote control

Note


- To return to the setting item selection screen from the setting value selection screen, select .
- To perform the setting item in the selection screen or the setting value, select **OK**.

[65] How to Use | Changing the Settings of the Live-View Remote | Remote Control Settings

Connection Mode

1. Press the MENU button of the remote control
The list of setting items will be displayed.
2. Press the UP button or DOWN button of the remote control to select  (Connection mode) in  (Remote control settings), then press the REC/ENTER button of the remote control
3. Press the UP button or DOWN button of the remote control to select the desired setting value, then press the REC/ENTER button of the remote control
 **(default)**: Single connection
 : Multi connection

Note





- The displayed icons differ depending on the conditions of connection settings on the remote control.
- To return to the setting item selection screen from the setting value selection screen, select .
- To perform the setting item in the selection screen or the setting value, select **OK**.

[66] How to Use | Changing the Settings of the Live-View Remote | Remote Control Settings

GPS Setting


You can record the location information and the movement speed while recording movies and the location information while recording photos using the GPS function of the remote control, and transfer them to the camera.

Action Cam Movie Creator allows you to import movies recorded with GPS log (the location information, the movement speed) to a computer and view them with a map.

1. Press the MENU button of the remote control
The list of setting items will be displayed.
2. Press the UP button or DOWN button of the remote control to select : **ON** (GPS setting) in  (Remote control settings), then press the REC/ENTER button of the remote control
3. Press the UP button or DOWN button of the remote control to select the desired setting value, then press the REC/ENTER button of the remote control
: **ON (default)**: Records movies with the GPS log (the location information, the movement speed) and still images with location information
: **OFF**: Does not use GPS function

Note



- If you do not record the GPS log and the location information, set the GPS setting to [OFF].
- During takeoff and landing of an airplane, set the airplane mode to [ON].
- Use GPS in accordance with regulations of countries and regions where you use it.
- It may take from several tens of seconds to several minutes to record the location information when you use the GPS for the first time or use it again after long intervals. Triangulating time can be shortened by taking in GPS assist data.


- The GPS antenna is built in the front of the remote control. Placing the remote control upside down may cause positioning to take long time or may not be able to determine your position.
- Sony does not collect location information and routing information.
- The maximum number of log files that can be recorded is 256/day. When the maximum number of recorded log files is reached, you can continue to shoot images, however log files will not be recorded.
- The GPS functions of the bundled remote control RM-LVR2V are not compatible with cameras other than HDR-AZ1.
- To return to the setting item selection screen from the setting value selection screen, select .
- To perform the setting item in the selection screen or the setting value, select **OK**.


[67] How to Use | Changing the Settings of the Live-View Remote | Remote Control Settings

Airplane Mode

When you are in an airplane, you can set the remote control to disable all functions related to the Wi-Fi and GPS.


1. Press the MENU button of the remote control
The list of setting items will be displayed.
2. Press the UP button or DOWN button to select :OFF (Airplane mode) in 
(Remote control settings), then press the REC/ENTER button
3. Press the UP button or DOWN button of the remote control to select the desired setting value, then press the REC/ENTER button of the remote control

: **ON (default)**: Select this when you are on board an airplane
The Wi-Fi/GPS function is disabled.

: **OFF (default)**: Select this for normal use
The Wi-Fi/GPS function is enabled.





When you are in an airplane, set the airplane mode of the remote control to ON and also set the Wi-Fi mode of the camera to OFF.

Note


- To return to the setting item selection screen from the setting value selection screen, select .
- To perform the setting item in the selection screen or the setting value, select **OK**.

Resetting the Network Settings for Multi Connection

You can reset multi connected network settings.

1. Press the MENU button of the remote control
The list of setting items will be displayed.
2. Press the UP button or DOWN button of the remote control to select   (Reset network settings) in  (Remote control settings), then press the REC/ENTER button of the remote control
3. Press the UP button or DOWN button of the remote control to select **OK** , then press the REC/ENTER button of the remote control
When setting to the multi connection after the reset is completed, you are required to register devices once again even though they have been already registered.
 - If  (Back) is selected on the confirmation screen, the resetting is cancelled.




Note

- To return to the setting item selection screen from the setting value selection screen, select  (Back).
- To perform the setting item in the selection screen or the setting value, select **OK** .

Playback Using the Live-View Remote



Play back images recorded with the camera using the remote control.

The procedure below explains how to play back movies.

1. Press the MENU button of the remote control while selecting the shooting mode, press the UP button or DOWN button of the remote control to select    (Playback using the remote control), then press the REC/ENTER button of the remote control
2. Select the desired image by pressing the UP/DOWN button

3. Press the REC/ENTER button of the remote control to start playback
4. Press the UP button of the remote control during movie playback

Returning to the shooting mode

To return to the shooting mode, select   (Shooting Mode) and press the REC/ENTER button of the remote control.

Note

- The camera cannot play back audio.
- The image frame rate displayed on the LCD screen when using the remote control for playback will change according to the Wi-Fi communication status of the camera and remote control. This frame rate is different from the one used when shooting.

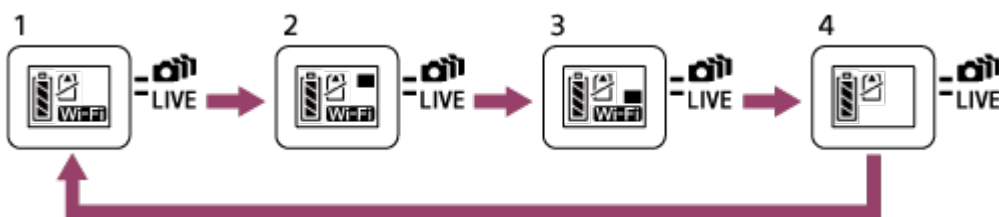
Hint

- You can fast-forward by pressing the UP button of the remote control and fast-rewind by pressing the DOWN button.

[70] How to Use | Viewing | Switching the Display of the Camera and the Live-View Remote

Switching the Connection Mode of the Camera

Every time the Wi-Fi button of the camera is pressed, the Wi-Fi connection mode of the camera will be switched as follows.



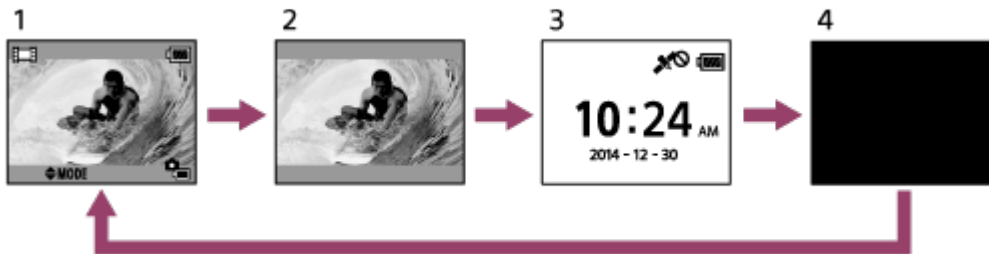
- 1 Set the Wi-Fi to ON (Single connection)
- 2 Connect to multiple cameras (Multi connection)
- 3 Perform live streaming (Live connection)
- 4 Switch off the Wi-Fi (OFF)

Note

- The connection mode for Wi-Fi is set to the single connection by default.
-

Switching the LCD Screen of the Live-View Remote

When the remote control is connected to the camera through Wi-Fi, pressing the DISP button of the remote control switches the LCD screen display as follows.



1 Live-View display

2 Icon off




3 Clock display

4 Screen off (only in the multi connection setting)

- Shooting information is displayed in the single connection setting.

Deleting

Delete unnecessary images saved in the memory card of the camera.

1. Press the MENU button of the remote control while selecting the shooting mode, press the UP button or DOWN button of the remote control to select  →  (Playback using the remote control), then press the REC/ENTER button of the remote control
2. Press the UP button or DOWN button of the remote control to select an image to delete, then press the MENU button of the remote control
3. Select  (Delete) and then press REC/ENTER button of the remote control
4. Select **OK** on the confirmation screen and press the REC/ENTER button of the remote control to delete

Note

- You can delete images only in the single connection.

- You can delete one image at a time.
- Format the memory card when you want to delete all of the images.

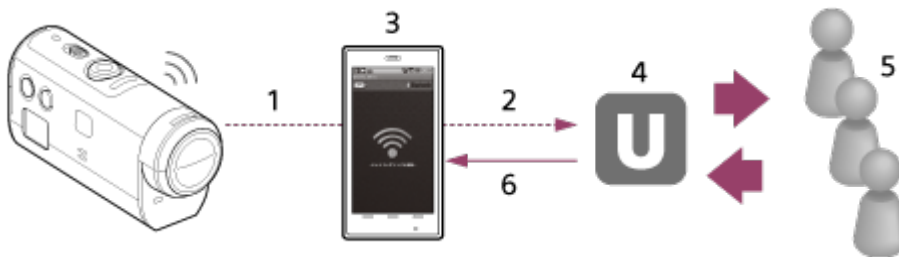
[73] How to Use | Live Streaming of Movies | Live Streaming with the Camera (Live Connection)

Live Streaming

Live stream movies via video sharing websites such as USTREAM by using a Wi-Fi router or smartphone that can tether the camera.

You can send* distribution start messages to previously set SNS (Facebook, Twitter, etc.) when starting the live distribution of movies.

* User registration for live distribution websites or SNS is required.



- 1 Wi-Fi
- 2 3G/LTE
- 3 Tethering Mode
- 4 USTREAM
- 5 Audience
- 6 Comments from audience

The following preparations are required for the live streaming.

Set the following distribution settings in the live streaming settings of the camera:

- User registration for USTREAM
- Smartphones (tethering) with cameras for Wi-Fi network connection or Wi-Fi network environments

* For more information about smartphone tethering settings or Wi-Fi network settings, refer to the operating instructions supplied with the smartphone or network service. For further details about the network environment, contact your network service provider.

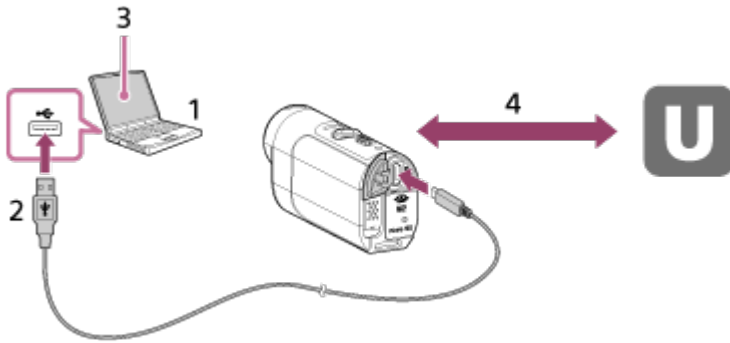
[74] How to Use | Live Streaming of Movies | Live Streaming with the Camera (Live Connection)

Preparing for Live Streaming

Complete the network settings via a dedicated application “Network setting tool”, the account registration for video distribution sites and SNS settings in advance.

Download “Network setting tool” from the following website.

<http://www.sony.net/nst/>



1. Enter information for USTREAM account and "Network setting tool"
 2. USB
 3. “Network setting tool”
 4. OAuth authentication
- Obtain Channel ID

Reset the network setting tool

Set the distribution settings below in the live streaming settings of the camera.

- Network settings
You can set Wi-Fi network settings to which the camera is connected.
 - Network SSID, password, security method
- Streaming settings
You can set the movie distribution method.
 - Destinations, channels, image quality, saving settings at destinations
 - Titles and descriptions
- SNS settings
You can post comments when the movie distribution starts in coordination with social network.
 - Connection settings for Twitter, Facebook
 - Comments to be posted

USTREAM

USTREAM is an online video sharing site where you can distribute and view movies with the live streaming function of the camera.

For details, visit the USTREAM website below.

<http://www.ustream.tv/>

Note

- Your personal information (required for the login for USTREAM, Twitter and Facebook) is to be set in the camera. Be sure to reset the settings of the camera by pressing the RESET (Reset) button in boot state when transferring to third parties or disposing of the camera. Be sure to reset the settings by pressing the RESET (Reset) button of the camera in boot state.

[75] How to Use | Live Streaming of Movies | Live Streaming with the Camera (Live Connection)

Performing for Live Streaming

You can start the live distribution when the preparation for the live streaming is complete. For the initial live distribution, we recommend trial distribution in a well prepared environment after prior settings on a computer.

1. Press the Wi-Fi button of the camera to select [LIVE]
2. Press the REC button of the camera to start the live distribution
The REC lamp on the top of the camera lights up in blue.
3. Press the REC button once again to stop the live distribution

Note

- It may take 10 to 20 seconds to start the actual distribution in the movie distribution site after the distribution of the camera is started.
- You can record movies that are being live distributed in the memory card of the camera. When the memory card is already inserted, movies are recorded at the same time as the distribution*.
- When the capacity of the memory card is full, only the movie recording will stop without stopping the distribution.
- Only movie distributions will be performed when no memory card is inserted.





* Simultaneously recorded movies are processed on MP4/HQ mode.

REC lamp in real-time distribution

You can check the state of live streaming distribution by the REC lamp when selecting the live streaming mode.



1 REC lamp

-  OFF: Before distribution
-  Lights up in blue: In distribution
-  Blinks slowly in blue (Approx. blinks 1 time per second): In distribution (There is an audience)
-  Blinks fast in red (Approx. blinks 3 times per second): Distribution error

[76] How to Use | Computer | Action Cam Movie Creator

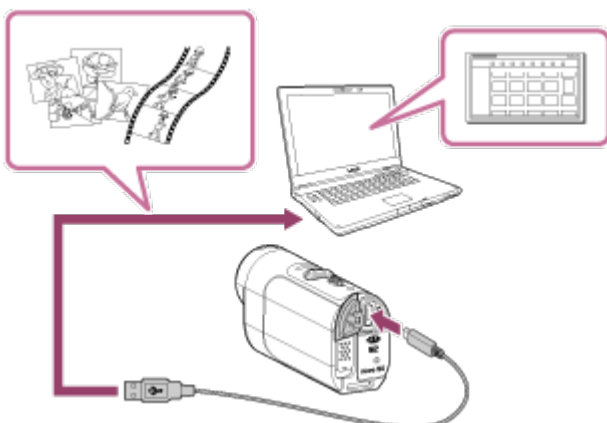
Useful Functions of Action Cam Movie Creator

Action Cam Movie Creator allows you to import movies to your computer to edit and use them in a variety of ways.

Visit the following URL to install the software.

<http://www.sony.net/actioncam/support/>

Two software applications, Action Cam Movie Creator, which can edit movies, and PlayMemories Home, which can manage movies and photos, will be installed simultaneously.



Useful functions of Action Cam Movie Creator

- Editing movies and displaying them with tracking information and movement speed

Useful functions of PlayMemories Home

- Import and play back movies and photos
- Use the micro USB cable (supplied) when connecting the camera to your computer.

Note

- Use PlayMemories Home when importing movies to your computer. GPS information will be lost if movies are imported using a different method.

[77] How to Use | Computer | Action Cam Movie Creator

Checking the Computer Environment

For information about the computer environment for the software, refer to the following website.

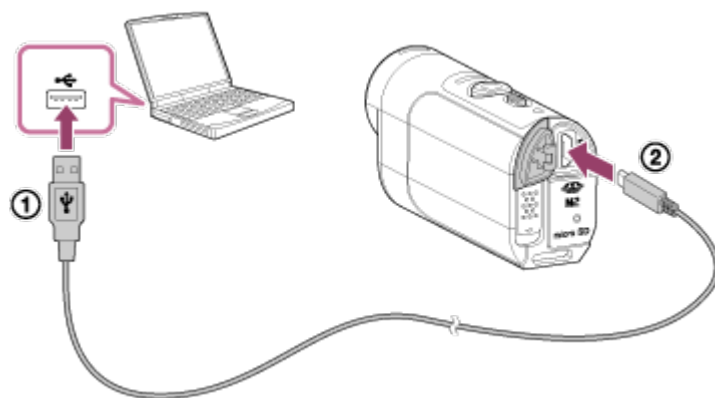
<http://www.sony.net/pcenv/>

[78] How to Use | Computer | Action Cam Movie Creator

Installing Action Cam Movie Creator

Install Action Cam Movie Creator on your computer. Follow the steps below.




1. Turn on the computer
 - Log on as an Administrator.
 - Close all applications running on the computer before installing the software.
2. Visit the following URL with the Internet browser of the computer and install Action Cam Movie Creator
<http://www.sony.net/actioncam/>
 - When the installation is completed, Action Cam Movie Creator starts up.
3. Connect the camera to the computer with the supplied micro USB cable
 - New functions may be added to Action Cam Movie Creator. Even if Action Cam Movie Creator is already installed on your computer, connect the camera to your computer.



① To USB jack

② To Multi/Micro USB Terminal


Note

- Do not disconnect the micro USB cable (supplied) from the camera while the computer screen indicates that the camera is being operated or accessed. Doing so may cause data corruption.
- To disconnect the computer from the camera, click  on the task tray, then click  (icon to remove). For Windows Vista, click  on the task tray.

[79] How to Use | Computer | Action Cam Movie Creator

Disconnecting the Computer (Windows 7/Windows 8)

In order to disconnect the computer from the camera, follow the steps below for Windows 7/Windows 8.

1. Click  on the task tray
2. Click the disconnect icon in Customize
3. Click the device to remove

Windows 7/Windows 8



1 Disconnect icon

Note

- Do not format the memory card of the camera using a computer. If you do this, the

camera will not operate correctly.

- When you access the camera from the computer, use PlayMemories Home. Do not directly modify the files or folders on the camera from the computer. The image files may be damaged or may not be played back.
- Operation is not guaranteed if you operate the data on the memory card of the camera from the computer.
- Use PlayMemories Home when you import long movies or edited images from the camera to a computer.


If you use other software, the images may not be imported correctly.

- Drag and drop the drive icon to the "Trash" icon when you use a Mac and the camera is disconnected from the computer. The camera will be disconnected from the computer.

[80] How to Use | Computer | Action Cam Movie Creator

Disconnecting the Computer (Windows Vista)

In order to disconnect the computer from the camera, follow the steps below for Windows Vista.

1. Double-click the disconnect icon on the task tray
2. Select  (USB Mass Storage Device) and click [Stop]
3. Confirm the device to disconnect on the confirmation window, then click [OK]

Perform the procedure from step 1 to 3 below in advance.

- Disconnecting the micro USB cable (supplied)
- Turning off the power of the camera
- Ejecting the memory card

Note

- Do not format the memory card of the camera using a computer. If you do this, the camera will not operate correctly.
- When you access the camera from the computer, use PlayMemories Home. Do not directly modify the files or folders on the camera from the computer. The image files may be damaged or may not be played back.
- Operation is not guaranteed if you operate the data on the memory card of the camera from the computer.
- Use PlayMemories Home when you import long movies or edited images from the camera to a computer.

If you use other software, the images may not be imported correctly.

- Drag and drop the drive icon to the "Trash" icon when you use a Mac, and the camera is disconnected from the computer. The camera will be disconnected from the computer.

[81] How to Use | Computer | Importing GPS Assist Data

GPS Assist Data

The time for the GPS to acquire the location information can be shortened by taking in GPS assist data. If the bundled remote control RM-LVR2V is connected to a computer on the Internet using a software Action Cam Movie Creator, the GPS assist data can be updated automatically.

- If the date & time setting is not set, or set time is shifted greatly, the time for the GPS acquiring location information cannot be shortened.
- If the term of validity of GPS assist data has run out, the time until you can record location information cannot be shortened.

[82] How to Use | Others | Estimated Duration of Recording and Playback for the Battery Pack of the Camera

Estimated Duration of Recording for the Battery Pack of the Camera

Approximate time available when you use a fully charged battery pack.

NP-BY1 (supplied)

Continuous recording time

HQ: 80 min. (85 min.)

VGA: 85 min. (100 min.)

Typical recording time

HQ: 45 min. (50 min.)

VGA: 50 min. (60 min.)

- Time measured when you use the camera at 25°C (77°F). It is recommended that you use the camera from 10°C to 30°C (50°F to 86°F).
- The recording time will be shorter when you use the camera in low temperatures.
- The recording time may be shorter, depending on the recording conditions.

Typical recording time is time that is measured when you repeat such operations as the shooting standby and switching the shooting mode.

- () indicates the recording time when the Wi-Fi setting is set to [OFF].

[83] How to Use | Others | Estimated Duration of Recording and Playback for the Battery Pack of the Camera

Estimated Duration of Playback for the Battery Pack of the Camera

Approximate time available when you use a fully charged battery pack.

Playing time

HQ: 120 min.

VGA: 130 min.

- Time measured when you use the camera at 25°C (77°F). It is recommended that you use the camera from 10°C to 30°C (50°F to 86°F).
- The playback time will be shorter when you use the camera in low temperatures.
- The playback time may be shorter, depending on the recording conditions.

[84] How to Use | Others | Recordable Time, the Recordable Number of Photos for a Memory Card

Estimated Continuous Movie Recordable Time

XAVC S (XAVC S) Average shooting time

64GB

XAVC S 50 Mbps (HD resolution) :

2 h 35 min.

MP4 (MP4) Average shooting time

8 GB

PS Highest resolution (smooth image recorded at 2× frame rate):

35 min.

HQ Highest resolution:

1 h

STD High resolution:

2 h 40 min.

HS 120 / **HS 100** High speed recording (smooth image recorded at 4x frame rate):

35 min.

SSLOW Super slow recording (slow motion image recorded at 4x frame rate):

40 min.

VGA Standard resolution:

4 h 55 min.

16GB

PS Highest resolution (smooth image recorded at 2x frame rate):

1 h 20 min.

HQ Highest resolution:

2 h 5 min.

STD High resolution:

5 h 20 min.

HS 120 / **HS 100** High speed recording (smooth image recorded at 4x frame rate):

1 h 20 min.

SSLOW Super slow recording (slow motion image recorded at 4x frame rate):

1 h 20 min.

VGA Standard resolution:

9 h 55 min.

32GB

PS Highest resolution (smooth image recorded at 2x frame rate):

2 h 40 min.

HQ Highest resolution:

4 h 10 min.

STD High resolution:

10 h 50 min.

HS 120 / **HS 100** High speed recording (smooth image recorded at 4x frame rate):

2 h 40 min.

SSLOW Super slow recording (slow motion image recorded at 4x frame rate):

2 h 45 min.

VGA Standard resolution:

20 h

64GB

PS Highest resolution (smooth image recorded at 2x frame rate):

5 h 20 min.

HQ Highest resolution:

8 h 25 min.

STD High resolution:

21 h 45 min.

HS 120 / HS 100 High speed recording (smooth image recorded at 4x frame rate):

5 h 20 min.

SSLOW Super slow recording (slow motion image recorded at 4x frame rate):

5 h 35 min.

VGA Standard resolution:

40 h 10 min.

- In the [SSLOW] setting, the above figure indicates the recordable time in shooting and differs from actual playback time.
- When using a Sony memory card.

Note

- The recordable time may vary depending on the recording conditions, subjects, and image quality setting.
- Continuous movie recordable shooting time is approximately 13 hours. In [SSLOW] mode, it will be approximately 3 hours.
- VBR (Variable Bit Rate) format is used, which automatically adjusts image quality to suit the recording scene. This technology causes fluctuations in the recording time of the media. Movies containing quickly moving and complex images are recorded at a higher bit-rate, and this reduces the overall recording time.

[85] How to Use | Others | Recordable Time, the Recordable Number of Photos for a Memory Card

Estimated Recordable Number of Photos

Recordable number of photos

8GB

Equivalent to approx. 2 070 000 pixels (Interval photo recording) (16:9): 9,700

Approx. 11 900 000 pixels (Still images): 1,250

16GB

Equivalent to approx. 2 070 000 pixels (Interval photo recording) (16:9): 19,000

Approx. 11 900 000 pixels (Still images): 2,500

32GB

Equivalent to approx. 2 070 000 pixels (Interval photo recording) (16:9): 39,000

Approx. 11 900 000 pixels (Still images): 5,100

64GB

Equivalent to approx. 2 070 000 pixels (Interval photo recording) (16:9): 40,000

Approx. 11 900 000 pixels (Still images): 10,000

- When using a Sony memory card.
- The recordable number of photos for the memory card represents the number of photos at the maximum image size for the camera. The actual recordable number of photos is displayed on the LCD screen of the remote control.
- The recordable number of photos for a memory card may vary depending on the shooting conditions.

[86] How to Use | Others | Notes on Using

Notes on Handling of the Camera and the Live-View Remote

Do not use/store the camera and the remote control 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 or the remote control body may become deformed, and this may cause a malfunction.
- In direct sunlight or near a heater
If you store the camera or the remote control in direct sunlight or near a heater, the camera and the remote control may become discolored or deformed, and these may cause a malfunction.
- In a location subject to strong vibration
- Near strong magnetic fields
- Do not use the camera near a location that generates strong radio waves or emits radiation.
- In sandy or dusty places
Be careful not to let sand or dust get into the camera directly. This may cause the camera and the remote control to malfunction, and in some cases may be irreparable.

About dust-proof and waterproof performance

The camera is dust-proof and waterproof (Depth of water 5 m (16 feet), 30 minutes continuously). For the notes on use of the waterproof case, refer to the instruction manual on

the website.

http://rd1.sony.net/help/cam/1415/h_zz/

On carrying

- Do not sit down in a chair or other place with the camera and the Live-View Remote in the back pocket of your trousers or skirt, as this may cause malfunction or damage the camera and the Live-View Remote.
- Do not shake or strike the camera. It may cause a malfunction and you may not be able to record images. Furthermore, a memory card may become unusable or image data may be damaged.

Operating temperatures

The camera is designed for use in temperatures between -5°C and +40°C (23°F and 104°F) and the remote control between -10°C and +40°C (14°F and 104°F).

[87] How to Use | Others | Notes on Using

On Moisture Condensation

If the camera and remote control are brought directly from a cold to a warm location, moisture may condense inside or outside the camera and remote control. This moisture condensation may cause a malfunction of the camera.

If moisture condensation occurs

Turn off the camera and wait about 1 hour for the moisture to evaporate.

Note on moisture condensation

Moisture may condense when you move the camera and the remote control from a cold place to a warm place (or vice versa) or when you use the camera and the remote control in a humid place, as shown below.

- When you bring the camera from a ski slope into a warm place
- When you bring the camera from an air conditioned car or room into a hot place outside
- When you use the camera and the remote control after a squall or rain shower
- When you use the camera in a hot and humid place

How to avoid condensation

Before carrying the camera or the remote control into a warmer place, put the camera in a plastic bag and seal it airtight. Remove the bag when the air temperature inside the plastic bag has reached the ambient temperature (after about 1 hour).

Care and Storage

- Clean the camera surface or the remote control with a soft cloth slightly moistened with water, then wipe the surface with a dry cloth. Do not use any of the following as they may damage the finish or the casing.
Chemical products such as thinner, benzine, alcohol, disposable cloths, insect repellent, sunscreen or insecticide, etc.
 - Do not touch the camera with any of the above on your hand.
 - Do not leave the camera or the remote control in contact with rubber or vinyl for a long time.
- Wipe the surface of the lens clean with a soft cloth in the following instances:
 - When there are fingerprints on the lens surface.
 - In hot or humid locations.
 - When the lens is exposed to salty air such as at the seaside.
- Store in a well-ventilated location with little dirt or dust.
- To prevent mold, periodically clean the lens as described above.

Notes on Optional Accessories

- Genuine Sony accessories may not be available in some countries/regions.

For details on the bundled accessories, refer to the following.

http://rd1.sony.net/help/cam/1415/h_??/

Notes on Disposal/Transfer of the Memory Card

Even if you delete data in the memory card or format the memory card on the camera or a computer, you may not delete data from the memory card completely. When you give the memory card to somebody, it is recommended that you delete data completely using data deletion software on a computer. Also, when you dispose of the memory card, it is recommended that you destroy the actual body of the memory card.

Battery Packs of the Camera and the Live-View Remote

On charging

- Charge the camera the remote control before using them for the first time.
- We recommend charging the camera and the remote control in an ambient temperature of between 10 °C to 30 °C (50 °F to 86 °F) until the POWER/CHG (Charge) lamp turns off. The camera and the remote control may not be effectively charged in temperatures outside this range.
- The POWER/CHG (Charge) lamp may blink during charging the camera in the following situations:
 - Battery pack is not attached correctly
 - Battery pack is damaged
- When the battery pack temperature of the camera is low, detach the battery pack and put it in a warm place.
- When the battery pack temperature of the camera is high, detach the battery pack and put it in a cool place.
- The CHG (Charge) lamp of the remote control may blink in the following situations.
 - Battery pack is damaged
- If the temperature of the remote control is low, put it in a warm place.
- If the temperature of the remote control is high, put it in a cool place.

Effective use of the battery pack

- Battery pack performance decreases at a low ambient temperature lower than 10 °C (50 °F). In cold places, therefore, the operational time of the battery pack is shorter.
- The battery pack will run out quickly if you use the playback, fast-forward, and fast-rewind frequently.
- It is recommended that you warm the battery pack in advance by keeping the pack in a place such as a pocket and attach it to the camera right before the shooting for the safe operation and longer lifetime.
- Turn off the camera every time you do not shoot or playback on the camera. Battery pack is wearing out when the shooting is in standby.
- We recommend having spare battery packs handy for twice or three times longer than the expected shooting time, and making trial shots before taking the actual shots.
- You may not be able to turn on the camera and remote control or the battery pack may not be effectively charged if the terminal section of the battery pack is dirty. In this case, wipe any dust with a soft cloth lightly to clean the battery pack.
- Do not expose the battery pack to water. The battery pack is not water-resistant.

Remaining battery charge

- If the battery pack runs out quickly even though the remaining charge indicator is high, fully charge the camera and the remote control, again. The remaining charge indicator will then be displayed correctly. Note that it may not be displayed correctly in the following situations:
 - The camera and the remote control are used for a long time at high ambient temperature
 - The camera and the remote control are left fully charged
 - The camera and the remote control are used heavily

How to store the battery pack

- To maintain the battery pack's function, fully charge the battery pack and then fully discharge it on the camera at least once a year while storing. Remove the battery pack from the camera before storing and store it in a cool, dry place.
- To prevent staining the terminal, short-circuiting, etc., be sure to use a plastic bag to keep away from metal materials when carrying or storing.

On battery pack life

- The battery pack has a limited life. 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 pack life varies according to how the battery pack is used.

[92] [How to Use](#) | [Others](#) | [Notes on Using](#)

The Limitations to Live Streaming of the Camera

There are the limitations to live video streaming in USTREAM. For details, visit USTREAM website below.

[93] [How to Use](#) | [Others](#) | [Notes on Using](#)

GPS and Wi-Fi Function in Distribution

GPS function

GPS recording of the camera is not available during live video distribution.

And monitoring via a smartphone or the remote control is not supported during live video

distribution.

Wi-Fi function

- Use the camera and the remote control in accordance with the regulations of the area of use.
- You cannot use the Wi-Fi function of the camera and the remote control underwater.

Security in the use of wireless LAN devices

- To avoid hacking, access by malicious third parties, and other vulnerabilities, confirm that the wireless LAN is always secure.
- It is very important to set up security on a wireless LAN.
- If a problem occurs due to inadequate security measures or due to foreseeable circumstances, Sony Corporation is not responsible for any resulting damage.

[94] [How to Use](#) | [Others](#) | [Notes on Using](#)

Network Connection

Use a smartphone or Wi-Fi router capable of tethering for live video streaming. Operation of all devices is not assured. Connection via public wireless LAN is not supported.

[95] [How to Use](#) | [Others](#) | [Notes on Using](#)

Simultaneous Live Streaming with multiple the Cameras

Live video cannot be distributed simultaneously through the same account with multiple the cameras (more than 2 cameras). Connecting through another account is required.

[96] [How to Use](#) | [Others](#) | [Notes on Using](#)

Influence by the Line State

Communication may be disconnected depending on the network status when you tether your smartphone or Wi-Fi router.

[97] [How to Use](#) | [Others](#) | [Notes on Using](#)

Connection of Live Streaming

Since live video streaming has the communication time limit based on the contract of your smartphone or Wi-Fi router, be aware of this time limit.

[98] [How to Use](#) | [Others](#) | [Notes on Using](#)

Continuous Distribution Time

Continuous distribution time for live video streaming by camera is limited to approximately 13 hours.

[99] [How to Use](#) | [Others](#) | [Notes on Using](#)

Connection Restriction

Live video distribution sites may not be connected in some countries. Use the camera following each country's law.

[100] [How to Use](#) | [Others](#) | [Notes on Using](#)

LCD Screen of the Live-View Remote

Handling the LCD screen

- Do not leave the LCD screen facing the sun as it may be damaged. Be careful when placing the remote control by a window.
- If the remote control is used in a cold place, horizontal lines or a residual image may appear on the LCD screen. This is not a malfunction. The LCD screen returns to normal

when the remote control warms up.

- If a still picture or a fixed picture is displayed for a long time, an image may remain superimposed on the LCD screen as a ghosting image.

Bright point and vanishing point of the LCD screen

The LCD panel fitted to the remote control is manufactured with high precision technology, but a very small proportion of pixels may be “stuck”, either always off (black), always on (red, green, or blue), or flashing. In addition, because of the physical characteristics of the liquid crystal display, such “stuck” pixels may appear spontaneously over a long period of use. These problems are not a malfunction.

Maintenance

Cleaning the LCD screen

The LCD screen surface is specially treated to reduce the reflection of light. Incorrect maintenance may impair the performance of the LCD screen, so take care with respect to the following:

- Wipe the LCD screen gently with a soft cloth such as a cleaning cloth or glasses cloth.
- Stubborn stains may be removed with a soft cloth such as a cleaning cloth or glasses cloth slightly dampened with water.
- Never use a solvent such as alcohol, benzene or thinner, or acid, alkaline or abrasive detergent, or chemical cleaning cloth, as they will damage the LCD screen surface.

[101] How to Use | Others | Notes on Using

Live-View Remote Waterproof Performance

About the waterproof performance of the remote control

The remote control is designed to be water-proof. Damage caused by misuse, abuse, or improper maintenance is not covered by the limited warranty.

- Do not subject the remote control to pressurized water, such as from a tap.
- Do not use in hot springs.
- Use the remote control in the water temperature range of 0 °C to 40 °C (32 °F to 104 °F).
- The remote control has continuous waterproof performance at a water depth of 3 m for 30 minutes.

Notes before using the remote control under/near water

- Make sure that no foreign matter such as sand, hair, or dirt gets inside the connector cover. Even a small amount of foreign matter may lead to water entering the remote

control.

- Confirm that the sealing gasket and its mating surfaces have not become scratched. Even a small scratch may lead to water entering the remote control. If the sealing gasket or its mating surfaces become scratched, consult your Sony dealer or local authorized Sony service facility.
- If dirt or sand gets on the sealing gasket or its mating surfaces, wipe the area clean with a soft cloth that does not leave behind any fibers.
- Do not open/close the connector cover with wet or sandy hands or near water. There is a risk of sand or water getting inside of the remote control. Before opening the connector cover, perform the procedure described in “Cleaning after using the remote control under/near water.”
- Open the connector cover when the remote control is completely dry.
- Always check that the connector cover is securely locked.

Notes on using the remote control under/near water

- Do not subject the remote control to shock such as by jumping into water.
- Do not open and close the connector cover while under/near water.
- The remote control sinks in water. Use the belt supplied with the remote control to prevent it from sinking.

Cleaning after using the remote control under/near water

- Always clean the remote control with water within 60 minutes of use, and do not open the connector cover before cleaning is finished. Sand or water may get inside where it cannot be seen, and will degrade waterproof performance if not rinsed out.
- Allow the remote control to sit in pure water poured into a cleaning bowl for about 5 minutes. Then, gently shake this remote control and press each button under the water to clean away any salt, sand or other matter lodged around the buttons.
- After rinsing, wipe away any drops of water with a soft cloth. Allow the remote control to dry completely in a shady location with good ventilation. Do not blow dry with a hair dryer as there is a risk of deformation and/or degraded water-proof performance.
- Wipe away any drops of water or dust from the connector cover with a soft dry cloth.
- Bubbles may appear when the remote control is placed underwater. This is not a malfunction.
- The remote control body may become discolored if it comes into contact with sunscreen or suntan oil.
If the remote control does come into contact with sunscreen or suntan oil, quickly wipe it clean.
- Do not allow the remote control to sit with salt water inside it or on its surface. This may lead to corrosion or discoloration, and degradation of the waterproof performance.

GPS

On GPS

- As the positions of GPS satellites vary constantly, it may take longer to determine the location or the receiver may not be able to determine the location at all, depending on the location and time you use the camera.
- GPS is a system that determines your position by receiving signals from satellites. Avoid using the GPS feature on your remote control in places where radio signals are blocked or reflected, such as a shadowy place surrounded by buildings or trees, etc. Use the remote control in open sky environments.
- You may not be able to record location information at locations or in situations where radio signals from the GPS satellites do not reach the remote control as follows.
 - In tunnels, indoors or under the shade of buildings
 - Between tall buildings or at narrow streets surrounded by buildings
 - In underground locations, locations surrounded by dense trees, under an elevated bridge, or in locations where magnetic fields are generated, such as near high voltage cables
 - Near devices that generate radio signals of the same frequency band as the remote control: near 1.5 GHz band mobile telephones, etc.
- Do not put a hand or a finger on the GPS receiver (GPS antenna part) while seeking a satellite or determining a position. The reception sensitivity lowers and your position may not be determined.
- Depending on the mounting position of the remote control or posture, the remote control may not receive the electric wave from the GPS satellite. Turn the GPS receiver (GPS antenna part) toward the sky.
- You may not be able to record GPS information in situations as follows.
 - Turn off the remote control
 - Disconnect the remote control and the camera
 - When the connection between the remote control and the camera via Wi-Fi is unstable
- If you take images with the GPS log of the remote control set to [ON], and upload those images to the Internet, the shooting location may be available to third parties. To prevent this, set GPS log to [OFF] before shooting.

On triangulation errors

- If you move to another location right after turning the remote control on, it may take a longer time for the camera to start triangulating, compared to when you stay in the same place.
- GPS satellite error

When the remote control receives signals from more than three GPS satellites, it determines your present position. The triangulating error allowed by the GPS satellites is about 10 m (33 feet). Depending on the environment of the location, the triangulating error can be greater. In this case, your actual location may not match the location on the

map based on the GPS information. Meanwhile, the GPS satellites are controlled by the United States Department of Defense, and the degree of accuracy may be changed intentionally.

- Error during the triangulating process

The remote control acquires location information periodically during triangulating. There is a slight time lag between when the location information is acquired and when the location information is recorded on an image, therefore, the actual recording location may not match the exact location on the map based on the GPS information.

On GPS use restriction

- Use GPS in accordance with the situation and regulations of the countries/regions where you use the remote control.

[103] How to Use | Others | Notes on Using

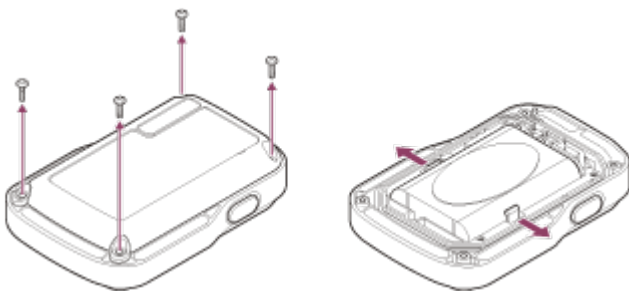
Disposing of the Live-View Remote

Remove the battery pack before disposing of the remote control.

- Do not remove the screws except when disposing of the remote control. We will refuse repairs or replacement if we judge there to have been unwarranted disassembly.

The built-in battery pack of the remote control is recyclable. When disposing of the remote control, remove the built-in battery pack and take it to your dealer.

1. Press the ON/OFF button to turn off the power of the remote control
2. Disconnect the connected cables
3. Remove the screws with a Phillips-head screwdriver (4 screws)
4. Detach the cover
5. Push the hook outwards and remove the battery pack



Note

When removing the battery pack of the remote control, be careful of the following.

- Remove the screws, etc. away from small children to prevent accidental swallowing.

Remove the screws, etc. away from small children to prevent accidental swallowing.

- Be careful not to injure your nails or fingers.

[104] How to Use | Others | Using the Camera Abroad

Using the Camera Abroad

On TV color systems

Before shooting, be sure to set the TV system of the country and region where you will view recordings. The following shows which countries and regions you can view [NTSC] or [PAL] images.

Countries and regions where you can view images when [NTSC] is set

Barbados, Bermuda, Bolivia, Canada, Chile, Columbia, Costa Rica, Cuba, Dominica, Ecuador, El Salvador, Guam, Guatemala, Guyana, Haiti, Honduras, Japan, Mexico, Micronesia, Myanmar, Nicaragua, Panama, Peru, Philippines, Puerto Rico, Republic of Korea, Saint Lucia, Samoa, Suriname, Taiwan, Trinidad and Tobago, United States of America, Venezuela etc.

Countries and regions where you can view images when [PAL] is set

Australia, Austria, Argentina, Belgium, Bulgaria, Brazil, China, Croatia, Czech Republic, Denmark, Finland, France, French Guiana, Germany, Greece, Hong Kong, Hungary, Indonesia, Iran, Iraq, Italy, Kuwait, Malaysia, Monaco, Netherlands, New Zealand, Norway, Paraguay, Poland, Portugal, Romania, Russia, Singapore, Slovakia, Spain, Sweden, Switzerland, Thailand, Turkey, Ukraine, United Kingdom, Uruguay, Vietnam etc.

[105] How to Use | Others | Using the Camera Abroad

The List of the Time Difference of the Major Cities of the World

The time difference from the standard time of each city around the world. (As of 2014)

Lisbon/London

GMT

Berlin/Paris

+01:00

Helsinki/Cairo/Istanbul

+02:00

Nairobi

+03:00

Tehran

+03:30

Moscow/Abu Dhabi/Baku

+04:00

Kabul

+04:30

Karachi/Islamabad

+05:00

Kolkata/New Delhi

+05:30

Almaty/Dhaka

+06:00

Yangon

+06:30

Bangkok/Jakarta

+07:00

Hong Kong/Singapore/Beijing

+08:00

Tokyo/Seoul

+09:00

Adelaide/Darwin

+09:30

Melbourne/Sydney

+10:00

New Caledonia

+11:00

Fiji/Wellington

+12:00

Midway

-11:00

Hawaii

-10:00

Alaska

-09:00

San Francisco/Tijuana

-08:00

Denver/Arizona

-07:00

Chicago/Mexico City

-06:00

New York/Bogota

-05:00

Santiago

-04:00

Newfoundland

-03:30

Brasilia/Montevideo

-03:00

Fernando de Noronha

-02:00

Azores/Cape Verde Is.

-01:00

[106] [How to Use](#) | [Others](#) | [Specifications](#)

Camera

[System]

Video signal:

HDTV

Image device:

1/2.3 type (7.77 mm) Exmor R™ CMOS sensor

Pixel Gross: Approx. 16.8 megapixels

Effective picture resolution (movie): Approx. 11.9 megapixels (16:9)*

Effective picture resolution (still): Approx. 11.9 megapixels (16:9)

Still image max effective: Approx. 11.9 megapixels

Interval photo recording mode: Approx. 2.1 megapixels (16:9)

Lens:

ZEISS Tessar

Aperture: F2.8

Focal distance: $f = 2.8$ mm

Focal length (35 mm equivalent) (Movie mode): $f = 17.1$ mm (16:9)*

FOV: 170°*

Camera:

Exposure control: Auto

Minimum illumination: 6 lx (lux)

Image stabilization: Electronic SteadyShot image stabilization

Minimum shooting distance: Approx. 30 cm (11 7/8 in.)

File format:

Movies: MP4: MPEG-4 AVC/H.264, XAVC S: MPEG-4 AVC/H.264

Audio: MPEG-4 AAC-LC 2ch (When recording MP4 movies), LPCM 2ch (When recording XAVC S movies)

Photo: JPEG (DCF Ver. 2.0, Exif Ver. 2.3, MPF Baseline) compliant

Recording media type:

When recording MP4 movies:

Memory Stick Micro (Mark2) media

microSD/SDHC/SDXC memory card (Class4 or faster)

When recording XAVC S movies:

microSDXC card (Class10 or faster)

* SteadyShot set to [OFF]

[Input and Output connectors]

Multi/Micro USB Terminal*: micro-B/USB2.0 Hi-Speed

* Supports Micro USB compatible devices.

[Power]

Power requirements:

Rechargeable battery pack: 3.7 V (NP-BY1 (supplied))

Multi/Micro USB Terminal: 5.0 V

Charging method:

USB charging: DC 5.0 V, 500 mA

Charging time:

Via a computer

NP-BY1 (supplied): Approx. 2 h 25 min.

Via the AC-UD10 (sold separately)

NP-BY1 (supplied): Approx. 2 h 05 min.

Power supply method:

USB power supply (1.5 A or more is recommended)

Power consumption:

1.7 W (when the movie image size is [1920 × 1080/30p])

Battery:

Rechargeable battery pack: NP-BY1 (supplied)

Maximum output voltage: DC 4.2 V

Output voltage: DC 3.7 V

Maximum charge voltage: DC 4.2 V

Maximum charge current: 975 mA

Capacity: 2.4 Wh (640 mAh)

Type: Li-ion

[General]

Waterproof performance: Depth of water 5 m (16 feet), 30 minutes continuously
(In use with the waterproof case (SPK-AZ1))

Splashproof performance: Equivalent to IPX4*

Operating temperature: -5 °C to +40 °C (23 °F to 104 °F)

Storage temperature: -20 °C to +60 °C (-4 °F to +140 °F)

Dimensions: Approx. 24.2 mm × 36.0 mm × 74.0 mm (31/32 in. × 1 7/16 in. × 3 in.)
(W/H/D, excluding protrusions)

Mass: Approx. 48 g (1.7 oz) (camera only)

Mass (when shooting): Approx. 63 g (2.2 oz) (including NP-BY1 (supplied))

Microphone: Stereo

Speaker: Monaural

* Splashproof performance is based on standard testing by Sony.

[Wireless LAN]

Corresponding standard: IEEE 802.11b/g/n

Frequency: 2.4 GHz

Supported security protocols: WPA-PSK/WPA2-PSK

Configuration method: WPS (Wi-Fi Protected Setup)

Access method: Infrastructure Mode

NFC: NFC Forum Type 3 Tag compliant

[Accessories]

Tripod Adaptor

Dimensions: Approx. 14.2 mm × 12.2 mm × 69 mm (9/16 in. × 1/2 in. × 2 3/4 in.)

(W/H/D, excluding protrusions)

Mass: Approx. 12 g (0.43 oz)

Waterproof Case (SPK-AZ1)

Dimensions: Approx. 36.3 mm × 53.2 mm × 80.2 mm (1 7/16 in. × 2 1/8 in. × 3 1/4 in.)

(W/H/D, excluding protrusions)

Mass: Approx. 48 g (1.7 oz)

Pressure-resistance: Depth of water 5 m (16 feet), 30 minutes continuously.

Attachment Buckle

Dimensions: Approx. 47.0 mm × 14.0 mm × 58.5 mm (1 7/8 in. × 9/16 in. × 2 3/8 in.)

(W/H/D, excluding protrusions)

Mass: Approx. 16 g (0.57 oz)

Flat Adhesive Mount

Dimensions: Approx. 53.0 mm × 12.5 mm × 58.5 mm (2 1/8 in. × 1/2 in. × 2 3/8 in.)

(W/H/D, excluding protrusions)

Mass: Approx. 14 g (0.5 oz)

Curved Adhesive Mount

Dimensions: Approx. 53.0 mm × 16.0 mm × 58.5 mm (2 1/8 in. × 21/32 in. × 2 3/8 in.)

(W/H/D, excluding protrusions)

Mass: Approx. 16 g (0.57 oz)

Design and specifications are subject to change without notice.

[107] How to Use | Others | Specifications

Live-View Remote

[Input terminal]

Multi/Micro USB Terminal: micro-B/USB

(For charging/taking in GPS assist data)

[Power]

Power requirements

Rechargeable battery pack: 3.6 V (Internal battery)

Multi/Micro USB Terminal: 5.0 V

Charging method:

USB charging: DC 5.0 V, 500 mA/800 mA

Charging time:

Via a computer

Internal battery: Approx. 4 h 05 min.

Via the AC-UD20 (sold separately)

Internal battery: Approx. 2 h 55 min.

Power supply method:

USB power supply (1.5 A or more is recommended)

Power consumption:

1.0 W (when connected by Wi-Fi and during Live-View display)

Battery:

Rechargeable battery pack: Internal battery

Maximum output voltage: DC 4.2 V

Output voltage: DC 3.6 V

Maximum charge voltage: DC 4.2 V

Maximum charge current: 1.89 A

Capacity: 4.5 Wh (1,240 mAh)

Type: Li-ion

[General]

Waterproof performance: Depth of water 3 m (10 feet), 30 minutes continuously*

Operating temperature: -10°C to +40°C (14°F to 104°F)

Storage temperature: -20°C to +60°C (-4°F to +140°F)


Dimensions (approx.): 72.3 mm × 50.2 mm × 20.8 mm (2 7/8 in. × 2 in. × 27/32 in.)
(W/H/D, excluding protrusions)

Mass: Approx. 67 g (2.4 oz) (only the main body)

Total weight in use: Approx. 98 g (3.5 oz) (including the supplied belt and base plate)

*The waterproof performance is not guaranteed under all circumstances.

Design and specifications are subject to change without notice.

-
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 - The N Mark is a trademark or registered trademark of NFC Forum, Inc. in the United States and in other countries.
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[109] How to Use | Others | Notes on the Licences

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.

Access the URL below when downloading.



<http://www.sony.net/Products/Linux/>

We would prefer you do not contact us about the contents of source code. Copies of the licenses (in English) are stored in the internal memory of your camera. Establish a Mass Storage connection between your camera and a computer, and read the files in the "LICENSE" folder in "PMHOME."

[110] Troubleshooting | Troubleshooting | Troubleshooting

What Can I Do to Solve a Problem?



If you experience trouble with the camera, try the following solutions.

1. Check the items of troubleshooting and inspect the camera
2. Detach the power supply at first, then attach the power supply one minute after and turn on the power of the camera
3. Press the UP button or DOWN button of the remote control to select  (Reset settings) from  (Remote control settings), then press the REC/ENTER button of the remote control
After this operation, settings such as the date & time setting will be released.
4. Consult your Sony dealer or local authorized Sony service facility by phone

[111] Troubleshooting | Troubleshooting | Battery Pack and Power of the Camera Cannot Turn On the Camera

- Install a charged battery pack to the camera.
- Check that the battery pack is installed to the camera correctly.

[112] Troubleshooting | Troubleshooting | Battery Pack and Power of the Camera The Power of the Camera Turns Off Suddenly

- Depending on the camera and battery temperature, you may be unable to record movies or the power may turn off automatically to protect the camera. A message  will be displayed on the screen of the remote control before the power turns off or you can no longer record movies.
- When  is indicated, stop recording the movie.
- If the camera stops recording due to the temperature, leave it for several minutes with the power turned off. Start recording after the temperature inside the camera drops fully.
- If you do not operate the camera for given period of time, the camera turns to power saving mode. Turn the power on again.
- If you have selected [OFF] in the auto power off function, the power of the camera will not turn off automatically.

Battery Life of the Camera Is Short

- You are using the camera in an extremely hot or cold location, or the charging is insufficient. This is not a malfunction.
- If you have not used the camera for a prolonged period, the efficiency of the battery will be improved by repeatedly charging and discharging it.
- When usable battery life becomes half the usual time, even after charging the battery pack fully, the battery pack may need to be replaced. Consult your nearest Sony dealer.

Cannot Charge the Camera

- Turn off the camera and make the USB connection.
- Disconnect the micro USB cable (supplied), and then reconnect it.
- Use the micro USB cable (supplied).
- Charge the battery pack in an ambient temperature of 10°C to 30°C (50°F to 86°F).
- Turn on the computer and connect the camera.
- Release the computer from sleep or hibernation status.
- Connect the micro USB cable (supplied) directly to the USB connector of the computer.
- Connect the camera to a computer with the operating system that is supported by the camera.

The Remaining Charge Indicator of the Camera Is Incorrect

- This phenomenon occurs when you use the remote control in an extremely hot or cold location.
- A discrepancy arises between the remaining charge indicator and the actual remaining battery charge. Fully discharge the battery pack once, then charge it to correct the indication.
- Fully charge the battery pack again. If the problem persists, the battery pack is worn out.

Replace the battery pack with a new one.

[116] Troubleshooting | Troubleshooting | Memory Card

Operations Using the Memory Card Cannot Be Performed

- If you use a memory card formatted on a computer, format it again on the camera.
-

[117] Troubleshooting | Troubleshooting | Shooting images

Cannot Record Images

- Check the free capacity of the memory card.
 - Check that the NTSC/PAL setting of the existing camera corresponds to that of the camera in which the currently used memory card was formatted.
 - Format a new memory card before use.
-

[118] Troubleshooting | Troubleshooting | Shooting images

Cannot Insert Dates on Images

- The camera does not have a feature to insert dates on images.
-

[119] Troubleshooting | Troubleshooting | Viewing Images

Cannot Play Back Images

- Images cannot be played back when the folder/file name has been changed on your computer.
-

Your Computer Does Not Recognize the Camera

- When the battery level is low, charge the camera.
 - Turn on the camera and connect to a computer.
 - Use the micro USB cable (supplied).
 - Disconnect the micro USB cable (supplied) 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.
-

Cannot Import Images

- Connect the camera and your computer correctly making a USB connection.
-

Cannot Install Action Cam Movie Creator

- Check the computer environment or installation procedure required to install.
-

Action Cam Movie Creator Does Not Work Correctly

- Quit Action Cam Movie Creator and restart your computer.
-

Cannot Play Back Images on Your Computer

- Consult the computer or software manufacturer.
-

It Takes Too Much Time to Transfer an Image

- Microwave ovens or Bluetooth-enabled devices using the 2.4 GHz wavelength could hinder the communication. If such devices are in the vicinity, move the camera away from those devices or shut those devices down.
-

The Lens Gets Fogged

- Moisture condensation has occurred. Turn off the camera and wait about 1 hour for the moisture to evaporate.
-

The Camera and Battery Become Warm

- Camera body and battery may get warm with use. This is normal.
 - Avoid using the camera for a long time when holding the camera in your hand or when it is directly touching your skin. It is recommended that you use the supplied adhesive mounts or waterproof case, or optional mount accessories.
-

The Date or Time Is Incorrect

-
- Set the date and time of the remote control.
 - Connect the camera to the remote control through Wi-Fi.

The date and time setting of the camera is performed by transferring the date and time set on the LCD screen of the remote control through the Wi-Fi communication.

[129] Troubleshooting | Troubleshooting | Live-View Remote

Cannot Turn On the Live-View Remote

- Charge the battery pack sufficiently.
-

[130] Troubleshooting | Troubleshooting | Live-View Remote

Cannot Charge the Live-View Remote

- Turn off the remote control and make the USB connection.
 - Disconnect the micro USB cable (supplied), and then reconnect it.
 - Use the micro USB cable (supplied).
 - Charge the battery pack in an ambient temperature of 10°C to 30°C (50°F to 86°F).
 - Turn on the computer and connect the remote control.
 - Release the computer from sleep or hibernation status.
 - Connect the micro USB cable (supplied) directly to the USB connector of the computer.
-

[131] Troubleshooting | Troubleshooting | Live-View Remote

The Remaining Charge Indicator of the Live-View Remote Is Incorrect

- This phenomenon occurs when you use the remote control in an extremely hot or cold location.
- A discrepancy arises between the remaining charge indicator and the actual remaining battery charge. Fully discharge the battery pack once, then charge it to correct the indication.
- Fully charge the battery pack again. If the problem persists, the battery pack is worn out.

Consult your nearest Sony dealer.

[132] Troubleshooting | Troubleshooting | Live-View Remote

Cannot Receive a GPS Signal

- Set the GPS setting to [ON].
- Your camera may not be able to receive radio signals from GPS satellites because of obstructions.
- To acquire the location information correctly, take your camera to an open area, and turn on the remote control again.

[133] Troubleshooting | Troubleshooting | Live-View Remote

Excessive Error in Location Information

- The margin of error can be up to several-hundred meters depending on surrounding buildings, weak GPS signals, etc.

[134] Troubleshooting | Troubleshooting | Live-View Remote

It Takes Time to Triangulate although the GPS Assist Data is Taken In

- Date & time setting is not set, or set time is shifted greatly. Set the date and time correctly. Try settings again.
- The term of validity of GPS assist data has expired. Update GPS assist data.
- As the positions of GPS satellites vary constantly, it may take longer to determine the location or the receiver may not be able to determine the location at all, depending on the location and time you use the camera.
- GPS is a system to determine geographic location by triangulating radio signals from GPS satellites. Avoid using the camera in places where radio signals are blocked or reflected, such as a shadowy place surrounded by buildings or trees, etc. Use the camera in open sky environments.

[135] Troubleshooting | Troubleshooting | Live-View Remote

The Location Information Has Not Been Recorded

- Use PlayMemories Home to import the movies with GPS location information to your computer.

[136] Troubleshooting | Q & A | Camera

Cannot Turn On the Camera

- Install a charged battery pack.
- Make sure that the battery pack is installed correctly.

[137] Troubleshooting | Q & A | Camera

Battery Life of the Camera is Short

- You are using the camera in an extremely hot or cold location, or the charging is insufficient. This is not a malfunction.
- If you have not used the camera for a prolonged period, the efficiency of the battery will be improved by repeatedly charging and discharging it.
- When usable battery life becomes half the usual time, even after charging the battery pack fully, the battery pack may need to be replaced. Consult your nearest Sony dealer.

[138] Troubleshooting | Q & A | Live-View Remote

The Power of the Live-View Remote Turns Off Suddenly

- Charge the battery pack sufficiently.
- If you have not used the camera for a prolonged period, the efficiency of the battery will

be improved by repeatedly charging and discharging it.

[139] Troubleshooting | Q & A | Live-View Remote

Cannot Connect the Live-View Remote and the Camera via Wi-Fi

- Disconnect, and then reconnect it.

[140] Troubleshooting | Warning Indicators and Error Indicators | Display on the Live-View Remote

01-01/02-02

Has failed to connect the remote control to the camera.

There may be signal congestion, or the camera or remote control may be too far from the access point.

[141] Troubleshooting | Warning Indicators and Error Indicators | Display on the Live-View Remote

01-02

Has failed to connect the remote control to the camera.

Follow the steps in "Connecting the Live-View Remote to Multiple Cameras."

[142] Troubleshooting | Warning Indicators and Error Indicators | Display on the Live-View Remote

01-03/01-04

Has failed to connect the remote control to the camera.

This is a non supported camera.

[143] Troubleshooting | Warning Indicators and Error Indicators | Display on the Live-View Remote

03-01/03-02

Has failed to connect the remote control to the camera.

- The camera and remote control cannot be authenticated. Follow the steps in "Connecting the Live-View Remote to Multiple Cameras."
- There may be signal congestion, or the camera or remote control may be too far from the access point.

[144] Troubleshooting | Warning Indicators and Error Indicators | Display on the Live-View Remote

02-01

Camera error.

Check the connected camera or memory card.

[145] Troubleshooting | Warning Indicators and Error Indicators | Display on the Live-View Remote

04-03

The request to the camera has failed.

Check the camera.

[146] Troubleshooting | Warning Indicators and Error Indicators | Display on the Live-View Remote

05-01

The camera cannot shoot images.

Check the camera.

[147] Troubleshooting | Warning Indicators and Error Indicators | Display on the Live-View Remote

05-02

The camera cannot start shooting.
Check the camera.

[148] Troubleshooting | Warning Indicators and Error Indicators | Display on the Live-View Remote

05-03

The camera cannot stop shooting.
Check the camera.

[149] Troubleshooting | Warning Indicators and Error Indicators | Display on the Live-View Remote

04-04

There are no responses from the camera.

- Check the camera.
 - There may be signal congestion, or the camera may be too far from the access point.
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[150] Troubleshooting | Warning Indicators and Error Indicators | Display on the Live-View Remote

10-01

The camera's temperature has risen. Turn the power of the camera off and leave the camera alone for 10 minutes or longer.

Code Starting with an E or a C

When a code starting with a letter appears in the monitor, the self-diagnosis of the remote control is working.

Since some repairs may be necessary, consult your nearest Sony dealer and inform them of all codes starting with an E or a C.