SONY

4-564-744-**14**(1)

Digital HD Video Camera Recorder

Operating Guide

Getting started
Recording/Playback
Saving images
Customizing your camcorder
Others

"Help Guide" (Web manual)
Refer to "Help Guide" for in-depth instructions on the many functions of the camera.

http://rd1.sony.net/help/cam/1440/h_zz/

AVCHD Progressive
XAVC S
HDMI
LITHIUM ION
MEMORY STICK
microSDXC

HANDYCAM

HDR-CX405/CX440/CX470/PJ410/PJ440

Read this first

Before operating the unit, please read this manual thoroughly, and retain it for future reference.

Owner's Record

The model and serial numbers are located on the bottom. Record the serial number in the space provided below. Refer to these numbers whenever you call your Sony dealer regarding this product.

Model No. HDR-
Serial No. _____
Model No. AC- _____
Serial No. _____

WARNING

To reduce the risk of fire or electric shock,
1) do not expose the unit to rain or moisture.
2) do not place objects filled with liquids, such as vases, on the apparatus.

Do not expose the batteries to excessive heat such as sunshine, fire or the like.

IMPORTANT SAFETY INSTRUCTIONS

SAVE THESE INSTRUCTIONS. DANGER - TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, CAREFULLY FOLLOW THESE INSTRUCTIONS.

- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this apparatus near water.
- Clean only with dry cloth.
- Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician

for replacement of the obsolete outlet.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- Only use attachments/accessories specified by the manufacturer.
- Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/ apparatus combination to avoid injury from tip-over.



- Unplug this apparatus during lightning storms or when unused for long periods of time.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
- If the shape of the plug does not fit the power outlet, use an attachment plug adaptor of the proper configuration for the power outlet.

⚠ CAUTION

Battery pack

If the battery pack is mishandled, the battery pack can burst, cause a fire or even chemical burns. Observe the following cautions.

- Do not disassemble.
- Do not crush and do not expose the battery pack to any shock or force such as hammering, dropping or stepping on it.
- Do not short circuit and do not allow metal objects to come into contact with the battery terminals.
- Do not expose to high temperature above 60°C (140°F) such as in direct sunlight or in a car parked in the sun.
- Do not incinerate or dispose of in fire.
- Do not handle damaged or leaking lithium ion batteries.
- Be sure to charge the battery pack using a genuine Sony battery charger or a device that can charge the battery pack.
- Keep the battery pack out of the reach of small children.
- Keep the battery pack dry.
- Replace only with the same or equivalent type recommended by Sony.
- Dispose of used battery packs promptly as described in the instructions.

AC Adaptor

Do not use the AC Adaptor placed in a narrow space, such as between a wall and furniture.
Use the nearby wall outlet (wall socket) when using the AC Adaptor. Disconnect the AC Adaptor from the wall outlet (wall socket) immediately if any malfunction occurs while using the apparatus.
Even if your camcorder is turned off, AC power source (mains) is still supplied to it while connected to the wall outlet (wall socket) via the AC Adaptor.

For Customers in the U.S.A. and Canada

RECYCLING LITHIUM-ION BATTERIES



Lithium-Ion batteries are recyclable.
You can help preserve our environment by returning your used rechargeable batteries to the collection and recycling location nearest you.

For more information regarding recycling of rechargeable batteries, call toll free
1-800-822-8837, or visit http://www.call2recycle.org/

Caution: Do not handle damaged or leaking Lithium-Ion batteries.

Battery pack/AC Adaptor

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

CAN ICES-3 B/NMB-3 B

This equipment complies with FCC/IC radiation exposure limits set forth for an uncontrolled environment and meets the FCC radio frequency (RF) Exposure Guidelines and RSS-102 of the IC radio frequency (RF) Exposure rules.
This equipment has very low levels of RF energy that are deemed to comply without testing of specific absorption ratio (SAR).

For Customers in the U.S.A.

If you have any questions about this product, you may call:
Sony Customer Information Center
1-800-222-SONY (7669).
The number below is for the FCC related matters only.

Regulatory Information

Declaration of Conformity
Trade Name: SONY
Model No.: HDR-CX405, HDR-CX440, HDR-CX470, HDR-PJ440
Responsible Party: Sony Electronics Inc.
Address: 16530 Via Esprillo, San Diego, CA 92127 U.S.A.
Telephone No.: 858-942-2230

This device complies with Part15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment must not be co-located or operated in conjunction with any other antenna or transmitter.

CAUTION

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

Note:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.
These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The supplied interface cable must be used with the equipment in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

For Customers in Canada

This device complies with Industry Canada licence-exempt RSS standard(s).
Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

For Customers in Europe

Notice for the customers in the countries applying EU Directives

Manufacturer: Sony Corporation, 1-7-1 Konan Minato-ku Tokyo, 108-0075 Japan
For EU product compliance: Sony Deutschland GmbH, Hedelfinger Strasse 61, 70327 Stuttgart, Germany

CE

Hereby, Sony Corporation, declares that this equipment (HDR-CX440/HDR-PJ410/HDR-PJ440) is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC. For details, please access the following URL:
http://www.compliance.sony.de/

Notice

If static electricity or electromagnetism causes data transfer to discontinue midway (fail), restart the application or disconnect and connect the communication cable (USB, etc.) again.

This product has been tested and found compliant with the limits set out in the EMC regulation for using connection cables shorter than 3 meters (9.8 feet).

The electromagnetic fields at the specific frequencies may influence the picture and sound of this unit.

Disposal of waste batteries and electrical and electronic equipment (applicable in the European Union and other European countries with separate collection systems)



This symbol on the product, the battery or on the packaging indicates that the product and the battery shall not be treated as household waste. On certain batteries this symbol might be used in combination with a chemical symbol. The chemical symbols for mercury (Hg) or lead (Pb) are added if the battery contains more than 0.0005% mercury or 0.004% lead. By ensuring these products and batteries are disposed of correctly, you will help prevent potentially negative consequences for the environment and human health which could otherwise be caused by inappropriate waste handling. The recycling of the materials will help to conserve natural resources.
In case of products that for safety, performance or data integrity reasons require a permanent connection with an incorporated battery, this battery should be replaced by qualified service staff only. To ensure that the battery and the electrical and electronic equipment will be treated properly, hand over these products at end-of-life to the applicable collection point for the recycling of electrical and electronic equipment. For all other batteries, please view the section on how to remove the battery from the product safely. Hand the battery over to the applicable collection point for the recycling of waste batteries. For more detailed information about recycling of this product or battery, please contact your local Civic Office, your household waste disposal service or the shop where you purchased the product or battery.

For Customers in Singapore

Complies with
IMDA Standards
DB00353

For Customers in U.A.E.

TRA
REGISTERED No:
ER0098751/12
DEALER No:
DA0073692/11

This manual describes 1080 60i-compatible devices and 1080 50i-compatible devices.
To check whether your camera is a 1080 60i-compatible device or 1080 50i compatible device, check for the following marks on the bottom of the camera.
1080 60i-compatible device: 60i
1080 50i-compatible device: 50i

Learning more about the camcorder (Help Guide)

Help Guide is an on-line manual. Refer to it for in-depth instructions on the many functions of the camcorder.

Access the Sony support page.

http://rd1.sony.net/help/cam/1440/h_zz/

You will find further information such as the following functions in Help Guide.

- Highlight Movie Maker
- Live Streaming
- Multi Camera Control

Table of Contents

Read this first 2
Learning more about the camcorder (Help Guide) 7

Getting started 8

Supplied items 8
Charging the battery pack 9
Turning the power on 11
Inserting a memory card 12

Recording/Playback ... 14

Recording 14
Playback 16
Viewing images at a larger size 18

Saving images 19

Using PlayMemories Home™ 19
Connecting an external media device 20
Using the Wi-Fi function (HDR-CX440/PJ410/PJ440) 21

Customizing your camcorder 26

Using the menus 26

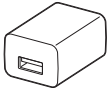
Others 27

Precautions 27
Specifications 29
Parts and controls 33

Supplied items

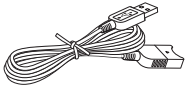
The numbers in ( ) indicate the supplied quantity.

- Camcorder (1)
- AC Adaptor (1)

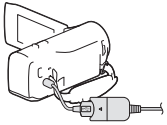


The shape of the AC Adaptor differs depending on the countries/ regions.

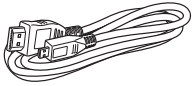
- USB connection support cable (1)



The USB connection support cable is designed for use with this camcorder only. Use this cable when the Built-in USB Cable of the camcorder is too short for connection.



- HDMI cable (1)



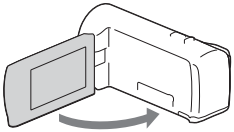
- Rechargeable battery pack NP-BX1 (1)



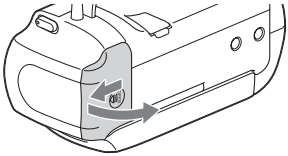
- "Operating Guide" (This manual) (1)

Charging the battery pack

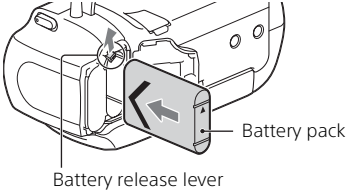
1 Turn off your camcorder by closing the LCD monitor.



2 Slide the battery cover in the direction of the arrow, and open it.

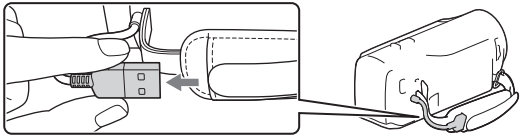


3 Insert the battery pack while pressing and holding the battery release lever.

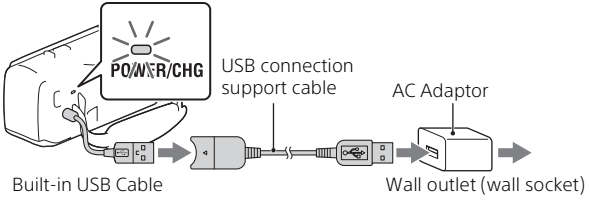


4 Close the battery cover and slide it back securely.

5 Pull out the Built-in USB Cable.



6 Connect the AC Adaptor and the camcorder with the USB connection support cable, and connect the AC Adaptor to the wall outlet (wall socket).



- The POWER/CHG (charge) lamp turns orange.
- The POWER/CHG (charge) lamp turns off when the battery pack is fully charged. Disconnect the USB connection support cable from the camcorder.
- The shape of the AC Adaptor differs depending on the countries/regions.

- Turn off your camcorder before you remove the battery pack.

Charging the battery using your computer

Turn off your camcorder and connect the camcorder to a running computer using the Built-in USB Cable.

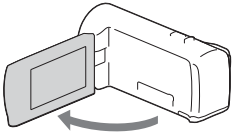
To use your camcorder connected to the wall outlet (wall socket)

Connect the camcorder to the wall outlet (wall socket) in the same way as "Charging the battery pack."

- Insert the battery pack to the camcorder.
- The battery pack may be consumed even if the camcorder is connected to the wall outlet (wall socket).

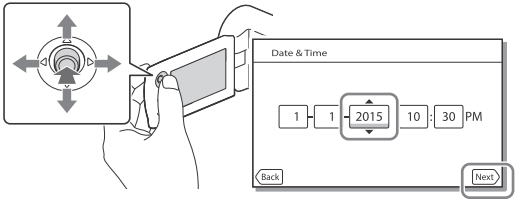
Turning the power on

1 Open the LCD monitor of your camcorder and turn the power on.



2 Select the language, the geographical area, Daylight Savings or Summer Time, date format, and the date and time.

Move the multi-selector towards ▼/▲/◀/▶ to select the desired item, and then press the center of the selector to complete the selection.

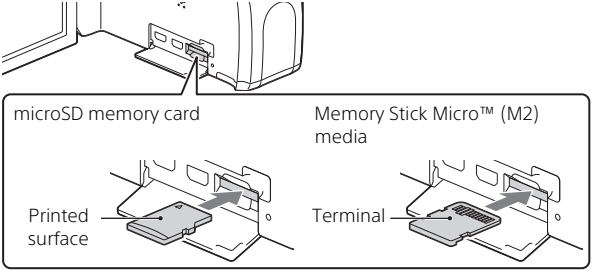


- To turn off the power, close the LCD monitor.

- To set the date and time again, select MENU → [Setup] → [Clock Settings] → [Date & Time Setting]. (In case you haven't used your camcorder for several months)
- To turn off the operating sound, select MENU → [Setup] → [General Settings] → [Beep] → [Off].

Inserting a memory card

1 Open the cover, and insert the memory card until it clicks.



- The [Preparing image database file. Please wait.] screen appears if you insert a new memory card. Wait until the screen disappears.
- Insert the memory card straight in the right direction so that the camcorder can recognize it.

- To select a memory card as the recording medium, select MENU → [Setup] → [Media Settings] → [Media Select] → [Memory Card]. (HDR-CX440/CX470/PJ440)
- To eject the memory card, open the cover and lightly push the memory card in once.

Types of memory card you can use with your camcorder

Select the type of memory card to use with the camcorder referring to the following table.

SD cards

Recording formats	Supporting memory cards
Photos	microSD memory card/microSDHC memory card/ microSDXC memory card
AVCHD	microSD memory card/microSDHC memory card/ microSDXC memory card (Class 4 or faster, or U1 or faster.)
XAVC S	microSDHC memory card/microSDXC memory card (Class 10 or faster, or U1 or faster.)

Memory Stick media

Recording formats	Supporting memory cards
Photos	Memory Stick Micro (Mark2) media
AVCHD	
XAVC S	–

Notes

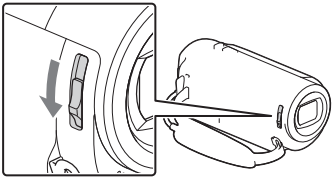
- The movies recorded will be divided into files of 4 GB when a microSDHC memory card is used to record XAVC S movies over extended periods of time.
  The divided files will be played back continuously when played back on the camcorder.
  The divided files can be integrated into the single file by using PlayMemories Home.
- Proper operation with all memory cards is not guaranteed. Contact the manufacturer of each memory card for the compatibility of memory cards other than Sony.
- To repair the image database file, charge the battery pack fully in advance.
- Movies saved on microSDXC memory cards cannot be imported to or played back on computers or AV devices not supporting the exFAT(*) file system by connecting this product to these devices with the USB cable. Confirm in advance that the connecting equipment is supporting the exFAT system. If you connect equipment not supporting the exFAT system and a message that prompts you to perform formatting appears, do not perform the formatting. All the data saved will be lost.

* The exFAT is a file system that is used for microSDXC memory cards.

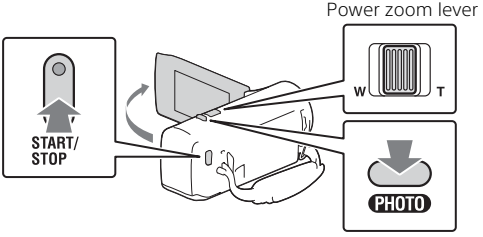
Recording

Recording movies

1 Open the lens cover.



2 Open the LCD monitor, and press START/STOP to start recording.

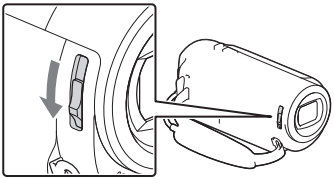


- To stop recording, press START/STOP again.
- You can record photos during movie recording by pressing PHOTO (Dual Capture) except when [SteadyShot] is set to [Intelligent Active].

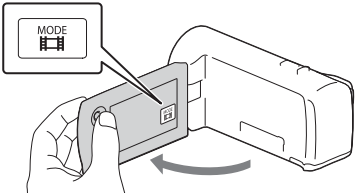
- In the default setting, movies are recorded with AVCHD and MP4 format simultaneously (Dual Video REC). MP4 format is easy for playing back your movies on a smartphone, for uploading to a network, or for uploading to the Web.
- You can check the recording time of a medium on the LCD monitor in the shooting mode.
- To change the image quality of the movies you record, select MENU → [Image Quality/Size] → [REC Mode].
- You can change the recording format by selecting MENU → [Image Quality/Size] → [File Format].

Shooting photos

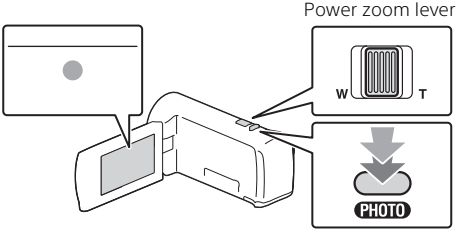
1 Open the lens cover.



2 Open the LCD monitor and select [MODE] → (Photo).



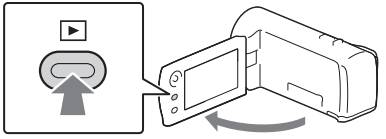
3 Press PHOTO lightly to adjust the focus, then press it fully.



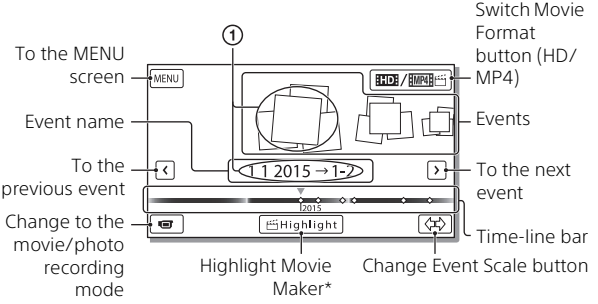
- When the focus is adjusted properly, AE/AF lock indicator appears on the LCD monitor.

Playback

1 Open the LCD monitor and press the ▶ (View Images) button on the camcorder to enter the playback mode.



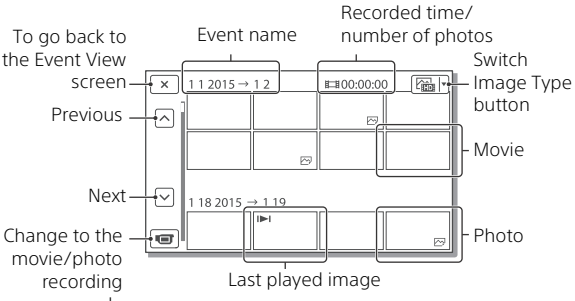
2 Select ‹ / › to move the desired event to the center, and then select the part circled (①) in the figure.



* Highlight Movie Maker will be displayed when Movie format is set to AVCHD.

- To select the XAVC S movies or AVCHD movies you want to play, edit, or copy to other devices, select MENU → [Image Quality/Size] → [File Format].

3 Select the image.



Playback operations

	Volume	/	Previous/Next
	Delete	/	Fast-reverse/Fast-forward
	Context	/	Play/Pause
	Stop		Play/Stop slide show
	Motion Shot Video		Motion Interval ADJ

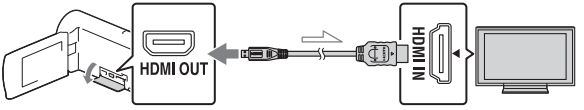
To select the format of the movie you want to play, edit, or copy to other devices

In step 2, select HD at the top right of the LCD monitor → [HD HD Quality] or [MP4 MP4].

Viewing images at a larger size

Connecting the camcorder to a TV

1 Connect the HDMI OUT jack of the camcorder to the HDMI IN jack of a TV using the HDMI cable supplied.



Signal flow

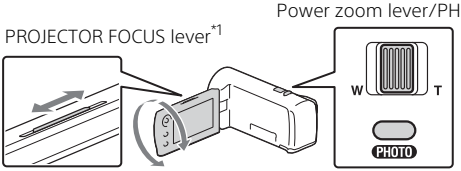
- If your TV does not have an HDMI jack, connect the Multi Terminal of the camcorder to the video/audio input jacks of the TV using an AV cable (sold separately).

Using the built-in projector (HDR-PJ410/PJ440)

1 Press the PROJECTOR button (page 33).

2 Select [Image Shot on This Device].

3 Follow the operating guide on the LCD monitor, and then select [Project].



*1 Adjust the focus of the projected image.

*2 Use the power zoom lever to move the selection frame that appears on the projected image, then press the PHOTO button. You can also use the multi-selector for this operation.

Using PlayMemories Home™

What you can do with PlayMemories Home

PlayMemories Home allows you to import movies and photos to your computer to use them in a variety of ways.



Import images from the camcorder.



Playing back imported images



For Windows, the following functions are also available.



Viewing images on Calendar



Creating movie discs

Uploading images to network services

Sharing images on PlayMemories Online™

PlayMemories Online



To download PlayMemories Home

PlayMemories Home can be downloaded from the following URL.
www.sony.net/pm/

To check the computer system

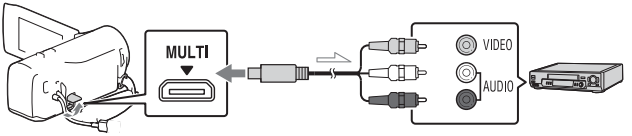
You can check the computer requirements for the software at the following URL.
www.sony.net/pcenv/

Connecting an external media device

How to connect the device

Recorder without a USB jack

Connect a recorder to the Multi Terminal of your camcorder using an AV cable (sold separately).



Signal flow

① Insert the battery pack to the camcorder.
② Connect the AC Adaptor (supplied) to the camcorder.
③ Connect the AV cable (sold separately) to the camcorder.

• Movies are copied with standard definition image quality.

Using the Wi-Fi function (HDR-CX440/PJ410/PJ440)

Installing PlayMemories Mobile™ on your smartphone

For the latest information and more detailed information on the functions of PlayMemories Mobile, visit the following URL.

PlayMemories Mobile

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

Android OS

Install PlayMemories Mobile from Google play.

GET IT ON Google Play

- Android 4.0 or higher is required to use One-Touch functions (NFC).

iOS

Install PlayMemories Mobile from App Store.

Download on the App Store

- One-touch functions (NFC) are not available with iOS.

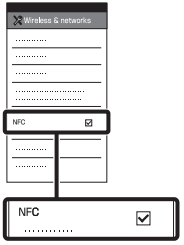
Notes

- You may not be able to download PlayMemories Mobile from Google play or App store depending on the country or the region.
  In that case, search for "PlayMemories Mobile".
- If PlayMemories Mobile is already installed in your smartphone, update the software to the latest version.
- The Wi-Fi function described here is not guaranteed to work on all smartphones and tablets.
- The Wi-Fi function of the camcorder cannot be used connected to a public wireless LAN.
- To use the One-touch functions (NFC) of the camcorder, a smartphone or tablet supporting the NFC function is required.
- The operation methods and display screens for the application are subject to change without notice by future upgrades.

Transferring MP4 movies and photos to your smartphone

One-touch connection with an Android supporting NFC

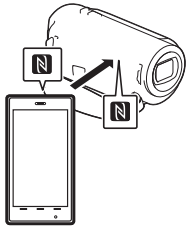
1 On the smartphone, select [Settings], then, select [More...] to check that [NFC] is enabled.



2 On the camcorder, play back an image to be sent to the smartphone.

- You can transfer MP4 movies and photos only.
- Select "Switch Movie Format button" in Step 2 of "Playback", to select MP4 movies when you play back movies (page 16).

3 Touch the camcorder to the smartphone.



Notes

- Cancel the sleep mode or unlock the screen on the smartphone beforehand.
- Make sure that N is displayed on the LCD monitor of the camcorder and the smartphone.
- Continue touching the camcorder to the smartphone without moving until PlayMemories Mobile starts (1 to 2 seconds).
- If the camcorder cannot be connected with the smartphone by NFC, see "Connection without using NFC" (page 22).

Connection without using NFC

1 Press the ▶ (View Images) button, then select MENU → [Wireless] → [Function] → [Send to Smartphone] → [Select on This Device] → image type.

2 Select the image you want to transfer, and add ✓, and then select OK → OK.

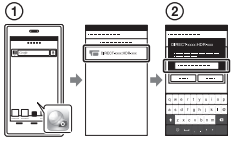
- The SSID and a password are displayed, and the camcorder is ready to be connected with the smartphone.

3 Connect the camcorder to the smartphone, and transfer images.

Android

① Start up PlayMemories Mobile and select the SSID of the camcorder.

② Input the password displayed on the camcorder (first time only).



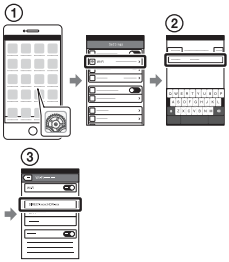
iPhone/iPad

① Select [Settings] → [Wi-Fi] → the SSID displayed on the camcorder.

② Input the password displayed on the camcorder (first time only).

③ Confirm that the SSID displayed on the camcorder is selected.

④ Return to Home, and start up PlayMemories Mobile.



Using your smartphone as a wireless remote commander

You can record with the camcorder using your smartphone as a wireless remote commander.

1 On your camcorder, select MENU → [Wireless] → [Function] → [Ctrl with Smartphone].

2 On your smartphone, perform in the same way as in step 3 in "Connection without using NFC" (page 22).

When you use NFC, display the recording screen on your camcorder, and touch on the camcorder to on the smartphone.

3 Operate the camcorder on your smartphone.

Notes

- Depending on local electrical interference or the smartphone's capabilities, the live view images may not be displayed smoothly.

Saving movies and photos to your computer via Wi-Fi

Connect your computer to a wireless access point or wireless broadband router in advance.

1 Install the dedicated software in your computer (first time only).

Windows: PlayMemories Home
www.sony.net/pm/

Mac: Wireless Auto Import
http://www.sony.co.jp/imsoft/Mac/

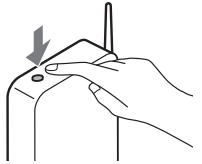
- If the software is already installed in your computer, update the software to the latest version.

2 Connect your camcorder to an access point as follows (first time only).

If you cannot register, refer to the instruction of the access point, or contact the person who set up the access point.

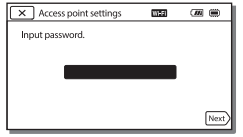
If the wireless access point has a WPS button

① On your camcorder, select MENU → [Wireless] → [Setting] → [WPS Push].
② Press the WPS button on the access point you want to register.



If you know the SSID and the password of your wireless access point

① On your camcorder, select MENU → [Wireless] → [Setting] → [Access point settings].
② Select the access point you want to register, enter the password, then select [Next].



3 If your computer is not started, turn on the computer.

4 Start sending images from the camcorder to the computer.

① Press the ▶ (View Images) button on your camcorder.

② Select MENU → [Wireless] → [Function] → [Send to Computer].

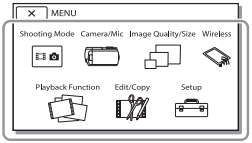
- Images are automatically transferred to and saved on the computer.
- Only newly recorded images are transferred. Importing movies and multiple photos may take time.

Using the menus

1 Select MENU.

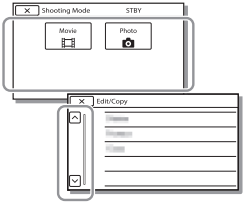


2 Select a category.



Number of the category which is displayed depends on the model.

3 Select a desired menu item.



Scroll the menu items up or down.

- Select × to finish setting the menu or to return to the previous menu screen.

Precautions

AC Adaptor

Do not short-circuit the battery terminal with any metallic objects. This may cause a malfunction.

Playing back images with other devices

You may not be able to play back images that were recorded on your camcorder with other devices normally. Also, you may not be able to play back images recorded on other devices with your camcorder.

Recording and playback

- Avoid rough handling, disassembling, modifying, physical shock, or impact such as hammering, dropping or stepping on the product. Be particularly careful with the lens.
- To ensure stable operation of the memory card, it is recommended to format the memory card with your camcorder before the first use. Formatting the memory card will erase all the data stored on it and the data will be irrecoverable. Save your important data on your PC, etc.
- 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.
- Before starting to record, test the recording function to make sure the image and sound are recorded without any problems.
- Television programs, films, video tapes, and other materials may be copyrighted. Unauthorized recording of such materials may be violate to the copyright laws.
- Compensation for the content of recordings cannot be provided, even if recording or playback is not possible due to a malfunction of the camcorder, recording media, etc.
- The camcorder is not dustproofed, dripproofed or waterproofed.
- Do not let your camcorder get wet, for example, from rain or sea water. If your camcorder gets wet, it may malfunction. Sometimes this malfunction cannot be repaired.
- Do not aim the camcorder at the sun or strong light. Doing so may cause your camcorder to malfunction.
- Do not use the camcorder near strong radio waves or radiation. The camcorder may not be able to record or play back images properly.
- Do not use the camcorder on a sandy beach or anywhere dusty. Doing so may cause your camcorder to malfunction.
- If moisture condensation occurs, stop using the camcorder until moisture evaporates.
- Do not subject the camcorder to mechanical shock or vibration. If you do so, the camcorder may operate incorrectly or may not record images. In addition, the recording medium or recorded data may be damaged.

LCD monitor

The LCD monitor is manufactured using extremely high-precision technology, so over 99.99% of the pixels are operational for effective use. However, there may be some tiny black points and/or bright points (white, red, blue, or green in color) that appear constantly on the LCD monitor. These points are normal results of the manufacturing process and do not affect the recording in any way.

Camcorder temperature

If you use the camcorder continuously for a long time, the camcorder gets very warm. This is normal.

Overheat protection

Depending on the camcorder and battery temperature, you may be unable to record movies or the power may turn off automatically to protect the camcorder. A message will be displayed on the LCD monitor before the power turns off or you can no longer record movies. In this case, leave the power off and wait until the camcorder and battery temperature goes down. If you turn on the power without letting the camcorder and battery cool enough, the power may turn off again or you may be unable to record movies.

Deactivating wireless LAN (Wi-Fi, NFC, etc.) temporarily (HDR-CX440/PJ410/PJ440)

When you board an airplane, you can deactivate the Wi-Fi function temporarily. Select MENU → [Wireless] → [Setting] → [Airplane Mode] → [On].

Wireless LAN (HDR-CX440/PJ410/PJ440)

We assume no responsibility whatsoever for any damage caused by unauthorized access to, or unauthorized use of, destinations loaded on the camcorder, resulting from loss or theft.

Notes on security when using wireless LAN products (HDR-CX440/PJ410/PJ440)

- Always make sure that you are using a secure wireless LAN to avoid hacking, access by malicious third parties, or other vulnerabilities.
- It is important that you set the security settings when using a wireless LAN.
- If a security problem arises because no security precautions are in place or due to any inevitable circumstances when using a wireless LAN, Sony bears no responsibility for the loss or damage.

Troubleshooting

If you run into any problems using your camcorder:

- Check your camcorder referring to Help Guide (page 7).
- Disconnect the power source, attach the power source again after about 1 minute, and turn the camcorder on.
- Initialize your camcorder. All settings, including the clock setting, are reset.
- Contact your Sony dealer or local authorized Sony service facility.

Specifications

System

Signal format:
NTSC color, EIA standards (1080 60i compatible models)
PAL color, CCIR standards (1080 50i compatible models)
HD TV

Movie recording format:
XAVC S (XAVC S format)
Video: MPEG-4 AVC/H.264
Audio: MPEG-4 Linear PCM 2ch (48 kHz/16 bit)
AVCHD (AVCHD format Ver.2.0 compatible):
Video: MPEG-4 AVC/H.264
Audio: Dolby Digital 2ch
Dolby Digital Stereo Creator[*1]
MP4:
Video: MPEG-4 AVC/H.264
Audio: MPEG-4 AAC-LC 2ch

[*1] Manufactured under license from Dolby Laboratories.

Photo file format:
DCF Ver.2.0 Compatible
Exif Ver.2.3 Compatible
MPF Baseline Compatible

Recording media (Movie/Photo):
Internal memory
HDR-CX440/PJ440: 8 GB[*2]
HDR-CX470: 32 GB[*3]
AVCHD, Photo
Memory Stick Micro (Mark2) media
microSD card (Class 4 or faster)
XAVC S
microSDXC card (Class 10 or faster)

[*2] The capacity that a user can use (Approx.) 7.76 GB

[*3] The capacity that a user can use (Approx.) 31.2 GB
1 GB equals 1 billion bytes, a portion of which is used for system management and/or application files. Only preinstalled demonstration movie may be deleted.

Image device:
3.1 mm (1/5.8 type) CMOS Sensor
Recording pixels (photo, 16:9):
Max. 9.2 mega pixels (4 032 × 2 272)[*4]
Gross: Approx. 2 510 000 pixels
Effective (movie, 16:9)[*5]:
Approx. 2 290 000 pixels
Effective (photo, 16:9):
Approx. 2 290 000 pixels
Effective (photo, 4:3):
Approx. 1 710 000 pixels

Lens:
ZEISS Vario-Tessar Lens
30× (Optical)[*5], 60× (Clear Image Zoom, while recording movies)[*6], 350× (Digital)
F1.8 - F4.0
Focal length:
f=1.9 mm - 57.0 mm (3/32 in. - 2 1/4 in.)
When converted to a 35 mm still camera
For movies[*5]: 26.8 mm - 804.0 mm
(1 1/16 in. - 31 3/4 in.) (16:9)
For photos: 26.8 mm - 804.0 mm (1 1/16 in. - 31 3/4 in.) (16:9)

Color temperature: [Auto], [One Push], [Indoor], [Outdoor]

Minimum illumination:
6 lx (lux) (in default setting, shutter speed 1/30 second (1080 60i compatible models) or 1/25 second (1080 50i compatible models))
3 lx (lux) ([Low Lux] is set to [On], shutter speed 1/30 second (1080 60i compatible models) or 1/25 second (1080 50i compatible models))

[*4] The unique image processing system of Sony's BIONZ-X allows still image resolution equivalent to the sizes described.

[*5] [SteadyShot] is set to [Standard] or [Off].

[*6] [SteadyShot] is set to [Active].

Input/Output connectors

HDMI OUT jack: HDMI micro connector
PROJECTOR IN jack (HDR-PJ410/PJ440): HDMI micro connector
USB jack: Type A (Built-in USB)
USB connector is only for output (For customers in Europe).
Multi Terminal

LCD monitor

Picture: 6.7 cm (2.7 type, aspect ratio 16:9)
Total number of pixels: 230 400 (960 × 240)

Projector (HDR-PJ410/PJ440)

Projection type: DLP
Light source: LED (R/G/B)
Focus: Manual
Throw Distance: 0.5 m (1.6 feet) or over
Contrast ratio: 1 500:1
Resolution (output): 640 × 360
Continuous projection time (when using the supplied battery pack): Approx. 1 h. 10 min.

Wireless LAN (HDR-CX440/PJ410/PJ440)

Supported standard: IEEE 802.11 b/g/n
Frequency: 2.4 GHz
Supported security protocols: WEP/WPA-PSK/WPA2-PSK
Configuration method: WPS (Wi-Fi Protected Setup)/manual
Access method: Infrastructure Mode
NFC: NFC Forum Type 3 Tag compliant

General

Power requirements: DC 3.6 V (battery pack), DC 5 V 1 500 mA (AC Adaptor)
USB Charging: DC 5 V 800 mA
Average power consumption:
During camera recording using LCD monitor at normal brightness:
HDR-CX405/CX440/CX470: 2.1 W
HDR-PJ410/PJ440: 2.2 W
Operating temperature: 0 °C to 40 °C (32 °F to 104 °F)
Storage temperature: –20 °C to +60 °C (–4 °F to +140 °F)
Dimensions (approx.):
HDR-CX405/CX440/CX470:
54.0 mm × 59.5 mm × 128.0 mm (2 1/4 in. × 2 3/8 in. × 5 1/8 in.) (w/h/d) including the projecting parts
54.0 mm × 59.5 mm × 128.0 mm (2 1/4 in. × 2 3/8 in. × 5 1/8 in.) (w/h/d) including the projecting parts, and the supplied rechargeable battery pack inserted

HDR-PJ410/PJ440:
59.0 mm × 59.5 mm × 128.0 mm (2 3/8 in. × 2 3/8 in. × 5 1/8 in.) (w/h/d) including the projecting parts
59.0 mm × 59.5 mm × 128.0 mm (2 3/8 in. × 2 3/8 in. × 5 1/8 in.) (w/h/d) including the projecting parts, and the supplied rechargeable battery pack inserted
Mass (approx.)
HDR-CX405/CX440/CX470:
190 g (6.7 oz) main unit only
215 g (7.6 oz) including the supplied rechargeable battery pack
HDR-PJ410/PJ440:
210 g (7.4 oz) main unit only
235 g (8.3 oz) including the supplied rechargeable battery pack

AC Adaptor AC-UUD11/AC-UD10

Power requirements: AC 100 V - 240 V, 50 Hz/60 Hz
Power consumption: 11 W
Output voltage: DC 5.0 V, 1 500 mA

Rechargeable battery pack NP-BX1

Used battery: Lithium-ion battery
Maximum voltage: DC 4.2 V
Nominal 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)

Design and specifications of your camcorder and accessories are subject to change without notice.

Estimated time of charging, recording, and playback using the supplied battery pack

HDR-CX405/CX440/CX470

Charging time (minutes)		
	AC Adaptor (supplied)	155
	Computer	275
Recording time (minutes)		
	Continuous	115
	Typical	55
Playback time (minutes)		210

HDR-PJ410/PJ440

Charging time (minutes)		
	AC Adaptor (supplied)	155
	Computer	275
Recording time (minutes)		
	Continuous	110
	Typical	55
Playback time (minutes)		210

- The charging times are measured when charging the camcorder at a room temperature of 25 °C (77 °F) without using the USB Connection support cable.
- The recording and playback times are measured when using the camcorder at 25 °C (77 °F).
- The recording times are measured when recording movies with the default settings ([REC Mode]: [High Quality FH], [Dual Video REC]: [On]).
- Typical recording time shows the time when you repeat recording start/stop, switching the [Shooting Mode], and zooming.

Trademarks

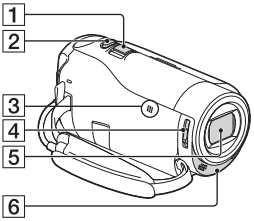
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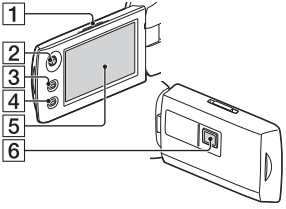
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Parts and controls

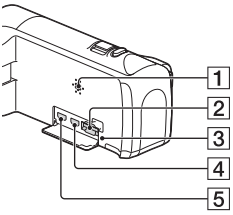
Figures in ( ) are reference pages.



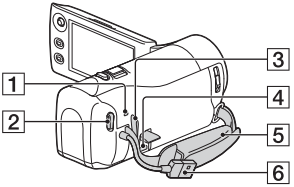
1 Power zoom lever (14, 15)
2 PHOTO button (15)
3 N mark (22) (HDR-CX440/PJ410/PJ440)
NFC: Near Field Communication
4 LENS COVER switch (14, 15)
5 Lens (ZEISS lens)
6 Built-in microphone



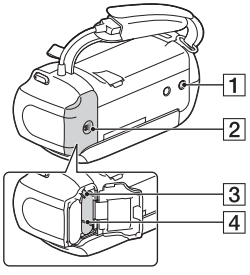
1 PROJECTOR FOCUS lever (18) (HDR-PJ410/PJ440)
2 Multi-selector (11)
3 ▶ (View Images) button (16)
4 PROJECTOR button (18) (HDR-PJ410/PJ440)
5 LCD monitor
6 Projector lens (HDR-PJ410/PJ440)



1 Speaker
2 Memory card slot (12)
3 Memory card access lamp (12)
4 HDMI OUT jack (18)
5 PROJECTOR IN jack (HDR-PJ410/PJ440)

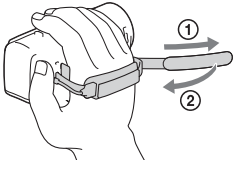


1 POWER/CHG (charge) lamp (10)
2 START/STOP button (14)
3 Loop for a shoulder belt
4 Multi Terminal
This terminal does not support VMC-AVM1 Adaptor Cable (sold separately). You cannot use accessories via an A/V remote connector.
5 Grip belt
6 Built-in USB Cable (9)



1 Tripod receptacle
2 Battery cover (9)
3 Battery release lever
4 Battery pack (9)

To fasten the grip belt



GB

Additional information on this product and answers to frequently asked questions can be found at our Customer Support Website.

http://www.sony.net/

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